Upper Mississippi River Restoration Program
Coordinating Committee

November 20, 2024
Quarterly Meeting

Highlights and Action Items

Programmatic Highlights

- UMRR executed 98.2 percent of its FY 2024 appropriation of $55 million, including the funds carried over from FY 2023.
- The President's FY 2025 budget and the House and Senate FY 2025 energy and water appropriations measures include $55 million for UMRR. Federal agencies are currently operating under a continuing resolution, which is set to expire in late December 2024. In the interim, the Corps is allocating funds per a $55 million planning assumption for UMRR in FY 2025.
- Through draft Water Resource Development Act of 2024 bills, the Senate and House of Representatives are proposing to increase the program's annual authorized appropriation for long term resource monitoring from $15 million to $25 million.
- The UMRR Coordinating Committee and other meeting participants reviewed draft mission and vision statement and goals and objectives for the program as drafted by the UMRR strategic planning team. The notes from the discussion will be shared with the strategic planning team. The team is scheduled to meet in person on December 5-6, 2024, to finalize strategies and actions for program work from 2025 to 2035. The next phase of the strategic planning process will be to initiate a public review process. The strategic plan is anticipated to be finalized in summer 2025.
- Corps Headquarters representatives visited the region on October 7-10, 2024. Their visit included touring multiple habitat rehabilitation and enhancement projects (HREPs), participating in a LTRM electrofishing demonstration, and engaging with UMRR partners and stakeholders. The Headquarters staff, who work in policy and budgeting for the Corps, expressed strong enthusiasm for UMRR's work and the partnership that was demonstrated throughout their visit.

Habitat Rehabilitation and Enhancement Projects (HREPs) Highlights

- UMRR program partners continue to work through the process of evaluating potential project opportunities and selecting a suite of projects for implementation in FYs 2026 through 2030. River Teams are currently drafting fact sheets for their proposed projects. The UMRR Coordinating Committee is anticipated to review and approve fact sheets by the third quarter of FY 2025 – i.e., April 2025 through June 2025. The Corps will incorporate environmental justice and parametric cost data into the fact sheets ahead of the feasibility studies.
- In response to the partnership expressing interest in developing standardized practices for monitoring HREPs, Marshall Plumley proposes to establish a HREP Monitoring Team in January 2025.

- The program has twenty-six HREPs currently in progress. The HREPs scheduled from now through 2036 will benefit over 69,000 acres of habitat.
- A few highlights of progress in implementing HREPs include:
    - The St. Paul District finished the Big Lake HREP feasibility study. With an estimated construction cost of around forty million dollars, the Big Lake HREP is the largest feasibility study ever completed by the St. Paul District.
    - This year, the St. Paul District completed four GIS storymaps of UMRR HREPs, which can be found on their website.
    - The Rock Island District completed the first two construction stages of the Steamboat Island HREP.
    - MVD approved the Rock Island District's feasibility report for the Lower Pool 13 HREP. The project will now advance to design and construction.
    - The St. Louis District completed a berm setback on the Clarence Cannon HREP.
    - The St. Louis District completed Stage 2 of construction on the Piasa and Eagles Nest Islands HREP. The District hosted a tour of the HREP in conjunction with the UMRBA Quarterly Meeting on November 19, 2024.

Long Term Resource Monitoring (LTRM) Highlights

- Under the $55 million planning assumption, UMRR plans to increase funding for base monitoring for LTRM by an additional $1.5 million in FY 2025 in recognition of increasing costs over the past several years.
- Six manuscripts were published in the last quarter (since August 2024) that were supported by UMRR funding and the programmatic infrastructure.
- The 2024 LTRM Implementation Plan prioritized focused learning related to floodplain vegetation change across the system. In response, UMRR is scheduled to convene a program-level Floodplain Vegetation Workshop for January 7-9, 2025, in the Quad Cities. The program goal is to develop a long-term monitoring plan for floodplain vegetation.
- Topobathy acquisition is currently in process for the twelve task orders awarded (FY24) for the Lower Poole 13 pilot and the entire Illinois River and Open River Reach 2 on the Mississippi. It is estimated that the data will be processed and usable in a year.

Communications and Outreach

- The UMRR Photo Contest is ongoing. Voting was extended to the UMRR distribution list on November 13, 2024.
- The Communications and Outreach Team is open for new members; email Rachel Perrine if interested.

Future Meeting Schedule

- February 2025 through a virtual platform (not in-person)

    - UMRBA quarterly meeting – February 25
    - UMRR Coordinating Committee quarterly meeting – February 26
- May 2025 in La Crosse, Wisconsin
    - UMRBA quarterly meeting – May 20
    - UMRR Coordinating Committee quarterly meeting – May 21
- August 2025 in Minneapolis, Minnesota
    - UMRBA quarterly meeting – August 5
    - UMRR Coordinating Committee quarterly meeting – August 6

UMRR COORDINATING COMMITTEE - REGIONAL MANAGEMENT AND PARTNERSHIP COLLABORATION

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

Date: 20 November 2024

U.S. ARMY

US Army Corps of Engineers

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REGIONAL MANAGEMENT AND PARTNERSHIP COLLABORATION

- FY 2024 Fiscal Update and FY 25 Outlook
- Program Efforts Schedule
- USACE Headquarters Staff Visit to the Region
- HREP Selection
- UMRR Strategic Planning

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UPPER MISSISSIPPI RIVER RESTORATION PROGRAM

Upper Mississippi River System

- 1,200-mile commercially navigable river network
  - 29 Mississippi River locks & dams
  - Eight Illinois River locks & dams
  - Five National Wildlife Refuges
  - Five states
- Supports a mosaic of diverse and varied terrestrial and aquatic natural habitats, linking the Great Lakes and the Gulf Coast
- Nationally and Internationally Significant

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UPPER MISSISSIPPI RIVER RESTORATION PROGRAM

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HABITAT REHABILITATION AND ENHANCEMENT PROJECTS

Restoring and Protecting the Nationally Significant Mississippi River Ecosystem

Submerged and Emergent Aquatic Vegetation Restoration MVP, MVR, and MVS

Pool 8 Island Restoration MVP

Beaver Island Protection MVR

1986-2022: 63 Completed Projects 121,400 Acres

McGregor Lake Beneficial Use Island Creation MVP

Pool 12 Forest Restoration MVR

Clarence Cannon Water Control Structure MVS

Lake Odessa Water Level Management MVR

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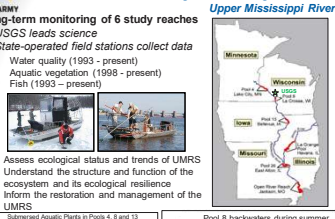
LONG TERM RESOURCE MONITORING ELEMENT

Advance Knowledge for Restoring and Maintaining a Healthier and More Resilient Upper Mississippi River Ecosystem

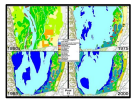
Long-term monitoring of 6 study reaches

- *USGS leads science*
- *State-operated field stations collect data*
  - Water quality (1993 - present)
  - Aquatic vegetation (1998 - present)
  - Fish (1993 – present)

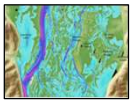


- Assess ecological status and trends of UMRS
- Understand the structure and function of the ecosystem and its ecological resilience
- Inform the restoration and management of the UMRS

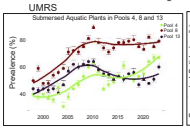
Data and Information Delivery
https://umesc.usgs.gov/ltrm-home.html

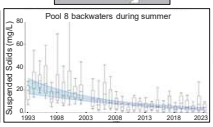


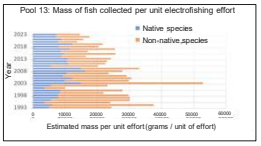
Systemic land cover data collected every 10 yrs.



Seamless elevation data across river and floodplain







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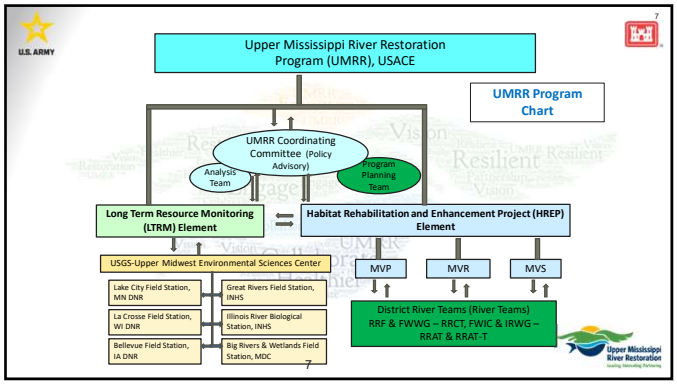
Upper Mississippi River Restoration Program (UMRR), USACE
UMRR Program Chart
UMRR Coordinating Committee (Policy Advisory)
Analysis Team
Program Planning Team
Long Term Resource Monitoring (LTRM) Element
Habitat Rehabilitation and Enhancement Project (HREP) Element
USGS-Upper Midwest Environmental Sciences Center
MVP
MVR
MVS
Lake City Field Station, MN DNR
Great Rivers Field Station, INHS
La Crosse Field Station, WI DNR
Illinois River Biological Station, INHS
Bellevue Field Station, IA DNR
Big Rivers & Wetlands Field Station, MDC
District River Teams (River Teams) RRF & FWWG – RRCT, FWIC & IRWG – RRAT & RRAT-T
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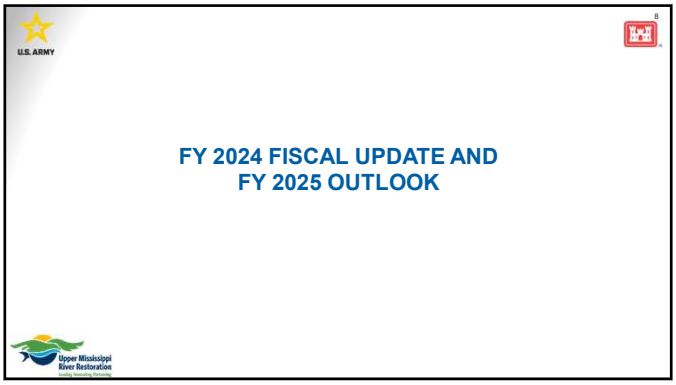
FY 2024 FISCAL UPDATE AND FY 2025 OUTLOOK
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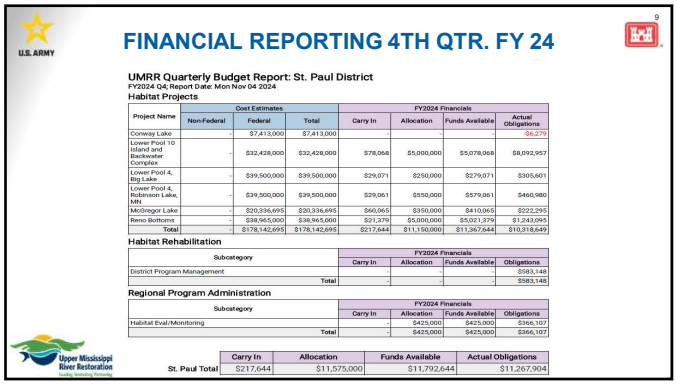
FINANCIAL REPORTING 4TH QTR. FY 24
UMRR Quarterly Budget Report: St. Paul District
FY2024 Q4; Report Date: Mon Nov 04 2024
Habitat Projects
Habitat Rehabilitation
Regional Program Administration
St. Paul Total $217,644 $11,575,000 $11,792,644 $11,267,904
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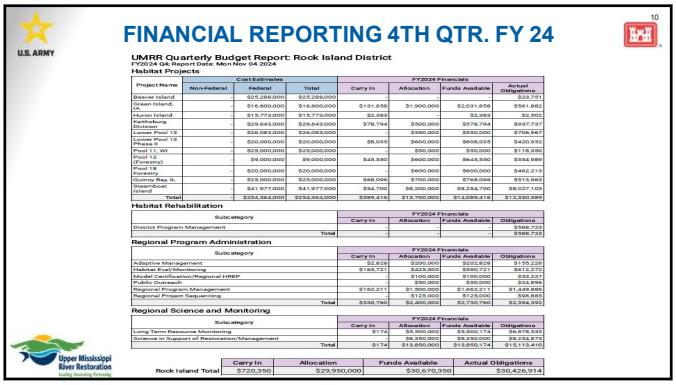
FINANCIAL REPORTING 4TH QTR. FY 24
UMRR Quarterly Budget Report: Rock Island District
FY2024 Q4; Report Date: Mon Nov 04 2024
Habitat Projects
Habitat Rehabilitation
Regional Program Administration
Regional Science and Monitoring
Rock Island Total $720,350 $29,950,000 $30,670,350 $30,426,914
10

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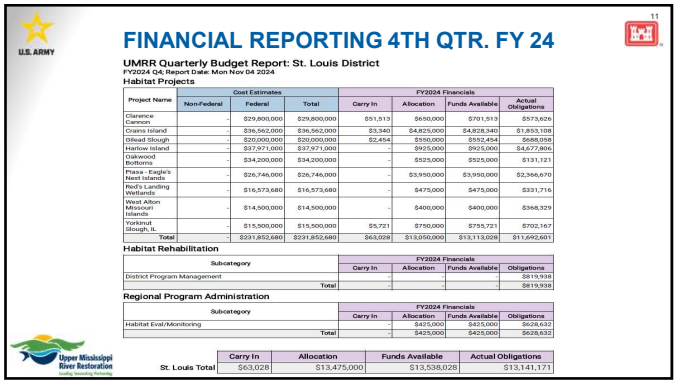
FINANCIAL REPORTING 4TH QTR. FY 24
UMRR Quarterly Budget Report: St. Louis District
FY2024 Q4; Report Date: Mon Nov 04 2024
Habitat Projects
Habitat Rehabilitation
Regional Program Administration
St. Louis Total $63,028 $13,475,000 $13,538,028 $13,141,171
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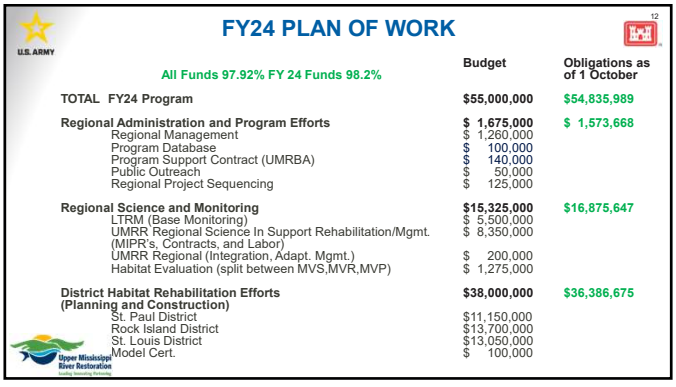
FY24 PLAN OF WORK
All Funds 97.92% FY 24 Funds 98.2%
Budget
Obligations as of 1 October
TOTAL FY24 Program $55,000,000 $54,835,989
Regional Administration and Program Efforts $ 1,675,000 $ 1,573,668
Regional Management $ 1,260,000
Program Database $ 100,000
Program Support Contract (UMRBA) $ 140,000
Public Outreach $ 50,000
Regional Project Sequencing $ 125,000
Regional Science and Monitoring $15,325,000 $16,875,647
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 $36,386,675
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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FY 25 APPROPRIATIONS

President's Budget	$55,000,000
House	$55,000,000
Senate	$55,000,000
FINAL APPROPRIATION	Continuing Resolution 20 Dec

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FY25 DRAFT PLAN OF WORK

	Budget
TOTAL FY25 Program	**$55,000,000**
Regional Administration and Program Efforts	**$ 2,225,000**
Regional Management	$ 1,735,000
Program Database	$ 120,000
Program Support Contract (UMRBA)	$ 145,000
Public Outreach	$ 100,000
Regional Project Sequencing	$ 125,000
Regional Science and Monitoring	**$15,925,000**
LTRM (Base Monitoring)	$ 6,500,000
UMRR Regional Science In Support Rehabilitation/Mgmt. (MIPR's, Contracts, and Labor)	$ 7,950,000
UMRR Regional (Integration, Adapt. Mgmt.)	$ 200,000
Habitat Evaluation (split between MVS,MVR,MVP)	$ 1,275,000
District Habitat Rehabilitation Efforts (Planning and Construction)	**$36,850,000**
St. Paul District	$ 9,900,000
Rock Island District	$13,925,000
St. Louis District	$12,925,000
Model Cert.	$ 100,000

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FY25 DRAFT PLAN OF WORK

	Budget	Obligations as of 1 Nov 24
TOTAL FY25 Program	**$55,000,000**	**$ 1,034,140**
Regional Administration and Program Efforts	**$ 2,225,000**	**$ 117,347**
Regional Management	$ 1,735,000	
Program Database	$ 120,000	
Program Support Contract (UMRBA)	$ 145,000	
Public Outreach	$ 100,000	
Regional Project Sequencing	$ 125,000	
Regional Science and Monitoring	**$15,925,000**	**$ 107,383**
LTRM (Base Monitoring)	$ 6,500,000	
UMRR Regional Science In Support Rehabilitation/Mgmt. (MIPR's, Contracts, and Labor)	$ 7,950,000	
UMRR Regional (Integration, Adapt. Mgmt.)	$ 200,000	
Habitat Evaluation (split between MVS,MVR,MVP)	$ 1,275,000	
District Habitat Rehabilitation Efforts (Planning and Construction)	**$36,850,000**	**$ 809,410**
St. Paul District	$ 9,900,000	
Rock Island District	$13,925,000	
St. Louis District	$12,925,000	
Model Cert.	$ 100,000	

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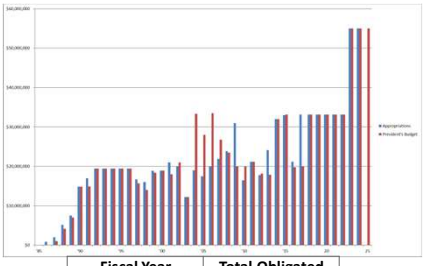
UMRR FUNDING

- 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 & FY 24 $55M Appropriation
- FY 25 PBUD $55M
- WRDA 2022 Authorization $90M (HREP = $75M / LTRM = $15M)
- WRDA 2024 DRAFT language increases LTRM $20M or $25M



Fiscal Year	Total Obligated
2011- 2016 Average	97.0 percent
2017 – 2022 Average	97.7 percent
2023 & 2024	98.2 percent

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PROGRAM EFFORTS SCHEDULE

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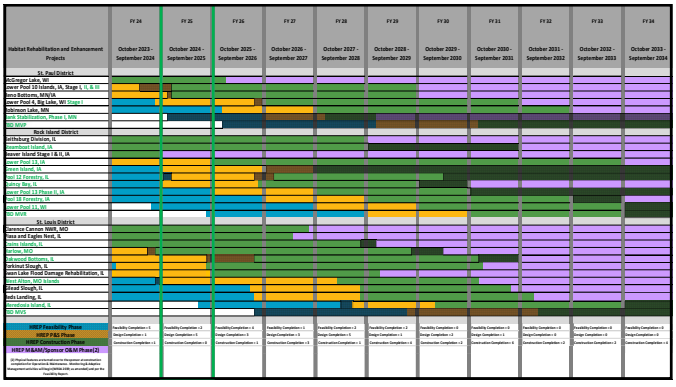

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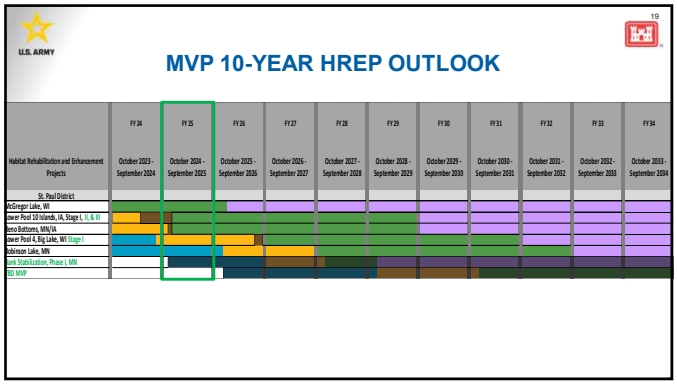

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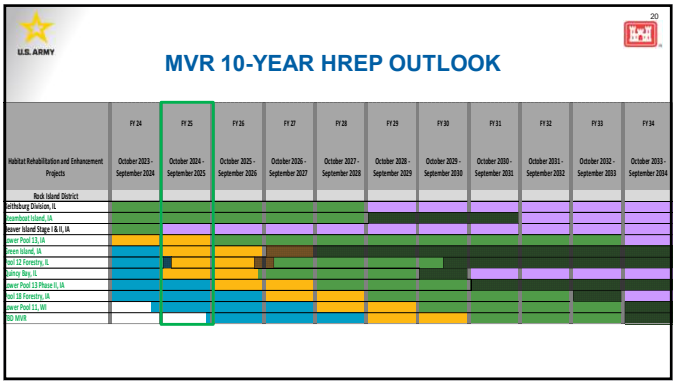

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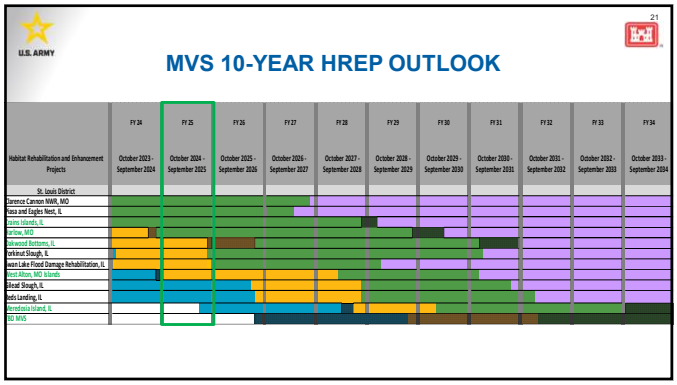

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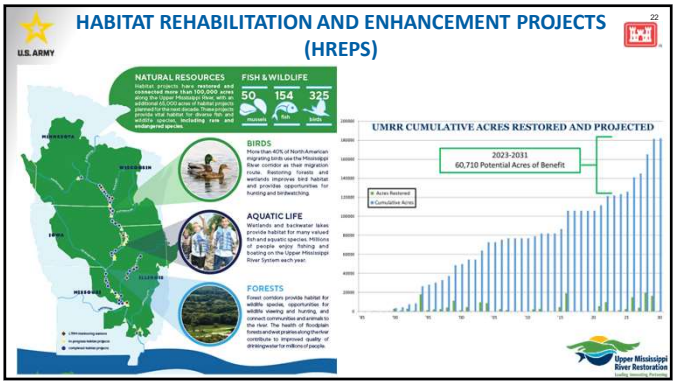

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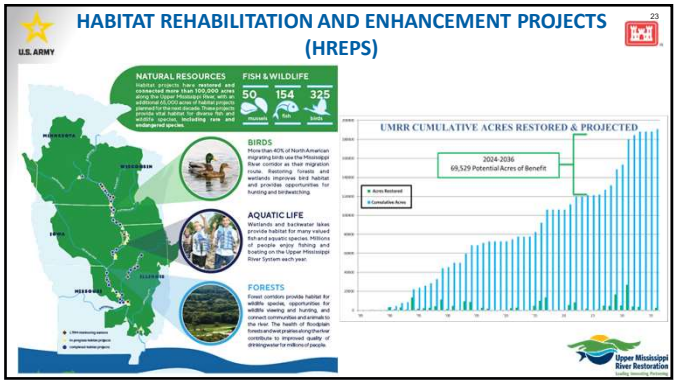

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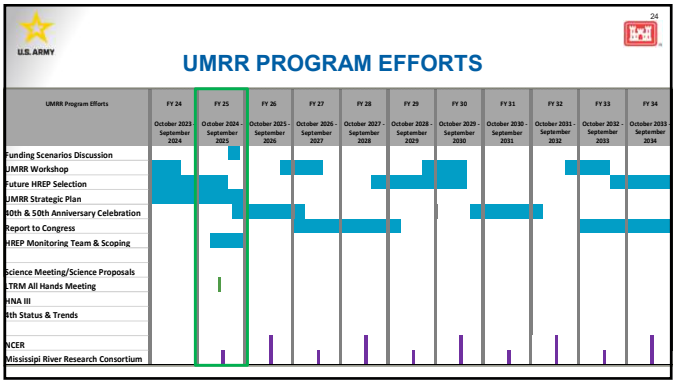

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HQ USACE STAFF VISIT

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HQUSACE Visit for NESP/UMRR — ROCK ISLAND DISTRICT

SUMMARY: 07-10 October 2024, the Navigation and Ecosystem Restoration Program (NESP) and Upper Mississippi River Restoration (UMRR) Program had the pleasure of hosting USACE Headquarters team members across the upper three districts. HQUSACE attendees include Daniela Todesco, AER Business Line Manager, Sharon Sartor, MVD Regional Integration Team Deputy, and Charles Stokes, Jr., BIL Program Manager. The HQUSACE team had the opportunity experience firsthand the regional efforts in delivering the ecosystem restoration mission on the Upper Mississippi River.

COMMUNICATION OBJECTIVES:

- Provide understanding, appreciation, and an increased awareness of the complementary aspects of the UMRR and NESP Ecosystem Programs.

KEY TAKEAWAYS:

- HQUSACE visited specific congressional interest projects such as UMRR Quincy Bay HREP, NESP Lock and Dam 22 Fish Passage, and NESP Sny Magill, Effigy Mounds Project.
- State and Federal Agency Partners, UMRBA, NGOs, and USACE collaborated to provide a wide array of activities for the HQUSACE team supported by our regional ecosystem programs. Experiences included helicopter tours, fish tagging, electrofishing demonstration, Tribal Nation Engagement, Partner Engagements, and visiting all three MVD upper districts.

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HREP SELECTION

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FUTURE HREP SELECTION

BLUF: 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/Project Size/Scope
  - Project Sponsor Requirements
- 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 held workshops
  - Illinois River workshop (FWIC & RRAT)

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SCHEDULE

- Fall 2024 – 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

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DRAFT FACT SHEETS

- FWWG (St. Paul AOR)
  - Wing Lake/Hunters Point - Pool 8
  - Sny Magill- Methodist Lake - Pool 10
  - Trempealeau NWR - Pool 6
  - 4 additional fact sheets drafted
- FWIC (Rock Island AOR)
  - Turkey River Bottoms – Pool 11
  - Lower Pool 11 Submersed Aquatic Vegetation
  - Lower Long Island & Shandrew Island – Pool 21
  - Nine Mile – Pool 12
  - Lake Odessa – Pool 17 & 18
  - Spring Lake Phase II – Pool 13

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DRAFT FACT SHEETS

- RRAT Tech (St. Louis AOR)
  - ➢ Upper, Middle, & Lower Cache
  - ➢ Mason Island Complex – Illinois & Mississippi Confluence
  - ➢ Brickhouse and Spatterdock Islands – RM 218-221
  - ➢ Chouteau and Mosenthein Islands.- RM 189-185 St. Louis
  - ➢ 3 additional fact sheets drafted

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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 – Aug/Sep 2024	Sep 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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UMRR STRATEGIC PLANNING

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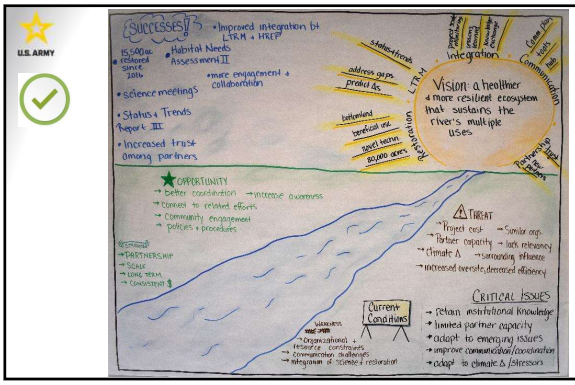

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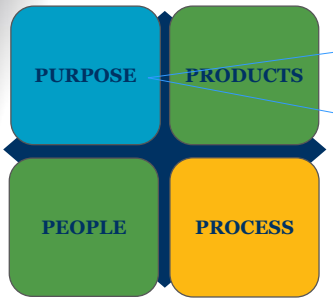
UMRR STRATEGIC PLANNING



Support the strategic management of the UMRR Program

Enhance collaboration among the partnership

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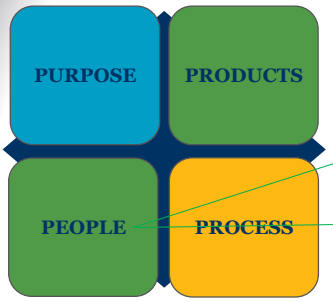
UMRR STRATEGIC PLANNING



UMRR Coordinating Committee

Strategic Planning Team

Independent Facilitator

Stakeholders, individuals, and organizations

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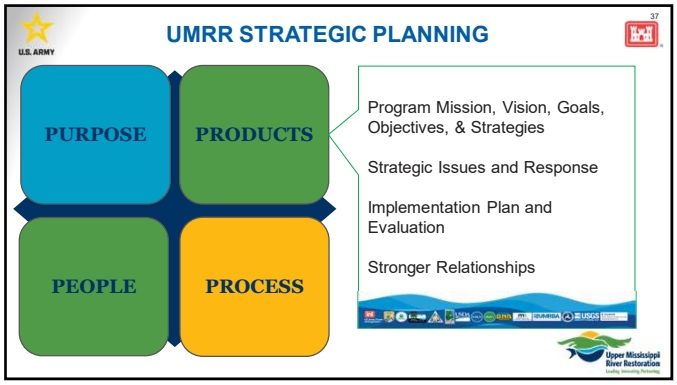
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U.S. ARMY
UMRR STRATEGIC PLANNING
PURPOSE
PRODUCTS
PEOPLE
PROCESS
Program Mission, Vision, Goals, Objectives, & Strategies
Strategic Issues and Response
Implementation Plan and Evaluation
Stronger Relationships
Upper Mississippi River Restoration

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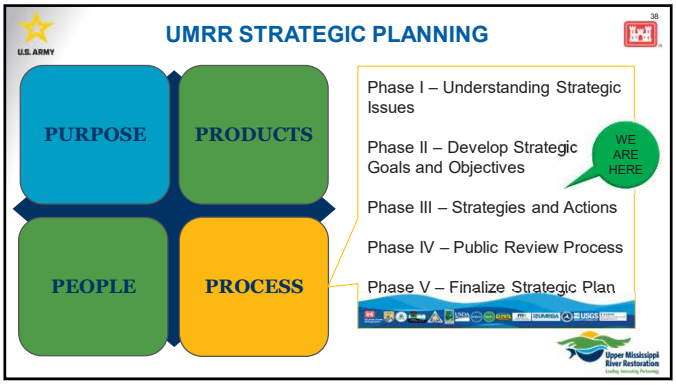
38
U.S. ARMY
UMRR STRATEGIC PLANNING
PURPOSE
PRODUCTS
PEOPLE
PROCESS
Phase I – Understanding Strategic Issues
Phase II – Develop Strategic Goals and Objectives
WE ARE HERE
Phase III – Strategies and Actions
Phase IV – Public Review Process
Phase V – Finalize Strategic Plan
Upper Mississippi River Restoration

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U.S. ARMY
DISCUSSION
Upper Mississippi River Restoration

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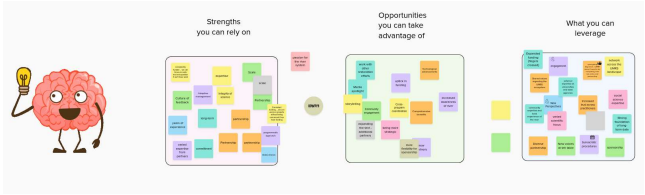
40
U.S. ARMY
HABITAT RESTORATION - DISTRICT REPORTS
Upper Mississippi River Restoration

40

UMRR Strategic Planning Process

1

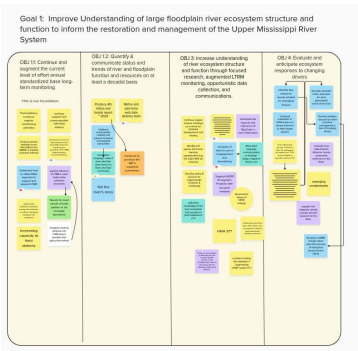
September 30th – Virtual meeting to discuss strategies & actions



2

September 30th – Virtual meeting to discuss strategies & actions

Example from whiteboard exercise



3

Current State of Draft goals for 2025 – 2035

*see Attachment C

Foster an inclusive partnership to advance UMRR's mission.

Improve understanding of the Upper Mississippi River ecosystem for better management	**Enhance engagement and communication with key UMRR audiences**
Restore habitat to support the river ecosystem in the face of ongoing stressors and human-caused alterations.	**Strengthen collaboration between program elements for efficient science and restoration efforts.**

4

Goal 1: Improve understanding of the structure and function of the Upper Mississippi River ecosystem for better management.

Objectives:

- 1.1: Maintain and enhance annual long-term monitoring efforts.
- 1.2: Measure and share the status and trends of river functions and resources every ten years.
- 1.3: Deepen understanding of the ecosystem through targeted research and data collection.
- 1.4: Anticipate how the ecosystem will respond to changes, especially climate change.

Goal 2: Restore habitat to support the river ecosystem in the face of ongoing stressors and human-caused alterations.

Objectives:

- 2.1: Address ecological needs through habitat projects based on the best knowledge available.
- 2.2: Restore 60,000 to 80,000 acres of habitat by 2035, with all projects achieving success criteria within ten years of completion.
- 2.3: Explore and implement new restoration techniques and monitor their effectiveness.

5

Goal 3: Strengthen collaboration between program elements for efficient science and restoration efforts.

Objectives:

- 3.1: Develop a framework for ongoing collaboration between program elements.
- 3.2: Standardize how monitoring data is collected, stored, and shared to enhance learning across projects.
- 3.3: Improve the chances of successful restoration through targeted research at project sites.
- 3.4: Apply findings from long-term research more effectively throughout the restoration process.
- 3.5: Holistically use information from habitat projects in research and design.
- 3.6: Increase capacity of personnel and knowledge for better collaborative project planning and decision-making.

Goal 4: Enhance community engagement and communication with key UMRR audiences.

Objectives:

- 4.1: Continue implementing the current engagement and communication plan and update it by 2027.
- 4.2: Assess and integrate the role of the Communications and Outreach Team into the overall engagement plan.
- 4.3: Use social science methods in engagement and communication strategies.
- 4.4: Create opportunities for community input on UMRR projects and activities.

6

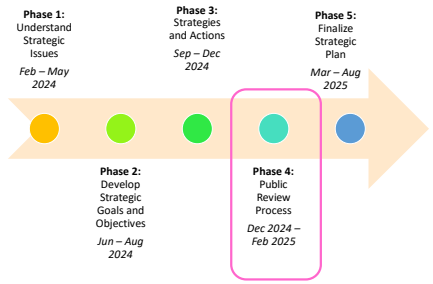
Goal 5: Foster an inclusive partnership to advance UMRR's mission.

Objectives:

- 5.1: Create regular opportunities for new and existing partners and stakeholders to discuss key program topics.
- 5.2: Build and maintain trust within the partnership.
- 5.3: Address partner capacity issues to ensure ongoing support for the program.

7

UMRR Strategic Planning Process



8

Breakout Group Discussion

1) Individually, take some time to reflect on and answer the questions below.
   - What do you like about the current version of the mission, vision, goal and objectives?
   - How would you improve them at this stage?
   - Who are 3-5 important stakeholders that we need to make sure we connect with during our public participation process?
   - Are there any other thoughts you'd like to share?

2) Join a breakout group to discuss (both in the room and online)

3) Return to large group to share highlights

Feel free to followup with email to ltalbert@umrba.org

9

UMRR COMMUNICATION AND OUTREACH TEAM

Update

Rachel Perrine
- *Water Resource Planner*
- *Rock Island District Plan Formulation Section Chief*
- *UMRR Communication and Outreach Team Lead*

INAUGURAL UMRR PHOTO CONTEST

"Empowering Conservation Through Vision: Capturing the Upper Mississippi River's Essence"

Who: UMRR partners
When: Photo submission period is August 1 – October 31, 2024; photos can be from any season or taken during prior years.
Why: To bolster UMRR's program materials and communication efforts.

Categories:
- Before/After, Construction, or Benefits of HREPs
- Connecting People with Nature, Human Use, or Public Interaction
- Natural Features, Scenic Views, or Landscapes
- Cultural or Historic Features
- LTRM – Monitoring in Action

INAUGURAL UMRR PHOTO CONTEST

Round 1 Judging:
When: November 5-November 13
Who: UMRR COT Panel
How: Quantitative scoring* on *Relevance to Category & UMRR Program, Technical Quality, Creativity and/or Originality, and Emotional Impact*
*To reduce bias, submission information (name, agency, etc) was not included with photos

Round 2 Judging (Top five photos per category)**:**
When: November 21-December 13
Who: UMRR Practitioners
How: Microsoft Form emailed to UMRR Distribution List – *Pick Your Favorite*

BEFORE/AFTER, CONSTRUCTION, OR BENEFITS OF HREPS

CONNECTING PEOPLE WITH NATURE, HUMAN USE, OR PUBLIC INTERACTION

CULTURAL OR HISTORIC FEATURES

LTRM – MONITORING IN ACTION

NATURAL FEATURES, SCENIC VIEWS, OR LANDSCAPES

Where We're Going …

- 2022 UMRR Report to Congress support
- UMRR Strategic Planning support
- 40th Anniversary of UMRR (2026)
- "Our Mississippi" publication

…and many others!

QUESTIONS

UMRR Communication and Outreach Team

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

Understanding ecological response to physical characteristics in side channels of the UMRS

Kristen L. Bouska[1], Molly Sobotka[2], Todd Slack[3], Heather Theel[3]

[1]U.S. Geological Survey, Upper Midwest Environmental Sciences Center, La Crosse, WI
[2]Missouri Department of Conservation, Jackson, MO
[3]US Army Engineer Research and Development Center, Vicksburg, MS

www.sentinel-hub.com

U.S. Department of the Interior
U.S. Geological Survey

Bouska, K. L., M. Sobotka, T. Slack, and H. Theel. 2023. Understanding ecological response to physical characteristics in side channels of a large floodplain-river ecosystem. Science of the Total Environment. https://doi.org/10.1016/j.scitotenv.2023.162132

1

Photo credit: M. Sobotka

Side Channels

- Side channels are key components of the ecological structure of rivers
- In reaches that lack off-channel habitat, restoration emphasis is often on side channels
- Poor understanding of physical controls on side channel function
  - Uncertain how to best rehabilitate side channel habitats to support ecological objectives

2

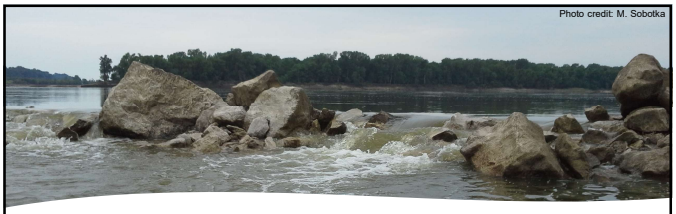


Photo credit: M. Sobotka

Objective(s)

- Investigate associations between physical attributes and ecological responses using the long-term ecological datasets
- Incorporate this understanding into a functional classification and inventory of side channels in the UMRS
- Synthesize management implications of side channel classifications to inform habitat restoration

3

Hypotheses

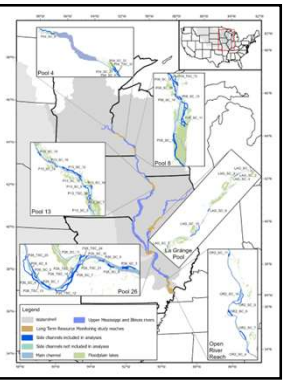
Life history needs	Hypothesis
Nursery	Young of year fishes will be more abundant and diverse in shallow, low velocity and physically complex side channels compared to deep, high velocity, and less complex side channels with potential differences based on reproductive guild
Foraging	More physically complex side channels provide and retain more abundant and diverse foraging resources and support greater fish diversity compared to more homogenous side channels
Refugia	Under high flow conditions, fishes will seek more physically complex side channels with less connectivity that provide refuge
	Under low flow conditions, fishes will seek larger, more physically complex side channels that support varied resources and maintain flow-through conditions

Icons from thenounproject.com

4

Study Area

- Long Term Resource Monitoring study reaches
  - Pools 4, 8, 13, 26, and Open River Reach on Mississippi River
  - La Grange Pool on Illinois River



5

Data Sources

- Fish data
  - Upper Mississippi River Restoration program's Long Term Resource Monitoring element
  - Stratified random sampling design – side channel stratum
  - Multi-gear approach – electrofishing
- Environmental data
  - Site-level variables taken at time of fish sampling and from nearest USGS gage
  - Side channel-level variables derived from aquatic areas classification as well as a few new derived variables

Ratcliff et al. 2014

De Jager et al. 2018

6

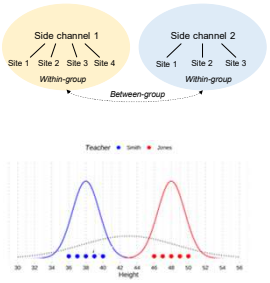
Response and Predictor Variables

Hypothesis	Response variable		Site-level predictor variables	Side channel-level predictor variables
Nursery 	Species richness of young-of-year reproductive guilds per unit effort day electrofishing	Lithopelagophil	Sampling period, water velocity, temperature, Secchi depth, water depth, aquatic vegetation, woody debris, discharge	Total volume, average depth, shoreline development index, percent of shoreline as wet forest, revetment, sinuosity, connectivity
		Lithophil		
		Polyphil		
		Speleophil		
Foraging 	Adult species richness per effort day electrofishing			
Refuge 				

7

Methods

- Multi-level/hierarchical models
  - incorporate site-level and side channel-level variables
  - assess variability within and between side channels
- Separate models for upstream / downstream reaches
- Interclass correlation (ICC) – proportion of variation in the response variable that is accounted for between side channels >0.10
- Model comparison using BIC



8

Methods

- Classification & Inventory
  - Side channel-level physical variables that were retained in final models were included in a classification analysis from all reaches
    - Variables normalized to have mean of 0 and standard deviation of 1
    - K-means cluster analysis
  - Side channel clusters summarized by pool/reach

9

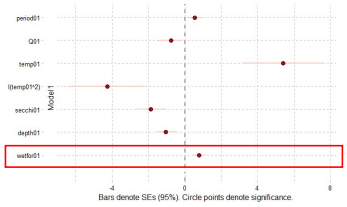
Results – Initial Screening

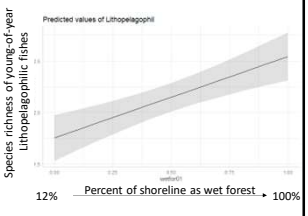
Response variable	Interclass Correlation (proportion of variation in response variable accounted for between side channels)	
	Upstream study reaches (Pools 4, 8, and 13)	Downstream study reaches (Pool 26, Open River, and La Grange)
Lithopelagophil young of year richness	**18%**	4%
Lithophil young of year richness	**30%**	Not normally distributed
Pelagophil young of year richness	9%	8%
Phytolithophil young of year richness	1%	8%
Phytophil young of year richness	Not normally distributed	4%
Polyphil young of year richness	**28%**	Not normally distributed
Speleophil young of year richness	**20%**	7%
Adult richness	**23%**	6%
Adult richness – low flow	**19%**	**11%**
Adult richness – high flow	**31%**	8%

10

Results – Nursery

- Lithopelagophilic yoy species richness ICC=0.19



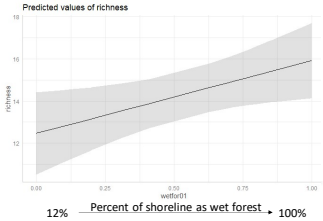


12% Percent of shoreline as wet forest → 100%

11

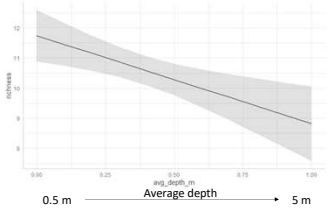
Results – Low Flow Refugia

- Upstream adult species richness ICC=0.19



12% Percent of shoreline as wet forest → 100%

- Downstream adult species richness ICC=0.11



0.5 m Average depth → 5 m

12

Results Summary

Life history needs	Findings	Important variables
Nursery 	Species richness of young of year lithopelagophils and speleophils were higher in shallow sites and in side channels with a higher proportion of wet forest shoreline, sinuosity, and frequency of snags Richness of young of year lithophils were higher in side channels with less aquatic vegetation and lower shoreline development index values. No support for low velocity conditions.	Shoreline development index; Wet forest shoreline; Sinuosity
Foraging 	No explanatory side channel-level variables retained in final model.	
Refugia 	No explanatory side channel-level variables retained in final model for high flow conditions.	
	Under low flow conditions, richness was higher in side channels with greater percent wet forest shoreline in upper reaches. In lower reaches, richness was higher in side channels with lower mean depth.	Wet forest shoreline; Average depth

Icons from thenounproject.com

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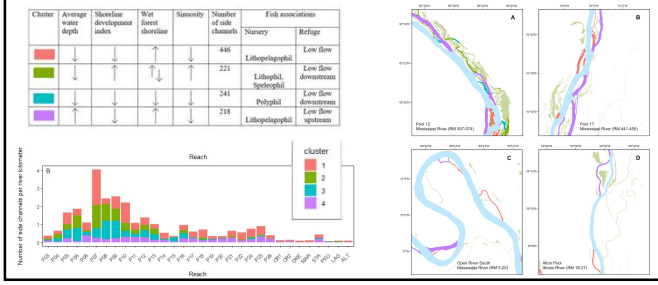
Side channel classification and inventory



14

Discussion

- Heterogeneity within side channels provide habitat conditions that support nursery and low flow refuge of riverine fishes
  - Percent shoreline as forest
  - Shoreline diversity index
  - Sinuosity
- Substantial variation within side channels
- Diversity and abundance of side channels varied by reach
- Continued efforts needed to understand fish responses to hydrophysical conditions in lower reaches

15

What's next?

- UMRR Science Meeting Proposal
  - Conceptualize how side channel connectivity relates to ecological objectives
  - Classify side channels based on connectivity
  - Understand relationships between connectivity index and habitat conditions
- Please share any work related to evaluating side channel restoration or connectivity!

16

Acknowledgements

US Army Corps of Engineers
USGS science for a changing world
ILLINOIS Illinois Natural History Survey
Upper Mississippi River Restoration Leading Innovating Partnering
Illinois Department of Natural Resources
DEPARTMENT OF NATURAL RESOURCES
USDA
DNR

Contact information:

Dr. Kristen Bouska
kbouska@usgs.gov
608-781-6344

17

PIASA AND EAGLE'S NEST ISLANDS

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

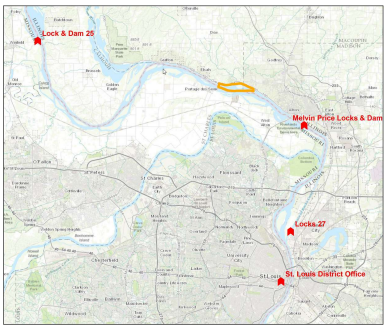
Jasen Brown
UMRR Engineering Lead, St. Louis District
20 Nov 2024

US Army Corps of Engineers

Upper Mississippi River Restoration

1

PROJECT LOCATION



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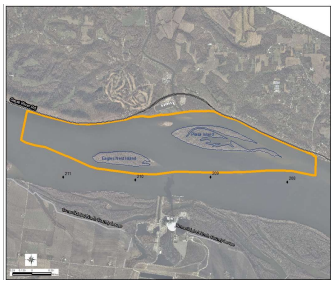
PROJECT AREA

- 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 Managed**
- **Project First Cost 100% Federal**
- **1381 acres**



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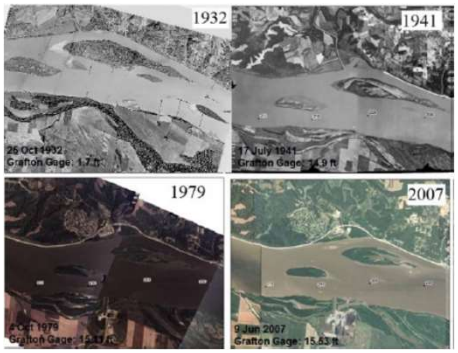
Piasa and Eagle's Nest Islands History



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ADH MODEL – ERDC HIGH PERFORMANCE COMPUTING (HPC)

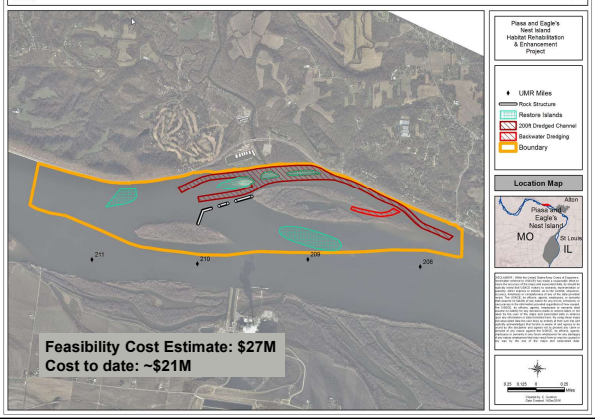
Vital Project Resource

- 30 Alternatives
- 5 Runs / Alternative
- Total of 150 Model Runs

- **Use of ERDC HPS saved MONTHS of alternative analysis time.**

5

Tentatively Selected Plan



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PIASA AND EAGLES NEST ISLANDS CONSTRUCTION PLAN

- Construct **70 acres** of Island Habitat
- Dredge over **2 Miles** of Deep Water (>8' depth at Min Pool) Dredged Habitat
- 200' Dredge Channel Width
- Redirect energy to Piasa Chute
- Monitor Water Quality

7

STAGE 1 CONSTRUCTION

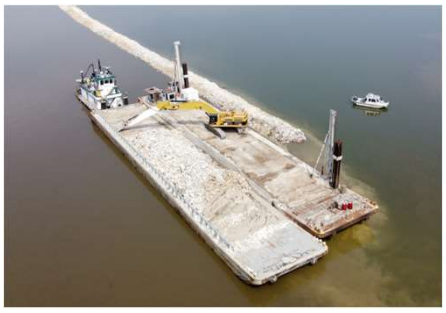
Rock Structures

Type of Award:	Unrestricted, IFB
Awarded to:	Luhr Brothers Construction
Cost:	$7.2M ($35 / Ton)
Tonnage:	202,000 Tons
Rock Type:	A-Stone
Construction Start:	9/16/2020
Construction Finish:	8/25/2022

8

STAGE 1 CONSTRUCTION

Island Perimeter



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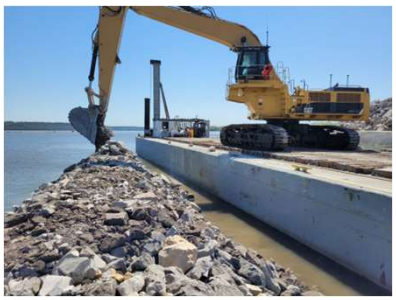
STAGE 1 CONSTRUCTION

Island Perimeter



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STAGE 1 CONSTRUCTION

Island Perimeter

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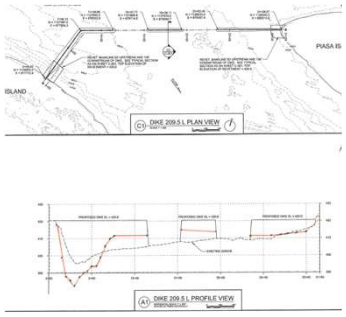
STAGE 1 CONSTRUCTION

Connection Dike Between Piasa and Eagles Nest Islands



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STAGE 1 CONSTRUCTION

Connection Dike Between Piasa and Eagles Nest Islands

13

STAGE 1 CONSTRUCTION

Connection Dike Between Piasa and Eagles Nest Islands

14

STAGE 1 CONSTRUCTION

Habitat!

15

STAGE 2 CONSTRUCTION

Side Channel Dredging / Island Construction

Type of Award:	SATOC IDIQ, Small Biz, IFB
Awarded to:	Magruder Construction Co.
Awarded to Date:	$11M
Cubic Yards:	~1M
Construction Start:	2/2/2023
Construction Finish:	TBD (On track for June, 2025)

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STAGE 2 CONSTRUCTION

Side Channel Dredging / Island Construction

17

STAGE 2 CONSTRUCTION

Side Channel Dredging / Island Construction

18

STAGE 2 CONSTRUCTION

Cutterhead Dredge

19

STAGE 2 CONSTRUCTION

Dredge Pipe Fusion

20

STAGE 2 CONSTRUCTION

Side Channel Dredging / Island Construction

21

STAGE 2 CONSTRUCTION

Side Channel Dredging / Island Construction

22

STAGE 2 CONSTRUCTION

Side Channel Dredging / Island Construction

23

STAGE 2 CONSTRUCTION

Side Channel Dredging / Island Construction

24

STAGE 2 CONSTRUCTION

Side Channel Dredging / Island Construction

25

SCHEDULE / TIMELINE

Stage 2 Construction Complete: 3rd Qtr FY25

Stone Dike Work: FY26

Fiscal Completion: FY27

26

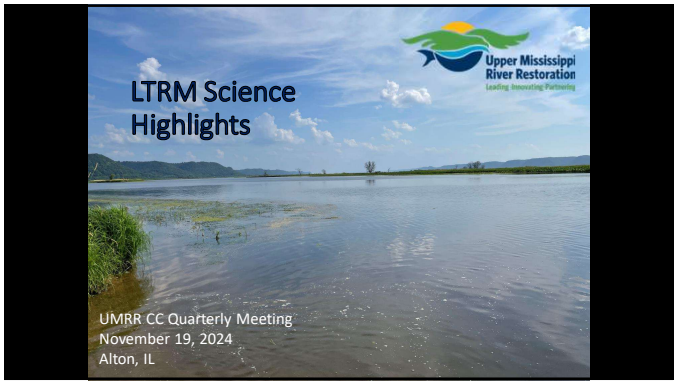
ADVANCING UMRR (MVS)

- **Public Outreach**
  - **Piasa and Eagles Nest Islands**
    - Posted Approved Feasibility Report to UMRR website
    - Island Naming Contest with local grade schools
    - Selected Winning Island Names and Recognized Students

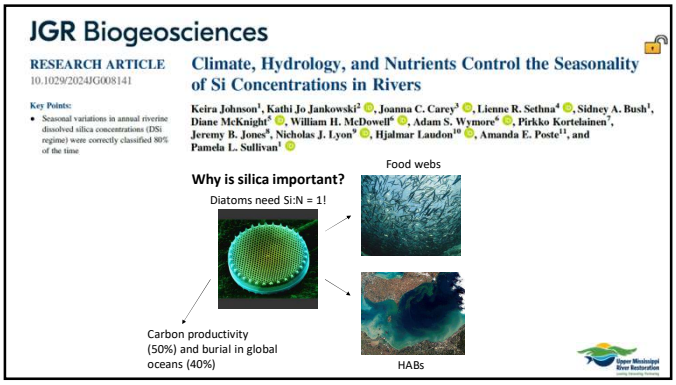
27

QUESTIONS?

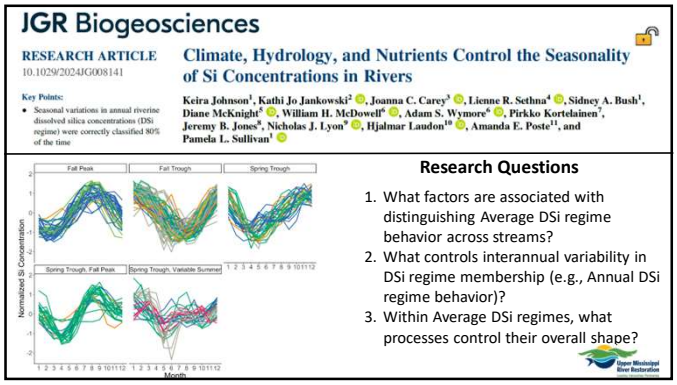
28


LTRM Science Highlights
Upper Mississippi River Restoration
Leading. Innovating. Partnering.
UMRR CC Quarterly Meeting
November 19, 2024
Alton, IL

1


JGR Biogeosciences
RESEARCH ARTICLE
10.1029/2024JG008141
Climate, Hydrology, and Nutrients Control the Seasonality of Si Concentrations in Rivers
Key Points:
Seasonal variations in annual riverine dissolved silica concentrations (DSi regime) were correctly classified 80% of the time
Keira Johnson[1], Kathi Jo Jankowski[2], Joanna C. Carey[3], Lienne R. Sethna[4], Sidney A. Bush[1], Diane McKnight[5], William H. McDowell[6], Adam S. Wymore[6], Pirkko Kortelainen[7], Jeremy B. Jones[8], Nicholas J. Lyon[9], Hjalmar Laudon[10], Amanda E. Poste[11], and Pamela L. Sullivan[1]
Why is silica important?
Diatoms need Si:N = 1!
Food webs
Carbon productivity (50%) and burial in global oceans (40%)
HABs

2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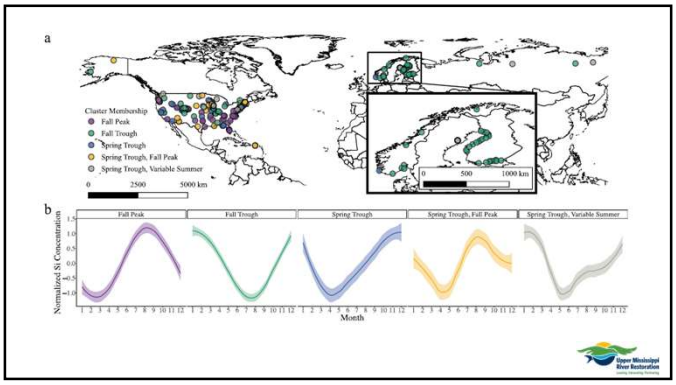
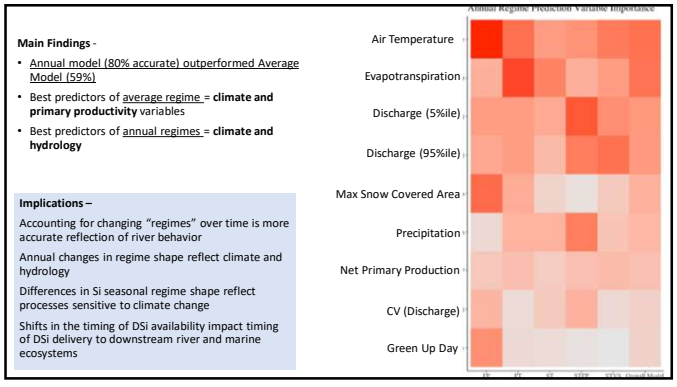
Fall Peak
Fall Trough
Spring Trough
Spring Trough, Fall Peak
Spring Trough, Variable Summer
Normalized Si Concentration
Month
Research Questions
1. What factors are associated with distinguishing Average DSi regime behavior across streams?
2. What controls interannual variability in DSi regime membership (e.g., Annual DSi regime behavior)?
3. Within Average DSi regimes, what processes control their overall shape?

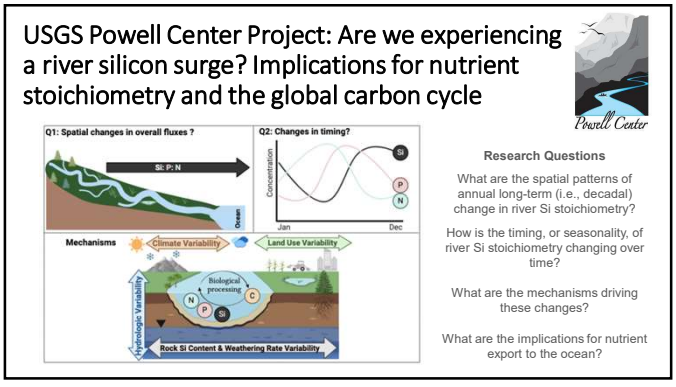
3


a
Cluster Membership
Fall Peak
Fall Trough
Spring Trough
Spring Trough, Fall Peak
Spring Trough, Variable Summer
b
Normalized Si Concentration
Month

4


Main Findings -
Annual model (80% accurate) outperformed Average Model (59%)
Best predictors of average regime = climate and primary productivity variables
Best predictors of annual regimes = climate and hydrology
Implications –
Accounting for changing "regimes" over time is more accurate reflection of river behavior
Annual changes in regime shape reflect climate and hydrology
Differences in Si seasonal regime shape reflect processes sensitive to climate change
Shifts in the timing of DSi availability impact timing of DSi delivery to downstream river and marine ecosystems
Annual Regime Prediction Variable Importance
Air Temperature
Evapotranspiration
Discharge (5%ile)
Discharge (95%ile)
Max Snow Covered Area
Precipitation
Net Primary Production
CV (Discharge)
Green Up Day

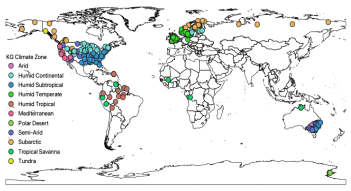
5


USGS Powell Center Project: Are we experiencing a river silicon surge? Implications for nutrient stoichiometry and the global carbon cycle
Powell Center
Q1: Spatial changes in overall fluxes ?
Si: P: N
Ocean
Q2: Changes in timing?
Concentration
Jan
Dec
Mechanisms
Climate Variability
Land Use Variability
Biological processing
Hydrologic Variability
Rock Si Content & Weathering Rate Variability
Research Questions
What are the spatial patterns of annual long-term (i.e., decadal) change in river Si stoichiometry?
How is the timing, or seasonality, of river Si stoichiometry changing over time?
What are the mechanisms driving these changes?
What are the implications for nutrient export to the ocean?

6

Global project dataset (GIASS) and team (FY2025-FY2026)

GIASS (Global Aggregation of Stream Silica)



Dataset –
River Si, N, and P concentrations and loads
Daily discharge
Watershed climate, hydrologic, land cover, lithology variables

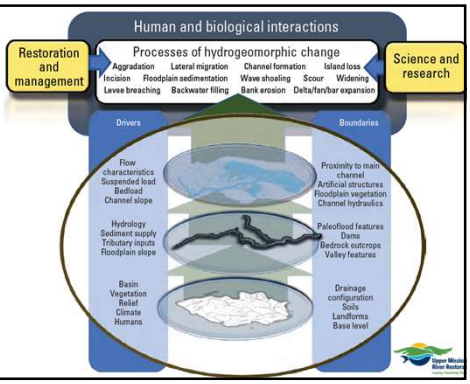
Institutions involved:

- USGS UMESC
- Babson College
- Oregon State University
- University of Nebraska
- University of Alabama
- USGS Water Mission Area
- Cornell University
- Science Museum of Minnesota
- University of British Columbia
- Lund University Sweden
- Marine Biological Lab
- University of Washington
- Syracuse University

7

USGS Report: *Upper Mississippi River System Hydrogeomorphic Change Conceptual Model and Hierarchical Classification*

Faith Fitzpatrick, Jim Rogala, Jon Hendrickson, Lucie Sawyer, Jayme Stone, Susannah Erwin, Edward Brauer, and Angus A. Vaughan



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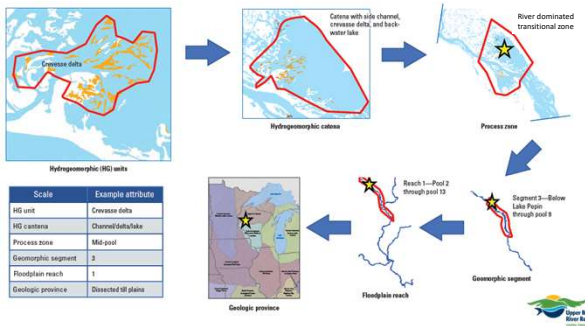


9

Publication: ***Population structure and vital rates of Shortnose Gar Lepisosteus platostomus in a large floodplain river. Environmental Biology of Fishes***

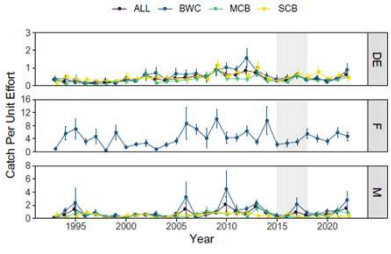
Sara Molinaro, Sarah King, Levi Solomon, Kris Maxson, Jeffrey Stein

- Funded by Federal Aid in Sportfish Restoration (Dingell-Johnson)
- Led by Illinois Natural History Survey staff in Champaign IL
- Combined three data sets:
  - LTEF
  - MAM
  - LTRM
- Specific LTRM contributions included
  - Fish collection: both targeted sampling and LTRM SRS sampling
  - Assistance with analysis of LTRM data
  - Assistance with writing/editing of manuscript

10

Results

- Populations stable in La Grange
- Age range: 1 – 18 years
- Appear to grow slower and have the potential to reach larger body sizes than previously found
- Low fishing mortality
- Most caught in backwaters



- Figure 2 of Molinaro et al. 2024. CPUE of shortnose gar using LTRM electrofishing (DE), fyke netting (F) and mini fyke netting (M). Shaded region (2015-2018) was period of pectoral spine collection

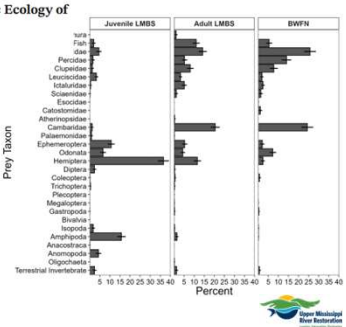
11

ORIGINAL ARTICLE OPEN ACCESS — Ecology of FRESHWATER FISH — https://doi.org/10.1111/eff.12814

Spatial and Ontogenetic Patterns in the Trophic Ecology of Two Predatory Fishes in a Large River

Shaley A. Valentine | Gregory W. Whitledge

- Diet study of bowfin and largemouth bass (LMB) collected as part of the UMRR vital rates project
- Main components of diet:
  - Juvenile LMB: many macroinverts, few fish
  - Adult LMB and Bowfin: crayfish, fish, some aq. insects
  - Adult LMB and bowfin had high overlap of prey resources.
  - But – bowfin tended consume more and larger fish and LMB consumed more large inverts.
  - Crayfish were important for LMB & bowfin

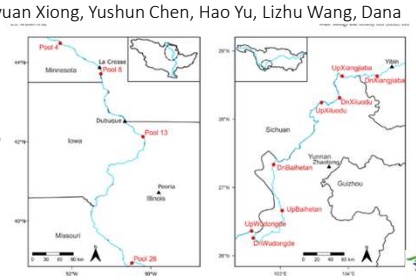


12

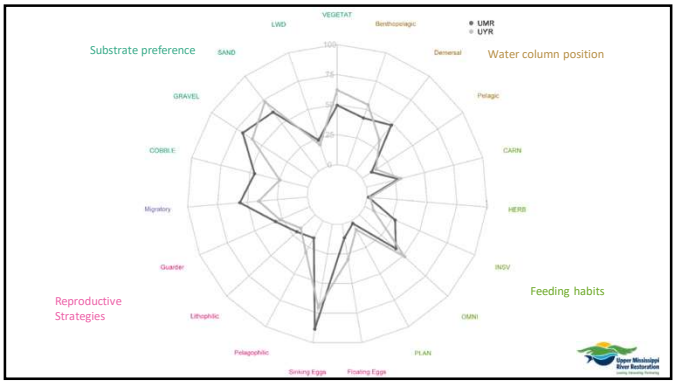
Publication: Relationships between environmental variables and fish functional groups in impounded reaches of the Upper Mississippi and Yangtze Rivers

Kyle Brumm, Fangyuan Xiong, Yushun Chen, Hao Yu, Lizhu Wang, Dana Infante

- Compared environmental variables and functional traits of fish communities to understand how large river fish communities may respond to anthropogenic stressors.



13



14

American Fisheries Society 2024 Annual Meeting

- The 6th Mississippi-Yangtze River Basins Symposium (MYRIBS):
  - Now represents over 10 years of international communications and collaborations.
  - Organized by Yushun Chen, (Chinese Academy of Sciences, Michael Eggleton (U. Arkansas), Dana Infante (Mich. State. Univ), Patrick Kroboth (USGS), **James Lamer (INHS, IRBS)**, Micheal Moore (USGS).
- Kristen Bouska,, A. Bartels, J. Lamer, L. Solomon, H. Kim, and Q. Phelps. Spatial patterns of vital rates among large river fish populations.
- Kristen Bouska, J. N. Houser, and N. R. De Jager. Resilience as a collaborative learning process: Insights from the Upper Mississippi River.
- Nicole Ward, S. Winter, K. Bouska, E. Stefanik. Linking long-term monitoring and inter-agency environmental decision making.
- Manisha Pant. First record of non-indigenous polychaete *Laonome xeprovala* in La Grange Pool of the Illinois River.
- Teresa Newton. Vital rates of native mussel assemblages in the Upper Mississippi River.

15

LTRM Implementation Planning Recommended Information Needs

- Geomorphic trends in the UMRS
- River gradients from Pool 14 to Pool 25

FY2023

- Floodplain vegetation change across system
- Lower trophic contribution (zooplankton and phytoplankton)

FY2024

- Aquatic plant distribution
- Learning from restoration
- Terrestrial and aquatic herpetofauna (amphibians and reptiles)
- Freshwater mussels
- Macroinvertebrates*

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Implementation Planning: Floodplain Vegetation Change Across the System

- Project Objective:
  - Develop a long-term floodplain vegetation monitoring plan for LTRM
  - Conduct a Program-Level workshop (January 7-9, 2025 in the Quad Cities).
    - Establish a floodplain vegetation monitoring working group
    - Identify, assemble, and evaluate existing floodplain vegetation data sets
    - Identify avenues for data collection and analyses at restoration sites
  - Develop public online tools to facilitate data sharing and visualization of existing floodplain vegetation data
  - Answer focused research questions with existing data and further predictive modelling efforts

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Floodplain Vegetation Information Need

- Initial Planning Team: Nathan De Jager (USGS), Lyle Guyon (NGRREC), Molly Van Appledorn (USGS), Matthew Trumper (Co-PI, USGS, new hire), Shelby Weiss (Co-PI, NGRREC, relatively new hire) + TBD at workshop

Shelby Weiss
PhD University of Oregon
MS The Ohio State University
BS Colorado State University

Interested in forest ecosystem dynamics and quantifying how forests respond to ecological disturbances and climate change.

Matthew Trumper
MA University of Minnesota
BS University of Minnesota

Interested in forest growth, ecosystem modelling, background in geography.

18

LTRM Field Station Visits

- LTRM Management Team
- 5 of 6 completed
- Visited with Pool 26 Field station staff yesterday.
- Will visit with La Grange Pool Field Station (IRBS) tomorrow.

19

UMRR-LTRM MONITORING AND SCIENCE UPDATE

Davi Michl
Rock Island District
UMRR-CC
20 Nov 2024



U.S. ARMY 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 FY25

$55 Million UMRR Program

2 SOWs in FY24

SOW for LTRM base monitoring
$6.5M

SOW for science in support (analysis under base)
$2.0M

Both SOWs <u>together</u> are equivalent to a fully funded UMRR LTRM element $8.5M

Science in Support of Restoration & Management
(combined with analysis under base into 1 SOW)
$5.95M

TOTAL: $14.45M

3

UMRR MONITORING & SCIENCE FY25

LTRM

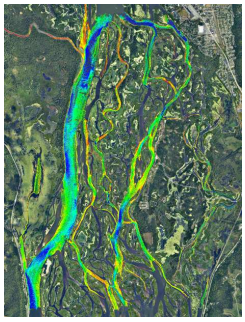
	Budget (gross)
MN	$1,084,310
WI	$880,299
IA	$593,488
Great Rivers (IL)	$610,057
Big Rivers & Wetlands (MO)	$603,889
IRBS (IL)	$688,704
Equipment	$143,356
All-Hands meeting	$ 9,081
STATES TOTAL (-carry-in)	**$4,651,356***
UMESC TOTAL (-carry-in)	**$4,137,486**
Corps tech/science reps	$ 77,000
TOTAL FY24 LTRM BUDGET	**$8,865,842**

4

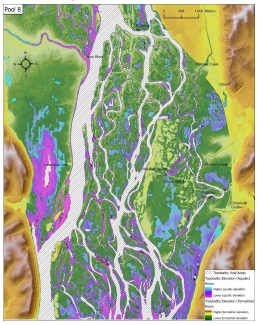
TOPOBATHY UPDATES

FY23 Pilot Study

Sonar →



Bathymetric lidar ↓

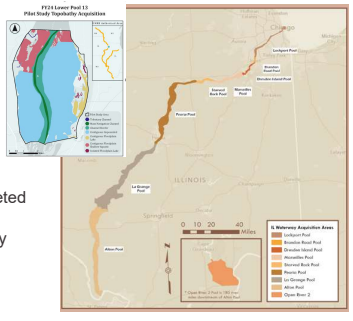


5

TOPOBATHY UPDATES

FY24 Acquisition Areas
- ILWW (La Grange to Lockport)
- Open River 2 (Ohio confluence to Grand Tower, IL)
- Lower Pool 13 Pilot

FY24 Acquisition Areas
- 12 task orders awarded
- Contractor kick-off meetings completed
- Multi-beam acquisition commenced
- POCs for leaf-off/aquatic veg weekly updates



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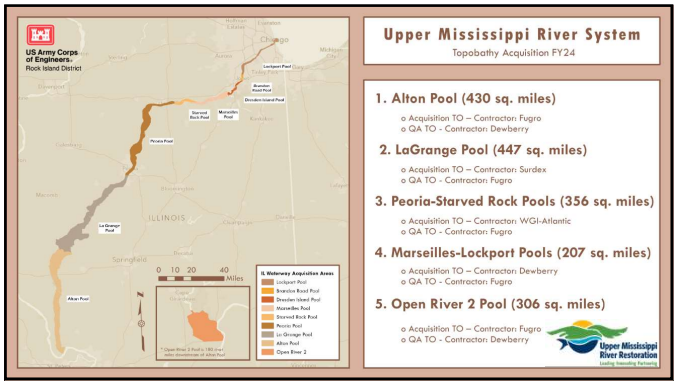
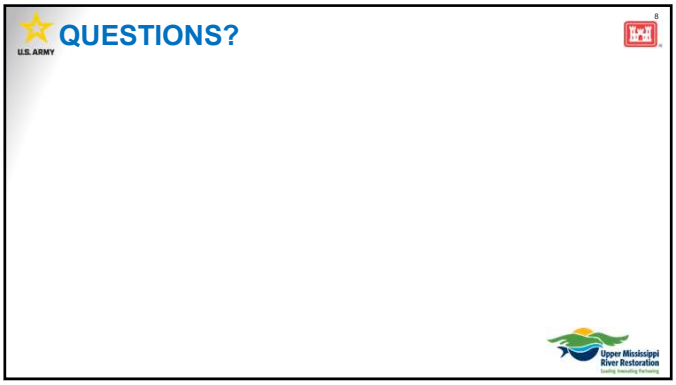
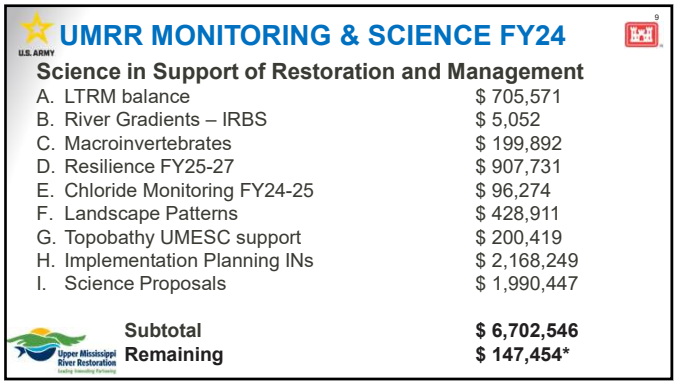

US Army Corps of Engineers
Rock Island District
Upper Mississippi River System
Topobathy Acquisition FY24
1. Alton Pool (430 sq. miles)
o Acquisition TO – Contractor: Fugro
o QA TO - Contractor: Dewberry
2. LaGrange Pool (447 sq. miles)
o Acquisition TO – Contractor: Surdex
o QA TO - Contractor: Fugro
3. Peoria-Starved Rock Pools (356 sq. miles)
o Acquisition TO – Contractor: WGI-Atlantic
o QA TO - Contractor: Fugro
4. Marseilles-Lockport Pools (207 sq. miles)
o Acquisition TO – Contractor: Dewberry
o QA TO - Contractor: Fugro
5. Open River 2 Pool (306 sq. miles)
o Acquisition TO – Contractor: Fugro
o QA TO - Contractor: Dewberry
Upper Mississippi River Restoration
ILLINOIS
Miles

7


QUESTIONS?
U.S. ARMY
Upper Mississippi River Restoration

8

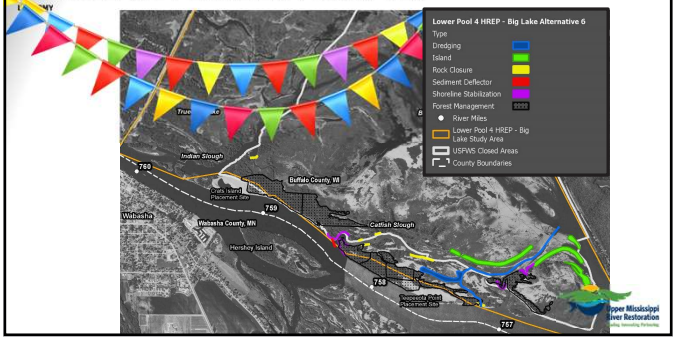

UMRR MONITORING & SCIENCE FY24
U.S. ARMY
Science in Support of Restoration and Management
A. LTRM balance $ 705,571
B. River Gradients – IRBS $ 5,052
C. Macroinvertebrates $ 199,892
D. Resilience FY25-27 $ 907,731
E. Chloride Monitoring FY24-25 $ 96,274
F. Landscape Patterns $ 428,911
G. Topobathy UMESC support $ 200,419
H. Implementation Planning INs $ 2,168,249
I. Science Proposals $ 1,990,447
Subtotal $ 6,702,546
Remaining $ 147,454*
Upper Mississippi River Restoration

9

ST. PAUL DISTRICT
FY24 ACCOMPLISHMENTS

41

BIG LAKE FEASIBILITY COMPLETE!



42

AWARDED LOWER POOL 10 – STAGE 1

Total: $39M
Stage 1 = $11M
Awarded $7.5M

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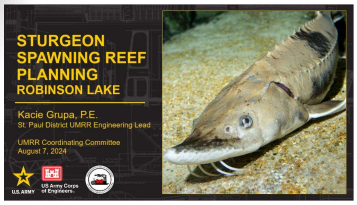
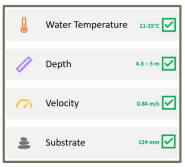
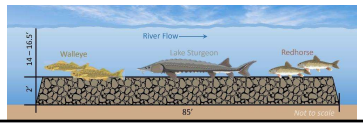
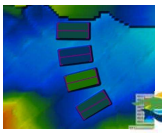
ROBINSON LAKE – SPAWNING REEF









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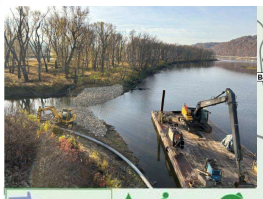
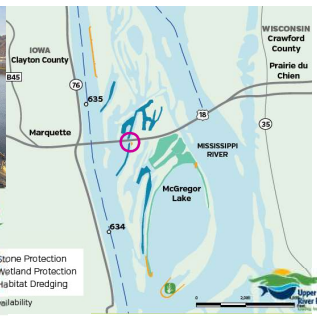
MCGREGOR – COMPLETED STAGE 1





Proposed Project Features
- River Mile
- Navigation Channel
- Floodplain Forest
- Stone Protection
- Wetland Protection
- Habitat Dredging

Features are subject to funding availability

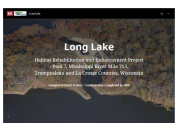
45

STORYMAPS

GOAL: to develop standard visualizations of HREPs using ArcGIS StoryMap technology

Completed 4 StoryMaps
- Capoli
- Long Lake
- Lower Pool 10
- Conway Lake

INTERACTIVE STORYMAP



Provides the public with a visual and short history of each HREP project's purpose, objectives, design, and built features using text, photos, and maps.

Find an HREP Project

https://www.mvr.usace.army.mil/Missions/Environmental-Stewardship/Upper-Mississippi-River-Restoration/Habitat-Restoration/Find-an-HREP-Project/

MVP GIS: Joel Porterfield

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PUBLIC AFFAIRS STATS

Featured projects/posts

- McGregor HREP
  - Earth Day tree planting
  - Open house
- Big Lake HREP
  - Public meeting
  - Public comments on the EA
- Lower Pool 10 HREP contract award

Social Media Analytics

- Facebook, Instagram, LinkedIn and X (formerly Twitter)
- 48 posts

Video Analytics

- McGregor aerial footage
  - 2,200 views, 23 likes (on YouTube)
- McGregor construction video
  - reached 550 people, 2 shares, 9 reactions (on Facebook)

Videos

- McGregor construction video
- McGregor aerial footage video

MVP PAO: Melanie Peterson

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ST. PAUL DISTRICT
FY25 HREP UPDATE

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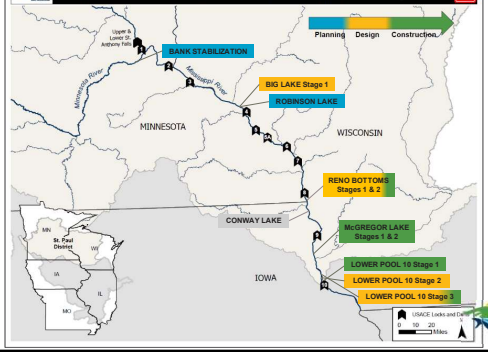
St. Paul District - Current Habitat Rehabilitation and Enhancement Projects

FY25 Execution Goal:

1. Reno Stage 1
2. Reno Stage 2
3. LP10 Stage 1
4. LP10 Stage 3



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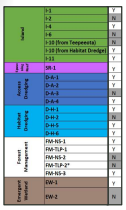
PLANNING

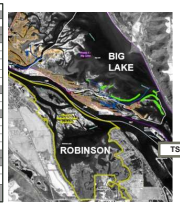
- **Bank Stabilization – MN River**
  - Mn Valley Refuge
  - Nov 20 – Kick-off
  - Nov 25 – Site Visit

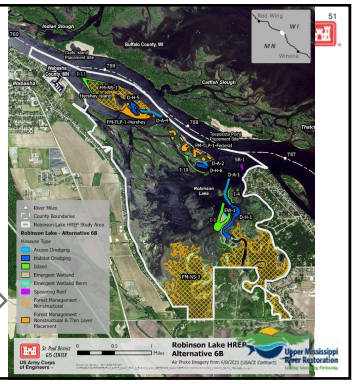
50

PLANNING

- **Robinson Lake – Pool 4, MN**
  - Nov – Tentatively Selected Plan Milestone Mtg
  - Dec – Internal Review (DQC)
  - Jan – Public Review







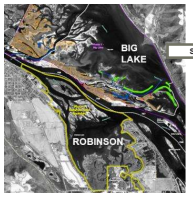
51

DESIGN

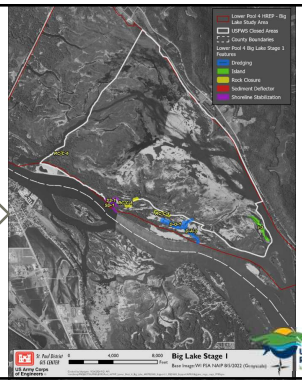
- **Big Lake – Pool 4, WI**

Stage 1

- P&S Kick-off!
- Refinement of habitat dredging
- Agency input on rock closures



Stage 1



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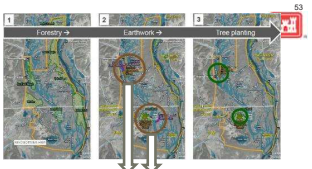
DESIGN

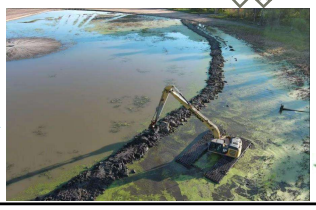
➢ **Reno Bottoms HREP – Pool 9, MN/IA**

Stage 1
- Forest Management Actions
- Completed SOW
- Next Steps: Award Task Order
  - Whalen Tract

Stage 2
- A/E Design
- 95% Review – ATR
- Next Steps: BCOES & Advertise

Thin Layer Placement
Applying lessons learned →
- Using in situ material for berms
- Allows more habitat dredging





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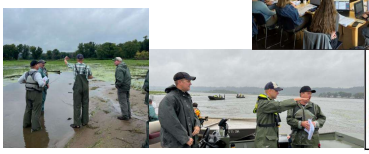
DESIGN

➢ **Lower Pool 10 HREP – Pool 10, IA**

Stage 1
- Contract Awarded
  - Winter: Tree clearing
  - Spring: Groundbreaking Event

Stage 2 & 3
- Final Reviews
- BCOES
- Next Steps: Advertise Stage 3



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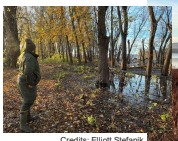
CONSTRUCTION

➢ **McGregor Lake HREP – Pool 10, WI**

Stage 1: 100% Complete
- Drafting O&M Manual
- Evaluating Tree Planting



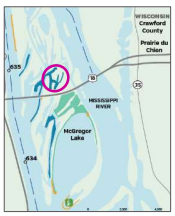
Credits: Elliott Stefanik
Lewis Wiechmann

55

CONSTRUCTION

➢ **McGregor Lake HREP – Pool 10, WI**

Stage 2: 85% Complete
- Completed fines placement & berm mixing
- Fisheries features complete
- 2025: Final grading, seeding, tree planting



Credit: John Henderson

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ROCK ISLAND DISTRICT
FY24 ACCOMPLISHMENTS

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ROCK ISLAND DISTRICT (MVR) ACCOPLISHMENTS 2024

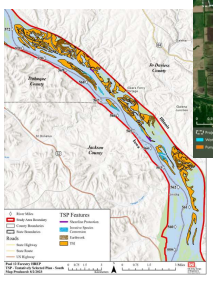
PLANNING –

Pool 12 Forestry HREP – Pool 12, IA/IL/WI
- Advanced feasibility study
- Completed concurrent reviews
- Submitted report for final approval

Green Island HREP, Pool 13, IA
- Advanced feasibility study
- Completed concurrent reviews
- Submitted report for final approval

Lower Pool 13, HREP, Pool 13, IA/IL
- Report was approved from MVD

Lower Pool 13, Phase II HREP, Pool 13, IA/IL
- Advanced feasibility study
- Final array on Sep 4th



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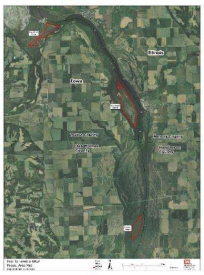
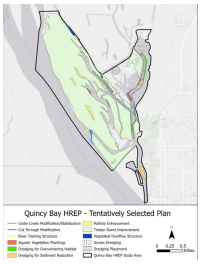
ROCK ISLAND DISTRICT (MVR) ACCOPLISHMENTS 2024

PLANNING –

Pool 18 Forestry HREP, Pool 18, IA/IL
- Advanced feasibility study
- Final array on Jul 24th

Quincy Bay HREP – Pool 21, IA/IL/WI
- Advanced feasibility study
- Completed concurrent reviews
- Submitted report for final approval





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ROCK ISLAND DISTRICT

Steamboat Island HREP

Completed Work in FY24
Stage I
Completed all rock placement at the head of the island, NE bankline and SE Island

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ROCK ISLAND DISTRICT

Steamboat Island HREP

Completed Work in FY24
Stage II
Completed tree clearing
Dredging – 80% of the channels

61

ROCK ISLAND DISTRICT

Huron Island HREP

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

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ROCK ISLAND DISTRICT

Forest Services MATOC Activities
***Spring Lake** – 70 acres planted with 660 trees & shrubs and 6 acres non-native species treatment
***Lower Pool 13 - Elk River Bottoms** – 78 acres of TSI, non-native species treatments, and planted 4,370 trees and shrubs
***Beaver Island** Stands A, B, and dredge placement – 94 acres planted with 1,975 trees & shrubs
***Beaver Island** Stands E and J – has not started yet – 46 acres of TSI and non-native invasive species treatment, planted 1,580 trees & shrubs
***Steamboat**
- **Grant and Steamboat Island –** 116 acres planted with 970 trees & shrubs
- **Wapsipinicon Bottoms Area** – 76 acres planted with 2,500 trees and 8 acres non-native invasive species treatment

***Keithsburg Division** – 20 acres vegetation treatment and planted 1,500 trees & shrubs
Total cost = $1.6 million (approx. 13,555 trees and shrubs planted)

Timber Inventory
***Pool 18 Forestry** – completed – 1,400 acres out of 1,400 acres
***Award Lower Pool 11** – completed - 325 acres out 1,300 acres

Total cost = $72,000 (1,725 acres)

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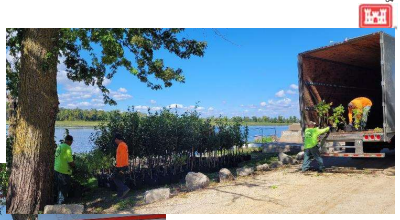
ROCK ISLAND DISTRICT

Spring Lake Planting



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ROCK ISLAND DISTRICT – UMRR COMMUNICATIONS FY24

Featured Projects/Posts
- Steamboat Island HREP Groundbreaking
- Green Island HREP Open House
- Quincy Bay HREP Open House
- Pools 12 and 13 HREP Open Houses
- World Migratory Bird Day
- UMRR Program Workshop
- Pool 19 HREP Open House

YouTube Videos
- Five videos created in FY24
  - UMRR Partnership Webinar – Ecological Status & Trends
  - UMRR Science in Support of Restoration Webinars (x2)
  - Green Island HREP Open House
  - Pool 18 Forestry Public Input Opportunity
- Videos garnered 129 views and 16.5 hours of viewership
- *Note: All videos were "unlisted", meaning they were only accessible via direct link*

Social Media Analytics
- Facebook/Instagram
  - 42,118 users reached
  - 1,110 likes/reactions
  - 86 comments
  - 155 shares
- Twitter
  - 3,604 users reached
  - 42 engagements (likes, retweets, etc.)

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ROCK ISLAND DISTRICT PROJECT UPDATE

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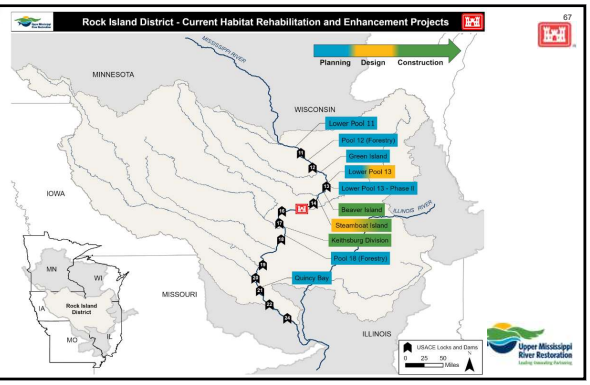
Rock Island District - Current Habitat Rehabilitation and Enhancement Projects



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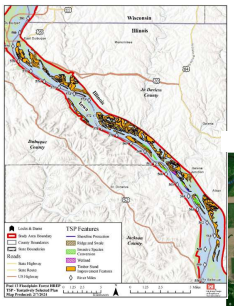
PLANNING

- **Lower Pool 11 – Pool 11, WI**
  - Kickoff Meeting held on Nov 7th
  - Next Step: drafting POOC
- **Pool 12 Forestry – Pool 12, IA/IL/WI**
  - Completed Final ATR
  - PDT working on finalizing MVD review
  - Next Step: MVD Approval and FONSI
- **Green Island – Pool 13, IA**
  - MVD approved the report
  - PDT is routing the FONSI for signatures
  - Next step: Updating the report for printing



Pool 12 Forestry TSP

Green Island TSP

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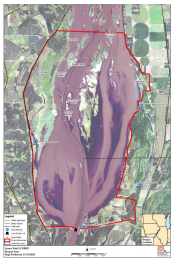
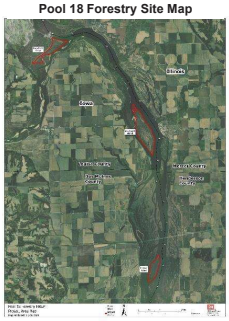
PLANNING

- **Lower Pool 13 Phase II – Pool 13, IA/IL**
  - Completed the final array
  - PDT working on quantities, cost and HEP on the final array
  - Next step: pick a TSP
- **Pool 18 Forestry – Pool 18, IA**
  - PDT working on quantities, cost and HEP on the final array
  - Next step: pick a TSP
- **Quincy Bay – Pool 21, IL**
  - Report approved by MVD
  - PDT is routing the FONSI for signatures
  - Next Step: Updating the report for printing



Lower Pool 13 Phase II Site Map

Pool 18 Forestry Site Map



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DESIGN

- **Lower Pool 13 Stage I – Pool 13, IA/IL**
  - 30% design reviews started on Oct 24th
  - Next step: 60% design reviews
- **Steamboat Island Stage III – Pool 14, IA/IL**
  - PDT still addressing 30% design review comments
  - PDT is also laying out the dredge channels and placement sites
  - Next step: 60% design reviews

Steamboat Island Stage III Draft Site Plan

Lower Pool 13 Stage I Draft Site Plan

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CONSTRUCTION

- **Beaver Island Stage IB, Pool 14, IA/IL**
  - Ribbon cutting ceremony completed – Oct 1st
- **Steamboat Island Stage I – Pool 14, IA/IL**
  - Construction is working on closing out this contract.
- **Steamboat Island Stage II, Pool 14, IA/IL**
  - Contractor is shaping the placement sites and cleaning up the channel
  - Protest – on-going

Beaver Island – Ribbon Cutting Ceremony

Steamboat Stage II – Shaping Placement Site

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CONSTRUCTION

- **Keithsburg Division Stage I, Pool 18, IL**
  - Contractor started working on the spillway
- **Keithsburg Division Stage II, Pool 18, IL**
  - Contractor is schedule next week to be on-site
- **Huron Island, Stage III - ERDC, Pool 18, IA**
  - Supplemental plantings completed August 20-22nd
  - Survival survey completed September 17th

Keithsburg Division Stage I – Spillway

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ST. LOUIS DISTRICT FY24 ACCOMPLISHMENTS AND FY25 WORK PLAN

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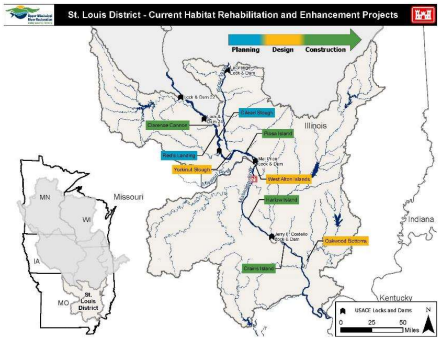
St. Louis District - Current Habitat Rehabilitation and Enhancement Projects



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

CONSTRUCTION

Clarence Cannon Refuge, MO (Pool 25)
- Completed Berm Setback
  - River Tested!
- Completed Tree Planting Task Order

Clarence Cannon HREP Berm Setback

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CRAINS ISLAND

CONSTRUCTION

- **Crains Island, IL HREP (Open River) FWS**
  - Completed Stage 2 Construction
  - Earthwork focused on Side Channel excavation
- Advanced PED Stage 3

Crains Island HREP Stage 2 Earthwork

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HARLOW ISLAND

- **Harlow Island, IL HREP (Open River) FWS**
  - Sponsor is the U.S. Fish and Wildlife Service
  - Stage 1 Contract Award Complete FY24 4th Qtr
  - Stage 2 P&S tracking for 4th Qtr FY 25 Pending Funding Availability or FY26

Harlow Island HREP
Stage 1 Earthwork

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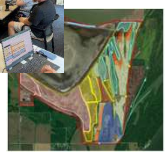
FEASIBILITY PLANNING REPORTS APPROVED

Yorkinut Slough IL River
Sponsor FWS
- ***MVD Approved Final Report***
- ***Coordinated with DU Project***
- ***Initiated Design FY24***



West Alton Islands Pools 26
Sponsor MDC
Sponsor FWS
- ***MVD Approved Final Report***

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ADVANCING UMRR (MVS)

Gilead Slough, IL Pool 25
- **Sponsor FWS, Completed Alternatives Array IPR, continued planning.**

Reds Landing, IL Pool 25
- **Sponsor IDNR, Completed Alternatives Array IPR, continued planning.**

- **Build Capacity and Maintain Capability**
  - **MVS Future Work Fact Sheets**
    - *Completed River Team Workshops*
    - *Identified 4 UMRR project ideas to move forward as fact sheet proposals*
    - *Identified 3 additional UMRR project ideas that need more conversation with Sponsors*
- **HREP Workshop - Great turn out and participation!**
- **Swan Lake Flood Rehabilitation**
  - **Advanced Design**
- **Completed water level mapping for ecosystem restoration planning**

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ADVANCING UMRR (MVS)

- **Data Collection to support HREPS**
  - Completed Mapping Products to Support 4 future projects
  - Completed Geotechnical Sub-surface data collection for 2 active projects to support PED
  - Acquired additional Bathymetry to support 2 projects
  - Awarded Lower Illinois River Hydrogeomorphic Study to support future HREPS
- **Public Outreach**
  - Island Naming Completed! Received Official designation from USGS. (Canvasback, Moonlight, Steamboat Islands, and Powrie Islands)
  - Completed HREP interpretive sign design, fabrication, and installation
  - Working with Technical Writer to make Reports 508 Compliant

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FY 25 DISTRICT PROGRAM WORK PLAN

Planning
- **Reds Landing**, IL, IDNR –Feasibility Study
  - Draft TSP
- **Gilead Slough,** IL, FWS –Feasibility Study
  - Complete TSP
- **Meredosia Island**, IL FWS – Pre-Feasibility Coordination and Preparation
  - New Start Study

DESIGN
- **Crains Island Stage 3**
  - Complete Design, Award 2nd Qtr.
- **UMRR IDIQ SATOC**
  - 5 year, $50M Construction Contract Acquisition 4th Qtr.
- **Swan Lake Rehabilitation**
  - Complete P&S, FY26 Award Pending Funding Availability
- **Yorkinut Slough Stage 1**
  - Complete PED, FY26 Award Pending Funding Availability
- **Yorkinut Slough Stage 2**
  - Initiate PED
- **Harlow Island Stage 2**
  - Complete Design 3rd -4th

Construction
- **Clarence Cannon National Wildlife Refuge**
  - Reforestation – Issue Task Order 2nd Qtr.
  - Gravity Drain Trash Boom – 2nd Acquisition.
  - Pump Station Trouble Shooting
- **Piasa & Eagles Nest Islands**
  - Complete Stage 2 Dredging and closeout
  - Acquisition of Stage 3 Rock Dike work
- **Crains Island Open River**
  - Stage 3 Award 2nd Qtr.
  - Excavation - Hydraulic & Land based
- **Harlow Island Open River**
  - Stage 1 Construction underway
  - Stage 2 Award Pending Funding Availability

Other Programmatic Efforts
- Ted Shanks Complete Project Evaluation Report
- Clarence Cannon Ribbon Cutting / Dedication - 3rd Qtr.
- New Project Fact Sheet Development District Wide with River Team Coordination / Support (RRAT)
  - Draft FS from River Team Process (4)

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U.S. ARMY
UMRR MGMT TEAM
Brian Markert
UMRR Program Manager
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Vacant
Senior Project Manager
Project Development Lead
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Jasen Brown
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Jacob Conway
Project Manager
(314) 331.8501
Jack Hendrickson
Program Analyst / Project Assistant
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UMRR
Upper Mississippi River Restoration

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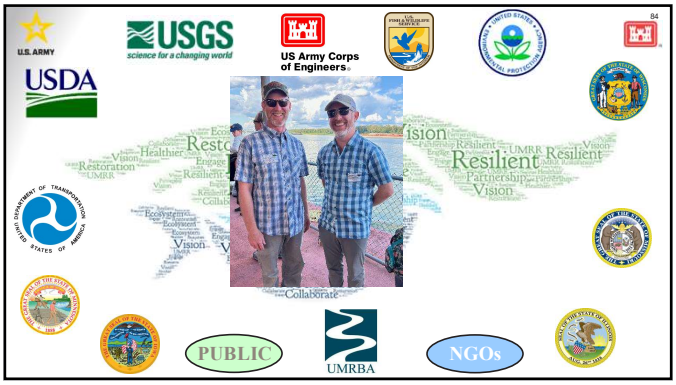
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U.S. ARMY
USGS
science for a changing world
US Army Corps of Engineers
USDA
Resilient
Vision
Collaborate
PUBLIC
UMRBA
NGOs

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