

Upper Mississippi River Restoration Program Coordinating Committee Quarterly Meeting

October 25, 2023

Highlights and Action Items

Program Management

- **On October 2, Congress enacted a continuing resolution extending current funding levels of the federal government until November 17, 2023.** The President's FY 24 Budget and House and Senate Appropriations Committees' energy and water spending measures include \$55 million for UMRR. The final appropriation is not yet known.
- **Marshall Plumley & USGS UMESC have met with state field station leaders regarding impacts to field stations in the event of a shutdown.**
- **The draft FY 24 plan of work for UMRR at \$55 million is largely consistent with the FY 23 plan of work with the addition of regional project sequencing.**
- **Marshall Plumley introduced a matrix to track environmental justice processes under UMRR from fact sheet development through feasibility. Plumley will distribute the draft matrix following the meeting. Coordinating Committee members recommended engaging communities earlier in the process, maintaining a connection between communities and resource managers, sharing LTRM information with communities, and ensuring environmental justice efforts are embedded in projects and not developed in parallel to be implemented later. Plumley requested additional feedback on the matrix be emailed to him.**
- **The three UMRS Corps district-based river teams are scheduled to initiate project selection this fall or early winter per guidance from the UMRR Coordinating Committee. The UMRR program planning team (PPT) will meet following the river teams' initial meetings to address any questions or concerns.**
- **UMRR will hold a programmatic workshop on May 7-9, 2024. The location has not yet been determined. Potential workshop topics include monitoring and adaptive management, HREP/LTRM integration, HREP design handbook update, and HREP lessons learned, among others. A workshop agenda planning team will convene a meeting in November or December to begin planning. Planning team members are as follows:**

Kara Mitvalsky
Brian Markert
Lane Richter
Elisa Royce
Angela Deen
Kacie Opat
Julie Millhollin

Davi Michl
Sara Schmuecker
Sharonne Baylor
Jeff Houser
Jim Fischer
Kirk Hansen
Ryan Hupfeld

Vanessa Perry
Nicole Ward
Matt Vitello
Molly Sobotka
Jeff Janvrin
Brenda Kelly
Andrew Stephenson

- **The UMRR 2022 Report to Congress is still in review at the ASA(CW)'s office. Coordinating Committee members requested release of a draft final report to allow sharing within their agencies to leadership and in discussions with Congressional offices.**

Strategic Planning

- **UMRBA staff presented a proposed process to the UMRR Coordinating Committee for developing the next UMRR strategic plan. The UMRR Coordinating Committee largely agreed to the proposed process and UMRBA staff will make the following modifications:**
 - **Draft an 18-month schedule of the process that includes major touch points such as quarterly meetings and the UMRR workshop.**
 - **Refine teams' roles and responsibilities and draft a list of potential participants.**

The Coordinating Committee will convene meetings virtually on November 27 and December 11 to discuss the revised document.

Communications

- **The UMRR Communications and Outreach Team (COT) finalized the team Framework in August 2023.** Highlights for the COT in FY 23 included providing support for the LTRM Status and Trends snapshot summary rollout, a discussion on environmental justice, and partner agency presentations on communication initiatives, success stories, and lessons learned.
- **On October 18, 2023, Rachel Perrine sent a poll to COT members to help prioritize activities for calendar year 2024. Results of the poll will be discussed at the November 1, 2023, meeting.** In FY 24, the COT anticipates providing support for the release of the 2022 UMRR Report to Congress, continuing to share lessons learned from partner agency communications efforts, and additional environmental justice discussions.

Habitat Restoration

- The three District HREP Managers presented their respective District's FY 23 accomplishments and priorities.
- MVP celebrated the first drone flight through its small unmanned aerial systems program which can collect high resolution video and imagery that will aid planning, monitoring, and public affairs efforts around projects.
- MVR continued spillway construction at Keithsburg HREP and awarded the forestry services MATOC totaling \$9.5 million over five years.
- MVS completed the pump station at Clarence Cannon Refuge and completed aerial lidar, digital ortho photography, and bathymetry to support multiple projects.

Long Term Resource Monitoring and Science

- Accomplishments of the fourth quarter of FY 23 include publication of the following manuscripts and completion report:
 - *River Geomorphology Affects Biogeochemical Responses to Hydrologic Events in a Large River Ecosystem*
 - *Long-Term Changes in Concentration and Yield of Riverine Dissolved Silicon from the Poles to the Tropics*
 - *Reimagining large river management using the Resist–Accept–Direct (RAD) framework in the Upper Mississippi River*
- **Jim Fischer started as the new USGS LTRM Branch Chief and Davi Michl as the new USACE LTRM Project Manager.**

- LTRM implementation planning process resulted in nine projects addressing information needs being proposed.
- Hosting two science webinars on September 25, 2023 and October 5, 2023. Recordings of the webinars are available at <https://www.mvr.usace.army.mil/Missions/Environmental-Stewardship/Upper-Mississippi-River-Restoration/Key-Initiatives/Workshops/>
- On October 11, 2023, USGS held a dedication event for the UMESC facility and water quality lab renovation.
- All 2022 LTRM data has been uploaded online and on graphical browsers.
- **Topobathy pilot study contracts were awarded in September. Low water may be advantageous for topobathy lidar acquisition this fall.**
- The A-Team met on October 18, 2023. A-Team members reviewed focal areas and initial work groups for the 2024 UMRR LTRM science meeting. A-Team members suggested additional topics including emerging contaminants, lentic fish assemblages, refuge and backwater overwintering habitat, turtle bycatch, and floodplain forestry. **The next A-Team meeting will be held in conjunction with the January 16-18, 2024 science meeting. [Note: The A-Team scheduled a meeting on November 30, 2023 to finalize focal areas ahead of the science meeting.]**

Other Business

Upcoming quarterly meetings are as follows:

- **February 2024 – Virtual**
 - UMRBA quarterly meeting – February 27
 - **UMRR Coordinating Committee quarterly meeting – February 28**
- **May 2024 – Quad Cities**
 - UMRBA quarterly meeting – May 21
 - **UMRR Coordinating Committee quarterly meeting – May 22**
- **August 2024 – St. Paul**
 - UMRBA quarterly meeting – August 6
 - **UMRR Coordinating Committee quarterly meeting – August 7**

UMRR COORDINATING COMMITTEE - REGIONAL MANAGEMENT AND PARTNERSHIP COLLABORATION

Marshal Plumley
UMRR Regional Program Manager
St. Paul District
Rock Island District
St. Louis District

Date: 25 October 2023

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U.S. Army Corps of Engineers

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REGIONAL MANAGEMENT AND PARTNERSHIP COLLABORATION

- FY 2023 Fiscal Update and FY 24 Outlook
- Environmental Justice
- 2023 HREP Selection
- Scoping Strategic Plan
- Implementation Issues
- Odds & Ends

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FY 2023 FISCAL UPDATE AND FY 2024 OUTLOOK

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FINANCIAL REPORTING

UMRR Quarterly Budget Report: St. Paul District
FY2023 Q4 Report Date: 31 Oct 20 2023

Project Name	Cost Estimates			FY2023 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Bass Ponds, Marsh, and Wetland		\$4,300,000	\$4,300,000	-	-	-	\$128,053
Curlew Lake	\$741,000	\$7,410,000	\$8,151,000	-	-	-	\$48,016
Deerme Slough		\$138,750,000	\$138,750,000	-	-	-	\$135,053
Lower Pool 10 Island and Wetland Complex	\$17,000,000	\$17,000,000	\$34,000,000	\$3,248,000	\$32,480,000	\$35,728,000	\$1,977,206
Lower Pool 4, Big Lake	\$18,000,000	\$18,000,000	\$36,000,000	\$355,000	\$35,645,000	\$35,999,999	\$399,116
Lower Pool 4, Middleton Lake, MN	\$12,000,000	\$12,000,000	\$24,000,000	\$950,000	\$23,050,000	\$23,999,999	\$397,219
Redwing Lake	\$25,000,000	\$25,000,000	\$50,000,000	\$183,750	\$49,816,250	\$49,999,999	\$1,681,263
Revo Bottoms	\$10,000,000	\$10,000,000	\$20,000,000	\$29,603	\$19,970,397	\$19,999,999	\$449,208
Total	\$107,838,000	\$107,838,000	\$215,676,000	\$248,346	\$11,291,346	\$11,539,692	\$1,539,045

Subcategory	FY2023 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management			\$602,907	\$602,907
Total			\$602,907	\$602,907

Subcategory	FY2023 Financials			
	Carry In	Allocation	Funds Available	Obligations
Habitat Eval/Monitoring			\$333,519	\$333,519
Total			\$333,519	\$333,519

	Carry In	Allocation	Funds Available	Actual Obligations
St. Paul Total	\$248,346	\$11,291,346	\$11,539,692	\$1,539,045

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FINANCIAL REPORTING

UMRR Quarterly Budget Report: Rock Island District
FY2023 Q4 Report Date: 31 Oct 20 2023

Project Name	Cost Estimates			FY2023 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Beaver Island	\$5,536,300	\$5,536,300	\$11,072,600	\$833,000	\$10,239,600	\$10,239,600	\$1,284,217
Deerme Slough	\$16,000,000	\$16,000,000	\$32,000,000	\$23,281	\$31,976,719	\$31,999,999	\$296,661
Harriet Island	\$18,729,000	\$18,729,000	\$37,458,000	\$65,694	\$37,392,306	\$37,457,999	\$46,213
Deerme Slough	\$20,448,000	\$20,448,000	\$40,896,000	\$640,000	\$40,256,000	\$40,796,000	\$1,136,793
Lower Pool 10 Island and Wetland Complex	\$55,368,300	\$55,368,300	\$110,736,600	\$448,300	\$110,288,300	\$110,735,999	\$237,374
Lower Pool 4, Big Lake		\$21,394,000	\$21,394,000	\$603,000	\$20,791,000	\$20,994,000	\$89,999
Lower Pool 4, Middleton Lake, MN	\$26,700,000	\$26,700,000	\$53,400,000	\$950,000	\$52,450,000	\$52,999,999	\$97,861
Lower Pool 4, Revo Bottoms	\$20,400,000	\$20,400,000	\$40,800,000	\$1,894	\$40,798,106	\$40,799,999	\$1,598
Lower Pool 4, Upper Pool 4	\$24,000,000	\$24,000,000	\$48,000,000	\$83,894	\$47,916,106	\$47,999,999	\$86,697
Lower Pool 4, West Lake	\$11,811,000	\$11,811,000	\$23,622,000	\$17,217	\$23,604,783	\$23,604,783	\$172,005
Lower Pool 4, West Lake, MN	\$7,283,000	\$7,283,000	\$14,566,000	\$115,814	\$14,450,186	\$14,499,999	\$2,272
Lower Pool 4, West Lake, MN	\$4,977,000	\$4,977,000	\$9,954,000	\$8,969,499	\$9,945,001	\$9,945,001	\$1,184,114
Total	\$7,383,300	\$148,925,300	\$156,308,600	\$341,253	\$156,034,347	\$156,308,600	\$1,726,041

Subcategory	FY2023 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management			\$622,303	\$622,303
Total			\$622,303	\$622,303

Subcategory	FY2023 Financials			
	Carry In	Allocation	Funds Available	Obligations
Regional Program Administration			\$1,644,519	\$1,644,519
Administrative Management			\$1,644,519	\$1,644,519
Habitat Eval/Monitoring	\$450	\$177,500	\$177,950	\$177,950
Market Cost Estimation/Program Support		\$100,000	\$100,000	\$28,524
Public Outreach		\$100,000	\$100,000	\$14,319
Regional Program Management	\$1,203	\$1,200,000	\$1,199,200	\$1,199,200
Regional Project Management		\$1,500,000	\$1,500,000	\$28,000
Total	\$1,453	\$3,277,500	\$3,276,669	\$3,276,669

Subcategory	FY2023 Financials			
	Carry In	Allocation	Funds Available	Obligations
Long Term Resource Monitoring		\$5,000,000	\$5,000,000	\$5,000,000
Market Cost Estimation/Program Management		\$4,000,000	\$4,000,000	\$4,000,000
Total		\$9,000,000	\$9,000,000	\$9,000,000

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FINANCIAL REPORTING

UMRR Quarterly Budget Report: St. Louis District
FY2023 Q4 Report Date: 31 Oct 20 2023

Project Name	Cost Estimates			FY2023 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Clarence		\$29,800,000	\$29,800,000			\$96,000	\$80,004
Crane Island		\$36,562,000	\$36,562,000		\$1,900,000	\$1,900,000	\$247,590
Oldway Slough		\$11,000,000	\$11,000,000		\$350,000	\$350,000	\$165,499
Harriet Island		\$37,871,000	\$37,871,000		\$25,000	\$25,000	\$209,585
Oldway Slough		\$29,000,000	\$29,000,000		\$57,500	\$57,500	\$876,711
Plaza - Eagle's Nest Islands		\$26,746,000	\$26,746,000	\$31,151	\$8,300,000	\$8,331,151	\$9,400,944
West Alton Island				\$21,510	\$42,500	\$446,510	\$321,775
Yankton Slough, IL		\$8,500,000	\$8,500,000	\$13,681	\$97,500	\$388,681	\$781,742
Total		\$179,579,000	\$179,579,000	\$66,342	\$13,250,000	\$13,316,342	\$12,761,853

Subcategory	FY2023 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management			\$657,503	\$657,503
Total			\$657,503	\$657,503

Subcategory	FY2023 Financials			
	Carry In	Allocation	Funds Available	Obligations
Habitat Eval/Monitoring			\$441,087	\$441,087
Total			\$441,087	\$441,087

	Carry In	Allocation	Funds Available	Actual Obligations
St. Louis Total	\$66,342	\$13,250,000	\$13,316,342	\$13,860,450

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FY23 PLAN OF WORK

All Funds 98.2% FY 23 Funds 98.42%

	Budget	Obligations as of 30 Sep
TOTAL FY22 Program	\$55,000,000	\$54,653,635
Regional Administration and Program Efforts	\$1,550,000	\$1,213,115
Regional Management	\$1,280,000	
Program Database	100,000	
Program Support Contract (UMRBA)	120,000	
Public Outreach	50,000	
Regional Science and Monitoring	\$15,450,000	\$15,063,916
LTRM (Base Monitoring)	5,500,000	
UMRR Regional Science In Support Rehabilitation/Mgmt. (MIPR's, Contracts, and Labor)	9,350,000	
UMRR Regional (Integration, Adapt. Mgmt.)	200,000	
Habitat Evaluation (split between MVS,MVR,MVP)	1,275,000	
Report to Congress	125,000	
District Habitat Rehabilitation Efforts (Planning and Construction)	\$38,000,000	\$38,376,604
St. Paul District	\$11,148,000	\$11,939,954
Rock Island District	\$13,502,000	\$12,978,711
St. Louis District	\$13,250,000	\$13,419,353
Model Cert.	\$100,000	\$38,576

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FY 24 APPROPRIATIONS

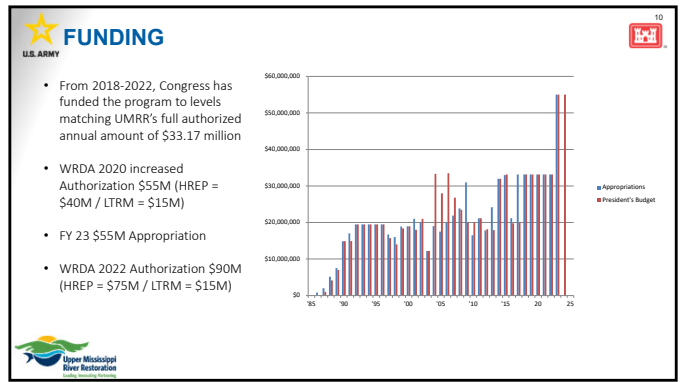
President's Budget	\$55,000,000
House	\$55,000,000
Senate	\$55,000,000
FINAL APPROPRIATION	Continuing Resolution until 17 November

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FY24 DRAFT PLAN OF WORK

	Budget
TOTAL FY24 Program	\$55,000,000
Regional Administration and Program Efforts	\$1,675,000
Regional Management	\$1,250,000
Program Database	100,000
Program Support Contract (UMRBA)	140,000
Public Outreach	50,000
Regional Project Sequencing	125,000
Regional Science and Monitoring	\$15,325,000
LTRM (Base Monitoring)	\$5,500,000
UMRR Regional Science In Support Rehabilitation/Mgmt. (MIPR's, Contracts, and Labor)	\$8,350,000
UMRR Regional (Integration, Adapt. Mgmt.)	200,000
Habitat Evaluation (split between MVS,MVR,MVP)	1,275,000
District Habitat Rehabilitation Efforts (Planning and Construction)	\$38,000,000
St. Paul District	\$11,150,000
Rock Island District	\$13,700,000
St. Louis District	\$13,050,000
Model Cert.	\$100,000

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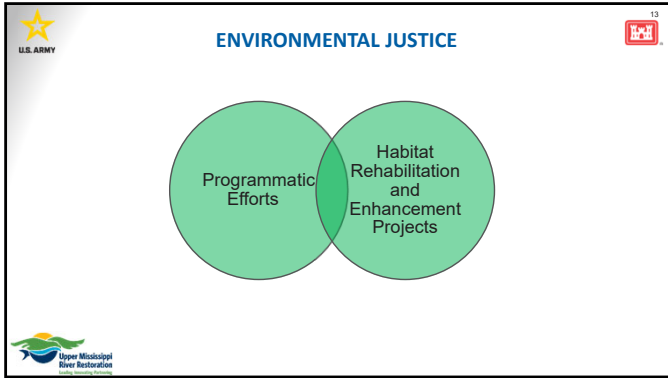
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	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33
Habitat Rehabilitation and Enhancement Projects	October 2022 - September 2023	October 2023 - September 2024	October 2024 - September 2025	October 2025 - September 2026	October 2026 - September 2027	October 2027 - September 2028	October 2028 - September 2029	October 2029 - September 2030	October 2030 - September 2031	October 2031 - September 2032	October 2032 - September 2033
St. Paul District											
Rock Island District											
St. Louis District											
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ENVIRONMENTAL JUSTICE

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ENVIRONMENTAL JUSTICE

UMRR Program Efforts

- May 2022 - Initial UMRR CC Discussion
- August 2022 UMRR CC Discussion – UMRR will fully integrate environmental justice into its planning, design, construction, and operations and management. Desire for dialog about partners policy & approach regarding Environmental Justice
 - Share tools, Develop options, and identify opportunities to engage communities
- November 2022 – Coordinating Committee establishment of *ad hoc* group
 - Provide partner perspective on approaches/best practices, methods, and tools related to Environmental Justice in their work
 - Discuss how UMRR currently approaches Environmental Justice through Habitat Rehabilitation and Enhancement Projects
 - First of several discussions that may result in recommendations regarding Environmental Justice to the UMRR Coordinating Committee.
- January 2023 ad hoc group Discussion
 - NRCS, Missouri, Wisconsin, Illinois, UMRBA, USGS, USF&WS, Iowa, Minnesota, and USACE
 - UMRR Environmental Justice Background
 - Environmental Justice Defined
 - Partner Perspectives

Environmental Justice defined: what are 3-5 key words that reflect how you or your group defines EJ (in law, policy, or practice)?

Word cloud terms: accountability, listening, equity, involvement, accessibility, transparency, representation, fairness, respect, perspectives, inclusion, resilience, outcomes, treatment, acknowledgment, sharing, contributions, opportunities, representation.

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Upper Mississippi River Restoration

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ENVIRONMENTAL JUSTICE

HREPs

- UMRR GIS Database Team – Environmental justice Dashboard
- Future HREP Selection Process
 - July 2023 HREP Selection Process Updates
 - Update of Fact Sheet Template to include preliminary information on disadvantaged communities
 - Request for support from the Corps
- Quincy Bay HREP Example
- 29 September NESP/UMRR Discussion

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	INITIAL FACT SHEET DEVELOPMENT	DRAFT FACT SHEETS	FINAL APPROVED FACT SHEETS	APPROVED FACT SHEET TO INITIATION OF FEASIBILITY	FEASIBILITY
When?					
What?					
Who?					
How?					
Where Documented?					

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	INITIAL FACT SHEET DEVELOPMENT	DRAFT FACT SHEETS	FINAL APPROVED FACT SHEETS	APPROVED FACT SHEET TO INITIATION OF FEASIBILITY	FEASIBILITY
When?	Oct 2023 – Mar 2024				
What?	• Identification of disadvantaged communities & opportunities to engage				
Who?	• Corps staff primarily • District River Team (DRT) members secondary				
How?	• Ecosystem Project Viewer (CEJST & Justice40 data) • DRT firsthand knowledge • Web based project input				
Where Documented?	• Draft Fact Sheet				

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	INITIAL FACT SHEET DEVELOPMENT	DRAFT FACT SHEETS	FINAL APPROVED FACT SHEETS	APPROVED FACT SHEET TO INITIATION OF FEASIBILITY	FEASIBILITY
When?	Oct 2023 – Mar 2024	Apr 2024 – May 2025			
What?	• Identification of disadvantaged communities & opportunities to engage	• Relationship building • Direct outreach to community leaders about projects that may be of interest • Articulation of specific opportunities by communities			
Who?	• Corps staff primarily • District River Team (DRT) members secondary	• Corps staff • DRT members w/ existing relationships • Ad hoc committee members with expertise • Representatives from the community			
How?	• Ecosystem Project Viewer (CEJST & Justice40 data) • DRT firsthand knowledge • Web based project input	• Telephone • Letter/E-mail • In person meetings • Web based project input • Social Media			
Where Documented?	• Draft Fact Sheet	• Fact Sheet Appendix			

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	INITIAL FACT SHEET DEVELOPMENT	DRAFT FACT SHEETS	FINAL APPROVED FACT SHEETS	APPROVED FACT SHEET TO INITIATION OF FEASIBILITY	FEASIBILITY
When?	Oct 2023 – Mar 2024	Apr 2024 – May 2025		1 to 3 years	
What?	• Identification of disadvantaged communities & opportunities to engage	• Relationship building • Direct outreach to community leaders about projects that may be of interest • Articulation of specific opportunities by communities		• General Program Updates • Project schedule updates (when will it start) • Changed conditions • New communities	
Who?	• Corps staff primarily • District River Team (DRT) members • secondary	• Corps staff • DRT members w/ existing relationships • Ad hoc committee members with expertise • Representatives from the community		• Project Delivery Team (Corps, sponsors, partners to include interested communities)	
How?	• Ecosystem Project Viewer (CEJST & Justice40 data) • DRT firsthand knowledge • Web based project input	• Telephone • Letter/E-mail • In person meetings • Web based project input • Social Media		• Regularly scheduled check ins • Newsletters • Community events • Social Media	
Where Document?	• Draft Fact Sheet	• Fact Sheet Appendix		• Updated Fact Sheet Appendix	

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	INITIAL FACT SHEET DEVELOPMENT	DRAFT FACT SHEETS	FINAL APPROVED FACT SHEETS	APPROVED FACT SHEET TO INITIATION OF FEASIBILITY	FEASIBILITY
When?	Oct 2023 – Mar 2024	Apr 2024 – May 2025		1 to 3 years	18 mo. – 3 years
What?	• Identification of disadvantaged communities & opportunities to engage	• Relationship building • Direct outreach to community leaders about projects that may be of interest • Articulation of specific opportunities by communities		• General Program Updates • Project schedule updates (when will it start) • Changed conditions • New communities	• Problems and opportunities refinement • Comprehensive benefits • Objectives and constraints
Who?	• Corps staff primarily • District River Team (DRT) members • secondary	• Corps staff • DRT members w/ existing relationships • Ad hoc committee members with expertise • Representatives from the community		• Project Delivery Team (Corps, sponsors, partners to include interested communities)	• Project Delivery Team (Corps, sponsors, partners to include interested communities)
How?	• Ecosystem Project Viewer (CEJST & Justice40 data) • DRT firsthand knowledge • Web based project input	• Telephone • Letter/E-mail • In person meetings • Web based project input • Social Media		• Regularly scheduled check ins • Newsletters • Community events • Social Media	• "Build a new table" • Accessible public meetings • Communication plan
Where Document?	• Draft Fact Sheet	• Fact Sheet Appendix		• Updated Fact Sheet Appendix	• Communications Plan • Feasibility Report w/ Integrated EA

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	INITIAL FACT SHEET DEVELOPMENT	DRAFT FACT SHEETS	FINAL APPROVED FACT SHEETS	APPROVED FACT SHEET TO INITIATION OF FEASIBILITY	FEASIBILITY
When?	Oct 2023 – Mar 2024	Apr 2024 – May 2025		1 to 3 years	18 mo. – 3 years
What?	• Identification of disadvantaged communities & opportunities to engage	• Relationship building • Direct outreach to community leaders about projects that may be of interest • Articulation of specific opportunities by communities		• General Program Updates • Project schedule updates (when will it start) • Changed conditions • New communities	• Problems and opportunities refinement • Comprehensive benefits
Who?	• Corps staff primarily • District River Team (DRT) members • secondary	• Corps staff • DRT members w/ existing relationships • Ad hoc committee members with expertise • Representatives from the community		• Project Delivery Team (Corps, sponsors, partners to include interested communities)	• Project Delivery Team (Corps, sponsors, partners to include interested communities)
How?	• Ecosystem Project Viewer (CEJST & Justice40 data) • DRT firsthand knowledge • Web based project input	• Telephone • Letter/E-mail • In person meetings • Web based project input • Social Media		• Regularly scheduled check ins • Newsletters • Community events • Social Media	• "Build a new table" • Accessible public meetings • Communication plan
Where Document?	• Draft Fact Sheet	• Fact Sheet Appendix		• Updated Fact Sheet Appendix	• Communications Plan • Feasibility Report w/ Integrated EA

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2023 HREP SELECTION



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2023 HREP SELECTION



- **Need:** Approved Fact Sheets available to the Program by the 3rd quarter of FY 25 (Apr – Jun 2025) for use in the FY 26- FY 30 timeframe.
- **Goals:**
 - Optimize investment
 - Address UMRS ecological needs at pool, reach, and system scales
 - Enhance public understanding of and trust
 - Flexibility
- **11 July Program Planning Team Meeting**
 - Coordinated need and timeframe with Program Planning Team (UMRR Regional Program Manager, Coordinating Committee, HREP Program Managers and River Team Chairs. Focused on aligning River Team schedules with similar requests to maximize efficient use of time.

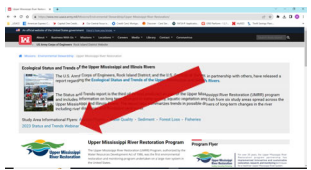






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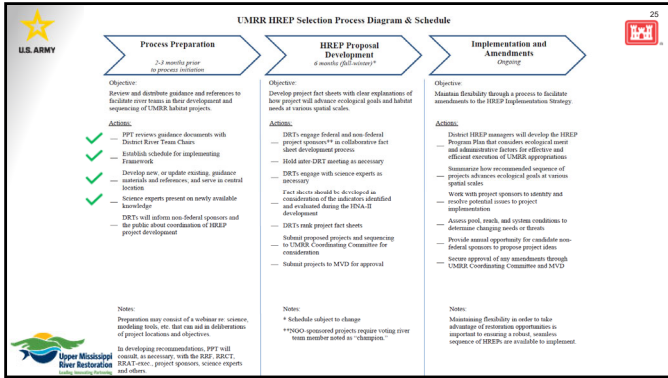
SUPPORT TO RIVER TEAMS

- HNA II Webinar
 - <https://usace.contentdm.oclc.org/utills/getfile/collection/p16021coll11/id/3834>
 - <https://usace.contentdm.oclc.org/utills/getfile/collection/p16021coll11/id/3834>
- Ecological Status and Trends of the Upper Mississippi and Illinois River 2021
 - <https://pubs.er.usgs.gov/publication/ofr20221039>
 - Webinar: 7 September

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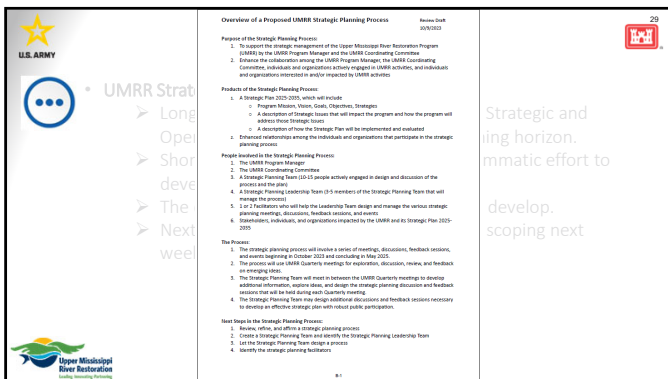
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IMPLEMENTATION ISSUES

Purpose: To identify and describe the variety of issues that have the potential to affect the most efficient implementation of UMRR in the future.

Process: With each Report to Congress (RTC), there has been an attempt to ID and discuss the status of issues that may hinder implementation of UMRR. Last completed an IIA in 2013, updated for 2016 RTC, and held some discussions in 2017. In 2021, the UMRR Coordinating Committee identified the following issues for paper development, including updating three existing issues papers and drafting some new ones:

Issues:

- Project Partnership Agreements (PPAs)*
- Engaging non-traditional sponsors
- Floodplain Regulations
- External Communications
- Federal Easement Lands
- Watershed Inputs and Climate Change
- Water Level Management

*Requires action by Congress to address

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IMPLEMENTATION ISSUES

• 9 August Updates

Federal Easement Lands	Water Level Management	Project Partnership Agreements	Watershed Inputs and Climate Change	Engaging Non-traditional Project Sponsors	External Communications*	Floodplain Regulations
USACE	UMRBA	UMRBA	UMRR CC	UMRBA	USACE	IL
		IL	MN	MN	UMRR CC	UMRBA
			MO	USACE	UMRR COT	
			USGS			

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ODDS & ENDS

- UMRR Workshop
- Mega Eco Symposium

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UMRR WORKSHOP

- UMRR Workshop
 - Last HREP Workshop in 2019
 - **Request for availability has gone out. Planning meetings begin in November and save the date will go out.**
 - Potential topics
 - ✓ Monitoring and Adaptive Management
 - ✓ HREP/LTRM Integration
 - ✓ HREP Design Handbook Update
 - ✓ HREP Lessons Learned
 - ✓ ?

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UMRR WORKSHOP

- UMRR Workshop Planning Group...so far

Agency	Staff
Iowa	Kirk Hansen & Ryan Hupfeld
Minnesota	Vanessa Perry & Nicole Ward
Missouri	Matt Vitello & Molly Sobotka
U.S. F&WS	Sara Schmuecker & Sharonne Baylor
USGS	Jeff Houser & Jim Fisher
USACE	Kara Mitvalsky, Brain Markert, Lane Richter, Elisa Royce, Angela Deen, Kacie Opat, Julie Millhollin, Davi Michl
?	?

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MEGA-ECO PROJECT SYMPOSIUM

October 5, 2023

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MEGA-ECO PROJECTS

“Complex, landscape-scale ecological restoration and construction endeavors that aim to help biodiversity and communities adapt and respond to degraded ecosystems and climate change.”

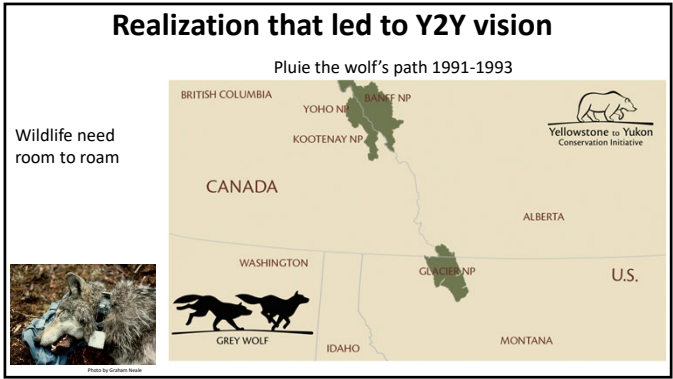
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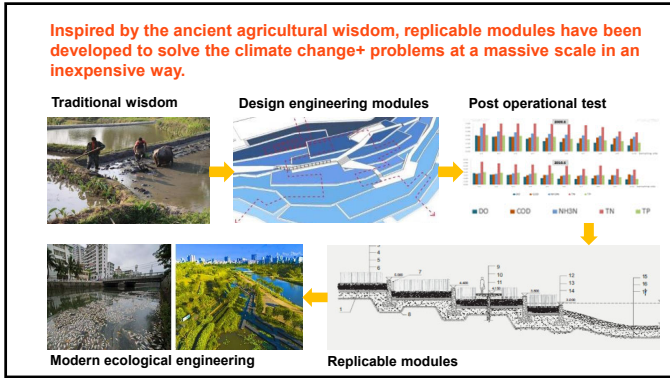
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UMRR COMMUNICATION AND OUTREACH TEAM

Update



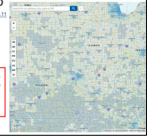




1

Where We've Been ...

- Finalized UMRR COT Framework
- Support for:
 - 2022 UMRR Report to Congress
 - LTRM Status & Trends Report Rollout
- UMRR Environmental Justice Communication
- Collaboration and learning from each other



CLIMATE AND ECONOMIC JUSTICE SCREENING TOOL DEMO

- Disadvantaged areas identified by census tract
- Identifies the factors that result in designation
- Queryable data
- Other tools available (EJScreen) but main source should be CEJST

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income regarding the development, implementation, and enforcement of environmental laws, regulations, and policies, with an equal opportunity to participate in decisions about a project's siting, design, construction, operation, and maintenance.


<https://www.epa.gov/ejscreeningtool>

2

Where We're Going ...

- Calendar Year 2024 Strategy and Anticipated Efforts (November)
- Continued support for UMRR Report to Congress (December)



3




UMRR Communication and Outreach Team

Points of Contact:

Rachel Perrine
USACE-RPEDN-PD-F @ MVR
Rachel.E.Perrine@usace.army.mil

Anne Wurtenberger
USACE-RPEDN-PD-F @ MVR
Anne.C.Wurtenberger@usace.army.mil



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**HABITAT RESTORATION -
DISTRICT REPORTS & FY 23
ACCOMPLISHMENTS**

Upper Mississippi
River Restoration
Early Recovery Institute

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**ST. LOUIS DISTRICT
FY23 ACCOMPLISHMENTS**

Upper Mississippi
River Restoration
Early Recovery Institute

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St. Louis District - Current Habitat Rehabilitation and Enhancement Projects

Upper Mississippi
River Restoration
Early Recovery Institute

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

CONSTRUCTION

Clarence Cannon Refuge, MO (Pool 25)

- Completed Pump Station
- Berm Setback 95% Complete (contract)
- Issued Tree Planting Task Order (contract)

Piasa & Eagles Nest, IL HREP (Pool 26)

- Initiated Stage II Construction
- Hydraulic Excavation & Island Filling

Upper Mississippi
River Restoration
Early Recovery Institute

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ST. LOUIS DISTRICT

Berm Setback 95% Complete FY23

**Clarence Cannon HREP
Berm Setback**

Upper Mississippi
River Restoration
Early Recovery Institute

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ST. LOUIS DISTRICT

Initiated Stage 2

**Piasa & Eagles Nest Islands HREP
Stage Two
Hydraulic Excavation & Island
Filling Construction**

Upper Mississippi
River Restoration
Early Recovery Institute

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ADVANCED DESIGNS FOR FUTURE CONTRACT AWARDS

Oakwood Bottoms, IL (Open River)

- Sponsor U.S. Forest Service
- Well Pumps Package P&S
- 100% Complete
- Pump Station Package P&S
- 100% Complete
- Earthwork & Water Control P&S
- Combined North and South Packages
- 100% Complete

Harlow Island, MO (Open River)

- Sponsor U.S.F.W.S.
- Stage 2 Initiated Design

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ADVANCED FEASIBILITY PLANNING

Yorkinut Slough IL River
Sponsor FWS

- Completed Draft Feasibility Report
- Transmitted Final Report to MVD for Approval Sept 2023
- Completed Public Meeting
- Completed All Reviews
- Coordinated with DU Project

West Alton Islands Pools 26
Sponsor MDC
Sponsor FWS

- Completed Tentatively Selected Plan
- Initiated DQC

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ADVANCING UMRR (MVS)

Gilead Slough, IL Pool 25
Sponsor FWS

Reds Landing, IL Pool 25
Sponsor IDNR

- Data Collection to support FY 24 Planning

- Build Capacity and Maintain Capability**
 - MVS Future Work Fact Sheets
 - Approved - new Meredosia Island Fact Sheet, FWS IL River
 - Spunky Bottoms, TNC / IDNR, IL River
 - Continued dialog draft Fact Sheet
 - Cape Slough, USFS, MS Open River
 - Continued dialog draft Fact Sheet
- Construction and Operations Lessons Learned**
 - Completed site visit to Batchtown HREP
 - Swan Lake Flood Damage Assessment
 - Approved - Letter Report

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ADVANCING UMRR (MVS)

- Data Collection to support HREPS**
 - Completed Aerial Lidar and Digital Ortho Photography for 5 projects
 - Acquired Bathymetry for two projects
- Public Outreach**
 - Piasa and Eagles Nest Islands**
 - Selected Winning Island Names and Recognized Students (Canvasback, Moonlight, and Steamboat Islands)
 - Posted Approved Feasibility Report to UMRR website

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ST. LOUIS DISTRICT PROJECT UPDATE

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ST. LOUIS DISTRICT (MVS) FY24 WORK PLAN

PLANNING –

- West Alton Islands, MO, HREP (Pool 26)**
 - Complete DQC, ATR, Public Review
 - Submit Draft Report for Approval
- New Feasibility Studies (Pool 25)**
 - FY 24 Initiate study activities
 - Gilead Slough, IL FWS
 - Reds Landing, IL IDNR

DESIGN –

- Yorkinut Slough, IL HREP (IL River)**
 - Initiate Design Phase with multiple packages
 - Complete H&H modeling to inform design
 - Complete Sub-surface Borings to inform Design
- Swan Lake, IL HREP Flood Damage Rehabilitation**
 - Design P&S Package(s)
- Harlow Island, IL HREP (Open River)**
 - Complete Stage 2, P&S
 - Initiate Acquisition Stage 1, P&S

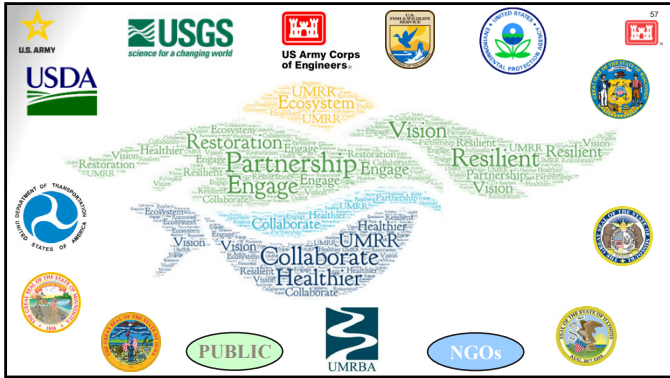
DESIGN – Continued

- Clarence Cannon**
 - Stage 5, Remaining Items P&S Package FY24
- Crains Island, IL HREP (Open River)**
 - Acquisition for Stage 2, Earthwork and Excavation P&S Package Complete

CONSTRUCTION –

- Crains Island, IL HREP (Open River) FWS**
 - Stage 2 Construction Award FY24
- Piasa & Eagles Nest, IL HREP (Pool 26) IDNR**
 - Stage II – Side Channel Excavation and Island
- Clarence Cannon Refuge, MO (Pool 25)**
 - Complete Exterior Berm (Levee) Setback
 - Initiate Reforestation first task order

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ROCK ISLAND DISTRICT (MVR) ACCOMPLISHMENTS 2023

PLANNING –

- Pool 12 Forestry HREP – Pool 12, IA/IL/WI
 - Advanced feasibility study
 - TSP milestone completed – Aug 18th
- Green Island HREP, Pool 13, IA
 - Advanced feasibility study
 - TSP milestone completed – Apr 4th
- Lower Pool 13, HREP, Pool 13, IA/IL
 - Advanced feasibility study
 - Report is at MVD for approval
- Lower Pool 13, Phase II HREP, Pool 13, IA/IL
 - Started feasibility study
- Quincy Bay HREP – Pool 21, IA/IL/WI
 - Advanced feasibility study
 - TSP milestone completed – Aug 25th

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ROCK ISLAND DISTRICT

Beaver Island HREP

Completed Work in FY23

- Completed Dredging
- Grading – completed
- Seeding – completed

Timber Stand Improvements – finishing up

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ROCK ISLAND DISTRICT

Steamboat Island HREP

Completed Work in FY23

- Completed tree clearing
- Rock placement – 30% done

Started Timber Stand Improvements

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ROCK ISLAND DISTRICT

Keithsburg HREP

Completed Work in FY23

- *Spillway construction on going
- *Tree clearing – waiting on frozen ground

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ROCK ISLAND DISTRICT

Huron Island HREP

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

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ROCK ISLAND DISTRICT

Awarded the Forestry Services MATOC - \$9.5million capacity for 5 years

Forest Services

- *Bertom McCartney Island – 320 trees & shrubs planted, 13 acres woody non-native invasives treated
- *Beaver Island Stands A, B, and dredge placement – 80 acres of TSI, 40 acres of vegetation control & planting on dredged placement – Total 1975 trees & shrubs (planting is on going)
- *Beaver Island Stands E and J – has not started yet – 60 acres of TSI
- *Huron Island – only vegetation treatments completed – 3117 trees & shrubs to be delivered this fall
- *Keithsburg - 1500 trees & shrubs delivered, 42 acres of planting
- *Steamboat – only TSI work started, 84 acres, 290 trees to be delivered this fall

Total cost = \$1.9 million

Timber Inventory

- *Award Pool 18 Forestry – completed 500 acres out of 1400 acres
- *Completed 1,000 acres – Cottonwood Island, Monkey Chute, and Long Island projects areas.

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ROCK ISLAND DISTRICT

Upper Mississippi River Restoration

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ROCK ISLAND DISTRICT – UMRR COMMUNICATIONS FY23

Featured Projects/Posts

- Lower Pool 13 HREP
- UMRR Celebrates 35 Years of History and Partnership
- Huron Island HREP Ribbon Cutting
- Pool 26 HREP
- ASACW Visit to Beaver Island HREP
- Bettendorf HS Students Visit Keithsburg HREP
- Huron Island Aquatic Vegetation Planting
- Mussel Collection at Beaver Island

Social Media Analytics

- Facebook/Instagram
 - 18,934 users reached
 - 506 likes/reactions
 - 24 comments
 - 72 shares
- Twitter
 - 2,289 users reached
 - 68 engagements (likes, retweets, etc.)

YouTube Videos

- Three videos created in FY23
 - Lower Pool 13 HREP Public Input Opportunity
 - UMRR Celebrates 35 Years of History and Partnership
 - Huron Island HREP Ribbon Cutting
- Videos garnered 655 views, 9 'likes' and 22 hours of viewership

Upper Mississippi River Restoration

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ROCK ISLAND DISTRICT PROJECT UPDATE

Upper Mississippi River Restoration

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ROCK ISLAND DISTRICT (MVR)

Rock Island District - Current Habitat Rehabilitation and Enhancement Projects

Planning Design Construction

Upper Mississippi River Restoration

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★ PLANNING

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- **Pool 12 Forestry – Pool 12, IA/IL/WI**
 - TSP milestone completed Aug 18th
 - PDT working on drafting the feasibility document
 - DQC review is scheduled Nov 13th
- **Green Island – Pool 13, IA**
 - Public Review closes Nov 11th
 - Open house is Nov 2nd
- **Lower Pool 13 – Pool 13, IA/IL**
 - Final report was sent to MVD on Aug 29th
 - Received comments from MVD on final report
- **Lower Pool 13 Phase II – Pool 13, IA/IL**
 - PDT is drafting Chapters 1-3
- **Pool 18 Forestry – Pool 18, IA/IL**
 - PDT will be scheduling a kickoff meeting soon
- **Quincy Bay – Pool 21, IL**
 - TSP milestone completed Aug 25th
 - PDT working on drafting the feasibility document
 - DQC review is scheduled Oct 31st

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★ DESIGN

U.S. ARMY

- **Steamboat Island Stage II – Pool 14, IA/IL**
 - 100% DQC/BCOE/ATR reviews
 - PDT finalizing back check comments

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★ CONSTRUCTION

U.S. ARMY

- **Beaver Island Stage IB, Pool 14, IA/IL**
 - PDT working on reviewing final survey data
- **Steamboat Island Stage I – Pool 14, IA/IL**
 - Groundbreaking held on October 4th
 - Contractor placing rock at the head of the island (Photo)
- **Keithsburg Division Stage I, Pool 18, IL**
 - Contractor working on the spillway
- **Keithsburg Division Stage II, Pool 18, IL**
 - Contractor working on the building (Photo)
- **Huron Island, Stage III - ERDC, Pool 18, IA**
 - Spring growth survey completed Jun 21st
 - Supplemental plantings completed on Jul 18th
 - Survival survey completed Sep 13th

Steamboat Island Stage I – Rock placement

Keithsburg Division Stage II – Storage Building

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★ ST. PAUL DISTRICT

FY23 ACCOMPLISHMENTS

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★ PROJECT TURNOVER – 3 HREPS

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- **Completed Turnover and O&M Manuals**
- **Updated Template**
- **Positive feedback from Refuge Managers**

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★ BIG LAKE TSP SELECTION

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Lower Pool 4 HREP - Big Lake Alternative 6

- Type
- Dredging
- Island
- Rock Closure
- Sediment Deflector
- Shoreline Stabilization
- Forest Management
- USFS
- River Miles
- Lower Pool 4 HREP - Big Lake Study Area
- USFWS Closed Areas
- County Boundaries

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★ DROUGHT TESTED – BASS PONDS HREP

U.S. ARMY

➤ **MN River: Ability to move water into dry lakes**

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★ FULLY AWARDED MCGREGOR LAKE

U.S. ARMY

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★ WEBVIEWERS

U.S. ARMY

➤ **Developed 2 more webviewers (Robinson & Big Lake)**

- Desktop: Planning tool
- Field: Utilize ArcGIS field maps on iPhones/iPads to record HREP observations

UMRH HREP Field Observations Standard Operating Procedure

Collect Field Observations and Photos for HREP Projects using the ArcGIS Field Maps Mobile App for iOS

Draft April 21, 2022

Mobile GIS Training SOP - ArcGIS Field Maps HREP Field Observations for iOS

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★ MVP'S SMALL UNMANNED AERIAL SYSTEMS PROGRAM

U.S. ARMY

➤ **First drone flight for an HREP**

- **SAAS managed by GIS section**
 - 6 pilots and 2 aircraft
 - Can collect high resolution video, imagery, orthomagey, thermal imagery and non-survey grade elevation data for digital terrain and surface modeling
- **4 HREPs flown in FY23:**
 - Bass Ponds
 - McGregor Lake
 - Capoli Slough
 - Harpers Slough
- **District-wide SUP with the USFWS and compliance with FAA and Army regulations**

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★ MCGREGOR LAKE HREP DRONE FLIGHT

U.S. ARMY

Video removed for file size issues

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★ PUBLIC AFFAIRS OFFICE STATS:

U.S. ARMY

Featured projects/posts

- McGregor HREP
- Robinson Lake HREP

Video Analytics

- 2 videos
- 830 views
- 50 reactions, comments and shares
- Reached 1,685 people

Videos

McGregor construction video: <https://www.facebook.com/usace.saintpaul/videos/883085290001072>

UMRR roadshow video: <https://www.facebook.com/usace.saintpaul/videos/1304341343721269>

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HREP ROADSHOW

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- Corps personnel newer to HREP projects were able to view status and meet with Agency Partners.
- September 13 & 14
- Viewed three completed HREPs: Conway Lake, Harpers Slough, and McGregor Lake.

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Upper Mississippi River Restoration
Living with the River

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ST. PAUL DISTRICT PROJECT UPDATE

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Living with the River

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St. Paul District - Current Habitat Rehabilitation and Enhancement Projects

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PLANNING

U.S. ARMY

- Robinson Lake – Pool 4, MN**
 - Alternatives Meeting (1 Nov)
- Big Lake – Pool 4, WI**
 - Completed Concurrent Reviews
 - Draft Report Released (12 Oct - 17 Nov)
 - Public Meeting (8 Nov)

U.S. Army Corps of Engineers St. Paul District

News: We are seeking public comments on the draft Environmental Assessment (EA) for Big Lake rapid installation and enhancement study on the Upper Mississippi River near Wabasha, Minnesota and will host a public meeting Nov. 8 at Wabasha-Rellogg High School to discuss the project.

You can also watch the presentation live on the our YouTube channel at <https://youtube.com/live/5t6mCjdown> on Nov. 8 or watch it after the meeting.

News release: <https://www.usace.army.mil/News/2022/11/08/USACE-Engineers-Seek-Comments-on-Draft-Environmental-Assessment-for-Big-Lake-Rapid-Installation-and-Enhancement-Study-on-the-Upper-Mississippi-River-near-Wabasha-Minnesota>

Public notice, report and appendices: <https://www.usace.army.mil/News/2022/11/08/USACE-Engineers-Seek-Comments-on-Draft-Environmental-Assessment-for-Big-Lake-Rapid-Installation-and-Enhancement-Study-on-the-Upper-Mississippi-River-near-Wabasha-Minnesota>

U.S. Army Corps of Engineers

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DESIGN

U.S. ARMY

- Reno Bottoms HREP – Pool 9, MN/IA**
 - A/E: Value Engineering Study (7-10 Aug)
 - Award A/E for Design (Stage 2)
- Lower Pool 10 HREP – Pool 10, IA**
 - Continue Stages 1, 2, 3 P&S
 - REVIEWS
 - 65% Review Stage 1
 - Plan-in-hand site visit (11-12 Oct)
 - 95% ATR Review next

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CONSTRUCTION

U.S. ARMY

- McGregor Lake HREP – Pool 9, WI**
 - Stage I: 97% Complete
 - Stage II: 45% Complete
 - Summer: Granular Placement
 - Fall: Just started Thin Layer Placement

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Living with the River

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U.S. ARMY **LOOKING AHEAD...**

> Fact Sheet development process

- **Reno Bottoms**
 - Phase I (Design)
 - Phase II

Active HREPs ✓

- 1. Lower Pool 4**
 - Big Lake (Feasibility)
 - Robinson Lake (Feasibility)
 - Tank Pond
- 2. Bank Stabilization** Pools 4-11
- 3. Weaver Bottoms** Pool 5
- 4. Black River Bottoms** Pool 7
- 5. Pool 8 Floodplain Forest**

Existing Approved Fact Sheets (2020) ✓

Task: New Fact Sheets needed

Goal: 5 for St. Paul	Considerations
Trempealeau Pool 6 ?	
TBD	• Fact Sheet Template
TBD	• Cost
TBD	• Study Area
TBD	• Location
TBD	• Workload

Upper Mississippi River Restoration
U.S. Army Corps of Engineers



1

Water Resources Research

RESEARCH ARTICLE River Geomorphology Affects Biogeochemical Responses to Hydrologic Events in a Large River Ecosystem

T. Waite^{1,2}, K. J. Jankowski³, D. A. Braaten⁴, M. Van Apeldoorn¹, M. Johnston¹, J. N. Houser¹, D. A. Bammann¹, and B. Benke^{1,6}

Motivation: High flow events play an important role in influencing water quality conditions in the UMR. Extreme events are predicted to become more common with climate change.

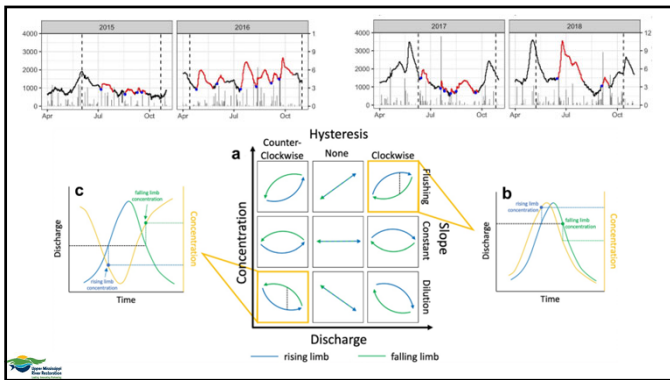
Study Objectives:

1. Characterize how water quality parameters respond to high flow events (concentration – discharge (CQ) responses)
2. Assess whether event responses differed among parameters and areas of the river
3. Evaluate which high flow event characteristics (e.g., magnitude, duration) are related to water quality responses

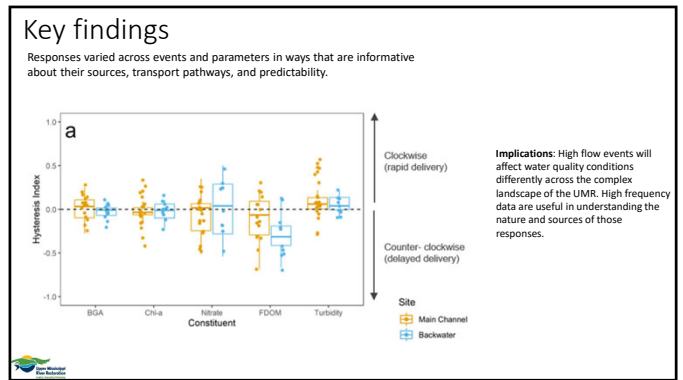
Approach:

- Used high-frequency sensor data collected in the main channel and a backwater during growing seasons 2015–2018
- Compared event-specific responses of **turbidity**, **dissolved organic matter (DOM)**, **nitrate**, **chlorophyll a**, and **phycocyanin (cyanobacteria)**
- Calculated concentration-discharge metrics for each event (i.e., slope and hysteresis). Allows for interpretation of sources and transport pathways

2



3



4

Global Biogeochemical Cycles

Research Article | Open Access

Long-Term Changes in Concentration and Yield of Riverine Dissolved Silicon From the Poles to the Tropics

Kathryn Jankowski, Vera Johnson, Lenneth DeRosa, Paul Johnson, Adam S. Wynn, Arif J. Shogren, Patrick K. Thomas, Renee L. Sullivan, Diane M. Mcknight, William H. McDowell, Ruth Heitdel, Jeremy B. Jones, Wilfried Wollheim, Benjamin Abbott, Linda Deegan, Joanna C. Carey

First published: 23 August 2023 | <https://doi.org/10.1029/2022GB007678>

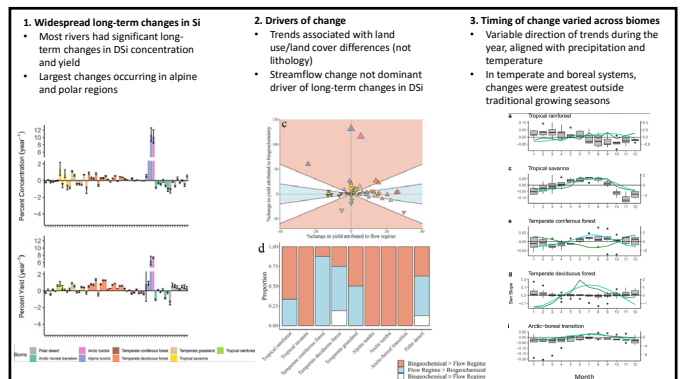
Why study silica in rivers?

- Silica (Si) is required by diatoms (need as much Si as N)
- Diatoms are responsible for ~50% of oceanic net primary productivity and 40% of C burial
- Rivers supply ~80% annual inputs of Si inputs to oceans
- Si is much less studied in rivers than C, N, or P; altered ratios of Si with N or P can favor harmful algal taxa

Study objectives:

- Are river DSI concentrations and yields changing over time across biomes?
- Used data from multiple long-term monitoring networks (LTRM, LTER, USGS, CZAS, Arctic GRON) to assess 15+ year trends
- Are hydrometeorological, geological, or biogeochemical processes associated with changes in DSI concentrations and yields across biomes?
- Evaluated role of land use, lithology, and climate on trends
- Assessed role of changes in streamflow in driving trends
- When during the year do we observe the greatest change in DSI concentrations and yields within and across biomes?

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The Resist-Accept-Direct (RAD) Framework requires a long-term (> 50 year) view of ecosystem change, which can help link decisions across scales

What is RAD? It outlines the 3 possible responses to ecosystem change:

RESIST the trajectory, working to maintain the current or to return to historical system configuration (i.e., its composition, structure, or function)
E.g., maintain oak with forest management

ACCEPT the trajectory, allowing the system to change autonomously
E.g., allow willow forest expansion

DIRECT the trajectory by actively shaping change in the system towards a preferred new configuration
E.g., establish novel forest mixture of warm temperature, flood tolerant species

Title: Reimagining large river management using the Resist-Accept-Direct (RAD) framework in the Upper Mississippi River
Authors: Nicole K. Ward, Abigail J. Lynch, Erin A. Brewer, Joshua Kocken, Kristin L. Shultz, Holly Embke, Jeffrey N. Fouzer, John P. Kock, Joshua Glick, David J. Lawrence, Mary Grace Larson, David Linscott, Shaohua P. Zhang, Ryan M. Yantford, Dawn M. Roberts, Jerome Shreve, John M. Morton, Jeffrey D. Munnich, Robert Newman, David C. Oliver, Heidi M. Ravitza, Greg D. Sass, Amber Shultz-Laura M. Thompson, & Jennifer Z...

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The Resist-Accept-Direct (RAD) Framework requires a long-term (> 50 year) view of ecosystem change, which can help link decisions across scales

Decision Interdependencies
Key Cross-Scale Information Needs

Large Scale (Basin)
Develop basin goals → Reach transformation → Site mosaic

Mid Scale (Lower Reach)
Basin trajectory → Develop reach objectives → Site conditions

Small Scale (Site)
Basin vision → Reach prioritization → Implement site actions

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The Resist-Accept-Direct (RAD) Framework requires a long-term (> 50 year) view of ecosystem change, which can help link decisions across scales

Reach-scale RAD portfolios: Diversify efforts and enhance adaptation

Reach objective: Resist loss of habitat diversity
Resist loss of oak/maskeg forest & corresponding low riparian diversity
Site 1 initial conditions: high topographic & substrate diversity

Reach objective: Accept loss of habitat diversity
Accept loss of oak/maskeg forest & conversion of overbanking. Push habitat to willow & marsh
Site 2 initial conditions: low topographic & substrate diversity

Reach objective: Direct habitat diversity to include flood & warm temperature adapted species
Change to 20-year habitat mosaic of oak/maskeg forest, willow & open water
Direct conversion of forest & open water to margin

Direct conversion of marsh to willow & cottonwood forest & resist reed canopy grass invasion
Resist by promoting desirable grasses & to resist reed canopy grass invasion

Increasing directional forcing with time

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FY23 UMRR LTRM Accomplishments

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Pool 4 LTRM + HREPs: LTRM Data is integrated on the HREP project dashboard (Substantial effort by Eric Lund, w/contributions from the entire Lake City team)

Lower Pool 4 HREP Dashboard | P1 Big Lake | P2 Robinson Lake

U.S. Army Corps of Engineers St. Paul District | GIS Section

Summer Dissolved Oxygen mg per L 1993-2021 MN DNR Land

Lower Pool 4 HREP Study Area Boundaries
HREP Lower Pool 4 Study Boundary
HREP Lower Pool 4 Big Lake Study Area

USA Counties

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Pool 4 Veg Sampling Highlight: clear water conditions + increasing frequency of water stargrass in Upper Pool 4

Frequency of Water stargrass in Pool 4

Frequency of Detection (%)

Upper Pool 4

Lower Pool 4

Upper Pool 4

Figure 7. Water stargrass (*Heteranthera dubia*, formerly *Zosterella dubia*) detections in upper Pool 4 over three, 8-9 year time periods (Top panel) and annual prevalence by Pool 4 reach (Bottom panel). [Click to Enlarge](#)

Upper Mississippi River Pool 4 - Summary of 2023 LTRM Aquatic Vegetation
Eric Lund & Clarissa Driscoll
Minnesota Department of Natural Resources
Upper Mississippi River Restoration - Long Term Resource Monitoring (UMRR LTRM)
ERIC.Lund@state.mn.us

Figure 8. Robust submersed aquatic vegetation, primarily water stargrass (*Heteranthera dubia*) and clear water conditions in Catherine Pass backwater, upper Pool 4, Bay City, WI on July 31st, 2023. [Click to Top](#)

12

The State of Minnesota is reviewing and updating their Invasive Carp Action Plan, and requested that the Lake City LTRM contribute to the process

Minnesota Invasive Carp Action Plan

A plan to assess the threat posed by bighead, black, grass and silver carp, and actions to minimize their impact in Minnesota

2018

Upper Mississippi River Restoration

Habitat Needs Assessment-II: Linking Science to Management Perspectives

USGS

Ecological Status and Trends of the Upper Mississippi and Illinois Rivers

Unique opportunity for Lake City LTRM to help link internal state decisions w/UMRR resources and knowledge

REVIEW

Nicole has gladly been pointing to the relevant LTRM/UMRR publications + the conversation!

13

Pool 8 LTRM field station (WNDR)

- Completed 2022 Pool 8 Annual Report
- Completed Pool 8 post field season vegetation report
- Presentations at
 - UMRC WQ tech section
 - Lake Onalaska Rehabilitation and Protection district (public meeting)
 - MRCC
- Lots of wild rice this year!

14

Pool 13 Field station (IADNR)

- Collected 1 millionth fish!
 - Channel catfish caught in hoop net
- 3rd highest flood crest ever at LD 12 in Bellevue with slow, steady decline—good for spawning for many species.
- Large year classes of both game and non-game fishes

15

Pool 13 Field Station (IADNR)

- Ongoing participation in Lower Pool 13 HREPs (Phase I and Phase II).
- Contribute LTRM data, knowledge, and equipment
 - Participation planning team
 - Support for site visits

16

Pool 26 Field station (INHS)

- Eric Hine served President of the Mississippi River Research Consortium
- Outreach:
 - Annual Fishing Fair at Pere Marquette State Park. Used flash cards to teach children and adults fish identification skills.
 - Annual Earth Tones Festival in Alton, IL. Used flash cards to teach children and adults fish identification skills.
- Eric Gittinger presented a summary of our research and outreach activities over the past year during the Illinois Chapter of the American Fisheries Society Meeting.

17

La Grange Field Station (INHS)

Water Quality


- Sara Sawicki joined in August of 2022
- Lab improvements
- Continuing drought/low water levels in LGR
 - Increased airboat usage
 - 30+ SRS sites too shallow to sample

18

La Grange Field Station (INHS)

Fish

- Only 1 young of the year silver carp this year
- Caught 2 Silver Redhorse, 3 White Bass/Striped Bass hybrids, and 1 Northern Pike. Not new species, but tend to only catch 1 or 2 every few years.
- Low water is a continued theme, with Chain/Stewart (backwater lakes) remaining mostly dry for the 2nd sampling season in a row.

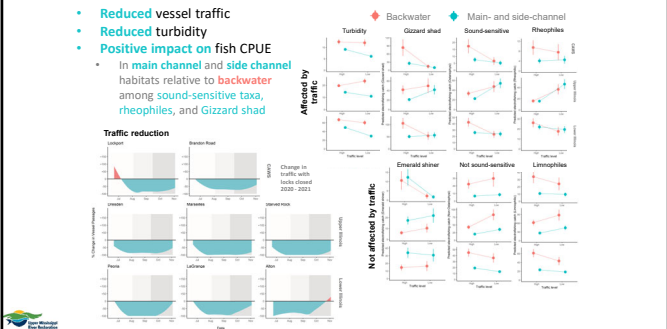



19

La Grange Field Station

2020 Illinois Waterway lock and dam closure

- Reduced vessel traffic
- Reduced turbidity
- Positive impact on fish CPUE
- In main channel and side channel habitats relative to backwater among sound-sensitive taxa, rheophiles, and Gizzard shad

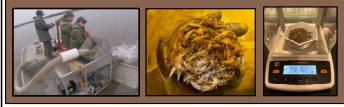
20

La Grange Field Station

Assessing long term changes and spatial patterns in macroinvertebrates through standardized long-term monitoring



Primary Objectives and Approaches

- Determine contaminant levels of PAHs, neonicotinoids, pyrethroids and other current-use pesticides (64 compounds) in burrowing mayfly tissue
- Suction dredge at 3 sites/pool to collect burrowing mayflies for tissue contaminant analysis
- Shipped samples to AXYS for further analysis
- Shipped water and sediment samples to USEPA for further analysis



Current Affairs

- Identify species to lowest taxonomic level and participation in outreach programs
- Processing samples from all sites
- Outreach activities

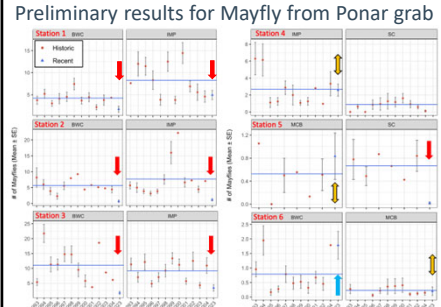



21


La Grange Field Station

Assessing long term changes and spatial patterns in macroinvertebrates through standardized long-term monitoring

Preliminary results for Mayfly from Ponar grab




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22

La Grange Field Station

Vital rates inventory update



Species	Total Number of Samples	Total Sectioned	Total Pictured	Total Measured	Done Sectioning	Done Picturing	Done Measuring	Missing or damaged (not processed)
BIOL	2,663	2,501	2,501	216	Yes	Yes	In Progress	162
CNCP	3,122	2,771	2,837	x	No	Yes	No	352
FWDM-V	1,093	1,057	1,054	1,048	Yes	Yes	Yes	36
FWDM-VH	2,264	2,254	2,852	1,957	In Progress	In Progress	In Progress	x
LWES	1,365	1,323	1,309	555	In Progress	In Progress	No	56
GZSD	3,275	923	x	x	No	No	No	x
BHAW	1,065	x	x	x	No	No	No	x
BHAW	19	x	x	x	No	No	No	x
BWPN	334	x	x	x	No	No	No	x
CNSN	91	x	x	x	No	No	No	x
ENIN	1,126	x	x	x	No	No	No	x
MNSN	83	x	x	x	No	No	No	x
OSPF	394	372	53	x	In Progress	In Progress	No	x
RVCS	221	x	x	x	No	No	No	x
SPSH	513	x	x	x	No	No	No	x
SVCP	400	x	x	x	No	No	No	x
WRBH	2	x	x	x	No	No	No	x
YVPH	527	x	x	x	No	No	No	x
Total:	19,684	11,281	9,796	3776				



23

MDC: Day on the River set for Sept. 16 at Cape Girardeau's Riverfront Park


Open River Field Station (MDC)

Search News
 By Keyword

STAY IN TOUCH WITH MDC
 Stay in Touch with MDC news, newsletters, events, and manage your subscription

Sign Up

OUR MAGAZINES
 Xplor
 Xplor reconnects kids to nature and helps them find adventure in their own backyard. Free to residents of Missouri.
 Missouri Conservationist
 A monthly publication about conservation in Missouri. Started in 1938, the journal magazine is free to residents of Missouri.




Attendees at MDC's Day on the River will also discover informational booths, live aquatic animal displays, live birds, and kids' crafts. Staff with the Upper Mississippi River Restoration program will also be available for attendees to ask how MDC can help.

News from the region: Southeast
 By: Josh Manning @9/11/2023

CAPE GIRARDEAU, Mo. – The Missouri Department of Conservation's (MDC) Day on the River event showcasing the mighty Mississippi River is set for 10 a.m. – 2 p.m. on Sept. 16 at Riverfront Park in Cape Girardeau. All ages and groups are welcome at this free event. No registration is required.

MDC Naturalist Angela Pierce said Day on the River is a "prime opportunity" to learn about the Mississippi River.



24

Open River Field Station (MDC)

The image shows a collage of text and images related to the Open River Field Station. At the top left is the 'Nature LAB' logo. Below it are several snippets from an article titled 'Ohio Shrimp Surveys'. The snippets include text about the importance of monitoring the river's health, the role of the Mississippi River in the state's economy, and the impact of climate change on the river's ecosystem. There are also small photographs of the river and surrounding landscape.

25

LTRM Implementation Planning Group

- Kirk Hansen IADNR
- Jim Lamer IRBS
- Molly Sobotka MDC
- Matt Vitello MDC
- Rob Burdis MDNR
- Nick Schlessler MDNR
- Neil Rude MDNR
- Andrew Stephenson UMRBA
- Davi Michl USACE
- Rob Cosgriff USACE
- Karen Hagerty USACE
- Matt Mangan USFWS
- Steve Winter USFWS
- Kristen Bouska USGS
- Nate De Jager USGS
- Jeff Houser USGS
- Jennie Sauer USGS
- Robb Jacobsen USGS
- Jim Fischer WDNR
- Madeline Magee WDNR

Facilitators:
David Smith (USGS)
Max Post van der Burg (USGS)

26

Recommended Information Needs for FY 24 - 26

- Floodplain ecology:** Vegetation change across the system
- Floodplain ecology:** Terrestrial and aquatic herpetofauna
- Hydrogeomorphic change:** Geomorphic trends
- Aquatic ecology:** Aquatic vegetation distribution and changes across the system
- Aquatic ecology:** Native freshwater mussel distribution
- Aquatic ecology:** Macroinvertebrate distribution
- Aquatic ecology:** Lower trophic contribution (phyto- and zooplankton)
- Aquatic ecology:** River gradients from Pool 14 to Pool 25
- Restoration applications:** Learning from restoration and management

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Information Needs supported with FY 2023 Funding

- Partially fund
 - 2.1 Geomorphic Trends (fund PI position for 3 years)
 - 3.12 River Gradients from Pool 14 to Pool 25
- Planning for FY24 – 26 is underway.

28

Lower Pool 13 HARP*: Understanding wind dynamics and contributing factors of water clarity, aquatic vegetation, and native freshwater mussels

*HREP associated research project

The image features a wide, calm river under a cloudy sky. The text is overlaid on the top half of the image. The logo for Upper Mississippi River Restoration is in the bottom left corner.

29

Lower Pool 13 HARP: Learning Opportunity

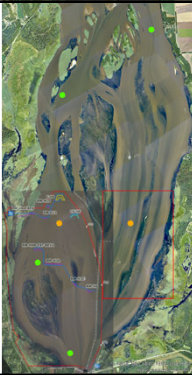
- Brainstorming session at 2022 UMRR Science Meeting
- Physical drivers
 - Sediment resuspension
 - Upstream turbidity
 - Substrate composition
 - Velocity
- Ecological responses
 - Aquatic vegetation
 - Mussels
- Portfolio of physical and ecological responses and interactions

The image shows a collection of hand-drawn diagrams and flowcharts on a grid background. These diagrams represent the brainstorming session's output, detailing physical drivers, ecological responses, and their interactions. The diagrams use various colors and symbols to represent different concepts and their relationships.

30

Lower Pool 13 HARP Research Objectives

- (1) Pilot a radar wave monitoring system to measure existing (pre-project) wave conditions in Lower Pool 13;
- (2) Evaluate relationships between wind, waves, and turbidity, and assess the relative contributions of upstream sources and local resuspension to turbidity in the project area;
- (3) Assess spatial patterns and quantify relationships among wild celery, turbidity, and wave dynamics through additional pre-project water clarity and aquatic vegetation field collections and deployment of wave sensors;
- (4) Estimate substrate stability and population size, density, and species richness of mussels pre-project and determine if areas with stable substrates (RSS<1) have more robust mussel assemblages relative to areas with unstable (RSS>1) substrates.



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2023 LTRM All Hands Meeting 11 – 13 April, Muscatine, IA



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LTRM Fisheries Field Meeting 8 – 11 May 2023 Pool 19 / Kibbe Field Station




33

Vital rates, microchemistry & genetics synthesis

Kibbe Field Station, August 3rd & 4th

Purpose: share findings and develop objectives and approaches for integrating project components




- Missouri State University
 - Dr. Quinton Phelps
 - Hae Kim
- Southern Illinois University
 - Dr. Greg Whitledge
 - Shaley Valentine, PhD candidate
- University of Illinois Urbana-Champaign
 - Dr. Milton Tan
 - Dr. Joel Corush
 - Roberto Cucalón, PhD student
- Illinois Natural History Survey
 - Dr. Jim Lamer
- U.S. Geological Survey
 - Dr. Kristen Bouska

34

Publication: Gene flow influences the genomic architecture of local adaptation in six riverine fish species.
In: Molecular Ecology.

Shi, Y., K. L. Bouska, G. J. McKinney, W. Dokai, A. Bartels, M. V. McPhee, and W. A. Larson.

- Previously reported publication now out as a “hard copy”
- Cover design created by Andy Bartels (WDNR).



35

2023 Mississippi River Research Consortium 19 - 21 April in La Crosse, Wisconsin



SPATIAL AND TEMPORAL SHIFTS IN THE HYDROLOGIC REGIME OF THE UPPER MISSISSIPPI RIVER FLOODPLAIN OVER 83 YEARS

25 YEARS OF AQUATIC PLANT SPATIOTEMPORAL PATTERNS IN THE UPPER MISSISSIPPI RIVER

MAPPING POTENTIAL SENSITIVITY TO HYDROGEOLOGIC CHANGE IN THE UMRS RIVERSCAPE

ATTRIBUTES OF UPPER MISSISSIPPI RIVER SYSTEM CONTIGUOUS FOREST AREAS

INTEGRATING MACHINE LEARNING AND ECOSYSTEM STATE TRANSITION CONCEPTS TO MODEL SUBMERSED PLANT VULNERABILITY AND RESTORATION POTENTIAL

HYDROLOGIC RESPONSE TO HABITAT RESTORATION IN POOL 12 BACKWATERS

MACROINVERTEBRATE ABUNDANCE AND COMMUNITY COMPOSITION ACROSS TWENTY SIX SIDE CHANNELS OF THE UPPER MISSISSIPPI RIVER

THE 50th ANNIVERSARY: RIVER RESEARCH LAB - ILLINOIS RIVER BIOLOGICAL STATION & MRRC 1972-2022. 129 YEARS OF CHANGING RIVER RESEARCH.

PREDICTING PHALARIS ARUNDINACEA (REED) INVASION IN FOREST UNDERSTORIES OF NAVIGATION POOLS 3-13

36

Fall 2023 UMRR Science Webinars	
September 25	October 5
Title	Title
Mapping Potential Sensitivity to Hydrogeomorphic Change in the UMRS Riverscape and Development of Supporting GIS Database	Improving our understanding of historic, contemporary, and future UMRS hydrology by improving workflows, reducing redundancies, and setting a blueprint for future hydrologic modeling efforts
Understanding physical and ecological differences among side channels of the UMRS	Evaluating the LOCA-VIC-mizuRoute hydrology data products for scientific and management applications in the UMRS
A year of zooplankton community data from the habitats and pools of the UMRS	UMRS Fisheries Vital Rates Intro/overview
Systemic analysis of hydrogeomorphic influences on native freshwater mussels	Vital Rates – Microchemistry
Understanding landscape-scale patterns in winter condition in the UMRS	Vital Rates – Genetics phase II
Putting LTRM's long-term phytoplankton archive to work to understand ecosystem transitions and improve methodological approaches	Vital Rates – Mimic and channel shiner genetics
Testing ecosystem state concepts throughout the Upper Mississippi River System will inform restoration and management	Why aren't bigheaded carp everywhere?
Assessing long term changes and spatial patterns in macroinvertebrates through standardized long-term monitoring	Has large scale ecosystem rehabilitation altered functional fish community expressions in the Upper Mississippi River System?
Intrinsic and extrinsic regulation of water clarity over a 950-km longitudinal gradient of the UMRS	Fish Community response to 2020 Illinois Waterway Lock Closure
Using dendrochronology to understand historical forest growth, stand development, and gap dynamics	Forest response to multiple large -scale inundation events
Assessing Forest Development Processes and Pathways in Floodplain Forests along the Upper Mississippi River using Dendrochronology	Reforestation UMRS forest canopy openings occupied by invasive species

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2023 UMRR Science Webinars are available online

- <https://www.mvr.usace.army.mil/Missions/Environmental-Stewardship/Upper-Mississippi-River-Restoration/Key-Initiatives/Workshops/>

Also available is the 7 September 2023 Status and Trends Webinar:

- <https://www.mvr.usace.army.mil/Missions/Environmental-Stewardship/Upper-Mississippi-River-Restoration/>

38

WQ Lab Remodel Is Complete!

39

All 2022 LTRM data are available online (<https://umesc.usgs.gov/ltrm-home.html>)

- Water quality
 - All 2022 data uploaded
 - Graphical browser updated
- Vegetation
 - All 2022 data uploaded
 - Graphical browser and surface maps updated through 2022
- Fisheries
 - All 2022 data uploaded
 - Graphic browsers updated through 2022

40

Information, Data,
Multiple Reports and Publications

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

41

UMRR-LTRM MONITORING AND SCIENCE UPDATE

Davi Michl
Rock Island District
UMRR-CC
25 Oct 2023

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.

U.S. ARMY
US Army Corps of Engineers

1

UMRR MONITORING & SCIENCE FY23

Science in Support of Restoration and Management

LTRM Q4 Obligations

A. Lower Pool 13 HARP	\$ 827,934
B. IP Info Needs 2.1 & 3.12	\$ 1,057,152
C. Topobathy Pilot Task Orders (3)	\$ 1,312,645
A. LTRM portion	\$ 376,070
B. HREP portion	\$ (-936,575)
D. FY24 Advance \$ for Base SOW	\$ 1,212,749

FY23 Total Obligations **\$13,740,667**

Execution Rate **99.2%**

2

UMRR MONITORING & SCIENCE FY24

\$55 Million UMRR Program
2 SOWs in FY24

- SOW for LTRM base monitoring **\$5.5M**
- SOW for science in support (analysis under base) **\$1.5M**

Both SOWs together are equivalent to a fully funded UMRR LTRM element **\$7.0M**

Science in Support of Restoration & Management (combined with analysis under base into 1 SOW) **\$6.85M**

TOTAL: \$13.85M

3

UPPER MISSISSIPPI RIVER RESTORATION (UMRR) PROGRAM OVERVIEW – MARSHALL PLUMLEY

Partner Engagements:

- Mega Eco Symposium 5-6 October U. of Pennsylvania
- UMRR CC 25 October St. Louis, IL

Execution:

- Overall Program \$55,655,097 / \$54,654,076 98.2%
- Regional Program \$3,250,000 / \$2,574,940 79.2%
- LTRM/Science \$13,850,000 / \$13,740,667 99.2%
- MVP HREP \$11,148,000 / \$11,939,954 107.1%
- MVR HREP \$13,502,000 / \$12,978,711 96.1%
- MVS HREP \$13,250,000 / \$13,419,804 101.3%
- FY24 PBJD \$55M / FY24 House \$55M / FY24 Senate \$55M

HREP Design/Construction:

- Steamboat Stage II Design – PDT addressing 100% review comments
- Steamboat Stage I – Contractor placing rock at the head of the island
- Kelthsburg Stage I – Engineering reviewing survey for the next 500' of the spillway
- Kelthsburg Stage IIa – Storage building inside is completed; contractor needs to finish the outside grading
- Beaver Island Stage IB – Waiting for seed growth
- Huron Island – Completed survival survey on 13 Sep

HREP Feasibility:

- Green Island – Public Open House scheduled for 02 Nov
- Lower Pool 13 – Final document sent to MVD on 29 Aug
- Lower Pool 13 Phase II – PDT drafting Chapters 1-3
- Pool 12 Forestry – DDC is scheduled for Nov
- Quincy Bay – DDC kick off scheduled for 31 Oct
- Pool 18 Forestry – Internal kick off meeting is schedule for 11 Oct

LTRM:

- UMRR LTRM FY24 Base Monitoring: **partially funded**
- UMRR LTRM FY24 Science in Support of Restoration and Management: **SOW being drafted**
- FY24 UMRR Science Meeting (Jan 16-18): **planning**
- Topobathy update
 - Pilot study task orders – **awarded contracts in Sep**
- FY24 Acquisition

4

UMRR MONITORING & SCIENCE FY24

LTRM

	Budget (gross)
MN	\$941,773
WI	\$808,561
IA	\$553,442
Great Rivers (IL)	\$576,343
Big Rivers & Wetlands (MO)	\$612,912
IRBS (IL)	\$634,892
Equipment	\$175,461
Science meeting	\$ 10,483
STATES TOTAL (-carry-in)	\$4,345,686*
UMESC TOTAL (-carry-in)	\$3,528,893
Corps tech/science reps	\$ 77,000
TOTAL FY24 LTRM BUDGET	\$7,951,579

5

QUESTIONS?

6