

UMRR
Long Term Resource Monitoring FY18 Activities (Living Document)
(Oct. 2017–Sept. 2018)

Publications, Presentations, and Conference Attendance

- Nathan DeJager gave a presentation on spatially explicit modelling of flood inundation and forest succession, during the U.S. Army Corps of Engineers' (USACE) Upper Mississippi River Regional Forestry Team Meeting, December 5-7, 2017, in Pleasant Valley, IA.
- Eric Ratcliff and Ben Lubinski presented Mississippi River fish and freshwater mussel ecology and identification to approximately 250 fifth-grade students attending the annual Water Festival event at Lewis and Clark Community College. 9/2017
- John Chick – Poster Session: Long-term perspectives on human-river dynamics at the confluence of the Illinois and Mississippi rivers: Interdisciplinary research for students in ecology and archeology. Results were from a National Science Foundation – Research Experience for Undergraduates grant to PI: Carol E. Colaninno (Co-PI: John H. Chick). Students conducted interdisciplinary projects analyzing archeological data and fish monitoring data from LTRM and LTEF, and presented their findings in poster format. 8/2017.
- Eric Gittinger and Ben Lubinski gave updates during the Pool 26 portion of the Corps of Engineers RRAT meeting. Eric presented a general LTRM update and present work being conducted at the Great Rivers Field Station and Ben gave an update on the expanded LTEF project. 8/2017.
- Michael J. Lemke, Keenan Dungey, Angela Kent, Felipe Velho, Luzia Cleide Rodrigues, Doyn Kellerhals, and Sara Paver "Diversity and succession of pelagic microorganism communities in a newly restored Illinois River floodplain lake" *Hydrobiologia*, December 2017
- Kris Maxson, Levi Solomon, Jason DeBoer, and Andrya Whitten attended the annual State of the Survey address, University of Illinois Urbana-Champaign
- Chris Rob, Steve and Eric attended the Mississippi River Research Consortium in La Crosse, WI April 26-28. Eric judged student presentations.
- Chris and Rob coauthored a poster titled "Establishing Baseline Rotifer Community Information in Lake Pepin Prior to Invasion of Planktivorous Carp" which Chris presented at MRRC on April 27th.
- Megan attended a Water Level Management workshop in Dubuque, IA April 4th-5th. The meeting was well attended by representatives from the 5 Upper Mississippi River states, USACE, USGS, USFWS, Navigation industry, USEPA, National Weather Service, TNC, Audubon, and American Rivers.
- Megan presented Mississippi River issues and highlights to Regional Management Team meeting on May 1st. In the presentation she highlighted the accomplishments of the UMRR-LTRM program and field station.
- Megan attended UMRBA and UMRR CC quarterly meetings in St. Louis, MO May 23rd and 24th.
- Molly Van Appledorn presented a webinar to the Floodplain Science Network entitled "Mapping inundation patterns across the Upper Mississippi River System for ecological applications" on December 12, 2017. The webinar included discussion of the motivation and development of a systemic model for characterizing spatial patterns of flooding, examples of initial results, and potential model applications. The Floodplain Science Network is a group of scientists, researchers, managers, policy experts, and conservation practitioners that have a common interest in learning from one another in regards to floodplain science, policy, restoration, and conservation approaches.
- Counihan T.D., I.R. Waite, A.F. Casper, D.L. Ward, J.S. Sauer, E.R. Irwin, C.G. Chapman, B.S. Ickes, C.P. Paukert, J.J. Kosovich, and J.M. Bayer. 2018. Can data from disparate long-term fish monitoring

programs be used to increase our understanding of regional and continental trends in large river assemblages? PLoS ONE 13(1): e0191472. <https://doi.org/10.1371/journal.pone.0191472>

- Molly Van Appledorn presented, "Mapping ecologically relevant flooding attributes in the Upper Mississippi River System: development and application of a systemic floodplain inundation model," at the Central Midwest Water Science Center in Urbana, IL, March 22, 2018.
- Steve DeLain used LTRM data and sampling methodology to develop status and trends report on rare fish in southeastern Minnesota. Steve and Chris Dawald presented the results via PowerPoint and written report to relevant MNDNR staff in March. Steve also prepared a poster of the results, which were presented at the MN AFS meeting on Feb 6th and will be presented at the MRRC meeting on April 24th.
- Eric, Rob and Steve attended the UMRR Science Meeting in La Crosse January 16th – 18th
- Chris and Steve attended Upper Mississippi River Conservation Committee meeting in Collinsville, IL on March 20th, 21st and 22nd.
- Bowler participated in the Fish Work Group's conference call for the UMRR-LTRM/UMESC/USACE Science Meeting – January, 2018.
- Bales participated in the Vegetation Work Group's conference call for the UMRR-LTRM/UMESC/USACE Science Meeting – January, 2018.
- Bowler participated in conference call/webinar with Dr. Greg Whitley of Southern Illinois University to explore the utilities and limitations of otolith microchemistry, as it applies to fisheries population dynamics within the LTRM fisheries framework – February, 2018.
- Bowler participated in conference call/webinar with Dr. Wes Larson of UW Stevens Point to explore the applications of genetics and fisheries population dynamics within the LTRM fisheries framework – February, 2018.
- Bales, Bierman, Bowler, and Kueter attended Fisheries Statewide meeting at Honey Creek State Lodge – February, 2018.
- Bales, Bierman, Bowler, and Kueter attended the Iowa Chapter of the American Fisheries Society meeting at Honey Creek State Lodge – February, 2018.
- Bales participated in the AFS webinar, "GoToWebinar" – February, 2018.
- Bales participated in the National Water Quality Monitoring Council webinar for electrofishing – February, 2018.
- Bowler participated in the Fish Work Group's conference call for the UMRR project proposal, Investigating Vital Rate Drivers of UMRS Fishes to Support Management and Restoration – March, 2018.
- Bales attended LTRM vegetation component meeting at UMESC in La Crosse, Wisconsin – March, 2018.
- Bales participated in the Vegetation Work Group's conference call for the UMRR project proposal, Wild Celery Winter Bud Evaluation – March, 2018.
- Bales, Bierman, Bowler, and Kueter completed "Preventing Sexual Harassment" on-line training – March, 2018.
- Bierman and Kueter participated in a conference call led by Illinois state EPA and UMRBA staff regarding the feasibility of conducting a Clean Water Act pilot study in Mississippi River pools shared with Illinois – March, 2018.
- Bierman participated in LTRM Team Leader/Management Team conference call regarding multiple UMRR Science Proposals and future staffing needs – March, 2018.
- Zhang, H. (Kansas State University), T. Hefley (KSU), B. Gray (UMESC) and K. Bouska (UMESC) presented "Modeling abundance of multiple species using latent regression tree algorithms" at the Conference on Applied Statistics in Agriculture, Manhattan, KS, May 6-8, 2018.

- Zhang, H. (Kansas State University), T. Hefley (KSU), B. Gray (UMESC) and K. Bouska (UMESC) presented "Modeling abundance of multiple species using latent regression tree algorithms" at the Joint Statistical Meetings in Vancouver, Canada, Jul 28 – Aug 2, 2018.
- Gray, B.R. (UMESC), D.I. MacKenzie (Proteus Wildlife Research Consultants) and R.A. Erickson (UMESC) presented "A multiseason site occupancy model for use when sites are not revisited among seasons" at the Joint Statistical Meetings in Vancouver, Canada, Jul 28 – Aug 2, 2018.
- Oral Presentations by USGS UMESC Staff at 50th annual Mississippi River Research Consortium
 - Applying Principles of General Resilience to Large River Ecosystems: Case Studies from the Upper Mississippi and Illinois Rivers, by Kristen Bouska, Jeff Houser, Nathan De Jager, Molly Van Appledorn, and James Rogala (UMESC)
 - Effects of Ice and Snow Cover on Winter Limnological Conditions across a Lentic-Lotic Gradient in the Upper Mississippi River, by KathiJo Jankowski and Jeffrey Houser (UMESC)
 - Intrinsic Processes Regulate Water Clarity in a Large, Floodplain-River Ecosystem, by Deanne Drake, Alicia Carhart, James Fischer (WI DNR), Jeffrey Houser, Kathijo Jankowski (UMESC), and John Kalas (WI DNR)
 - Inundation Dynamics of the Upper Mississippi River Floodplain: Understanding Spatial and Temporal Patterns of a Critical Ecosystem Process to Inform Large River Management, by Molly Van Appledorn, Nathan De Jager, Jason Rohweder, and James Rogala (UMESC)
 - Lessons of a Frozen River: Contrasts in Spatial and Temporal Nutrient Patterns between Summer and Winter in the Channels and Backwaters of the Upper Mississippi River, by Jeffrey N. Houser and KathiJo Jankowski (UMESC)
 - Sedimentation Rates in Backwaters of Pools 4 and 8 of the Upper Mississippi River, by Jim Rogala (UMESC), John Kalas (WI DNR), and Rob Burdis (MN DNR)
 - Spatial and Temporal Changes in Species Composition of Submersed Aquatic Vegetation Reveal Effects of River Restoration, by Alicia Carhart (WI DNR) and Nathan De Jager (UMESC)
- Poster Presentations by USGS UMESC Staff at 50th annual MRRC
 - A Conceptual Model Framework to Hypothesize Pathways of Stress and Identify Information Needs To Understand Factors Affecting Fishes of the Upper Mississippi River System, by Kristen Bouska (UMESC), Andy Casper (Shedd Aquarium) and Timothy Counihan (WFRC)
- 2018 ASLO Presentations:
 - "What are the implications of contrasts in nutrient patterns between summer and winter in the Upper Mississippi River," by Jeff Houser (presenter) and Kathi Jo Jankowski
 - "Ice and snow cover affect winter limnological conditions differently across a lentic-lotic gradient in a large floodplain river," by Kathi Jo Jankowski (presenter) and Jeff Houser
 - "Land Use Effects on Nutrient Cycling and Loss from Headwaters to Great Lakes in the Fox River Basin, Wisconsin, USA," by William B. Richardson (presenter), Rebecca M. Kreiling, Lynn A. Bartsch, and Victoria G. Christensen
- Rob gave a PowerPoint presentation of Pool 4 Ecological Shift work to UMRR-LTRM water quality staff during a quarterly conference call (Apr 17th).
- Eric co-authored and submitted draft COMPLETION REPORT: Developing methods of estimating submersed aquatic vegetation biomass in the Upper Mississippi River to expand capabilities within the UMRR program and improve the utility of the long-term vegetation data on 4/17/2018

- Megan, Chris, Steve, Eric and Rob attended the 50th Annual MRRC meeting in La Crosse, WI (Apr 25th- 27th).
- Rob coauthored a platform presentation at the MRRC meeting titled Sedimentation rates in backwaters of Pools 4 and 8 of the Upper Mississippi River.
- Megan attended A-Team meeting in Onalaska, MN on April 25. UMRR-LTRM FY18 SOW proposals were discussed and ranked.
- Bouska, K.L., Whitley, G.W., Lant, C., Schoof, J. 2018. Drivers and uncertainties of forecasted range shifts for warm-water fishes under climate and land cover change. *Canadian Journal of Fisheries and Aquatic Sciences*. 35 pgs. DOI: 10.1139/cjfas-2018-0002.
- Bowler co-authored poster presentation “Understanding Spatial and Temporal Drivers of Juvenile Growth of Fishes of the Upper Mississippi River” with Kristen Bouska of the USGS for the 42nd Larval Fish Conference in Victoria, British Columbia – June, 2018.
- Bales attended Streams and Watershed Integrated Management workshop in Coon Rapids, Iowa – June, 2018.
- Presentations Ecological Society of America (ESA) meeting, August 5-10, 2018, in New Orleans, LA.
 - “Putting the Flood in the Floodplain: Characterizing inundation dynamics to improve the science and management of floodplain forests,” by Molly Van Appledorn.
 - “Climatic and ecological co-benefits of riparian forest conservation under the Brazilian Forest Code,” by Marcia N. Macedo, Michael T. Coe (Woods Hole Research Center), Divino Silvério (Instituto de Pesquisa Ambiental da Amazônia), Paul A. Lefebvre (Woods Hole Research Center), KathiJo Jankowski (USGS), Paulo M. Brando, Linda A. Deegan, and Christopher Neill (Woods Hole Research Center).
 - “Higher fertilizer use in Amazon crop agriculture does not increase nitrogen and phosphorus watershed export,” by Christopher Neill, Lindsay Scott, Linda A. Deegan (Woods Hole Research Center), KathiJo Jankowski (USGS), Marcia N. Macedo (Woods Hole Research Center), Leonardo Maracahipes (Instituto de Pesquisa da Amazônia), and Michael T. Coe (Woods Hole Research Center).
 - “Stream macroinvertebrate community and functional diversity response to riparian deforestation,” by Nubia Marques (Instituto de Pesquisa Ambiental da Amazônia), KathiJo Jankowski (USGS), Marcia N. Macedo (Woods Hole Research Center), Leandro Juen (Universidade Federal do Pará), Ludmila Rattis, and Linda A. Deegan (Woods Hole Research Center).
 - “How are connections between tropical streams and riparian forest buffers altered by watershed land use?” by Linda A. Deegan (Woods Hole Research Center), KathiJo Jankowski (USGS), Paulo Ilha (Instituto de Pesquisa Ambiental da Amazônia), Christopher Neill (Woods Hole Research Center), Leonardo Maracahipes, and Nubia Marques (Instituto de Pesquisa da Amazônia).
- Bouska, K.L., Rosenberger, A., McMurray, S.E., Linder, G.A., Key, K.N. 2018. State-Level Freshwater Mussel Programs: Current Status and a Research Framework to Aid in Mussel Management and Conservation. *Fisheries*. 43(8):345-360. DOI: 10.1002/fsh.10106.
- Kristen Bouska presented “A Resilience Assessment of the Upper Mississippi River System,” at the National Conference on Ecological Restoration (NCER), August 26-30, 2018, in New Orleans, LA.
- Bierman participated in a conference call led by UMRBA staff regarding the feasibility of conducting a Clean Water Act pilot study in Pools 18-21 – July, 2018.
- Bierman participated in the quarterly River Resources Coordinating Team (RRCT) webinar – September, 2018.

Technical activities and assistance

- Jennifer Sauer (USGS) supplied Kim Fredericks (USGS) with water quality information for a field study on CO2 controls for Asian carp
- Jennifer Sauer and Randy Hines (USGS) provided information to Congressman Ron Kind's River Advisory Group
- Jennifer Sauer (USGS) provided Clint Muhlfeld, USGS Fisheries Program Manager, background and highlights on LTRM fisheries component
- Levi Solomon and Kris Maxson assisted Sarah Molinaro with collecting and tagging gar for her Masters project.
- Kris Maxson and Levi Solomon collected Silver Carp for Emi Tucker, a graduate student at the University of Illinois Urbana-Champaign
- Eric prepared the vegetation boat for field season, including installing new fuse box, gps and transducer, and replaced faulty battery.
- Eric collaborated with Deanne Drake in preparation for vegetation pre-sampling project.
- Eric and Chris conducted vegetation SRS pre-sampling at 40 sites in pool 4 over 4 days (May 18,22,24,25) in collaboration with Deanne Drake's curly-leaf pondweed phenology study.
- Eric provided pre-sample curly leaf pond weed biomass data from 40 sites to Deanne Drake (WI DNR, LTRM) on June 5th.
- Eric consulted with Molly Van Appledorn (USGS) and KathyJo Janikowski (LTRM) on proposal for on depth gauge installation and water level monitoring in pool 4 ; Eric and Chris built and installed 2 depth monitoring gauges in lower Pool 4 (Big Lake and Peterson Lake) on May 25th.
- Eric and Chris conducted high water inundation line mapping at 108 sites in pool 4 over 3 days (May 8, 11, 12) in contribution to modeling efforts being conducted at USGS (Van Appledorn
- Eric obtained all historical elevation, flow and temperature data from all pool 4 USACE gauges that was made re-available; formatted and compiled all data into a shared MS Access database.
- Eric reviewed draft report by Drake et al on Potamogeton crispus chemistry and detectability.
- Eric prepared for inundation mapping work including consultation with model development PI Molly VanAppledorn at UMESC.
- Eric provided inundation mapping data to Molly Van Appledorn (USGS) on June 7th.
- Eric procured materials, built and installed 34 data loggers for USGS inundation modeling project at 2 sites in pool 4 on June 15th and June 20th.
- Steve provided insight and information on LTRM fish data and MN fishing regulations for black crappie to Tyler Ham (Southeast Missouri State) for his fish project on Black Crappie.
- Rob provided Peterson Lake HREP water quality monitoring data to Dan Kelner with the Army Corps of Engineers
- Rob provided Lake Pepin phytoplankton data to Will Bouchard of the MN PCA.
- Rob participated in Onset software (HOBOS) webinar on May 17th.
- Eric joined conference call discussing Lake Koronis vegetation trends and sampling methods on May 3rd (Perleberg et al).
- Eric participated in R statistical software training via Lynda.com
- Rob, Chris and Megan maintained the Peterson Lake HOBOS.
- Rob and Megan collected mayfly nymphs on June 29th to be filmed on the cinematic event series, ONE STRANGE ROCK for the National Geographic Channel.
- Steve provided LTRM Silver chub data to Brian Brecka (Wisconsin DNR)
- Chris gathered historical LTRM fish data for use in upcoming analyses to inform potential restoration projects in Upper Pool 4.

- Megan and Eric provided aquatic plant identification training to a class organized by Jen Wahls (Wabasha County SWCD) at Wilcox boat landing on June 19th.
- Rob participated in Onset (HOBO's) deployment webinar on June 28th.
- Eric met with LTRM vegetation component staff in La Crosse, WI for field training at Goose Island on June 13th.
- Nathan De Jager and Molly Van Appledorn participated in the Upper Mississippi River Regional Forestry Meeting, December 5-7, 2017, in Bettendorf, IA. The U.S. Army Corps of Engineers facilitated the annual meeting to coordinate forestry activities and research projects on federal lands along the Upper Mississippi River (UMR). The meetings are designed to promote consistent protocols and/or processes regarding the inventory, monitoring, and stand prescription writing, in furtherance of the UMR Systemic Forest Stewardship Plan. Participants include; U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, USGS, National Great Rivers Research and Education Center, and National Audubon Society.
- Eric Lund served as co-leader of a working group at UMRR science meeting, which included: numerous days of pre & post-meeting planning with collaborators, developing an agenda for the work group, compiling data from 5 different pilot projects, developing a presentation (LTRM biomass pilot project) for discussion at the meeting, and review and development of 4 vegetation/water quality/waterfowl research proposals. Related to the FY18 research proposals, Eric provided vegetation data analysis and GIS support to UW-Stevens Point faculty (J. Straub and R. Schultz) and USFWS staff (S. Winter) for the waterfowl habitat study proposal. After the meeting Eric drafted 2 PowerPoint slides on behalf of the working group for Jeff Houser.
- Eric Lund and Deanne Drake completed a draft report evaluating USFWS and LTRM vegetation collections methods and results utilized in 2017 during USFWS-led wild celery surveys in Lake Onalaska, UMR Pool 7 on January 31st.
- Rob provided Nick Schlessler (MNDNR Large Lake Specialist) with 2017 Lake Pepin transparency data.
- Megan provided an official review for a large Habitat Needs Assessment document being developed for the UMRR program.
- Steve participated in fish work group planning activities in preparation for the FY18 UMRR Science planning meeting, including a conference call with Greg Witledge from SIU University regarding microchemistry. Related to the fish work group planning, Steve developed a PowerPoint presentation regarding Warmouth to be presented at the UMRR LTRM meeting in La Crosse. The focus of this presentation was to investigate the possibility of considering some genetic and movement work on this species.
- Rob participated in woody debris work group activities, including reviewing and providing comments on the project proposal.
- Megan, Rob and Eric participated in MNDNR's habitat needs assessment - rapid assessment discussion on Feb 12 with MNDNR staff to help apply the concepts developed in the HNA2.
- Bales served as secretary/treasurer of Iowa AFS and assisted with setting up Iowa Chapter's annual meeting – January-March, 2018.
- Bales served as webmaster for Iowa AFS, Fisheries Management Section, and Student Subsection of the Education section, updating and maintaining each site – January-March, 2018.
- Bowler provided age assignment and age analysis of white bass collections in Pool 16, 2017 to Fairport Management – January, 2018.
- Bowler compiled and submitted the Bellevue LTRM Operational Report for 2017 to district supervisor – January, 2018.

- Bowler provided current compilation of Iowa native and non-native fish species to Manchester Management – January, 2018.
- Bowler compiled list of fish species from Iowa's Mississippi River field stations that have aging information (2005-2017) for Kristen Bouska, river ecologist of the USGS – January, 2018.
- Bowler compiled and provided geo-referenced records of threatened and endangered fish species in Iowa collected in 2017 from Pools 10, 11, 12, 13, 16, and 18 for Kelly Poole, Iowa endangered species coordinator of the Des Moines office – January, 2018.
- Bowler compiled and provided geo-referenced records of threatened and endangered fish species in Illinois collected in 2017 from Pools 12, 13, 16, and 18 for Tara Kieninger (Heritage Database Program Manager for the Illinois Department of Natural Resources) and Jeremy Tiemann of the Prairie Research Institute in Champaign-Urbana – January, 2018.
- Bales lead the Early Career Professional Committee conference call discussing AFS 2018 in Atlantic City, Iowa - January 2018
- Bowler compiled and provided geo-referenced records of warmouth (Pool 13 - LTRM 1993-2017; Pool 12 - 2006-2017; Pools 9, 10, 11, 16, 17, 18 and Huron Island - 2009-2017) for Steve DeLain of the Minnesota DNR – January, 2018.
- Bowler provided data and summaries of 2017 special projects fisheries sampling for Pools 10, 11, 16, 18 and Huron Island HREP to Guttenberg and Fairport Management – January, 2018.
- Bierman assisted Kueter with completion of field collections of winter WQ SRS – January, 2018.
- Kueter digitized 602 bluegill otoliths from Pool 12 – February, 2018.
- Kueter completed aging of 602 bluegills for the Pool 12 HREP project – February, 2018.
- Bowler entered bluegill age data into the Pool 12 HREP project database – February, 2018.
- Bierman attended the FWIC/OSIT Winter Meeting at Mines of Spain State Park – February, 2018.
- Bales and Kueter evaluated Maquoketa River flooding and coordinated with USGS personnel on obtaining water samples for floodplain study on nutrient uptake – February, 2018.
- Bales and Kueter sectioned and aged Missouri River flathead spines and otoliths for Onawa Management. – February, 2018.
- Bowler calculated bluegill mortality rates in the eight HREP study lakes in Pool 12 for 2017 – March, 2018.
- Bowler compiled and distributed Pool 13 Fisheries Highlights, 2017 to UMRS personnel and to Manchester Research for the Rivers and Streams Technical Committee meeting and the AFS NCD annual report – March, 2018.
- Bowler completed and submitted 1st draft of the Mississippi River chapter of the Iowa Walleye Management Plan to Des Moines and Manchester Research – March, 2018.
- Bales, Bierman, and Bowler attended the 74th annual UMRCC meeting in Collinsville, Illinois – March, 2018.
- Kueter performed QA/QC of Pool 13 water quality chemical and field data from 2017 – March, 2018.
- Kueter assisted the City of Bellevue with dissolved oxygen meter fluid replacement and calibration. – March, 2018.
- Bowler sent lake sturgeon information to Kelly Poole, Iowa's endangered species coordinator of the Des Moines office – March, 2018.
- Bales and Bowler compiled and distributed shovelnose sturgeon length frequency data (Pool 13 - LTRM 1993-2017) to Mike Wolf of the Minnesota DNR – March, 2018.
- Rob gave a PowerPoint presentation of Pool 4 Ecological Shift work to UMRR-LTRM water quality staff during a quarterly conference call (Apr 17th).

- Eric co-authored and submitted draft COMPLETION REPORT: Developing methods of estimating submersed aquatic vegetation biomass in the Upper Mississippi River to expand capabilities within the UMRR program and improve the utility of the long-term vegetation data on 4/17/2018
- Megan, Chris, Steve, Eric and Rob attended the 50th Annual MRRC meeting in La Crosse, WI (Apr 25th- 27th).
- Rob coauthored a platform presentation at the MRRC meeting titled Sedimentation rates in backwaters of Pools 4 and 8 of the Upper Mississippi River.
- Megan attended A-Team meeting in Onalaska, MN on April 25. UMRR-LTRM FY18 SOW proposals were discussed and ranked.
- Bales assisted Green Island Wildlife with spring spotlight surveys in Dubuque County, Iowa – April-May, 2018.
- Bowler assisted Green Island Wildlife with spring spotlight surveys in Jackson County, Iowa – April, 2018.
- Bowler compiled and sent centrarchid fyke netting CPUE summaries and bluegill mortality estimate histograms (Pool 12 Overwintering; 2017) to Bellevue Research for an annual report – April, 2018.
- Bowler edited 1st draft of the Iowa Walleye Management Plan for Des Moines and Manchester Research – May, 2018.
- Bales hosted LTRM vegetation sampling training in Bellevue – May, 2018.
- Bales, Kueter, and Litterer assisted Bellevue Research with collections of shovelnose sturgeon from the Cedar River – May, 2018.
- Bowler compiled fisheries database (Green Island Floodplain; 1993) for Bellevue Management – June, 2018.
- Bowler compiled and plotted bigmouth buffalo capture locations (LTRM Pool 13; 1993-2017) for use in potential Asian Carp sampling sites in Pool 13 for Ann Runstrom of the Fish and Wildlife Service and Bellevue Management – June, 2018.
- Bierman assisted Bellevue Research with statewide turtle collection study in Jackson County – July, 2018.
- Bowler and Litterer assisted Bellevue Research with pre-project electrofishing at Albany and Beaver Islands in Pool 14 – July, 2018.
- Bierman assisted Bellevue Research with pre-project electrofishing at Albany and Beaver Islands in Pool 14 – August, 2018.
- Bales co-coordinated and assisted with UMRCC aquatic vegetation sampling in Pools 9 and 10 – August, 2018.
- Bowler summarized multiple insitu habitat parameters (means), l/f, percent frequency, and CPUE of bluegill (LTRM Pools 4, 8, and 13; 1993-2017) for Ethan Rutledge of West Virginia University – September, 2018.
- Bowler provided walleye CPUE analysis of wingdam electrofishing (Kruskal-Wallace; LTRM; 1994-2017) in Pools 8 and 13 to evaluate pre-and-post slot limit regulation changes in Iowa for Bellevue Research – September, 2018.
- Wassink assisted Guttenberg Management with outpool electrofishing sampling in Pool 9 – September, 2018.
- Bales and Hankemeier entered 2018 aquatic vegetation data from Pools 9 and 10 into the UMRCC vegetation database – September, 2018.

- Bowler provided bluegill length-at-age summaries (Pool 12; 2006-2015) to Ethan Rutledge of West Virginia University for a presentation at the 79th Midwest Fish and Wildlife conference – September, 2018.
- Hankemeier and Wassink entered 2018 fisheries data from Pools 9 and 18 into the special projects database – September, 2018.

Outreach

- John Chick and Ben Lubinski spent a weekend demonstrating LTRM fish sampling techniques, fish identification and ecology, and large river ecology on Pools 19 and 20 of the Mississippi River, for students participating in the National Science Foundation – Research Experience for Undergraduates: Long-term perspectives on human-river dynamics at the confluence of the Illinois and Mississippi rivers. 7/2017
- Levi Solomon, Kris Maxson, and Andrya Whitten provided station tours and electrofishing demos for an Ecology class from MacMurray University
- Megan and Nick Frohnauer along with USGS staff Mark Gaikowski (UMESC Center Director), Randy Hines, Brent Knights, and other USGS and USFWS staff met with Congressman Jason Lewis (Rep MN-2) on April 20th. The meeting primarily discussed invasive carp as was requested by Congressman Lewis. Megan and Mark also discussed the UMRR program and the two main elements (HREP and LTRM). The meeting was originally intended to be on Peterson Lake of lower Pool 4, but weather prohibited that tour. The meeting was moved to the National Eagle Center in Wabasha. Center Director Rolf Thompson provided his facility free of charge for our meeting.
- Staff from UMESC’s Upper Mississippi River Restoration Program water quality lab assisted an 8th grade student from Cotter Junior High School in Winona, MN, with their science fair project. The project, “A Solution for the Gulf?,” a study of nutrient uptake by the phytoplankton *Chlorella*. The student has already won several awards at their regional science fair and will soon compete at the state level. Awards won at the regional level are,
 - Award for Geoscience Excellence from The Association for Women Geoscientists for an outstanding Project in Earth and Environmental Sciences
 - Award for best use of SI, presented by The U.S. Metric Association
 - Genius Award in honor of a project that displays excellent work on environment
 - Bartlett W. Foster Award for outstanding research in the environmental science field
 - NOAA’s 2018 Taking the Pulse of the Planet Award, presented to the student whose research has demonstrated the Principles and Technical Innovations that offer the greatest potential for an improved understanding of Earth’s dynamic processes
- Bales and Kueter taught ice fishing mini-course at Marquette Catholic School in Bellevue, Iowa – January, 2018
- Kueter gave environmental careers talk at Marquette Catholic School in Bellevue, Iowa – March, 2018.
- Megan Moore spoke via Skype to approximately 60 6th -7th -8th grade students and teachers from Mount Horeb WI middle school about stressors to healthy watersheds, impacts to the Mississippi River, and in general DNR careers. Prior to the skype interview, the Mt. Horeb students watched the Animal Planet’s: Mighty Rivers episode on the Mississippi River. Many of the student’s questions were the result of watching that episode.
- Jennifer Sauer was interviewed by Alex Wasilenko (weekend meteorologist, WXOW, La Crosse, WI) regarding the recent mayfly hatches in the La Crosse, WI, area. The interview was conducted at

UMESC on July 30, 2018. Two versions of the story aired later that evening. Both videos are available at, <http://www.wxow.com/story/38769553/2018/07/30/mayfly-hatches-have-been-later-and-smaller-than-usual>

- Megan Cowan presented information about Mississippi River fishes and the UMRR program at the Alton, Illinois Earthtones Festival, which is an It's Our River Day event. It's Our River Day is an annual, State of Illinois-wide celebration of Rivers through more than 60 education, recreation and conservation events throughout the state. 9/2016.