Upper Mississippi River Restoration Program Coordinating Committee Quarterly Meeting

May 26, 2021

Highlights and Action Items

- **Illinois DNR recently named Chad Craycraft as Illinois DNR's UMRR Coordinating Committee member.**

Program Management

- The partnership implemented an Earth Day social media campaign with the theme "Restore Our Earth" and acknowledged that **2021 marks the 35th anniversary of UMRR**.

- **UMRR has obligated over $18.1 million, or 54.6 percent, of its $33.17 million FY 21 funds to-date.** Cost savings were realized for Harpers Slough and Huron Island.

- **The President's FY 22 budget has not yet been released but is anticipated to be published by the end of May 2021.**

- **Three projects, totaling 5,590 acres, are anticipated to be completed by December 2021, increasing UMRR's total acres restored to 111,000 acres through 59 completed projects.** These projects include Conway Lake, Pool 12 Overwintering, and Ted Shanks. Another four projects are anticipated to be completed in 2022 that will collectively add 9,810 acres to UMRR's total restored or improved habitat.

- On May 12, 2021, the A-Team revised language to its Charter in response to direction from the UMRR Coordinating Committee. In a May 25, 2021 email to the Coordinating Committee, the A-Team provided an explanation of its edits with additional suggested changes. That is a newer version than the version included in the meeting agenda packet.

- A survey is being developed for distribution to the UMRR partnership at-large regarding the 2015-2025 Strategic and Operational Plan. The purpose being to seek input regarding progress achieved since 2015, priorities for the next five years, and the issue areas to include in the 2022 Report to Congress. **The UMRR Coordinating Committee will be sent a draft survey for review in early summer and will be asked to provide people within their respective agency to receive the survey.**

- On April 14, 2021, the *ad hoc* team developing an outline for the UMRR 2022 Report to Congress met to discuss the Coordinating Committee's feedback on the draft outline of the report. Next steps include finalizing the report outline and identifying chapter authors and contributors.

- **The UMRR Coordinating Committee will soon initiate a process to develop a desired future condition for the UMR ecosystem through a qualitative narrative approach**. The process will utilize the "statements of significance," Habitat Needs Assessment-II, the UMRR 2015-2025 Strategic Plan (and review feedback), and the 2011 NESP Report among others. A small *ad hoc* group will be assembled to scope this process and assemble references from existing programmatic documents.

- On May 21, 2021, the LTRM implementation planning team convened a meeting to discuss the timeframe, participants, and process for this effort, including use of an independent facilitator. **Next steps are to develop a broader scope of work and timeline for LTRM implementation planning and identifying potential facilitators.**

Communications

- Over the last few months, the UMRR communications team developed and implemented a social media campaign to celebrate Earth Day with the theme "Restore Our Earth." Strategies included partnership agencies sharing the Corps' social media posts or using the provided verbiage to create their own posts. **The campaign reached over 34,000 Facebook users and 18,000 Twitter users. The team is also finalizing a draft UMRR flyer and will send it to the UMRR Coordinating Committee for comments in the coming weeks.** The flyer is geared toward a general audience with limited knowledge of UMRR and will highlight the value of the UMRS and benefits of UMRR in the context of water, wildlife, and way of life. The team also discussed how UMRR can recognize and celebrate its 35th anniversary and will continue this discussion at their next meeting.

UMRR Showcase Presentations

- Jasen Brown provided an update on the Oakwood Bottoms Greentree Reservoir HREP. It is the first UMRR HREP to be sponsored by the U.S. Forest Service and will encompass 4,700 acres located in the Shawnee National Forest. The area is home to the Shawnee's largest Indiana bat maternity colony, provides critical waterfowl migration habitat, and has been the focus of many partnership and conservation efforts. Problems at the site include unnatural water level fluctuations, degraded forest community, and a reduction of emergent wetlands. Project objectives include:
  - Increase regeneration of bottomland hardwood forest within the study area during the period of analysis.
  - Restore natural hydrologic conditions and function to the floodplain by emulating natural flooding and drainage regimes in the study area during the period of analysis.
  - Restore degraded wetland habitat in the study area for resident migratory wildlife during the period of analysis.

  The recommended plan includes berm modifications, water structure replacement, channel grading, and installation of a pump station and six well pumps to improve the ability to add and remove water from various areas, as needed. The project will also include reforestation and timber stand improvement. The project feasibility report was approved by MVD in May 2021 and four design packages are anticipated to be advertised in January 2022.

- Alicia Carhart summarized a recent manuscript published in the journal *Wetlands* on understanding constraints on submersed vegetation distribution in the Upper Mississippi River System. Ecosystem health and resilience in the UMRS is often associated with aquatic vegetation. This research focused on the combined effects of water clarity, geomorphology, and water level fluctuations, which provide the known constraints on where aquatic vegetation can establish and grow. Research indicates a complete absence of suitable area for SAV for some years in Pools 20-26 on the Mississippi River and all years in the La Grange and Alton pools on the Illinois River.

  A system-wide 75 percent reduction in total suspended solids (TSS) was modeled to assess potential increases in suitable area for SAV and highlight areas that may respond well to vegetation restoration efforts. Even with a 75 percent reduction in TSS, many pools in the Lower Impounded Reach had only minor increases in suitable area for SAV. Suitable areas increased by 1,400 hectares or more in upper Pool 4, Pool 13, and Pool 19 with the hypothetical TSS reduction. This research found that, in the Peoria Pool, water clarity and water level fluctuation may not be the limiting factors for SAV presence, but other factors such as herbivory, seed bank viability, sedimentation, or water quality (chemical pollution) may be limiting SAV. These datasets can be downloaded from Science Base or viewed spatially within the UMRS-Systemic Spatial Data Viewer: https://www.umesc.usgs.gov/management/dss/umrs_land_cover_viewer.html

Long Term Resource Monitoring and Science

- Accomplishments of the first quarter of FY 21 include publication of the following manuscript and completion reports:
  - Understanding constraints on submersed vegetation distribution in a large, floodplain river: the role of water level fluctuations, water clarity and river geomorphology
  - Probabilities of detecting submersed aquatic vegetation species using a rake method may vary with biomass
  - Bluegill Habitat Use in the Upper Mississippi River
  - Gear specific catch rates and size structure of channel catfish in the Upper Mississippi River
  - Integrating Perspectives to Understand Lake Ice Dynamics in a Changing World
  - Aquatic Ecosystem Metabolism as a Tool in Environmental Management

- The UMRR LTRM Component Meeting was held on March 30-31, 2021 and had 55 participants. Topics included field station updates, research project presentations, and LTRM component meetings.

- The Mississippi River Research Consortium's annual meeting was held virtually on April 22-23, 2021 and featured a session devoted to the upcoming Status and Trends report. A variety of other presentations and posters included contributions from LTRM staff or made use of LTRM data.

- **The Status and Trends Report 3rd Edition is being reviewed by USGS' Science Publishing Network (SPN) to produce a final version of the report. Figures are completed for eight of the ten chapters. Following report finalization, a summary brochure will be created for use in outreach and communication activities. A small group is planning for a strategic rollout for the UMRR Status and Trends Report.**

- In October 2020, USGS implemented a new bureau-wide Quality Management System (QMS) that provides a foundation to ensure laboratory activities meet a defined standard of quality. **The LTRM Water Quality Analytical Laboratory was one of the first USGS labs to implement the new QMS, which included small modifications to work processes. This effort did not disrupt workflow.**

- The LTRM water quality lab volunteered to participate in the USGS Standard Reference Sample Project that evaluates the performance of federal, state, private, and university laboratories' analyses of chemical constituents of environmental samples. **Results show that LTRM water quality labs are rated excellent for phosphorous, nitrite, and nitrate as N.**

- UMRR's LTRM allocation is $6.3 million ($5.0 million for base monitoring and $1.3 million for analysis under base) with an additional $2.5 million available for Science in Support of Restoration and Management. This represents the third year of consistent funding at this level and has contributed to the advancement of many science priorities. Funded science activities for FY 21 total $8,678,114 and include LTRM base monitoring overage, IWW monitoring, COVID-related safety expenditures, graphical assistance on the Status and Trends report, adjustments to FY 20 proposals, and five FY 21 Science in Support of Restoration and Management projects. The remaining funds will be used to cover any potential emergencies or Corps labor.

- The A-Team met via webinar on May 12, 2021. Topics discussed include revisions to the roles and responsibilities of the A-Team as outlined in the 2013 UMRR joint Charter of consultative bodies, macroinvertebrate sampling and research needs, continued impacts of COVID-19 on agency

policies and potential impacts to the 2021 field/work season, and transferring the A-Team Chair. Modifications to the A-Team's Charter language include:

— Removing the line "e.g., through operationalizing adaptive management at the project or larger scale" from the A-Team's responsibility #7.

— Removing the phrase "on technical issues that do not raise policy or budgetary concerns" from the first paragraph of the A-Team's purpose.

— Replacing "as directed by UMRR CC" with "Any specific actions will be coordinated with and directed by the UMRR CC" in the A-Team's responsibility #6.

The first two changes were passed unanimously at the meeting and the third change was approved by A-Team representatives via email vote after the meeting. The macroinvertebrate subgroup requested the A-team vote on two recommendations: 1) reinstate the macroinvertebrate monitoring in 2022 and 2) develop new focal area around macroinvertebrates. Although all states supported reinstatement and indicated it would likely be made a priority, concern was expressed over voting on the recommendations without additional information on methods and budgets. Jim Lamer volunteered to develop a proposal including methods and budgets in a format that allows for comparison and prioritization by the A-Team relative to other science needs. **Houser agreed to include a macroinvertebrate focal group in future science meetings and will engage the subgroup to develop a research framework. The A-Team Chair was transferred to Scott Gritters of Iowa DNR. The A-Team's next meeting will be held via webinar in July.**

- **The UMRR Coordinating Committee endorsed the Joint Charter of the Upper Mississippi River Restoration Coordinating Committee, Analysis Team, and Habitat Rehabilitation and Enhancement Projects Selection Process Teams. Signing of the Charter will be coordinated via email.**

Habitat Restoration

- MVP's planning priorities include Reno Bottoms and Lower Pool 10. An interagency site visit was held at Reno Bottoms on May 4, 2021. A second run of the forest succession model will be used to re-evaluate alternatives and TSP selection is anticipated in fall 2021. A draft feasibility report for Lower Pool 10 is undergoing district quality review and a final report is anticipated to be submitted to MVD in fall 2021. The district's design priority was addressing repairs on three islands and backwater areas at Harpers Slough. The project's design was approved in January 2021 and a construction contract was awarded May 19, 2021. MVP has three projects in construction – McGregor Lake, Bass Ponds, and Conway Lake. Interior lake granular placement is occurring at McGregor Lake and a site visit occurred on May 25, 2021. Concrete stoplog structures are finished at Bass Ponds and installation of handrail metals, guard rails, access roads, and aluminum stop logs are next. Construction may be completed one year ahead of schedule and drawdowns may be possible this summer. One thousand willows were planted at Conway Lake and low water levels have aided final grading and seeding. MVP participated in the UMRR Earth Day social media campaign with Facebook posts on Bass Ponds, McGregor Lake, and Reno Bottoms. Pool 8 islands HREP was included in the Engineering with Nature Atlas. The district is planning a kick off meeting for Lower Pool 8 Big Lake in fall 2021, completing three performance evaluation reports, and a Trempealeau site visit is scheduled for May 27, 2021.

- MVR's planning priorities include Lower Pool 13, Green Island, Pool 12 Forestry, and Quincy Bay. The Lower Pool 13 PDT is working on feature dependency relationships and refining the project area. TSP selection for Green Island is anticipated for fall 2021. The Pool 12 Forestry PDT is finalizing project goals and objectives and developing a video for a virtual open house and public comment. A kick off meeting for Quincy Bay is anticipated in fall 2021. MVR's design priorities include Keithsburg Island and Steamboat Island Stage I. Keithsburg Division Stage II was fully

designed to accommodate a dam permit application but will be broken into smaller contracts before advertising. The 65 percent review for Steamboat Island Stage I is scheduled for June 3, 2021. MVR has five projects in construction. Tree planting was completed at Pool 12 Overwintering Stages II and a final inspection occurred on May 20, 2021. Construction at Keithsburg Division Stage 1 is on hold until mid-July due to an occupied eagle nest and the PDT is working on a modification to add an articulated concrete mattress for Stage II. Huron Island Stage II planting was completed in May and ERDC is schedule to plant aquatic vegetation for Huron Island Stage III in June 2021. Mussel substrate is being placed at Beaver Island. Re-built pumps at Rice Lake were tested on April 20, 2021 and are fully operational. MVR is addressing sponsor comments on three fact sheets prior to submitting to MVD.

- MVS's planning priorities include West Alton Islands, Oakwood Bottoms, and Yorkinut Slough. The West Alton Islands planning charette was completed this spring. The Oakwood Bottoms feasibility report was approved in May 2021. TSP selection for Yorkinut Slough is anticipated for fall 2021. MVS's design priorities include Piasa & Eagles Nest, Crains Island, and Oakwood Bottoms. Plans and specs for Piasa & Eagles Nest Phase II and Crains Island Phase II are both anticipated to be completed in fall 2021. Oakwood Bottoms is anticipated to be ready for advertising in the first half of FY22. Construction on a rock structure at Piasa & Eagles Nest is anticipated to begin in late-summer 2021. The pump station at Clarence Cannon is anticipated to be operational by fall 2021 and exterior berm setback is underway. Earth work and pile removal is ongoing at Crains Island. Reforestation is underway at Ted Shanks and pump station warranty work was completed in May 2021. Fact sheets with MDC, USFS, and IDNR/TNC as sponsors are being finalized and will be sent to MVD for approval later this year.

Other Business

- Randy Schultz said the Iowa DNR has experienced significant turnover at the Bellevue field station. Mel Bowler retired and Kyle Bales accepted a position with the Corps' Rock Island District. Travis Keuter is the new fish lead and a new vegetation lead was hired from Nebraska. The water quality lead is still vacant.

Upcoming quarterly meetings are as follows:

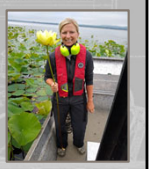
- **August 2021 – Remote**
  - UMRBA quarterly meeting – August 10
  - **UMRR Coordinating Committee quarterly meeting – August 11**
- **November 2021 – TBD**
  - UMRBA quarterly meeting – November 16
  - **UMRR Coordinating Committee quarterly meeting – November 17**
- **February 2022 – TBD**
  - UMRBA quarterly meeting – February 22
  - **UMRR Coordinating Committee quarterly meeting – February 23**

UMRR COORDINATING COMMITTEE - REGIONAL MANAGEMENT AND PARTNERSHIP COLLABORATION

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

26 May 2021

Upper Mississippi River Restoration
Leading·Innovating·Partnering



US Army Corps of Engineers

REGIONAL MANAGEMENT AND PARTNERSHIP COLLABORATION

- FY 2021 Fiscal Update and FY 22 Outlook
- Draft 2021 UMRR Joint Charter Review
- 2015-2025 Strategic and Operation Plan Review
- 2022 Report to Congress
- Desired Future Condition
- LTRM Implementation Planning

USGS science for a changing world

US Army Corps of Engineers

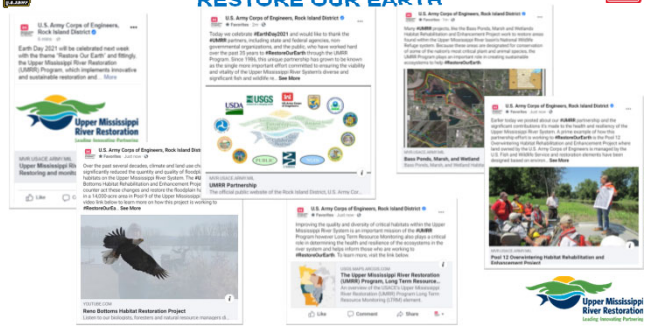
USDA

PUBLIC

UMRBA

NGOs

UMRR 35TH ANNIVERSARY & EARTH DAY 2021 – "RESTORE OUR EARTH"



FINANCIAL REPORTING

UMRR Quarterly Budget Report: St. Paul District
FY2021 Q2; Report Date: Fri May 21 2021

Habitat Projects

Project Name	Cost Estimates			FY2021 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Bass Ponds, Marsh, and Wetland	-	$6,300,000	$6,300,000	-	$300,000	$300,000	$486,146
Conway Lake	-	$7,413,000	$7,413,000	$39,645	$300,000	$339,645	$133,171
Harpers Slough	-	$13,675,000	$13,675,000	-	-	-	-$14,345
Lower Pool 10 Island and Backwater Complex	-	$17,000,000	$17,000,000	$12,700	$350,000	$362,700	$247,946
McGregor Lake	-	$23,550,000	$23,550,000	-	$5,875,000	$5,875,000	$123,589
Reno Bottoms	-	$10,000,000	$10,000,000	$105,337	$450,000	$555,337	$223,679
Total	-	$77,938,000	$77,938,000	$157,683	$7,275,000	$7,432,683	$1,200,186

Habitat Rehabilitation

Subcategory	FY2021 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management	-	-	-	$337,108
Total	-	-	-	$337,108

Regional Program Administration

Subcategory	FY2021 Financials			
	Carry In	Allocation	Funds Available	Obligations
Habitat Eval/Monitoring	-	-	-	$183,267
Total	-	-	-	$183,267

	Carry In	Allocation	Funds Available	Actual Obligations
St. Paul Total	$157,683	$7,275,000	$7,432,683	$1,720,560

FINANCIAL REPORTING

Habitat Rehabilitation

Subcategory	FY2021 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management				$437,247
Total				$437,247

Regional Program Administration

Subcategory	FY2021 Financials			
	Carry In	Allocation	Funds Available	Obligations
Adaptive Management		$300,000	$300,000	$117,500
Habitat Eval/Monitoring		$1,125,000	$1,125,000	$89,940
Model Clarification/Regional HREP		$100,000	$100,000	$28,884
Public Outreach		$50,000	$50,000	$30,301
Regional Program Management		$1,200,000	$1,200,000	$589,094
Regional Project Sequencing		$275,000	$275,000	$13,567
Total		$2,950,000	$2,950,000	$869,176

Regional Science and Monitoring

Subcategory	FY2021 Financials			
	Carry In	Allocation	Funds Available	Obligations
Long Term Resource Monitoring		$5,000,000	$5,000,000	$4,636,868
Science in Support of Restoration/Management		$3,800,000	$3,800,000	$1,756,256
Total		$8,800,000	$8,800,000	$6,394,124

	Carry In	Allocation	Funds Available	Actual Obligations
Rock Island Total	$359,384	$18,770,000	$19,129,384	$9,080,300

FINANCIAL REPORTING

UMRR Quarterly Budget Report: St. Louis District

FY2021 Q2; Report Date: Fri May 21 2021

Habitat Projects

Project Name	Cost Estimates			FY2021 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Clarence Cannon	-	$29,800,000	$29,800,000	-	$850,000	$850,000	$190,067
Crains Island	-	$36,562,000	$36,562,000	$6,226	$4,000,000	$4,006,226	$885,118
Oakwood Bottoms	-	$29,000,000	$29,000,000	-	$350,000	$350,000	$635,688
Pleasa - Eagle's Nest Islands	-	$26,746,000	$26,746,000	-	$825,000	$825,000	$115,567
Ted Shanks	-	$29,506,000	$29,506,000	-	-	-	$55,352
West Alton Mitsouri Islands	-	-	-	-	$275,000	$275,000	$127,829
Yorktond Slough, IL	-	$8,500,000	$8,500,000	$2,716	$225,000	$227,716	$138,539
Total:	$2,848,000	$164,549,000	$167,397,000	$8,947	$7,125,000	$7,133,947	$2,148,189

Habitat Rehabilitation

Subcategory	FY2021 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management				$273,140
Total				$273,140

Regional Program Administration

Subcategory	FY2021 Financials			
	Carry In	Allocation	Funds Available	Obligations
Habitat Eval/Monitoring				$30,716
Total				$30,716

	Carry In	Allocation	Funds Available	Actual Obligations
St. Louis Total:	$8,947	$7,125,000	$7,133,947	$2,451,474

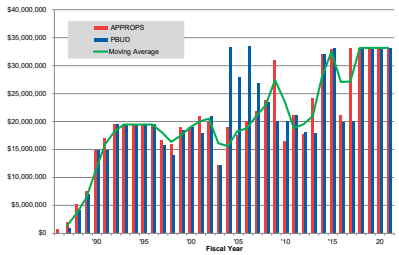
FY21 PLAN OF WORK

	Budget	Obligations 2nd. Qrt.
TOTAL FY21 Program	**$33,170,000**	**$13,252,342**
Regional Administration and Program Efforts	**$ 1,250,000**	**$622,852**
Regional Management	$ 1,000,000	
Program Database	$ 100,000	
Program Support Contract (UMRBA)	$ 100,000	
Public Outreach	$ 50,000	
Regional Science and Monitoring	**$10,400,000**	**$ 6,825,046**
LTRM (Base Monitoring)	$ 5,000,000	
UMRR Regional Science In Support Rehabilitation/Mgmt. (MIPR's, Contracts, and Labor)	$ 3,800,000	
UMRR Regional (Integration, Adapt. Mgmt.)	$ 200,000	
Habitat Evaluation (split between MVS,MVR,MVP)	$ 1,125,000	
Report to Congress	$ 275,000	
District Habitat Rehabilitation Efforts (Planning and Construction)	**$21,520,000**	**$ 5,804,444**
Rock Island District	$ 7,020,000	
St. Louis District	$ 7,125,000	
St. Paul District	$ 7,275,000	
Model Cert.	$ 100,000	**39.5%**

FY21 PLAN OF WORK

week	Budget	As of 30 April
TOTAL FY21 Program	**$33,170,000**	**$18,128,579**
Regional Administration and Program Efforts	**$ 1,250,000**	**$ 689,062**
Regional Management	$ 1,000,000	
Program Database	$ 100,000	
Program Support Contract (UMRBA)	$ 100,000	
Public Outreach	$ 50,000	
Regional Science and Monitoring	**$10,400,000**	**$ 8,906,947**
LTRM (Base Monitoring)	$ 5,000,000	
UMRR Regional Science In Support Rehabilitation/Mgmt. (MIPR's, Contracts, and Labor)	$ 3,800,000	
UMRR Regional (Integration, Adapt. Mgmt.)	$ 200,000	
Habitat Evaluation (split between MVS,MVR,MVP)	$ 1,125,000	
Report to Congress	$ 275,000	
District Habitat Rehabilitation Efforts (Planning and Construction)	**$21,520,000**	**$ 8,532,570**
Rock Island District	$ 7,020,000	
St. Louis District	$ 7,125,000	
St. Paul District	$ 7,275,000	**54.6%**
Model Cert.	$ 100,000	

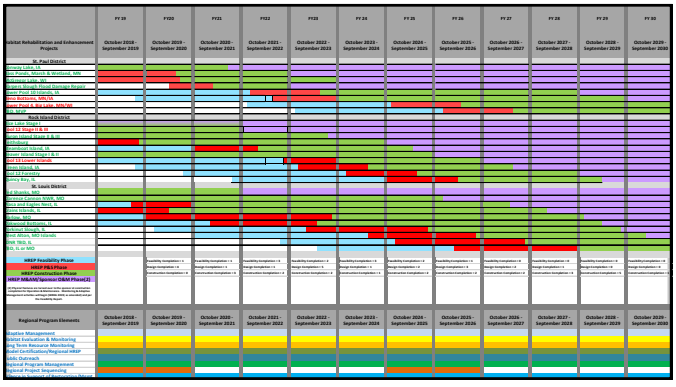
UMRR PROGRAM APPROPRIATION/BUDGET HISTORY



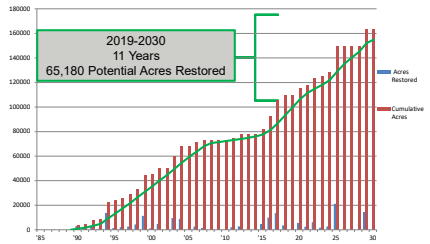
FY1985 to FY2020

FY 22 APPROPRIATIONS

President's Budget	May?
House	TBD
Senate	TBD
FINAL APPROPRIATION	?



ACRES RESTORED



AQUATIC ECOSYSTEM RESTORATION NATIONAL PERSPECTIVE

Acres of habitat restored, created, improved or protected (annual)	FY 2012 – 2020
Nationally	332,657
UMRR	31,370

UMRR HREP POTENTIAL CONSTRUCTION COMPLETIONS

2021		2022	
Conway Lake (MVP)	1,170	Bass Ponds (MVP)	2,090
Pool12 Overwintering (MVR)	1,280	Harpers Slough (MVP)	1,680
Ted Shanks (MVS)	3,140	Beaver Island (MVR)	3,510
		Huron Island (MVR)	2,530
Total Acres	**5,590**	**Total Acres**	**9,810**

DRAFT 2021 UMRR JOINT CHARTER REVIEW

- February UMRR CC Comments on A-Team Charter
  - Two suggestions were made:
    - Remove the line "e.g., through operationalizing adaptive management at the project or larger scale" from the A-Team's responsibility #7
    - A potential rewording for Role #3 was suggested as "3. Advise the UMRR CC regarding the technical implications of decisions affecting LTRM, including policy, programmatic, and budget matters."
- 12 May A-Team Discussion

DRAFT 2021 UMRR JOINT CHARTER REVIEW

- February UMRR CC Comments on A-Team Charter
  - Remove the line "e.g., through operationalizing adaptive management at the project or larger scale" from the A-Team's responsibility #7

7. Promote integration of HREP and LTRM. ~~e.g., through operationalizing adaptive management at the project or larger scale.~~ [SXC1][AS8]

DRAFT 2021 UMRR JOINT CHARTER REVIEW

- February UMRR CC Comments on A-Team Charter
  - The statement at the end of the A-Team's Purpose and Role #3 were confusing, potentially contradictory, and would benefit from rewording for clarity.
  - A potential rewording for Role #3 was suggested as "3. Advise the UMRR CC regarding the technical implications of decisions affecting LTRM, including policy, programmatic, and budget matters."
  - A-Team opted to remove some language from the Purpose to eliminate a perceived conflict between this statement and major role #3.

Purpose:

The Analysis Team (A-Team) addresses technical matters related to implementing the Long Term Resource Monitoring (LTRM) element and the Science in Support of Restoration and Monitoring efforts of the Upper Mississippi River Restoration (UMRR) program. The term "LTRM" henceforth will include both traditional LTRM and UMRR science efforts. The A-Team serves as an advisory body to the Upper Mississippi River Restoration Coordinating Committee (UMRR CC) and advises the U.S. Army Corps of Engineers (Corps) and the U.S. Geological Survey (USGS) on technical issues. ~~on technical issues that do not raise policy or budgetary concerns.~~

DRAFT 2021 UMRR JOINT CHARTER REVIEW

- Charter Correction in meeting agenda packet.
  - Role #3 will be changed back to:

    "Advise the UMRR CC regarding the technical implications of policy, programmatic, and budget decisions affecting LTRM" before routing for signatures.

2015 - 2025 STRATEGIC AND OPERATIONAL PLAN REVIEW

- Partnership Survey
  - Initial draft survey discussed at the 16 Feb RTC Scoping Team Call
  - Content includes:
    - Demographics
    - Success criteria from the Strategic Plan
    - Prioritization of actions for the next 5 years
  - Results can inform the RTC
- Next Step: Revisions to the survey based on feedback and adding clarifying language related to its purpose, audience, background, objectives. Survey will inform a brief report on the mid-point review of the strategic plan.
- Review by the UMRR CC of the survey

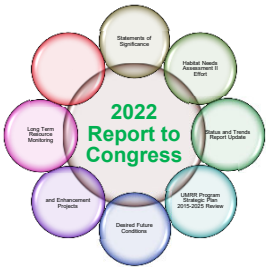
2022 REPORT TO CONGRESS

Completed
- Habitat Needs Assessment II
- Statements of Significance

In Progress
- Strategic Plan Review (2021)
- Status and Trends Report (2021)

Future efforts
- Desired Future Condition (2021)
- Recommendations (early 2022)

Ongoing
- HREPs (early 2022)
- LTRM (early 2022)



2022 REPORT TO CONGRESS

- Scoping Team Meetings on 16 Feb and 14 Apr
- UMRR CC Review Report Outline
  - Executive Summary – Clarify the audience, Support for the flour floodplain reaches
  - History and Background – Suggested title change, focus on responsible execution and partnership
  - Strategic Partnership and Vision – Continued stressors, order of subsections
  - Enhancing Habitat – Process adaptation (Lead-Partner-Innovate), next steps, highlight HREP that been adapted post construction, high water construction lessons
  - Advancing Knowledge – Suggested title change
  - Implementation Issues – Suggested title change, real estate and easement title revision, NESP UMRR transition (unique qualities of both programs)

2022 UMRR Report to Congress

Start Date	Finish Date	Activity
	Nov 2018	*HNA II Complete*
	3 Jun 2020	RTC Planning Mtg #1
	29 Sep 2020	RTC Planning Mtg #2
	3 Nov 2020	RTC Scoping Team Mtg #1
	15 Dec 2020	RTC Scoping Team Mtg #2
	16 Feb 2021	RTC Scoping Team Mtg #3
	14 April	RTC Scoping Team Mtg #4
	Feb 2021	*Statements of Significance Complete*
Nov 2020	April 2021	*Report Outline Complete*
	Summer 2021	*Status & Trends Complete*
	Aug 2021	*Desired Future Conditions Complete*
	Aug 2020	*2015-2025 Strategic Plan Review Complete*
Mar 2021	Sep 2021	Draft RTC Sections
Sep 2021	Nov 2021	Draft RTC
Dec 2021	Jan 2022	RTC Editing
Jan 2022	Jan 2022	In Progress Review (IPR) #1 w/ USACE vertical team
	Feb 2022	Draft RTC Complete
Mar 2022	Apr 2022	UMRR Partner Review
	Apr 2022	Letters of Support
May 2022	Jun 2022	Mississippi Valley Division Review
June 2022	Jun 2022	In Progress Review (IPR) #2 w/ USACE vertical team
Jun 2022	Jul 2022	HQ/ASA(CW) Draft Report Review
	Aug 2022	Final Draft RTC Complete
Aug 2022	Sep 2022	Mississippi Valley Division Review
Oct 2022	Nov 2022	HQ/ASA (CW) Final Review & Approval
Nov 20 2022	Nov 30 2022	Final delivery of RTC

DESIRED FUTURE CONDITION

- Upcoming Effort
  - Qualitative narrative
  - 2011 NESP Report
  - HNA II
  - HREPs
  - Status & Trends
  - Statements of Significance - Threats
  - Strategic Plan review
- Recommend a small group lead
  - Process development
  - Assemble narratives from previous efforts
  - Provide feedback to UMRR CC

LTRM IMPLEMENTATION PLANNING

- 21 May Small Group Discussion
  - Mark Gaikowski, Jeff Houser, Jennie Sauer, Karen Hagerty Megan Moore, Matt Vitello, Andrew Stephenson, Kirsten Wallace, Marshall Plumley
  - Context of effort and important questions
  - Use of facilitator(s)
  - Process
  - Participants
  - Timeframe
- Next Steps – Scope of Work & Facilitator Recommendations

DISCUSSION

UMRR COMMUNICATION AND OUTREACH TEAM - UPDATE

Jill Bathke, USACE-RPEDN-PD-F @ MVP

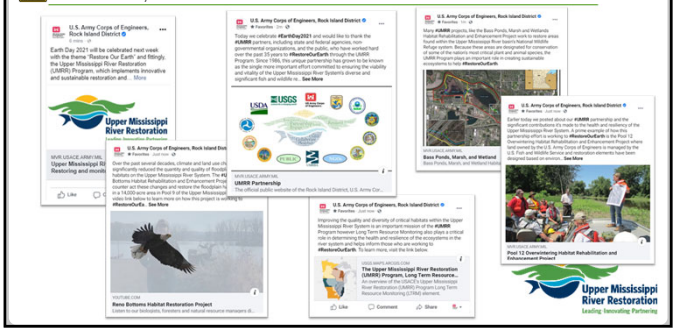
Communication and Outreach Team Goal

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

Communication and Outreach Team Progress

- **March-April 2021:** Developed and executed Earth Day 2021 Social Media Campaign
- **February-May 2021:** Refined and completed updated Program Flyer
- **April 2021-present:** Began discussions and plans for UMRR 35th Anniversary

Earth Day 2021 – "Restore Our Earth"



Earth Day 2021 – "Restore Our Earth"

Key Stats!

- Reached over:
  - 34,000 Facebook users
  - 18,000 Twitter users
- Most popular:
  - Kickoff post, Reno Bottoms HREP video, McGregor Flyer ←these were eye-catching
- Team compiled lessons learned from 1st campaign

Groups that Participated: USACE Districts, USACE HQ, FWS Refuges, MN, IA, MO, UMRBA, USGS Field Station & Public

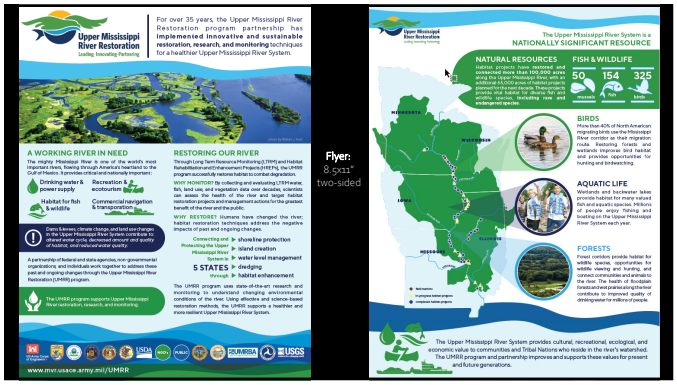
UMRR Program Flyer

Audience: General public, including legislators, who have limited/no knowledge of the UMRR program

Goal: Highlight how the program benefits the public
Ecological and social benefits of the UMRR program
Public values
3 W's → **W**ater, **W**ildlife, and **W**ay of Life

More: Infographics and updated, diverse photos

Less: Jargon, acronyms, and words



Flyer:
8.5x11"
two-sided

8

UMRR 35th Anniversary

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

2021 Boat Tours
-Share printed flyers
-Provide key messaging

Video (5 mins or less)
-Partner & public Interviews
-Highlight themes of flyer

Social Media Photo Campaign
-Before/after photos
-Potentially - photo contest

Upper Mississippi River Restoration
Leading. Innovating. Partnering.

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UMRR 35th Anniversary- Video

Video (5 mins or less)
-Partner & public Interviews
-Highlight themes of flyer

→ **A partnership effort!**

Recommendations for persons to:
Interview?
Edit & film?

(add to chat, share, or email Jill & Rachel)

Upper Mississippi River Restoration
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Communication and Outreach Team – Next Steps

FUTURE GOALS

- ❑ Finalize Communication & Outreach Materials Inventory
- ❑ Communication & Outreach Material Needs
- ❑ HREP/ LTRM Signage
- ❑ Revisit Communication & Outreach Plan
- ❑ Refine Lower Illinois River Pilot Project

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UMRR Communication and Outreach Team

Points of Contact:

Jill Bathke
USACE-RPEDN-PD-F @ MVP
Jill.C.Bathke@usace.army.mil

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

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UPPER MISSISSIPPI RIVER RESTORATION (UMRR)

OAKWOOD BOTTOMS GREENTREE RESERVOIR HABITAT REHABILITATION & ENHANCEMENT PROJECT (HREP)

PROJECT SHOWCASE

U.S Army Corps of Engineers, St. Louis District
Sponsor, U.S. Forest Service

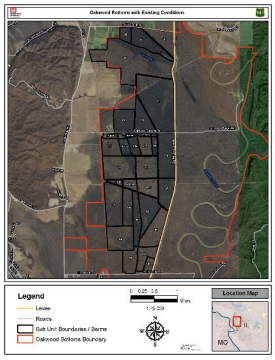
May 26, 2021

SPONSOR AND AUTHORITY

- U.S. Forest Service (USFS)

STUDY AREA

STUDY AREA



- Entirely within the Shawnee National Forest
- 4,700 Acres
- Mississippi River Miles 79-84
- Jackson County, IL
- Approximately 80 miles southeast of St. Louis, MO

RESOURCE SIGNIFICANCE

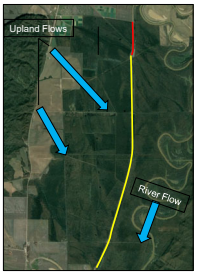
- Technical
  Home to the Shawnee's largest known T&E Indiana bat maternity colony
- Institutional
  Critical waterfowl migration habitat in the fall, winter, and early spring (Mississippi Valley Flyway)
- Public
  Center of many partnerships and conservation efforts

PROBLEMS

Problem 1: Unnatural Water Level Fluctuations.

PROBLEM 1: UNNATURAL WATER LEVEL FLUCTUATIONS

- Grand Tower / Degognia Levee Systems



PROBLEM 1: UNNATURAL WATER LEVEL FLUCTUATIONS

- Undersized and Aged Infrastructure / Inefficient Water Movement

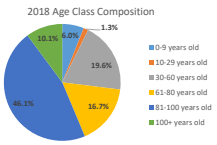

Well Pumps


Water Control Structures

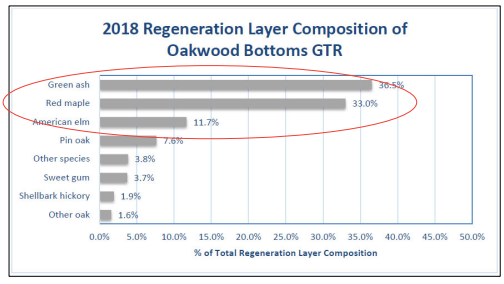

Interior Berms

PROBLEM 2: DEGRADED FOREST COMMUNITY

AGE CLASS	% Existing Condition	Existing Condition (Acres)
0-9	6.0	275.4
10-29	1.3	61.6
30-60	19.6	898.5
61-80	16.7	767.0
81-100	46.1	2,113.5
100+	10.1	464.6

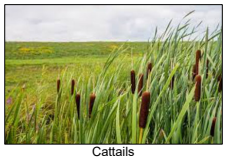


PROBLEM 2: DEGRADED FOREST COMMUNITY



PROBLEM 3: REDUCTION OF EMERGENT WETLANDS

The USFS currently manages approximately 80 acres of MSUs within the OBGTR

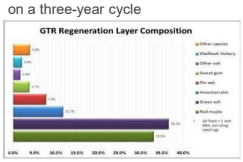


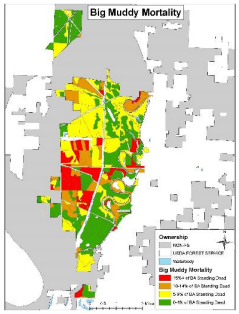
Cattails

Perrenial Sedge

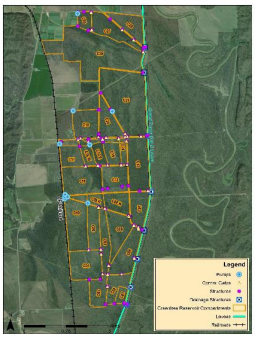
FUTURE WITHOUT PROJECT CONDITIONS

- Continued decline and elimination of oak and hickory species within the study area
- Continued decline of habitat value over time.
- Transition of emergent wetland habitat to early successional forest species
- Existing management will continue on a three-year cycle





PROJECT OBJECTIVES



1. Increase regeneration of bottomland hardwood forest within the study area during the period of analysis.
2. Restore natural hydrologic conditions and function to the floodplain by emulating natural flooding and drainage regimes in the study area during the period of analysis.
3. Restore degraded wetland habitat in the study area for resident migratory wildlife during the period of analysis.

PLAN FORMULATION

Measure Identification
- Utilized existing infrastructure, existing reports, and subject matter expertise
- Structural, Non-Structural, Natural, Nature Based Solutions

Measure Screening
- 20 measures identified
- 7 measures were screened from further analysis

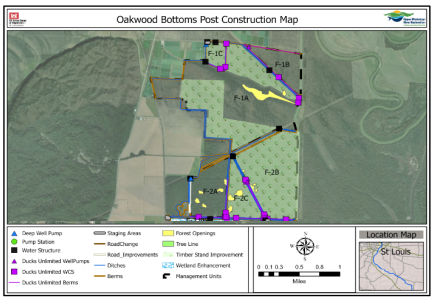
Alternative Formulation
- Utilized six strategies
- Three screened from further analysis

Final Array
Forest Service
Maximum
Minimum

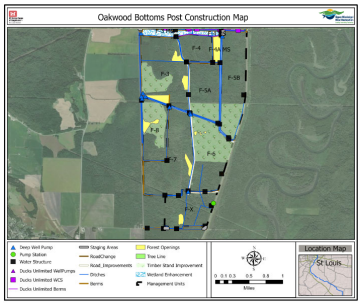
RECOMMENDED PLAN

- Berm construction and associated earthwork (approximately 9 acres)
- Berm enhancement and associated earthwork (approximately 55 acres)
- Berm deconstruction and associated earthwork (approximately 94 acres)
- Remove 62 water structures
- Install 1 pump station
- Install 6 well pumps
- Install 30 water structures
- Excavate 19 acres of channel
- Excavate/re-grade 87 acres of emergent wetlands
- Reforestation (approximately 94 acres)
- Selective clearing and woody debris removal (approximately 128 acres)
- Additional Timber stand improvements (approximately 1,600 acres)

RECOMMENDED PLAN (NORTHERN UNITS)



RECOMMENDED PLAN (SOUTHERN UNITS)



PROJECT SCHEDULE

Project Fact Sheet Approved: Mar 2016 (A)

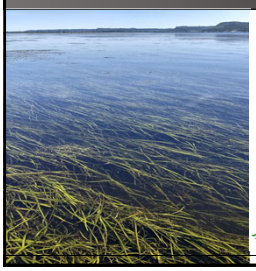
Project Feasibility Report MVD Approval: May, 2021 (A)

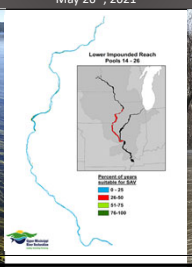
4 P&S Packages – Ready to Advertise: Jan, 2022

Understanding constraints on submersed vegetation distribution in the Upper Mississippi River System: the role of water level fluctuations, water clarity and river geomorphology

Alicia Carhart, John Ka as Deanne Drake, Jim Rogala, Jason Rohweder, Jeff Houser

Upper Mississippi River Restoration Coordinating Committee
May 26th, 2021





Water surface elevation

Daily WSE at 121 gauges (1993 2014)

Water clarity

Tota suspended solids data at 10 LTRM fixed sites (May Sept; 1993 2014)

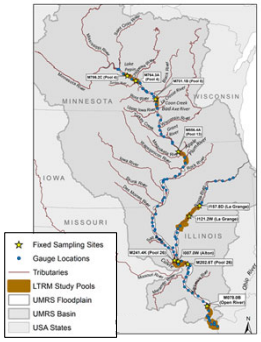
Light penetrat on data (Pools 8 & 13; Sullivan and Giblin)

Tributary discharge and TSS contributions (Wasley 2000)

Aquatic vegetation

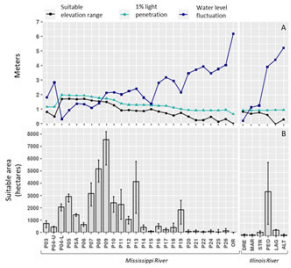
Submersed aquatic vegetat on data (Pools 4,8,13; 1998 2014)

Model error was assessed us ng SAV data 2015 2019

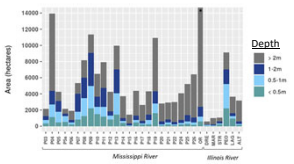


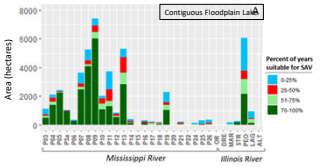
Pool size, bathymetry, and water level fluctuation interact with water clarity to determine the suitable area for SAV

- The Upper Impounded Reach contained the largest proportion of suitable area for SAV
- For many pools in the Lower Impounded Reach, there was little area suitable based on the criteria developed here (i.e., conditions are suitable > 50% of years)
- For some years in Pools 20-26, La Grange and Alton and all years in the Open River Reach our results indicate a complete absence of suitable area for SAV



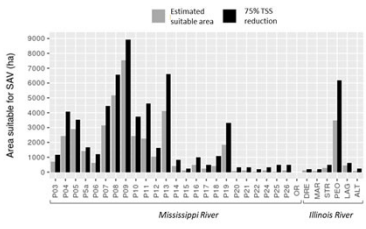
Pool 9 contains more contiguous floodplain lake area than Pools 14 Open River combined





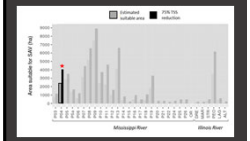
Sensitivity to simulated changes in total suspended solids

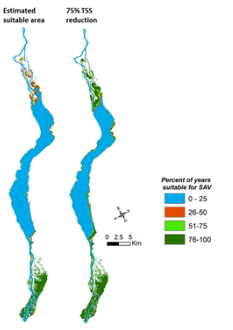
- Improved land-use practices in the catchment & local river restoration actions can help reduce TSS
- **Even with a 75% reduction in TSS**, many pools in the Lower Impounded Reach had only minor increases in suitable area for SAV (median 330 ha)



Pool 4

- Evaluating suitable area at multiple scales
- Suitable area increased by 1,635 hectares in upper Pool 4 with hypothetica TSS reduction





Pool 4

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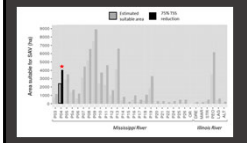
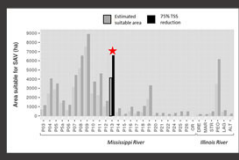
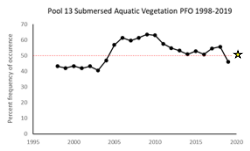
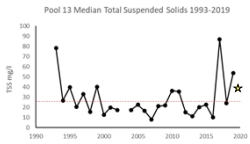


Pool 13

- TSS ⇧
- Aquatic vegetation ⇩
  - Prevalence of SAV in 2019 dropped below 50% for the 1st time since 2004
- Suitable area increased by 2,475 ha with reduction in TSS

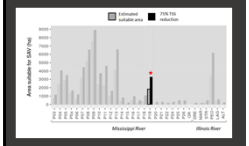


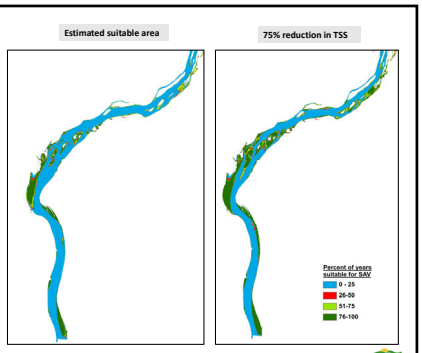




Pool 19

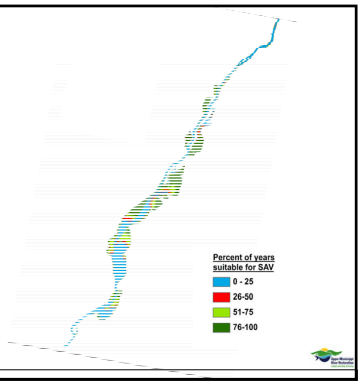
- Substantial shallow area (> 40% of tota area; 4,000 hectares) and over 1,800 hectares of suitable area
- Suitable area increased by 1,471 hectares with hypothetica TSS reduction





Peoria Pool

- Substantial shallow area (> 75% of total area; 7,000 hectares) and over 3,400 hectares of suitable area
- Our results suggest that water clarity and water level fluctuation were not limiting in much of the Peoria Pool
- Sass et al. (2017) hypothesized other potentially limiting factors:
  - herbivory (carp and turtles)
  - seed bank viability
  - sed mentation
  - water quality (chemica pollut on)



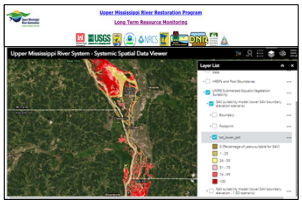
Systemic Spatial Data Viewer and LTRM project page

- These datasets can be viewed spatially within the Upper Mississippi River System – Systemic Spatial Data Viewer (LTRM website) or downloaded directly from Science Base

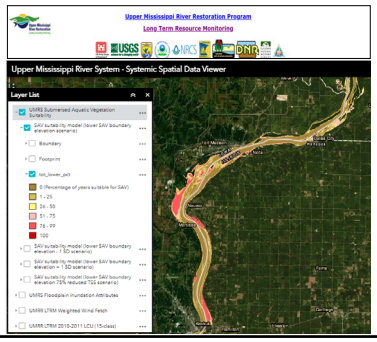
  https://umesc.usgs.gov/management/dss/umrs_land_cover_viewer.html

- Visit our project page at

  https://www.usgs.gov/centers/umesc/science/understanding-constraints-submersed-vegetation-distribution-a-large-floodplain?qt-science_center_objects=0#qt-science_center_objects



Upper Mississippi River System – Systemic Spatial Data Viewer



Management Implications

- In areas that do not meet the suitable criteria: Management actions to establish vegetation are unlikely to succeed
- In areas that meet the suitable criteria, but do not currently support vegetation: Management actions may succeed if other limiting factors can be addressed (velocity, wind fetch, herbivory, bioturbation, etc.)

Pool	Median TSS	Water level fluctuation	Shallow area
Lower 4, 5-10	low	low	abundant
3, Upper 4, 11-13, 19, PEO	moderate	moderate	abundant
14-18, 20-26, Dresden, Marseilles, Starved Rock	moderate	moderate	scarce
Open River, La Grange, Alton	moderate-high	high	scarce

Acknowledgments

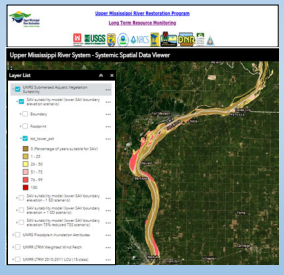
Funding: UMRR LTRM- Science in support of Restoration and Management

Contact Information:
Alicia Carhart
Alicia.Carhart@wisconsin.gov
608-781-6378

Manuscript: Carhart, A.M., Kalas, J.E., Rogala, J.T., Rohweder, J.J., Drake, D.C., Houser, J.N. 2021. Understanding Constraints on Submersed Vegetation Distribution in a Large, Floodplain River: the Role of Water Level Fluctuations, Water Clarity and River Geomorphology. *Wetlands* 41: 57. https://doi.org/10.1007/s13157-021-01454-1

Recent Publication: Understanding constraints on submersed vegetation distribution in a large, floodplain river: the role of water level fluctuations, water clarity and river geomorphology

Alicia Carhart, John Kalas, James Rogala, Jason Rohweder, Deanne Drake, and Jeffrey Houser



Recent publication: Probabilities of detecting submersed aquatic vegetation species using a rake method may vary with biomass.

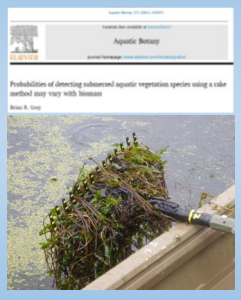
Brian Gray

Background

- Detection errors occur when a species is present at a site, but not collected on the rake
- It is important to address detection errors when estimating vegetation prevalence from rake data
- This paper explored ways of doing this in order to improve our estimates of SAV prevalence

Key finding

- Probability of detection varied among species and SAV biomass
- Possible methods to improve estimates of prevalence include:
  - Model presence using both rake and visual detection data
  - Identify additional covariates of biomass that could be easily collected
  - Collect biomass data directly (coring or snorkel harvest) at a subset of LTRM sites each year



Recent Publication: Bluegill Habitat Use in the Upper Mississippi River

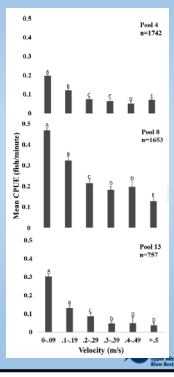
Ethan Rutledge, Ryan Hupfeld, Colby Gainer, Hae Kim and Quinton Phelps. 2020. Natural Areas Journal, 40(4) : 355-361

Background

- Bluegill (*Lepomis macrochirus*) are an important indicator species regarding habitat needs of a broader fish community
- Identified the habitat use of bluegill in the Upper Mississippi River to inform their management and habitat restoration
- Used LTRM electrofishing data from three LTRM study reaches (Pools 4, 8 and 13) from 1993 to 2017

Key Findings

- Bluegill were more common in **backwaters** than main channel and side channel.
- Bluegill catch rates were highest at sites with
  - **Low current velocity** (0 to 0.09 m/sec)
  - moderately **shallow depths** (0–1.5 m)
  - **silty substrates**



Recent Publication: Gear specific catch rates and size structure of channel catfish in the Upper Mississippi River

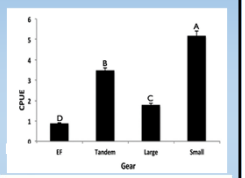
Colby Gainer, Hae Kim, Quinton Phelps. 2021. River Research and Applications.

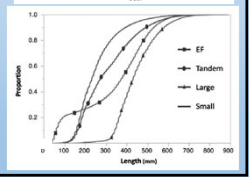
Background

- Channel Catfish have been sampled using a variety of gears in the past
- Different gears provide different catch rates and size structure
- Differences in size structure can lead to conflicting vital rates, which can lead to erroneous management decisions

Key Findings

- Tandem hoop nets provided high catch rates (3.48 fish per deployment [SE=0.12])
- Tandem hoop nets collected the broadest size distribution of channel catfish
- Results suggest channel catfish collected for demographic assessments should be collected using tandem hoop nets





Recent Publication:

JGR Biogeosciences

Research Article | Full Access

Integrating Perspectives to Understand Lake Ice Dynamics in a Changing World

Sapna Sharma, Michael F. Meyer, Joshua Culpepper, Xiao Yang, Stephanie Hampton, Stella A. Berger, Matthew R. Brousil, Steven C. Fradkin, Scott N. Higgins, Kathi Jo Jankowski ... See all authors

First published: 27 July 2020 | https://doi.org/10.1029/2020JG005799 | Citations: 1

Find it @ USGS

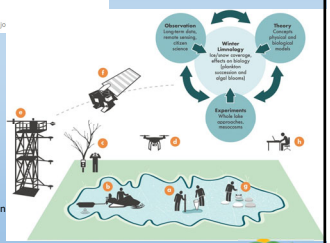
Sapna Sharma, Michael F. Meyer, Joshua Culpepper, and Xiao Yang are jo

Background

- Lakes are experiencing accelerated rates of warming, including shorter duration of ice cover, later ice-on, earlier ice-off, and in some years no ice cover at all
- Lake ice has been historically studied independently by four subdisciplines: observations by in situ and remote sensing scientists, controlled mesocosm experiments by limnologists, and process-based models by physical modelers

Key Findings

- Identified opportunities for collaboration between disciplines
- Provided guidelines to integrate disciplines to tackle urgent questions about lake ice loss in warming climates



Recent Publication:

OVERVIEW

WILEY

Aquatic ecosystem metabolism as a tool in environmental management

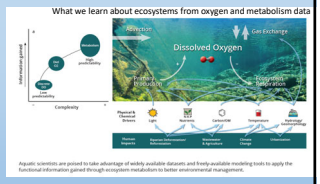
Kathi Jo Jankowski[1] | Francine H. Mejia[2] | Joanna R. Blaszczak[3] | Gordon W. Holtgrieve[4]

Background

- Aquatic ecosystem metabolism affects dissolved oxygen dynamics and is an integrative measure of overall biological productivity

Key Findings

- Reviews current use of discrete oxygen, continuous oxygen, and metabolism data in U.S. management settings and describes the information they provide
- Provides a short guide to implementing field measurements, available datasets, and information on modeling metabolism
- Discusses information that is needed to overcome logistical and conceptual challenges that would enable more widespread use of metabolic data in management settings



2021 Mississippi River Research Consortium
Oral Presentations (partial list)

SAMPLING OF SMALL-BODIED FISHES IN EMERGENT VEGETATION USING A 1.0M2 THROW TRAP IN POOL 26

AQUATIC VEGETATION DYNAMICS IN THE UPPER MISSISSIPPI RIVER OVER TWO DECADES

SPATIAL VEGETATION RECOVERY

POPULATION STRUCTURE AND HABITAT USE OF GIZZARD SHAD

WATERFOWL DISTRIBUTIONS AND HABITAT USE ON POOL 8 OF THE MISSISSIPPI RIVER DURING AUTUMN MIGRATION

SESSION III: Ecological Status and Trends of the Upper Mississippi River System

ENVIRONMENTALLY-DRIVEN SHIFTS IN FISH COMMUNITY STRUCTURE WITHIN A LARGE REGULATED RIVER

NATAL ORIGINS OF BLUECATFISH, FRESHWATER DRUM, AND CHANNEL CATFISH

CATCH COMPARISON OF FISHES AND TURTLES IN HOOP NETS USING THREE BAIT TYPES

WILD CELERY WINTER BUD DYNAMICS IN POOLS 4, 8, AND 13

2021 Mississippi River Research Consortium
Posters (partial list)

THE EFFECTS OF AGRICULTURE ON FISH COMMUNITIES

GIZZARD SHAD HABITAT USE

DRIVERS OF FISH GROWTH AND RECRUITMENT IN LARGEMOUTH BASS, BLUEGILL, AND BLACK CRAPPIE IN THE EMIQUON PRESERVE – *USED LTRM METHODS*

LARGEMOUTH BASS POPULATION DYNAMICS

CLASSIFICATION OF ECOLOGICAL TOPOLOGICAL DATA ANALYSIS

VARIATION IN FISH COMMUNITIES AMONG ARCHAEOLOGICAL COLLECTIONS

SPATIOTEMPORAL DRIVERS OF SUITABLE OVERWINTERING HABITAT FOR CENTRARCHID SPECIES

FEASIBILITY OF AGING AND APPLICATION TO OVERHARVESTED PREY SPECIES

2020 AERIAL SURVEY OF RIVER SYSTEM FOR DECADAL

DOES PRESENCE OF AQUATIC VEGETATION HELP US UNDERSTAND VARIATIONS IN FISH COMMUNITIES

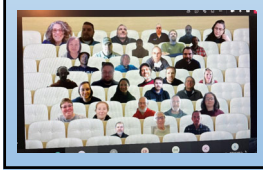
YELLOW PERCH POPULATION DYNAMICS AND SIMULATION

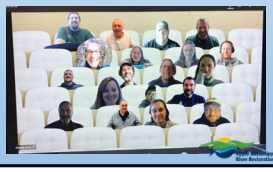
MAPPING HYDROGEOMORPHIC SETTINGS AND CHANGE

DO FISH COMMUNITIES VARY WITH FLOODING ACROSS THE MILLENNIA

UMRR LTRM Component Meeting
March 30 - 31

- 55 participants
- Day 1:
  - Field station updates
  - 14 research project presentations
- Day 2:
  - LTRM Component meetings

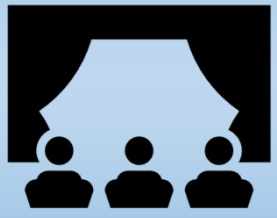




UMRR Status and Trends Report

- Actively working with publishing office (SPN) to produce final version of the report
- Ongoing work
  - Getting SPN assistance in improving design of some graphics
  - SPN is editing completed figures and text
    - Figures and text for 8 of the 10 chapters are currently in review at SPN
    - Remaining chapters to be submitted by 4 June

Behind the Curtain
LTRM Water Quality Laboratory

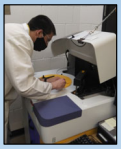


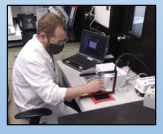
Participation in USGS Quality Management System

- USGS Bureau-wide Quality Management System (QMS) developed
  - QMS provides a foundation to ensure laboratory activities meet a defined standard of quality
  - Supports the mission of the USGS to provide reliable scientific information to the Nation
  - USGS QMS Implementation began in October 2020
  - LTRM is one of the first USGS labs to implement the new USGS Quality Management System (Phase 1)

Participation in USGS Quality Management System

- Many of LTRM's high-quality practices meet USGS requirements
  - Small modifications to work processes completed where required
  - Able to implement QMS requirements and meet workflow schedule
- Implementation of the USGS QMS affirms their high-quality standards





Inter-laboratory Comparison

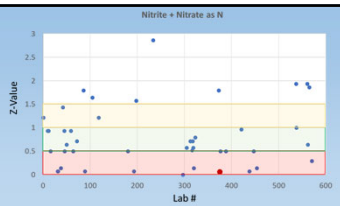
USGS – Water Quality Analytical Laboratory

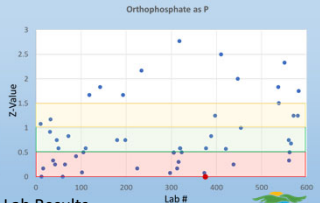
Slides prepared by John Manier and Jennie Sauer

Standard Reference Sample Project

- Approximately 125 Laboratories from 40 states
- Federal, state, private and university labs
- Performed each spring
- Samples are analyzed for NH_4, NO_3, TN, TP and SRP

LTRM WQ Lab 2021 Standard Reference Sample results (two examples)





Satisfactory 1.01 – 1.5
Good 0.51 – 1
Excellent 0 – 0.5

Red Dot is UMRR LTRM WQ Lab Results

Questions?

UMRR MONITORING AND SCIENCE UPDATE

Karen Hagerty
Rock Island District
26 May 2021

US Army Corps of Engineers

UMRR MONITORING & SCIENCE FY21

2 SOWs in FY21

SOW for LTRM base monitoring
$5.0M

SOW for science in support (analysis under base)
$1.3M

Both SOWs <u>together</u> are equivalent to a fully funded UMRR LTRM element $6.3M

Science in Support of Restoration & Management
$2.5M

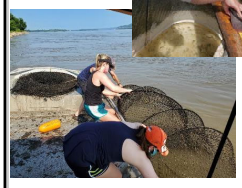
TOTAL: $8.8M

UMRR MONITORING & SCIENCE FY21

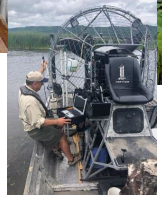
LTRM Base Monitoring	$6,300,000
LTRM balance	$ 118,280
IWW monitoring (FY21)	$ 175,813
COVID costs (FY20)	$ 36,626
FY20 proposal adjustments (IL rates)	$ 16,614
Graphical assistance S&T	$ 12,248
FY20 Stable States proposal (remainder)	$ 77,573
Landscape patterns (FY22-24)	$ 390,733
Resilience (FY22-24)	$ 671,066
Ecohydrology (FY23)	$ 212,685
Land Cover / Land Use processing (FY24)	$ 638,029

MONITORING IN ACTION

FISHERIES



WATER QUALITY



AQUATIC VEGETATION

PROGRAM REPORTS

- Habitat Restoration
  - ➢ District Reports

ST. PAUL DISTRICT (MVP)

PLANNING

➢ **Reno Bottoms HREP – Pool 9, MN/IA**
- Interagency Site Visit (4 May)
- Finalizing measures
- Evaluating model results

➢ **Lower Pool 10 HREP – Pool 10, IA**
- Reviews - District Quality Control (June)
- Final Report (Fall 2021)

DESIGN

➢ **Harpers Slough HREP – Pool 9, IA**
- P&S Completed (Winter)
- Bid Opening (20 Apr)
- Contract Awarded (19 May)

CONSTRUCTION

➢ **McGregor Lake HREP – Pool 9, WI**
- 20% Complete
- Interior lake granular placement

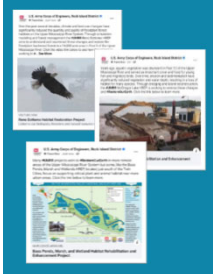
➢ **Bass Ponds, Marsh & Wetland HREP – MN River**
- 65% Complete
- Concrete stoplog structures complete
- Misc metals & access roadwork

➢ **Conway Lake HREP – Pool 9, IA**
- Agency tree planting
- Final grading & seeding

Other Activities
- Fall 2021: Lower Pool 4, Big Lake (MN/WI)
- Performance Evaluation Reports
- Trempealeau Site Visit (27 May)

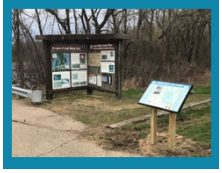
ST. PAUL DISTRICT PHOTOS Outreach -

UMRR Earth Day Campaign



EWN Atlas & Pool 8 Islands HREP

McGregor Lake Construction Sign



ST. PAUL DISTRICT PHOTOS Construction -

ROCK ISLAND DISTRICT (MVR)

PLANNING

➢**Lower Pool 13 – Pool 13, IA/IL**
- PDT is working on feature dependency relationships and further refinement in priority areas.

➢**Green Island – Pool 13, IA**
- PDT and Sponsor held meetings to discuss the measures and risk associated for each measures

➢**Pool 12 Forestry – Pool 12, IA/IL/WI**
- PDT is finalizing the goals and objectives
- PDT is working on a virtual open house

➢**Quincy Bay – Pool 21, IL**
- Requesting PDT members to start project

DESIGN

➢**Keithsburg Division Stage II – Pool 18, IL**
- Stage II is being broken up into smaller contracts

➢**Steamboat Island Stage I – Pool 14, IA/IL**
- 65% review is scheduled for June 3rd

CONSTRUCTION

➢**Pool 12 Overwintering, Pool 12, IL**
- ***Stage II –*** Final inspection - May 20th

➢**Keithsburg Division Stage I, Pool 18, IL**
- Construction on hold due to eagle.
- PDT is working on a modification to add addition ACM for Stage II.

➢**Huron Island, Pool 18, IA**
- ***Stage II –*** Spring planting completed in May
- ***Stage III –*** EDRC is schedule for mid June

➢**Beaver Island Stage IB, Pool 14, IL**
- Contractor placed mussel substrate in Apr
- Contracting working on shaping placement site

➢**Rice Lake, LaGrange Pool, IL**
- Re-built pumps tested on 20 Apr and are fully operational

FACTSHEETS
- Addressing sponsor comments (Geneva & Hershey Island, Upper Pool 13, and Multi Pool Habitat Protection)
- Submit to MVD for approval

ROCK ISLAND DISTRICT PHOTOS

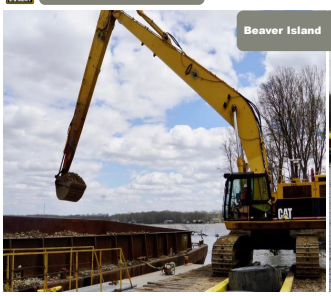
Pool 12- Overwintering Final Inspection

ROCK ISLAND DISTRICT PHOTOS

Huron Island- Spring Planting

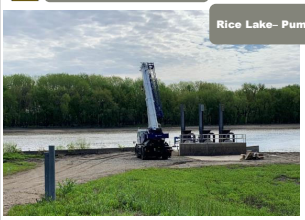
ROCK ISLAND DISTRIPHOTOS

Beaver Island Mussel substrate



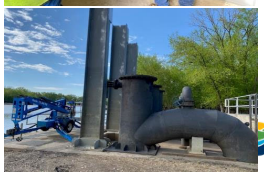
ROCK ISLAND DISTRIPHOTOS

Rice Lake- Pumps



Crane for Pump Reinstallation

Electrical Repair Testing



Pump Testing

ST. LOUIS DISTRICT (MVS)

PLANNING –

West Alton Islands, MO, HREP (Pool 26)
- Continue Feasibility Planning

Yorkinut Slough, IL HREP (IL River)
- Continue Feasibility Planning
- Developing Measures

Oakwood Bottoms, IL, HREP (Open River)
- Feasibility Report Approved May 2021

DESIGN –

Piasa & Eagles Nest, IL HREP (Pool 26)
- Finalize Phase II P&S 4th Qtr FY21
- future award pending funding availability

Crains Island, IL HREP (Open River)
- Finalize Phase II P&S 4th Qtr FY21
- future award pending funding availability

Oakwood Bottoms, IL, HREP (Open River)
- Continue 4 P&S packages
- Pump Station, Well Pumps, North & South Units

CONSTRUCTION –

Crains Island, IL HREP (Open River)
- Earthwork & Pile Removal

Piasa & Eagles Nest, IL HREP (Pool 26)
- Rock Structure Construction (July/ August start) FY21

Clarence Cannon Refuge, MO (Pool 25)
- Pump Station
- Exterior Berm Setback

Ted Shanks, MO HREP (Pool 24)
- Reforestation Underway
- Warranty Work Completed May 2021
- Closeout 4th Qtr FY21

New Fact Sheets
- Finalize MDC, FS, & INDR/TNC new facts sheets
- Sponsor Review
- Submit to MVD for Approval

ST. LOUIS DISTRICT

Clarence Cannon HREP Pump Station

Crains Island HREP Earthwork

Ted Shanks HREP Reforestation