

**Minutes of the
Upper Mississippi River Restoration Program
Coordinating Committee**

**November 16, 2022
Quarterly Meeting**

Davenport, IA

Sabrina Chandler of the U.S. Fish and Wildlife Service called the meeting to order at 8:02 a.m. on November 16, 2022. UMRR Coordinating Committee representatives in attendance were Brian Chewning (USACE), Mark Gaikowski (USGS), Chad Craycraft (IL DNR), Randy Schultz (IA DNR), Megan Moore (MN DNR), Matt Vitello (MO DoC), and Jim Fischer (WI DNR). A complete list of attendees follows these minutes.

Minutes of the August 10, 2022 Meeting

Matt Vitello moved and Jim Fischer seconded a motion to approve the draft minutes of the August 10, 2022 UMRR Coordinating Committee meeting as written. The motion carried unanimously.

Regional Management and Partnership Collaboration

FY 2022 Fiscal Update

Marshall Plumley reported that UMRR's FY 2022 plan of work included \$33,583,764, including carryover from FY 2021. UMRR achieved an execution rate of 98.4 percent in FY 2022. UMRR averaged a 97.7 percent execution rate from 2017 to 2022. Regional science and monitoring obligations reflect pre-funding of the FY 2023 scope of work to ensure continuity of funding across fiscal years. Adjustments will be made back to other sources in FY 2023. Plumley said the program execution reflects the partnerships' effort and sends an important signal to Congress regarding program success.

FY 2023 Budget Outlook

Plumley said that, on September 30, 2022, Congress passed a continuing resolution authority (CRA) extending current funding levels of the federal government until December 16, 2022. The President's FY 2023 budget as well as the House and Senate FY 2023 energy and water appropriations bills include \$55 million for UMRR. UMRR is proceeding with executing the Program at the \$55 million level. The final FY 2023 appropriation is not yet known.

The draft plan of work for UMRR in FY 2023 at a \$55 million funding scenario is anticipated to be as follows:

- Regional Administration and Program Efforts – \$1,550,000
 - Regional management – \$1,280,000
 - Program database – \$100,000
 - Program Support Contract – \$120,000
 - Public Outreach – \$50,000

- Regional Science and Monitoring – \$15,450,000
 - Long term resource monitoring – \$5,500,000
 - Regional science in support of restoration – \$8,350,000
 - Regional science staff support – \$200,000
 - Habitat evaluation (split across three districts) – \$1,275,000
 - Report to Congress – \$125,000
- Habitat Restoration – \$38,000,000
 - Rock Island District – \$11,148,000
 - St. Louis District – \$13,502,000
 - St. Paul District – \$13,250,000
 - Model certification – \$100,000

Plumley said that, at a \$55 million funding level, regional science in support of restoration would increase from approximately \$3.8 million to \$8.3 million and habitat restoration funding in each district would increase from between \$6 million and \$7 million to between \$11 million and \$13 million. In response to a question from Mark Gaikowski regarding model certification funds, Plumley said model certification funds were obligated from FY 2018 to FY 2021 but that only one-quarter of the funds were used in FY 2022. Jim Fischer asked if \$50,000 is adequate to support UMRR’s communications needs, especially as the program expands under increased appropriation authority. Fischer named near term communications needs around the ecological status and trends flyers, the 2022 Report to Congress, and environmental justice. Plumley said there is separate funding designated for the LTRM status and trends and 2022 UMRR Report to Congress rollouts. The HREP allocation would cover restoration-related environmental justice opportunities at the project scale. Regional programmatic environmental justice activities would be paid from the public outreach allocation. Plumley said adjustments can be made across items if there are immediate needs.

WRDA 2022

Plumley reported that the Senate WRDA 2022 draft language includes an annual appropriation authorization increase for the HREP element of UMRR from \$40 million to \$75 million. With LTRM’s authorized appropriation level of \$15 million annually, the total UMRR annual authorized funding level would be \$90 million. Plumley anticipates more information will be available after the conclusion of various election recounts. In response to a question from Jennie Sauer, Plumley said WRDA 2020 increased annual authorized funding for LTRM to \$15 million, but WRDA 2022 did not address LTRM.

UMRR Ten-Year Plan

Plumley reported that updates to the UMRR 10-year implementation plan include adding Robinson Lake HREP in MVP and extending schedules for cost estimates on Green Island HREP in MVR, and design work at Harlow and Oakwood Bottoms HREPs in MVS. Plumley said twelve projects are anticipated to be in feasibility in FY 2023, requiring considerable staff time from implementing partners, and thanked partners for investing energy in planning to ensure a healthy pipeline of projects. In response to a question from Kirsten Wallace, Plumley said the program identified a need for a project selection process every five years to occur again in FY 2025, but that increased appropriations would result in accelerated project schedules and expedited need for a project selection process sooner. The program has available fact sheets now, but Plumley anticipates the next HREP selection process to begin in calendar year 2024. Kirk Hansen suggested revisiting existing fact sheets in conjunction with identifying new projects. Plumley said that a UMRR and NESP program-neutral selection process was completed in 2009 and may be considered again to make efforts most efficient and complimentary.

2022 Report to Congress

Plumley reported that the second in-progress review of the 2022 UMRR Report to Congress with USACE Headquarters was held on August 29, 2022. MVD and USACE HQ then completed an initial review of the draft 2022 UMRR Report to Congress that Plumley said resulted in mostly editorial comments to improve clarity. The revised report was routed to MVD and USACE HQ on November 9, 2022 for final approval. Plumley expressed appreciation to partners for their collective efforts in writing and reviewing the report, but especially to Jeff Houser, Andrew Stephenson, Jill Bathke for their contributions. The report is an excellent tool for communicating within the partnership and to others about the program. Plumley said he will distribute the finalized report to UMRR Coordinating Committee members in the coming weeks. The delivery of the report to Congress is anticipated in December 2022. Plumley said that, similar to the 2016 Report to Congress, a four-page handout will be developed to summarize this report.

Plumley provided an overview of the report highlights tied to the UMRR 2015-2025 strategic plan as follows:

Leading

- Implemented the UMRR program as outlined in the adopted Joint Charter and the goals and objectives of the 2015-2025 Strategic Plan.
- Provided critical insight and understanding of the UMRS through monitoring, research, and modeling to inform management of the UMRS.
- Promoted a common vision, sense of purpose, transparency, and accountability among the program partners.

Innovating

- Assessed and detected changes in the fundamental health and resilience of the UMRS.
- Defined ecological resilience and appropriate indicators to measure status and trends in the UMRS.
- Renewed UMRR's Habitat Needs Assessment and identified the suite of habitat projects to improve UMRS ecosystem health and resilience.
- Addressed key ecological needs at various spatial scales.
- Formulated and constructed 7 habitat restoration projects benefiting approximately 15,400 acres of nationally significant aquatic, wetland, forest, island, side channel and backwater habitats.

Partnering

- Actively exchanged information with UMRS watershed, national, and international partners.
- Evaluated and learned from constructed habitat restoration projects.
- Applied adaptive management principles to address risk and uncertainty.
- Collaborated with partners to further inform issues related to project partnership agreements.

Plumley said the report also includes recommendations that will help as UMRR kicks off development of the next strategic plan in 2024. Recommendations included:

- Apply defined ecological resilience concepts, the UMRR Habitat Needs Assessment-II, and adaptive management principles to address risk and uncertainty.
- Continue to identify and construct habitat projects that improve the UMRS ecosystem health and resilience and evaluate and learn from constructed habitat projects to inform future restoration and management.

- Assess, and detect changes in, the fundamental health and resilience of the UMRS ecosystem by continuing to monitor and evaluate its key ecological components.
- Provide critical insights and understanding regarding a range of key ecological questions in order to inform and improve management and restoration of the UMRS ecosystem.
- Work with key organizations and individuals in the UMRS watershed and provide information to organizations and individuals whose actions and decisions affect the UMRS ecosystem
- Promote a common vision and sense of purpose, transparency, and accountability among UMRR’s implementing partner agencies
- Implement UMRR as outlined in Joint Charter and engage the partnership in 2024 in preparing the next UMRR Strategic Plan.
- The Corps and non-federal sponsors should continue to work together to further inform issues related to execution of PPA’s.

Plumley expressed appreciation for the letters of support he received from various state and federal agencies and NGOs, noting they demonstrate ongoing commitment to the program and were included in a report appendix. In response to a statement from Wallace, Plumley agreed that a small group should be convened to help develop key messages and talking points for the report to help partners communicate about the report release in spring 2023.

Environmental Justice

Plumley reflected on the environmental justice discussion during the UMRR Coordinating Committee’s August 10, 2022 quarterly meeting. Plumley said USACE will continue to fully integrate environmental justice into all aspects of its programs, including planning, design, construction, and operations and management. He reported that additional USACE guidance on environmental justice is anticipated in late November 2022. Plumley said that, following UMRR CC discussion at the August meeting and at his request, Stephenson sent an email to the UMRR Coordinating Committee on October 6, 2022, to designate staff from their respective agencies to participate in an *ad hoc* group to consider UMRR’s roles in environmental justice. The *ad hoc* group’s first steps will include sharing their respective agencies’ perspectives on approaches and best practices, methods, and tools related to environmental justice in their work and discussing how UMRR currently approaches environmental justice through habitat rehabilitation and enhancement projects. Plumley said a request for availability for the first discussion is anticipated to be sent in the coming weeks after all agencies have identified participants. Stephenson added that because some agencies have identified staff who are not currently engaged with UMRR, there will be an information webinar held in advance of the first *ad hoc* group discussion on environmental justice. Bryan Hopkins asked for opportunities for NGOs to engage in the conversation on environmental justice and said The Nature Conservancy has expertise and perspective that could be valuable. Lindsay Brice indicated in the meeting chat Audubon’s interest as well. Plumley said the initial discussion will be with Coordinating Committee members and other agency staff but welcomed broadening discussions to the wider partnership in subsequent discussions. Megan Moore expressed appreciation for Hopkins’ comments and said that NGOs can have a productive role in achieving the program’s environmental justice goals.

Implementation Issues

Plumley reported that, on August 31, 2022, the UMRR Coordinating Committee met to discuss revisions to the draft implementation issue papers. On September 21, 2022, UMRBA staff sent an email asking Coordinating Committee members to identify supported and preferred actions to address each issue. On November 10, 2022, UMRBA staff distributed finalized implementation issue papers to the UMRR Coordinating Committee with draft recommendations removed. Issues included:

- Project Partnership Agreements (PPAs)
- Engaging non-traditional sponsors
- Land acquisition
- Floodplain regulations
- External communications
- Federal easement lands
- Watershed inputs and climate change
- Water level management

Plumley noted that PPAs require action by Congress to address. Plumley said that in the coming months, the Coordinating Committee will convene a meeting to establish broad consensus on the recommended suite of alternatives to address implementation issues and consider lead agency and personnel for each action to be pursued. Plumley said this process will also help prepare the partnership for discussions on UMRR’s next strategic plan as well.

2015-2025 Strategic and Operational Plan Review

Plumley said that a draft of the UMRR 2015-2025 Strategic Plan review report is nearly complete. The report summarizes the results of a survey distributed to the partnership at-large on September 20, 2021 and identifies what the program has done well and priority actions to fulfill the strategic plan. Plumley overviewed areas of program success and priority actions under each of the four goals in the strategic plan.

Success Criteria

Priority Actions

Goal 1 Enhance Habitat

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- Restoration projects provide opportunities for scientific research and inquiry
- HREPs enhance the health and resilience of the UMR
- UMRR serves as a source of guidance on restoration for similar programs nationally
- UMRR is recognized as a premier program in large river restoration

- Centralize HREP data and collect and digitize historic data currently stored in computers and file cabinets
- Establish consistent and standardized HREP monitoring
- Complete HREP project evaluation reports (PERs) across districts
- Define appropriate temporal and spatial scales for determining physical and biotic response of habitat project objectives

Goal 2 Advance Knowledge

Goal 2 Advance Knowledge

- Research and monitoring inform restoration and management efforts
- UMRR is recognized as a premier program in large river monitoring and science
- UMRR serves as a source of guidance on monitoring and science for similar programs nationally
- UMRR effectively detects the status and trends of the UMR as related to indicators of ecosystem health and resilience

- Connect resilience concepts with ongoing and future restoration work

Goal 3 Communications

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[no success criteria were available for Goal 3]

- Link together habitat restoration projects with existing watershed projects and upstream contributors

Goal 4 Partnership

- The partnership is supportive of the program and its output
- UMRR has a highly engaged regional partnership

Goal 4 Partnership

- Create a narrative around missed-restoration opportunities because of existing policies

Plumley said a finalized report is anticipated to be submitted to UMRR Coordinating Committee members in the coming weeks. A meeting will be convened to review and discuss the results. This meeting will likely be held on conjunction with the meeting to discuss the implementation issues papers.

Status and Trends Report Long Rollout

Stephenson said that UMRBA staff are coordinating the development of a series of five two-page flyers related to findings presented in the 2022 UMRR LTRM status and trends report and are creating a plan for disseminating flyers to the UMRR partnership and media outlets. Topics include fisheries, water quality and nutrients, floodplain forest loss, aquatic vegetation, and sedimentation. Key findings from the joint press release are the basis for the flyers on fisheries, forest loss, and water quality. Stephenson said a finalized version of the fisheries flyer is included as attachment C1-C2 in the meeting agenda packet and drafts of the sedimentation and floodplain forest loss flyers are in development. Stephenson said there were not key takeaways developed for the press release regarding sedimentation or aquatic vegetation. Stephenson presented draft versions as follows:

- Sedimentation: Sediment accumulation has changed the river structure by creating new floodplain land areas and reducing depths in backwater areas. These changes affect the quality and availability of habitat for fish and wildlife.

The loss of deep backwater areas can reduce suitable habitat for some fish species, especially for overwintering.

New landforms with sandy substrates can be important habitats for shorebirds and waterbirds and offer ideal conditions for the establishment of important tree species such as willows and cottonwoods.

- Aquatic vegetation: Aquatic vegetation diversity has improved in the Upper Impounded Reach of the Upper Mississippi River. However, aquatic vegetation diversity remains low or unknown in other reaches of the river.

Long-term monitoring reveals that improvements in aquatic vegetation are tied to lower nutrient loads in the water, better water clarity, and a decline in common carp.

The increase in submersed aquatic vegetation and water clarity in much of the Upper Impounded Reach represents a significant improvement in the ecological condition of the Upper Mississippi River System.

Aquatic vegetation helps sustain clearer water, provides important habitat for many aquatic animals, and is an important food source for migrating waterfowl.

Stephenson said that during various stages of development, flyers are reviewed by the report authors, UMRR Communications and Outreach Team, and A-Team members. Final draft versions are presented to the UMRR Coordinating Committee. Stephenson said that in lieu of a central photo repository, there is an ongoing request for photos with photo credit information to be submitted for use in the flyers. In response to a question from Vitello, Stephenson said distribution of the flyers has not yet been determined, but that the fisheries flyer will be available in three formats for digitally sharing, printing at home, and professional prints. Plumley said that print run could be arranged following a request to partners to assess needed

numbers of copies. Stephenson said that many agencies are looking to participate in or hold in-person events and that a request will be sent to UMRR Communications and Outreach Team members regarding calendars of events for each agency. Hopkins said that since the Status and Trends report was published, he has received more inquiries about altered hydrology in the system. Hopkins noted that hydrologic changes impact many other important characteristics of the river. Hopkins suggested that linking this change to climate change would align well with the Administrations priorities. Megan Moorea agreed that water discharge is the master variable. Stephenson said that more water more of the time was a key takeaway from the press release and is being woven into each flyer. Lauren Salvato suggested linking water availability in terms of water quality and water supply into the flyer on water quality. Jennie Sauer said USGS is developing an FAQ based in interviews of inquiries that followed release of the report. The summary fact sheet is anticipated to be six to eight pages in length and will go through a similar partnership review process. Sauer said they will discuss the fact sheet with the publishing network on November 28, 2022 and solicit involvement of creative writers to help translate technical language. The fact sheet is anticipated for use with Congressional visits in 2023.

Fischer suggested adding a fact sheet specifically to address the issue of altered hydrology. Stephenson concurred and noted that although these handouts are meant to be individual topics, a general topic fact sheet could also be useful to unify them all. Houser questioned the development of a standalone fact sheet on hydrology and said the hydrologic information is based on USGS gage data, not LTRM data, and was included in the report to establish context, but is now drawing the most attention. Kirsten Wallace said the use and inclusion of the data aligns with goal three of the strategic plan in how we can learn from others to achieve our mission and vision. She agreed that the information is key to our knowledge about climate change. Sabrina Chandler suggested including information on altered hydrology as an intro paragraph to the flyers to set the tone for topics, but not as a separate flyer because it is not LTRM data. Stephenson reiterated that altered hydrology is a thread across all flyers. Fischer recalled that during UMRBA's open space meetings in 2019, it was evident that there was a need for greater understanding regarding how the river functions, how locks and dams are managed, and that Corps operations are not responsible for increased flood frequency or duration. A fact sheet focused on altered hydrology may help address that need. Stephenson said he has received requests for additional review time on flyers and that review periods will be lengthened, but will still be shorter than other materials as the products are short, there are multiple review opportunities, and language is derived mainly from information already presented in the status and trends report. Olivia Dorothy echoed Hopkin's request for a separate flyer on hydrologic changes in the river. Dorothy asked if USACE would look at the Status and Trends report as part of their consideration if the NESP programmatic environmental impact statement (PEIS) needs to be supplemented. Brian Johnson said the appropriate Corps staff to answer that question were not in attendance.

Communications

Bathke reported that, using insights gained from the 2022 UMRR LTRM status and trends report release, the UMRR Communications and Outreach Team (COT) developed a set of best practices and drafted a six-month schedule template for similar future efforts. Recommendations include identifying key partners involved and their respective needs early in the process as well as intended communication methods and modes of dissemination to various stakeholder groups. When possible, messages should be tailored to specific geographic areas and anticipated FAQs should be developed prior to a press release. Bathke emphasized that accessibility and accuracy during key message development is time well spent. The COT will continue to build relationships with the Mississippi River Basin Ag & Water Desk.

Bathke said future COT activities include developing communications materials to support publication of the 2022 UMRR Report to Congress, updating the UMRR communications and outreach plan, completing the UMRR video series, creating a communications inventory, and cooperating with advanced communications planning efforts around the 100th Anniversary of the Upper Mississippi River National Wildlife and Fish Refuge in 2024.

External Communications and Outreach

Communication and outreach activities in the fourth quarter of FY 2022 include the following:

- Lauren Salvato said she will present to the Iowa Learning Farm on UMRBA’s How Clean is the River report, but also plans to discuss existing water quality monitoring under LTRM and the need for additional monitoring.
- Matt Vitello said that on September 24, Missouri Department of Conservation held a World River Day event in Cape Girardeau with tanks of fish and turtles, ask the professionals booth, and boat rides. The event had approximately 750 participants over 4 hours. Jennie Sauer commended Vitello for organizing boat rides for so many participants.
- Fischer said that on August 24, 2022, Jeff Janvrin presented on UMRR at the American Fisheries Society National Conference in Spokane, WA and on November 5, 2022 at Bucknell University’s 17th annual river symposium in Lewisburg, PA. Fischer said that on September 6, 2022 he, Houser, and Marc Schultz with the La Crosse County Conservation Alliance participated in a panel discussion regarding the status and trends report with Ezra Wall on Wisconsin Public Radio.
- Gaikowski said that on November 10, 2022, UMESC staff were joined by Fischer and provided a briefing on LTRM to Senator Baldwin’s staff. On September 13-15, 2022, Gaikowski and KathiJo Jankowski attended the Mississippi River Cities and Towns Initiative’s annual meeting and Jankowski presented on the Status and Trends Report.
- Kirsten Wallace said she met with USACE Headquarters in early-October as part of Federal Water subcabinet meeting and underscored UMRR and PPA issues in response to questions of where there have been successful efforts of state and federal partnerships. She also met with congressional staff and USFWS leadership to underscore the importance of the Service in the program and the states.
- Plumley said that on October 26, 2022, he, Kirk Hansen, and Kara Mitvalsky presented on UMRR to the Interstate Council on Water Policy (ICWP) and shared information about habitat restoration. Wallace expressed appreciation for their participation and said that UMRBA was the outgoing chair of ICWP and selected the Quad Cities for the meeting to highlight UMRR. Wallace said The USEPA Region 7 Water Director was impressed with UMRR’s work and the agency is trying to determine how best to reengage.
- Jeff Houser said that he also presented to ICWP on the Status and Trends Report at this event.

UMRR Showcase Presentations

FY 2022 LTRM Accomplishments

Jennie Sauer presented LTRM accomplishments in FY 2022, as follows:

Partnership

- Collaboration with agencies on newly planned ecological assessment programs on the Columbia and Hudson River systems
- Collaboration with UMRR HREPs, including the Big Lake, Pool 4, and Lower Pool 13
- Successful completion of the UMRR 2022 virtual science meeting with over 100 participants representing 17 different agencies and organizations
- Contributions to future generations of scientists, including the water quality lab hosting 60 interns over the last 30 years and multiple graduate student research projects utilizing LTRM fish data.

- Completion of monitoring of the Illinois Waterway consolidated closure
- LTRM implementation planning efforts

Publications

- Multiple publications based on 29 years of LTRM monitoring of fisheries and water quality and 24 years of aquatic vegetation monitoring, including the 2022 UMRR LTRM status and trends report and subsequent media coverage
- Advancing the UMRS resilience assessment including a new publication using the resist-accept-direct framework
- Development of a manuscript regarding side channel classification based on fish associations with physical metrics currently in review

New Methods, Tools, and Procedures

- Successful upgrade of ScanLog/data transfer to sFTP
- Ongoing renovation of the LTRM water quality lab and temporary move to University of Wisconsin-La Crosse
- Creation of methods for high-accuracy mapping of emergent vegetation (wild rice) using UAS assets
- Land cover/use (LCU) 2020 mapping
- Mapping potential sensitivity to hydrogeomorphic change in the UMRS riverscape and development of supporting GIS database and query tool
- Refining the framework of Upper Mississippi River's ecosystem states based on predictions of plant distribution (and why) on the landscape and areas with high restoration potential
- Systematic analysis of hydrogeomorphic influences on native freshwater mussels including establishing population estimates in Pools 8 and 13
- Modeling projected patterns of forest recruitment and succession with and without inhibition of forest regeneration in areas currently occupied by invasive reed canary grass under different hydrologic scenarios

Continuation of Important Work

- Ongoing work related to vital rates, genetics, and microchemistry of UMRS fishes
- Ongoing efforts to improve understanding of historic, contemporary, and future UMRS hydrology including development of a database template for historic and contemporary daily water service elevations at UMRS USACE gages.

Sauer expressed appreciation to the technicians, field station leaders, and others who contributed to these accomplishments. Stephenson applauded Sauer for including the contributions to future generations recognizing those who passed through the program and Plumley agreed. In response to a question from Stephenson, Gaikowski said completed and ongoing renovations to the water quality lab include leveling the floor and installing HVAC and fire suppression. Fume hoods and cabinetry are scheduled to be installed in February 2023. The water quality lab is scheduled to move back to UMESC between September and December 2023.

Marshall Plumley presented Jennie Sauer with the Commanders Award for Public Service to recognize her exceptional service to UMRR and LTRM over 30 years. The award reads:

“For exceptional service to the UMRR program’s LTRM element over past 3 decades. Ms. Sauer made critical contributions to its success and recognition as a national and global leader in applied science and monitoring. As a field technician, principal investigator, and LTRM Branch Chief, she mentored her staff, coordinated research investigators, and ensured efficient LTRM operation, earning the enduring respect of UMRR partners. Her outstanding performance is in keeping with the highest traditions of civil service and reflects distinct credit upon herself, the UMRR program, the U.S. Geological Survey, and the U.S. Army. Signed Lt. Col. John M. Fernas, Deputy District Commander for the Rock Island District, U.S. Army Corps of Engineers.”

Plumley expressed gratitude on behalf of himself and UMRR for Sauer’s contributions to the program. Sauer expressed appreciation for the opportunity to work on LTRM and said she will retire in December 2022. Sauer was congratulated and applauded by the UMRR Coordinating Committee and meeting attendees.

FY 2022 HREP Accomplishments

District HREP managers presented on HREP accomplishments in FY 2022, as follows:

- Angela Deen said MVP’s FY 2022 accomplishments include three ribbon cuttings to celebrate completion of Bass Ponds, Harpers Slough, and Conway Lake HREPs. The district awarded Stage II of McGregor Lake. Deen said MVP had multiple opportunities to host site visits to the Bass Ponds HREP, including for the UMRR Coordinating Committee and the River Resources Forum as well as a public ribbon cutting. Deen said the Shakopee Mdewakanton Sioux Community was able to harvest Wild Rice from at least one lake at the project for the first time in a long time. Deen said completing repairs at Harpers Slough required considerable work and overcoming many challenges. MVP public affairs created five videos and multiple social media posts featuring HREPs and participated in the UMRR Earth Day campaign. Videos were viewed nearly 8,000 times, reached 16,700 people, and elicited 637 reactions, comments, and shares. Deen said the district applied lessons learned from UMRR to other programs as well. Two accomplishments outside of UMRR include beneficially using dredged material at Pigs Eye Lake, a CAP 204 project, to create six islands and selection of Upper Pool 4 Islands as a CAP 1122 pilot project. The project will add islands to upper Lake Pepin. In response to a question from Jennie Sauer, Plumley said Harpers Slough was the first project that was complete and then impacted by flooding. The program had stopped budgeting for the project, which is why it required so much additional coordination. Plumley added that the CAP 1122 project on Lake Pepin is one of only a few pilot projects around the country and may have been selected in part because of MVP’s 30 years of experience restoring ecosystems under UMRR. Stephenson said Bass Ponds HREP presents a great opportunity for public engagement and applauded the Corps and the USFWS Refuges for facilitating site visits.
- Julie Millhollin said MVR’s FY 2022 accomplishments include advancing feasibility studies on four HREPs, awarding a construction contract for Steamboat Island, and completing construction of Keithsburg Stage I and Stage IIA as well as various components of the Beaver Island HREP. The district developed a ribbon cutting video to celebrate completion of the Pool 12 Overwintering HREP. Aquatic vegetation plantings at Huron Island have been successful and blanket purchase agreements have advanced tree planting and clearing as well as timber inventory efforts in the District. Millhollin said that MVR public affairs created three videos that garnered over 28.8 hours of viewership and featured multiple social media posts on UMRR and LTRM activities that reached over 25,000 users. The district plans to identify a new HREP to start in the fourth quarter of FY 2023.

- Brian Markert said MVS’s FY 2022 accomplishments include advancing construction on three HREPs, design on two HREPs, and feasibility on two HREPs. The sediment deflection berm was completed at Crains Island, UMRR’s first open river project, and pump stations are nearly complete at Clarence Cannon HREP. The District has drafted three new fact sheets and toured Cypress Creek Refuge to discuss restoration opportunities with the USFWS Refuge Manager. Site visits to Swan Lake, Cuivre Island, Calhoun Point, and Dresser Island helped identify construction and operation lessons learned. The Swan Lake Flood Damage Assessment letter report was advanced. In response to a question from Stephenson, Markert introduced MVS staff new to UMRR including Abby Hoyt, Ryan Swearingin, and Jack Hendrickson.

Long Term Resource Monitoring and Science

FY 2022 4th Quarter Report

Jeff Houser reported that accomplishments of the fourth quarter of FY 22 include publication of the following manuscripts and reports:

- *Annual Summer Submersed Macrophyte Standing Stocks Estimated From Long-Term Monitoring Data in the Upper Mississippi River*
- *Trophic reorganization of native planktivorous fishes at different density extremes of bigheaded carps in the Illinois and Mississippi Rivers, USA.*
- *Recommendations report regarding water level management to achieve ecological goals in the Upper Mississippi River System*

Houser said that renovation of the LTRM water quality laboratory, which has temporarily moved to the University of Wisconsin-La Crosse, is ongoing. The laboratory renovation is expected to be completed in July 2023.

USACE LTRM Report

Karen Hagerty said UMRR is operating under a \$55 million funding scenario for FY 2023, in which LTRM is allocated \$13.85 million. Allocations compared to the FY 2022 funding level are as follows:

- Base monitoring increases to \$5.5 million from \$5 million
- Science in support restoration (analysis under base) increases to \$1.5 million from \$1.3 million
- Science in support of restoration and management increases to \$6.85 million from \$2.5 million

Hagerty said the LTRM FY 2023 \$7.4 million base monitoring and analysis-under-base program covers field stations, UMESC, and Corps technical and science representatives. Under the continuing resolution funding restrictions, LTRM is funded to continue base monitoring until more appropriations are received. High priority funding items for science in support of restoration total \$1.975 million and include:

- LTRM balance: \$464,671
- Ecohydrology: \$459,797
- LC processing (last year): \$335,238
- Proposal adjustments: \$28,884
- Macroinvertebrate contaminants: \$77,483
- Herbarium: \$21,000
- Future landscape modeling: \$588,674

Hagerty said remaining funds of approximately \$4.9 million may be used to purchase equipment for field stations and the water quality lab, advance additional FY 2022 science proposals, and/or update topobathy. Hagerty noted that the topobathy data underlies many UMRR science and habitat restoration

activities, but updating it would include financial support from NESP at this time. Sauer said that vegetation samples have been collected, pressed, and stored since the early 90's and that establishing a central herbarium would result in a collection of large river plants unlike any other. Fischer expressed support for improved cataloging of vegetation samples and suggested archiving fish samples similarly.

[Note: following conclusion of the meeting, Brian Ickes provided additional information regarding fish sample specimens. He said that from the beginning of sampling, the fish component has preserved specimens for vouchering and maintaining a training set of samples. Early in the program, each field station maintained a specimen voucher collection locally. These were preserved specimens with two primary purposes: (1) maintaining specimens, particularly for difficult taxa, for verifying species IDs in the lab once the preserved voucher specimen had been identified by a trained ichthyologist/systematist (Bob Hrabik was one of these experts, along with a few others); (2) training seasonal and new field personnel in taxa identification and methods. About the time we switched from paper archives to digital archives for the data, a "house cleaning" initiative at most field stations occurred. As part of that, each field station sought out museums with ichthyological expertise to house their burgeoning voucher specimen collections. Some went the way of the Bell Museum in Minneapolis under Konrad Schmidt while others went to Southern Illinois University Carbondale under Brooks Burr and colleagues.]

LTRM Implementation Planning

Houser said the *ad hoc* LTRM implementation planning team has been tasked with determining research opportunities to expand the understanding of UMRS restoration and management. In part, an objective for this effort is to identify and prioritize research needs under increased potential for additional funding following the authorized increase in WRDA 2022.

Houser reported that, over the past several months, the implementation planning team has drafted objective statements and identified and prioritized information needs in four broad categories: floodplain ecology, hydrogeomorphic change, aquatic ecology, and restoration applications. Possible actions to address information needs include employing short-term research studies, adding capacity for analyzing existing LTRM data, spatially expanding baseline monitoring, and adding new long term monitoring components. Houser said, the team held an in-person workshop on September 13-15, 2022 to finalize scoring criteria and information needs. Agencies submitted final scores of information needs on November 10, 2022. The implementation planning team is scheduled to meet on November 17, 2022 to review scoring results. A small subgroup will develop approximate cost estimates associated with necessary actions to address each information need. The implementation planning team will then discuss how to optimize actions based on scores and estimated costs. Houser said he anticipates providing a set of recommended actions to the Coordinating Committee at the March 1, 2023 quarterly meeting.

A-Team Report

Scott Gritters said the A-Team met via webinar on October 25, 2022. Topics discussed included updating the A-Team Corner and the Corps webpages regarding LTRM Field Station descriptions, management implications of a resilience assessment of the UMRS, including application of the resist-accept-direct framework, the status of aquatic vegetation in Pool 13, potential A-Team roles in HREP/LTRM integration, development of the two-page flyers communicating the major findings from the 2022 UMRR LTRM status and trends report, and an introduction to the staff at the Wisconsin field station by Jim Fischer. Gritters said Kristen Bouska presented on how assessing resilience can aid in navigating the resist-accept-direct (RAD) framework by understanding general resilience, distance to thresholds, and desirability of conditions. Furthermore, understanding trajectories of change and implications on ecological resources can aid in evaluating management actions under future scenarios. Gritters said Seth Fopma presented on how Wild Celery in the impounded portion of Pool 13 increase in frequency of occurrence from 1998 to 2016, but has shown signs of decline over the last 6 years.

Gritters said the A-Team identified a few ways to support HREP/LTRM integration including informing all PDT members of available information, ensuring LTRM trend information is presented early in PDT discussions, and notifying PDT members that the A-Team chair and reps will respond to any information needs. Gritters said the A-Team has reviewed the fisheries flyer and was requested to review the forest loss flyer. Gritters commended UMRBA staff for effectively summarizing a great deal of information in the flyers. Gritters expressed appreciation to Fischer for the overview on the Wisconsin Field Station staff and sympathies and support for Craig Hoff's medical conditions. Fischer acknowledged the need to update the field station information and thanked Gritters for the opportunity to highlight staff and the great work they do and acknowledge Hoff's situation. Gritters said as next steps, the A-Team will request that field station staff review information on the A-Team Corner and Corps webpages and submit updated information.

Habitat Restoration

Angela Deen said MVP's planning priorities include Robinson Lake, Big Lake - Pool 4, and Reno Bottoms. A kick-off meeting for Robinson Lake is being planned and will use the same PDT as the Big Lake Pool 4 project. The Reno Bottoms draft report was completed and released for public review and a public meeting was held on November 3, 2022. A design contract award for Lower Pool 10 is expected at the end of this month. Construction was completed at Harpers Slough, Bass Ponds, and Conway Lake HREPs. O&M manuals are nearly complete. A contract to complete McGregor Lake HREP construction was awarded at the end of the last fiscal year. The project will use approximately 500,000 cubic yards of dredge material from the main channel. Deen said other efforts in the District include development of a Trempealeau HREP letter report outlining repair needs and the development of 12 storymaps for recent HREPs. Sabrina Chandler said the work Mandy Michaelson from ERDC presented on HABs at the UMRBA Board's quarterly meeting on August 9, 2022 would be relevant to Trempealeau. Chuck Theiling said Nicole Manasco would be another good resources. In response to a question from Stephenson, Deen said the selection of presentation-style or open-house style public meetings can be driven by venues and the availability of technology or input from community members ahead of the meeting.

Julie Millhollin said MVR's planning priorities include Lower Pool 13, Green Island, Pool 12 Forestry, and Quincy Bay. The Pool 12 Forestry PDT conducted a site visit on October 26, 2022 and is finalizing alternatives. Cost estimates for Green Island are being finalized and the Lower Pool 13 has a virtual public Q&A scheduled for November 17, 2022. The Quincy Bay PDT held an alternatives workshop on November 2, 2022 and established concurrence on the final array of alternatives. The District's design priority is Steamboat Island Stage II, with a 65 percent review anticipated to begin in January 2023. Millhollin said MVR has five projects in construction including Pool 12 Overwintering, Beaver Island Stage IB, Steamboat Island Stage I, Keithsburg Division Stages I and II, and Huron Island Stage III. The District is working to turn over the Pool 12 Overwintering Stage II project to the sponsor. A construction contract for Steamboat Island Stage I was awarded on August 31, 2022. The Beaver Island HREP included a large tree planting that required five semi-truck loads of trees. A ribbon cutting for Huron Island Stage II was held on September 7, 2022. MVR is working to address sponsor comments on the Upper Pool 13 fact sheet. Chandler said she is aware of a group of stakeholders opposed to pelicans and aquatic vegetation who have engaged USFWS and Iowa DNR in the past and may join the Pool 13 virtual meeting, but expressed displeasure over the 4:00 p.m. meeting time. Millhollin said the PDT walked through issues related to pelicans and received input online regarding the meeting time and can look for alternative times in the future. Fischer said Pool 13 is a trend pool and suggested highlighting the data to educate stakeholders on the importance of submersed aquatic vegetation. In response to a question from Chad Craycraft, Millhollin said that when they have difficulty sourcing tree species, they may substitute different species, but that the blanket purchase agreement they have allows two years for work to be completed and has allowed nurseries to prepare for a given need. Chandler said volunteer groups have also been collecting acorns to provide local seed to growers.

Brian Markert said MVS's planning priorities include West Alton Islands and Yorkinut Slough. Hydraulic and hydrologic modeling for West Alton Islands and cost estimates for incremental cost analysis and the draft tentatively on Yorkinut Slough are nearly complete. Markert said MVS's design priorities include Piasa & Eagles Nest, Harlow Island, Oakwood Bottoms, and Crains Island. MVS has three projects in construction: Crains Island, Piasa and Eagles Nest, and Clarence Cannon Refuge HREPs. Pre-solicitation for Stage II of Piasa & Eagles Nest was issued on October 26, 2022 and a construction contract award is anticipated for the second quarter of FY 23. Exterior berm setback work continues at Clarence Cannon Refuge HREP. The District is developing new fact sheets with the Forest Service, Illinois DNR, and USFWS and anticipates a draft letter report for a flood damage assessment at the Swan Lake HREP.

LTRM and HREP Special Reports

Mike Spear, INHS, presented on fish community response to decreased vessel traffic on the Illinois Waterway. Consolidated extended closure of eight locks and dams in 2020 spurred a multi-agency monitoring effort from 2019 to 2021 to assess changes in river conditions from decreased navigation traffic. This was a unique ecosystem-scale opportunity to assess anthropogenic impacts of vessel traffic to a large river using a before/after/control impact study design. Three variables were evaluated including vessel traffic intensity, water quality, and fish communities in the main channel for direct impacts, side channels without direct traffic, and backwaters separated from noise and turbidity. Navigation pools showed a 50 percent to 100 percent decrease in vessel traffic during the closure. Turbidity was lower in the main channel and side channel habitats during the closure year of 2020. In addition, catch of sound-sensitive and rheophilic fish taxa as well as Gizzard shad increased in main and side channel habitats as compared to the backwater "quasi-control" condition. In response to a question from Stephenson, Spear said decreases in turbidity may have increased visibility by a couple inches.

Collin Moratz, USACE, presented an update on aquatic vegetation plantings at the Huron Island HREP. ERDC provided support from FY 18 to FY 20 to establish native aquatic vegetation at the project site. ERDC used flood tolerant native plant species of regional provenance and monitored plantings for adaptive management purposes. Herbivory exclosures were installed and initial specimens planted in August 2019. Assessments in 2020 indicated some mortality due to 2019 flooding, but also that some species had established outside exclosures. An assessment June 2021 showed unprotected arrowhead recruitment, additional spread of longleaf pondweed from exclosures, and good to high survival of ten species in exclosures. An additional planting was conducted in July 2021. An assessment in September 2021 showed high survival of 13 species in exclosures and rushes and arrowheads observed in unprotected areas. From July 26-28, 2022 a three day field campaign was conducted with ERDC, MVR, and Iowa DNR to establish larger exclosures with additional plantings. During an assessment on September 21, 2022, pens showed 70 percent to 99 percent coverage with some plants spreading from exclosures showing signs of herbivore damage. Overall, there was limited spread observed for both emergent and SAV beyond protected exclosures, likely due to herbivory pressure both aquatic and from terrestrial herbivores. One remaining question is whether a critical mass can be reached, whereby unprotected plant communities are robust to herbivory. In response to a question from Houser, Moratz said grass carp, common carp, some smaller herbivorous fishes, and turtles are likely the primary herbivores, but that researchers had considered developing a statement of need to specifically address that question and make information for applicable to other areas of the river. Hansen said grass carp are likely. In response to a question from Matt Vitello, Moratz said that, absent ice issues or complaints from boaters, the plan is to keep cages in place for a number of years for additional monitoring. Moratz said they are in regular contact with the area biologist to be able to address any concerns quickly. In response to a question from Hansen, Moratz said arrowhead is likely from the seedbank following freshly receded water, but that the top one foot of sediment was removed by dredging prior to the plantings.

Other Business

Upcoming quarterly meetings are as follows:

- **February/March 2023 – Virtual**
 - UMRBA quarterly meeting – February 28
 - **UMRR Coordinating Committee quarterly meeting – March 1**

- **May 2023 – St. Paul, MN**
 - UMRBA quarterly meeting – May 23
 - **UMRR Coordinating Committee quarterly meeting – May 24**

- **August 2023 – La Crosse, WI**
 - UMRBA quarterly meeting – August 8
 - **UMRR Coordinating Committee quarterly meeting – August 9**

With no further business, Chad Craycraft moved, and Jim Fischer seconded a motion to adjourn the meeting. The motion carried unanimously, and the meeting adjourned at 2:30 p.m.

**UMRR Coordinating Committee Attendance List
November 16, 2022
[Note: this includes in-person and virtual attendees]**

UMRR Coordinating Committee Members

Brian Chewning	U.S. Army Corps of Engineers, MVD
Sabrina Chandler	U.S. Fish and Wildlife Service, UMR Refuges
Mark Gaikowski	U.S. Geological Survey, UMESC
Chad Craycraft	Illinois Department of Natural Resources
Randy Schultz	Iowa Department of Natural Resources
Megan Moore	Minnesota Department of Natural Resources
Matt Vitello	Missouri Department of Conservation
Jim Fischer	Wisconsin Department of Natural Resources

Others In Attendance

Jim Cole	U.S. Army Corps of Engineers, MVD
Thatch Shepard	U.S. Army Corps of Engineers, MVD
Leann Riggs	U.S. Army Corps of Engineers, MVD
Samantha Thompson	U.S. Army Corps of Engineers, MVD
Angela Deen	U.S. Army Corps of Engineers, MVP
Jill Bathke	U.S. Army Corps of Engineers, MVP
Marshall Plumley	U.S. Army Corps of Engineers, MVR
Karen Hagerty	U.S. Army Corps of Engineers, MVR
Leo Keller	U.S. Army Corps of Engineers, MVR
Julie Millhollin	U.S. Army Corps of Engineers, MVR
Jodi Creswell	U.S. Army Corps of Engineers, MVR
Davi Michl	U.S. Army Corps of Engineers, MVR
Greg Kohler	U.S. Army Corps of Engineers, MVS
Brian Markert	U.S. Army Corps of Engineers, MVS
Jasen Brown	U.S. Army Corps of Engineers, MVS
Jack Hendrickson	U.S. Army Corps of Engineers, MVS
Abby Hoyt	U.S. Army Corps of Engineers, MVS
Ryan Swearingin	U.S. Army Corps of Engineers, MVS
Collin Moratz	U.S. Army Corps of Engineers, RPEDN
Chuck Theiling	U.S. Army Corps of Engineers, ERDC
Kraig McPeck	U.S. Fish and Wildlife Service, IIFO
Sara Schmuecker	U.S. Fish and Wildlife Service, IIFO
Lauren Larson	U.S. Fish and Wildlife Service, IIFO
Laura Muzal	U.S. Fish and Wildlife Service
JC Nelson	U.S. Geological Survey
Jeff Houser	U.S. Geological Survey, UMESC
Jennie Sauer	U.S. Geological Survey, UMESC
Jennifer Dieck	U.S. Geological Survey, UMESC
Kristen Bouska	U.S. Geological Survey, UMESC
Scott Gritters	Iowa Department of Natural Resources
Kirk Hansen	Iowa Department of Natural Resources
Kevin Stauffer	Minnesota Department of Natural Resources
Nick Schlessler	Minnesota Department of Natural Resources
Lindsay Brice	Audubon
Anshu Singh	Corn Belt Ports
Rick Stoff	Stoff Communications
Bryan Hopkins	The Nature Conservancy
Mike Spear	Illinois Natural History Survey

Kirsten Wallace	Upper Mississippi River Basin Association
Andrew Stephenson	Upper Mississippi River Basin Association
Mark Ellis	Upper Mississippi River Basin Association
Lauren Salvato	Upper Mississippi River Basin Association
Natalie Lenzen	Upper Mississippi River Basin Association
Erin Spry	Upper Mississippi River Basin Association