

# Upper Mississippi River Basin Association Water Quality Task Force Meeting

September 25-26, 2018  
Grand River Center  
Dubuque, Iowa

## Highlights and Action Items Summary

### June 12-13, 2018 Joint WQEC/WQTF Highlights and Actions Meeting Summary

- The WQTF approved the draft highlights and actions summary of the joint June 12-13, 2018 WQEC-WQTF meeting following one correction to Iowa's HAB update, as provided by Dan Kendall.

### UMRBA Staff Updates

- Lauren Salvato provided an update that she has now assumed UMRBA's water quality responsibilities. Salvato announced UMRBA's new hire Andrew Stephenson will start on October 15, 2018. Stephenson has research and project coordination experience in human dimensions, wildlife biology, and sustainable agriculture. UMRBA staff are looking forward to Stephenson joining the team.

### CWA Program Updates

*Illinois* – ILEPA is responding to public comments on the integrated 2018 report. Agency staff hope to have a draft to review by early October. The 2020 CWA assessments are now underway. There is no TMDL update. Amy Wakenbach is retiring and the section will be under new supervision.

*Iowa* – IADNR expects to be done with their 2018 listings by December or January. DNR staff are using the AQUEA database for automation and are hoping to collect external data.

Dan Kendall reported that IADNR is working on a whole state bacteria TMDL, which will hopefully eliminate bacteria issues on public beaches.

*Minnesota* – MPCA's 2016-2018 listings are in review by USEPA Region 5. Pam Anderson reported that in January 2019, MPCA will begin assessments for the 2020 list.

MPCA developed a reporting mechanism online for TMDLs, as required by the Minnesota Legislature. The TMDL page on the MPCA website was completed this summer, and allows the user to search through topic areas including approved and unapproved TMDLs, BMPs implemented, effluent limits (tracked by permitting requirements), and assessments.

The Lake Pepin TMDL is still not approved and the public notice period has ended.

*Missouri* – MODNR finished its second round of report comments. Agency staff are starting assessments for the 2020 list. John Hoke reported ongoing biological discussion on small headwater streams.

Hoke reported that MODNR is waiting to hear back from USEPA on a bacteria TMDL for an urban stream in the state. The TMDL was withdrawn and placed back on the 303(d) list in part because the modeling was not appropriate for a low gradient stream with low dissolved oxygen.

MODNR TMDL modelers have been helping Section 319 staff to conduct a supplemental watershed analysis. One example is modeling drought areas of the state where public water supply reservoirs are impacted by water transfers.

*Wisconsin* – On August 2, 2018, USEPA approved WIDNR’s 303(d)/305(b) listing. Chloride concentrations represented 20 percent of the contaminants on the listing, and the majority of elevated levels are in the Milwaukee area. On September 19, 2018, WIDNR closed comments on the proposed Wisconsin River impairments.

Shawn Giblin listed topics included in Wisconsin’s 305(b) report: TSS thresholds for native fish response, the role of habitat rehabilitation and enhancement projects on water quality, sediment contaminant trends over time, an overview of the CWA monitoring pilot, and zebra mussel declines since the mid 1990’s. Giblin noted that freshwater drums have learned to eat zebra mussels, contributing to their decline.

#### Additional Updates

- Kathy Hawes reported that, at the September 18-20, 2018 Mississippi River Cities and Towns Initiative annual conference, a federal and industry agreement was signed to increase water quality monitoring on the main stem of the Mississippi River. Kelly Warner added that the agreement involves place multi-parameter sondes on barges to capture differences in nutrients and other water quality parameters in the Upper and Lower Mississippi River. Warner reiterated that this is a collaborative effort with the navigation industry, and the main point of contact is Peter Cinotto in the Louisville USGS office ([pcinotto@usgs.gov](mailto:pcinotto@usgs.gov)).

#### **Harmful Algal Blooms**

##### Hypoxic Task Force (HTF) Update

- Adam Schneiders reported that the last HTF meeting was postponed due to Hurricane Florence and is rescheduled for January 29-31, 2019 in Baton Rouge. David Ross, the USEPA chair for the HTF wants to supercharge the efforts of the Task Force by convening federal agency members from DOI, USEPA, the Corps, DOE, NRCS, USGS, and NOAA. Topics for the next meeting are infrastructure, nutrients, WOTUS, and PFAS. The HTF is looking at the adoption of nutrient reduction practices by different approaches, including innovative partnerships, treatment plant upgrades, market-based approaches, etc. Each state in the HTF will present to David Ross about their nutrient reduction strategies.
- NOAA has reported that the 2018 Gulf of Mexico hypoxic zone is the third smallest on record.

##### HAB Updates

*Missouri* – Hoke noted that MODNR has focused primarily on education and outreach related to algal blooms. During the 2018 drought, MODNR coordinated with the MO Department of Health and Senior Services to field citizen complaints.

In response to a mid-September 2018 algal bloom in Columbia, MO, DNR staff mobilized quickly, collected samples, and closed the lake before awaiting sample results.

*Illinois* – Gregg Good reported on an algal bloom that occurred on the Illinois River on June 19, 2018. ILEPA received calls that the river was green from local residents. Field crews sampled in the area the following day and confirmed the algal bloom in the Marseilles and Hennepin areas. ILEPA consulted relevant federal, state and local agencies during the algal bloom, including Peoria public water supply and point source dischargers, Rock Island Army Corps of Engineers, USGS staff, and the IL States Police. A June 21 news article was published regarding the bloom and June 25 follow-up sampling confirmed the need for a second advisory. But, by July 2, no more microcystins were present. Good speculated that a storm in the Chicago area reduced the algal bloom. ILEPA plans to publish a one-pager summarizing the lessons learned, best response tactics, and need to improve predictive capabilities of algal blooms.

Good noted that this was a normal to above normal year for algal blooms, and particularly in northeast Illinois. Good explained that there are more public beaches and involvement from the Lake County volunteer lake monitoring coordinator and IL Department of Public Health. Rend Lake had an algal bloom over the summer and left residents without water for 2-3 days. The reservoir is operated by the Corps and supplies water to 250,000 people.

*Iowa* – Kendall reported six blooms on lakes that have historically experienced algal blooms. In previous years, HAB events were more frequent (32-37 annually). On July 17, IA Department of Public Health issued a bottled water order (no drink, no boil) at Greenfield Lake, a public water supply reservoir. Two days later, algal samples were below detection, although there was still a mandatory boil order because of turbidity exceedances. Another bloom occurred in Big Spirit Lake in northeast Iowa. A citizen reported the bloom, samples were collected the same day, and agency staff were able to clear out the bloom quickly.

*Minnesota* – Anderson reported a fairly slow year for algal blooms. While most blooms typically occur in lakes, two rivers experienced blooms: the Thief River in NW Minnesota and the Cannon River in SE Minnesota. There were no human incidents and one suspected dog death.

MPCA has also focused on outreach and education. Local government agencies have asked for guidance to respond to citizens' algal blooms questions.

*Wisconsin* – Gina LaLiberte reported that the wet spring and summer exacerbated the algal blooms in the state. Wisconsin's HAB surveillance program is a partnership between DNR and public health state agencies. As a part of the program, samples are tested for reported algal blooms. The highest concentration of microcystin detected during 2018 sampling was 20 µg/L. Lake Mendota had an early algal bloom on June 9, and the Apostle Island had its fourth algal bloom since 2012. The New York Times published an article on the Apostle Island bloom. While toxins are not typically associated with blooms in that area, laboratory analysis found anabaena present.

Shawn Giblin reported less algal bloom activity on the main stem of the Mississippi River, although substantial blooms occurred in the backwaters. DNR staff are looking at management actions to reconnect isolated backwaters to the river.

*USEPA* – Salvato shared USEPA Region 5's (R5) updates on behalf of Meghan Hemken.

In late 2017, USEPA R5 initiated a workgroup to increase collaboration and transparency across federal and state HAB programs in the region. The group will meet quarterly to discuss federal and state efforts coinciding with round-robin discussions to share insights and lessons learned. Thus far, the workgroup has covered topics on monitoring, the CyAN project, and analytical cyanotoxin methods.

USEPA is currently finalizing the Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for Microcystins and Cylindrospermopsin to reflect comments received and new data published since the first draft was developed. USEPA intends to publish the criteria document by fall 2018, followed by an FAQ document that covers criteria adoption and implementation this winter.

The 1996 Safe Drinking Water Act as amended requires, that once every five years, USEPA to issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems. The fourth Unregulated Contaminant Monitoring Rule (UCMR 4) requires monitoring between 2018 and 2020 for a total of 30 chemical contaminants, including nine cyanotoxins and one cyanotoxin group, i.e., total microcystins, microcystin-LA, microcystin-LF, microcystin-LR, microcystin-LY, microcystin-RR, microcystin-YR, nodularin, anatoxin-a, and cylindrospermopsin. This monitoring provides a basis for future regulatory actions to protect public health. The first posting of UCMR 4 data in the National Contaminant Occurrence Database is scheduled for fall 2018 and can be found online.

#### Action Items

- **UMRBA will annually update the HAB manual and coordinate new information with WQTF members.**

#### CWA Pilot Updates

##### Reaches 8-9 CWA Monitoring Pilot

- Jason DeBoer, Illinois Natural History Survey, briefed the WQTF on the history of the Illinois Long-Term Survey and Assessment of Large River Fishes (LTEF) program. LTEF began in 1957 to conduct standardized and extensive fish surveys. It was expanded in 2009 to reaches in the Illinois River and portions of the Mississippi River, adopting the Upper Mississippi River Restoration LTRM protocols. For the purposes of the Reaches 8-9 pilot, DeBoer explained that the Havana field station alternates fish monitoring in pools 16 and 17 with IADNR. Western Illinois University (WIU) is contracted to monitor pools 18-21.

Kirsten Wallace explained that contractors, such as WIU, could be beneficial to the pilot. Cost-savings could be realized if vessels are already out in the field conducting routine sampling. Dr. Jim Lamer, WIU faculty, is the main point of contact for fish sampling. DeBoer explained that the universities coordinate their own grants.

##### Reaches 0-3 CWA Monitoring Pilot

- Salvato is working with Giblin and Joel Chirhart to respond to comments made by agency leadership on the *Evaluation Report* and *Condition Assessment*. They aim to finalize the documents by the end of the year.

#### Nutrient Reduction Strategies (NRS)

##### NRS Updates

*Missouri* – John Hoke distributed the *Missouri Nutrient Loss Strategy 2018 Update* to WQTF members. Hoke noted that restrictive words were removed from the nutrient reduction strategy, greater emphasis placed on technology based nutrient reduction techniques, and there is good participation from effluent discharges to monitor voluntarily. MODNR has experienced challenges with baseline calculations and trend analysis. Instead, Hoke noted, the focus has shifted from

nutrient reduction. Utilizing state conservation funding of \$25 million - \$40 million per year, MODNR has been able to provide 90 percent cost shares for BMPs. Promoting cover crops through the soil and water conservation districts has shown successful.

*Minnesota* – MPCA is working on the five-year update for Minnesota’s nutrient monitoring strategy. Anderson noted MPCA is looking to see if differences in point source and non-point source reductions are apparent.

*Wisconsin* – Wisconsin’s Nutrient Reduction Strategy 2015-2016 Implementation Progress reported a 23 percent decrease in phosphorus from the baseline. Giblin noted that WIDNR is planning to issue a progress report in 2019, including for the Wisconsin River TMDL. WIDNR developed a nonpoint source-point source trading program that credits users for nonpoint source reduction.

*Iowa* – Kendall noted that Iowa’s Nutrient Reduction Strategy update is delayed but the most current executive summary is finalized.

*Illinois* – Good announced that the Illinois Nutrient Monitoring Council is scheduled to convene a one-day policy workshop in Springfield in November 2018. University of Illinois council members are updating the science assessment that evaluates the sources of phosphorus and nitrogen. The Council is planning to cross-reference USGS’s super gauge network to measure nutrient loss in the state.

*USEPA* – Janette Marsh stated that USEPA staff are updating the nonpoint source management plans and are preparing to include related efforts in its FY 2020 budget.

*National Great Rivers Research and Education Center (NGRREC)* – Ted Kratschmer announced that the Great Lakes to Gulf website will be published soon. The website will visualize and display continuous monitoring data collected by multiple agencies and various BMPs. Kratschmer and staff collected real-time monitoring data in Illinois and have been able to replicate modeling capabilities using linear interpolation and the WRTI method. His hope is to reach out to other states and replicate the same efforts as in Illinois.

### Presentations

- Jamie Benning, IA State University, explained the methods for calculating 2006-2010 nitrogen and phosphorus baseline estimates. Researchers utilized land use data, nitrogen and phosphorus application sales data, tillage information, and phosphorus soil tests. Loading estimates found that nitrogen increased 5 percent due to a slight increase in corn-soybean, continuous corn acres and nitrogen fertilizer application. Phosphorus decreased 22 percent due to a reduction in intensively tilled areas and a significant increase in no-till practices. Benning noted a few limitations of the study, including that there is no available method to evaluate stream bank and bed contributions to overall phosphorus loads. Legacy phosphorus in sediment may be significant contributors.

In response to a question posed by Anderson, Benning noted that the northern part of Iowa has seen an increase in tilling as a function of increased precipitation.

- Dr. Sri Vedachlam, Northeast-Midwest Institute, a researcher at the nonpartisan institute presented to the WQTF on source water quality and the cost of nitrate treatment in the Mississippi River Basin. Vedachlam and co-authors utilized SPARROW modeling software to characterize the watershed and understand nitrogen contributions from each of the source types. They found that nitrate concentrations increased over a 10-year period and farm fertilizer was the largest contributor to that increase. Noting that utilities spent 4-9 percent of their operating budget on nitrate treatment, Vedachlam observed that undue burden is placed on small utilities.

Good asked Vedachlam the difference in treatment costs for 15 mg/L and 10 mg/L of nitrate and whether a lower maximum contaminant level would result in more treatment plants in violation. Vedachlam responded that this is question requires additional monitoring. Giblin asked whether the authors are planning a similar study wells of rural water users. While Vedachlam and co-authors are not planning on a rural well study, Anderson contributed that Minnesota has conducted some targeted sampling but ultimately found it challenging to obtain data.

Wallace asked whether the authors could determine the cost-per-individual of nitrate treatment based on how many people utilities serve. This area was not explored because of the variable rate structures for household water consumption, according to Vedachlam. Hoke asked if a cost-benefit-analysis was considered to estimate the reduced health care costs to the public based on the fiscal investment in nutrient reduction. Vedachlam noted there is new information available but has not yet looked into the studies. Vedachlam appreciated the feedback and will follow-up with the WQTF as his research progresses.

### **Emerging Issues**

- Sean Strom, WIDNR, presented on a six-year study examining the constituents of eaglet's blood. Researchers wanted to understand levels of legacy contaminants and emerging contaminates, because bald eagles serve as indicators of environmental change and ecosystem health. The results cited phthalates and perfluorinated compounds as emerging contaminants as well as chemical mixtures, industrial compounds, and pharmaceuticals.

Funding has halted for the eagle study, but Giblin and Strom recently applied for funding to continue the work. Giblin would like to see this type of monitoring for emerging contaminants throughout the five states.

### **Chloride**

- KathiJo Jankowski, USGS, has focused her research on better understanding lake ecology during the winter and how ice and snow cover affect water quality in the UMRS. The Upper Mississippi River LTRM data indicate that ice out days in Lake Pepin are occurring 17 days earlier and ice occurrence is notably different between the channels and backwaters. Jankowski presented preliminary findings and will continue to explore nutrient trends in winter and ice phenology on a larger scale and additional data sources such as USGS super gauges.
- The Task Force observed that Jankowski's research is relevant to chloride research. Wallace asked what trends states are observing. Giblin responded that Wisconsin acknowledges that the state is on an unsustainable path but does not have remedial actions. Minnesota has a chloride management strategy due to high salt usage and waterbody impairments in the Twin Cities Metro Area. Ettinger noted that there was a recent proposal to the IL Pollution Control Board to reduce chloride standards in the winter. Next steps include developing a chloride resolution. Salvato will schedule a follow-up call for the WQTF.

### **Action Items**

- **UMRBA will distribute the IL Pollution Control Board proposed water quality standards to the WQTF.**
- **UMRBA will convene a call with the states to update the states' chloride comparison document and develop a regional policy position statement.**

## **Administrative Items**

- The next WQTF in-person meeting is scheduled for January 29-30, 2019 in Dubuque, Iowa.
- The proposed dates for the next joint WQTF-WQEC meeting are June 4-5, 2019. UMRBA staff will confirm the dates with the WQEC in October.

## **Attendance**

Gregg Good	Illinois Environmental Protection Agency
Jason DeBoer	Illinois Natural History Survey ( <i>phone</i> )
Daniel Kendall	Iowa Department of Natural Resources
Adam Schnieders	Iowa Department of Natural Resources ( <i>phone</i> )
Jamie Benning	Iowa State University ( <i>phone</i> )
Pam Anderson	Minnesota Pollution Control Agency
Molly Sobotka	Missouri Department of Conservation ( <i>phone</i> )
John Hoke	Missouri Department of Natural Resources
Shawn Giblin	Wisconsin Department of Natural Resources
Gina LaLiberte	Wisconsin Department of Natural Resources ( <i>phone</i> )
Sean Strom	Wisconsin Department of Natural Resources ( <i>phone</i> )
Karen Hagerty	US Army Corps of Engineers, Rock Island District
Wendy Drake	US Environmental Protection Agency, Region 5 ( <i>phone</i> )
Janette Marsh	US Environmental Protection Agency, Region 5 ( <i>phone</i> )
KathiJo Jankowski	US Geological Survey
Kelly Warner	US Geological Survey ( <i>phone</i> )
Sri Vedachalam	Northeast-Midwest Institute ( <i>phone</i> )
Albert Ettinger	Mississippi River Collaborative( <i>phone</i> )
Ted Kratschmer	National Great Rivers Research and Education Center
Kathy Hawes	Tennessee Clean Water Network ( <i>phone</i> )
Lauren Salvato	Upper Mississippi River Basin Association
Kirsten Wallace	Upper Mississippi River Basin Association