Upper Mississippi River Restoration Program
Coordinating Committee Quarterly Meeting

February 28, 2024

Highlights and Action Items

Thatch Shepard announced that Kelly Keefe will take over as MVD representative and Co-Chair of the UMRR Coordinating Committee for Brian Chewning. Coordinating Committee members expressed appreciation to Chewning for his dedicating and contributions during his tenure as Co-Chair and welcomed Keefe into her new role.

Program Management

- **On January 18, 2024, Congress enacted a continuing resolution extending current funding levels of the federal government until March 1, 2024. UMRR has obligated $6,934,159 as of the end of the first quarter.** Funds for LTRM base monitoring was not initially available for obligation in the first (through 17 Nov) Continuing Resolution (CR), but were made available for obligation in the second (through 19 Jan) CR. 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.

- At the time of the quarterly meeting, total obligations, including a renewed contract option period for support services through UMRBA, a contract award in MVS, and a fully funded LTRM, total approximately $12 million.

- **Program allocations will differ from anticipated at the outset of the year due to a delay in a contract award for Steamboat Island and favorable bids on contracts in MVS. Contingency plans are in place to obligate program funds.**

- The President's FY 25 Budget is anticipated to be released on March 11, 2024. **UMRR has capability close to its full authorized funding level of $90 million. Senators from Illinois, Minnesota, and Wisconsin sent a letter to ASA(CW) Connor and the Office of Management and Budget (OMB), requesting support for $55M for UMRR in FY25.**

HREP selection

- **Corps staff have provided updated guidance to River Teams** on topics such as handling overlap with completed projects, Environmental Justice (EJ) area identification and outreach, how to approach previously completed fact sheets, and costs. River Teams initiated workshops, including an Illinois River workshop attended by the FWIC and RRAT on February 22, 2024.

- **The regional viewer developed for River Teams to use during the project selection process will be maintained and available into the future to document restoration needs across the system.**

- **In May, the Program Planning Team (PPT) anticipates convening to ensure the HREP project selection process is moving forward as expected. River Teams anticipate having draft project fact sheets submitted to executive level teams by August 2024.** The PPT may convene in August to review draft fact sheets with the River Team Chairs. River Teams anticipate presenting new fact sheets to the UMRR Coordinating Committee at the February 2025 quarterly meeting and to seek endorsement by the Coordinating Committee in May 2025.

Strategic Planning

- **The UMRR Coordinating Committee met on November 27 and December 11, 2023 to complete the Strategic Plan process overview document. The committee engaged a facilitator, Chrissa Waite of USACE Collaboration & Public Participation Center of Expertise, in January 2024 to support the process. On February 20, 2024, the strategic planning leadership team met with Waite and discussed sequencing of activities outlined in the process overview document.**
- **Waite led the UMRR Coordinating Committee and quarterly meeting attendees through an initial Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis.**

Implementation Issues

- UMRR and partners have communicated with Congress and Corps leadership about concerns related to Project Partnership Agreements (PPA). The previous process to sign an MOA for projects on federal lands but managed by a state has changed due to policy and law. **The Corps** (HQ, MVD, and Districts) **internally agreed that a legislative fix is not needed, and the agency is allowed to sign for O&M of projects on these lands with states or in certain cases other partners capable and willing to take on responsibilities. A new model PPA is being drafted by USACE HQ.** It was suggested that any UMRR-specific MOA be developed in consideration of and with applicability to other authorities on the river, such as NESP.

UMRR Workshop

- **The next UMRR workshop will be held from May 7-9, 2024 in Bettendorf, IA.** Around 140 potential attendees are expected. There will be a program focus, small group HREP discussions, and LTRM/HREP integration. The workshop agenda planning team has held four planning sessions and now have a preliminary agenda for the workshop.

Comprehensive Benefits of HREPs

- **ASA(CW) Memo dated January 5, 2021 and titled "Comprehensive Documentation of Benefits in Decision Documents"** directs the program to include an alternative plan that maximizes net total benefits across all categories in the final array, including national and regional economic and environmental benefits, and other social effects, as well as a locally-preferred plan if requested by the project sponsor.
- **Davi Michl shared that the Net Emissions Analysis Tool (NEAT) was developed by the USACE Air Quality and GHG Emissions Analysis Sub-Community of Practice (AQ/GHG Sub-CoP) to transition output data from publicly available air pollutant and GHG emissions models and integrate them all to compute net effects relevant to USACE civil works and regulatory projects.** For more info, search "NEAT model" here: https://publibrary.planusace.us/#/home. **The UMRR Coordinating Committee will convene a future discussion regarding assessing climate change in HREP planning and using NEAT to assess carbon dynamics.**
- Other social effects of HREPs have been included in feasibility reports. **Marshall Plumley proposed engaging Corps social scientists at a future quarterly meeting for further details and this topic will be included in discussions during the strategic planning process and UMRR workshop.**

National Historic Preservation Act (NHPA) Section 106

- **In October 2022, the Corps began consultation with 55 Tribal Nations, five State Historic Preservation Offices, the Advisory Council on Historic Preservation, USFWS, and National Park Service to develop a joint programmatic agreement for UMRR and NESP. The agreement will clarify review procedures and improve consistency, consultation, and accountability to comply with NHPA Section 106.** USACE anticipates executing an agreement as soon as May 2024. Tribes have asked to have 'invited signatory' status. Each Corps District will be responsible for compliance work but with longer timeframes in which to consult with Tribes, which will lead to greater efficiency and reduce burden on some partners.

Communications

- **The Communications and Outreach Team (COT) is providing ongoing support for the 2022 Report to Congress (RTC) release. The COT has reviewed a** draft brochure and story map for the RTC, which are being developed to help present its content.
- **UMRR will hold a photo contest** internally with partners to engage with the public and partners and have material for social media campaigns.
- **USACE** staff are taking inventory of kiosks and interpretive stations that may need updated UMRR materials and information.
- **USFWS will hold a 100th anniversary event for the UMR National Wildlife & Fish Refuge in June 2024.**

Habitat Restoration

- In MVP, Robinson Lake HREP will feature an innovative new sturgeon spawning reef. An architectural engineering firm was contracted to design Reno Bottoms and Lower Pool 10 HREPs.
- MVR received approval of the Lower Pool 13 report in December 2023, and the Finding of No Significant Impact (FONSI) was signed in January 2024. An alternative formulation workshop was held on February 1, 2024, which produced an array of alternatives. A Pool 18 forestry kickoff was held on November 30, 2023. A multiple award task order contract (MATOC) was awarded at three sites in FY24: Steamboat Island, Lower Pool 13, and Spring Lake. **A ribbon cutting for Beaver Island HREP is anticipated for summer 2024.**
- In MVS, an island naming contest for four new islands at Piasa & Eagles Nest Islands HREP was held, with students from six local middle schools contributing names. The winning students were honored at a recreation festival. The naming process with USGS is still underway. Construction at Clarence Cannon saw closeout of the Stage 4 exterior berm setback.

Long-Term Resource Monitoring and Science

- Accomplishments of the first quarter of FY24 include publication of the following article and book chapter:
  - *Establishing fluvial silicon regimes and their stability across the Northern Hemisphere*
  - The book Resilience and Riverine Landscapes, edited by Thoms and Fuller, features the chapter *Resilience-based challenges and opportunities for fish management in Anthropocene rivers*

- **The UMRR science meeting was held at UMESC in La Crosse, WI on January 16-18, 2024.** The goal was to outline and develop science proposals for consideration in FY24. **Proposals will be discussed at the A-Team's next meeting on April 16, 2024. Selected proposals are expected to be presented to the UMRR Coordinating Committee for consideration of endorsement at its May 22, 2024 quarterly meeting.**

Implementation planning

- The partnership identified opportunities to use additional funds from increased authorization to implement larger and potentially long-term projects and activities to address information needs if funding is sustained at a higher level. In 2023, LTRM funded the initiation of two information needs:
  - Understanding geomorphic change within the UMRS
  - Assessing gradients from Pool 14 to Pool 25.

  If funding levels continue, two additional informational needs are anticipated to receive funds in FY24:
  - Lower trophic levels: abundance, distribution and status of phytoplankton and zooplankton in the UMRS
  - Floodplain ecology: vegetation change across the UMRS.
- **LTRM activities are being implemented under the assumption of a $55 million UMRR program for FY24, including an LTRM budget of $7 million ($5.5 million for base monitoring and $1.5 million for analysis under base) with an additional $6.85 million available for science in support of restoration and management. The program fully funded base monitoring this month. Science in support of restoration and management draft Scope of Work was received on February 16, 2024. Hydrosurveys in support of UMRS systemic topobathy acquisition are anticipated to occur in spring 2024.**
- **The A-team will hold its regular meeting in La Crosse on April 16, 2024**, in conjunction with the Mississippi River Research Consortium (MRRC). The primary purpose of this meeting is to rank science proposals.

Other Business

The MVR change of command is expected to occur on May 23, 2024 in conjunction with the next quarterly meeting.

Upcoming quarterly meetings are as follows:

- **May 2024 – Quad Cities**
  - UMRBA quarterly meeting: May 21
  - **UMRR quarterly meeting: May 22**
- **August 2024 – St. Paul**
  - UMRBA quarterly meeting – August 6
  - **UMRR quarterly meeting – August 7**
- **November 2024 – St. Louis**
  - UMRBA quarterly meeting – November 19
  - **UMRR quarterly meeting – November 20**

1

REGIONAL MANAGEMENT AND PARTNERSHIP COLLABORATION

- FY 2024 Fiscal Update and FY 25 Outlook
- HREP Selection
- Scoping Strategic Plan
- Implementation Issues
- UMRR Workshop
- Odds & Ends

2

FY 2024 FISCAL UPDATE AND FY 2025 OUTLOOK

3

FINANCIAL REPORTING 1ST QTR. FY 24

UMRR Quarterly Budget Report: St. Paul District
FY2024 Q1; Report Date: Wed Jan 10 2024

Habitat Projects

Project Name	Cost Estimates			FY2024 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Lower Pool 10 Island and Backwater Complex	-	$17,000,000	$17,000,000	$78,068	$5,000,000	$5,078,068	$126,526
Lower Pool 4, Big Lake	-	$18,000,000	$18,000,000	$29,071	$250,000	$279,071	$91,017
Lower Pool 4, Robinson Lake, MN	-	$12,000,000	$12,000,000	$29,061	$550,000	$579,061	$71,550
McGregor Lake	-	$23,550,000	$23,550,000	$60,065	$350,000	$410,065	$45,630
Reno Bottoms	-	$10,000,000	$10,000,000	$21,379	$5,000,000	$5,021,379	$964,095
Total	-	$80,550,000	$80,550,000	$217,644	$11,150,000	$11,367,644	$1,298,818

Habitat Rehabilitation

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management	-	-	-	$95,339
Total	-	-	-	$95,339

Regional Program Administration

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
Habitat Eval/Monitoring	-	$425,000	$425,000	$91,502
Total	-	$425,000	$425,000	$91,502

	Carry In	Allocation	Funds Available	Actual Obligations
St. Paul Total	$217,644	$11,575,000	$11,792,644	$1,485,659

4

FINANCIAL REPORTING 1ST QTR. FY 24

UMRR Quarterly Budget Report: Rock Island District
FY2024 Q1; Report Date: Wed Jan 10 2024

Habitat Projects

Project Name	Cost Estimates			FY2024 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Beaver Island	-	$25,288,000	$25,288,000				$32,405
Green Island, IA	-	$16,600,000	$16,600,000	$131,858	$1,900,000	$2,031,858	$241,859
Huron Island	-	$15,773,000	$15,773,000	$2,383		$2,383	$1,154
Kethtoteng Complex	-	$29,643,000	$29,643,000	$78,794	$500,000	$578,794	$99,791
Lower Pool 13	-	$25,288,000	$25,288,000	-	$550,000	$550,000	$339
Lower Pool 13 Phase II	-	-	-	$8,035	$600,000	$608,035	$58,092
Pool 11, WI	-	-	-	-	$50,000	$50,000	-
Pool 12 (City)	-	-	-	$45,550	$600,000	$645,550	$135,193
Pool 10 Forestry	-	-	-	-	$600,000	$600,000	$38,497
Quincy Bay, IL	-	-	-	$68,096	$700,000	$768,096	$174,717
Steamboat Island	-	$41,977,000	$41,977,000	$54,706	$8,200,000	$8,254,706	$202,527
Total	-	$154,569,000	$154,569,000	$389,416	$13,700,000	$14,089,416	$984,452

Habitat Rehabilitation

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management	-	-	-	$12,813
Total	-	-	-	$12,813

Regional Program Administration

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
Adaptive Management	$2,828	$200,000	$202,828	$2,828
Habitat Eval/Monitoring	$118,857	$425,000	$543,857	$21,867
Model Certification/Regional HREP	-	$100,000	$100,000	$2,010
Public Outreach	-	$50,000	$50,000	-
Regional Program Management	$162,211	$1,500,000	$1,662,211	$273,592
Regional Project Sequencing	-	$125,000	$125,000	$7,795
Total	$283,896	$2,400,000	$2,683,896	$308,459

Regional Science and Monitoring

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
Long Term Resource Monitoring	$174	$5,500,000	$5,500,174	$3,323,106
Science in Support of Restoration/Management	-	$8,350,000	$8,350,000	$17,656
Total	$174	$13,850,000	$13,850,174	$3,340,762

	Carry In	Allocation	Funds Available	Actual Obligations
Rock Island Total	$673,486	$29,950,000	$30,623,486	$4,646,479

5

FINANCIAL REPORTING 1ST QTR. FY 24

UMRR Quarterly Budget Report: St. Louis District
FY2024 Q1; Report Date: Wed Jan 10 2024

Habitat Projects

Project Name	Cost Estimates			FY2024 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Clarence Cannon	-	$29,800,000	$29,800,000	$91,513	$650,000	$701,513	$104,277
Crains Island	-	$36,562,000	$36,562,000	$3,340	$4,825,000	$4,828,340	$75,137
Gilead Slough	-	$11,000,000	$11,000,000	$2,454	$550,000	$552,454	$50,381
Harlow Island	-	$37,971,000	$37,971,000	-	$925,000	$925,000	$11,463
Oakwood Bottoms	-	$29,000,000	$29,000,000	-	$525,000	$525,000	$21,267
Pissa - Eagle's Nest Islands	-	$26,746,000	$26,746,000	-	$3,950,000	$3,950,000	$80,761
Red's Landing Wetlands	-	$16,573,680	$16,573,680	-	$475,000	$475,000	$53,335
West Alton Missouri Islands	-	-	-	-	$400,000	$400,000	$145,873
Yorkinut Slough, IL	-	$8,500,000	$8,500,000	$5,721	$750,000	$755,721	$95,624
Total	-	$196,152,680	$196,152,680	$63,028	$13,050,000	$13,113,028	$638,138

Habitat Rehabilitation

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management	$46,864	-	$46,864	$125,145
Total	$46,864	-	$46,864	$125,145

Regional Program Administration

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
Habitat Eval/Monitoring	-	$425,000	$425,000	$38,739
Total	-	$425,000	$425,000	$38,739

	Carry In	Allocation	Funds Available	Actual Obligations
St. Louis Total	$109,892	$13,475,000	$13,584,892	$802,022

6

FY24 DRAFT PLAN OF WORK

	Budget	Obligations as of 31 Dec
TOTAL FY24 Program	**$55,000,000**	**$6,934,159**
Regional Administration and Program Efforts	**$ 1,675,000**	**$ 281,747**
Regional Management	$ 1,260,000	
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**	**$3,495,699**
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**	**$3,156,713**
St. Paul District	$11,150,000	
Rock Island District	$13,700,000	
St. Louis District	$13,050,000	
Model Cert.	$ 100,000	

7

FY24 DRAFT PLAN OF WORK

	Budget	Obligations as of 1 Feb
TOTAL FY24 Program	**$55,000,000**	**$9,504,461**
Regional Administration and Program Efforts	**$ 1,675,000**	**$ 521,209**
Regional Management	$ 1,260,000	
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**	**$3,674,294**
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**	**$5,308,958**
St. Paul District	$11,150,000	
Rock Island District	$13,700,000	
St. Louis District	$13,050,000	
Model Cert.	$ 100,000	

8

FY 24 APPROPRIATIONS

President's Budget	$55,000,000
House	$55,000,000
Senate	$55,000,000
FINAL APPROPRIATION	Continuing Resolution expires March 1

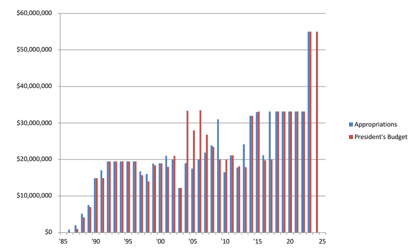
FY 25 APPROPRIATIONS

President's Budget	March 11

9

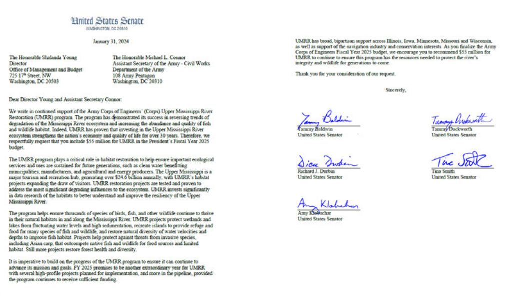
FUNDING

- From 2018-2022, Congress has funded the program to levels matching UMRR's full authorized annual amount of $33.17 million
- WRDA 2020 increased Authorization $55M (HREP = $40M / LTRM = $15M)
- FY 23 $55M Appropriation
- WRDA 2022 Authorization $90M (HREP = $75M / LTRM = $15M)



10

SUPPORT FOR UMRR



United States Senate
WASHINGTON, DC 20510

January 31, 2024

The Honorable Shalanda Young
Director
Office of Management and Budget
725 17th Street, NW
Washington, DC 20503

The Honorable Michael L. Connor
Assistant Secretary of the Army - Civil Works
Department of the Army
108 Army Pentagon
Washington, DC 20310

Dear Director Young and Assistant Secretary Connor:

We write in continued support of the Army Corps of Engineers' (Corps) Upper Mississippi River Restoration (UMRR) program. The program has demonstrated its success in reversing trends of degradation of the Mississippi River ecosystem and increasing the abundance and quality of fish and wildlife habitat. Indeed, UMRR has proven that investing in the Upper Mississippi River ecosystem strengthens the nation's economy and quality of life for over 30 years. Therefore, we respectfully request that you include $55 million for UMRR in the President's Fiscal Year 2025 budget.

The UMRR program plays a critical role in habitat restoration to help ensure important ecological services and uses are sustained for future generations, such as clean water benefitting municipalities, manufacturers, and agricultural and energy producers. The Upper Mississippi is a major tourism and recreation hub, generating over $24.6 billion annually, with UMRR's habitat projects expanding the draw of visitors. UMRR restoration projects are tested and proven to address the most significant degrading influences to the ecosystem. UMRR invests significantly in data research of the habitats to better understand and improve the resiliency of the Upper Mississippi River.

The program helps ensure thousands of species of birds, fish, and other wildlife continue to thrive in their natural habitats in and along the Mississippi River. UMRR projects protect wetlands and lakes from fluctuating water levels and high sedimentation, recreate islands to provide refuge and food for many species of fish and wildlife, and restore natural diversity of water velocities and depths to improve fish habitat. Projects help protect against threats from invasive species, including Asian carp, that outcompete native fish and wildlife for food sources and limited habitat. Still more projects restore forest health and diversity.

It is imperative to build on the progress of the UMRR program to ensure it can continue to advance its mission and goals. FY 2025 promises to be another extraordinary year for UMRR with several high-profile projects planned for implementation, and more in the pipeline, provided the program continues to receive sufficient funding.

B-6

UMRR has broad, bipartisan support across Illinois, Iowa, Minnesota, Missouri and Wisconsin, as well as support of the navigation industry and conservation interests. As you finalize the Army Corps of Engineers Fiscal Year 2025 budget, we encourage you to recommend $55 million for UMRR to continue to ensure this program has the resources needed to protect the river's integrity and wildlife for generations to come.

Thank you for your consideration of our request.

Sincerely,

Tammy Baldwin
United States Senator

Tammy Duckworth
United States Senator

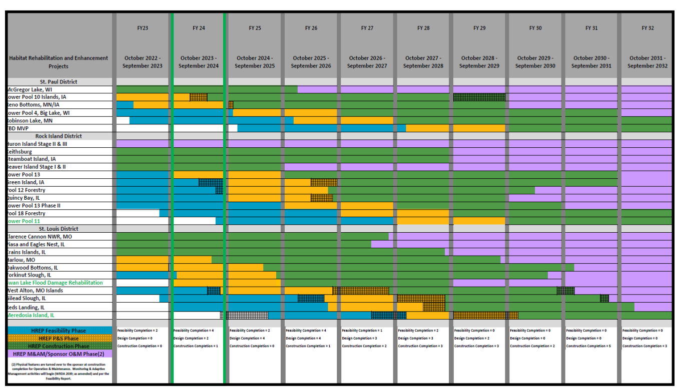
Richard J. Durbin
United States Senator

Tina Smith
United States Senator

Amy Klobuchar
United States Senator

B-7

11



12

HREP SELECTION

13

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.

- Updated guidance provided to River Teams (FWWG, FWIC, RRAT)
  - Physical overlap with completed restoration efforts
  - Environmental Justice
  - Previously endorsed fact sheets
  - Cost

- Support to River Teams
  - Single GIS viewer to input information across the region
  - Staff to support Environmental Justice analysis
  - HNA II & Status and Trends Webinars

- River Teams have initiated workshops
  - Illinois River workshop (FWIC & RRAT)

14

SCHEDULE

- FWWG (St. Paul AOR)
  - 10 August Initial request
  - 9 January Pre-workshop meeting
  - 2 February Workshop

- FWIC (Rock Island AOR)
  - 26 October Pre-workshop meeting
  - 13 November Workshop

- RRAT Tech (St. Louis AOR)
  - 19 January Pre-workshop meeting
  - 7-8 March Workshop

- Illinois River (FWIC & RRAT)
  - 22 February Pre-workshop meeting
  - Workshop being scheduled

15

SCHEDULE

- May 2024 Program Planning Team (UMRR CC, River Team Chairs, Program Manager, & District HREP Managers) Meeting – As needed
- August 2024 Program Planning Team Meeting – Draft Fact Sheets for River Team (RRF, RRCT, & RRAT Exec)
- February 2025 UMRR CC – Presentation by River Teams
- May 2025 UMRR CC – Endorsement of Fact Sheets by UMRR CC

16

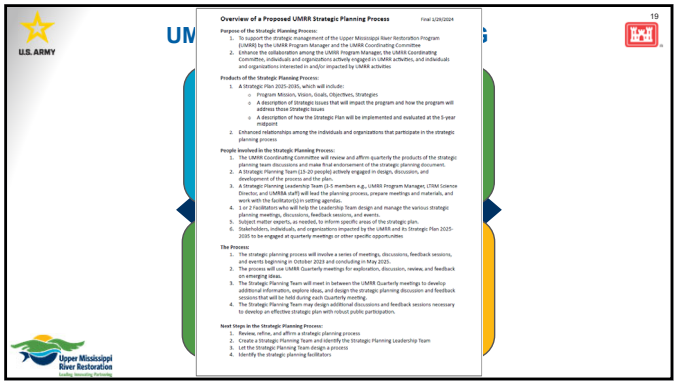
UMRR STRATEGIC PLANNING

17

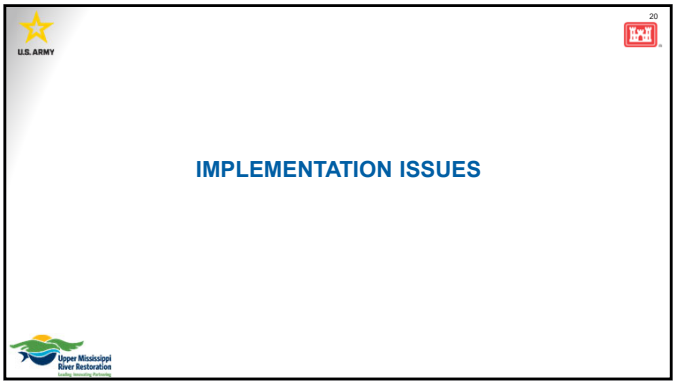
UMRR STRATEGIC PLAN

- **UMRR Strategic Plan Scoping**
  - 27 November & 11 December 2023 Coordinating Committee calls to revise and finalize overview document (B-7 to B-12).
  - January 2024 Facilitator engaged (B-13).
  - 20 February Strategic Plan Leadership Team meeting
  - Next steps: Engage with the UMRR CC on scoping.

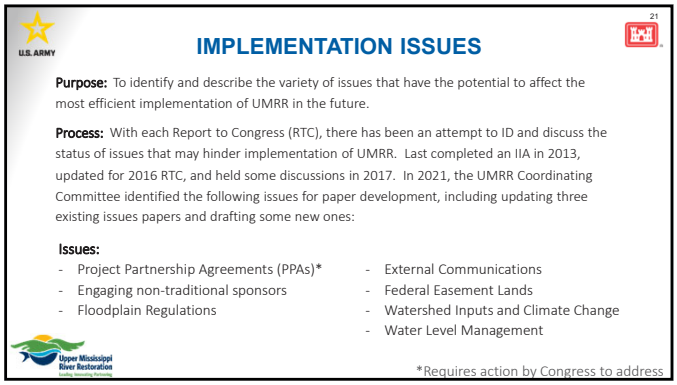
18



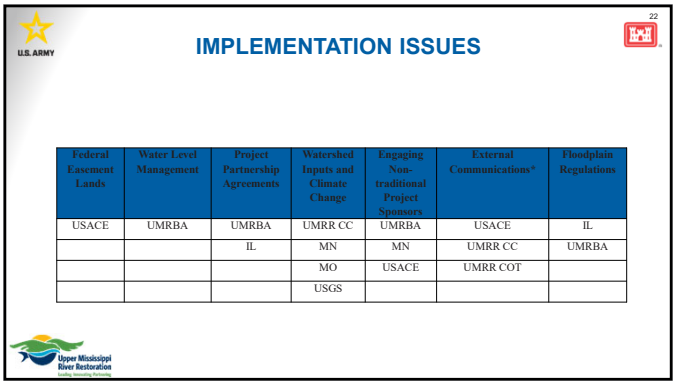
19



20

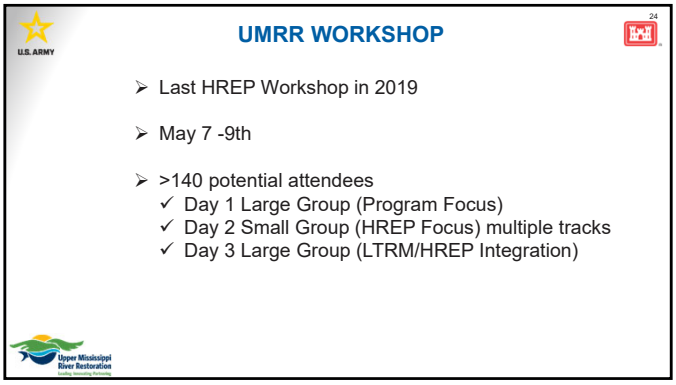


21



22

23



24

UMRR WORKSHOP

- **UMRR Workshop Planning Group**

Agency	Staff
Iowa	Kirk Hansen & Ryan Hupfeld
Minnesota	Vanessa Perry & Nicole Ward
Missouri	Matt Vitello & Molly Sobotka
Wisconsin	Jeff Janvrin & Brenda Kelly
Illinois	Jim Lamer
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, Rachel Perrine, Marshall Plumley
UMRBA	Andrew Stephenson

25

ODDS & ENDS

ASA(CW) Memo (5Jan21) – Comprehensive Documentation of Benefits in Decision Documents

- Identify and analyze benefits in total and equally across a full array of benefit categories
- Include a plan that maximizes net total benefits across all benefit categories in the final array
- Include a locally-preferred plan if requested by the sponsor

26

ODDS & ENDS

Comprehensive Benefits Examples

Report to Congress (2022)

"For every $10 million spent on habitat project construction, the UMRR program supports a total of 306 full-time equivalent jobs in manufacturing, agriculture, tourism, recreation, freight and passenger transportation, and energy sectors among others and $26,426,000 in economic output in the Nation."

Comprehensive Benefits			
NER	RED	EQ	OSE
-	-	-	-
$12.2 Million	$10.3 Million 242 Jobs	650	Increased recreational opportuniti es for fishing, boating, canoeing, and bird watching. Recreation benefits increase respective to habitat unit gain.
$26.5 Million	$22.3 Million 525 Jobs	817	
$42.2 Million	$35.7 Million 842 Jobs	915	

27

ODDS & ENDS

Regional Economic Development

- Economic benefit through tourism, ecotourism, recreation, connection to regional corridors, and increased visibility and use of Quincy Bay and the river
- Improved conditions in the Bay near the downtown area would increase local use and visitation of downtown dining, parks, and walkways
- Economic benefits contribute to City health and lead to enjoyment of the Mississippi River, constructed HREP, and natural resources

Environmental Justice (EJ)

- Provides benefits to immediately adjacent areas of EJ concern (10 census blocks) and documented food deserts (7 census tracts), two of which also represent lack of vehicle access, including:
  - Opportunities for recreational and subsistence fishing*
  - Lower Bay Dredging for Sediment reduction represents unburdened public access for shoreline fishing

Alternative/Area	Local Capture of Total Construction Cost	Output of Total Construction Cost (beyond direct construction dollars)	Jobs (Full-time equivalence)	Labor Income	Value Added to Local Economy
Minimum Plan - Local	$21,030,145	$34,351,712	199.1	$16,944,648	$21,261,548
Minimum Plan - US	$29,333,336	$77,179,917	467.1	$35,666,453	$47,259,756
Habitat Plan - Local	$20,196,457	$32,989,924	191.2	$16,272,920	$20,418,687
Habitat Plan - US	$28,170,489	$74,120,312	448.6	$34,252,545	$45,386,260
Maximum Plan - Local	$24,540,034	$40,084,945	232.3	$19,772,676	$24,810,058
Maximum Plan - US	$34,229,011	$90,061,091	545.1	$41,619,113	$55,147,314

28

ODDS & ENDS

Programmatic Agreement

"Agency Program Alternative" under Section 106 of the National Historic Preservation Act (NHPA)

- Purpose is to clarify review procedures, improve consistency, consultation, and accountability in fulfilling its responsibilities to comply with Section 106
- USACE may defer steps within the Section 106 process until after completing the final USACE decision document and requirements of the NEPA for Program undertakings but before the implementation of applicable Program undertakings

Consulting Parties: 55 Tribal Nations, 5 SHPOs, ACHP, USFWS, NPS

29

ODDS & ENDS

Consultation Outcomes

- Combine both programs (UMRR & NESP) into one agreement document
- Tribes requested having "Invited Signatory" status
- Each District will be responsible for carrying out the stipulations of the agreement

30

ODDS & ENDS

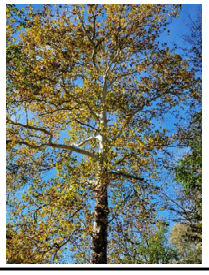
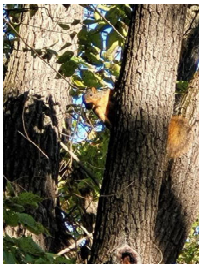
Schedule

Initiate Consultation: Oct 2022
Info Webinar: Dec
Distribute draft: Jan 2023
Workshop 1: Feb
Workshop 2: May
Distribute draft: Aug
Workshop 3: Aug
Distribute final draft: Nov
Workshop 4: Jan 17
Execute Agreement: May 2024

2022 2023 2024

31

DISCUSSION

32

UMRR STRATEGIC PLANNING

PURPOSE
PRODUCTS
PEOPLE
PROCESS

Phase I – Understanding Strategic Issues

Phase II – Develop Strategic Goals and Objectives

Phase III – Strategies and Actions

Phase IV – Public Review Process

Phase V – Finalize Strategic Plan

33

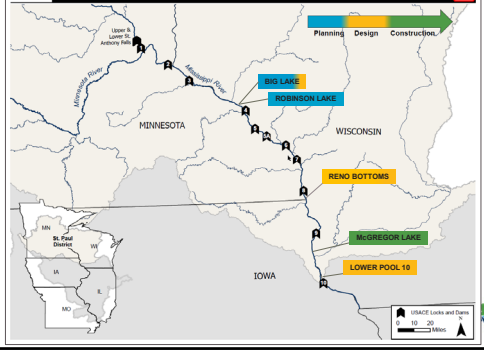
HABITAT RESTORATION - DISTRICT REPORTS

34

ST. PAUL DISTRICT PROJECT UPDATE

35

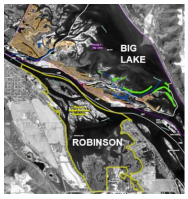
St. Paul District - Current Habitat Rehabilitation and Enhancement Projects

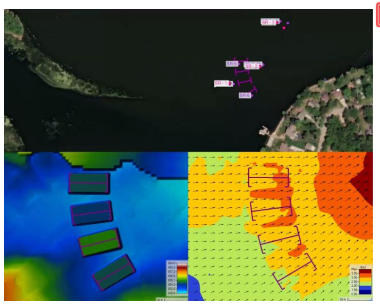


36

PLANNING

- **Robinson Lake – Pool 4, MN**
  - Final alternatives in progress
  - Sturgeon Spawning Reef
- **Big Lake – Pool 4, WI**
  - Completing MVD comments
  - Final Report submittal this Spring

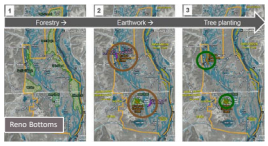




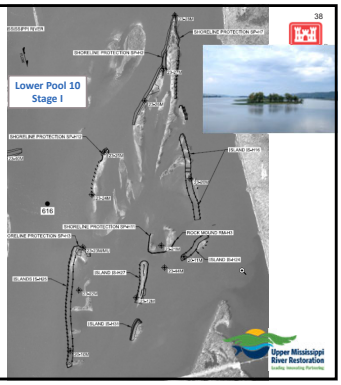
37

DESIGN

- **Reno Bottoms HREP – Pool 9, MN/IA**
  - Stage I: Tree planting SOW
  - Stage II: A/E continuing design, on schedule
    - Borings
    - 65% Review (June)



- **Lower Pool 10 HREP – Pool 10, IA**
  - Continue Stages 1, 2, 3 P&S
  - Stage 1:
    - 95% Review (Feb/Mar)
    - Contract Award (Aug/Sept)



38

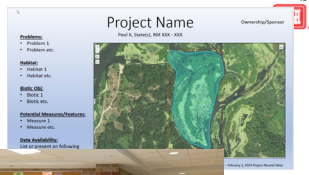
CONSTRUCTION

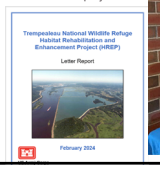
- **McGregor Lake HREP – Pool 10, WI**
  - Stage I: 97% Complete
  - Stage II: 45% Complete
    - Evaluating Thin Layer Placement
  - Construction to resume in March

39

OTHER ACTIVITIES

- **Trempealeau Letter Report**
  - Draft Completed, interagency review
  - Backcheck/close-out (early March)
- **New project Fact Sheets**
  - Kick-off: FWWG Meeting (2 Feb)
  - Interagency ideas presented & discussed
  - Decision on project ideas (March)
- **Outreach**
  - Science Fair showcased District projects





40

video

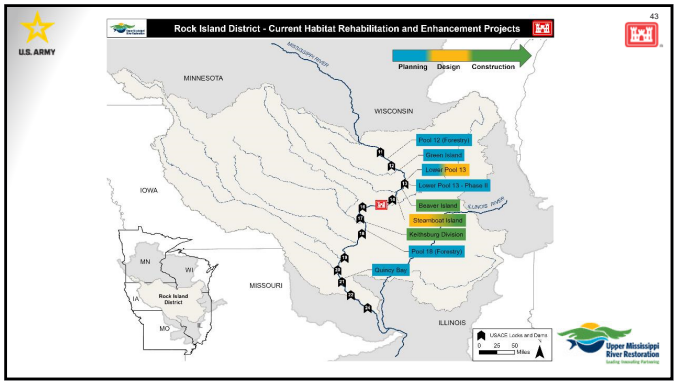
McGregor HREP

https://www.youtube.com/watch?v=m6NQXuMorLg

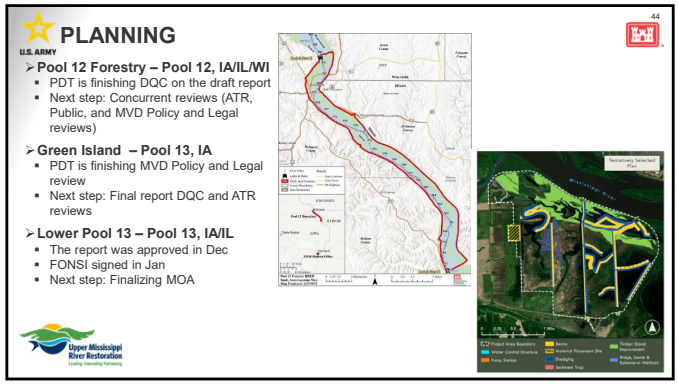
41

ROCK ISLAND DISTRICT PROJECT UPDATE

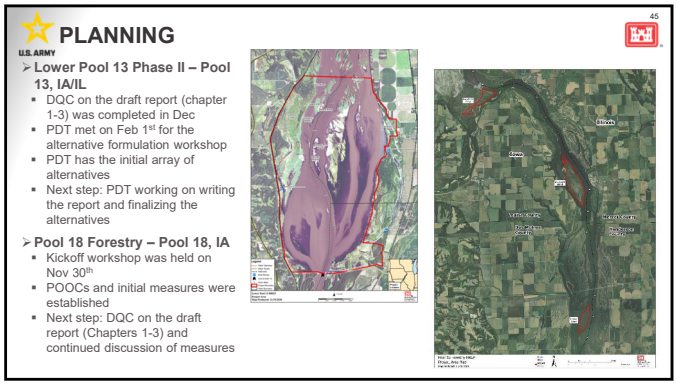
42



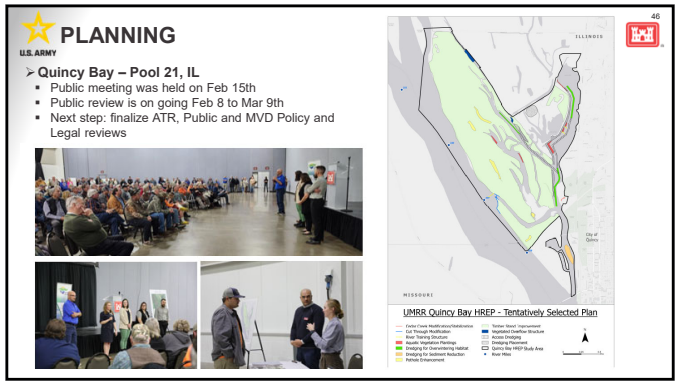
43



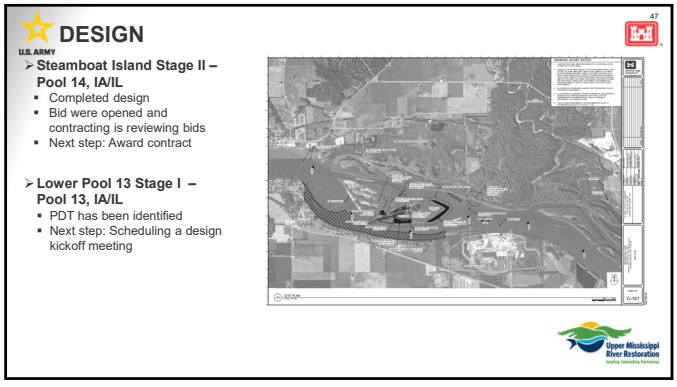
44



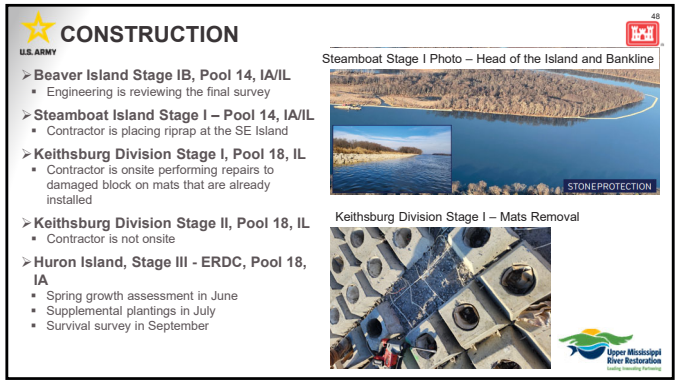
45



46



47



48

OTHER ACTIVITIES

49

- **Forestry Multiple Award Task Order Contract (MATOC)**
  - FY24 SOW:
    - Steamboat
    - Lower Pool 13
    - Spring Lake
- **PER Site Visits**
  - Scheduling the following site visit this FY:
    - Big Timber
    - Rice Lake
    - Pleasant Creek
    - Princeton
    - Lake Odessa

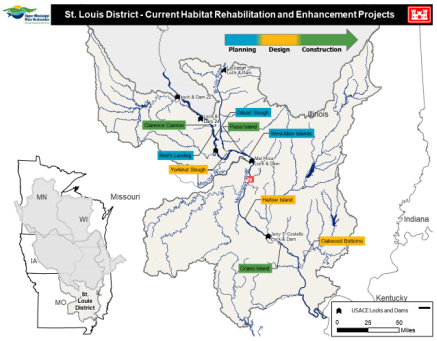
49

ST. LOUIS DISTRICT PROJECT UPDATE

50

50

St. Louis District - Current Habitat Rehabilitation and Enhancement Projects



51

51

PLANNING

52

- **West Alton Islands - (Pool 26) MO - MDC/FWS**
  - Final DCQ, Final ATR
  - Submit Draft Report for Approval 3rd Qtr
- **Gilead Slough (Pool 25) IL FWS**
  - Completed Charette & Site Visits
  - Evaluating measures and alternatives
- **Reds Landing, IL (Pool 25) IDNR**
  - Completed Charette & Site Visits
  - Evaluating measures and alternatives

52

DESIGN

53

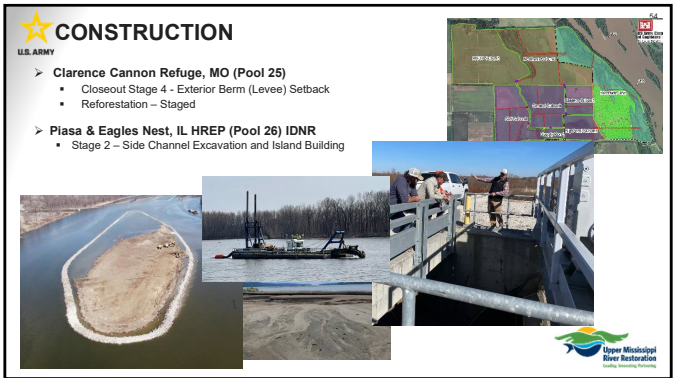
- **Clarence Cannon HREP – Pool 25, MO - FWS**
  - Stage 5, Remaining Items P&S Package
- **Swan Lake FDR – Pool 26, IL - INDR / FWS**
  - Design P&S Package(s)
- **Yorkinut Slough, HREP (IL River) FWS**
  - Design Phase with multiple packages
  - Complete H&H modeling to inform design
  - Complete Sub-surface Borings to inform Design
- **Harlow Island HREP (Open River), MO - FWS**
  - Acquisition Stage 1, P&S
  - Complete Stage 2, P&S
- **Crains Island HREP (Open River), IL - FWS**
  - Stage 3, Excavation Hydraulic & Land based

53

CONSTRUCTION

54

- **Clarence Cannon Refuge, MO (Pool 25)**
  - Closeout Stage 4 - Exterior Berm (Levee) Setback
  - Reforestation – Staged
- **Piasa & Eagles Nest, IL HREP (Pool 26) IDNR**
  - Stage 2 – Side Channel Excavation and Island Building

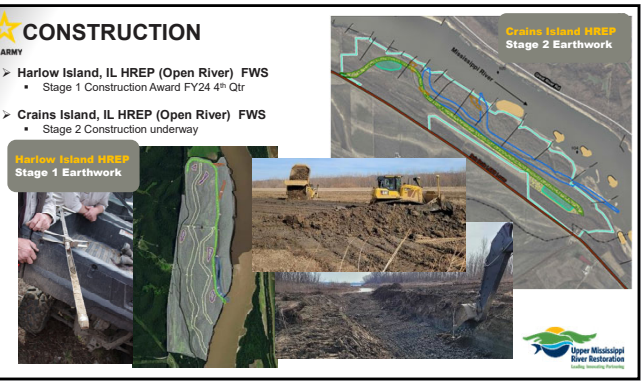


54

CONSTRUCTION

U.S. ARMY

- **Harlow Island, IL HREP (Open River) FWS**
  - Stage 1 Construction Award FY24 4th Qtr
- **Crains Island, IL HREP (Open River) FWS**
  - Stage 2 Construction underway



55

OTHER ACTIVITIES

U.S. ARMY

56

- **New Project Concepts / Draft Fact Sheets Mississippi River**
  - Kick-off: RRAT Meeting (19 Jan)
  - Interagency ideas presented & discussed
  - Decision on project ideas (7 & 8 March)
- **New Project Concepts / Draft Fact Sheets Illinois River**
  - Kick-off: RRAT Meeting (22 Feb)
  - Interagency ideas presented & discussed
  - Decision on project ideas (April)
- **Outreach**
  - HREP Interpretive Signage
- **Performance Evaluation & Monitoring**
  - Data Collection
  - Ted Shanks PER SOW
- **Construction IDIQ Contract**
  - 5 year $50m
  - HREP SOW

56

UMRR COMMUNICATION AND OUTREACH TEAM
Update

1

Where We've Been …

- Ongoing support for 2022 UMRR Report to Congress and LTRM Status & Trends Report Rollout
- Collaboration and learning from each other
- Calendar Year 2024 Strategy & Anticipated Efforts

2

Where We're Going …

- Ongoing support for 2022 UMRR Report to Congress
  - Brochure
  - GIS Storymap
- Photo contest (details to be determined)
- Potential updates to UMRR outreach materials, kiosks, and interpretive stations

Calendar Year 2024 Planning	
COT Meeting	**Strategy and/or Efforts**
February (2/7)	• WTC support • Photo contest planning • Update from USACE on logistics for developing UMRR outreach materials and/or updating current kiosks/interpretive stations
March (3/6)	• Photo contest planning • Migratory Bird Day and National River Month social media posts discussion
April (4/3)	• Photo contest finalization and kickoff (Earth Day social media post)
May (5/1)	• UMRR outreach materials and/or updating current kiosks/interpretive stations planning • UMRR COT review of Migratory Bird Day (USFWS UMR NWFR 100th Anniversary) social media post • Photo contest (ongoing)
June (6/6)	• UMRR outreach materials and/or updating current kiosks/interpretive stations planning • UMRR COT review of National River Month (LTRMT) social media post • Photo contest (ongoing)
August (Date TBD)	• UMRR outreach materials and/or updating current kiosks/interpretive stations planning • Photo contest (ongoing)
September (9/4)	• UMRR outreach materials and/or updating current kiosks/interpretive stations planning • Announce photo contest winner (National Rivers Month social media post)
October (10/2)	• EJ considerations and actions for UMRR
November (11/6)	• Calendar Year 2024 Evaluation/Calendar Year 2025 Strategy and Efforts
December (12/4)	• Calendar Year 2024 Evaluation/Calendar Year 2025 Strategy and Efforts

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

4

PIASA AND EAGLE'S NEST ISLANDS

HABITAT REHABILITATION AND ENHANCEMENT PROJECT
POOL 26
MILES 211.5 – 207.5
MADISON AND JERSEY COUNTIES, IL

Ryan Swearingin
Project Manager, St. Louis District
28 Feb 2024

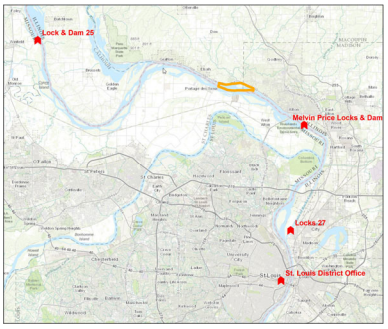
US Army Corps of Engineers

Upper Mississippi River Restoration

1

MBJCUC(6

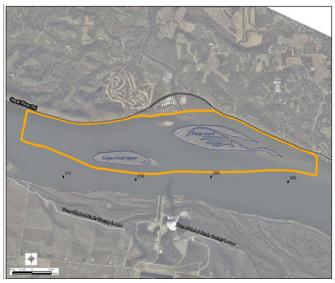
PROJECT LOCATION



2

PROJECT AREA

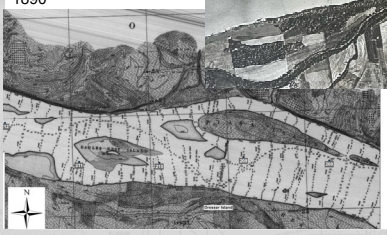
- Left Descending Bank of the Mississippi River, Miles 211.5 – 207.5 (Pool 26)
  - Madison and Jersey Counties, Illinois
  - Upstream of Alton, Illinois
  - Downstream of confluence with Illinois River
  - IDNR Sponsor
  - **Project First Cost 100% Federal**
  - **1381 acres**



3

PIASA AND EAGLE'S NEST ISLANDS HISTORY

1890

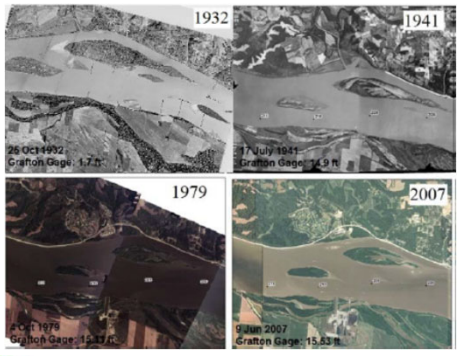


Pre lock and dam

4

BJLCCC(5

Piasa and Eagle's Nest Islands History



5

PRE PROJECT CONDITIONS

6

Slide 2

MBJCUC(6 For your background info...there was tremendous support for this project from partners, stakeholders, organizations, the public, local elected officials etc. It was bar none the largest pubic open house/ meeting we have had for an HREP in MVS (in recent memory)
Markert, Brian J CIV USARMY CEMVS (USA), 2/22/2024

Slide 5

BJLCCC(3 This is an island in the same area I was discussing at the meetings with Robert Oney from the Jackson Group. I suggested that an island in this location, even if it's part of the Missouri River Island Project, could be a benefit to Piasa Chute depths.
Brown, Jasen L CIV CEMVS CEMVD (US), 5/14/2019

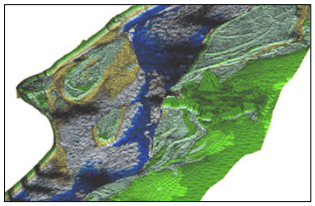
BJLCCC(5 Per my original email conveying my thoughts on this presentation, I feel like a relatively detailed discussion of historic island habitat value (pre lock and dam) would be impactful. This would foreshadow our TSP discussion ensure a good flow thru the earlier slides to the later sides.
Brown, Jasen L CIV CEMVS CEMVD (US), 5/14/2019

PROBLEMS & OBJECTIVES

Problems	Objectives
• Loss of depth and flow in Piasa Chute • Loss of backwater habitat • Loss of diverse island mosaic	• Increase aquatic side channel habitat with depth and flow diversity • Increase connected backwater habitat with depth diversity for enhance backwater fisheries habitat benefits • Restore diverse island mosaic

7

ADAPTIVE HYDRAULICS (ADH) MODEL



Model Runs

2-year event.....254,000 cfs
5-year event.....321,000 cfs
10-year event.....360,000 cfs
25-year event.....415,000 cfs
50-year event.....486,000 cfs

- 30 Alternatives
- 5 Runs / Alternative
- Total of 150 Model Runs
- **Use of ERDC High Performance Computing saved MONTHS of alternative analysis time.**

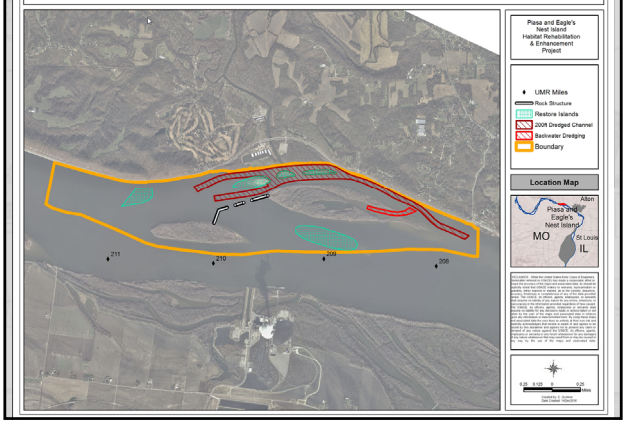
8

TENTATIVELY SELECTED PLAN

- 200-ft wide braided channel excavation of Piasa Chute
- Excavation of the entrance of Piasa Island Backwater
- Construction of notched rock structure between Piasa and Eagle's Nest Islands
- Construction of Islands
- 430 AAHU

9

Tentatively Selected Plan



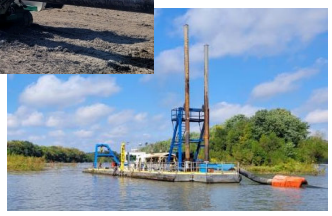
10

STAGE 1 – ROCK PLACEMENT COMPLETE 2022

- 202,000 tons rock
- 5,000 lb top size stone
- $7.2 million

11

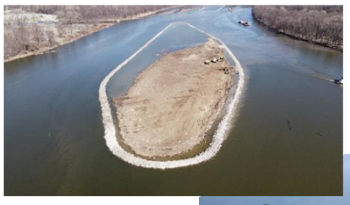
STAGE 2 – HYDRAULIC DREDGING AND ISLAND FILLING - INITIATED



- Contract Awarded 2 Feb 2023 $11.0M
- 1.4 million cubic yards

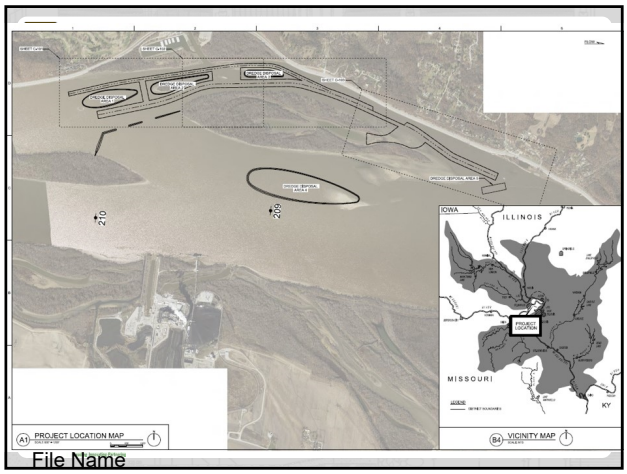
12

STAGE 2 – HYDRAULIC DREDGING AND ISLAND FILLING - INITIATED



- Dredging a braided channel in the side channel between Piasa Island and the Illinois bankline.
- Beneficial use of dredge material is being used to create three islands

13



File Name

14

ISLAND NAMING CONTEST

- Interpretive Services and Outreach Program engaged local middle schools
  - 2,400 students
- Stakeholder Selection Panel
- Recommended names submitted to USGS (Agency Responsible for Island Names)

15

WINNING ISLAND NAMES

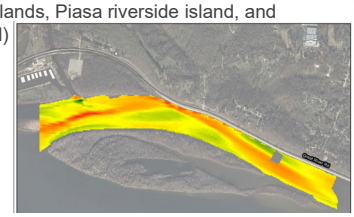
16

QUESTIONS?

17

MEASURES CONSIDERED

- 200 ft braided Piasa Chute dredge cut
- 300 ft braided Piasa Chute dredge cut
- Piasa Island backwater minimum dredge cut
- Piasa Island backwater maximum dredge cut
- Notched rock structure between Piasa and Eagle's Nest Islands
- Island Diversity (three islands, Piasa riverside island, and upstream rootless island)

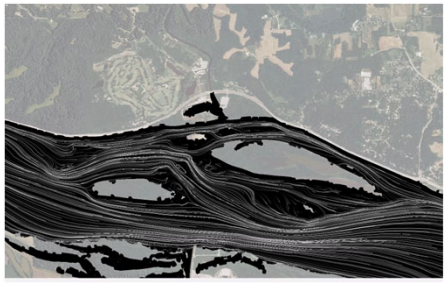


18

Slide 13

MBJCUC(5 sometimes I also use the phrase "hydraulic excavation" in place of dredging....shoudl not matter with this audience....
Markert, Brian J CIV USARMY CEMVS (USA), 2/22/2024

ADH RESULTS – FLOW TRACES



19

SCHEDULE / TIMELINE

20

What controls water clarity in the Upper Mississippi River?

Alicia Carhart
UMRR-Coordinating Committee
February 28th, 2024





Intrinsic and Extrinsic Regulation of Water Clarity in a Large, Floodplain River Ecosystem

Alicia M. Carhart,[1]* Deanne C. Drake,[1] James R. Fischer,[2] Jeffrey N. Houser,[2] Kathi J. Jankowski,[2] John E. Kalas,[1] and Eric M. Lund[3]

Abstract

Ecosystem processes in rivers are thought to be controlled more by extrinsic than intrinsic factors, that is, the result of processes that occur upstream or within their watersheds. However, large floodplain rivers have a diverse assemblage of aquatic habitats connected to the main channel, and the main channel and internal controls may at times describe 24-year trends of TSS in six study reaches of the UMRS. We evaluated the degree to which trends were shared across aquatic areas within each study reach and identified potential drivers of long-term TSS dynamics. Results varied across and within reaches, but the most common pattern we observed was the strongest predictor in nearly all

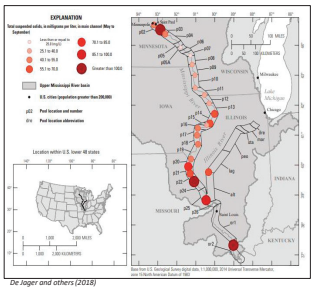
HIGHLIGHTS

- There was significant divergence of main and off-channel water clarity over time
- Intrinsic and extrinsic control of water clarity appeared to vary across the system
- Connectivity, vegetation, and carp abundance were the main drivers of water clarity





Research Questions

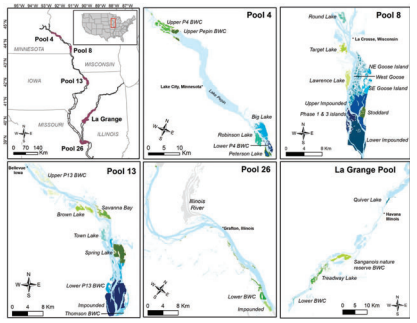


De Jager and others (2018)

1. How has water clarity (i.e., total suspended solids or TSS) changed across longitudinal and lateral connectivity gradients within the UMRS?
2. To what degree were there shared temporal dynamics in TSS between off-channel areas of the river?
3. Which environmental factors primarily control inter-annual variation in TSS in off-channel areas in the UMRS; is water clarity regulated by internal processes, external inputs, or both?

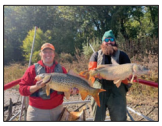
Approach: Evaluate the influence of environmental covariates on long-term TSS dynamics (1994 – 2018) at multiple spatial scales

- Six study reaches
  - 2-10 aquatic areas per reach
- Environmental variables represent a gradient of intrinsic to extrinsic regulation of water clarity
  - Vegetation cover (all lifeforms)
  - Common carp abundance
  - Total phosphorus
  - Input total suspended solids (TSS)
  - Discharge

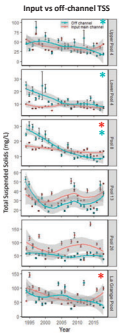


Expected effects of covariates on off-channel water clarity

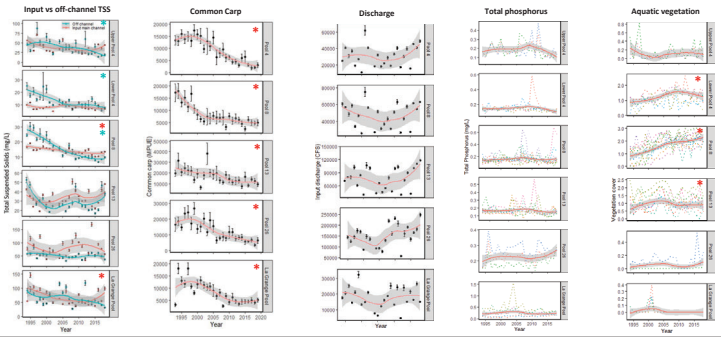

Covariate	Control	Expected effect
Input TSS	Extrinsic **(-)**	Reduced inputs of TSS increase water clarity in off-channel areas
Discharge	Extrinsic **(-)**	At low discharge, lower velocity leads to suspended sediment deposition in off-channel areas, which increases water clarity. As discharge increases, connectivity increases and the delivery of TSS increases.
Total Phosphorus	Intrinsic/Extrinsic **(-)**	Increased inputs of TP may decrease water clarity by stimulating algal growth
Common carp	Intrinsic **(-)**	Common carp cause bioturbation, which resuspends sediment and disrupts growth of vegetation thereby decreasing water clarity
Vegetation cover	Intrinsic **(+)**	Increased vegetation abundance slows water flow, increases sedimentation, and reduces resuspension which increases water clarity

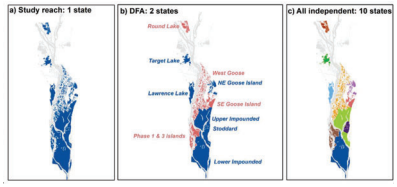
Timing and magnitude of changes have not been consistent among river reaches



Timing and magnitude of changes have not been consistent among river reaches



To what degree were there shared temporal dynamics in TSS between off-channel areas?

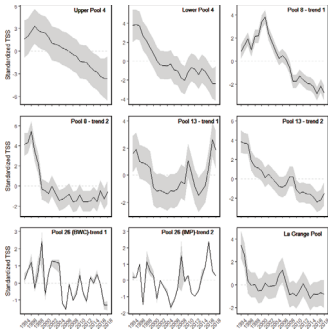


<u>Study reach or "Pool" model</u>
- Upper Pool 4
- Lower Pool 4
- La Grange Pool

<u>Some shared trends among aquatic areas</u>
- Pool 8
- Pool 13

<u>All aquatic areas independent</u>
- Pool 26

Modeled trends of off-channel TSS

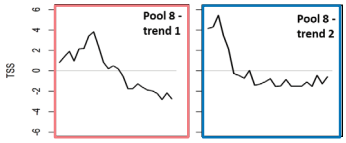


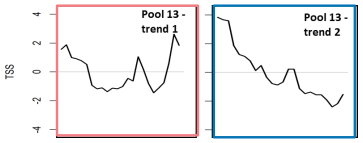
Best model structure varied among reaches

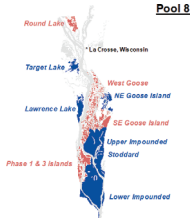
<u>Study reach or "Pool" model</u>
- Upper Pool 4
- Lower Pool 4
- La Grange Pool

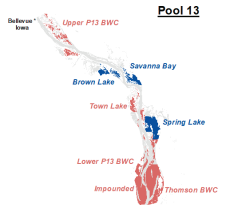
<u>Some shared trends among aquatic areas</u>
- Pool 8
- Pool 13

<u>All aquatic areas independent</u>
- Pool 26









Evidence for intrinsic and extrinsic control of water clarity varied across the system

* Nearly all study reaches indicated associations with <u>both</u> intrinsic and extrinsic processes
* Carp abundance (MPUE) had the most consistent effect across all reaches, with a strong positive effect on off-channel TSS
* Upstream and watershed inputs are important regulators of water clarity but could be secondary to more local, intrinsic processes at some locations
* Marginal model r^2 suggests that there may be additional environmental factors influencing water clarity

<u>Model results (July- October)</u>

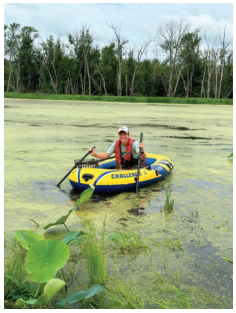
Pool	# states/ common trends	covariates in final model	covariate effect size (coefficient)*	Model r^2
Upper Pool 4	*1*	Carp	**0.438**	**0.486**
		TP	**0.324**	
		InputQ	**-0.291**	
Lower Pool 4	*1*	VegCov	**-0.472**	**0.380**
		TP	**0.208**	
Pool 8	*2*	Carp	**0.274**	**0.607**
		VegCov	-0.202	
Pool 13	*2*	InputQ.1	**0.339**	**0.264**
		Carp	**0.282**	
		InputQ.2	-0.024	
Pool 26	*2*	Carp.1	**0.641**	**0.397**
		InputQ	**0.371**	
		Carp.2	0.257	
		TP	**0.194**	
La Grange Pool	*1*	Carp	**0.390**	**0.259**
		InputTSS	-0.204	
		InputQ	-0.191	

* Significance is indicated in bold where CI did not cross zero.

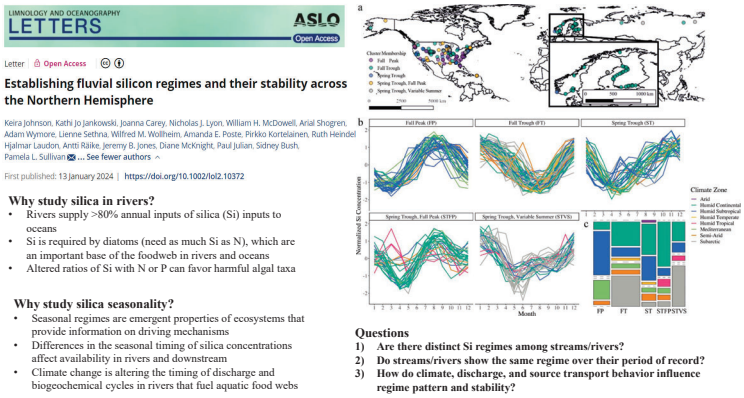
Conclusions & Management Implications

- TSS declines did not simply reflect changes in TSS concentration entering each reach -- a combination of extrinsic and intrinsic processes were important in determining off-channel TSS concentrations
- Effects of environmental covariates differed among reaches
- Connectivity, vegetation recovery, and carp abundance influence *magnitude* of shared off-channel TSS dynamics
- Management actions may vary across the UMRS
  - Identify thresholds of concern
  - Target underlying feedback mechanisms
  - Prioritize management of aquatic vegetation or higher trophic levels (i.e., manage for herbivory or bioturbation)
  - Flow management and catchment processes

Thank You!

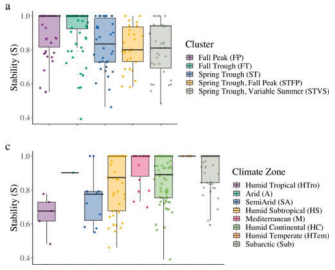


Alicia.Carhart@wisconsin.gov



Do streams show the same regime over their period of record?

- No, many do not
  - There was a wide range in overall cluster stability across streams
- Stability differed among climate zones
  - The humid tropical climate was least stable, likely reflecting muted seasonal variation in Si and stochasticity of precipitation and discharge
  - Mediterranean, humid temperate, and subarctic climates were most stable; seasonality very pronounced in those zones
- In general, clusters with spring trough behavior had lower stability than those without spring troughs.
  - The fall trough cluster was most stable and the spring trough-variable summer cluster was least stable
  - Low stability indicative of sensitivity of Si to changes in winter-spring climate?



Book chapter: Resilience-based challenges and opportunities for fisheries management in Anthropocene rivers

Jason DeBoer, Kristen Bouska, Christian Wolter, and Martin Thoms

Take-aways:

- Anthropocene Rivers are defined by novel conditions and uncertain trajectories

- Factors governing fish populations are broad scale and beyond a managers' control

- A resilience-based approach places an emphasis on increasing ecological, institutional, and societal capacity to deal with change

- Changes in uses and values of the river system require development of a common vision among different 'user sectors' to develop effective management strategies

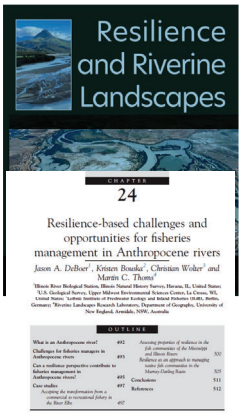
Three case studies:

- River Elbe, Central Europe

- **Upper Mississippi River and Illinois River, United States**

- Murray-Darling River Basin, Australia

DeBoer, J. A., K. L. Bouska, C. Wolter, and M. C. Thoms. 2023. Resilience-based challenges and opportunities for fisheries management in Anthropocene rivers. *in* Thoms, M. and I. Fuller (eds.) Resilience and Riverine Landscapes. Elsevier, 500 p.



2024 UMRR Science Meeting

2024 UMRR Science Meeting

- USACE, USGS, USFWS
- MDNR, WDNR, IADNR, INHS, ILDNR, MDC, UMRBA
- National Great Rivers Research and Education Center
- National Audubon Society
- Univ. of Minnesota, UW-La Crosse, Iowa St. Univ, Lewis and Clark College

Acknowledgements

Acknowledgements

- Working group leaders: Kristen Bouska, Nate De Jager, Brian Ickes, Kathi Jo Jankowski, Molly Van Appledorn, Lyle Guyon, Andy Meier
- Jim Fischer and Davi Michl
- UMRR LTRM Analysis Team
- Randy Hines and Lisa Hein
- Everyone who attended

2024 UMRR Science Meeting

- River/floodplain science ⇄ River/floodplain restoration
- Mix of extensive experience and fresh perspectives
- Time to think and discuss
- Collaborative, relevant projects

Photo provided by J. Janvrin (WDNR)

2024 UMRR Science Meeting: Intended Meeting Outcomes

- Primary goal:
  - Outline proposals for consideration in FY 2024
- Other meeting outcomes:
  - Ideas for future work
  - Better network of restoration professionals and river/floodplain scientists

2024 UMRR Science Meeting Working Groups

- WG1: Modeling physical and biological components of the UMRS under different environmental and management actions
- WG2: Effects of aquatic vegetation on:
  - Nutrient and carbon retention, processing and export;
  - Sediment retention and hydrogeomorphology
  - Oxygen dynamics and ecosystem metabolism
- WG3: Quantifying spatial and temporal patterns in temperature in the UMRS and implications for biota [*joint mtg of WG1 and WG2*]
- WG4: Fisheries: Enhanced understanding of UMRS upper aquatic trophic levels
- WG5: Floodplain ecology
- WG6: Linking restoration actions and ecological responses

2024 UMRR Science Meeting: Day 1

- Welcome and Orientation
- Modelling Plenary
- Ecological Response to Restoration Plenary
- Initial working group discussions

2024 UMRR Science Meeting Day 2

Time	WG 1: Modelling	WG 2 and 3: Water quality	WG 4: Fisheries	WG 5: Floodplain ecology	WG 6: Ecological response to restoration
8:30 -10:30	Input Needs and Improvements Related to Aquatic Functional Classes (8:30-9:30) and Floodplain Functional Classes (9:30-10:30).	Ecological impacts of increased aquatic vegetation in a large floodplain river system	Review ideas and direction from 2022 Science meeting; Brainstorming new ideas for 2024 and beyond	Hydrogeomorphic interactions and feedbacks with forest succession processes	Ecological responses to side channel rehabilitation
10:30 - 10:45	Break	Break	Break	Break	Break
10:45 - 11:45	Input Needs and Improvements Related to Modelling Submersed Aquatic Vegetation	Ecological impacts of increased aquatic vegetation in a large floodplain river system	Focus on upper trophics and 2022 Status and Trends Report findings driving this	The role of groundwater-surface water interactions, soils, and forest dynamics	Establish habitat criteria for mussels
11:45 - 12:45	Lunch	Lunch	Lunch	Lunch	Lunch
12:45 - 1:45	Modelling Water Clarity and Temperature (joint meeting of WG 1 and WG 2/3)		Conceptual model and hypothesis development	Forest loss, transitions, and recruitment	Establish habitat criteria for mussels
1:45 - 2:00	Break	Break	Break	Break	Break
2:00 - 4:00	Input Needs and Improvements Related to Modelling Floodplain Vegetation (2:00-3:00). Review any additional issues related to plenary Q and A session (3:00-4:00)	Modelling Water Clarity and Temperature continued; Ice cover; continued discussion from morning	ID supporting data sources, new data needs, methods, and individual contributions.	Continued discussion time & floodplain ecology research priorities	Habitat requirements of lentic/backwater fish assemblages

2024 UMRR Science Meeting Day 3

- Continued working group discussion and presentation preparation
- Plenary session for Working group presentations
- Lunch/wrap up

Day 1: Modelling Plenary: The Motivating Question(s)

- How is the abundance and distribution of various river attributes, such as:
  - Aquatic and Floodplain areas / habitats
  - Submersed Aquatic Vegetation
  - Floodplain Vegetation

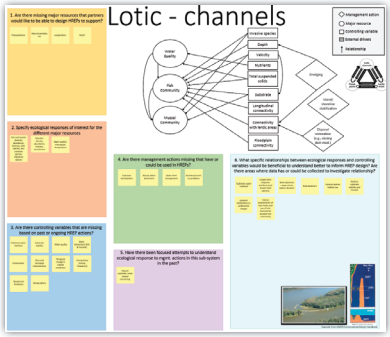
  likely to change over the next 50-100 years in response to changing climate, hydrological regimes, and geomorphology?

Day 1: Linking Restoration Actions & Ecological Responses Plenary

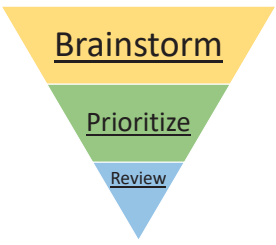
- Prioritized information need from LTRM Implementation Planning:
  - Build capacity to learn from management actions across the UMRS
  - Resolve uncertainties regarding the ecological role of management actions
  - Enhance LTRM capacity to provide technical expertise as part of HREP PDTs
- Develop participatory and collaborative approach across UMRR program elements for prioritizing which hypotheses are pursued

Linking Restoration Actions & Ecological Responses: UMRR Science Meeting Brainstorm Session

- Introduced Research Framework
- Held brainstorm session
  - Floodplain (2)
  - Lotic channels (2)
  - Lentic backwaters (1)
  - Lentic impounded (1)
- Structured around six questions
- Goals:
  - General awareness of potential program development
  - Elicit uncertainties regarding ecological response to management actions from which future HREPs would benefit
  - Identify past efforts where there has been effort to understand ecological response to mgmt. actions



Linking Restoration Actions & Ecological Responses: Development of a Collaborative Research Framework



Research Framework →

Partnership involvement:

- UMRR Science Meeting Brainstorm Session
- UMRR Workshop Brainstorm & Prioritization Session
- Presentations within partnership+ forums (A-Team, River Teams, UMRCC) Interagency Review of draft document

Advisory Team

Documents:

- Priority uncertainties
- Existing datasets to assess uncertainties
- Near-term HREP opportunities to study
- Lessons learned from past efforts to guide future efforts

WG1 - Modeling physical and biological components of the UMRS under different environmental and management actions

- Overarching question: How is climate change likely to affect river flows, water quality, and aquatic and floodplain vegetation on the UMRS?
- Topics selected for proposals:
  - Generating future hydrology, water temperature, and water clarity projections for the UMRS using hybrid deep learning
  - Submersed plant responses to wind, waves, velocity, and shear stress -- Spatial/temporal modelling of aquatic vegetation with emphasis on velocity.
  - Understanding, quantifying and forecasting associations among hydrogeomorphology, water chemistry and the distribution and abundance of biota in the UMRS under climate change

WG2 - Water Quality: Ecosystem effects of aquatic vegetation

- Carbon sequestration processes (storage and fluxes) as a function of gradients in depth and connectivity
- Interaction of sedimentation with vegetation types; implications for C, N and P retention and cycling
- Role of HREPs in carbon and nutrient retention

WG3 - Quantifying spatial and temporal patterns in temperature in the UMRS and implications for biota [*joint mtg of WG1 and WG2*]

Enhancing our understanding of ice phenology and ice cover change

- Mapping ice conditions along the Upper Mississippi River using satellite imagery, trail cameras, and machine learning
- maps of ice cover conditions across the UMR for years 2016-2024;
- semi-automated data pipeline to facilitate map updates in future years.
- Generate new information on the patterns and controls of inter- and intra-annual in ice cover and provide insight into how to manage the ecosystem in the face of changing ice cover regimes.

WG4: Fisheries: Enhanced understanding of UMRS upper aquatic trophic levels

Hindcasting and forecasting abiotic drivers of UMRS fish populations and advancing management and research tools for non-game fishes

- Assess meaningful abiotic drivers of fisheries population dynamics
- Assess a wide variety of hydrologic, climatic, and spatial attributes as abiotic explanatory variables in fisheries population models
- Tool development:
  - Update fisheries life history data base including GAP analysis of missing information for all non-game fishes
  - Application that estimates sample size requirements for HREP response studies using LTRM data at smaller spatial scales relevant for HREP.

WG5 – Floodplain ecology

Understanding the role of surface-subsurface hydrology and soil characteristics on floodplain vegetation in the UMRS through space and time

- How does soil texture and quality vary across a gradient of floodplain hydrogeomorphic units?
- How does the availability of surface vs groundwater vary throughout the growing season and across floodplain hydrogeomorphic units?
- How do forest dynamics (recruitment, growth, etc.) relate to soil and water patterns?

Regeneration and recruitment in areas of forest canopy mortality

- Thousands of acres of floodplain forest canopy in the Upper Mississippi River System (UMRS) have been lost since heavy flooding in 2019.
- Are the forests regenerating across these impacted areas equally and, if not, what can this tell us about their current trajectories?
- Why and how did some forest survive?
- What creates a resilient forest?

WG6: Linking restoration actions and ecological responses

- Strategic approach to identify HREP features that promote dense and diverse mussel assemblages
- Estimating the influence of HREPs on river carbon dynamics
- Occurrence patterns and habitat relationships of limnophilic fish assemblages of Upper Mississippi River backwater lakes
- Evaluating ecological responses to side channel rehabilitations in the Middle Mississippi River

Timeline for Science Meeting Proposals

- 1 March: Initial draft of proposal and budgets due. Main purpose is budget review.
- 29 March: Final proposals due to Jim Fischer and Davi Warden-Michl
- 3 April: Proposals distributed to LTRM Analysis Team, USACE and UMESC for evaluation
- 16 April: Proposals discussed during doing the LTRM Analysis Team Meeting
- 22 May: Selected proposals presented to the UMRR CC for their endorsement

UMRR LTRM Implementation Planning

Why?

- To prepare for continued higher funding level which may result from increased UMRR authorization under WRDA 2020

What?

- Identify and prioritize restoration and management needs not currently being addressed within UMRR.
- Develop a portfolios of actions that best address those information needs

Implementation Planning and the Science Meeting

- Intention of Implementation Planning was to plan for effectively using additional funds to address unmet information needs.
  - Emphasis was on identifying larger, potentially long-term, information needs and building LTRM capacity in those areas if higher levels of funding are sustained.
- Assumed the proposal process associated with the science needs would continue.
  - Emphasis on addressing information needs with projects that can be completed in 1 to 3 years and often rely on collaboration with and support from expertise from outside UMRR.

Addressing information needs identified during UMRR LTRM Implementation Planning

- Initiated in FY2023
  - Understanding geomorphic change within the Upper Mississippi River System
  - Assessing Gradients in the UMR from Pool 14 to Pool 25
- Tentative plans for initiation in FY2024
  - Lower Trophic Levels: Abundance, distribution and status of phytoplankton and zooplankton in the UMRS
  - Floodplain ecology: Vegetation change across the Upper Mississippi River System

Questions?

UMRR-LTRM MONITORING AND SCIENCE UPDATE

Davi Michl
Rock Island District
UMRR CC
22 May 2024

US Army Corps of Engineers

1

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 <u>together</u> 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

2

UMRR MONITORING & SCIENCE FY24

Updates

- UMRR LTRM FY24 Base Monitoring SOW: fully funded
- UMRR LTRM FY24 Science in Support of Restoration and Management SOW: draft received 16 Feb 2024
- Systemic Topobathy Acquisition
  - Pilot projects – awarded 3 TOs in Sep 2023
  - Topobathy LiDAR acquisition – Nov 2023
  - Hydrosurvey acquisition – Spring 2024
  - FY24 Acquisition – PDT evaluating study areas

3

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**

4

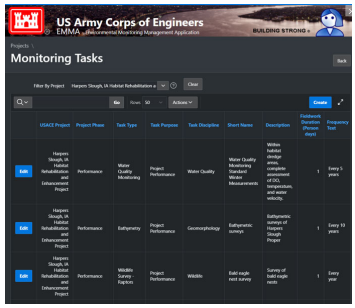
ENVIRONMENTAL MONITORING AND MANAGEMENT APPLICATION (EMMA)

Develop a modern web-database application to:

1. Track monitoring **tasks**
2. Create monitoring **budgets**
3. Maintain monitoring **schedules**
4. Measure project **performance (next steps)**

FY24 Updates

1. **App in production phase**
2. **Data entry of HREP monitoring tasks ongoing**
3. **Application refinement**



5

QUESTIONS?

6

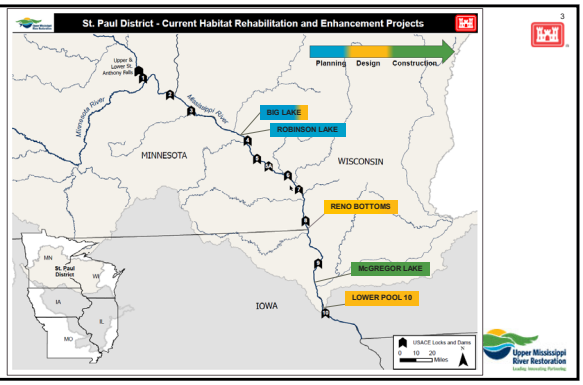
HABITAT RESTORATION - DISTRICT REPORTS

1

ST. PAUL DISTRICT PROJECT UPDATE

2

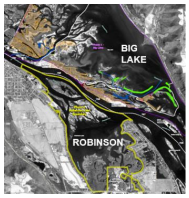
St. Paul District - Current Habitat Rehabilitation and Enhancement Projects

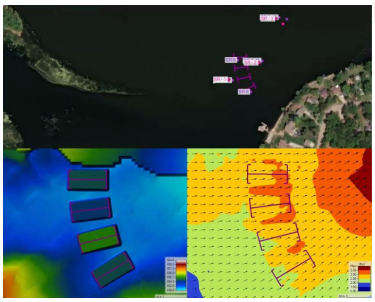


3

PLANNING

- **Robinson Lake – Pool 4, MN**
  - Final alternatives in progress
  - Sturgeon Spawning Reef
- **Big Lake – Pool 4, WI**
  - Completing MVD comments
  - Final Report submittal this Spring

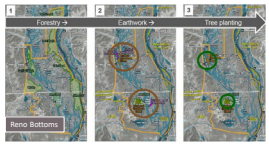




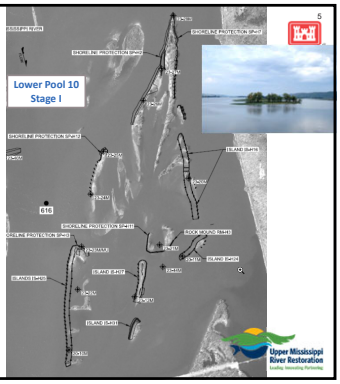
4

DESIGN

- **Reno Bottoms HREP – Pool 9, MN/IA**
  - Stage I: Tree planting SOW
  - Stage II: A/E continuing design, on schedule
    - Borings
    - 65% Review (June)



- **Lower Pool 10 HREP – Pool 10, IA**
  - Continue Stages 1, 2, 3 P&S
  - Stage 1:
    - 95% Review (Feb/Mar)
    - Contract Award (Aug/Sept)



5

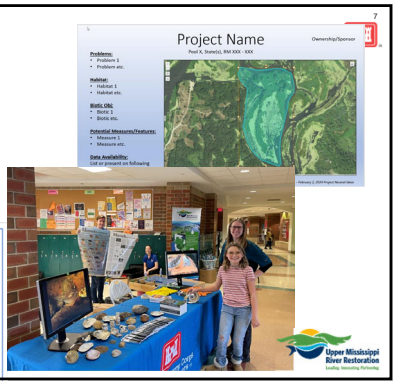
CONSTRUCTION

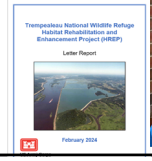
- **McGregor Lake HREP – Pool 10, WI**
  - Stage I: 97% Complete
  - Stage II: 45% Complete
    - Evaluating Thin Layer Placement
  - Construction to resume in March

6

OTHER ACTIVITIES

- **Trempealeau Letter Report**
  - Draft Completed, interagency review
  - Backcheck/close-out (early March)
- **New project Fact Sheets**
  - Kick-off: FWWG Meeting (2 Feb)
  - Interagency ideas presented & discussed
  - Decision on project ideas (March)
- **Outreach**
  - Science Fair showcased District projects





7

video

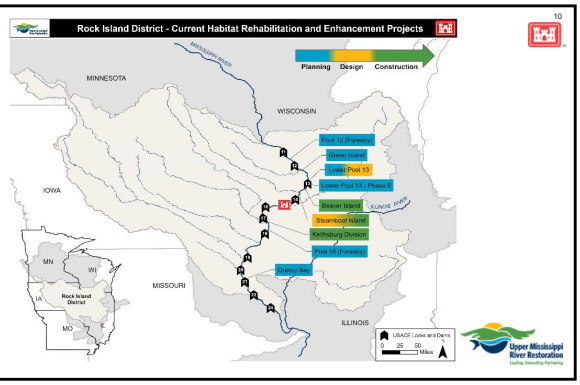
McGregor HREP

https://www.youtube.com/watch?v=m6NQXuMorLg

8

ROCK ISLAND DISTRICT PROJECT UPDATE

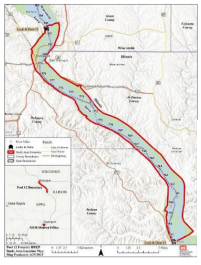
9



10

PLANNING

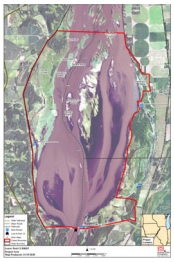
- **Pool 12 Forestry – Pool 12, IA/IL/WI**
  - PDT is finishing DQC on the draft report
  - Next step: Concurrent reviews (ATR, Public, and MVD Policy and Legal reviews)
- **Green Island – Pool 13, IA**
  - PDT is finishing MVD Policy and Legal review
  - Next step: Final report DQC and ATR reviews
- **Lower Pool 13 – Pool 13, IA/IL**
  - The report was approved in Dec
  - FONSI signed in Jan
  - Next step: Finalizing MOA

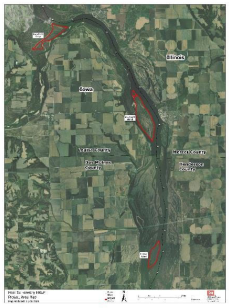


11

PLANNING

- **Lower Pool 13 Phase II – Pool 13, IA/IL**
  - DQC on the draft report (chapter 1-3) was completed in Dec
  - PDT met on Feb 1st for the alternative formulation workshop
  - PDT has the initial array of alternatives
  - Next step: PDT working on writing the report and finalizing the alternatives
- **Pool 18 Forestry – Pool 18, IA**
  - Kickoff workshop was held on Nov 30th
  - POOCs and initial measures were established
  - Next step: DQC on the draft report (Chapters 1-3) and continued discussion of measures



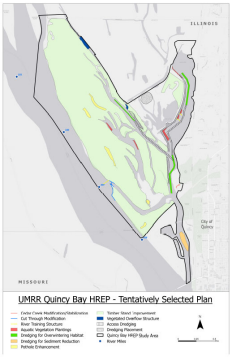


12

PLANNING

13

- **Quincy Bay – Pool 21, IL**
  - Public meeting was held on Feb 15th
  - Public review is on going Feb 8 to Mar 9th
  - Next step: finalize ATR, Public and MVD Policy and Legal reviews



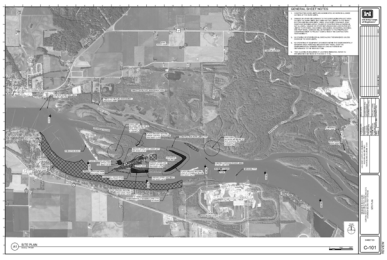
UMRR Quincy Bay HREP - Tentatively Selected Plan

13

DESIGN

14

- **Steamboat Island Stage II – Pool 14, IA/IL**
  - Completed design
  - Bid were opened and contracting is reviewing bids
  - Next step: Award contract
- **Lower Pool 13 Stage I – Pool 13, IA/IL**
  - PDT has been identified
  - Next step: Scheduling a design kickoff meeting



14

CONSTRUCTION

15

- **Beaver Island Stage IB, Pool 14, IA/IL**
  - Engineering is reviewing the final survey
- **Steamboat Island Stage I – Pool 14, IA/IL**
  - Contractor is placing riprap at the SE Island
- **Keithsburg Division Stage I, Pool 18, IL**
  - Contractor is onsite performing repairs to damaged block on mats that are already installed
- **Keithsburg Division Stage II, Pool 18, IL**
  - Contractor is not onsite
- **Huron Island, Stage III - ERDC, Pool 18, IA**
  - Spring growth assessment in June
  - Supplemental plantings in July
  - Survival survey in September

Steamboat Stage I Photo – Head of the Island and Bankline

Keithsburg Division Stage I – Mats Removal

15

OTHER ACTIVITIES

16

- **Forestry Multiple Award Task Order Contract (MATOC)**
  - FY24 SOW:
    - Steamboat
    - Lower Pool 13
    - Spring Lake
- **PER Site Visits**
  - Scheduling the following site visit this FY:
    - Big Timber
    - Rice Lake
    - Pleasant Creek
    - Princeton
    - Lake Odessa

16

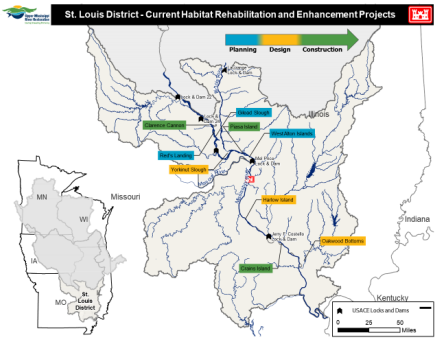
ST. LOUIS DISTRICT PROJECT UPDATE

17

17

St. Louis District - Current Habitat Rehabilitation and Enhancement Projects

18



18

PLANNING

19

West Alton Islands - (Pool 26) MO - MDC/FWS
- Final DCQ, Final ATR
- Submit Draft Report for Approval 3rd Qtr

Gilead Slough (Pool 25) IL FWS
- Completed Charette & Site Visits
- Evaluating measures and alternatives

Reds Landing, IL (Pool 25) IDNR
- Completed Charette & Site Visits
- Evaluating measures and alternatives



19

DESIGN

20

Clarence Cannon HREP – Pool 25, MO - FWS
- Stage 5, Remaining Items P&S Package

Swan Lake FDR – Pool 26, IL - INDR / FWS
- Design P&S Package(s)

Yorkinut Slough, HREP (IL River) FWS
- Design Phase with multiple packages
- Complete H&H modeling to inform design
- Complete Sub-surface Borings to inform Design

Harlow Island HREP (Open River), MO - FWS
- Acquisition Stage 1, P&S
- Complete Stage 2, P&S

Crains Island HREP (Open River), IL - FWS
- Stage 3, Excavation Hydraulic & Land based

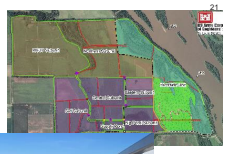
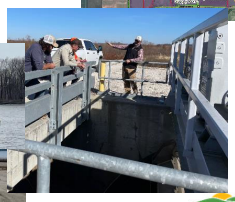
20

CONSTRUCTION

21

Clarence Cannon Refuge, MO (Pool 25)
- Closeout Stage 4 - Exterior Berm (Levee) Setback
- Reforestation – Staged

Piasa & Eagles Nest, IL HREP (Pool 26) IDNR
- Stage 2 – Side Channel Excavation and Island Building

21

CONSTRUCTION

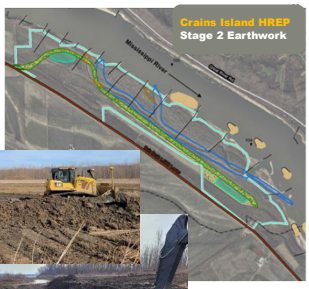
22

Harlow Island, IL HREP (Open River) FWS
- Stage 1 Construction Award FY24 4th Qtr

Crains Island, IL HREP (Open River) FWS
- Stage 2 Construction underway

Harlow Island HREP
Stage 1 Earthwork

Crains Island HREP
Stage 2 Earthwork




22

OTHER ACTIVITIES

23

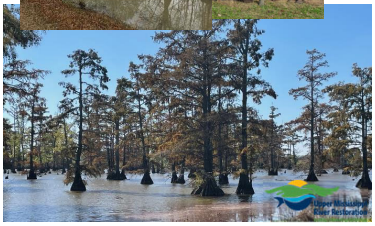
New Project Concepts / Draft Fact Sheets Mississippi River
- Kick-off: RRAT Meeting (19 Jan)
- Interagency ideas presented & discussed
- Decision on project ideas (7 & 8 March)

New Project Concepts / Draft Fact Sheets Illinois River
- Kick-off: RRAT Meeting (22 Feb)
- Interagency ideas presented & discussed
- Decision on project ideas (April)

Outreach
- HREP Interpretive Signage

Performance Evaluation & Monitoring
- Data Collection
- Ted Shanks PER SOW

Construction IDIQ Contract
- 5 year $50m
- HREP SOW

23