Minutes of the Joint Meeting of the
Upper Mississippi River Basin Association Board and
Upper Mississippi River Restoration Program Coordinating Committee

August 9, 2016

Radisson Hotel
La Crosse, Wisconsin

UMRBA Chair Robert Stout and UMRR Coordinating Committee Co-Chair Thatch Shepard called the meeting to order at 1:30 p.m. Meeting participants were as follows:

UMRBA Representatives, Alternates:

Rick Gosch	Illinois Department of Natural Resources
Dan Stephenson	Illinois Department of Natural Resources
Tim Hall	Iowa Department of Natural Resources
Dave Frederickson	Minnesota Department of Agriculture
Barb Naramore	Minnesota Department of Natural Resources
Robert Stout	Missouri Department of Natural Resources
Bryan Hopkins	Missouri Department of Natural Resources
Dan Baumann	Wisconsin Department of Natural Resources

UMRR Coordinating Committee Members:

Thatch Shepard	U.S. Army Corps of Engineers, MVD
Sabrina Chandler	U.S. Fish and Wildlife Service, UMR Refuges
Jennie Sauer	U.S. Geological Survey [On behalf of Mark Gaikowski]
Dan Stephenson	Illinois Department of Natural Resources
Randy Shultz	Iowa Department of Natural Resources
Kevin Stauffer	Minnesota Department of Natural Resources
Janet Sternburg	Missouri Department of Conservation (by phone)
Jim Fischer	Wisconsin Department of Natural Resources
Marty Adkins	Natural Resources Conservation Service

Others in Attendance:

Lawrence Patterson	Illinois Department of Natural Resources
Megan Moore	Minnesota Department of Natural Resources
Shawn Giblin	Wisconsin Department of Natural Resources
Tom Novak	U.S. Army Corps of Engineers, MVP
Ben Robinson	U.S. Army Corps of Engineers, MVP
Col. Craig Baumgartner	U.S. Army Corps of Engineers, MVR
Dennis Hamilton	U.S. Army Corps of Engineers, MVR
Ken Barr	U.S. Army Corps of Engineers, MVR
Marv Hubbell	U.S. Army Corps of Engineers, MVR
Karen Hagerty	U.S. Army Corps of Engineers, MVR
Scott Whitney	U.S. Army Corps of Engineers, MVR
Maj. Rich Star	U.S. Army Corps of Engineers, MVS
Shawn Sullivan	U.S. Army Corps of Engineers, MVS
Brian Markert	U.S. Army Corps of Engineers, MVS
Monique Savage	U.S. Army Corps of Engineers, MVS

Tim Eagan	U.S. Army Corps of Engineers, MVS
Gary Lee	U.S. Army Corps of Engineers, MVS
Kat McCain	U.S. Army Corps of Engineers, MVS
Tim Yager	U.S. Fish and Wildlife Service
Scott Morlock	U.S. Geological Survey
Kristen Bouska	U.S. Geological Survey
Molly Van Appledorn	U.S. Geological Survey
John Medinger	U.S. Senator Tammy Baldwin
Mike Welvaert	National Weather Service
Tom Boland	AMEC Foster Wheeler
Brad Walker	Missouri Coalition for the Environment
Don Powell	SEH, Inc.
Gretchen Benjamin	The Nature Conservancy
Dru Buntin	Upper Mississippi River Basin Association
Dave Hokanson	Upper Mississippi River Basin Association
Kirsten Mickelsen	Upper Mississippi River Basin Association

Farewell to Janet Sternburg

Robert Stout recognized Janet Sternburg for her tremendous contributions to Mississippi River policy and habitat restoration. Sternburg is taking a new position within the Missouri Department of Conservation. Stout remarked that Sternburg is diligent and extremely hard working and she will be sorely missed by the UMRS partnership. Members of the UMRBA Board and UMRR Coordinating Committee expressed their sincere appreciation for Sternburg's leadership and friendship over the years.

UMRR Presentation

Marv Hubbell touted the UMRR's interdisciplinary and interagency partnership that has been working together successfully over the past 30 years, and has resulted in an efficient and effective larger river restoration and science program. UMRR is a pioneer in large river restoration and is acclaimed nationally and internationally. Because of this well designed infrastructure, UMRR's obligation rate averages above 99 percent and the cost-per-acre restored is less than $3,000. These attributes are incredibly important to the program's ability to compete for limited restoration dollars nationally. The Corps ecosystem restoration funding is increasingly competitive, and UMRR's ability to execute funds quickly and strategically will become even more important.

2015-2025 UMRR Strategic Plan

Hubbell described UMRR's 2015-2025 Strategic Plan as proactive and forward-looking. According to Hubbell, the Plan's integration of restoration and science is a keystone event that is already improving the ways in which partners are connecting their work to others and the overall strategic vision. The plan includes the following vision for the river, mission statement for the program, and four goals to achieve the vision and mission:

- *Vision*: A healthier and more resilient Upper Mississippi River ecosystem that sustains the river's multiple uses
- *Mission*: To work within a partnership among federal and state agencies and other organizations; to construct high-performing habitat restoration projects; to produce state-of-the-art knowledge through monitoring, research, and assessment; to engage other organizations to accomplish the Upper Mississippi River Restoration Program's vision
- *Goal 1*: Enhance habitat for restoring and maintaining a healthier and more resilient Upper Mississippi River ecosystem

- *Goal 2*: Advance knowledge for restoring and maintaining a healthier and more resilient Upper Mississippi River ecosystem
- *Goal 3*: Engage and collaborate with other organizations and individuals to help accomplish the Upper Mississippi River Restoration vision
- *Goal 4*: Utilize a strong, integrated partnership to accomplish the Upper Mississippi River Restoration vision

Hubbell explained that the UMRR partnership developed a subsequent operational plan that provided recommendations for establishing priorities, identified key policy and technical issues, offered approaches for integrating the program's science and restoration efforts, and identified challenges to implementation. A few of the strategic plan's primary recommendations include developing a communications strategy, applying resilience concepts to the UMRS ecosystem, updating the Habitat Needs Assessment, and enhancing transparency in budgeting. The planning team considered establishing a standing habitat team, but decided that the UMRR Coordinating Committee and other existing groups are already charged with considering many of the identified consultative needs.

Jim Fischer underscored the importance of the 2015-2025 UMRR Strategic Plan, both in terms of the outcomes of the development process itself as well as the recommendations that shift UMRR's focus and internal collaborations. UMRR's new focus on resilience is extremely important for better understanding the ecosystem at a broader spatial scale and determining how restoration can enhance the ecosystem sustainability in the face of degrading stressors. In addition, the strategic plan calls for a more integrated science and restoration program. Whereas the science and restoration efforts have operated mostly independently historically, the strategic plan offers new approaches for a more integrated program.

Hubbell reported that the UMRR is preparing to embark on the process to identify the third generation of habitat projects. The program is currently defining conceptual models for understanding the ecosystem's resilience to stressors and updating the Habitat Needs Assessment. Both efforts will serve as foundational information sources for defining those future habitat restoration projects.

UMRS Ecological Resilience

Kristen Bouska provided a summary of the observations witnessed over the past six years using long term resource monitoring data. Out of the six study reaches, there have been both positive and negative developments. In the northern three study reaches, UMRR has observed an ecological shift to a healthier state, with less turbidity and clearer water that has resulted in a rebound of submersed aquatic vegetation and desired, native fish species. However, vegetation remains scarce in the southern study reaches. In 2015, Pool 26 and the Open River study reaches experienced the lowest water clarity in the 30-year monitoring period. Asian carps are outcompeting native species, reducing their body condition, in the Illinois River reach. Collectively, the ability to make these observations underscores the value of continuous long term monitoring and the infrastructure of six study reaches.

Bouska provided an overview of UMRR's effort to-date to define and apply the concepts of ecological resilience to the UMRS. She recalled that the 2015-2025 UMRR Strategic Plan called for UMRR's habitat projects to address ecological resilience and for an increased understanding of the status and trends of the UMRS's ecological resilience. Bouska said she is assisting with the resilience effort, including authoring a manuscript to explain the insights gained through this exercise.

Bouska explained the definition of resilience as "capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks." Main concepts of ecological resilience are:

- Small changes in controlling variables can lead to rapid changes in major ecosystem services to rapid changes in major ecosystem services when the system is near a threshold

- There are multiple possible states, instead of one global equilibrium to which an ecosystem can always return.
- There exists nonlinearity (hysteresis), meaning that an ecosystem cannot always return to its original state.
- Controlling variables and other components of the ecosystem can interact resulting in positive or negative feedbacks – e.g., a positive relationship exists between sedimentation and submersed aquatic vegetation.
- Slow variables, such as sedimentation, play a key role.

Bouska explained that resilience is value-neutral and must be placed in context. Strong resilience can either maintain a healthy ecosystem or an unhealthy ecosystem in the face of disturbances. On the other hand, low resilience could either shift a healthy ecosystem to an undesirable state or vice versa. For example, the return of a high presence aquatic vegetation in the northern reaches of the UMRS suggests that it vegetation is resilient to stressors. However, in the southern reaches, the vegetation seems to have difficulty reestablishing and therefore the vegetation is either not resilient or it may be resilient to its poor state.

Bouska said the workbook, *The Resilience, Adaptation and Transformation Assessment Framework: From Theory to Application*, is being used as a guide to applying ecosystem resilience concepts to the UMRS. The workbook contains three main sections: system description, assessing the system, and adaptive governance and management. Thus far, USGS has lead partners through the first main section, which includes defining the scope, scale, and a "desirable" future condition, the resilience of what to what, the governance and social interactions, and how the ecosystem functions.

Bouska said the purpose of doing the ecological resilience assessment is to 1) improve the understanding of the UMRS's current ecosystem resilience and the potential for management and restoration actions to affect the resilience of the UMRS, 2) identify potential indicators of ecosystem resilience, and 3) identify areas of uncertainty where additional study is needed to inform management and restoration. UMRR partners agreed to define the UMRS ecosystem as the main stem river and floodplain, with larger scale processes included as external drivers. The analyses will focus at the floodplain reach scale, given the significant differences in ecosystem condition throughout the UMRS. In addition, the analyses will focus on three main ecological systems:

1) Lentic: backwater lakes and impounded areas
2) Lotic: channels (main and side channels)
3) Floodplain (with emphasis on forests)

Bouska explained that partners are now defining the basic relationships of the valued ecological component to its stressor – i.e., the resilience of what to what. This requires determining the critical ecological components of the system and what are the likely shocks/disturbances that the ecosystem will continue to experience. To answer the question of "resilience of what," the resilience work group identified the valued uses or ecosystem services that are provided by the UMRS (e.g., recreation, water quality) and the ecological components that support those uses or services.

Using the conceptual model being developed for the lentic backwater lakes area, Bouska said partners are examining the main controlling variables and interactions among them that essentially make the ecosystem function, as well as the interactions across and within scales and feedbacks. This is then related to what we know about the relationships between components required to support expected uses and services and the key controlling variables, as well as what we do not know and need to research. The models will also be used to determine past and potential impacts of ecosystem management and restoration of the river. A next step will include quantifying the thresholds that exist between the key controlling variables and major uses and services as well as the associated scientific research. Bouska

said the models reflect the notion that the resilience of the UMRS ecosystem is dependent on individual and cumulative relationships among various stressors and disturbances and the valued ecological components that they influence.

Bouska said partners are now assessing alternate regimes (states) of the ecosystem, such as high turbidity and scarce aquatic vegetation versus clear water and abundance aquatic vegetation, in order to better understand both *specific* resilience (resilience of particular parts of a system to identified disturbances) and *general* resilience (the capacity of the ecosystem to cope with unfamiliar shocks and surprises). The conceptual models that Bouska presented form the basis for determining specific resilience. Bouska said that the principles for building resilience include maintain diversity and redundancy, manage connectivity, and manage slow variables and feedbacks, and described how UMRR's habitat projects contribute to those principles.

Bouska said next steps include populating the models and tables with information, refining the conceptual model diagrams, publishing the system assessment effort to-date and analyzing existing data to better quantify and understand the relationships identified in the conceptual models. Ultimately, the goal is to describe the impacts of UMRR's restoration and management of the ecosystem. Bouska said UMRR's long term monitoring data will be the primary reference for quantifying the relationships. The expected outcomes of this work are to assess the current state and trends of the UMRS's ecosystem, including trends in controlling variables, proximity to thresholds of concern, developing indicators of resilience, determining where the system is acceptable and resilience should be enhanced to maintain the state and where the system is unacceptable and resilience should be reduced.

In response to a question from Mike Klingner, Bouska said the data regarding the percent that lock gates are open is from 1959 to 2015. Klinger said he has privately-held monitoring data that might be useful. Fischer observed that UMRR can effectively address the first two general variables – maintaining diversity and redundancy and managing connectivity. However, UMRBA has a role in working to manage slow variables and feedbacks, which may include watershed inputs, climate change, and invasive species. These things are not within UMRR's ability to control. Fischer suggested that the UMRBA Board consider advocating for policies and other efforts that could reduce the impacts of these slower stressors.

Increasing Competition for Fiscal Resources

Hubbell observed that UMRR has faced increasing pressure to demonstrate success and explain the intended benefits of its budget requests. Col. Craig Baumgartner elaborated on Hubbell's statement and said UMRR must demonstrate that it remains good stewards of the federal money. In other words, the Administration places substantial emphasis on delivering outcomes and executing fully and efficiently. That requires preparedness with action-ready projects and other efforts. Col. Baumgartner emphasized that the programs and projects with the most traction typically have a united partnership with a strong, compelling message and proactively communicate with decision-makers. According to Col. Baumgartner, it is important for partners to articulate the value of UMRR, the risk of reduced budgets and what can be done with increased funding, the importance of the long term monitoring baseline and sustaining its continuity, the strength of UMRR's regional partnership, and how this program is able to advance the interest of other federal and state agencies as well as local communities and nonprofit organizations.

Dru Buntin emphasized the need for dedicated staff to develop communications messages and tools as well as strategies for targeting the appropriate audiences. Buntin said his observations in Washington D.C. are that UMRR often falls short compared with other large aquatic ecosystems such as the Everglades.

Col. Baumgartner said the new Administration may have different perspectives on funding criteria and advised partners to be prepared with a variety of messages to quickly speak to any particular objective

or question. Scott Morlock suggested using ESRI's new "story map" tool, which helps to develop compelling stories with visuals and audio. Jennie Sauer added that the story map tool is very simple and user-friendly.

Project Partnership Agreements

Hubbell explained the communication between UMRBA and the Corps during the past few months. UMRBA sent two letters to Congress seeking that project partnership agreements (PPAs) be addressed in WRDA 2016, dated February 3, 2016 and April 22, 2016. The former letter is included in the agenda packet. Specifically, the changes sought by the states include creating a more shared approach to liability and limiting the obligations for operations, maintenance, repair, replacement, and rehabilitation (OMRR&R). In a May 11, 2016 letter, UMRBA requested that the Corps explain what action would be required to modify the PPA template and whether the Corps has existing authority to make such changes. In response, Corps Headquarters explained that the indemnification clause is based on Sections 103(j)(1) and 101(j) of WRDA 1986. Perpetual OMRR&R is based on the fact that Section 103(j)(1) requiring a non-federal sponsor to pay 100 percent of the OMRR&R costs does not identify a time limit. Thus, the Corps stated that Congressional action is required to make the requested changes. In that letter, the Corps Director of Civil Works invited the Association to work collaboratively with the Corps to identify solutions that would be mutually beneficial.

Buntin explained that there was some traction within the UMRS delegation to seek changes to the PPA templates in WRDA 2016. Buntin observed that the Corps attorneys seem to only be concerned with decreasing any potential risk of federal liability and are not considering that worthy projects might not be implemented as a result. However, this approach appears to conflict with the Administration's and Congress' desire for leveraging nonfederal dollars through cost-shared projects as well as through public-private partnerships in implementing projects. Buntin said he believes it will be helpful to start engaging directly with the Corps attorneys and asked for the Corps' insight on how UMRBA might best engage with Headquarters. It appears that the Corps has not provided any alternative approaches to liability for consideration by Congressional members working on WRDA.

Hubbell said the exercise to review the legal obligations related to PPAs resulted in the Corps removing a requirement that tribes waive their respective sovereign immunity. That was required in addition to fully indemnifying the Corps.

Barb Naramore described the difficulty that states face in executing PPAs and asserted that the Corps does not fully appreciate the challenge of the state constitutional and statutory prohibitions on indemnification. Naramore asked the Corps to consider how the project agreements can be structured in a practical way so that the states can effectively participate as cost-share sponsors. She explained that Minnesota has nearly lost two projects in the last few years that it would have fully committed to as a cost-share sponsor if the legal requirement were not so burdensome and one-sided. The state was fortunate to find a work-around for one of the projects, but it will not likely be as lucky in the future. Naramore urged the Corps to also consider the capacity for the state to fulfil its long standing obligations compared with the risk of using local, smaller-scale organizations that are willing to execute PPAs with indemnification requirements.

Sabrina Chandler added that the USFWS has been asked to assume the sponsorship in two cases recently. And while the Service places high value on these projects, the agency sometimes cannot do so because of jurisdictional issues and it is also concerned with setting precedent. Chandler offered to assist in facilitating conversations about the non-federal sponsor agreements. Buntin noted that this issue will likely be a limiting factor on the placement of the next generation of UMRR habitat projects and encouraged the Corps to resolve these issues.