

**69th Annual UMRCC Meeting
March 19-21 in Collinsville, Illinois**

Water Quality Technical Section Meeting Notes and Organization Updates

Agenda

- March 19 1:00 p.m. – 4:30 p.m.
- 1:00 Welcome and introductions
- 1:15 Water Quality and Mussel Reintroduction Projects for the Cedar River, IA
Scott Gritters, Iowa Department of Natural Resources
- 2:00 Iowa Nutrient Reduction Strategy
John Olson, Iowa Department of Natural Resources
- 2:30 UMR Clean Water Act Monitoring Strategy Development Update
John Sullivan, Wisconsin Department of Natural Resources
- 3:00 Break
- 3:15 UMRCC Coordinator's Update
Scott Yess, US Fish and Wildlife Service
- 3:30 Dissolved Oxygen Metabolism in the Open River Side Channels
Molly Sobotka, Missouri Department of Conservation-Long Term Resource Monitoring Program
- 4:00 Discussion about Fall WQ Technical Section meeting

Attendees

John Sullivan and Shawn Giblin (WI-DNR), John Olson and Scott Gritters (IA-DNR), Louise Hotka (MN-PCA), Molly Sobotka (MO-DoC-LTRMP; molly.sobotka@mdc.mo.gov), Ben Lubinski (INHS; blubinski@illinois.edu) and Lori Gittinger (INHS; soeken@illinois.edu), Katy Manar (USACE-Riverlands), Dave Bierman and Travis Kueter (IA-DNR-LTRMP). (Email addresses that are not listed can be found in the 2012 UMRCC directory: <http://umrcc.org/Reports/Directory/UMRCC%202012%20Directory.pdf>)

Presentation Summaries

Cedar River Mussel and WQ Project – The reach of the Cedar River through Palisades Park downstream of Cedar Rapids, Iowa, is listed as impaired for aquatic life due to a decline in the freshwater mussel community. Higgins eye mussel reintroduction projects have been successful in other river systems in Iowa, but not here. This project in 2011-2012 monitored mussel sensitivity to water quality conditions above and below Cedar Rapids using “silos” designed to house the mussels while providing flow-driven circulation of river water. While the substrates are large gravel to cobble sized, sand in the bed load clogged the silos, which was solved by placing the silos up on cement blocks. The study results indicate that the water column quality has good potential to support mussels. Results point to possible bed sediment pore water and spring run-off quality that could present problems for mussels that will require additional study. Scott

noted that this river is highly productive, with one silo discovered completely covered in fish eggs. Contact: Scott Gritters, scott.gritters@dnr.state.ia or Mike Coffey, michael_coffey@fws.gov

Iowa Nutrient Reduction Strategy – In order to make progress on nutrient reduction until adoption of numeric nutrient criteria, Iowa is proposing a nutrient reduction strategy. The Iowa Dept. of Agriculture & Land Stewardship and the Iowa DNR, as well as Iowa State University, each took the lead for developing the nonpoint source strategy, point source strategy, and a science assessment, respectively. Point source reductions will be met with technology based limits for 120 major wastewater dischargers statewide. The science assessment of nutrient reduction BMPs, which was characterized as most extensive review and analysis in the nation, quantified load reductions and costs for management practices, including land use and edge-of-field practices. Nonpoint source implementation includes prioritizing watersheds for goal setting and funding, providing best practices information to farmers, and documenting progress under the ongoing coordination of the Water Resources Coordinating Committee (WRCC). <http://www.nutrientstrategy.iastate.edu/documents>. Meeting attendees discussed the different political and economic factors that are likely to affect best practices adoption at the level necessary to meet goals. There was general agreement that vegetated shoreline buffer strips everywhere should be a priority. Contact: John Olson, john.olson@dnr.iowa.gov

UMR Clean Water Act Monitoring Strategy Update – A draft Options and Considerations document has been prepared by Midwest Biodiversity Institute (MBI) for the UMRBA Water Quality Task Force (WQTF). A final document is expected by late June. David Hokanson, UMRBA, will work with the WQTF in preparing a Recommended Monitoring Plan. A draft plan is expected to be developed by June. The design options include a nonrandom longitudinal survey, an intensive survey employing a probabilistic aspect and four probabilistic options with varying site density, reach extent and sampling frequency. MBI's analysis provides multiple ways to consider benefits and costs of the different designs. The least expensive probabilistic design allows an assessment of the full UMR reach (St. Croix River to Ohio River), but no information about differences within the 13 UMRBA WQ Assessment Reaches. The most expensive intensive design holds the potential for providing enough information to evaluate site-level impacts (pollution sources) as well as reach-based assessments. Reach-based designs mainly focus on probabilistic sampling of the 13 Assessment Reaches with 15 or 30 samples per reach. It is anticipated that UMRCC WQTS and others will be asked to provide comments on the Recommended Monitoring Plan once it is available for review. Contact John Sullivan or Louise Hotka for a copy of the presentation with design analysis tables.

UMRCC Coordinator's Update – The UMRCC video is available on the Web. Thanks to Norm Stuckey (narrator) and the Jon Stravers Band (music). In 2012-2013, 8 UMRCC student grants brought 525 students to the Mississippi at the cost of about \$3 per student. This year, 6 grants are in place for 335 students. There will be no teachers workshop this year, but aiming for one in 2014.

Vegetation sampling was conducted in Pools 7 and 14 last year. The WQ database of monitoring efforts on the Mississippi border waters is being updated now. Section members are asked to provide updates.

The Mussel Technical Section compiled sampling reach results that show a longitudinal trend of depressed mussel bed conditions in some reaches of the UMR. An analysis of WQ trends longitudinally was suggested to look for possible explanations.

Scott represented the UMRCC at the national AFS meeting in St. Paul and attended the International Rivers meeting in Russia last year. Contact: Scott Yess, scott_yess@fws.gov.

Dissolved Oxygen Metabolism in the Open River Side Channels – In the Open (un-impounded) River at the lower end of the UMR, side channels are recognized as important habitat and managed for that value. The LTRM conducts WQ monitoring on 6 important side channels that vary in depth, length, volume and connectivity with the main channel flow. This study uses continuous DO data in the side channels compared to that in the main channel to understand differences and interactions relative to support for biota. Respiration and primary production rates and net ecosystem metabolism are calculated and compared at the relative locations, along with other temperature and stream discharge. Conclusions: structure of the side channel is an important factor in water quality (more to learn about how size and control structures factor) and side channels exhibit seasonal differences in habitat quality more conducive to high metabolic opportunity. The comparison of upstream to downstream sites in side channels suggests heterotrophic systems, with greater amplitude in temperature fluxes and greater metabolism rates at downstream sites. Work continues to consider the

factor of river stage differences and investigate LTRMP fish data for relationships. Contact: Molly Sobotka, molly.sobotka@mdc.mo.gov)

Next Fall Meeting Discussion

Last week of September will work around October LTRM sampling. John Sullivan suggests announcing date and location mid-summer, and then sending out call for presentations and reminders in the following weeks to allow plenty of time to plan for travel.

Presentation suggestions: EPA about National Rivers and Streams Assessment; Shawn Schottler of the St. Croix Research Station on Tile Drainage; LTRM WQ trends relative to mussel longitudinal trends; Bernie Schonhoff History of Fairport Hatchery; Scott Yess – International Rivers meeting in Russia.

Organization Updates

Dave Bierl (USACE – Rock Island WQ and Sedimentation Section): Over the winter we performed baseline monitoring at three HREPs (Pool 12 Overwintering, Beaver Island in Pool 14 and Huron Island in Pool 18) and performance evaluation monitoring at five HREPs (Brown's Lake, and Spring Lake in Pool 13; Lake Odessa in Pools 17/18; Cottonwood Island in Pool 21 and Banner Marsh in the LaGrange Pool of the Illinois Waterway. The low water levels experienced during the summer continued into the fall and winter months.

Section members currently serve as team members on product delivery teams for the Pool 12 Overwintering, Huron Island (Pool 18) and Starved Rock Pool (Illinois Waterway) HREP/519 projects. A product delivery team for the Beaver Island HREP (Pool 14) has been selected and will likely start to meet this FY.

Transparency tube measurements at District Mississippi River Lock and Dams will commence again during the upcoming growing season. As in the past, these measurements will be performed voluntarily by district L/D personnel.

Louise Hotka (MPCA –EAOD Updates): Work continues on adoption of river eutrophication standards, revision of the turbidity standard to a TSS standard, and revision of human health methods for establishing standards. We anticipate final adoption early 2014. More info at <http://www.pca.state.mn.us/index.php/water/water-permits-and-rules/water-rulemaking/planned-amendments-to-water-quality-standards-minn.-r.-chs.-7050-7052-and-7053-use-classifications-human-health-methods-and-standards-for-river-eutrophication.html>

The proposed WQ standards for Lake Pepin and the Pools are the same (see p. 71 of Developing River, Pool and Lake Pepin Eutrophication Criteria). There have been some minor changes to the river eutrophication standards document, which led to small changes in the proposed WQS. The following table contains the current numbers.

River Nutrient Region	TP µg/L	Chl-a µg/L	DO flux mg/L	BOD5 mg/L
North	≤50	≤7	≤3.0	≤1.5
Central	≤100	≤18	≤3.5	≤2.0
South	≤150	≤35	≤4.5	≤3.0

The 8-digit HUC watershed load monitoring effort in Minnesota has enough years of consistent collection to calculate trends. Nitrite-nitrate concentrations are trending up at the Minnesota and Mississippi River basin watershed outlets.

John Olson (State Update for Iowa):

Iowa's 2012 Section 303(d) list: Iowa's 2012 Integrated Report and impaired waters list is in final stages of preparation; will go to EPA Region 7 by the end of March. Iowa DNR continues to work with Region 7 to hopefully expedite the approval/disapproval process.

Slime impairment: IDNR staff have begun talks with ADM-Clinton to re-assess the long-standing bacterial slime impairment in and downstream from Beaver Slough in UMR. The feeling is that this impairment has been addressed and no longer exists. The TMDL endpoint is agreement between ADM, Iowa DNR and USFWS that, based on visual review of the slime samplers, Iowa's narrative standards (aesthetically objectionable conditions and nuisance aquatic life) are met and that the impairment no longer exists.

Fish Tissue Monitoring: As part of the U.S. EPA's Regional Ambient Fish Tissue (RAFT) monitoring program, fish samples were taken from five locations on the Iowa reach of the UMR in 2012 (from upriver to downriver: Lansing (trend), Dubuque (trend), Clinton, Davenport (trend), and Muscatine).

See http://www.iowadnr.gov/portals/idnr/uploads/fish/fish_consumption_advisories.pdf for a reasonably up-to-date list of Iowa fish consumption advisories. .

Nutrient Criteria Development: Iowa DNR continues to work toward development of nutrient criteria for lakes and rivers/streams. A final report on stream/river numeric nutrient criteria recommendations is being prepared. The approach is to base numeric nutrient criteria on response variables (e.g., chlorophyll-a and dissolved oxygen) as they impact biological integrity (IBI values). Recommendations will be taken through rulemaking.

Nutrient strategy development: Based on the approach taken by the state of Kansas, goals of the Gulf Hypoxia action plan, and on EPA's March 2011 (Stoner) memo, Iowa has prepared a draft nutrient reduction strategy that sets technology-based nutrient reduction goals for point source dischargers independent of numeric nutrient targets. Nonpoint source reductions are based on voluntary implementation of nutrient BMPs. The draft strategy, released for public comment in November 2012, generated as much criticism as praise. Public comments are now being summarized; schedule for finalization is unknown.