

Upper Mississippi River Restoration Program Coordinating Committee Quarterly Meeting

November 17, 2021

Highlights and Action Items

Program Management

- **November 17, 2021, marks the 35th anniversary of UMRR. Plumley applauded the partnership for this significant milestone and thanked all those involved in program implementation past and present.**
- **UMRR achieved an execution rate of 98.77 percent in FY 21. This is the fourth consecutive year the program has achieved an execution rate above 97 percent and the seventh of the last eighth to receive near full funding.**
- **On September 30, 2021, Congress passed a continuing resolution authority (CRA) extending current funding levels for the federal government until December 3, 2021. District staff are authorized to execute the program at \$33.17 million.** The President's FY 22 budget includes \$33.17 million for UMRR. The House and Senate Appropriations Committees have both acted on appropriations bills for FY 22 and concurred with the President's recommended amount for UMRR of \$33.17 million. The final FY 22 appropriation is not yet known.
- The draft plan of work for UMRR in FY 22 at a \$33.17 million funding scenario is anticipated to be as follows:
 - Regional Administration and Program Efforts – \$1,450,000
 - Regional management – \$1,180,000
 - Program database – \$100,000
 - Program Support Contract – \$120,000
 - Public Outreach – \$50,000
 - Regional Science and Monitoring – \$10,250,000
 - Long term resource monitoring – \$5,000,000
 - Regional science in support of restoration – \$3,800,000
 - Regional science staff support – \$200,000
 - Habitat evaluation (split across three districts) – \$1,125,000
 - Report to Congress – \$125,000
 - Habitat Restoration – \$21,470,000
 - Rock Island District – \$6,718,000
 - St. Louis District – \$7,502,000
 - St. Paul District – \$7,150,000
 - Model certification – \$100,000

- **On November 15, 2021, the President signed the Infrastructure Investment and Jobs Act. UMRR capabilities above a \$33.17 million annual execution capacity were submitted for the Corps' potential work plan authorized by that bill. Project names and funding amounts are anticipated to be released in 30 to 60 days.**
- The UMRR 10-year implementation plan was updated to reflect changes to project timelines. Project timelines that were moved later include Conway Lake, Lower Pool 10, Reno Bottoms, Lower Pool 13, Green Island, and Pool 12 Forestry. Physical construction was completed at Conway Lake, but some tree planting will extend into FY 22. Anticipated construction completion for Huron Island Stage II and III was moved forward. Eight of the sixteen next generation HREPs recently identified are now included in the 10-year schedule. **If UMRR begins to receive additional funds over \$33.17 million in future annual appropriations, another HREP selection process may be needed to ensure a healthy pipeline of projects.**
- **UMRR has identified 76,110 acres for restoration between FY 21 and FY 31. This estimate assumes continued funding levels of \$33.17 million annually.** Decreased funding levels would extend the end date for completing projects and increased appropriations could accelerate these restoration activities. The figure is an important communication tool for multiple audiences.
- From FY 12 to FY 20, UMRR accounted for nearly ten percent of all acres restored under the Corps' aquatic ecosystem restoration mission area.
- **Construction on three projects, totaling 5,590 acres, was completed in calendar year 2021, increasing UMRR's total acres restored to approximately 112,000 acres through 59 completed projects.** These projects include Conway Lake, Pool 12 Overwintering, and Ted Shanks. Another four projects are anticipated to be completed in 2022 that will collectively add 9,810 acres to UMRR's total restored or improved habitat.
- **On September 20, 2021, a survey was distributed to the UMRR partnership at-large.** The distribution list included 200 program partners and the purpose of the survey was to seek input regarding progress achieved since 2015, priorities for the next five years, and the issue areas to include in the 2022 Report to Congress. Fifty-eight responses were received for a 29 percent response rate. Analysis is underway and a complete report will be distributed in early 2022.
- **The first progress update meeting for the UMRR 2022 Report to Congress was held on August 23, 2021.** Lead authors provided details regarding their chapter and section content. **Chapters will be assembled into a draft report document in December 2021 and shared with partners for initial review in January 2022. Partner comments will be consolidated into one document and shared to ensure transparency in report development. The first in-progress review (IPR) with MVD and USACE HQ is anticipated for late-January 2022. This will provide an opportunity to engage with Headquarters reviewers early in the process and allow adequate time to make any necessary modifications. Partners will be asked to coordinate a more in-depth review by their agencies in March-April.** A call to discuss implementation issues was rescheduled from November 10, 2021 to November 17, 2021, following conclusion of the quarterly meeting. The next progress update meeting is scheduled for November 29, 2021.
- On September 10, 2021, the Joint Charter of the Upper Mississippi River Restoration Coordinating Committee, Analysis Team, and Habitat Rehabilitation and Enhancement Projects Selection Process Teams was routed to UMRR Coordinating Committee members for electronic signatures. **On November 3, 2021, the Coordinating Committee completed electronic signatures of the Joint Charter.**

Communications

- FY 21 accomplishments of the UMRR Communications and Outreach Team (COT) include:
 - Established team goal
 - Created an updated UMRR program flyer
 - Supported UMRR Coordinating Committee on the development of a storyline
 - Initiated development of a communication and outreach materials inventory
 - Created and executed an Earth Day social media campaign “Restore Our Earth”
 - Created and distributed materials for UMRR 35th Anniversary – program flyer, video series, key messages
- **The UMRR Communications and Outreach Team has three ongoing initiatives to recognize and celebrate UMRR’s 35th anniversary including finalizing the program flyer, developing a pull-down banner for public and groundbreaking events, and a video series. The team finalized the flyer design and content in October 2021.** The flyer is geared toward a general audience with limited knowledge of UMRR and will highlight the value of the UMRS and benefits of UMRR in the context of water, wildlife, and way of life. The final version includes state department logos instead of state seals. The INHS logo will be added, and an electronic version of the flyer will be distributed to the partnership. **The pull-down banner is anticipated to be completed in late 2021. The team completed a draft of the first video highlighting UMRR history and partnership. The themes of the first four videos are:**
 1. What is UMRR: history and partnership
 2. Success of UMRR
 3. Science on the river
 4. Future of UMRR
- **The Communications and Outreach Team is considering options for supporting the strategic rollout of the third UMRR Status and Trends Report in the coming months.**

UMRR Showcase Presentations

- Jennie Sauer overviewed FY 21 LTRM accomplishments. Sauer said that Attachment D of the meeting agenda packet includes a chart of LTRM milestones. She expressed appreciation to all the technicians, field station leaders, and others who have contributed to data collection and analysis. **Base monitoring** accomplishments include:
 - **Fisheries component:** Most extensive fisheries dataset for a great river in the world. Includes 28 years of standardized scientific data capturing fish community. Abundance and diversity of fisheries is high despite invasion of bigheaded carp species. There are multiple publications underway. Upcoming work includes QA/QC, net mending, fish sorting, and report writing. Additional fisheries projects include vital rates, smallmouth buffalo recruitment, vegetation and fish response to environmental pool management, and large wood debris occurrence.
 - **Aquatic vegetation component:** LTRM has the largest aquatic vegetation dataset in the world. Includes 22 years of data, capturing plant community changes and recovery of aquatic vegetation in the Upper Impounded Reach. Multiple publications are underway. In 2021, abundance and diversity of aquatic vegetation is high despite new and concerning invasion of flowering rush. The first alert of flowering rush, an invasive species, came from the LTRM Field Stations in 2020. Detections from LTRM observations in Pools 4, 8, and 13 are being

submitted to EddMapS. A predictive model of SAV presence is being developed and preliminary findings suggest eighty-eight percent prediction accuracy with 9 variables, including water quality data, demonstrating integration of LTRM components data.

- **Water quality component:** Includes 28 years of data to capture spatially and temporally dynamic water quality changes in response to watershed changes. Multiple publications are underway. In 2021, continued chloride monitoring and phytoplankton research. The LTRM water quality lab at UMESC conducts over 50,000 analyses per year, maintaining high standards demonstrated through voluntary participation in standards comparison tests with other USGS labs.
- **Other:** Activities under base monitoring also include the UMRR LTRM all-hands meeting that was held March 30-31, 2021, expansion of LTRM fisheries sampling designs, methods, and procedures to all UMR navigation pools bordering the state of Illinois, efficient and effective data management and uploading, maintenance of graphical browsers for easy access of summarized data, and involvement in HREP PDTs.

Science in support of restoration and management research activities included:

- Understanding constraints on submerged aquatic vegetation distribution in the UMRS
 - Interpretation of 2020 systemic land cover/land use data
 - Refining Upper Mississippi River’s ecosystem states framework
 - Midwest climate change vulnerability assessment
 - UMRS resilience assessment
 - Ecohydrology projects
 - Improving our understanding of historic, contemporary, and future UMRS hydrology
 - Developing a better understanding of geomorphic changes
 - Systemic analysis of hydrogeomorphic influences on native freshwater mussels
 - Combining genetics, otolith microchemistry, and vital rate estimation to inform restoration and management of fish populations in the UMRS
 - Understanding physical and ecological differences among side channels of the UMRS
 - Development of a standardized monitoring program for vegetation and fish response to environmental pool management practices in the UMRS
 - IWW lock closure fisheries and vegetation monitoring
 - Wild celery winter bud dynamics in Pools 4, 8, and 13 of the UMR
 - Reforesting UMRS forest canopy openings occupied by invasive species
 - Forest response to multiple large-scale inundation events
 - Using dendrochronology to understand historical forest growth, stand development, and gap dynamics
- HREP District Managers summarized FY 21 HREP accomplishments in their respective districts.
 - MVP awarded two construction contracts for Harpers Slough repairs and McGregor Lake. Repair of three flood-damaged islands at Harpers Slough was a new challenge for the program. The district coordinated closely with MVD on the best approach and drafted a letter report and plans and specs for the repair. The Reno Bottoms HREP team developed two feasibility tools to help data-driven decision making, the USGS forest succession model and floodplain forest HEP

model. The forest succession model generated maps incorporating climate change, invasive species, and land-use change that were used to formulate alternatives and the floodplain forest HEP model will be used to calculate ecosystem benefits. Reno Bottoms is the first project in district with a forest focus, but the district has additional forest-focused projects in the queue and will utilize these models again. A successful drawdown at Bass Ponds resulted in excellent vegetation establishment, including wild rice. All five of the districts next generation fact sheets have been approved and the district has initiated feasibility for the first of these projects, Lower Pool 4 Big Lake.

- MVR advanced feasibility for three projects, including Lower Pool 13, Green Island, and Pool 12 forestry. A design contract was awarded for Keithsburg phase 2A. Construction began at Keithsburg Division Stage 1, continues as Beaver Island Stage 1B, and was completed at Pool 12 Overwintering. ERDC planted aquatic plants at Huron Island and monitoring is ongoing. Blanket Purchase Agreements with the US Forest Service facilitated forest plantings at Pool 12 Overwintering and Huron Island and two contracts were awarded for future work at Beaver Island. Three separate contracts were completed for timber inventory activities.
- MVS completed construction at Ted Shanks HREP. Ted Shanks was one of the first projects to incorporate hydrogeomorphic analysis. Construction is ongoing at Crains Island, Clarence Cannon, and Piasa and Eagles Nest. The sediment deflection berm was completed at Crains Island. Design contracts are ready to advertise for Piasa and Eagles Nest Stage 2, Crains Island Stage 2, and Harlow Island Stage 1. Four plans and specs packages are being prepared for Oakwood Bottoms. Feasibility is being advanced for Yorkinut Slough and West Alton Islands. Four of the districts six next generation fact sheets have been approved. All three districts employed new methods to engage with stakeholders including increased signage at HREPs during construction, online videos for public comment, answering questions at a groundbreaking via Facebook Live, and participating in the UMRR Earth Day social media campaign “Restore our Earth.”

Long Term Resource Monitoring and Science

- Accomplishments of the third quarter of FY 21 include publication of the following manuscripts and completion report:
 - The ecology of river ice
 - Warmer winters increase the biomass of phytoplankton in a large floodplain river
 - Spatial and temporal dynamics of phytoplankton assemblages in the Upper Mississippi River
 - Evaluation of a “trace” plant density score in LTRM vegetation monitoring
- **The Status and Trends Report 3rd Edition is being reviewed by USGS’ Science Publishing Network (SPN) to produce a final version of the report in calendar year 2022. A small group is planning for a strategic rollout for the UMRR Status and Trends Report.**
- **Planning for the 2022 LTRM Science Meeting is underway. The meeting is anticipated to be held virtually in February 2022.**
- **Land Cover Land Use processing is underway.** Mapping has been completed for Pools 4, 8, 13, 26, and half of open river south and is underway for La Grange Pool. An unexpected retirement has reduced mapping capacity. Andrew Strassman is expected to complete La Grange Pool in December and begin the second half of open river south in FY 22. **Field work has been completed for Pools 9, 10, 11, 12, and Alton Pools. The A-Team was asked to provide feedback regarding**

which of those pools should be prioritized for mapping in FY 22. USGS is moving forward with recruitment to hire another mapper.

- **Two webinars describing ongoing research within the Upper Mississippi River Restoration program (UMRR) and its long term resource monitoring (LTRM) element will be held on December 2 and December 7, 2021.** These webinars will provide updates on research projects supported by UMRR science in support of restoration funds. Each webinar will consist of a series of five-minute presentations, with time afterwards for questions to all speakers and discussion.
- UMRR’s LTRM FY 22 budget allocation will follow FY 21 allocations if the program receives \$33.17 million in funding. That is, \$6.3 million (\$5.0 million for base monitoring and \$1.3 million for analysis under base) with an additional \$2.5 million available for “science in support of restoration and management.” Under the continuing resolution, base monitoring has only been partially funded. The bulk of science in support of restoration and management funds, approximately \$1.7 million, will go to proposals from 2022 science meeting. Existing funding commitments for three projects total \$740,000. Funds may also be used to support LCU processing.
- The *ad hoc* LTRM implementation planning team has held recurring bi-weekly meetings with the selected facilitators, Max Post van der Burg and Dave Smith from USGS. *Ad hoc* team members include:

Jim Fischer	Mark Gaikowski	Marshall Plumley	Kirsten Wallace
Matt Vitello	Jeff Houser	Karen Hagerty	Andrew Stephenson
Nick Schlessler	Jennie Sauer		

The team is currently working to refine the problem statement and identify twenty potential participants representing the diverse partnership for workshop involvement. If held virtually, it is anticipated that implementation planning workshops would consist of a series of two to three hour calls over six to seven weeks.

- The A-Team met via webinar on November 3, 2021. Topics discussed include UMRR updates, recent LTRM science publications, detection and management of flowering rush, reinstating macroinvertebrate monitoring, continued impacts of COVID-19 on agency policies and practices, and an introduction to staff at the Open River Field Station. **[Note: The A-Team’s next meeting is anticipated to be held in conjunction with the 2022 Science Meeting.]**

Habitat Restoration

- MVP’s planning priorities include Lower Pool 4, Reno Bottoms, and Lower Pool 10. A kickoff meeting for Lower Pool 4 was held virtually. Reno Bottoms is continuing in feasibility with formulation of alternatives. District quality control was completed for Lower Pool 10 and a final report is anticipated to be submitted to MVD in early 2022. MVP has four projects in construction totaling 5,000 acres. McGregor Lake is sixty-five percent complete. The next task at McGregor Lake is to divide Option 2 into smaller pieces, re-advertise by summer, and award at the end of FY 22. Harpers Slough, Bass Ponds, and Conway Lake are all over eighty-five percent complete. Low water is needed at Harpers Slough for final grading and seeding in the spring. Bass Ponds is nearly complete, a pre-final inspection was held on November 16, 2021, and a ribbon cutting ceremony is anticipated for May or June 2022. A tree planting contract was awarded for Conway Lake and may be scheduled to coincide with Earth Day celebrations. The district is also wrapping up three project evaluation reports.

- MVR’s planning priorities include Lower Pool 13, Green Island, Pool 12 Forestry, and Quincy Bay. The Lower Pool 13 PDT has identified alternatives for the western area. The Green Island PDT hopes to finalize alternatives in the coming months. The Pool 12 Forestry PDT held a measures workshop in September and is addressing public comments on chapters one to three. An in-person kickoff meeting and site visit for Quincy Bay was held in October 2021. MVR’s design priorities are Keithsburg Division Stage II and Steamboat Island Stage I. The 100 percent review for Steamboat Island started on November 2, 2021. MVR has four projects in construction. Pool 12 Overwintering Stage II is complete and the contract is being closed out. The contractor at Keithsburg Division Stage 1 started working on the spillway. ERDC completed aquatic vegetation monitoring at Huron Island Stage III in September 2021. The contractor at Beaver Island continues to work on shaping the placement sites. MVR is addressing sponsor comments on the Upper Pool 13 and Multi Pool Habitat Protection fact sheets prior to submitting to MVD. MVD is reviewing the Geneva and Hershey Island fact sheet.
- MVS’s planning priorities include West Alton Islands and Yorkinut Slough. Several site visits were conducted at West Alton Islands and feasibility planning continues. Measures and alternatives development is progressing well for Yorkinut Slough and an IPR is being scheduled with MVD. MVS’s design priorities include Piasa & Eagles Nest, Harlow Island, and Oakwood Bottoms. Design for Piasa and Eagles Nest Islands is complete, and the plan is to award Stage II. Harlow Island Stage 2 plans and specs are anticipated to be completed and ready to advertise in late FY 22, pending funding and priorities. Oakwood Bottoms has four plans and specs packages in development and the project is anticipated to be ready for advertising in the third quarter of FY 22. Construction at Crains Island is ahead of schedule and one of two modifications has been completed. Construction of a rock structure at Piasa & Eagles Nest has begun and Stage II dredging will follow. The pump station and berm setback are ongoing at Clarence Cannon. Other MVS activities include a flood damage assessment on Swan Lake HREP and summarizing lessons learned from past and current HREP construction efforts.

Navigation and Ecosystem Sustainability Program (NESP) Update

- The focus for NESP during FY 21 has been to advance projects to construction readiness. Navigation and ecosystem projects that will be construction ready for FY 22 include:
 - Navigation (Total \$12.5M)
 - Lock 25 Lockwall Modifications
 - Lock 14 Mooring Cell
 - Moore’s Towhead Systemic Mitigation
 - Ecosystem (Total \$10M)
 - Pool 2 Wingdam Notching
 - Twin Islands Island Protection
 - Alton Pool Side Channel and Island Protection
 - Starved Rock Habitat Restoration and Enhancement
- A map of construction ready projects under NESP can be found on the website at: <https://www.mvr.usace.army.mil/Missions/Navigation/NESP/>.
- **NESP projects were submitted for inclusion in the Corps’ potential work plan associated with the Infrastructure Investment and Jobs Act. Project names and funding amounts are anticipated to be released in 30 to 60 days.**

- The District-based River Teams were asked to identify additional ecosystem projects for implementation under NESP. Twenty-nine projects across three districts were identified as priority projects. **Twelve “Group 1” projects were selected for fact sheet development and have been sent to MVD for approval. A map of these projects is being developed and will be posted to the USACE NESP webpage once complete.**
- The Lock and Dam 22 Fish Passage Improvement Project Implementation Report is being transmitted to USACE Headquarters for approval.
- **The Fish Passage Science Panel will hold a virtual design charrette on December 15, 2021 to determine necessary pre-project monitoring to inform an adaptive management plan for the project.**

Other Business

Upcoming quarterly meetings are as follows:

- **February 2022 – TBD**
 - UMRBA quarterly meeting – February 22
 - **UMRR Coordinating Committee quarterly meeting – February 23**
- **May 2022 – TBD**
 - UMRBA quarterly meeting – May 24
 - **UMRR Coordinating Committee quarterly meeting – May 25**
- **August 2022 – TBD**
 - UMRBA quarterly meeting – August 9
 - **UMRR Coordinating Committee quarterly meeting – August 10**

UMRR COORDINATING COMMITTEE - REGIONAL MANAGEMENT AND PARTNERSHIP COLLABORATION

Marshall Plumley
Regional Program Manager
St. Paul District
Rock Island District
St. Louis District

17 November 2021

US Army Corps of Engineers

REGIONAL MANAGEMENT AND PARTNERSHIP COLLABORATION

- FY 2021 Fiscal Update and FY 22 Outlook
- 2015-2025 Strategic and Operational Plan Review
- 2022 Report to Congress
- 2021 UMRR Joint Charter Review

USGS science for a changing world

USDA

US Army Corps of Engineers

UMRR Ecosystem

Partnership Engage Resilient Vision

Collaborate UMRBA

PUBLIC NGOs

FINANCIAL REPORTING

UMRR Quarterly Budget Report: St. Paul District

FY2021 Q4 Report Date: Tue Nov 02 2021

Project Name	Cost Estimates			FY2021 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Habitat Projects							
Beaver Ponds, Marsh, and Wetland	\$6,300,000	\$6,300,000			\$300,000	\$300,000	\$864,402
Conroy Lake	\$7,413,000	\$7,413,000		\$39,645	\$300,000	\$339,645	\$366,726
Chippewa Slough	\$13,675,000	\$13,675,000			\$300,000	\$339,645	\$2,486,680
Lower Pearl St Island and Backwater Complex	\$17,000,000	\$17,000,000		\$12,700	\$350,000	\$362,700	\$279,979
McClung Lake	\$23,540,000	\$23,540,000			\$5,875,000	\$5,875,000	\$2,652,074
Pearl Slough	\$216,000	\$216,000			\$400,000	\$400,000	\$16,443
Racco Bottoms	\$10,000,000	\$10,000,000		\$105,337	\$450,000	\$555,337	\$436,736
Total	\$88,819,000	\$88,819,000		\$157,682	\$7,275,000	\$7,432,682	\$7,092,129
Habitat Rehabilitation							
Subcategory				Carry In	Allocation	Funds Available	Obligations
District Program Management							\$660,897
Total							\$660,897
Regional Program Administration							
Subcategory				Carry In	Allocation	Funds Available	Obligations
Habitat Eval/Monitoring							\$779,640
Total							\$779,640
St. Paul Total				Carry In	Allocation	Funds Available	Actual Obligations
				\$157,682	\$7,275,000	\$7,432,682	\$8,012,533

FINANCIAL REPORTING

UMRR Quarterly Budget Report: Rock Island District

FY2021 Q4 Report Date: Tue Nov 02 2021

Project Name	Cost Estimates			FY2021 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Habitat Projects							
Beaver Ponds	\$17,280,000	\$17,280,000		\$85,000	\$1,217,000	\$1,302,000	\$6,247,711
Green Island	\$12,000,000	\$12,000,000			\$500,000	\$500,000	\$550,507
Harmon Marsh	\$15,775,000	\$15,775,000		\$43,200	\$1,000,000	\$1,043,200	\$1,791,715
Kawleppan	\$29,443,000	\$29,443,000		\$3,845,000	\$3,845,000	\$3,845,000	\$3,044,834
Lower Pearl St	\$25,580,000	\$25,580,000		\$43,200	\$3,000,000	\$3,043,200	\$3,000,000
Pearl St	\$84,178	\$84,178		\$84,178	\$84,178	\$84,178	\$493,739
Phelps	\$20,870,000	\$20,870,000		\$99,207	\$99,207	\$99,207	\$179,779
Phelps Slough	\$7,285,000	\$7,285,761		\$3,455,761	\$20,725,763	\$24,181,524	\$27,051
St. Louis	\$41,877,000	\$41,877,000		\$90,000	\$300,000	\$390,000	\$400,474
Total	\$77,280,000	\$77,280,000		\$139,411	\$7,275,000	\$7,414,411	\$4,481,108
Habitat Rehabilitation							
Subcategory				Carry In	Allocation	Funds Available	Obligations
District Program Management							\$117,315
Total							\$117,315
Regional Program Administration							
Subcategory				Carry In	Allocation	Funds Available	Obligations
Administrative Management							\$11,422
District Eval/Monitoring							\$14,114
Public Outreach							\$39,248
Public Outreach/Regional L&EP							\$13,811
Regional Program Management							\$1,277,617
Regional Science/Monitoring							\$27,607
Total							\$1,387,819
Regional Science and Monitoring							
Subcategory				Carry In	Allocation	Funds Available	Obligations
Long Term Resource Mgmt							\$1,712,101
Science in Support of Restoration/Management							\$5,197,344
Total							\$6,909,445
Rock Island Total				Carry In	Allocation	Funds Available	Actual Obligations
				\$139,411	\$7,275,000	\$7,414,411	\$17,400,372

FINANCIAL REPORTING

UMRR Quarterly Budget Report: St. Louis District

FY2021 Q4 Report Date: Tue Nov 02 2021

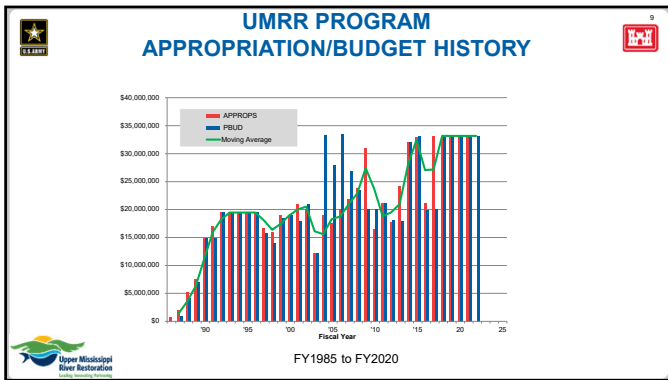
Project Name	Cost Estimates			FY2021 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Habitat Projects							
Beaver Ponds	\$79,800,000	\$79,800,000		\$90,000	\$90,000	\$90,000	\$40,847
Chippewa	\$6,400,000	\$6,400,000		\$400,000	\$400,000	\$400,000	\$736,767
Green Island	\$22,871,000	\$22,871,000		\$6,000	\$400,000	\$406,000	\$23,707
Harmon Marsh	\$29,800,000	\$29,800,000		\$90,000	\$90,000	\$90,000	\$1,261,211
Lower Pearl St	\$29,800,000	\$29,800,000		\$90,000	\$90,000	\$90,000	\$2,051,211
Phelps	\$29,800,000	\$29,800,000		\$90,000	\$90,000	\$90,000	\$2,051,211
Phelps Slough	\$29,800,000	\$29,800,000		\$90,000	\$90,000	\$90,000	\$2,051,211
St. Louis	\$40,000,000	\$40,000,000		\$100,000	\$100,000	\$100,000	\$2,051,211
Upper Mississippi	\$40,000,000	\$40,000,000		\$100,000	\$100,000	\$100,000	\$2,051,211
Total	\$344,000,000	\$344,000,000		\$842,000	\$7,100,000	\$7,942,000	\$34,812,322
Habitat Rehabilitation							
Subcategory				Carry In	Allocation	Funds Available	Obligations
District Program Management							\$47,726
Total							\$47,726
Regional Program Administration							
Subcategory				Carry In	Allocation	Funds Available	Obligations
Habitat Eval/Monitoring							\$10,000
Total							\$10,000
St. Louis Total				Carry In	Allocation	Funds Available	Actual Obligations
				\$842,000	\$7,100,000	\$7,942,000	\$34,870,048

FY21 PLAN OF WORK

	Budget	Obligations 4th Qrt.
TOTAL FY21 Program	\$33,697,040	\$33,283,975
Regional Administration and Program Efforts	\$ 1,250,000	\$1,113,916
Regional Management	\$ 1,000,000	
Program Database	\$ 100,000	
Program Support Contract (UMRBA)	\$ 100,000	
Public Outreach	\$ 50,000	
Regional Science and Monitoring	\$10,400,000	\$ 10,061,299
LTRM (Base Monitoring)	\$ 5,000,000	
UMRR Regional Science In Support Rehabilitation/Mgmt. (MIPR's, Contracts, and Labor)	\$ 3,800,000	
UMRR Regional (Integration, Adapt. Mgmt.)	\$ 200,000	
Habitat Evaluation (split between MVS,MVR,MVP)	\$ 1,125,000	
Report to Congress	\$ 275,000	
District Habitat Rehabilitation Efforts (Planning and Construction)	\$21,520,000	\$ 22,108,759
Rock Island District	\$ 7,020,000	
St. Louis District	\$ 7,125,000	
St. Paul District	\$ 7,275,000	
Model Cert.	\$ 100,000	
		98.77%

FY22 DRAFT PLAN OF WORK

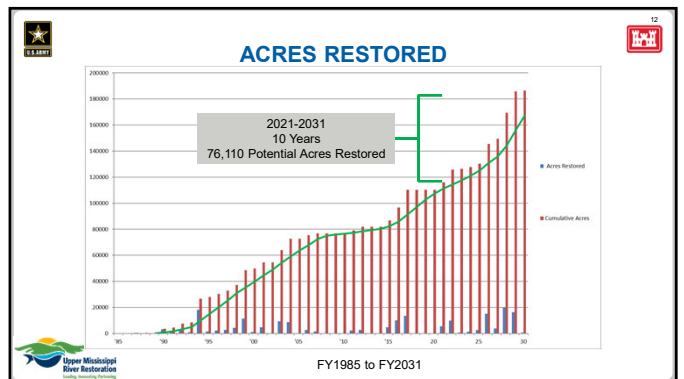
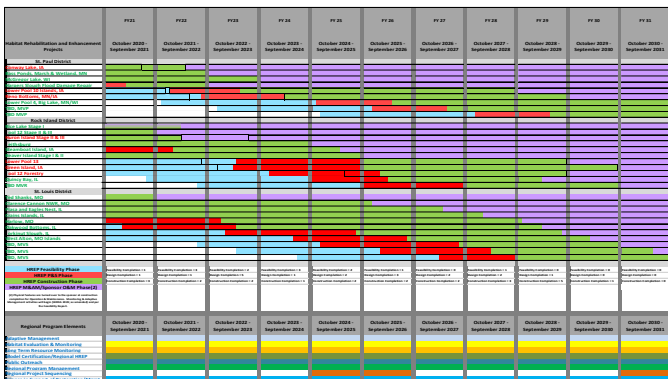
	Budget
TOTAL FY22 Program	\$33,170,000
Regional Administration and Program Efforts	\$ 1,450,000
Regional Management	\$ 1,180,000
Program Database	\$ 100,000
Program Support Contract (UMRBA)	\$ 120,000
Public Outreach	\$ 50,000
Regional Science and Monitoring	\$10,250,000
LTRM (Base Monitoring)	\$ 5,000,000
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UMRR Regional (Integration, Adapt. Mgmt.)	\$ 200,000
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St. Paul District	\$ 6,718,000
Rock Island District	\$ 7,502,000
St. Louis District	\$ 7,150,000
Model Cert.	\$ 100,000

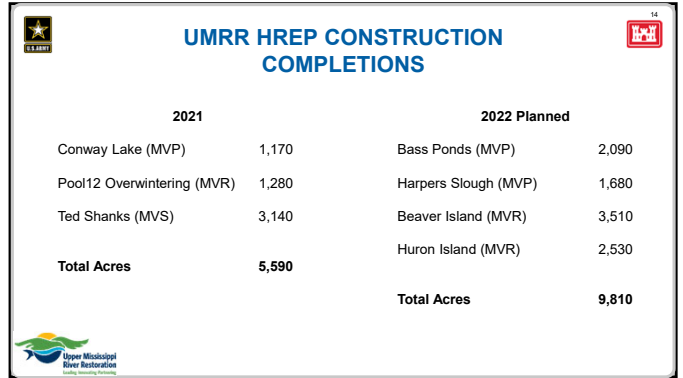
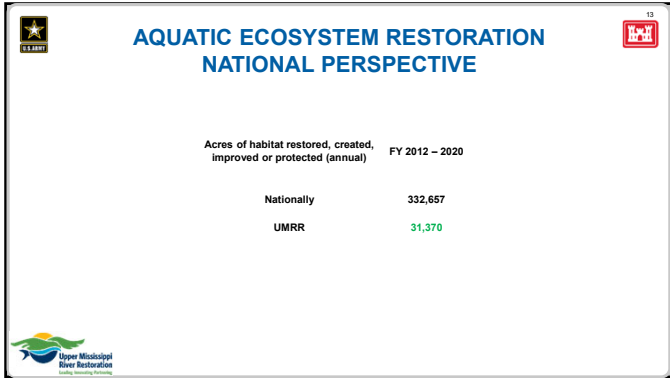


FY 22 APPROPRIATIONS

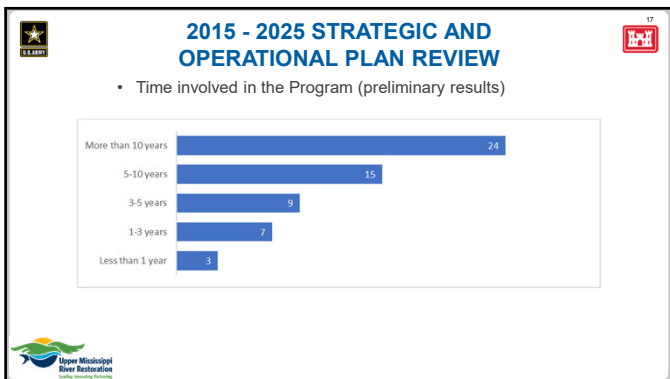
President's Budget	\$33,170,000
House	\$33,170,000
Senate	\$33,170,000
FINAL APPROPRIATION	?
Infrastructure Bill	?

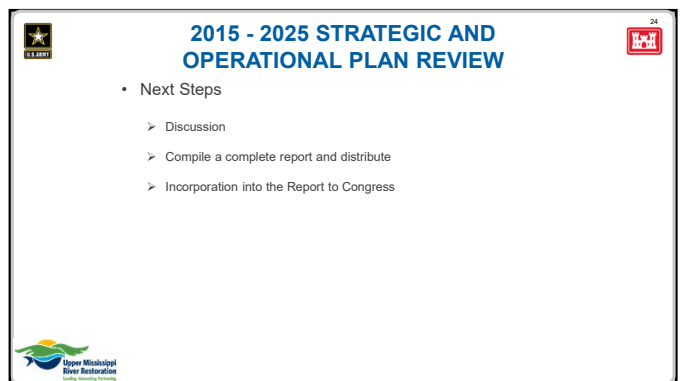
- Projects were submitted for UMRR
- It is anticipated that project names and funding amounts will be released in 30-60 days







- ## 2015 - 2025 STRATEGIC AND OPERATIONAL PLAN REVIEW
- Ad hoc Review Team meeting 6 August
 - Discussion
 - Demographics: additional choices, more specificity related to geographic areas, participation in various program initiatives.
 - Habitat restoration as a driver for research and inquiry, clarity between habitat models for projects and those for systemic application, additional open-ended question for information on agreed/disagree items as well as conceptual models, movement of certain questions to more appropriate sections.
 - Distribution list.
 - Next Steps: Provide revision and finalize distribution. September timeframe for survey.
-

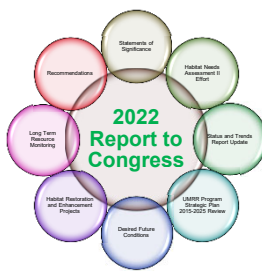





2022 REPORT TO CONGRESS






- Completed**
- Habitat Needs Assessment II
- Statements of Significance
- In Progress**
- Strategic Plan Review (2021)
- Status and Trends Report (2021)
- Desired Future Condition (2021)
- HREPs (2022)
- LTRM (2022)
- Future efforts**
- Recommendations (early 2022)

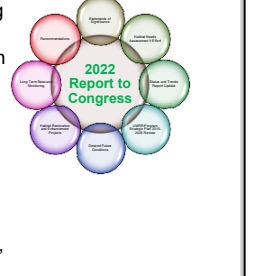





2022 REPORT TO CONGRESS






- August 23 Report Writing Team Meeting
- September/November additional section details and draft language
- Implementation Issues Assessment
- November 29 Report Writing Team Meeting
- December complete draft of text, layout, and graphic design examples








ROLES AND RESPONSIBILITIES


UMRR 2022 Report to Congress		
Report Outline Section	Lead Author(s)	Collaboration
Foreword	Marshall Plumley, Jill Bathke	UMRBA
Executive Summary	Marshall Plumley, Jill Bathke	UMRBA
History and Background	Marshall Plumley, Jill Bathke	UMRBA, UMRR Partners
A. Origins and Authorization		
B. Evolution of the Program's Maturity		
C. Robust and Stable Funding	Marshall Plumley, Jill Bathke	Angie Chen, Julie Mitchell, Brian Markert, Karen Hagerly, Jennie Saaly, Jeff Houser
Chapter 1. Strategic Partnership and Vision	Marshall Plumley, Jill Bathke	UMRBA
A. Strong, Integrated Partnership	UMRBA	Marshall Plumley, Jill Bathke, UMRR Partners
B. Strategic Implementation	Marshall Plumley, Jill Bathke, UMRBA	
C. Bridge Building Initiatives	Marshall Plumley, Jill Bathke, Jeff Houser	Karen Hagerly, Kat McCain, Sara Schmuecker & Nate Ostager
D. Engaging and Collaborating with Others Within the Watershed & Beyond	UMRBA	Marshall Plumley, Jeff Houser, Jennie Saaly
E. Future Strategic Direction	Marshall Plumley, Jill Bathke	UMRBA, Jeff Houser
Chapter 2. Expanding Habitat	Marshall Plumley	MVP, MVR, MVS, USGS, USF&W, States
A. Addressing Key Ecological Needs		
B. Applying Adaptive Management Principles to Address Risk and Uncertainty		
Chapter 3. Advancing Knowledge	Jeff Houser	Karen Hagerly, Jennie Saaly, Field Stations
A. Assessing and Detecting Changes in UMRR Ecosystems		
B. Providing Critical Insights and Understanding to Inspire Restoration		
Chapter 4. Implementation Issues	Marshall Plumley, Jill Bathke	UMRBA, UMRR Partners, District HREP Managers
Chapter 5. Conclusions and Recommendations	Marshall Plumley, Jill Bathke, Brian Chawing	UMRBA




2022 UMRR Report to Congress

Start Date	Finish Date	Activity
	Nov 2018	HMA II Complete
	3 Jun 2020	RTC Planning Mtg #1
	29 Sep 2020	RTC Planning Mtg #2
	3 Nov 2020	RTC Scoping Team Mtg #1
	15 Dec 2020	RTC Scoping Team Mtg #2
	16 Feb 2021	RTC Scoping Team Mtg #3
	14 April	RTC Scoping Team Mtg #4
	Feb 2021	Statements of Significance Complete
	April 2021	Report Outline Complete
	Fall 2021	Status & Trends Complete
	Jan 2021	Desired Future Conditions
	Dec 2021	2015-2025 Strategic Plan Review Complete
	Sep 2021	Draft #1 RTC Sections
	Dec 2021	Draft #2 RTC
	Jan 2022	RTC Editing/UMRR Partner Review #1
	Feb 2022	Report Review (PR) #1 w/ USACE vertical team
	Apr 2022	Draft #3 RTC Complete
	Apr 2022	UMRR Partner Review #2
	Apr 2022	Letters of Support
	Jan 2022	Mississippi Valley Division Review
	Jun 2022	In Progress Review (PR) #2 w/ USACE vertical team
	Jun 2022	HQASAS(CW) Draft Report Review
	Aug 2022	Final Draft RTC Complete
	Sep 2022	Mississippi Valley Division Review
	Nov 2022	HQASAS (CW) Final Review & Approval
	Nov 30 2022	Final delivery of RTC





2021 UMRR JOINT CHARTER SIGNING

UPPER MISSISSIPPI RIVER RESTORATION

Joint Charter of the
Upper Mississippi River Restoration Coordinating Committee,
Analysis Team, and Habitat Rehabilitation and Enhancement Project
Selection Process Teams





DISCUSSION








UMRR COMMUNICATION AND OUTREACH TEAM Update

Jill Bathke and Rachel Perrine, USACE-RPEDN-PD-F




Communication and Outreach Team Progress

- April 2021-present: UMRR 35th Anniversary
- October 2021-present: Support to UMRR CC for Status & Trends Report Rollout
- October 2021: Finalized updated Program Flyer



UMRR 35th Anniversary Communications

Key Message: UMRR Program has 35 years of success
Audience: Agency/Organization Leadership & Lawmakers

- Updated Program Flyer**
- Video Series**
- Key Messages**

Request copies or print your own
Pull down banner anticipated completion late 2021

Themes:
1. What is UMRR? History & Partnership
2. Success of UMRR
3. Science on the River
4. Future of UMRR


Three Key Messages (UMRS, UMRR program, HREP/LTRM) with 3-5 Supporting Facts per Key Message




For over 35 years, the Upper Mississippi River Restoration program partnership has implemented innovative and sustainable restoration, research and monitoring techniques for a healthier Upper Mississippi River System.



Video Series



"What is UMRR? History & Partnership" (Draft)




Key Messages

UMRS Key Message: The Upper Mississippi River System (UMRS), which includes the Upper Mississippi River, Illinois River, and tributaries, is an excellent example of river management in the United States that balances many uses.

UMRR Program Key Message: For over 35 years, the Upper Mississippi River Restoration (UMRR) program has enhanced and restored degraded habitat and natural resources in the internationally important Upper Mississippi River System (UMRS).

LTRM/HREP Elements Key Message: Collection of water quality, vegetation, and fish community data within the Upper Mississippi River System (UMRS) helps the Upper Mississippi River Restoration (UMRR) program understand the river ecosystem so it can target habitat restoration and management actions to benefit the river and the public.



7

Key Messages Full Document POCs

Agency POC	Contact Information
USACE – Jill Bathke or Rachel Perrine	Jill.C.Bathke@usace.army.mil; Rachel.E.Perrine@usace.army.mil
USFWS – Sara Schmuecker	Sara_Schmuecker@fws.gov
USGS – Randy Hines	rkhines@usgs.gov
EPA – Jill Bathke or Rachel Perrine	Jill.C.Bathke@usace.army.mil; Rachel.E.Perrine@usace.army.mil
NRCS – Andrew Bohnenkamp	Andrew.Bohnenkamp@usda.gov
IL DNR – Dave Glover	Dave.Glover@illinois.gov
IA DNR – Shannon Hafner	Shannon.Hafner@dnr.iowa.gov
MN DNR – Greg Husak	Greg.Husak@state.mn.us
MO DOC – Dave Herzog	Dave.Herzog@mdc.mo.gov
WI DNR – Susan Tesarik	Susan.Tesarik@wisconsin.gov

River Restoration
Leading. Inspiring. Partnering.

8

FY21 Accomplishments

Established Team Goal

- Created an updated UMRR Program Flyer
- Supported UMRR CC on the development of a Storyline
- Initiated development of a Communication and Outreach Materials Inventory
- Created and executed an Earth Day Social Media Campaign "Restore Our Earth"
- Created and distributed materials for UMRR 35th Anniversary – Program Flyer, Video Series, Key Messages

"Develop, organize, and implement clear and updated communication materials to support the success of the UMRR program"

River Restoration
Leading. Inspiring. Partnering.

9

UMRR Communication and Outreach Team

Points of Contact:

Jill Bathke USACE-RPEDN-PD-F @ MVP Jill.C.Bathke@usace.army.mil	Rachel Perrine USACE-RPEDN-PD-F @ MVR Rachel.E.Perrine@usace.army.mil
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Upper Mississippi River Restoration
Leading. Inspiring. Partnering.



LTRM FY21 Accomplishments

Contributors too many to name!!

UMRR Coordinating Committee Meeting
Virtual, 17 November 2021

Presented by Jennie Sauer, USGS



2. Science in Support of Restoration and Management Research (32 in total)



Base Monitoring

- Aquatic Vegetation Component
- Fisheries Component
- Water Quality Component
- Spatial Data Component
- Data Management
- UMRR LTRM Virtual All-Hands Component Meeting

Eric Lund (Acting Megan Moore (MDNR)), Jim Fischer (WDNR), Dave Bierman (IDNR), John Chick (INHS), Dave Herzog (MDC), and Jim Lamer (INHS)



LTRM Base Monitoring: Fisheries

- Fisheries Component: Steve DeLain and Chris DaWald (MDNR), Andy Bartels and Kraig Hoff (WDNR), Travis Kueter (IDNR), Eric Gittinger and Eric Hine, Levi Solomon, Kris Maxson (INHS) and John West, Brian Ickes (USGS)
- 28 years of standardized scientific data capturing fish community and single species changes across nearly 2000km
- Most extensive fisheries dataset for a great river in the world!
- In 2021, abundance and diversity is high despite invasion of bigheaded carp species
- Multiple Publications

Fall/Winter Work



Fisheries Additional Projects



- **Vital Rates;** All field stations—more to come
- **Smallmouth buffalo recruitment in the UMR;** Kris Maxson, Levi Solomon, and many others!
 - Catostomidae reproduction occurs in all reaches in all years.
 - Recruitment more variable, with few year classes evident post-2000 in Pools 4 and 8, stronger year classes evident every 5-10 years in the other 4 RTA pools.
- **Vegetation and fish response to Environmental Pool Management practices?** Steve DeLain and Chris Dawald (MDNR) and John Chick plus graduate student!!—More to come
- **The when and where of large wood in the UMRS:** lessons from a 25-year dataset; Molly Van Appledorn, Kathi Jo Jankowski, field station staff
 - Large Wood (LW) occurrence varied significantly across study reaches (greatest in P4, least in Open River)
 - Site-scale variables more important than reach-scale variables

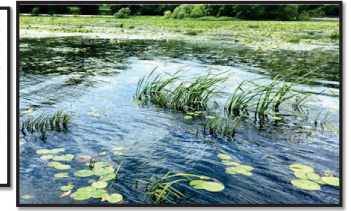
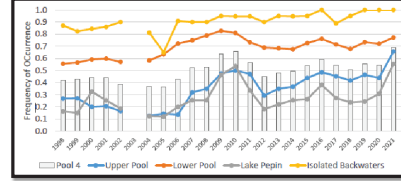


LTRM Base Monitoring: Aquatic Vegetation

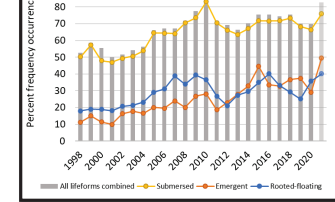
- Vegetation Component: Eric Lund (MDNR), Alicia Carhart (WDNR), Seth Fopma (IDNR), & Danelle Larson (USGS)—plus others!
- 22 years of data, capturing plant community changes and recovery of aquatic vegetation in the Upper Impounded Reach
- Largest aquatic vegetation dataset in the world!
- In 2021, abundance and diversity is high despite new & concerning invasion of flowering rush
- Multiple publications

In 2021, abundance and diversity is high

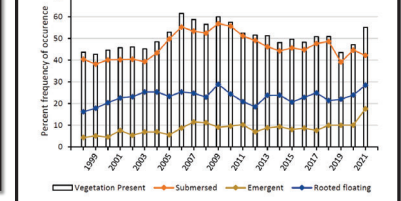
Pool 4



Pool 8



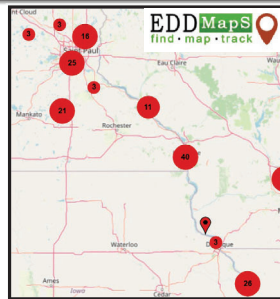
Pool 13



Expansion of Flowering rush (*Butomus umbellatus*)

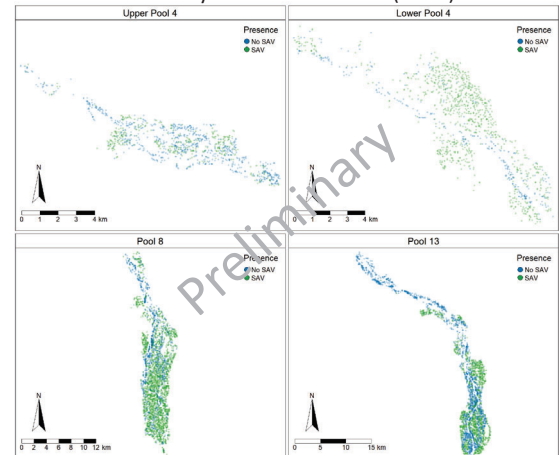
First alert of this invasive species came from the LTRM Field Stations in 2020. In 2021, continued monitoring with all LTRM observations of this invasive species in Pools 4, 8 and 13 are being submitted to EddMapS (<https://www.eddmaps.org/>)

Information being used by USFWS as they work on management solutions



Building a predictive model of submersed plant presence

John Delaney and Danelle Larson (USGS)



LTRM Base Monitoring: Water Quality

- Water Quality Component: Rob Burdis (MDNR), John Kalas (WDNR), Ashley Johnson (IDNR), Lori Soeken-Gittinger (INHS), Molly Sobotka (MDC), and Doyn Kellerhals (INHS), & Kathi Jo Jankowski (USGS)
- 28 years of data to capture spatially and temporally dynamic water quality changes in response to watershed changes
- In 2021, continued chloride monitoring and phytoplankton research
- Multiple publications

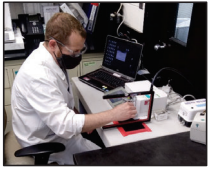
- Low water
- Clear water (in some areas)



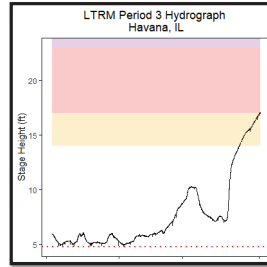
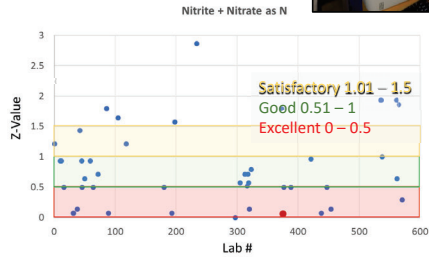
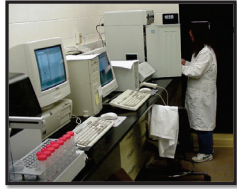
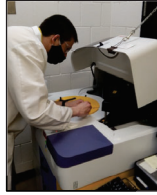
• If someone would have told me that I could ever see the anchor resting on the bottom in just over 6 feet of water in Pool 13 in my career, I would have called them crazy. Dave Bierman

LTRM WQ Laboratory

Xiaoli Yuan, John Manier, Derek Craig (USGS), and UW-L Students



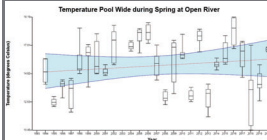
10 parameters
More than 50,000 analyses run
Maintaining high standards



Not always fun sampling!!



- Data Management: Ben Schlifer plus many others at FS and UMESC
- Update field apps, deliver barcodes to field stations
- Maintain and upload thousands of data records
- Maintain graphical browsers for easy access of summarized data



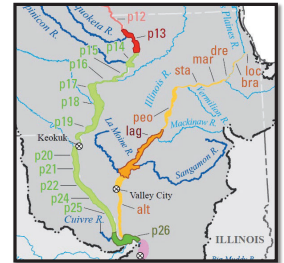
- Assist with data management on special projects

LTRM Base Monitoring:
Data Management

Expanding LTRM fisheries sampling designs, methods, and procedures

Brian Ickes and Ben Schlifer (USGS)

- **Expansion in 2021 to all UMR nav pools bordering the state of Illinois**
 - Long term efforts (>10 years)
 - Compatible with LTRM data (stratified random design; poolwide data) and data capture capabilities
 - Funded with non-program \$
 - Will provide
 - expanded monitoring coverage in the UMRS,
 - improved abilities to detect and model species distribution and habitat use,
 - capabilities to empirically inform HREP planning, implementation, and evaluation.



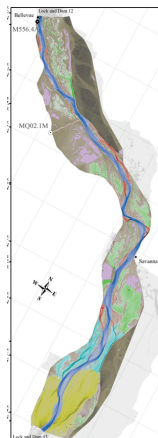
Specific HREP Involvement

Pool 13 HREPs



Jeff Houser,
Kristen Bouska (USGS),
Dave Bierman (IDNR),
plus others

Objectives: Reducing wind fetch and wave energy to support SAV especially wild celery plus emergents along with timber stand improvement

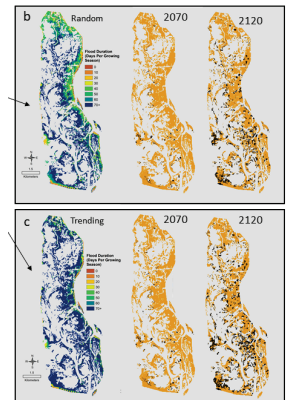


Specific HREP Involvement

Flood Inundation and Forest Simulation Modeling to support the Reno Bottoms HREP

Nathan De Jager, Molly Van Appledorn,
Enrika Hlavacek, Jason Rohweder (USGS)

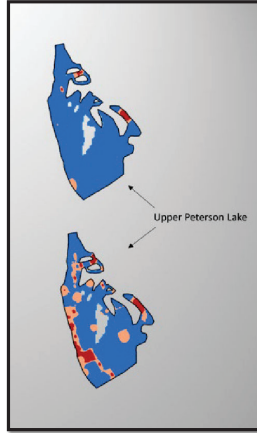
Examining effects of different hydrologic scenarios, topographic modifications, closing structures, and forest management actions on forest succession.



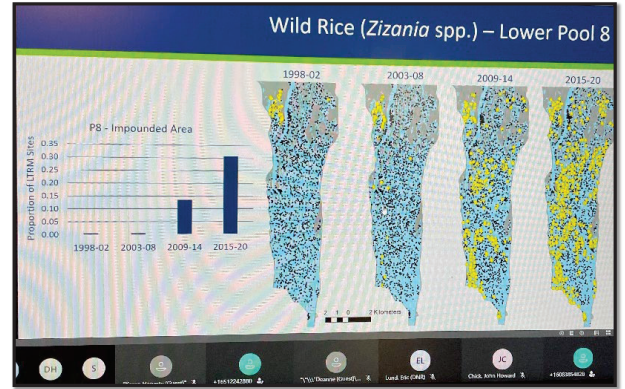
Specific HREP Involvement Peterson Lake HREP Assessment

Rob Burdis (MDNR) plus others

- Pre- and Post-Adaptive Management Evaluation
- Winter habitat suitability for limnophilic fishes
- Preliminary information indicates the modifications made in 2019 and the reduction in flow had a favorable impact on habitat conditions in areas that would have otherwise been unsuitable under the high discharge that occurred 2019-2020 winter.



UMRR LTRM All-Hands Meeting (Virtual) March 30 - 31



Science in Support of Restoration and Management Research

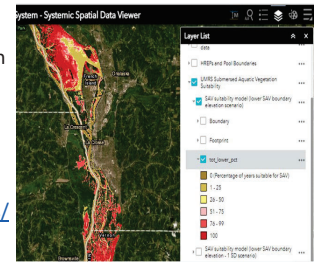
Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments
	Developing and Applying Indicators of Ecosystem Resilience to the UMRS				
	Assessing recent rates of sedimentation in the backwaters of Pools 4, 8, and 13 to support river restoration and the Habitat Needs Assessment-II				
	Landscape Pattern Research and Application				
	Eco-hydrologic Research				
	Acquisition and Interpretation of Imagery for Production of 2020 UMRS Land Cover/Land Use Data and Pool-Based Orthomosaics				
	Aquatic Vegetation, Fisheries, and Water Quality Research				
	Pool 12 Overwintering HREP Adaptive Management Fisheries Response Monitoring				
	Pool 4 - Peterson Lake HREP Water Quality Monitoring - Pre and Post-Adaptive Management Evaluation				
	Conceptual Model and Hierarchical Classification of Hydrogeomorphic Settings in the UMRS				
	Develop a better understanding of geomorphic changes through repeated measurement of bed elevation and overlay of land cover data				
	Determine geomorphic changes in selected side channels of selected reaches using hydroacoustics				
	Establish a network of transects in backwaters to measure sedimentation				
	Water Exchange Rates and Change in UMRS Channels and Backwaters, 1980 to Present				
	Intrinsic and extrinsic regulation of water clarity over a 950 km longitudinal gradient of the UMRS				
	Effectiveness of Long Term Resource Monitoring vegetation data to quantify waterfowl habitat quality				

Et cetera!!

Understanding constraints on submersed vegetation distribution in the UMRS: the role of water level fluctuations and clarity

Alicia Carhart, John Kalas, Deanne Drake (WDNR) Jim Rogala, Jason Rohweder, and Jeff Houser (USGS)

- In areas that meet the suitable criteria, but do not currently support vegetation: Management actions may succeed if other limiting factors can be addressed (velocity, wind fetch, herbivory, bioturbation, etc.)
- Tool within the spatial data viewer on the LTRM website for viewing the mapped estimates of suitable area for the entire UMRS
 - https://umesc.usgs.gov/management/dss/umrs_land_cover_viewer.html

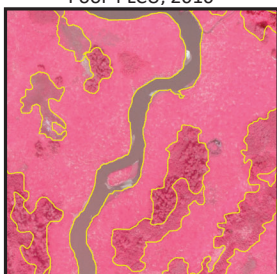


Interpretation of 2020 Systemic Land Cover/Land Use Data

Jennifer Dieck, Andrew Strassman, Erin Hoy, Janis Ruhser (USGS)

- 4th Decadal systemic mapping of land use and land cover
- Imagery processed for Pools 4, 8, 13, 26, La Grange, and Open River South

Pool 4 LCU, 2010



Pool 4 LCU, 2020

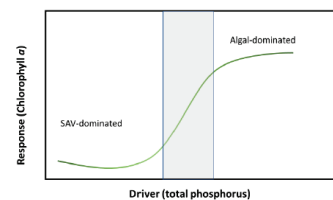


Refining Upper Mississippi River's ecosystem states framework

Danelle Larson, John Delaney, Jason Rohweder (USGS), Alicia Carhart (WDNR), Wako Bungula (UW-La Crosse)

Objectives

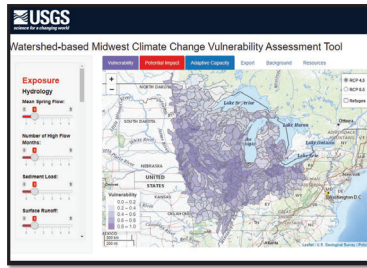
- What are the various ecosystem states/community types?
- What are the indicator species and environmental drivers?
- Are some places more vulnerable or resilient to state changes?
- Which places are opportunities for restoration and management?



Midwest Climate Change Vulnerability Assessment

John Delaney and Kristen Bouska (USGS)

- Developed an online climate vulnerability assessment dashboard
- To come under Stable States Research: Vulnerability maps and online assessment tool to allow managers to manipulate the drivers of change to help determine and prioritize restoration location and action.

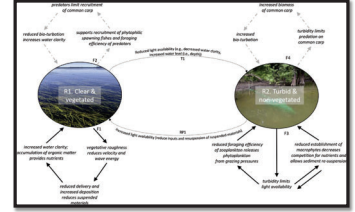


https://www.usgs.gov/apps/CC_Vulnerability/

UMRS Resilience Assessment

Kristen Bouska, Jeff Houser (USGS) and Working Group

- LTRM fish community data exhibit signals of regime shifts associated with biomass thresholds of Common Carp & bigheaded carps
- Stability and diversity of vegetation in Lower Pool 4 & 8 indicates high resilience whereas greater variability in assemblage change and diversity indicate low resilience in Pool 13
- Developed guidance for using resilience assessment findings to navigate the Resist-Accept-Direct decision framework & applied to alternate regimes of the UMRS



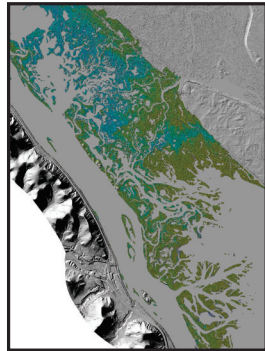
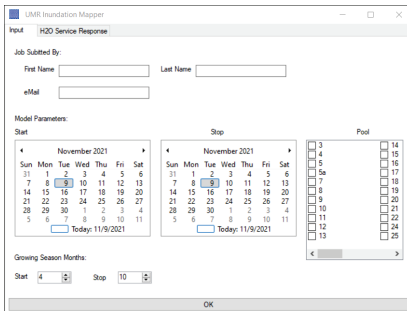
Ecohydrology Projects

Molly Van Appledorn (USGS)

Ecohydrology Projects

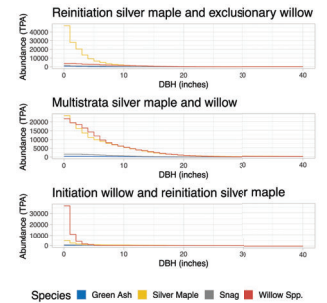
Molly Van Appledorn (USGS)

UMRS Floodplain Inundation Tool: Molly Van Appledorn and Tim Fox (USGS)



Are UMRS floodplains sensitive to shifting river hydrology?

Compositional and Structural Diversity of UMRS Floodplain Forests



Improving our understanding of historic, contemporary, and future UMRS hydrology

Molly Van Appledorn (USGS) & Lucie Sawyer (USACE MVR)

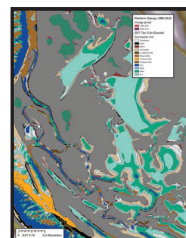
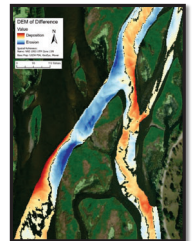
1. Historic Data Acquisition, Contemporary Data Acquisition, Compilation and Data Serving

Event	Purpose	Outcomes
Meeting #1	Identify UMRR priorities for understanding climate changed hydrology	Prioritized list of program needs (Geomorphology, HREP/Management, Ecology themes)
Meeting #2	Identify potential datasets and approaches to addressing UMRR priorities; Identify ideal outcomes of modeling effort	Description of ideal quantitative future hydrology dataset; ID Meeting #3 participants
Meeting #3	Develop a proposal for achieving priority needs	Proposal

Develop a better understanding of geomorphic changes

Determine geomorphic changes in selected side channels of selected reaches using hydroacoustics; Jayme Strange and Jim Rogala (USGS)

- Pools 4, 26, and La Grange showed an increase in depth whereas a decrease in depth was detected in Pools 8, 13, 18, and Open River.



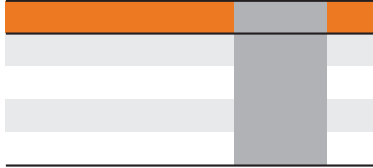
Mapping potential sensitivity to Hydrogeomorphic change and Development of Supporting GIS Database and Query tool; Jayme Strange and Faith Fitzpatrick (USGS)

- The Geomorphic Unit Tool (GUT)-- best for developing the hydrogeomorphic unit
- SPARROW model can be integrated to show suspended sediment loads moving through the system and how they have related to planform changes.

Systemic analysis of hydrogeomorphic influences on native freshwater mussels

Teresa Newton, Robert Francis, Danielle Schultz, and Jason Rohweder (USGS)

- Quantifying associations between geomorphology and mussels can lead to informed HREP planning at the system, reach, and pool scales
 - Dense, species rich, and reproducing assemblages of mussels in the UMR
 - Assemblages varied among pools
 - Preliminary data indicates across pools, juveniles appear more responsive to geomorphic variation than adults



Combining genetics, otolith microchemistry, and vital rate estimation to inform restoration and management of fish populations in the UMRS

Kristen Bouska (USGS), Andy Bartels (WDNR) and many others!

Vital Rates

- Will improve understanding of age, growth, mortality, and recruitment for a suite of fish species
 - Staff from all 6 field stations & Missouri State University: Quentin Phelps and Hae Kim
 - Collect/process structures from over 20,000 fish
 - Several publications



Combining genetics, otolith microchemistry, and vital rate estimation to inform restoration and management of fish populations in the UMRS

➤ Genetics – Drs Yue Shi and Wes Larson; Drs Mark Davis, Milton Tan, & Joel Corush

- Findings from our six systemic species support hypothesis that population structure reflects differences in life histories among species
- Fish specialists collected fin clips in field season 2021 for regional species analyses

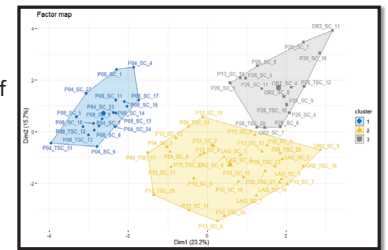
➤ Microchemistry – Dr. Greg Whitley and Shaley Valentine

- Analyses completed for a subset of 12 species; some delays due to equipment issues
- Value-added: outside funding is supporting concurrent diet & stable isotope analyses of these same fish

Understanding physical and ecological differences among side channels of the Upper Mississippi River System (UMRS)

Molly Sobotka, Kristen Bouska, Heather Theele, Todd Slack, and Ross VanderVorste (UW-La Crosse)

- Used aquatic area classification data, LTRM water quality and fish data site data, and recent sonar data sets to understand grouping of side channels based on physical characteristics using hierarchical classification techniques.
- Initiated and completed collection of invertebrate community in a subset of side channels from each LTRM reach.



Development of a standardized monitoring program for vegetation and fish response to Environmental Pool Management practices in the UMRS

John Chick (INHS), Ben McGuire (USACE), Steve DeLain, Chris DaWald (MDNR) plus others!

Use of emergent vegetation by juvenile silver carp has not been described before. . . Why were they using this habitat?

Relatively few fish species overall (depth? veg density? time of year?)

Recommend repeating this in more years, hopefully with differing conditions

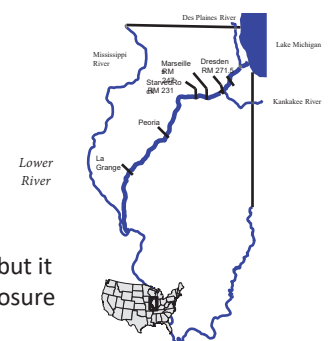


A Unique Opportunity IWW Lock Closure Fisheries

Brandon Harris, Levi Solomon, Kris Maxson, and Jim Lamer (INHS) plus many others!

- Using LTRM Fisheries Methods
- Turbidity
- Vessel traffic
- Wave sensors
- Sedimentation sampling
- Chlorophyll *a*
- Zooplankton (INHS partnership)

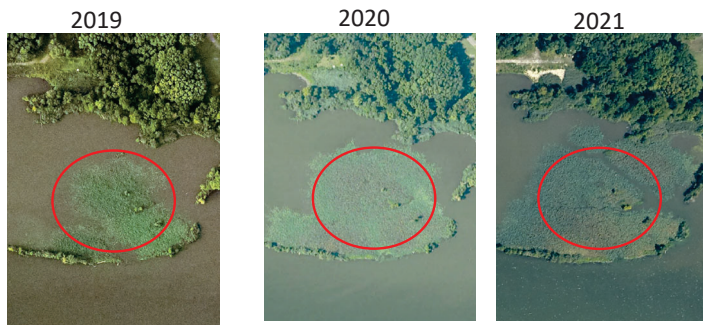
- Still working up 2021 turbidity data, but it seems lower turbidity during Lock Closure period with reduced vessel traffic



IWW Lock Closures: Vegetation

Eric Lund (MDNR), Deanne Drake (Previously WDNR), Kyle Bales (Previously IDNR)
Benjamin Finley, Janis Ruhser, Andrew Strassman (USGS)-Processing

- One year of SAV sampling
- Land Cover processing -- Vegetation response before, during, and after



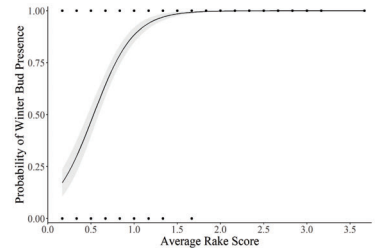
Task 18

Wild celery winter bud dynamics in Pools 4, 8, and 13 of the UMR

Kirsten Schmidt (UW-SP), Jacob Straub (Univ. New York), Benjamin Sedinger (UW-SP), Stephen Winter (USFWS)



- LTRM Rake sampling compared to coring
 - Raking saves time and money
 - core samples took 2.75 hours per site
 - rake sites took 15 minutes



Managers can use a more affordable and time saving sampling method to monitor wild celery buds more often

Forestry Projects

- Reforesting Upper Mississippi River System forest canopy openings occupied by invasive species. Dr. Lyle Guyon
 - Initial results indicate that large diameter cuttings do have potential to control invasive species
 - Another year of sampling to identify: Tree survivorship, Tree growth, Change in invasive species cover
- Forest Response to Multiple Large-Scale Inundation Events. Robert Cosgriff plus many others!
 - 2019 flood event caused high mortality. The impact was much lower than expected in the lower reaches, whereas it was higher than anticipated in the middle reaches.
 - Ambitious goal of modeling flood and forest features between the two large scale flood events with a goal of predicting impacts
- Using dendrochronology to understand historical forest growth, stand development, and gap dynamics. Benjamin J. Vandermyde, Robert J. Cosgriff
 - Conclude that the continued persistence of pecan trees in much of the UMR floodplain will require direct forest restoration

Information, Data,
Multiple Reports and Publications

<https://umesc.usgs.gov/ltrm-home.html>



Questions??

LTRM Management Team
Marshall Plumley and Karen Hagerty, USACE
Mark Gaiowski, Jeff Houser, and Jennifer Sauer, USGS

Thanks does not begin to cover our appreciation to all who contribute to making LTRM successful!!!



FISCAL YEAR 2021 HABITAT REHABILITATION AND ENHANCEMENT PROJECTS ACCOMPLISHMENTS

Angela Deen
Julie Millhollin
Brian Markert
St. Paul District
Rock Island District
St. Louis District



17 November 2021





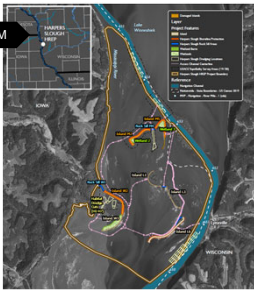

ST. PAUL DISTRICT FY21 ACCOMPLISHMENTS




AWARDED 2 CONSTRUCTION CONTRACTS

\$2.4M





Harpers Slough HREP Repair – Pool 9, IA

\$1.5M

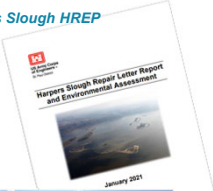


McGregor Lake HREP – Pool 10, Prairie du Chien, WI





REPAIR OF FLOOD-DAMAGED HREP

Harpers Slough HREP

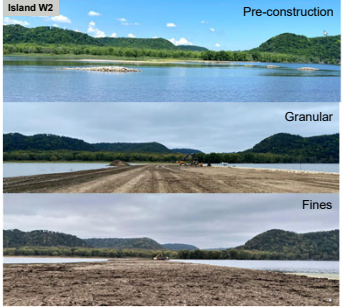


January 2021





Mobilization

Island W2

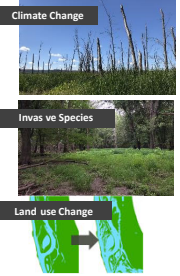


Pre-construction
Granular
Fines

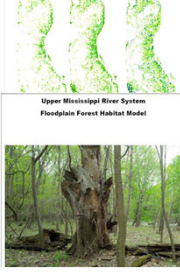



FEASIBILITY TOOLS


Reno Bottoms HREP





Forest Succession Model




HEP Model



SUCCESSFUL DRAWDOWN


Bass Ponds HREP




YOU ARE HERE

Examples of a water control structure to monitor flow

7/12/21

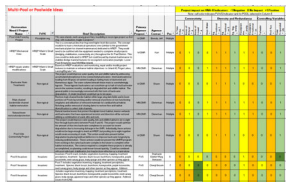


7/12/21



NEXT GENERATION FACT SHEETS

- Interagency development
- Multiple ranking approaches
 - o Brainstormed ideas
 - o Discussed priorities by agency
 - o Utilized HNA-II Indicators
 - o Conducted Pairwise Comparisons
- MVP Result: 5 Fact Sheets
 - ✓ Approved - Black River Bottoms
 - ✓ Approved - Bank Stabilization and Natural Levee
 - ✓ Approved - Pool 8 Poolwide Floodplain Forest
 - ✓ Approved - Lower Pool 5, Weaver Bottoms
 - ✓ Approved - Lower Pool 4, Big Lake, Robinson Lake, and Tank Pond



PUBLIC AFFAIRS OFFICE STATS:

Featured Projects/Posts


- Five news releases
- HREP in general
- Bass Ponds, Marsh and Wetlands HREP
- McGregor Island HREP
- Reno Bottoms HREP
- Harpers Slough
- Conway Lake

Social Media Analytics

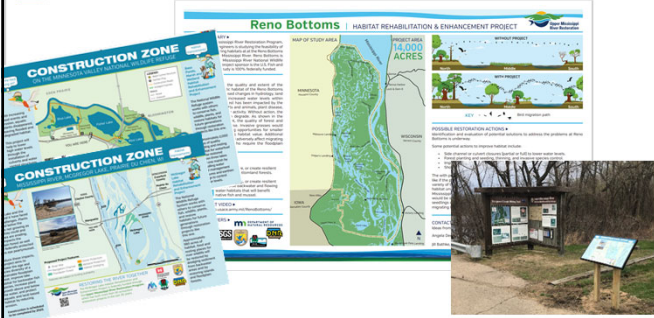
- Facebook, Twitter, LinkedIn, Instagram, YouTube
- 51 posts across 5 platforms
- #RestoreOurEarth UMRRR Earth Week Campaign
- 27 posts across Facebook, Twitter, LinkedIn
- 17,483 total users reached

YouTube Videos

- Four videos created in FY21
 - McGregor Lake
 - Reno Bottoms
 - Reno Bottoms virtual open house
 - Bass Ponds groundbreaking on FB Live
- Videos garnered 786 views, 109 'likes' and 26.4 hours of viewership



PUBLIC OUTREACH



ROCK ISLAND DISTRICT FY21 ACCOMPLISHMENTS



ROCK ISLAND DISTRICT (MVR) ACCOMPLISHMENTS 2021

PLANNING –


- Lower Pool 13, HREP, Pool 13, IA/IL**
 - Advanced feasibility study
 - Alternatives identified for western area
- Green Island HREP, Pool 13, IA**
 - Advanced feasibility study
 - Virtual open house
 - Drafted Chapters 1-3
- Pool 12 Forestry HREP – Pool 12, IA/IL/WI**
 - Advanced feasibility study
 - Virtual open house
 - Held the Measure Workshop (Sep)
 - Drafted Chapters 1-3

DESIGN –

- Steamboat Island HREP Stage I – Pool 14 IA/IL**
 - Developed P&S for Phase 1
- Keithsburg Division Stage IIa – Pool 18, IL**
 - Developed P&S for Phase IIa
 - Awarded Contract Sep. 2021

CONSTRUCTION –

- Pool 12 Overwintering, Pool 12, IL**
 - Stage II – Finished construction
- Keithsburg Division Stage I, Pool 18, IL**
 - Started construction on the spillway
- Huron Island, Pool 18, IA**
 - Stage III – Completed aquatic plantings
- Beaver Island Stage IB, Pool 14, IL**
 - Completed dredging
 - Finishing the placement sites



ROCK ISLAND DISTRICT

Keithsburg HREP

Completed Work in FY21

- *Articulated Concrete Mats
- *Started spillway construction



ROCK ISLAND DISTRICT

Huron Island HREP

Completed Work
 ERDC Planted Aquatic Plants
 *Monitoring visit - May
 *Plantings - July
 *Monitoring visit - September

ROCK ISLAND DISTRICT

Beaver Island HREP

Completed Work in FY21
 Completed Dredging
 Grading – 90% completed
 Seeding – 1/2 completed

Timber Stand Improvements

ROCK ISLAND DISTRICT

BPA (Blanket Purchase Agreement)

Forest Services
 *Pool 12 Overwintering – fall – 57 acres of containerized various trees and shrubs
 *Huron Island – spring planting – 3,500 bare root seedling trees and 4,000 containerized herbaceous plants

*Awarded two contracts for Beaver Island
 *TSI Stand D for \$441,400
 *Plantings for \$546,285

Timber Inventory
 *Completed 3 separate contracts this summer
 *Total of 898 plots location ~ 2,400 acres

ROCK ISLAND DISTRICT – UMRR COMMUNICATIONS FY21

Featured Projects/Posts

- Pool 12 HREP Public Input
- Lower Pool 13 HREP Mussel Collection and Site Visit
- Clarence Cannon National Wildlife Refuge HREP
- LTRM Elements
- Ted Shanks HREP
- Pool 12 Overwintering
- UMRR Partnerships
- Beaver Island HREP
- Bass Ponds, Marsh and Wetlands HREP
- McGregor Island HREP
- Reno Bottoms HREP
- Green Island HREP Public Input & Virtual Open House

Social Media Analytics

- Facebook
 - 31,856 users reached
 - 1,095 likes/reactions
 - 70 comments
 - 146 shares
- Twitter
 - 23,851 users reached
 - 218 engagements (likes, retweets, etc.)
- #RestoreOurEarth UMRR Earth Week Campaign
 - 22 posts across Facebook & Twitter
 - 39,162 total users reached

YouTube Videos

- Three videos created in FY21
 - Pool 12 Forestry HREP Virtual Open House
 - Green Island HREP Virtual Open House
 - Beaver Island HREP Fall 2020 Update
- Videos garnered 674 views, 10 'likes' and 18.3 hours of viewership

**ST. LOUIS DISTRICT
 FY21 ACCOMPLISHMENTS**

COMPLETED TED SHANKS, HREP

\$25M Federal Investment

Ted Shanks Conservation Area – MO Dept of Conservation

Sponsor: Missouri Department of Conservation
 Location: 2900 Acres in Pool 24, Mississippi River RM 284.5-288.5, Pike County, MO

A special thanks to all the team members, past and present / retired and still working - who helped make the project a success!

- Missouri Department of Conservation
- U.S. Fish and Wildlife Services
- Ducks Unlimited Missouri
- Greenbrier Wetland Services
- HDR Engineering
- USACE MVS, MVR, & MVK

ADVANCED CONSTRUCTION - MVS AWARDED CONSTRUCTION CONTRACTS, TASK ORDERS, AND MODIFICATIONS

CONSTRUCTION

Crains Island, IL HREP (Open River)

- Completed Sediment Deflection Berm, dike removals, and wetland excavation (Stage I)

Clarence Cannon Refuge, MO (Pool 25)

- Pump Station 95% complete
- Berm Setback 65% Complete

Piasa & Eagles Nest, IL HREP (Pool 26)

- Stage I
- Contract Awarded Sep 2020
- Low water throughout 2021 has slowed construction

ST. LOUIS DISTRICT

Clarence Cannon HREP
Water Control Structures, Interior Berms, Channel Excavation, Pump Station, & Berm Setback

ST. LOUIS DISTRICT

Berm Setback 65% Complete

Clarence Cannon HREP
Water Control Structures, Interior Berms, Channel Excavation, Pump Station, & Berm Setback

Pump Station 95% Complete

Upper Mississippi River Restoration
Leading. Innovating. Partnering.

ADVANCED DESIGNS FOR CONTRACT AWARD

Piasa & Eagles Nest Islands, IL (Pool 26) Stage 2

- Sponsor IDNR
- P&S Package is RTA (Ready to Advertise)

Crains Island, IL (Open River) Stage 2

- Sponsor FWS
- P&S Package is RTA (Ready to Advertise)

Oakwood Bottoms, IL (Open River)

- Sponsor Forest Service
- Feasibility Approved
- VE Workshop Completed
- Initiated 4 P&S Packages
- 3rd Quarter FY22 scheduled to complete RTA (Ready to Advertise)

Harlow Island, MO (Open River) Stage 1 Update

- Sponsor FWS
- P&S Package is RTA (Ready to Advertise)

WEB MEETING

ADVANCED FEASIBILITY PLANNING

Yorkinut Slough IL River Sponsor FWS

Collect & Analyze Data

Develop Measures

Formulate Alternatives

West Alton Islands Pools 26 Sponsor MDC Sponsor FWS

Kick Off Meeting

Collect & Analyze Data

NEXT GENERATION FACT SHEETS

- Interagency development
- Multiple ranking approaches
 - Brainstormed ideas
 - Discussed priorities by agency
 - Utilized HNA-II Indicators
- MVS Result: 4 (of 6) Fact Sheets
 - Approved – Gilbert Lake FWS, IL River
 - Approved – Gilead Slough, FWS Pool 25
 - Approved – Slim Island, FWS, Pool 25
 - Approved – Sterling Island, MDC Pool 25





LTRM Science Highlights



UMRR CC Quarterly Meeting
November 17, 2021
Virtual

JGR Biogeosciences

REVIEW ARTICLE

10.1029/2021JG006275

The Ecology of River Ice

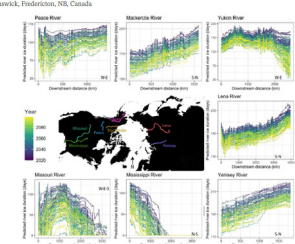
Andrey Theilmann¹, Kathi Jo Jankowski², Brian Haydes¹, Xiao Yang³, Wayana Dular⁴, Adrienne F. Smits⁵, and Antoin M. O'Sullivan⁶

Special Section: Winter limnology in a changing world

Andrey Theilmann and Kathi Jo Jankowski shared first authorship

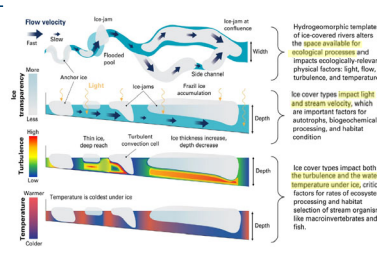
¹Department of Biology, Duke University, Durham, NC, USA, ²U.S. Geological Survey, Upper Midwest Environmental Sciences Center, La Crosse, WI, USA, ³Canadian Rivers Institute, University of New Brunswick, Fredericton, NB, Canada, ⁴Department of Geological Sciences, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, ⁵Department of Environmental Science and Policy, University of California Davis, Davis, CA, USA, ⁶Canadian Rivers Institute, Forestry and Environmental Management, University of New Brunswick, Fredericton, NB, Canada

- Motivation:**
 - Many of the world's rivers are ice-covered during winter months but the extent of river ice will shift substantially as winters warm.
 - We know little about the role of ice in the ecology of rivers but expect that the effects of changes in ice cover will not be uniform within river networks.
 - The principal aims of this review were to
 - Integrate knowledge of current and future ice processes with what is known about ecological processes and communities, and
 - Compile/compare what is known across river networks (i.e., small vs large rivers).
 - Identify gaps and research directions for winter ecology of rivers



Ecology of river ice (cont.)

- Ice, its ecological effects, and our knowledge of either of them are not uniform across river networks
- More study of ice dynamics in larger rivers (economic importance, visible from satellites) but more ecology research in small streams (easier to work in over winter). There are many gaps to fill.
- Ice formation, breakup, and duration differ with river size and geomorphology, and impact ecological processes different across river networks



Hydrogeomorphic template of ice-covered rivers alters the space available for ecological processes and impacts ecologically-relevant physical factors (light, flow, turbulence, and temperature)

Ice cover types impact light and stream velocity, which are important factors for autotrophs, biogeochemical processing, and habitat condition.

Ice cover types impact both the turbulence and the water temperature under ice, critical factors for rates of ecosystem processing and habitat selection of stream organisms, like macroinvertebrates and fish.

Temperature is coldest under ice

JGR Biogeosciences

RESEARCH ARTICLE

10.1029/2020JG006135

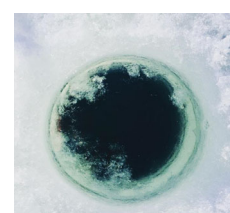
Warmer Winters Increase the Biomass of Phytoplankton in a Large Floodplain River

Kathi Jo Jankowski¹, Jeffrey N. Houser², Mark D. Scheuereff³, and Adrienne F. Smits⁴

Special Section: Winter limnology in a changing world

¹U.S. Geological Survey, Upper Midwest Environmental Sciences Center, La Crosse, WI, USA, ²School of Aquatic and Fisheries Sciences, University of Washington, Seattle, WA, USA, ³Department of Environmental Science and Policy, University of California Davis, Davis, CA, USA

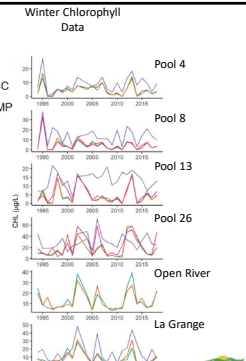
- Motivation:**
 - Winters are warming in the Upper Midwest
 - Winter productivity is important in sustaining populations through the winter, but we know little about how it varies across habitats and reaches of the UMRS or how it will respond to warming temperatures
- Research Questions:**
 - How does the magnitude and distribution of winter chlorophyll compare to summer chlorophyll?
 - Are long-term winter chlorophyll dynamics similar across river reaches and lotic-lentic areas?
 - What are the environmental drivers of winter chlorophyll dynamics and do they have the same effect everywhere?



Warmer winters increase the biomass of phytoplankton (cont.)

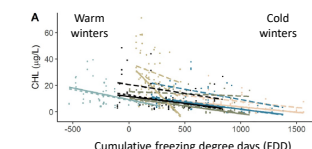
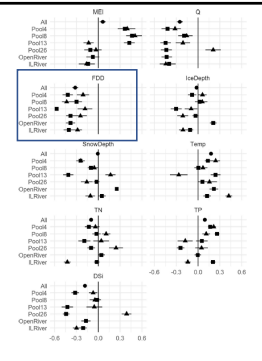
Major Findings

- Winter was 8-64% of summer chlorophyll on average
 - However, winter CHL was equal to or greater than summer in all reaches in at least one year and up to 2.3x greater than summer in some years/locations.
- Winter chlorophyll was highest in backwaters
- Long-term dynamics differed across reaches and lotic-lentic areas within reaches
 - Dynamics were shared between channels and impounded areas but were distinct in backwaters over time



Warmer winters increase the biomass of phytoplankton (cont.)

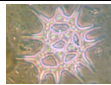
- Winter chlorophyll uniformly increased with winter temperatures across the UMRS

Spatial and temporal dynamics of phytoplankton assemblages in the upper Mississippi River

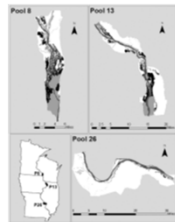
River Research and Applications 2021:1-2

John T. Manier, Roger J. Haro, Jeffrey N. Houser, Eric A. Strauss



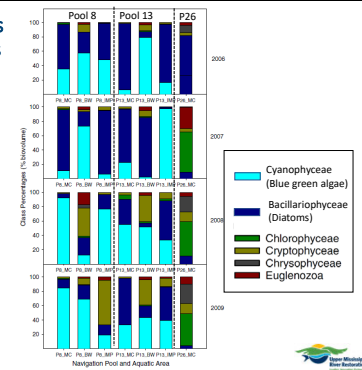
Purpose: Examine lateral and longitudinal variation of phytoplankton communities in the UMR. Determine the effect of interannual changes in discharge.

- Phytoplankton samples from the UMRR-LTRM archive (2006-2009).
- Pools 8 and 13 (main channel, backwater and impounded sites), Pool 26 (main channel sites only).
- Phytoplankton samples were enumerated at UW-La Crosse and the data was correlated with WQ variables.



Spatial and temporal dynamics of phytoplankton assemblages in the upper Mississippi River

- Three most common genera (*Aulacoseira*, *Aphanizomenon*, and *Microcystis*) are all indicators of eutrophication.
- Lateral variation:
 - Main channel dominated by cyanobacteria or diatoms.
 - Backwaters were similar, but typified by flagellated species, such as cryptomonads. These species are important to larval fish.
- Longitudinal transition: cyanobacteria/diatoms to diatoms/green algae.
- Nutrient limitation was not common, but physical factors were important.
- Prominence of cyanobacteria: 10% of the samples could be classified as a moderate-to-severe cyanobacteria bloom.



Completion Report: Evaluation of a "Trace" Plant Density Score in LTRM Vegetation Monitoring

Deanne Drake, Eric Lund, Kyle Byles

Background

- SAV and Individual Spp. are assigned Rake Abundance Index Scores 1 to 5
- 73% and 89% of Historical Rake Scores (1998-2017) were = 1 for SAV and Spp., respectively
- Rake Score 1 represents a wide range of plant masses
- Not all rake scores represent a distinct range of masses

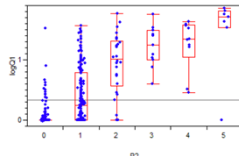


Figure 2.16 from Deppa 2017. Association between Rake Score and log biomass for Coontail (*Ceratophyllum demersum*)



Evaluation of a "Trace" Plant Density Score in LTRM Vegetation Monitoring (cont.)

Deanne Drake, Eric Lund, Kyle Byles

Primary Objective (Question)	Conclusion
1) Does "Trace" (i.e. 0.08) Rake Score reflect a distinct amount of fresh mass in samples?	YES
2) Does fresh mass associated with "Trace" Score differ by plant morphology?	YES
3) Would a "Trace" rake score improve the precision of potential future efforts to estimate biomass?	YES

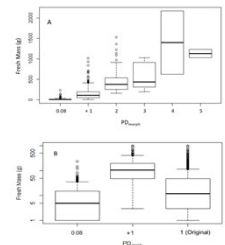
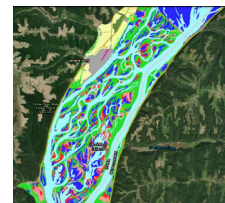


Figure 5. Box plots illustrating (A) medians and quartiles for fresh mass by PD_{trace} score and (B) division of $PD_{trace} = 1$ scores into 0.08 and +1 scores.

UMRR Status and Trends Report Update

- Content is complete
- Report continues to progress through publication process
- Publication date is uncertain – sometime (hopefully early) in CY 22

2020 Land cover update



UMRR MONITORING AND SCIENCE UPDATE

Karen Hagerty
Rock Island District
17 November 2021

The views, opinions and findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation.

UMRR MONITORING & SCIENCE FY22

2 SOWs in FY22
 SOW for LTRM base monitoring **\$5.0M**
 SOW for science in support (analysis under base) **\$1.3M**
Both SOWs together are equivalent to a fully funded UMRR LTRM element \$6.3M

Science in Support of Restoration & Management \$2.5M

TOTAL: \$8.8M

UMRR MONITORING & SCIENCE FY2022

LTRM

	Budget (gross)
MIN	\$775,483
WI	\$847,116
IA	\$500,755
Great Rivers (IL)	\$478,722
Big Rivers & Wetlands (MO)	\$465,383
IRBS (IL)	\$498,167
Equipment	\$338,940
STATES TOTAL*	\$3,570,667
UMESC TOTAL	\$3,278,186
Corps tech reps	\$ 63,000
TOTAL FY21 LTRM BUDGET	\$6,911,854

UMRR MONITORING & SCIENCE FY22

Science in Support of Restoration and Management

A. IWW monitoring (FY22)	\$ 105,270
B. IWW aerial data collection report	\$ 25,034
C. LTRM balance	\$ 611,854
Subtotal	\$ 742,158

UMRR MONITORING & SCIENCE FY22

Science in Support of Restoration and Management

Outstanding efforts for funding

First priority

- FY22 Science Meeting proposals

Potential for funding in FY22

- Land Cover / Land Use processing (FY25)



LTRM IMPLEMENTATION PLANNING



LTRM IMPLEMENTATION PLANNING



Planning Team:

- LTRM management team (Plumley, Hagerty, Gaikowski, Houser, Sauer)
- Jim Fischer (WI, UMRR CC)
- Matt Vitello (MO, UMRR CC, A-Team)
- Nick Schlessler (MN, A-Team)
- UMRBA (Stephenson, Wallace)

Facilitators:

- Dave Smith, Max Post van der Burg (USGS)

Duration:

- About 1 year, once SOW is finalized



LTRM IMPLEMENTATION PLANNING



Current tasks:

- Participant list – Goal of about 20 (in draft)
 - Representative of partnership organizations
 - Spanning geographic extent
 - Representing various types of roles and expertise
- Problem statement
- Upcoming tasks:
 - Finalize scope, schedule, meeting format

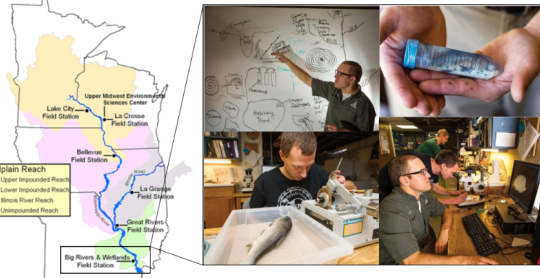


A-team update

Scott Gritters

Iowa DNR

Current A-team chairperson



UMRR Analysis Team Agenda November 3rd, 2021

- Date: Wednesday November 3rd, 2021
 Time: 8:00 pm – 12:00 pm
 Chair: Scott Gritters, Iowa Department of Natural Resources
- 8:00-8:10 – Introduction and Roll Call- Scott Gritters
 - 8:10-8:15 – Time, place, and type of next meeting and approval of July A-team meeting minutes
 - 8:15-8:30 – UMRR update- Marshall Plumley (Karen subbing in here)
 - 8:30-8:45 –LTRM implementation planning update- Karen Hagerty, Jennie Sauer and Jeff Houser
 - 8:45-9:00 – continued COVID update from each agency has anything changed with the agencies? UMRBRA, USGS, COE, USFWS, Missouri, Illinois, Iowa, Wisconsin, Minnesota... others?
 - 9:00-9:40 – Flowering Rush impacts up and down the Mississippi River- Danelle Larson
 - 9:40-9:45 – LTRM Science Highlights- Jeff Houser
 - 9:45-10:00 – Status and Trends Report update- Jeff Houser
 - 10:00-10:15 – Break
 - 10:15-10:30 – Science Meeting update- Jeff Houser
 - 10:30-10:45 –Climate changed hydrology in the UMRS- Molly Van Appledorn and Lucie Sawyer
 - 10:45-11:00 – Invertebrate Component update- Jim Lamer
 - 11:00-11:15 – Field Station in Focus, The people that make up the "Open" River Field Station –Dave Herzog
 - 11:15-11:55 –Agency Updates- UMRBRA, USGS, COE, USFWS, Missouri, Illinois, Iowa, Wisconsin, Minnesota... others?
 - 12:00 – Adjourn

Flowering Rush Discussion-Danelle Larson and Steve Winter



Applying Chemical to control flowering Rush

Submersed Diquat Application – Driftyard: 2107
 Diquat and Rhodamine WT Dye Applied to the Plot

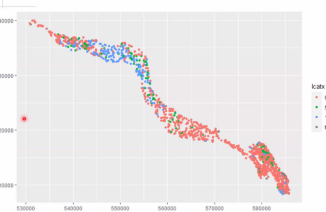
Rhodamine WT Dye used to measure contact exposure time. The dye can be measured with a fluorometer at stations inside and outside the plot to determine a half life and show where herbicide may go



Invertebrate Component update by James Lamer

Pool 4

Mayfly	BW	IMP	SC	IMC	
Historic	57.00	44	10	10	121.00
1%	4306.79	9185.75	41511.37	160398.98	
5%	172.27	367.43	1660.45	6415.96	
10%	43.07	91.86	415.11	1603.99	
15%	19.14	40.83	184.49	712.88	
20%	10.77	22.96	101.78	401.00	
25%	6.89	14.70	66.42	256.64	
30%	4.79	10.21	46.12	178.22	
35%	3.52	7.50	33.89	130.94	
40%	2.69	5.74	25.94	100.25	
45%	2.13	4.54	20.50	79.21	
50%	1.72	3.67	16.60	64.16	
	57.00	64.00			



Thank You!



UMRR COORDINATING COMMITTEE - PROGRAM REPORTS HABITAT RESTORATION DISTRICT REPORTS

Angela Deen
Julie Millhollin
Brian Markert

17 November 2021








ST. PAUL DISTRICT (MVP)

PLANNING

- Lower Pool 4 – Pool 4, MN/WI
 - Feasibility Study Kick-off
- Reno Bottoms HREP – Pool 9, MN/IA
 - Continue feasibility planning
 - Formulating alternatives
- Lower Pool 10 HREP – Pool 10, IA
 - Concurrent Reviews
 - Final Report

DESIGN


- Lower Pool 10 HREP – Pool 10, IA
 - P&S: Winter kick-off

CONSTRUCTION

- Harpers Slough HREP – Pool 9, IA
 - 85% Complete
 - Final grading & seeding
- McGregor Lake HREP – Pool 9, WI
 - 65% Complete
 - Split "Option 2" & re-advertise
- Bass Ponds, Marsh & Wetland HREP – MN River
 - 85% Complete
 - Remaining: Misc metals & access roads
- Conway Lake HREP – Pool 9, IA
 - 98% Complete
 - Final grading & seeding

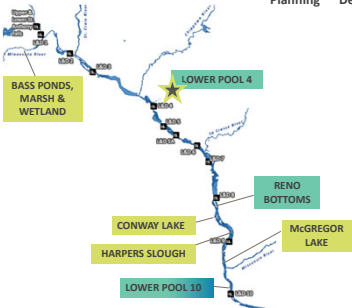
Other Activities

- Performance Evaluation Reports






MVP HREP PROJECTS

Planning Design Construction



ST. PAUL DISTRICT PHOTOS

Construction -

ROCK ISLAND DISTRICT (MVR)

PLANNING

- Lower Pool 13 – Pool 13, IA/IL
 - Alternatives identified for western area
- Green Island – Pool 13, IA
 - PDT is finalizing the alternatives
- Pool 12 Forestry – Pool 12, IA/IL/WI
 - Held measure workshop in Sep
 - PDT is address Chapters 1-3 comments
- Quincy Bay – Pool 21, IL
 - Kick-off meeting was held in Oct

DESIGN


- Keithsburg Division Stage II – Pool 18, IL
 - Stage IIa construction contract was award in Sep
- Steamboat Island Stage I – Pool 14, IA/IL
 - 100% review started on Nov 2nd

CONSTRUCTION

- Pool 12 Overwintering, Pool 12, IL
 - Stage II – Construction is closing out the contract
 - PDT is working on ribbon cutting video
- Keithsburg Division Stage I, Pool 18, IL
 - Contractor started working on the spillway.
- Huron Island, Pool 18, IA
 - Stage III – ERDC completed monitoring in Sep
- Beaver Island Stage IB, Pool 14, IA/IL
 - Contractor continues to shape the placement sites

FACTSHEETS

- Addressing sponsor comments (Upper Pool 13 and Multi Pool Habitat Protection)
- MVD is reviewing Geneva & Hershey Island



ST. LOUIS DISTRICT (MVS)

PLANNING –

- West Alton Islands, MO, HREP (Pool 26)
 - Continue Feasibility Planning
- Yorkinut Slough, IL HREP (IL River)
 - Continue Feasibility Planning

DESIGN –


- Piassa & Eagles Nest, IL HREP (Pool 26)
 - Award Stage 2, P&S 4th Quarter FY22
- Harlow Island, IL HREP (Open River)
 - Complete Stage 2, P&S 4th Quarter FY22
- Oakwood Bottoms, IL, HREP (Open River)
 - Complete 4 P&S packages 3rd Quarter FY22
 - Pump Station, Well Pumps, North Units Earthwork & Water Control Structures, South Units Earthwork & Water Control Structures

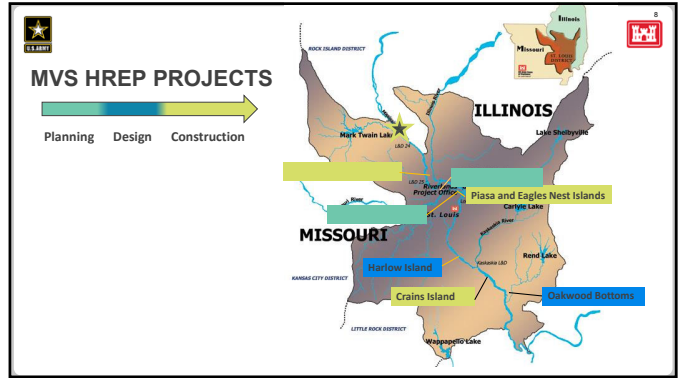
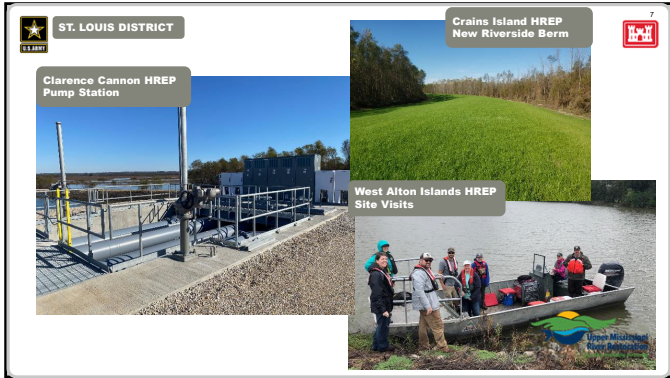
CONSTRUCTION –

- Crains Island, IL HREP (Open River)
 - Complete Stage 1, 2nd Quarter FY22
- Piassa & Eagles Nest, IL HREP (Pool 26)
 - Rock Structure Construction
- Clarence Cannon Refuge, MO (Pool 25)
 - Pump Station
 - Exterior Berm Setback

Other Activities

- FS, INDR/TNC New Fact Sheet
- Swan Lake Flood Damage Assessment
- HREP Construction Lessons Learned





NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM UPDATE

Andrew Goodall, P.E., P.M.P.
NESP Program Manager

UMRR-CC Quarterly Meeting
17 November 2021

US Army Corps of Engineers

NESP CONSTRUCTION READINESS

- **Navigation (Total \$12.5M)**
 - Lock 25 Lockwall Modifications
 - Lock 14 Mooring Cell
 - Moore's Towhead Systemic Mitigation
- **Ecosystem (Total \$10M)**
 - Pool 2 Wingdam Notching
 - Twin Islands and Alton Pool Island Protection
 - Starved Rock Habitat Restoration and Enhancement
 - Moore's Towhead Systemic Mitigation
- See Map on the website for construction-ready project locations:
<https://www.mvr.usace.army.mil/Missions/Navigation/NESP/>

ADDITIONAL NESP ITEMS

- **Infrastructure Bill**
 - Projects were submitted for NESP as part of USACE data calls.
 - It is anticipated that project names and funding amounts will be released in 30-60 days.
- **Lock 22 Fish Passage**
 - Final report currently being transmitted to HQUSACE for approval.
- **Ecosystem Project Coordination**
 - 29 total projects were recommended by the river teams.
 - 12 total projects were sent to MVD for approval as part of "group 1" – a map is being developed and will be posted to the USACE NESP webpage once complete.

LOCK 22 FISH PASSAGE FISH SCIENCE PANEL

Currently scheduled meetings

- 29 November 2021, 1300-1400 – Initial science panel meeting. Goal: develop charrette meeting agenda
- 15 December 2021, 0800-1200 – Virtual design charrette

Potential Future Schedule

- December 2021 charrette
- January 2022 – updated monitoring and adaptive management plan
- February 2022 – initiation of monitoring activities
- March-September 2022 – implementation of monitoring activities

Organization	Representative	Email
USACE	Mark Cornish	mark.a.cornish@usace.army.mil
USACE	Collin Moratz	collin.moratz@usace.army.mil
USACE	Rachel Havers	rachel.k.havers@usace.army.mil
USACE	Kara Mivabody	kara.n.mivabody@usace.army.mil
USACE	Tara Gambon	tara.m.gambon@usace.army.mil
Minnesota DNR	Grace Loppnow	Grace.Loppnow@state.mn.us
Minnesota DNR	Ben Larson	ben.larson@state.mn.us
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MDC	Annie Hentschke	Annie.Hentschke@mdc.mo.gov
MDC	John West	John.West@mdc.mo.gov
USFWS	Kevin Haupt	kevin_haupt@fws.gov
USFWS	Sara Schumacker	sara_schumacker@fws.gov
IA DNR	Ryan Hugfeldt	Ryan.Hugfeldt@iawd.gov
WI DNR	Dave Heath	David.Heath@wisconsin.gov
IL DNR	David Glover	Dave.Glover@illinois.gov
IL DNR	Matt O'Hara	matt.o'hara@illinois.gov
USGS	Marybeth Brey	mbrey@usgs.gov
USGS	Andrea Fritts	afritts@usgs.gov
EPA	TBD	

NESP ECOSYSTEM "GROUP 1" PROJECTS

Project Name	Location	Project Type	River Team	District
Andalusia Island Complex	UMR Pool 16	Backwater Restoration Topographic Diversity Floodplain Restoration Side Channel Restoration	RRCT	MVR
Johnson Island	UMR Pool 6	Backwater Restoration Floodplain Restoration Island & Side Channel Restoration	RRF	MVP
Liverpool Flowing Side Channel	ILWW - LaGrange	Side Channel Restoration	RRCT	MVR
Middle Mississippi River StoneDike Alterations Phase 1	MMR	Wing Dam/Dike Alteration	RRAT	MVS
North-Surgeon Lake	UMR Pool 3	Backwater Restoration	RRF	MVP
Pool 24 Island Restoration -benchmark and Drift Islands Complex	UMR Pool 24	Backwater Restoration Topographic Diversity Floodplain Restoration Topographic Diversity Side Channel Restoration Island & Shoreline Protection	RRAT	MVS
Pool 25 Side Channels - Clarkville/Carroll Island Complex, Haegens Island/Lower Pool 25 Complex	UMR Pool 25	Side Channel Restoration/Dike Alteration	RRAT	MVS
Wacoita Bay	UMR Pool 4	Backwater Restoration/Island Building & Shoreline Protection	RRF	MVP
Wacoita Bay	UMR Pool 4	Backwater Restoration Topographic Diversity Island & Shoreline Protection/Island Building	RRF	MVP
Project Name	Location	Project Type	River Team	District
Multi-Pool Forest Restoration	UMR Pools 13, 17, 21	Floodplain Restoration/Topographic Diversity	RRCT	MVR
Systemic Forest Restoration	UMR Pools 1-10	Floodplain Restoration	RRF	MVP
Systemic Water Level Management - Restore Water Level Fluctuations	Multiple	Water Level Management Pool	RRAT	MVS