

UMRR-EMP
Long Term Resource Monitoring Program FY13 Activities (Living Document)
(October 2012–September 2013)

Publications, Presentations, and Conference Attendance

1st Quarter

Jason Rohweder gave a webinar presentation September 24th, for scientists and managers from the U.S. Army Corps of Engineers' Mississippi Valley Division. The presentation discussed updates Rohweder is making to the geospatial Wind Fetch and Wave modeling tools created at UMESC for the UMRR-EMP.

Jason Rohweder presented, "Application of Wind Fetch and Wave Models for Habitat Rehabilitation and Enhancement Projects - 2012 Update," at the Fall U.S. Army Corps of Engineers' Fish and Wildlife Work Group meeting, November 29 at the Upper Midwest Environmental Sciences Center. Rohweder presented a short history of the project and an overview of the updates that are being made to the tools to increase functionality and efficiency.

David Bornholdt (USGS-MWR), Mike Jawson, and Barry Johnson participated in the quarterly meetings of the Upper Mississippi River Basin Association and the Upper Mississippi River Restoration-Environmental Management Program Coordinating Committee, November 28-29, in St. Paul, MN.

Jeff Houser gave a presentation at the Upper Mississippi River Conservation Committee Water Quality Technical Section 2012 Fall Meeting. The talk was titled: "Patterns in nutrient, chlorophyll, and suspended solids concentrations across channel, impounded, and backwater areas in the LTRMP study reaches.

Greg G. Sass, T.D. VanMiddlesworth, Nerissa N. Michaels, Bradley A. Ray, Tim W. Spier, John Lyons, Joshua D. Stafford, and Randy V. Smith. Is there a native recipe for controlling invasive common carp? South Dakota State University Fisheries and Wildlife Departmental Seminar Series. 10 Oct 2012. Platform Presentation.

Popp, W.*, R. Burdis, S. Delain, M. Moore, and J. Sauer Temporal trends in water quality and biota in reaches of Pool 4 above and below Lake Pepin: indications of a recent ecological shift. Presentation at UMRR-EMPCC quarterly meeting, Nov. 29, St. Paul.

Walt Popp chaired and Rob Burdis participated in a MNDNR Mississippi River Team meeting on Oct. 16th.

Megan Moore, as chair of the Wildlife Tech Section, participated by phone in a UMRCC Executive Board meeting on Dec. 4th.

John Chick, Ben Lubinski, Lori Gittinger, and Eric Ratcliff participated in a two day training session on the operation of the YSI PISCES (Pontoon for In-situ Characterization of Environmental Systems) water monitoring platform soon to be deployed by the NGRREC field station. The unit is planned to be the first in the proposed GREON (Great Rivers Ecological Observation Network) of real-time, continuous monitors collecting various water quality and phytoplankton data in the Mississippi River and other large rivers. 10/2012.

LTRMP staff attended NE District Fisheries Management quarterly meeting at Mines of Spain State Park – November, 2012.

Fischer gave a presentation on Mississippi River resources, issues, programs, and partnerships (including UMRR-EMP HREP and LTRMP) during WDNR new employees training session. Kemp Natural Resources Station, Woodruff, WI October 3

Fischer, participated in monthly WDNR meetings with Water Quality Board and Water Resources Policy & Management Team (statewide), & Western District Management Team, to provide a link for UMRR-EMP science and restoration activities with inland WDNR

Fischer & Baumann participated in UMRBA and EMPCC meetings November 27-29, St. Paul

Fischer co-chaired and participated in St. Paul District River Resources Forum meeting, Dec 4-5, St. Paul

2nd Quarter

Bierman, Bowler, Kueter, and Petersen attended Iowa AFS/Fisheries Statewide at Honey Creek State Lodge – February, 2013.

Bierman A-Team conference call – February, 2013.

Bierman participated in UMRR-EMP, low funding ad hoc conference call – February, 2013.

Bierman attended EMPCC meeting in Rock Island – February, 2013.

Bierman, Bowler, Kueter, and Petersen attended the 69th annual meeting of the UMRCC in Collinsville, Illinois – March, 2013.

Bowler attended meeting with the Quad City Station steering committee and Jeremiah Hass of Exelon Nuclear on fisheries stock assessments and impingement monitoring on Pool 14 in Cordova, Illinois – March, 2013.

Jenny Hanson attended the International LiDAR Mapping Forum in Denver, CO February 11-13 (funded by USGS), to ensure UMESC stays current with LiDAR technology, processing procedures, and applications. UMESC has worked cooperatively with the U.S. Army Corps of Engineers and the Upper Mississippi River Restoration-Environmental Management Program (UMRR-EMP) Long Term Resource Monitoring Program element for several years, creating LiDAR and bathymetry data products Upper Mississippi River System (http://www.umesc.usgs.gov/data_library/gis_data/lidar.html). The LiDAR Mapping Forum is the premier event for the LiDAR industry; a technical conference and exhibition focused on airborne and bathymetric LiDAR with emphasis on mobile mapping systems.

Michael Jawson, Barry Johnson, and Ken Lubinski (UMESC) will attend the Upper Mississippi River Basin Association (UMRBA) quarterly meetings in Davenport, IA, February 26-28. Mike Jawson and Johnson will represent UMESC and the Upper Mississippi River Restoration—Environmental Management Program’s (UMRR-EMP) Long Term Resource Monitoring Program (LTRMP) at the meetings. Lubinski will give the presentation, “Old and New Challenges to Restoring the Upper Mississippi River System.”

Wisconsin DNR staff delivered UMRR-EMP LTRMP presentations at our DNR Water Quality Bureau statewide meeting. The meeting, attended by biologists, bureau staff and administrators, included many excellent talks about projects around the state of Wisconsin. The talks were well-received and generated much discussion. In particular, there was considerable interest in the fisheries Treemap and other data visualization tools (in fact, it was an audible response from the audience during the demonstration). I would like to acknowledge and thank the developers of those tools, Brian Ickes and Ben Schlifer, for their contributions. The tools they developed provide opportunities for managers to explore our unparalleled monitoring datasets, ask their own questions, and enhance their knowledge about the UMRS ecology—goal number one of the LTRMP.

Kreiling, R.M., J.P. Schubauer-Berigan, W.B. Richardson, L.A. Bartsch, P.E. Hughes, J.C. Cavanaugh, and E.A. Strauss. 2013. Wetland management reduces sediment and nutrient loading to the Upper Mississippi River. *Journal of Environmental Quality* 42:562-572.

Nate DeJager assisted Eric Strauss (UWL) in planning the 45th meeting of the Mississippi River Research Consortium to be held April 24-26 in La Crosse, WI.

Nerissa N. Michaels, Michael A. McClelland, Stephen M. Tyszko, and Andrew Casper. Capture efficiency of silver carp *Hypophthalmichthys molitrix* using pulsed-DC electrofishing. 51st Annual Meeting of the Illinois Chapter of the American Fisheries Society, Rend Lake Resort, IL. 5-7 March 2013. Platform Presentation.

T.D. VanMiddlesworth, Nerissa N. Michaels, and Andrew F. Casper. The Nature Conservancy's Emiquon Preserve: Importance Of Aquatic Restoration To Nature And People. 6th Annual Emiquon Science Symposium, Dickson Mounds Museum, Lewistown, IL. 7 March 2013. Platform Presentation.

Todd D. VanMiddlesworth, Nerissa N. Michaels, and Andrew F. Casper. The Nature Conservancy's Emiquon Preserve Fish and Aquatic Vegetation Monitoring Annual Report. 2013.

Seibert, J., Yallaly, K., Tripp, S. J., Solomon, L. S., Stefanavage, T. Herzog, D. P., Phelps, Q. P. Silver carp population dynamics and the use of harvest simulation models for several Midwestern U.S. rivers. Midwest Fish and Wildlife Conference. Poster Presentation. December, 2012

Andrew F. Casper - "Conceptual Models for Side Channel Restoration" presented to the Feb. 28th Upper Mississippi River Restoration Environmental Management Program Coordinating Committee, Rock Island, IL.

Chick, J.H. National Great Rivers Research & Education Center (NGRREC) aquatic ecology program overview and the importance of partnerships. (Talk included information on the UMRR-EMP and LTRMP). Annual Meeting of the Upper Mississippi River Conservation Committee, Collinsville, IL (invited presentation)
Lubinski, B.J., and J.H. Chick. Highlights from the new Long-Term Illinois, Mississippi, Ohio and Wabash rivers fish population monitoring program. (Talk included information on the UMRR-EMP and LTRMP). Annual Meeting of the Upper Mississippi River Conservation Committee, Collinsville, IL (invited presentation)

Culver, E.F., and J.H. Chick. Assessing the injury rates of fishes using established boat pulsed DC-electrofishing protocols. (Talk included information on the UMRR-EMP and LTRMP). Annual Meeting of the Illinois Chapter of the American Fisheries Society, Rend Lake, IL

Lubinski, B.J., and J.H. Chick. Highlights from the new Long-Term Illinois, Mississippi, Ohio and Wabash rivers fish population monitoring program. (Talk included information on the UMRR-EMP and LTRMP). Annual Meeting of the Illinois Chapter of the American Fisheries Society, Rend Lake, IL

John Chick - Gave a presentation highlighting the UMRR-EMP and LTRMP (and other projects) to members of the U.S. Army Corps of Engineers visiting NGRREC from the Mississippi River Valley Division and ERDC. 3/2013.

John Chick, Ben Lubinski, Eric Ratcliff, and Eric Gittinger attended the Annual Meeting of the Illinois Chapter of the American Fisheries Society, Rend Lake, IL. 2/2013.

John Chick, Eric Ratcliff, Eric Gittinger, Ben Lubinski, and Lori Gittinger attended the Annual Meeting of the Upper Mississippi River Conservation Committee, Collinsville, IL. 3/2013

Ben Lubinski coordinated a two day Illinois AFS, continuing education workshop covering statistical analysis and darter identification. 3/2013.

John Chick - Took part in meetings of the Science Advisory Committee for the State of Illinois River Coordinating Councils. 3/2013

John Chick received a Volunteer Service Award from the Lieutenant Governor, State of Illinois – for service as a member of the River Coordinating Councils of Illinois, Science Advisory Committee

Eric Gittinger provided current LTRMP net specifications to Michael Delong of Winona State University. Eric Ratcliff and Eric Gittinger supplied LTRMP Pool 26 Asian carp habitat information to Kevin Irons of the Illinois DNR. 2/2013.

Eric Ratcliff provided Kevin Cummings of the Illinois Natural History Survey with voucher specimens and location information for specimens of the invasive mussel *Corbicula cf. leana* collected during UMRR-EMP-LTRMP sampling in Mississippi River, Pool 26. 2/2013.

Eric Ratcliff provided UMRR-EMP-LTRMP sampling safety training for hourly staff/graduate students at the NGRREC field station.

Ben Lubinski and Lori Gittinger participated in a training session on the calibration and maintenance of the YSI PISCES (Pontoon for In-situ Characterization of Environmental Systems) water monitoring platform. The unit is planned to be the first in the proposed GREON (Great Rivers Ecological Observation Network) of real-time, continuous monitors collecting various water quality and phytoplankton data in the Mississippi River and other large rivers. 3/2012.

Megan Moore attended the UMRCC Annual Meeting in Collinsville, IL on Mar. 19-21.

Phelps, Q.E., I. Vining, R. Dames, D. Herzog, S. Tripp, and M. Boone. Accepted. A comparison of techniques to evaluate sturgeon mortality in the Mississippi River adjacent to Missouri and Illinois. North American Journal of Fisheries Management.

Seibert, J. R. and Q. E. Phelps. Accepted. Evaluation of silver carp ages derived from seven bony structures in Midwestern U.S. Rivers: Implications for management of invasive populations. North American Journal of Fisheries Management.

Phelps, Q.E., J. Ridings, and D.P. Herzog. Accepted American eel population characteristics in the Upper Mississippi River. American Midland Naturalist

Yallaly, K.L., J.R., Seibert, S.J., Tripp, D. Herzog, and Q.E. Phelps. Accepted. Sauger Life History in the lower portion of the Upper Mississippi River. American Midland Naturalist

Phelps, Q. E. and D.W. Willis. 2013. Development of an Asian carp size structure index and application through demonstration. North American Journal of Fisheries Management.

2012: Phelps, Q.E. S.J. Tripp, and J.E. Garvey. Temporary Connectivity: A Comparison of the New Madrid Floodway and the Adjacent Main River 73rd Midwest Fish and Wildlife Conference. Poster

2012: Seibert, J. R., and Q. E., Phelps. Evaluation of silver carp ages derived from seven bony structures in Midwestern U.S. rivers: Implications for management of invasive populations. Midwest Fish and Wildlife Conference, Wichita KS Poster

2012: Seibert, J. R., S. J., Tripp, and Q. E., Phelps. A rapid assessment approach for evaluating silver carp gender. Midwest Fish and Wildlife Conference, Wichita KS Poster

2012: Seibert, J. R., K. L. Yallaly, S. J., Tripp, L. E. Solomon, T. Stefanavage, D. P. Herzog, M. J. Taylor, and Q. E., Phelps. Silver carp population dynamics and the use of the spawning potential ratio models for several Midwestern U.S. rivers. Midwest Fish and Wildlife Conference, Wichita KS Poster

2012: Seibert, J.R. and Q.E. Phelps. Early life history of blue catfish in the unimpounded middle Mississippi River. American Fisheries Society Conference. Poster

2013: Hupfeld, R. N., Q. E. Phelps, and M. K. Flammang. Excessive summer shovelnose sturgeon mortality in the Des Moines River and potential impacts of climate change. Iowa Chapter American Fisheries Society Conference. Platform

2013: Phelps, Q.E., S.J. Tripp, and D.P. Herzog. Incorporating basic and applied approaches to evaluate the effects of Asian carp on native fishes. Iowa Chapter American Fisheries Society Conference. Platform

2013: Phelps, Q.E. and G.W. Whitley. Environmental life history of sturgeon in the Missouri and Mississippi rivers. Iowa Chapter American Fisheries Society Conference. Platform

2013: Bales, K.R. and Q.E. Phelps. Age-0 lake sturgeon prey selectivity. Iowa Chapter American Fisheries Society Conference. Platform

2013: Hupfeld, R. N. and Q. E. Phelps.. Comparing commercial and recreational harvest characteristics of paddlefish in the middle Mississippi River. Iowa Chapter American Fisheries Society Conference. Platform

Molly Sobotka presentation at MRNRC- analysis of LTRMP water quality monitoring and DO metabolism.

Molly Sobotka presentation at UMRCC WQ tech- analysis of LTRMP water quality monitoring and DO metabolism

3rd Quarter

Bierman attended A-Team meeting in La Crosse – April, 2013.

Bierman participated in a Green Island/Maquoketa River floodplain management and science discussion with IDNR Wildlife staff, state and regional USGS staff, and local NRCS staff – May 2013.

Bierman and Kueter participated in a USGS webinar entitled, “Modernizing Water Time-Series Data Collection & Processing” – May, 2013.

Bierman participated in quarterly EMPCC meeting via webinar – May, 2013

Bowler, Keeney, Kueter, Petersen, and Thul attended annual River Rat meeting at Bellevue State Park – June, 2013.

Bierman, Bowler, Kueter, and Petersen received new personal computers from Des Moines Fisheries Bureau and completed file transfers and networking through server – June, 2013.

Bierman and Bowler attended N. E. District Fisheries Management quarterly meeting at Big Springs Hatchery – June, 2013.

Bierman, Bowler, Kueter, and Petersen completed OSHA safety training – June, 2013.

There was a strategic planning meeting for the U.S. Army Corps of Engineers’ (USACE) Upper Mississippi River Restoration-Environmental Management Program (UMRR-EMP), at USGS’s Upper Midwest Environmental Sciences Center (UMESC) in La Crosse, WI, April 9-11. The planning process covered both parts of the UMRR-EMP program, the Long Term Resource Monitoring Program (LTRMP) and Habitat Rehabilitation and Enhancement Projects (HREP). The LTRMP is implemented by UMESC with funding from the USACE. Agencies participating in the meeting 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. Staff from UMESC in attendance were Mike Jawson, Barry Johnson, Jennifer Sauer, and Jeff Houser. Total attendance is expected to be 18, with no USGS staff on travel status.

Jeff Houser provided Catherine Puckett, USGS Office of Communications, a photo of the WDNR LTRMP WQ sampling crew doing winter sampling for an outreach publication titled: Ecosystem Science for Now and the Future: Status and Trends Science and Biological Resources.

Barry Johnson (UMESC) will participate in a meeting of the Science Council for the Wisconsin Initiative on Climate Change Impacts ([WICCI](#)) in Madison, WI, May 6. The meeting will focus on updates to downscaled modeling for the US east of the Rocky Mountains being conducted at the University of Wisconsin, a case study of planning for driftless area stream management, and strategic planning for the Science Council. WICCI is a partnership of the University of Wisconsin, Wisconsin Department of Natural Resources, and other state agencies and institutions that assesses climate change impacts in the upper Midwest and develops adaptation strategies that can be implemented by stakeholders.

Michael Jawson, Jeff Houser, and Barry Johnson (UMESC) will attend 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, Rock Island, IL, June 18-20. The meeting is a continuation of the planning process initiated in April, 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 include; 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.

Jennifer Sauer participated in the UMR Federal Partners Conference Call, Thursday, June 20, 2013.

Lubinski, Ben J., and John H. Chick. Highlights from the new Long-Term Illinois, Mississippi, Ohio, and Wabash Rivers Fish Population Monitoring Program. 69th Annual Meeting of the Upper Mississippi River Conservation Committee. Collinsville, IL. March 19-21, 2013.

Creque, S.M., Chick, J.H., and S.J. Czesny. Rotifer abundance and composition in Lake Michigan: a significant data gap in understanding the potential for the establishment of Asian carp populations. Annual Conference on Great Lakes Research, West Lafayette, IN

Popp, W.*, R. Burdis, S. DeLain, M. Moore, and J. Sauer. Temporal trends in water quality and biota in reaches of Pool 4 above and below Lake Pepin: indications of a recent ecological shift. Presentation at Mississippi River Research Consortium, April 26, 2013, La Crosse.

Steve DeLain, Rob Burdis and Walt Popp attended the Mississippi River Research Consortium in La Crosse, WI on April 24-26.

Walt Popp participated as Minnesota's representative in the UMRR-EMPCC meeting webinar on May 29th. Walt Popp organized and chaired and Rob Burdis, Megan Moore and Steve DeLain participated in a MN DNR Mississippi River Team meeting on June 5th at Lake City.

Megan Moore, as chair of the UMRCC Wildlife Tech Section, participated in a UMRCC Executive Board meeting on June 13th by phone.

Houser, J.N. Increasing our understanding of the UMRS: general approaches and a specific water quality example. UMRR-EMP-LTRMP Analysis team meeting. A-Team meeting presentation. La Crosse, WI. 23 April 2013.

Houser, J.N. Nutrients, chlorophyll, and suspended sediments in the Upper Mississippi River: The role of discharge and season in contrasts among aquatic areas. Oral presentation. Mississippi River Research Consortium Annual Meeting. 24 - 26 April 2013. La Crosse, WI.

Gray BR, V Lyubchich and Y Gel (invited). 2013. May 2013. Regression estimation of trends in temperature when time and date of sampling are haphazard. Annual meeting, Statistical Society of Canada, Edmonton, AB.

Langrehr co-authored a presentation by Susan Romano “Water Depth and Wind Fetch Disturbance Relationships to Aquatic Vegetation in Pool 8, Upper Mississippi River” at the Mississippi River Research Consortium.

4th Quarter

Walt Popp attended the UMRR-EMPCC meeting in La Crosse on Aug. 28th.

Nate De Jager presented at the Ecological Society of America Conference in Minneapolis, Minnesota (August 4-9): Interactive effects of flooding and deer browsing on floodplain vegetation and nitrogen dynamics. Co-authors were Meredith Thomsen, Eric Strauss, Benjamin Cogger and Whitney Swanson from the University of Wisconsin-La Crosse

Schramm H. and B. Ickes. 2013. The Mississippi River: A place for fish. National American Fisheries Society special symposium. September 8-12, 2013, Little Rock, AR

Bierman attended a meeting of the Mississippi River Commission in Dubuque aboard the *MV Mississippi* during their annual low water tour – August, 2013.

Bierman attended a meeting of the Fish and Wildlife Interagency Committee (FWIC) in Le Claire – August, 2013.

Bierman participated in A-Team conference call – August, 2013.

Giblin et al. had manuscript titled “Thresholds in the Response of Free-Floating Plant Abundance to Variation in Hydraulic Connectivity, Nutrients, and Macrophyte Abundance in a Large Floodplain River” accepted for publication in *Wetlands* pending minor revisions.

Levi Solomon presented “The Expanding Influence of the Long Term Resource Monitoring Program” at the 14th Biennial Governor’s Conference on the Management of the Illinois River System.

Andy Casper used LTRMP La Grange Reach Asian Carp data in a presentation to the Asian Carp Monitoring and Response Workgroup Oct 29 in Chicago.

John Chick gave a lecture to a natural resources class at Southern Illinois University at Edwardsville. The talk included information about the National Great Rivers Research and Education Center and the UMRR-EMP LTRMP. 9/2013.

Ben Lubinski attended the Annual American Fisheries Society meeting held in Little Rock, Arkansas. 9/2013.

Lubinski, Ben J., and John H. Chick. Highlights from the new Long-Term Illinois, Mississippi, Ohio, and Wabash Rivers Fish Population Monitoring Program. 143rd Annual Meeting of the American Fisheries Society. Little Rock, Arkansas. September 8-12, 2013.

Technical activities and assistance

1st quarter

Jeff Houser, Shawn Giblin, and Rob Burdis discussed summer chlorophyll a concentrations in the Upper Mississippi River with John Sullivan (WDNR). John was seeing reductions in summer chlorophyll a concentrations in the UMR below Lake Pepin since 2008 and was interested in seeing if a similar pattern was being reported by LTRMP.

Brian Ickes assisted Steve Winter (USFWS) in gathering information from the LTRMP database. The Refuge is compiling a list of Resources of Concern as part of a Habitat Management Planning process.

Brian Ickes assisted Ann Runstrom (USFWS) in gathering information from the LTRMP database. Ann is looking for info to complete a Wildlife Action Plan for the refuge system. She mined the Fish 10-year report for an initial conservation status listing table to update, the LTRMP Fish life history database to help expand her list and then selected a final listing for her particular agency needs, and then supplemented that with empirically-informed write-ups for each species using mostly LTRMP data, but also other sources like UMRCC.

Ben Schlifer assisted Ann Runstrom (USFWS) in gathering fisheries information from the LTRMP database and summarizing it in the specific format that was requested.

The water quality field station staff participated in the USGS National Field Quality Assurance Project. In March 1979, U.S. Geological Survey began the NFQA Project. The project is designed to monitor the proficiency of alkalinity, pH, and specific conductance measurements performed by USGS water-quality analysts. The results were excellent! All field station measurements were "Acceptable".

Brian Ickes assisted Marie Baget, a French journalist, who is working on a documentary about the Mississippi River for the French TV (and maybe an American channel). The documentary is to discover the Mississippi River from its source at Lake Itasca down to New Orleans, in 10 episodes of 43 minutes. Brian provided a description of his position, a description of the River in La Crosse, how is the river at this place, and some relevant topics for the documentary.

Barry Johnson made a presentation describing UMRR-EMP LTRMP and its collaborations to a meeting of managers from the USGS Midwest Region, 7 November 2012, in Mounds View, Minnesota. The meeting was a scoping session for a possible new initiative on large river research within the Midwest Region and USGS.

Barry Johnson participated in a meeting to direct future work leading to an integrated approach to adaptation strategies for climate change effects within Wisconsin and the Upper Midwest, as a member of the Science Council for the Wisconsin Initiative on Climate Change Impacts (WICCI). The meeting was held in Madison, WI, November 5th, 2012.

Jennifer Sauer provided mapping assistance to Marian Havlik of Malacological Consultants. Marian was interested in a map depicting the McGregor area.

Jennifer Sauer and Carol Lowenberg provided Russ Wilson (USFWS) some background information on the faucet snail (*Bithynia tentaculata*). Russ was writing a press release on waterbird die-off occurring in the Upper Mississippi River National Wildlife and Fish Refuge, Savanna District.

Jennifer Sauer provided Eric Smith (Valley City State University, North Dakota) some background information on the faucet snail (*Bithynia tentaculata*). Eric is developing a project looking at waterbird die-off on the UMR. Eric is particularly interested in scaup population dynamics as it relates to the die-off.

Nerissa Michaels- provided UMRR-EMP LTRMP content and pictures for Experience Emiquon brochure. Nov 2012

Nerissa Michaels- participated in Spoon River College 10th Grade Career Day as a member on the Natural Resources panel at SRC, Canton, IL. Nov 2012

Nerissa Michaels- provided IDNR Kevin Irons with LTRMP data. Nov 2012

Nerissa Michaels- Provided John Nuhn, photo director, National Wildlife, National Wildlife Federation, Reston, VA with Asian carp photos for Dec 2012 issue. Nov 2012

Nerissa Michaels- Provided Alison Kirkpatrick, Terrestrial Invasive Species Outreach Liaison, Invading Species Awareness Program, Ontario Federation of Anglers and Hunters, Asian carp photos for their Facebook page. Nov 2012

Nerissa Michaels- Assisted UIS graduate student Nathan Grider with thesis research collecting alligator gar from TNC's Spunky Bottoms for growth and diet analysis. Oct 2012

Nerissa Michaels- Provided Stefan Daume, PhD student, Goettingen University, Stockholm Resilience Center, Asian carp pictures for PhD presentation. Oct 2012

Nerissa Michaels-Phone conference for meeting planning as Secretary on the Executive Board of the Mississippi River Research Consortium. Oct 2012

Levi Solomon completed update of Illinois River Biological Station website including LTRMP component webpages. (<http://www.inhs.illinois.edu/fieldstations/irbs>)

Megan Moore gave a talk on the development and use of a submersed macrophyte IBI for the UMR at a meeting of MN DNR and PCA staff to discuss development of a submersed macrophyte IBI for lakes at Sauk Rapids, MN on Oct. 16th.

Rob Burdis, Steve DeLain, and Megan Moore gave a joint talk at a regional meeting of the MNDNR's Ecological and Water Resources Division on how monitoring of water quality, fish and aquatic vegetation in the UMR contributes toward healthy watersheds on Oct. 25th in St. Paul.

Megan Moore provided 2012 LTRMP vegetation frequency summaries and distribution maps to MN, WI, and IA DNRs, MPCA, USFWS, and UMESC.

Steve DeLain reviewed the MNDNR's Asian carp action plan.

Eric Ratcliff corresponded with Oquawka Boats and Western Illinois University on numerous occasions, supplying specifications and procedures for boat wiring and building booms for LTRMP electrofishing boats. Western Illinois University is having an electrofishing boat built to LTRMP specs to be used at the Kibbe Field Station for sampling the Mississippi River. 11/2012.

Eric Ratcliff provided shock boat building advice, diagrams, and descriptions for Southern Illinois University at Carbondale (SIUC) to build an electrofishing boat to LTRMP specifications. 12/2012.

Kueter, Petersen, and Reed completed monthly WQ fixed site sampling – October-December, 2012.

Bowler, Kueter, Petersen, and Reed conducted normal LTRMP fisheries sampling in Pool 13 – October, 2012.

Bowler compiled and submitted summaries of 4th quarter station activities for FY12 for UMESC and USACE staff – October, 2012.

Bierman, Petersen, and Reed assisted Kueter with field collections of fall WQ SRS – October, 2012.

Bellevue LTRMP staff assisted Fisheries Research staff with fall tailwater sauger and walleye population assessments in Pool 13 – October, 2012.

Bellevue LTRMP staff completed 21 pool-wide random electrofishing sites and completed 30 fyke net samples at six different backwater complexes in conjunction with the Pool 12 overwintering HREP projects – October-November, 2012.

Bellevue LTRMP staff collected 558 bluegill otoliths in Pool 12 to assess age structure in conjunction with overwintering HREP projects – October, 2012.

Bowler completed data entry and QA/QC for Pool 12 overwintering HREP projects – November, 2012.

Petersen assisted multiple DNR staff with the Black Hawk Lake fish renovation project – November, 2012.

Bowler entered data from Pools 9, 10, 17, 19, and Huron Island HREP into the special projects database – November-December, 2012.

Bellevue LTRMP staff removed and catalogued 558 bluegill otoliths from Pool 12 – December, 2012.

Bowler data entry of catalogued bluegill otoliths – December, 2012.

Bowler submitted and completed QA/QC for Pool 13 routine fisheries monitoring from the 2012 season – December, 2012.

Bartels & Hoff processed 18,629 preserved fish specimens in the lab

Bartels, Giblin, Hoff, Langrehr, Finalized a summary report of 2011 field station findings for WDNR

Bartels, Hoff, Fischer, participated in in a WDNR group discussion and response to USFWS draft habitat management plan call for comments.

2nd quarter

Kueter, Petersen, and Bowler completed monthly WQ fixed site sampling – January-March, 2013.

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

Bowler provided summaries of Pool 13 turtle data (1991-2012) and provided other five field station's turtle data to Dr. Gary Casper, Wisconsin Chapter of Partners in Amphibian and Reptile Conservation Editorial Board – January, 2013.

Bowler compiled and submitted summaries of 1st quarter station activities for FY13 for UMESC and USACE staff – January, 2013.

Bowler entered the five other LTRMP field station's incidental turtle catches into master dataset – January, 2013.

Bowler provided summaries of historic gizzard shad abundances in Pool 13 (1991-2012) to Ty Smedes (Iowa Outdoors Magazine) – January, 2013.

Bowler and Kueter analyzed long-term trends of suspended solids, total nitrogen, total phosphorus, and turbidity by stratum in Pool 13 from 1994-2011 for the 2012 IDNR Operational Report – January, 2013.

Bowler and 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 2012 IDNR Operational Report – January, 2013.

Kueter, Petersen, and Bowler field collections of winter WQ SRS – January, 2013.

Bierman and Petersen assisted Kueter with lab sample work-ups of winter WQ SRS field collections – January, 2013.

Bowler provided updates on Pool 12 HREP sampling activities for 2012 in a conference call with the Fish and Wildlife Interagency Committee – January, 2013.

Bowler provided analysis of LTRMP wingdam electrofishing for walleye abundance (CPUE; Kruskal-Wallis) and L/F (Kolmogorov-Smirnov) data in Pools 8 and 13, to assess pre-and-post slot limit regulation changes (1993-2012) for Bellevue Research – January, 2013.

Bowler compiled and submitted the Bellevue LTRMP Operational Report for 2012 to N.E. district supervisor – January, 2013.

Bowler provided review and comments on the manuscript "Quality Assurance Results UMRR-EMP-LTRMP Fish Component: Mapping of the Electrical Fields on the New Fleet of Electrofishing Boats" to author Brian Ickes of the USGS – February, 2013.

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

Bowler provided yearly summaries (2003-2012) of special projects fisheries datasets for Pools 9, 10, and 16-19 to Guttenberg and Fairport Management – February, 2013.

Bowler provided information on gizzard shad abundance (1993-2012) and bald eagles on the Upper Mississippi River to Alma Gaul for an article in the Quad City Times – February, 2013.

Petersen digitized 558 bluegill otoliths from Pool 12 – February, 2013.

Bowler provided new bathymetry maps with stratified random sampling points for Pool 10, to Guttenberg Management for the 2013 field season – February, 2013.

Bowler provided centrarchid CPUE tabular summary data (2006-2012) from the Pool 12 HREP overwinter project to Chuck Theiling of the USACE – February, 2013.

Bowler provided day electrofishing CPUE graphical summaries (1993-2012) of white bass from the six LTRMP field stations to Bellevue Management and to Travis Moore of the Missouri Department of Conservation – March, 2013.

Petersen completed aging of 558 bluegills for the Pool 12 HREP project – March, 2013.

Bowler compiled and distributed ‘Pool 13 Highlights, 2012’ to UMR personnel, to Bellevue Research for the UMRCC Fish Technical Section, and to Manchester Research for the Rivers and Streams Technical Committee meeting and the AFS NCD website – March, 2013.

Bowler entered bluegill age data into the Pool 12 HREP project database – March, 2013.

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 – March, 2013.

Bowler provided age assignment and age analysis of Pool 16 white bass 2012 collections to Fairport Management – March, 2013.

Bowler provided the report “Eleven Years of Monitoring Turtles on the Upper Mississippi River, Pool 13” and summaries of LTRMP turtle data (1991-2012) to Carol Hall, Amphibian and Reptile Specialist of the Minnesota Department of Natural Resources – March, 2013.

Bierman, Kueter, and Petersen attended CPR/Wilderness Survival training in Dubuque, Iowa – March, 2013.

Bowler compiled and submitted summaries of 2nd quarter station activities for FY13 to UMESC and USACE staff – March, 2013.

Bowler completed and submitted annual report “Fisheries Monitoring in Pool 13, Upper Mississippi River, by Long Term Resource Monitoring” for the IDNR Fisheries Management Investigations 2012 Annual Report and to UMESC – January, 2013.

Bowler discussed and updated Barry Johnson (UMESC) on the Bellevue LTRMP Scope of Work for upcoming year – February, 2013.

Bierman updated and error-checked in-house water quality datasets – February, 2013.

Bowler downloaded sixteen special projects fisheries datasets (Pools 9 and 10 and 16-19; 2003-2012), ran SAS error checking programs, and sent data corrections to UMESC – February, 2013.

Brian Ickes provided information to Bob Ventorini, Three Rivers Fisheries Biologist Pennsylvania Fish and Boat Commission on Asian carp invasions on the UMRS native fisheries and Asian Carp status in China.

Barry Johnson (*UMESC*) was interviewed by Marie Zhuikov (*Wisconsin Sea Grant*, <http://www.seagrants.wisc.edu>) or the inaugural story in Sea Grant's series, "Where are they now?," January 4. The series provides updates on where former Wisconsin Sea Grant students are now, what they are doing, and how their Sea Grant experience helped in their career. Johnson was supported by Sea Grant funding from 1983-1990 while a Ph.D. student at the University of Wisconsin-Madison. His work involved both bioeconomic modeling of commercial quotas for yellow perch in Green Bay, and development and application of a generalized bioenergetics model of fish growth and consumption. The story should be published by Sea Grant in early 2013.

Jennifer Sauer attended a meeting with Steve Winter (USFWS) and other UMESC staff on February 13 to discuss habitat planning Phase 2. The Upper Mississippi River National Wildlife and Fish Refuge is in the process of completing a Habitat Management Plan (HMP), which is a step-down plan from the Refuge's Comprehensive Conservation Plan. Part of the habitat management planning process includes the identification of priority Refuge Resources of Concern (ROCs) and the Refuge.

Brian Ickes assisted Shana Sundstrom, a PhD student at the University of Minnesota-Minneapolis on a Powell Center Grant based on ecological and theoretical precepts centering around the concept of "Resilience", under Dr. Craig Paukert's (Unit Leader of the Missouri Cooperative Fish and Wildlife Research Unit) Powell grant for 2012. The LTRMP fisheries database will be a central case study in their work. Brian also provided "Guidance for Crediting UMRR-EMP and its Long Term Resource Monitoring Program element" to Shannon.

UMESC's Geospatial Sciences and Technologies branch completed Tier 2 LiDAR processing for Mississippi River Navigation Pools 2-13 and 20-24, which include additional quality control/quality assurance steps, masking elevation data from open water areas, smoothing of contour data, and reclassifying of data errors. The Tier 2 processing was funded by the LTRMP, an element of the U.S. Army Corps of Engineers' Upper Mississippi River Restoration-Environmental Management Program.

Jennifer Sauer, Megan Moore, and Sara Lubinski provided life history information on *Ceratomyxum* to Greg Sandland (UW-La Crosse) as it relates to the invasive snail, *Bithynia tentaculata*.

Carol Lowenberg provided "Guidance for Crediting UMRR-EMP and its Long Term Resource Monitoring Program element" to Gretchen Benjamin of The Nature Conservancy.

Brian Ickes provided information and assistance to Lindsey O'Shaughnessy of the University of Minnesota a student majoring in journalism and minoring in environmental studies. Lindsey is downloading fisheries raw data and utilizing the graphical fish database browser to evaluate the presence of Asian carp in the Mississippi in relation to native fish populations from year to year.

Brian Ickes wrote a letter of inquiry to Dr. vander Zanden, Center for Limnology, Univ. of Wisconsin-Madison for Dr. Fei Xiong, Associate Professor, School of Life Sciences, Jiangnan University China. Dr. Fei Xiong is looking for a visiting scholar position in an American University. He has funding opportunity for conducting overseas study and research in the scholarship program called "government-sponsored visiting scholar research", which is launched by China Scholarship Council. All the fees for his studying and living abroad will be totally supported by China Scholarship Council. Since the costs of this trip will be sponsored by Chinese Government, he only need an invitation letter from a University.

Nate DeJager is assisting group of undergraduate environmental science students from Carlton College (Northfield MN) think about and develop some research projects suitable to their knowledge and skills and having to do with resource management issues on the Mississippi. This is part of a research-oriented course that is specifically targeting management of the Mississippi River.

Andy Bartel's provided information to Dr. Brian Weigel, Water Quality Bureau Special Assistant, Wisconsin Department of Natural Resources on the utility of our biologists employing field laptops. Dr. Weigel was interested in the type of ruggedized laptops used and also the data entry applications developed for UMRR-EMP LTRMP.

Jennifer Sauer and Eric Gittinger provided Dr. Mike DeLong of Winona State with information and specifications of fyke nets and minifykes used by the LTRMP.

Barry Johnson provided information to Kurt Johnson (USFWS) on climate change including information on the annual sampling is for fishes, water quality, and aquatic vegetation under LTRMP.

Yao Yin and Heidi Langrehr met with Jim Nissen (USFWS) to introduce him to the surface maps available through UMRR-EMP LTRMP [Graphical Vegetation Database Browser](#). These maps represent the modeled likelihood of species occurrence within a pool. The original data used to create the map were collected using the LTRMP aquatic vegetation stratified random sampling protocol. Jim was interested in looking at vegetation changes in relation to the Pool 8 Islands HREP, Phase 3.

Brian Ickes - Met with Nate Richards, (USACE, Rock Island) at UMESC to discuss direction, progression, and progress on 2013 SOW product 2013B28.

Brian Ickes - Submitted two abstracts for the national American Fisheries Society, to be held in Little Rock, Arkansas in early September 2013. Both talks contribute towards a special symposium and were invited.

Brian Ickes - Assisted Dr. Robert Jacobsen (USGS, CERC), with data and information for a USGS strategic science plan for large rivers.

Ickes - Reviewed an essay written by Dr. Curt Meine (Aldo Leopold Center, Leopold Fellow) titled "Washed up on the Shores of Lake Michigan", which relates the historic scope and scale of invasive species in the Great Lakes basin in a personal way. The essay was inspired, in part, by a lecture I gave at the Minnesota State Science Museum. Publication pending.

Ickes - Assisted Dr. Quentin Phelps, Big Rivers and Wetlands Field Station, Jackson, Missouri, with an LTRMP fisheries database issue (need to reconstruct so-called "zero" observations across the entire database).

Brian Ickes and Jim Rogala - Assisted Jim Lamer, Western Illinois University, Kibbe Field Station Leader, with LTRMP-compliant sampling design issues. Efforts included (a) developing LTRMP sampling strata GIS coverages for Pools 19 and 20, (b) adapting them based on local knowledge and field reconnaissance, (c) and generating sampling allocations for the next 5 years. Kibbe intends a full annual LTRMP day electrofishing allocation in 2013 (and perhaps beyond), funded in-kind by WIU and LTRMP-independent soft-money grant sources.

Brian Ickes - Participated in the Southern Illinois University Carbondale (SIUC) Asian Carp Summit (St. Louis), at the invitation of SIUC, as an honorarium. The goals of the summit were to (1) update an existing population dynamics model designed to assess harvest strategies for controlling Asian carp in the Illinois River, and (2) to brainstorm new spatially-explicit modeling techniques in which harvest strategies could be evaluated to minimize propagule pressure at or near the Cal-Sag electrical barrier. All travel was funded by SIUC.

Brian Ickes and Ben Schlifer - Assisted Iowa DNR in delivering, documenting, and housing two Special Projects in the LTRMP fish component special database archives. One related to a pending habitat project (Huron Island) and the other related to "out-pool" sampling using LTRMP fish component day electrofishing protocols. Special Project codes for these can be gained by contacting Brian Ickes (USGS/UMESC), Ben Schlifer (USGS/UMESC), or Mel Bowler (Iowa DNR).

Brian Ickes - Submitted final draft summary letter on LTRMP Fish Component electrofishing quality assurance assessment for review (SOW product 2013B13)

Brian Ickes - Submitted final draft summary letter on LTRMP Fish Component in situ hoop net bait trials for review (SOW product 2013B14)

Brian Ickes and JC Nelson - Updated the UMRR-EMP LTRMP Fish Component metadata page. Several new species were observed in 2012 sampling with the drought, and these needed appended to the existing metadata document. Updates made, but awaiting publishing on the component web site.

Nate DeJager assisted Whitney Swanson (UWL) with a poster for the 27th National Conference on Undergraduate Research (NCUR) to be held in La Crosse April 11-13. 'Nitrogen dynamics in different floodplain vegetation communities'.

Nate DeJager contributed to a National Science Foundation pre-proposal with Meredith Thomsen, Eric Strauss, and Tim Gerber (UWL). 'Linking controls on floodplain plant community dynamics to landscape-scale hydrological models: forecasting restoration success in a changing climate'.

Nate DeJager contributed to a proposal to the Australian Research Council with Martin Thoms, Melissa Parsons, and Nick Reid (University of New England, Armidale, New South Wales, Australia). 'Does the flood-pulse concept hold water in Australia's unconstrained dryland floodplains?'

Nate DeJager made a field visit to the Gores Wildlife Management Area in Pool 3 with Randall Urich and Bobby Jackson (USACE, St. Paul District) to establish a floodplain reforestation research and monitoring plan following a series of forest management actions.

Jeff Houser provided LTRMP SRS WQ data file to Greg Sass (WDNR) for use by his student in a analysis of carp stress in the IL River.

Nerissa N. Michaels provided information and photos to Popular Science magazine.

Nerissa N. Michaels served as committee member for hiring committee of Large River Fisheries Ecologist-LTEF vacancy at IRBS.

Levi Solomon provided Benjamin Kissner, Fisheries and Oceans Canada, information and advice pertaining to sampling larval and adult Asian Carp. LTRMP Sampling protocols (Gutreuter et al. 1995) and selected trammel netting protocols used by the Asian Carp Reduction (IDNR, SIUC, INHS) were also provided to aid Mr. Kissner in collecting data that is comparable across regions.

Rob Burdis participated in a tour of Lake Pepin and several talks sponsored by the MN Pollution Control Agency on Jan. 15th in Red Wing, MN for a group of Chinese water quality scientists and government officials.

Rob Burdis and Megan Moore provided Lake Pepin Secchi transparency and aquatic vegetation data summaries to the DNR Fisheries' Lake Pepin Specialist.

Walt Popp provided LTRMP fish information on relevant species to the USFWS for their Refuge Habitat Management Plan's Resources of Concern section.

Steve DeLain provided LTRMP data about the decline in river shiners in Pools 4, 8, and 13 to one of the authors of the forthcoming book on the fishes of Minnesota.

Steve DeLain provided information to DNR Fisheries on the best gear types to use for sampling fish in the Minnesota River.

John West assisted in the collection of lengths, weights, and jawbone clips from paddlefish caught by recreational fisherman at Lock and Dam 26.

John West completed all requirements for new employees when hired. (Welcome John!)

John West removed otoliths from striped mullet, channel catfish, and sauger.

John West assisted in the collection sturgeon and paddlefish from middle Mississippi.

Quentin Phelps provided service to the American Fisheries Society (Fisheries Management Section)

Molly Sobotka: LTRMP monitoring Winter SRS –regular sonde maintenance, samples taken and shipped to lab, replacement supplies requested and received.

Molly Sobotka: Jan, Mar Fixed Site Samples -regular sonde maintenance, samples taken and shipped to lab, replacement supplies ordered and received.

Molly Sobotka Monitored impacts of rock pinnacle blasting at Thebes, IL.

Molly Sobotka: Age and growth workshop attended.

Molly Sobotka: Dissolved Oxygen monitoring –deployed sondes in various side channels in order to obtain diel oxygen data. Ultimately this data will be used to assess primary productivity in the main channel of the river and the side channels.

Molly Sobotka paddlefish creel surveys: Winfield and Osage Beach surveys

Molly Sobotka completed analysis of LTRMP water quality data, began write up.

Molly Sobotka analysis of species diversity in main and side channel habitats

Molly Sobotka ran CHL α sample analysis of Striped Mullet gut contents.

3rd Quarter

Bowler investigated fish kill in Jackson County farm pond – April, 2013.

Bowler assembled a full list of Bellevue LTRMP presentations, products, and publications to Mike Griffin for the UMRR-EMP-LTRMP Strategic Plan Meeting – April, 2013.

Bierman, Bowler, and Petersen assisted Bellevue Research with collecting and tagging northern pike in Pools 11 and 13 – April, 2013.

Bierman, Bowler, Kueter, and Petersen attended N. E. District Fisheries Management quarterly meeting at Guttenberg – April, 2013.

Bowler provided identification of lamprey (silver) for Bellevue Research – April, 2013.

Bierman submitted updated Equipment Refreshment Plan (out to FY2020) to USGS and USACE staff – April, 2013.

Bowler ran stepwise logistic regression models and ANOVA's for the Pool 11 and 13 to determine contribution of factors influencing sauger angling mortality at various depths (2009-2012) for Bellevue Research – April, 2013.

Bierman submitted report and location information of a collection of an adult silver carp from the Cedar River to Amy Benson, USGS database manager for Non-indigenous Aquatic Species. Also reported the collection to Kevin Irons of Illinois DNR, who updates the report on Asian Carp distributions in North America – May, 2013.

Bowler and Keeney assisted Bellevue Research with freeze branding of northern pike fingerlings at Fairport Hatchery – May, 2013.

Bowler and Kueter analyzed long-term trends of suspended solids, total nitrogen, total phosphorus, and turbidity by period and stratum in Pool 13, 2012 for Bellevue Management – June, 2013.

Bowler compiled and submitted summaries of 3rd quarter station activities for FY13 for UMESC and USACE staff – June, 2013.

Bowler made new bathymetry maps with stratified random sampling points for Pools 11, 17, 18, Beaver Island HREP, and Huron Island HREP for the 2013 field season – May, 2013.

Jennifer Sauer provided reference material to Natalie Romanello who is working on a project about the faucet snail and how it is invasive to the Great Lakes.

The Upper Midwest Environmental Sciences Center (UMESC) has completed land cover/land use data sets for Mississippi River navigation Pools 5, 7, and 24, for the 2010/2011 systemic land cover/land use mapping project for the Upper Mississippi River System (UMRS, the Mississippi River from Minneapolis, MN to the Ohio River, and Illinois River). Color infrared aerial photography was used to create these data sets, collected during late summer/peak vegetation of 2010 and 2011. Areas upstream of Lock and Dam 13 (near Clinton, IA), where the River's floodplain is dominated by wetlands, was photographed at 8-inches/pixel. Areas downstream of Lock and Dam 13, where the floodplain is dominated by agricultural lands, was photographed at 16-inches/pixel. The data sets were created using a 31-class generalized vegetation classification system designed to complement UMRS data sets created by UMESC in 1989 and 2000. This mapping effort, and the two previous systemic mapping efforts, was funded by the U.S. Army Corps of Engineers' Upper Mississippi River Restoration-Environmental Management Program's (UMRR-EMP) Long Term Resource Monitoring Program (LTRMP) element. For more information contact Jennifer Dieck (jdieck@usgs.gov) or visit http://www.umesc.usgs.gov/mapping/resource_mapping_lcu.html and <http://www.mvr.usace.army.mil/Missions/EnvironmentalProtectionandRestoration/UpperMississippiRiverRestoration.aspx>.

Brian Ickes assisted Steve Winter in gathering data for a presentation to the Red Wing chapter of the Izaak Walton League about the Refuge and the river. They're interested in the "health" of the river so Steve presented some of the LTRMP data.

Jennifer Sauer provided Jim Lamer of Western Illinois University with a snail identification key (*Amnicola* versus *Bithynia*) and voucher specimens of *B. tentaculata*

Yao Yin and Brian Ickes provided assistance to Sandra Cooke, PhD postdoc, at High Point University, North Carolina. Sandra is writing a literature review on Asian carp (my work was on Asian carp bioenergetic modeling) including a map showing the occurrence of bighead and silver carps in their native range of East Asia.

The LTRMP Field Stations participated in the USGS National Field Quality Assessment Program. This is the blind test in which each field station receives samples for pH and conductivity to be analyzed using LTRMP field procedures and WQ meters (Hydrolabs). The field stations once again have documented their excellent work through this program with all results officially "acceptable".

Brian Ickes assisted John Sullivan, WDNR, in understanding the LTRMP fisheries sampling methods. John was researching the protocol in regards to a monitoring strategy that is being developed for Clean Water Act Assessments on the UMR.

Yao Yin and Ben Schlifer provided information on Pool 11 vegetation sampling to Chuck Theiling, U.S. Army Corps of Engineers. Chuck hopes to use the information for the Bertom-McCartney HREP evaluation report.

Brian Ickes, Ben Schlifer, and Jim Rogala assisted in providing Jim Lamer, Western Illinois University, with (1) detailed a sampling frame for Pools 19 and 20; (2) day electrofishing SRS allocation selections; (3)

reprojected sites into NAD83; (4) pre-loaded site data into the LTRMP data entry application; and (2) modified the data entry application so it can be used outside the LTRMP key study reaches.

Jennifer Sauer provided Pam Eyden, Big River magazine, with photos from the waterbird mortality on the UMR.

Jennifer Sauer co-taught a DOI Motorboat Operator Certification Course held at UMESC.

Brian Ickes provided information on historic river basin surveys for the UMRS to Nick Genthon. Nick is working for the National Great Rivers Research and Education Center and partnered with the Army Corps of Engineers Veterans program.

Jennifer Sauer and Brian Ickes provided information to Ben Johnston, Kickapoo Valley Reserve. Ben is working on the WI DNR Bat Monitoring program, specifically for the acoustic (Anabat) surveys and was interested in the timing of mayfly hatches.

Brian Ickes provided Elizabeth Cantrell, a graduate student at Saint Louis University, with information on painted turtles. Turtle data, although caught, incidentally during fish sampling, is housed at UMESC in the LTRMP special projects database.

Yao Yin and Jim Rogala met with David Potter and Derek Ingvalson, US Army Corps of Engineers, to discuss developing an aquatic vegetation response model for use with HREP planning on a systemic level.

Brian Ickes assisted Dr. Hongwei Luo on research questions he had on Asian Carp. Dr. Hongwei Luo is working towards his PhD degree.

Barry Johnson provided information to Robert Stewart, University of Kentucky, who is investigating attenuation of diffuse light in water in low order streams as part of an investigation into nutrient cycling.

Ben Lubinski, Eric Ratcliff, and Eric Gittinger held an LTRMP electrofishing procedures training session for about 20 Illinois biologists who will be using LTRMP techniques in the recently expanded Long-Term Illinois, Mississippi, Ohio, and Wabash Rivers Fish Population Monitoring Program. 5/13.

Ben Lubinski presented information on LTRMP and how to use the LTRMP graphical database browser to an Environmental Science class from Lewis and Clark Community College at the National Great Rivers Research and Education Center. 4/13.

John Chick and Ben Lubinski met with Andy Casper and Levi Solomon at the National Great Rivers Research and Education Center to discuss writing a white paper addressing the role of LTRMP in current Asian Carp issues. 4/13.

Steve DeLain and Walt Popp met with the new Asian Carp Coordinator for the DNR on Apr. 18th at Lake City.

Walt Popp participated in a LTRMP Analysis Team meeting on Apr. 24th in La Crosse.

Walt Popp participated in a LTRMP FY'14 budget conference call on May 15th.

Steve DeLain organized and directed Watercraft Safety Training for DNR regional Ecological and Water Resources staff at a Mississippi River boat access in Lake City on June 4th.

Steve DeLain provided weed shiner data to Steve Winter, USFWS, for a talk.

Megan Moore coordinated this summer's vegetation sampling by the UMRCC Wildlife Technical Section in Pools 8 and 9.

Megan Moore provided wild rice and sulfate data to the MN Pollution Control Agency.

Megan Moore provided vegetation data from non-LTRMP sampling in Pools 2 and 3 to the coordinator of the Mississippi Makeover at the Dakota County Soil and Water Conservation District.

Rob Burdis calculated the volume of each two mile segment of Lake Pepin and provided that to Dave Soballe, USACE, to use in the Bathtub model.

Rob Burdis provided ten years of chlorophyll and total phosphorus data from fixed sites above, in, and below Lake Pepin to the MN Pollution Control Agency for assessment of whether the lake is meeting proposed nutrient standards.

John Manier investigated a water quality issue at the request of Vickie Hirschboeck, Refuge Manager, Trempealeau National Wildlife Refuge. John discovered the issue was a blue-green algal bloom mainly consisted of *Aphanizomenon* and *Microcystis*. John reported to the refuge that as the water level dropped, many of the cells were left on the shoreline to desiccate. The chlorophyll quickly degraded, leaving behind the accessory pigments, which gave them a bright-blue appearance. He also stated that both of these species are known to be toxic. Care should be taken to avoid these areas. A GBH was submitted to the USGS National Wildlife Health Center for a necropsy.

Jeff Houser and Jennifer Sauer were judges for Mississippi River Research Consortium student presentations/platforms.

Nate DeJager (president), Jeff Houser, Andy Casper, and Dave Herzog served as Mississippi River Research Consortium session moderator.

Langrehr provided vegetation frequency, richness and species information to Jim Nissen (USFWS) for the Pool 8 islands HREP area.

Langrehr provided SMI values for all pools and years based on LTRM data to John Sullivan (WDNR) for use in developing bioassessment strategies for the UMRS

Langrehr reviewed the report "Assessing the Use of High-Resolution Digital Aerial Photography to Identify Invasive Plants at Lost Mound Unit of Upper Mississippi River National Wildlife and Fish Refuge" by Robinson and Rusher

4th quarter

Land Cover/Land Use with GIS Support—Additional work

- Continue to update the detailed spreadsheet of all LTRMP aerial photography currently housed at UMESC, including date, pool location, format (color infrared, natural color, black-and-white), scan status (yes/no, dots per inch), interpreted status, photo scale, and extent of coverage (partial or complete). This document will be served on-line and updated as necessary. (70% complete)
- Complete summaries detailing differences in land cover between 2000 and 2010/11 for the key pools (25% complete)
- Create a Google Earth help page to assist partners and public in using Google Earth to view and query LTRMP data being served in the KMZ format. (65% complete)
- Develop KMZ files for 2010/2011 aerial photo positions that include date, time, approximate water level at time of acquisition, and link to closest stream gage. This work will enhance the scope "Geospatial upgrades". (50% complete)
- Convert 1989 and 2000 LCU and other relevant GIS vector and raster data sets to Google Earth KMZ files and distribute online. (99% complete)
- Clip HREP boundaries (based on boundaries as defined in HREP web pages for individual projects, or through consultation with the Corps) across years and create a geodatabase for each HREP site. (40% complete)

Rob Burdis provided the MN Pollution Control Agency (MPCA) with nutrient, chlorophyll, total suspended solids, and Secchi transparency data from the main channel of Pools 4 and 8.

Megan Moore provided graphical summaries of 2013 LTRM aquatic vegetation data to the MN, WI, and IA DNRs, MPCA, USFWS, USGS, USACE, and the UMRBA.

Steve DeLain organized and directed a second round of Watercraft Safety Training for DNR Ecological and Water Resources and Fisheries staff at a Mississippi River boat access in Lake City on Sept. 18th.

Walt Popp and Megan Moore reviewed the UMRBA Water Quality Task Force's UMR Suggested Monitoring Plan for Clean Water Act compliance.

Rob Burdis was invited to review a manuscript submitted to Aquatic Biology on the relationship between zooplankton and phytoplankton in a South American river.

Megan Moore participated as a crew leader in the UMRCC Wildlife Technical Section-sponsored SAV sampling effort on Pool 8.

Walt Popp participated in a LTRM low funding ad hoc group conference call on Sept. 4th.

Walt Popp participated in an Analysis Team conference call on Aug. 26th.

UMESC Geospatial Sciences and Technologies Branch: Web sites have been developed to allow LiDAR, collected under the UMRR-EMP, users the ability to preview LiDAR data in an efficient web application. LiDAR images were created by overlaying transparent relief or hillshade models over digital elevation models derived from the processed LiDAR data. These products were developed by the Upper Midwest Environmental Sciences Center using data developed for the Upper Mississippi River Restoration - Environmental Management Program's Long Term Resource Monitoring Program element. Detailed map images are displayed within the web site using an image viewing application called [Zoomify](#). Zoomify works by dicing a large image into many pieces or 'tiles', each at a different resolution or size. Viewing Zoomify images within these web sites is very fast and interactive because each view that the visitor zooms and pans to involves the download of only a small number of image tiles, each of which is small in size.

Nate De Jager contributed to a joint meeting on forest restoration in the presence of invasive reed canary grass. The meeting was jointly held by foresters and managers of the Minnesota Audubon society, U.S. Army Corps of Engineers, and U.S. Fish and Wildlife service and was held at the Refuge office in Winona, Minnesota on September 3.

Nate De Jager contributed to the regional forestry meeting November 20 and 21 in Le Claire, Iowa to discuss analysis of a system-wide forest inventory database developed by the U.S. Army Corps of Engineers and possible future efforts to model forest succession at landscape scales.

Nate De Jager assisted Whitney Swanson from UW-La Crosse on completion of field work for a study examining the consequences of Reed Canarygrass invasion and increased nitrogen deposition on floodplain soil nitrogen dynamics.

Nate De Jager assisted Martin Thoms and Murray Scown (PhD student) from the University of New England, Armidale, New South Wales, Australia on a project developing continuous surface metrics derived from LiDAR data.

Jennifer Sauer provided her EMP-CC presentation on Waterbird Mortality to Paul C. Rohde, Vice President, Waterways Council, Inc.

Jennifer Sauer provided Terry Hubert (USGS) with long term data on mayflies. Dr. Hubert was looking to find information on mayfly densities in a river environment to compare to mayfly populations in a river near Muskegon, Michigan.

Jennifer Sauer reviewed the US Fish and Wildlife's template for Wildlife Disease Contingency Plans. Barry Johnson participated in a workshop to determine the information needed to develop a report card for the Upper Mississippi River Basin, September 11-12 in Moline, IL. The workshop was sponsored by America's Watershed Initiative and The Nature Conservancy, led by staff from the University of Maryland's Center for Environmental Science.

Brian Ickes provided fisheries data and information to Rob Davinroy (Corps river engineer chief). He was interested to see similar trend graphs as were generated for the 2008 Status and Trends Report for post 2002 total fish biomass.

Keeney, Reed, and Thul assisted Maquoketa Wildlife Unit with Canada geese round-up and banding – July, 2013.

Bowler generated random sampling points and plotted points in ArcView for Pool 12 overwintering project – July, 2013.

Kueter collected zebra mussel veliger samples in the Maquoketa River – July, 2013.

Reed assisted Guttenberg Management with fish collections in Pool 9, UMR – August, 2013.

Kueter, Keeney, and Reed collected zebra mussel veliger samples in the Maquoketa River – August, 2013.

Keeney and Reed assisted Guttenberg Management with fish collections in Pool 10, UMR – September, 2013.

Jennifer Sauer, Andy Bartels, and Brian Ickes provided mayfly pictures to Tori McCormick for an article on mayflies in the Big River Magazine.

Langrehr reviewed a manuscript for Ted Angradi et al titled “Predicting submerged aquatic vegetation cover and occurrence in a Lake Superior estuary”

Langrehr provided Pool 11 UMRCC veg sampling data to Chuck Theiling for use in a UMRR-EMP HREP report.

Langrehr provided UMRR-EMP LTRMP vegetation rake method training to Steve Houdek and crew for Pool 3 drawdown work.

Illinois River Biological Station staff continued to provide carp specimens to the Illinois DNR osprey restoration study

Levi Solomon and Rich Pendleton provided Asian carp specimens to Ed Culver, graduate student at the University of Illinois

Levi Solomon provided grass and common carp specimens to Jay Von Bank, graduate student at the University of Illinois

IRBS staff assisted Brook Vetter, University of Minnesota Duluth, with her ongoing Asian carp acoustic experiments.

Ben Lubinski participated in the U.S. Fish and Wildlife Service annual Goby Roundup on the lower Illinois River.

Outreach

1st quarter

Mike Jawson and Randy Hines met with Congressman Tim Walz's (MN, 1st district) staffers Peder Kjeseth (Minnesota) and Randolph Briley (Washington DC), October 23rd. Kjeseth and Briley visited the UMESC to learn about research and monitoring programs at the Center including the UMRR-EMP.

Larry Robinson and Randy Hines facilitated a tour of UMESC for 100 students from La Crosse's Longfellow Middle School's, "School on the River." 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. Larry gave a presentation on the use of geographic information systems (GIS) to map and monitor floodplain vegetation on the Upper Mississippi River System, including the use of historic aerial photos and state-of-the-art 3D mapping technologies. October 23rd, 2012.

Jack Waide and Randy Hines hosted Congressman Ron Kind (WI) staffers Kevin Warnke (DC) and Karrie Jackelen (La Crosse, WI) on September 25th. A complete facility tour and discussion of the Center science programs was the focus including the UMRR-EMP LTRMP.

Levi Solomon co-hosted University of Illinois-Springfield Biology class field trip, including tour of facilities and demonstration of LTRMP fisheries techniques.

Nerissa Michaels- Conducted an educational presentation for 4-5th graders at Dive IN! Water Education Event at Peace on Earth Environmental Learning Center in Rushville, IL. Oct 2012

Nerissa Michaels & Levi Solomon - Organized a station /LTRMP component for 2012 Conservation Police Officer Recruit Training in Havana, IL. Oct 2012

The LTRMP La Crosse Field Station received recognition from the WDNR Water Division for their contributions to Mississippi River science and management.

John Chick gave a field station tour to Principia College Biology classes in October and December. 2013.

John Chick gave a field station tour to water quality professionals from Illinois American Water Company. 10/2013.

2nd quarter

Bierman served as presentation and poster judge for the Iowa AFS meeting – February, 2013.

Randy Hines—Jan. 9: La Crosse Chamber of Commerce - Adult Leadership Program; 30 area business leaders toured UMESC to learn about the Upper Mississippi River and agencies involved in research and management, and also the success of the cooperative UMRR-EMP and LTRMP.

Randy Hines sent follow-up email to Dave Clements, La Crosse Visitor's Bureau about fishing tournaments and how UMRR-EMP LTRMP and HREP can offer valuable information to the public.

Randy Hines—Feb. 4: Army Corps of Engineers - Leadership Development Course; 8 ACOE representatives toured UMESC to learn about how research and monitoring at UMESC support UMRR-EMP and LTRMP.

Randy Hines—Feb. 26: Western Technical College - Environmental Science Class; 25 students toured UMESC to learn about research, monitoring, and the UMRR-EMP Long Term Resource Monitoring Program.

Randy Hines—Feb. 28: University of Wisconsin at La Crosse - Environmental Science Class; 50 students toured UMESC to learn about research, monitoring, and the UMRR-EMP Long Term Resource Monitoring Program.

Randy Hines—Mar. 7: Western Technical College - Environmental Science Class; 25 students toured UMESC to learn about research, monitoring, and the UMRR-EMP Long Term Resource Monitoring Program.

Jennifer Dieck was invited to be the keynote speaker at the annual meeting of the Friends of the Trempealeau Refuge on January 24. Jennifer's presentation, "Moments in Time: Documenting Our Natural Resources Using Aerial Photography," discussed how the Upper Midwest Environmental Sciences Center in collaboration with the U.S. Army Corps of Engineer's Upper Mississippi River Restoration - Environmental Management Program has provided vegetation mapping and aerial photo interpretation expertise to the federal government across a variety of landscapes since 1989, as well as the processing and serving high-resolution Light Detection And Ranging (LIDAR) elevation data for the UMRS floodplain.

John Chick - Gave a lecture to one section of a high school biology class at Marquette Catholic High School, Alton, IL (UMRR-EMP/LTRMP highlighted). 3/2013.

John Chick - Gave lecture to two sections of a high school biology class at Marquette Catholic High School, Alton, IL. 3/2013.

Eric Ratcliff gave a talk at Triad High School, Troy, IL, regarding aquatic food chains, fish Identification, Mississippi River water control structures, pond management, and state fishing regulations, to help science students prepare for an "Envirothon" competition. 2/2013.

Eric Ratcliff gave a talk at Carlinville High School, IL, regarding Mississippi River food chains, fish Identification, and invasive species to help science students prepare for an "Envirothon" competition. 3/2013.

Megan Moore organized the agenda and chaired the UMRCC Wildlife Technical Section meeting on Mar. 19th in Collinsville, IL.

Phelps, Q.E. Asian carp impacts. Wetlands for Kids. Presentation to public ~3,000 people. October 1, 2011.

3rd Quarter

Randy Hines: May 3, 2013 - Hosted a visit by University of Wisconsin at Stout environmental science students to learn more about the LTRMP program and river science. A new program is under development by UW-Stout to involve more students in undergraduate research and monitoring activities with partners and this was the first opportunity to engage with faculty and students to explore future opportunities.

Randy Hines: June 18-19, 2013 - The Environmental Explorers Camp, an annual outdoor hands-on event designed to introduce forty youth aged 4th-6th grades to natural resource research and Upper Mississippi River ecosystem discovery was held June 18-19. The USGS UMESC has partnered with the University of Wisconsin – La Crosse Continuing Education and Extension and the Wisconsin Department of Natural Resources to develop and provide outdoor research and discovery experiences in wetlands and forests with a variety of animal species. Through presentations, demonstrations, and hands-on-activities, USGS scientists provide opportunities to learn about amphibians, birds, and fish, as well as water quality, plant, invertebrate, and ecosystem research.

Randy Hines: June 20-23, 2013 - The Upper Mississippi River Restoration - Environmental Management Program (UMRR-EMP) partners were successful in advertising the dual-purpose program to professional fishermen and public participants at the 2013 Bassmaster Elite Series: Mississippi River Rumble fishing tournament in La Crosse, Wis. An outreach effort was targeted to utilize posters, banners, and website communications to inform the public about how the UMRR-EMP is one of the success stories that has helped restore and maintain the healthy fish populations on the river. Attention was focused on the success of the program completing 54 habitat projects benefitting more than 100,000 acres of aquatic and floodplain habitat and contributing significantly to our scientific understanding of this complex ecosystem. The map, data, and web browser information can't tell people how to catch fish, but allows fishermen to see where professional biologists have sampled bass and other fish species in the river over the years. <http://www.explorelacrosse.com/wp-content/uploads/2013/06/BassMaster-MAG-WEB.pdf>. Over 14,000 participants attended the tournament.

John Chick, Eric Gittinger, Ben Lubinski, and Lori Gittinger performed demonstrations of fisheries and water quality field sampling techniques for 30 NGRREC interns, allowing the students hands on experience in pulling nets, handling and working up fish and learning about water quality and the fishes of the Mississippi River. 6/13.

John Chick gave a presentation about the NGRREC Aquatic Ecology Program to NGRREC interns during orientation week. 5/13.

Eric Gittinger conducted a demonstration of electrofishing and talked about the fishes of the Mississippi River for a Lewis and Clark Community College field study class. 4/13.

Eric Ratcliff gave presentations about Mississippi River fishes, turtles, and water quality to the third grade classes at the Carlinville, IL primary school (140 students). 5/13.

Eric Ratcliff, Eric Gittinger, and Kris Maxson 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. 5/13.

NGRREC field station staff hosted and attended both the US Coast Guard's Boating Safety course and CPR/First Aid training. 6/13.

Giblin, Hoff, Bartels, and Kalas set up two water quality monitoring stations at Pettibone Park for approximately 120 eighth grade students to demonstrate monitoring techniques and illustrate differences between main channel and backwater habitats

Bartels was interviewed by a WDNR video crew as part of a segment featuring the Mississippi River, habitat projects, and the benefits provided by them.

4th quarter

Brian Ickes, Yao Yin, and Ken Lubinski provided information to Charlene Porter, U.S. Department of State, about the cooperative work by Chinese and US scientists on the Mississippi and Yangtze Rivers for an article for the US Embassy.

<http://iipdigital.usembassy.gov/st/english/article/2013/09/20130909282472.html#axzz2eUdj6c6I>

Bowler worked the fish aquarium at the Iowa State Fair – August, 2013.

Bierman provided information to Amy Kent of the *Clinton Herald* regarding seasonal changes in fish movements and the importance of local fish overwintering habitat projects – September, 2013.

Rich Pendleton and Collin Hinz hosted La Presse (Canadian newspaper), answering questions about Asian carp while providing a tour of the Illinois River and opportunities to film and photograph leaping Asian carp.

Rich Pendleton and Collin Hinz hosted KBS (Korean Broadcasting System), answering questions about Asian carp while providing a tour of the Illinois River and opportunities to film and photograph leaping Asian carp.

Eric Ratcliff, Eric Gittinger, and Ben Lubinski presented Mississippi River fish and freshwater mussel ecology and identification to approximately 500 fifth-grade students attending the Water Festival 2013 event at Lewis and Clark Community College. 9/13.

Eric Ratcliff helped a local Boy Scout earn his environmental science merit badge by teaching him to use fish scales to determine the ages of various fish species. 8/13.

Eric Ratcliff and Eric Gittinger gave a presentation about fishes of the Mississippi River and LTRMP fish sampling for a group of 30 area high school teachers participating in the NGRREC Water Festival Teacher Workshop. 9/13.

Eric Ratcliff met with a college bound high school senior and her father to discuss the UMRR-EMP LTRMP, the duties of a fisheries biologist, and the education required for various river ecology jobs. 9/13.