

**Long Term Resource Monitoring Program FY12 Activities (Living Document)
Current FY 12 (Oct.–June)**

Presentations/Publications/General Meetings

1ST Quarter

Ruebush, Blake C., G. G. Sass, J. H. Chick and J. D. Stafford. 2012. In-situ tests of sound-bubble-strobe light barrier technologies to prevent range expansions of Asian carp. *Aquatic Invasions* 7(1): 37–48. This study was funded by a grant from the National Sea Grant College Program, National Oceanic and Atmospheric Administration, Department of Commerce awarded to GGS, NA08OAR4170913.
<http://www.aquaticinvasions.net/2012/issue1.html>

2nd Quarter

Herzog, D. P., Q.Phelps, D. Ostendorf, J. Ridings, T. Moore, B. Todd, C. Gemming, V. Travnichek and T. Hill. An evaluation of the lake sturgeon (*Acipenser fulvescens*) in Missouri's large Rivers. Midwest Fish and Wildlife Conference. December 4-7, 2011.

Herzog, D. P., Q.Phelps. Sturgeon management in Missouri. UMRCC: Mark twain State Park. Oct 11-13, 2011.

3rd Quarter

Mike Jawson, Barry Johnson (UMESC), and Dave Bornholdt (MWA) participated in the quarterly partner meetings of the Upper Mississippi River Basin Association and the Environmental Monitoring Program Coordinating Committee, May 23-24 in St. Louis, MO. The meetings focused on communication and actions regarding navigation infrastructure, Asian carp, water quality, habitat rehabilitation, and issues related to strategic planning and program management.

John (JC) Nelson and Larry Robinson (UMESC) presented posters of their LIDAR and 3D mapping projects at the 16th annual Digital Mapping Techniques 2012 conference in Urbana-Champaign, IL, May 20-23. This workshop on digital mapping techniques is an invitation-only event designed to bring together scientists, cartographers, and GIS specialists, primarily from State and Federal agencies who are using digital techniques to create and manage geologic maps. Among the topics discussed was the use of LIDAR or other advanced terrain models for field work and map/database preparation, 3D databases and/or visualization techniques, and information management and delivery.

Ken Lubinski (UMESC) led the workshop, "Information Needs Related to Lateral (Floodplain) Connectivity: a Workshop for River Scientists, Managers, Policy Analysts, and Advocates," in St. Louis, MO, June 5-8, attended by forty-six participants from federal, state and private institutions. Results of an e-survey distributed by Steve Gillespie (USGS-Reston) were summarized and discussed. The resulting list of information needs will be a key reference document during the development of a 5-year science plan written by UMESC and other river science institutions (selected at the workshop). Other USGS participants included Robb Jacobson (CERC), Kevin Richards (IA WSC), Craig Paukert (MO Co-op Unit), and Jeff Houser (UMESC).

Gray, B. 2012. Variance components estimation for continuous and discrete data, with emphasis on cross-classified sampling designs. In: Gitzen, R.A., J.J. Millspaugh, A.B. Cooper, D.S. Licht, editors. Design and analysis of long-term ecological monitoring studies. Cambridge University Press. 584 pgs.

UMESC Director Mike Jawson and Randy Hines participated in a conference call with Paula Sunde, the new Legislative Assistant for Representative Betty McCollum (MN 4th) June 13th. Ms. Sunde requested to learn more about UMESC science that might be useful in her focus area, including Energy, Environment, Agriculture, International Ag Development, and Telecommunications.

Amato, K.R., B. Martin, A. Pope, C. Theiling, K. Landwehr, J. Peterson, B. Ickes, J. Houser, Y. Yin, B. Hannon & R. Sparks. 2012. Spatially explicit modeling of productivity in Pool 5 of the Mississippi River. Pages 151-170 in J.D. Westervelt and G.L. Cohen [eds.] Ecologist-developed spatially explicit dynamic landscape models. Springer. New York. pp. 280

John Chick gave a presentation at the UMRR-EMP Coordinating Committee quarterly meeting on May 24. He presented information about NGRREC's assessment of the accuracy and precision of LTRM electrofishing methods.

John Chick hosted a meeting between Marv Hubbell, other UMRR-EMP representatives, and NGRREC personnel to discuss potential interactions between UMRR-EMP and NGRREC. May22.

Janvrin, J. and Heidi Langrehr. Assessment of Aquatic Vegetation Response to Island Restoration in Lower Pool 8 of the UMR. Platform presentation, Mississippi River research Consortium. La Crosse, WI April 27, 2012

Houser, J.N., S.M.Giblin*, W.F. James, H.A. Langrehr*, J.T. Rogala, J.F. Sullivan*, and B.R. Gray. Causes and Consequences of Abundant Duckweed and Filamentous Algae in Backwater Lakes of the Upper Mississippi River Near La Crosse, Wisconsin. Presentation made at the Mississippi River Research Consortium. 26-27 April 2012. La Crosse, WI.

S.M. Giblin*, J.F. Sullivan*, J.N. Houser, H.A. Langrehr*, J.T. Rogala, and B.D. Campbell*. Temporal and Spatial Evaluation Of Factors Influencing Free-Floating Plant Biomass, Distribution and Composition Within Upper Mississippi River Backwaters. Presentation made at the Mississippi River Research Consortium. 26-27 April 2012. La Crosse, WI.

Technical activities and assistance

1ST Quarter

Barry Johnson, USGS-UMESC, participated in the USGS Strategy Workshop on Implementing a Monitoring Framework to be held on December 1 & 2, 2011 at the USGS Headquarters Office in Reston, Virginia. This meeting is intended to generate some initial discussion and ideas on what a national biodiversity monitoring framework could look like and what could be done to support its creation.

Several LTRMP staff participated in the project: Upper Mississippi River Nutrient Monitoring, Occurrence, and Local Impacts: A Clean Water Act Perspective (September 2011; www.umrba.org/wq/umr-nutrients.pdf). This project, undertaken by the Upper Mississippi River Basin Association (UMRBA) Water Quality Task Force, brought together data and research in order to examine the status of UMR nutrient monitoring and the occurrence of nutrients – both current and historic – on the UMR. The project also investigated nutrient impacts on the UMR's mainstem and how these affect attainment of Clean Water Act (CWA) designated uses. The project was intended to inform the UMR states' ongoing water quality protection and nutrient reduction efforts.

Invited review of manuscript on zooplankton in tropical rivers for the International Journal of Tropical Biology and Conservation. (Burdis)

Distributed lab results from August water sample splits for total phosphorus and chlorophyll to all agency participants (UMESC, MPCA, and Met Council Environmental Services). (Burdis)

Coordinated to provide a set of notes to UMESC on the Hydrolab workshop they had attended (Burdis & Giblin)

Distributed 2011 LTRMP vegetation frequency summaries and distribution maps to MN and WI DNRs and MPCA. (Moore)

Provided LTRMP largemouth bass data to MNDNR Fisheries Management. (DeLain)

Provided LTRMP water quality data to a graduate student and zooplankton data to a second graduate student. (Burdis)

Met with staff from the Mississippi Watershed Management Organization to provide them with information on our monitoring operations and advise them on equipment needs for monitoring Pool 1 and above. (Lake City Field Station staff)

Completed 3rd period fish sampling; captured our first lake sturgeon in Pool 13 during LTRMP sampling since 1998 (captured via electrofishing) (Bellevue Field Station).

Helped the Iowa DNR's Bellevue Research Team with fall night electrofishing for walleye/sauger in the Lock and Dam 12 tailwaters, this supplements our tailwater sampling information; great indicator of young of year abundance for these important recreational species (Bellevue Field Station).

Completed Vegetation Accuracy Assessment for USGS to ground-truth vegetation classification system developed from aerial photos of Pool 13 (Bellevue Field Station).

Worked with the Iowa DNR's Bellevue Fisheries Research and Management teams, to complete this fall's increment of Pool 12 Overwintering HREP pre-project monitoring (pool-wide electrofishing and netting in specific backwater lakes that will be part of the project) (Bellevue Field Station).

Completed a budget exercise for USGS and USACE LTRMP managers to reflect a potential 5.6% reduction in base funding. This is in response to great uncertainty of what the EMP/LTRMP budget will be in federal FY12 (All Field Stations).

Worked with USGS and USACE LTRMP managers to expand the detail in the FY12 Scope of Work (All Field Stations).

Participated in two conference calls regarding the Pool 12 Overwintering HREP and issues with which backwaters would actually be dredged; it looks like Fishtrap Lake will be dropped from the project due to high zinc levels in the sediment in this area (based on monitoring by Illinois EPA) (Bellevue Field Station).

Provided water quality data collected by LTRMP from Rock Creek to staff from Iowa DNR's Contaminated Sites Section (Bellevue Field Station).

Staff continued collection of Asian carp cleithrums on the La Grange Reach for ongoing age/ growth study. (Illinois Rivers Field Station).

Staff provided summarized LTRMP fish data from the La Grange Reach to Greg Sass WDNR, concerning ongoing SIU/IDNR Asian Carp Reduction project. (Illinois Rivers Field Station).

Thad Cook conducted the thematic accuracy assessment for the La Grange Pool of the Illinois River.

John Chick took part in the November 9th meeting of the Science Advisory Committee for the State of Illinois. The Science Advisory Committee addresses scientific issues related to the Illinois, Mississippi, Ohio, and Wabash rivers and works directly under the guidance of the Governor's River Coordinating Councils. The Science Advisory Committee is chaired by Dr. Nani Bhowmik and hosted by the National Great Rivers Research and Education Center. Members include experts from the scientific community that are appointed by Lt. Governor Sheila Simon. Additional experts may be invited to temporarily serve on ad hoc committees focused on specific activities. Dr. Chick was appointed to this committee in 2011. During the meeting, Dr. Chick described the scientific information available from the Upper Mississippi River Restoration - Environmental Management Program and Long Term Resource Monitoring project.

Eric Ratcliff provided information on Asian carp to Jacob Lembke, a student at Auburn University working on an independent study on effects of Asian carp on the ecosystem in the UMRS.

Eric Ratcliff provided information on Asian carp to Lisa Adden, a biology major at Webster University working on an independent field study of how to best eliminate Asian carp from the UMRS.

Ben Lubinski has been studying ways of incorporating LTRMP electrofishing procedures into the protocols of the Illinois Natural History Survey's Long Term Electrofishing program.

Lori Gittinger demonstrated EMAP zooplankton identification protocols to two Western Illinois University students working on a Mississippi River zooplankton study.

Brian Gray contributed a chapter titled "Variance components estimation for continuous and discrete data, with emphasis on cross-classified sampling designs," to the book titled Design and analysis of long-term ecological monitoring studies (eds., RA Gitzen et al) that was published in June 2012. Topics addressed by the chapter are important for the analysis of LTRMP fish, invertebrate, plant and water data that are clustered within years, backwater lakes or both.

2nd Quarter

Barry Johnson and Eileen Kirsch (UMESC) participated in first meeting of the Minnesota Climate Change Vulnerability Assessment, February 8, in St. Paul, MN. The assessment group has been formed to use a systems mapping approach to evaluate exposure and sensitivity of habitats and species to projected changes in climate and other existing stressors in Minnesota. During this meeting habitat teams were created to assess habitat change maps and evaluate potential impacts to species.

Barry Johnson participated in the La Crosse (Wisconsin) Community Climate Adaptation Workshop, February 28. The workshop introduced local government officials and interested parties to climate change, as well as the planning processes and ideas about adaptation actions and strategies that can help their communities prepare for climate change impacts. Results of the workshop will be included in the City of La Crosse Sustainability Plan.

Dave Bornholdt (MWA) and Barry Johnson (UMESC) participated in the quarterly meetings of the Upper Mississippi River Basin Association (UMRBA) and the Environmental Management Program-Coordinating Committee (EMP-CC), in Davenport, IA, February 28 and March 1. The UMRBA meeting will focus on river and basin issues such as sand mining, Asian carp, and river training structures. The EMP-CC meeting will focus on the management and accomplishments of the Upper Mississippi River Restoration (previously, Environmental Management Program) in both the Habitat Rehabilitation and Enhancement Component and the Long Term Resource Monitoring Component, which is implemented by UMESC.

Jennifer Sauer and Jeff Houser provided John Wilson (USGS-WRD Hydrologist) with information on macroinvertebrate and water quality sampling on the UMRS. The National Water-Quality Assessment (NAWQA) Program is compiling a multi-state database of available monitoring data for streamflow, water quality (groundwater, streams and rivers), and aquatic biology.

Brian Ickes communicated with Dr. Zhen to assist in coordinating an Asian Carp study with the USGS-UMESC Aquatic Ecosystem Health Branch.

USGS-UMESC and field station fish component staff developed sampling protocols for the LTRM hoop net study looking at alternative bait.

USGS-UMESC and field station fish component staff developed an Electrofishing boat dropper array policy to maintain the standardization of equipment with the new purchases of ES boats.

Brian Ickes responded to a request from Kathryn McCain on depth requirements for overwintering fish habitat in UMRS backwaters. The information will be used in a revision of the EMP design handbook for HREPs.

Barry Johnson (UMESC) will participate in a Minnesota Department of Natural Resources workshop to develop "system maps" (similar to conceptual models) of the potential effects of climate change on different habitats and ecosystems across Minnesota. The maps will be used to consider possible adaptation strategies that can help lessen the predicted effects of climate change on these ecosystems. The workshop will be held April 15 in St. Paul, MN.

Nathan DeJager contributed text to the book *Studies on Environmental and Applied Geomorphology*, Chapter 7.

Houser, J.N., S.M. Giblin, W.F. James, H.A. Langrehr, J.T. Rogala, J.F. Sullivan, and B.R. Gray submitted a manuscript on Nutrient cycling and the abundance of duckweed and filamentous algae in backwater lakes of the Upper Mississippi River

Giblin, S.M., J. Sullivan, J. Houser, H. Langrehr, J. Rogala and B. Campbell submitted a manuscript on temporal and spatial evaluation of factors influencing metaphyton biomass, distribution and composition within Upper Mississippi River backwaters.

De Jager, N.R. and J.N. Houser submitted an abstract: Variation In Hydrologic Connectivity Influences Patch Distributions of Nitrogen, Phosphorous and TN:TP Ratios In The Upper Mississippi River, USA. Poster to be presented at the Society for Freshwater Science Annual Meeting. 20-24 May 2012. Louisville, KY.

Houser, J.N., S.M. Giblin, W.F. James, H.A. Langrehr, J.T. Rogala, J.F. Sullivan, and B.R. Gray submitted an abstract: Causes and Consequences of Abundant Duckweed and Filamentous Algae in Backwater Lakes of The Upper Mississippi River Near La Crosse, Wisconsin. Presentation to be made at the Mississippi River Research Consortium. 26-27 April 2012. La Crosse, WI.

De Jager, N.R., and J.N. Houser. In press. Variation in water-mediated connectivity influences patch distributions of total N, total P, and TN:TP ratios in the Upper Mississippi River, USA. *Freshwater Science*.

Nate DeJager submitted abstracts to two conferences (AFS and ESA).

S.M. Giblin, J.F. Sullivan, J.N. Houser, H.A. Langrehr, J.T. Rogala, and B.D. Campbell submitted an abstract: Temporal And Spatial Evaluation Of Factors Influencing Free-Floating Plant Biomass, Distribution and Composition Within Upper Mississippi River Backwaters. Presentation to be made at the Mississippi River Research Consortium. 26-27 April 2012. La Crosse, WI.

Invited review of manuscript on effects of substrate type and *Lemna* shading on growth of two species of submersed macrophytes for *Hydrobiologia*. (Moore)

Provided SAV trend data for multiple species in Big Lake to the US Fish & Wildlife Service. (Moore)

Provided graphics showing vegetation trends and the relationship of SAV to TSS in Pool 4 to St. Paul District US Army Corps of Engineers, US Fish & Wildlife Service, and MN DNR Fisheries Management biologists. (Moore)

Provided MN PCA with chlorophyll data from the fixed-site sampling in Lake Pepin. (Burdis)

Provided MN DNR Fisheries Management with Secchi transparency data for summer 2011 from the fixed-site sampling in Lake Pepin. (Burdis)

Provided information on MN listed fish species of special concern from the LTRM database to MN DNR Fisheries Management. (DeLain)

Bierman participated in conference calls for Pool 12 HREP regarding contaminated sediments in Fishtrap Lake – January-February, 2012.

Kueter and Petersen completed monthly WQ fixed site sampling – January-March, 2012.

Bowler assisted Kueter with field collections of winter WQ SRS – January, 2012.

Bierman and Petersen assisted Kueter with lab sample work-ups of winter WQ SRS field collections – January, 2012.

Bierman, Bowler, and Kueter attended quarterly N.E. district fisheries management meeting in Guttenberg, Iowa – January, 2012.

Bowler provided analysis of Pool 12 black and white crappie mortality in six backwater study lakes (2006-2011) for Bellevue Research – January, 2012.

Bowler compiled and submitted the Bellevue LTRM Operational Report for 2011 to N.E. district supervisor – January, 2012.

Bierman and Bowler worked with UMESC on updating the Bellevue LTRM Scope of Work for upcoming year – February-March, 2012.

Bierman participated in A-Team conference call – February, 2012.

Bowler provided analysis of Pool 13 snapping turtle catches in LTRM fisheries sampling (1989-2011) for Bellevue Management – February, 2012.

Bowler wrote SAS programs for Minnesota DNR that calculates CPUE for age-0 fishes in the upper and lower reaches of Pool 4, UMR – February, 2012.

Bowler, Kueter, and Petersen assisted Bellevue Research with MICRA paddlefish netting and tagging – February, 2012.

Bierman, Bowler, Kueter, and Petersen attended LTRM/UMESC/USACE meeting in La Crosse, Wisconsin – February, 2012.

Bowler worked with UMESC and multi-state LTRM staff updating the sampling procedures protocols of the LTRM fisheries component – February, 2012.

Bowler compiled and distributed ‘Pool 13 Fisheries Highlights, 2011’ for UMR personnel – February, 2012.

Bowler provided twenty-year trawling data summations of age-0 shovelnose sturgeon CPUE and age-frequency for Des Moines Research – February, 2012.

Bowler participated in conference call with the Fish and Wildlife Interagency Committee (FWIC) on Pool 12 HREP and regular LTRM activities – February, 2012.

Bierman, Bowler, Kueter, and Petersen extracted 541 bluegill otoliths for Pool 12 HREP project – February, 2012.

Bowler identified age-0 silver chubs for Fairport Management – February, 2012.

Bierman, Bowler, Kueter, and Petersen attended Iowa AFS/Fisheries Statewide in Guthrie Center, Iowa – March, 2012.

Bierman completed exercise to determine staff effort to complete base monitoring for Bellevue’s LTRM activities for the USACE – March, 2012.

Bowler provided spatial coverages (ArcView) of length-specific catch rates of bluegill in Pool 13 (1993-2011) for Bellevue Management and Research – March, 2012.

Bowler provided twenty years of gear-specific L/F’s and CPUE trends of northern pike in Pools 8 and 13 for Bellevue Research – March, 2011.

Bowler attended the UMRCC meeting in Winona, Minnesota – March, 2012.

Bowler gave summaries of the 2011 field season and various fisheries trends for the Pool 12 HREP and regular LTRM activities in Pool 13 to the UMRCC Fish Technical Section – March, 2012.

Bierman, Bowler, Kueter, and Petersen attended CPR training in Dubuque, Iowa – March, 2012.

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 2011 Annual Report and to UMESC – March, 2012.

Bierman provided WQ data (Total N, NH3, DO, and PH) to update water quality assessment on Upper and Lower Rock Creek for the IDNR Contaminated Sites Section – March, 2012.

Kueter summarized 2011 turbidity and secchi data in Pool 13 for Manchester Management – March, 2012.

Petersen digitized and completed initial aging of 541 bluegills for the Pool 12 HREP project – March, 2012. Bierman, Kueter, and Petersen assisted Bellevue Research with collecting and tagging northern pike in Pool 13 – March, 2012.

Bowler provided regression analysis and descriptive stats (i.e., annual fall mean lengths and SE's – 1993-2011) of age-0 perch in Pools 4, 8, and 13 for Jeff Janvrin, Wisconsin DNR – March, 2012.

Ben Lubinski provided LTRM water quality sampling photos to Scott Yess from the U.S. Fish and Wildlife Service 1/2012.

Eric Ratcliff, Brian Ickes, Eric Gittinger, Joe Ridings, Levi Solomon, Blake Ruebush, Mel Bowler, Andy Bartels, Kraig Hoff, Steve DeLain, and Ben Schlifer held an LTRM fish component conference call to resolve numerous procedural issues pertinent to the ongoing fish procedures manual revision 2/2012.

Eric Ratcliff, Eric Gittinger, and Ben Lubinski participated in an Illinois AFS, "Fish Age and Growth" continuing education workshop 3/2012

John Chick, Eric Ratcliff, Eric Gittinger, Ben Lubinski, and Lori Gittinger attended an LTRM all hands meeting in La Crosse, WI, 2/2012. Each participated in their respective LTRM component break-out meetings.

Participated in a "Multivariate Community Analysis using PC-ORD" training webinar through Penn State, March 5-9. (Burdis and Moore)

3rd Quarter

Larry Robinson (UMESC) met with staff from U. S. Fish and Wildlife Service (FWS) Region 3 and Applanix Corp. in Minneapolis, MN, for the FWS aerial photography program's annual review, April 11. The FWS Region 3 uses an Applanix DSS 439 digital aerial camera system to collect high-resolution aerial imagery throughout the Midwest, in support of federal mapping efforts. Recently, the DSS 439 system was upgraded to increase the sensitivity of the sensor and to offer greater control of camera settings via software. In addition, the aerial photography program was able to purchase a 60mm lens for collecting waterfowl imagery, and a gyroscopic mount to ensure the camera remains vertical to the ground and to isolate it from plane-induced vibrations. These enhancements have substantially increased the efficiency and quality of aerial photography collected with the Applanix DSS system.

Yao Yin (UMESC) and John Beeman (WERC) traveled to China to discuss fish passage at hydroelectric dams with Chinese scientists, June 16-30. Yin and Beeman were invited by The Nature Conservancy (in Beijing) and the Chinese Academy of Sciences (in Wuhan) to share information about the proper design, construction, and evaluation of fish passes in the United States in an effort to transfer the concepts to hydroelectric dams in China. Most dams in China currently either have no provisions for fish passage or have ineffective ones. The USGS and Chinese colleagues plan to develop a series of workshops to further share information on these topics, culminating with demonstration projects at one or more hydroelectric dams in China. The goal is to show that, with proper consideration of the biological and physical

requirements of the fish species of interest, successful fish passage measures can be implemented in China. China currently has more hydroelectric dams than any other country on earth, and has plans to build many more in the near future to help meet its growing need for electricity.

Jim Rogala assembled data and modified program code to apply the Pool 8 submersed aquatic vegetation (SAV) model to the Starved Rock Pool in the Illinois River. In collaboration with Yao Yin, the model will be used to predict SAV changes that might result from a proposed 519 project in the Starved Rock Pool.

Jim Rogala developed a sampling design, and selected random sites, for sampling Asian carps in the Illinois River. The study is being conducted by the U.S. Fish and Wildlife Service determine relative distribution, abundance, and age structure of small Asian carp in the middle and upper Illinois River.

Nate De Jager completed 2012 L3, "beta-version of a graphical browser of landscape pattern indicators", with Jason Rohweder.

Nate De Jager completed drafts of: 2012L4, "Regional flood selection by white-tailed deer in floodplain forest restorations of the UMR valley"; and 2012L5, "White-tailed deer herbivory increases flood-induced tree mortality in an UMR floodplain forest" with Ben Cogger and Meredith Thomsen of the University of Wisconsin La Crosse.

Nate De Jager Initiated field sampling for the project: 2012L6, "Reciprocal effects of alternative vegetation management techniques on soil nutrients and nitrification rates along an elevation gradient in an Upper Mississippi River floodplain forest" with Eric Strauss and Whitney Swanson of the University of Wisconsin La Crosse.

Assisted Jeff Stewart, Fish Biologist, USFWS Carterville, IL with several study design issues for sampling Asian Carp in the upper Illinois River. [Rogala and Ickes]

Brian Ickes: Provided Dr. Curt Meine, Aldo Leopold Foundation Director and pre-eminent Leopold biographer, historic details relating to changes in Great Lakes fisheries. He is using this information in a book chapter he is authoring, presently in production.

Fish Component staff: In field quality assurance assessment of the entire LTRM electrofishing fleet completed. This included continuity tests on all major components of the boats' circuitry and *in situ* direct measurements of the effective fishing field of each rig, fishing under standardized protocols.

Brian Ickes: Provided solicited input to Mr. Gene Sperry, Jr., a citizen of Chillicothe, IL, seeking content for a presentation he is preparing on Asian carp.

Brian Ickes: Assisted Dr. Quentin Phelps with several questions pertaining to effort allocation within the LTRM Fish Component sampling scheme and its relevancy for his intended data uses.

Brian Ickes: Communicated with Mr. Rob Maher, Illinois DNR and longtime A-Team rep for IL, answering his questions concerning what is measured and why (specifically fish weights) within the LTRM Fish Component.

Brian Ickes: Assisted Ann Runstrom (USFWS, La Crosse, WI) with database issues, population estimation analytic methods, and statistical issues related to a rather impressive lake sturgeon mark-recapture database she has assembled (indeed, it may be unique in scope and scale in North America). This would be fun to work with, but this is not a program study, so my input was minimal and simply meant to get her off on the right foot.

Responded to Ms. Amy Deweese (Eckardt), who was seeking insights on Asian carp in relation to a planned fish processing plant in Peoria, IL.

Kueter, Bowler, Meier, Petersen, and Reed completed monthly WQ fixed site sampling – April-June, 2012.

Bowler assisted the Wildlife Bureau with spring spotlight surveys in Jackson County, Iowa – April, 2012.

Bowler compiled and submitted summaries of 2nd quarter station activities for FY12 for UMESC and USACE staff – April, 2012.

Bierman attended A-Team meeting in La Crosse – April 2012.

Bierman, Bowler, and Kueter met with Chuck Theiling of the USACE to discuss monitoring revisions to the Pool 12 HREP project with respect to new lake selection and construction schedule – April, 2012.

Petersen assisted Bellevue Research with freeze branding of northern pike fingerlings at the Fairport Hatchery – April, 2012.

Bowler assisted Kueter with field collections of spring WQ SRS – April, 2012.

Bierman, Kueter, and Petersen assisted Mississippi River Research team with northern pike collections on Pool 13, UMR – April, 2012.

Bierman and Petersen assisted Kueter with lab sample work-ups of spring WQ SRS field collections – April/May, 2012.

Bierman, Kueter, and Petersen assisted Bellevue Management with shovelnose sturgeon collections on the Cedar River – May, 2012.

Bowler submitted summary of LTRM fisheries sampling in Pool 13, 2011 for the UMRCC Proceedings – May, 2012.

Bierman, Bowler, Petersen, Kueter, and Reed attended NE District Fisheries Management quarterly meeting at Backbone State Park – May 2012.

Bowler reviewed crappie telemetry draft from Bellevue Research for the USACE – May 2012.

Bierman and Bowler participated in conference calls and met with the USACE and Bellevue Research to discuss adaptive management plans for the Pool 12 HREP project with respect to analysis and future sampling directions – May and June, 2012.

Bowler provided metadata and coordinated with USACE, UMESC, and Fairport Management to house and enter multiple years of fisheries monitoring data from Pools 16-19 and the Huron Island HREP on LTRM data server – May and June, 2012.

Bierman, Bowler, and Kueter assisted USGS personnel with mapping electrical field on electrofishing boat – June, 2012.

Bowler assisted with Hy-Vee fishing derby at Bergfeld pond in Dubuque – June, 2012.

Bowler plotted 2012 fisheries sampling points in ArcView, uploaded points into Garmin, loaded points into Access application, and made schedule for 1st period sampling – June, 2012.

Bowler reviewed the new version of the LTRM Fisheries Procedures Manual for USGS – June, 2012.

Petersen completed 2nd and 3rd reads for aging of bluegills for the Pool 12 HREP project – June, 2012.

Bowler, Brashears, Kueter, and Reed conducted normal LTRM fisheries sampling in Pool 13 – June-August 2012.

Bierman sent water quality data from Sunfish Lake fixed-site sampling from 2003-2011 to Dave Bierl, USACE Hydrologist, to aid in development of the Pool 12 HREP Definite Project Report – June, 2012.

Brashears and Meier assisted Maquoketa Wildlife Unit with Canada geese round-up and banding – June, 2012.

Bowler entered bluegill age data into the Pool 12 HREP project database – June, 2012.

Bowler applied aged bluegill data to unaged fishes and calculated mortality in the six backwater study lakes for the Pool 12 HREP – June, 2012.

Bowler tabulated and submitted the Pool 12 HREP project budget to the USACE for work completed in FY 2012 – June, 2012.

Bowler compiled and submitted summaries of 3rd quarter station activities for FY12 for UMESC and USACE staff – June, 2012.

Eric Ratcliff and Eric Gittinger submitted the first draft of the revised LTRM Fish Procedures Manual for review. 5/2012

Eric Ratcliff, Eric Gittinger, and Ben Lubinski assisted Brian Ickes and Randy Burkhardt with inspection and testing of the electrical field of the LTRM electrofishing boat. 6/2012.

John Chick participated in a workshop about floodplain connectivity information needs, at Powder River Nature Center, Kirksville, MO. June 6-8.

Megan Moore (MNDNR) and Heidi Langrehr coordinated a demonstration and evaluation of technology for mapping SAV. CI BioBase, uses automated cloud processing of sonar log files recorded to SD card using today's Lowrance brand depth finders to produce bathymetric and % biovolume vegetation maps. May 30, 2012.

Andy Bartels and Kraig Hoff completed outfitting and testing of a new electrofishing boat for routine LTRMp sampling.

Fischer co-chaired the River Resources Forum meeting #93 April 17th, 2012 at Winona, MN - Winona State University. The River Resources Forum is a state and federal agency partnership for addressing resource issues concerning the Upper Mississippi River system within the St. Paul District jurisdiction.

Fischer participated in the third of four strategic planning sessions for the Upper Mississippi River Basin Association, May 22 2012. UMR States' priorities for the next one to five years are being evaluated and refined.

Gray, B.R., A.M. Ray, J.R. Rogala, M.D. Holland and J.N. Houser. Accepted. Spatial and temporal variation in duckweed and filamentous algal levels in contiguous floodplain lakes of the Upper Mississippi River. Journal of Aquatic Plant Management.

Invited review of a LTRM Completion Report on metaphyton by the WI Field Station water quality specialist. (Burdis and Moore)

Coordinated a demonstration by Contour Innovations on May 30th in Pool 8 of a technology that they developed for estimating SAV biomass and participated in a discussion with UMESC staff and other field station vegetation specialists on how the technology might augment LTRM vegetation sampling. (Moore)

Worked on numerous problems over several months that needed to be fixed on the new electroshocking boat prior to use. Transported the boat to the Nevin Fish Hatchery in Madison, WI on April 18th where Burke O'Neil checked the wiring and electric field and made necessary corrections. Assisted Randy Burkhardt in mapping the electrical field of the new boat on June 4th in Lake City. (DeLain)

Provided information to UMESC on GPS programs that more easily facilitate converting and transferring UTM files to Garmin chart plotters. (DeLain)

Communicated with Hydrolab regarding procedures for calibration and provided the information to UMESC. (Burdis)

Outreach

1ST Quarter

Blake Ruebush provided Asian carp video footage to the Chicago Architecture Foundation.

Blake Ruebush provided mayfly video footage to Red Rock Films for a National Geographic film production.

2nd Quarter

UMESC hosted U.S. Congressman Ron Kind (D-WI 3rd district) and his Mississippi River Advisory Committee meeting, January 26. During the semi-annual meeting, 30 representatives from state and federal agencies, nonprofit organizations, and private businesses provided updates on their river related activities. During the meeting, Deputy Director Waide provided updates on USGS's river related activities including LTRM.

Open Rivers and Wetlands Field Station staff working closely with SE Region Outreach and Education staff held our second River Day event in October 2011. As part of the educational event, Dr. Quinton Phelps (chief chef) conducted an Asian Carp taste test.

3rd Quarter

Barry Johnson (UMESC) and partners from the U.S. Army Corps of Engineers' Upper Mississippi River Restoration - Environmental Management Program (UMRR-EMP) were interviewed by John Flesher (Associated Press, Traverse City, MI) June 11, regarding the Asian carp invasion in the Mississippi River and their effects on other fish species. Flesher is also planning to use online data summaries for fish provided through the Long Term Resource Monitoring component of the UMRR-EMP conducted by UMESC on the Upper Mississippi River System. This particular interview was a preliminary interview, a follow-up may occur. The story is expected to be completed and released by the end of June.

Brian Ickes: Attended an outreach activity at the invitation of the Aldo Leopold Foundation. Toured Coon Creek watershed in Vernon County, WI (the nation's first watershed project) with advanced study students from UW Madison, NRCS staff, and Leopold Foundation board members, interpreting the environmental and conservation history of this watershed. I shared thoughts on how such lessons translate to the entire Mississippi watershed and how they may also translate more globally. It was a good day.

Brian Ickes: Provided a solicited phone interview to Mr. Chris Hubbuch of the La Crosse Tribune (newspaper) for a story on the commercial fisheries of the UMRS.

Brian Ickes: Delivered an invited lecture at the annual Mississippi River Forum, at the Minnesota State Science Museum in St. Paul, MN. The wider program for the forum, my talk, and associated multimedia content files can be regarded on the following National Park Service website:

<http://www.nps.gov/miss/naturescience/rf0518.htm>

B. Ickes and Yao Yin: Mississippi and Yangtze basin pages: <<http://www.greatriverspartnership.org/en-us/NorthAmerica/Mississippi/Pages/USChinaScienceExchange.aspx>>

Bierman gave a Mississippi River fish and wildlife talk to Kindergarten class at Preston Elementary as part of their "fish week" activities – May 2012.

Eric Gittinger provided information and granted video rights to use Asian carp footage to October Films, an award winning television production company based in London, who are working on a new science program for Discovery International.

John Chick, Eric Ratcliff, and Eric Gittinger provided interviews and a sampling demonstration for Associated Press reporter John Flesher, who was gathering information for various articles related to Asian Carp. 6/2012. One of the articles produced can be found at <http://www.usnews.com/science/news/articles/2012/07/12/research-murky-on-danger-of-asian-carp-invasion> .

Eric Ratcliff and Eric Gittinger had a booth at The Nature Institute's "Dive In, Water Festival"> They gave presentations on the fishes of the Mississippi River to about 500 second and third graders, parents, and teachers. 5/2012.

John Chick, Eric Gittinger, and Ben Lubinski conducted hands on demonstrations of fisheries sampling techniques, fish identification and natural history to approximately 30 college students from around the country and one from India, as part of the National Great Rivers Research and Education Center's intern program. 6/2012.

Eric Ratcliff taught fish identification of common fishes from the Illinois and Mississippi Rivers during the USFWS' annual Two Rivers Family Fishing Fair at Pere Marquette State Park, IL (attendance of 4000+ people).6/2012.

Eric Ratcliff presented an overview of LTRM fish sampling to a Chinese businessman representing a group of Chinese investors interested in an Asian carp processing plant planned for Grafton, IL. 4/2012
Eric Ratcliff made a presentation about fishes of the Mississippi River to about 30 Cub Scouts from Carlinville, IL. 5/2012

Ben Lubinski, Megan Cowan, Kristopher Maxson, and Ed Culver presented "Biology, Ecology, and Identification of Fishes of the Mississippi River" to FOCHE (Families of Christian Home Educators) homeschool group. The group consisted of 15 families and about 30 children ages 4-16. The demonstration was conducted at the Audubon Center at Riverlands, West Alton, MO. April 12.

John Chick gave a talk to visiting faculty from Leeds University, United Kingdom. He presented information about UMRR-EMP and aquatic research at NGRREC. April 20.

Heidi Langrehr, Shawn Giblin, Ben Campbell, Kraig Hoff gave talks to Logan middle School students about Water Quality on the Mississippi River. May 21, 2012

Heidi Langrehr and Ben Campbell gave talks about Aquatic Invertebrates to students at Eagle bluff Elementary School, May 18, 2012.

Rob Burdis presented a river ecology program to high school students from the Red Wing Environmental Learning Center on June 22nd and to middle school students from the Lake City Environmental Learning Program on June 25th.

Walt Popp coordinated and chaired a meeting of the MN DNR's Mississippi River Team on May 31st.