Upper Mississippi River Restoration Program Coordinating Committee Quarterly Meeting

May 20, 2020

Highlights and Action Items

Program Management

- Marshall Plumley expressed appreciation for the partnership's flexibility and willingness to make the program work during difficult circumstances due to Covid-19. HREP teams are engaging in new ways to advance projects, LTRM is navigating data collection needs amidst various agency restrictions, and the UMRR Coordinating Committee is meeting virtually.

- UMRR has obligated over $12 million of its FY 20 funds to-date. Significant upcoming expenditures include science proposals, forest inventory and timber stand improvement in MVR, and Bass Ponds and McGregor HREPs in MVP. Comparable program execution to previous years is anticipated.

- The District is planning for UMRR in FY 21 at a $33.17 million funding scenario, with internal allocations anticipated to be as follows:
  - Regional Administration and Program Efforts – $1,250,000
  - Regional Science and Monitoring – $10,400,000
    - Long term resource monitoring – $5,000,000
    - Regional science in support of restoration – $3,800,000
    - Regional science staff support – $200,000
    - Habitat project evaluations – $1,125,000
    - HNA II/regional project sequencing – $275,000
  - Habitat Restoration – $21,520,000
    - Rock Island District – $7,020,000
    - St. Louis District – $7,125,000
    - St. Paul District – $7,275,000
    - Model certification – $100,000

- No changes were made to UMRR's 10-year outlook since the February 26, 2020 UMRR Coordinating Committee quarterly meeting. The Steamboat Island HREP may be accelerated due to completion of the feasibility report ahead of schedule.

- **The Corps' ProjectWise software will be used for the Pool 13 HREP as a pilot effort to test the program's functionality for various agencies**. ProjectWise may be used for the communications pilot following a successful implementation with the Pool 13 project.

- **Adjustments were made to LTRM monitoring in response to COVID-19 policies at state and federal agencies.** Plumley expressed appreciation to USGS, field station, and Corps staff for engaging in conversations on how to continue operations.

- **The UMRR Coordinating Committee has a virtual meeting scheduled on June 3, 2020 to discuss development of the 2022 report to Congress.** Plumley introduced Jill Bathke, from MVP,

who will help organize the report. Initial discussions will be structured around potential implementation recommendations to partner agencies, Congress, and the Administration.

- The UMRR Coordinating Committee convened a call on March 24, 2020 to discuss revisions to the statements of UMRS significance and development of a draft UMRR storyline. The revised statements are organized into categories the partnership classified as important, as follows: natural resources, culture, recreation, navigation, partnership, and economic. The document also identifies a set of concerns for the river and threats to areas of significance that may be important for articulating in the report to Congress. The draft storyline provides context around the initial authorization of UMRR and will be provided for review in the coming months. Also discussed was the creation of a UMRR motto to succinctly convey the purpose and goal of the program. Mottos proposed for consideration include but are not limited "building resilience through restoration," "restoring a healthy, resilient river ecosystem," and "restoration today for a resilient tomorrow."

- Initial steps for reviewing the 2015-2025 UMRR Strategic and Operational Plan included an April 24 webinar to provide context around the development of the Strategic Plan and a survey to the Program Planning Team to help assess progress on the goals. Progress has been made under each Goal, but to varying degrees. Call participants observed considerable progress achieved during the last five years regarding objectives set in Goals 1, 2, and 4 – i.e., habitat restoration, knowledge, and partnership. But there was uncertainty regarding progress made under Goal 3 – i.e., communication. In particular, call participants acknowledged the achievements related to the HREP selection, ecological resilience, HNA II indicators, program integration (i.e., of the LTRM and HREP components), and transparency offered among the implementing partners in decision making. Areas for improvement include adaptive management, understanding restoration effects on indicators and resilience, conducting outreach, and meaningfully communicating restoration and science knowledge in relevant and timely ways. **A survey will be distributed to UMRR partners to gain additional insights on how to best implement the program over the next five years and to seek input on issue areas to include in the next report to Congress.**

- **The Lower Illinois River communications pilot framework has been updated to reflect comments from the *ad hoc* team members and will be distributed for additional review.** Rachel Perrine and Jill Bathke from the Corps will be assisting in this effort going forward.

- Communication and outreach activities in the second quarter of FY 20 include the following:

  — On April 3, 2020, Lauren Salvato was a plenary speaker for the Wisconsin Lakes and Rivers Convention. The theme of the plenary was resilience of the UMRS and she provide examples from both the LTRM and HREP elements of UMRR.

  — Jim Fischer presented at the Red Cedar River Conference on March 12, 2020 and discussed the history, successes, and future direction of UMRR.

  — Kat McCain said she will participate in a virtual outreach activity on June 23, 2020 for the Mighty Mississippi River exhibit as part of the River Conservation series from the Missouri History Museum. She will discuss UMRR's role in the recovery of ecosystems that have been degraded, damaged, or destroyed.

  — Mark Gaikowski said USGS and USACE participated in MRCTI's March 3-5, 2020 capital meeting and discussed issues relevant to UMRR and the river. He said it was an opportunity to work with mayors, federal agencies, and congressional staff to highlight the program.

— Plumley said the Steamboat Island HREP feasibility report is out for public review. It is one of the first examples of conducting a public presentation and review virtually for an HREP. The presentation was distributed on social media and has received over 100 views.

— Sabrina Chandler said Gail Carmody, National Wildlife Refuge Association Board member, visited Port Louisa Refuge in Savanna District. Discussion focused on the benefits of UMRR and HREPs. The Board advocates for the refuges at the Congressional level and engages with the public about refuge activities. Carmody was involved in UMRR in the 1980's and appreciated seeing the program's progress since here early involvement.

UMRR Showcase Presentations

- Jasen Brown provided an overview of the Harlow Island HREP. The project covers over 1,200 acres in the Middle Mississippi River National Wildlife Refuge (NWR) and will be a 100 percent federal project. Current problems include limited topographic diversity, degraded side channel structure and connectivity, habitat fragmentation, and loss of forest community diversity. At the feasibility-level of design, the project will include reforestation and establish topographic diversity through ridges and swales and partially restore a backwater by limiting upstream connectivity in the current side channel. The project would achieve most of these outcomes by building a sediment deflection berm to divert sediment and high velocities away from the protected area behind the berm. This would allow for fine sediment deposition and building of complex soils capable of supporting wetlands species in swales and hard mast trees on ridges. HEC-RAS 2D modeling shows how the deflection berm would direct flows and promote fine sediment deposition using a passive design that harnesses the rivers existing energy, eliminating the need for pump stations or water control structures. An initial contract will cover 60-70 percent of the work and the total estimated project cost is $8 million to $10 million. A contraction award is anticipated for September 2020 to have construction completed by FY 25, dependent on funding availability.

- John Delaney, USGS-UMESC, provided an overview of projected climate change impacts and vulnerability in the Upper Mississippi River Basin. Though this work was not conducted as part of UMRR, there is great relevance to the program and interest by the partners. The Midwest has experienced increases in temperature and precipitation, baseflow, and extreme precipitation and flooding over the 20th century. Climate change projections show further increases in temperature, precipitation, and shifts in seasonality such as greater precipitation and baseflow earlier in the spring. Two future climate change scenarios, Representative Concentration Pathways 4.5 and 8.5, and 30 climate models were used to model changes to temperature and precipitation in three watersheds: Mississippi Headwaters, Upper Mississippi-Iowa-Skunk-Wapsipincon, and Lower Illinois. Results suggest earlier and more precipitation in the spring, especially in the Lower Illinois and potentially drier summers in Iowa. Temperature increases in winter and late summer/early fall are also projected. A vulnerability assessment was conducted for USFWS Region 3 refuge lands in the Upper Mississippi River Basin. The vulnerability assessment incorporated measures of exposure, sensitivity, and adaptive capacity of focal resources (i.e., species, habitats) and used climate and hydrology data from the Hydrologic and Water Quality System (HAWQS). More diverse areas have more adaptive diversity. High vulnerability areas identified were Southwest Minnesota, Iowa, and the Illinois River. Chautauqua NWR and Emiquon NWR ranked second and sixth of seventy-two properties in terms of vulnerability. Next steps include creating an online interactive vulnerability map and consulting with refuge managers to develop refuge-specific and regional adaptation strategies.

Long Term Resource Monitoring and Science

- Accomplishments of the second quarter of FY 20 include publication of the following manuscripts:

- Conceptualizing alternate regimes in a large floodplain-river ecosystem: Water clarity, invasive fish, and floodplain vegetation
- Quantifying and mapping inundation regimes within a large river-floodplain ecosystem for ecological and management applications.

- The LTRM Status and Trends Report chapter authors met virtually in early April 2020 to discuss initial results and figures and to finalize details on formatting and layout. The authors also met May 8, 2020 to discuss presentation and discussion of the results. Draft chapters are scheduled to be distributed to chapter leads in early June 2020. The vegetation chapter is outlined, but requires information from other chapters before it can be completed.

- **In response to impacts to LTRM data collection due to Covid-19, a series of conference calls were held with field station staff to coordinate activities to allow for social distancing and comply with various state and federal agency policies. Fixed site sampling was suspended on April 6 and April 20, 2020. Iowa and Missouri were the only states able to sample for Spring Water Quality SRS data collection. SRS Fisheries and Vegetation sampling protocols are being reviewed for June 2020 sampling activities and LTRM component leads are engaging in ongoing calls as policies continue to change rapidly. Additional projects that may be impacted by Covid-19 restrictions include the fisheries vital rates project, zooplankton project, large woody debris, field testing of ScanLog, and vegetation, fisheries, and water quality sampling on the Illinois Waterway.**

- UMRR's FY 20 LTRM allocation under full funding includes $6.3 million ($5.0 million for base monitoring and $1.3 million for analysis under base). An additional $2.5 million is available for science in support of restoration and management. These funds will cover previously approved proposals that include monitoring during the Illinois Waterway closure, development of wind fetch products, moving LTRM spatial data to web mapping services, continuing ecohydrology work for two years, and reintroducing chloride monitoring for three years (2020-2023) to allow comparisons to historic data and establish change over time. Remaining funding available for science proposals developed at the science meeting in January increased from $1.9 million to $2 million due to additional carryover. Eight proposals have been recommended for funding totaling $1,985,855.

- The 2020 UMRR Science Meeting produced 13 science proposals. The UMRR LTRM Management Team recommended 8 proposals for endorsement by the UMRR Coordinating Committee:

<u>Side channels</u>
- Understanding physical and ecological differences among side channels of the Upper Mississippi River System

<u>Vegetation and wildlife</u>
- Refining our Upper Mississippi River's ecosystem states framework

<u>Hydrologic and geomorphic changes</u>
- Mapping Potential Sensitivity to Hydrogeomorphic Change in the UMRS Riverscape and Development of Supporting GIS Database and Query Tool
- Improving our understanding of historic, contemporary, and future UMRS hydrology by improving workflows, reducing redundancies, and setting a blueprint for modelling potential future hydrology

<u>Water quality and eutrophication</u>
- Understanding landscape-scale patterns in winter conditions in the Upper Mississippi River System

<u>Floodplain ecology</u>
- Forest response to multiple large-scale inundation events

<u>UMRS fish community dynamics</u>
- Augmenting the UMRR fish vital rates project with greater species representation for genetics and otolith microchemistry
- Functional UMRS fish community responses and their environmental associations in the face of a changing river: hydrologic variability, biological invasions, and habitat rehabilitation

- The A-Team met via webinar on April 22, 2020. Topics discussed were an update on aerial imagery collection from Kevin Hop, concern about decreases in abundance of mayflies and potential monitoring needs, the impact of COVID-19 on agency policies and work anticipated for the 2020 field/work season, and a summary of how high water in 2019 had impacted projects and the UMR system in general. The main focus of this meeting was the ranking of the UMRR science proposals. The A-Team refined the method to rank the science proposals developed during the science meeting at UMESC in January. In general, the refined ranking methods were considered an improvement and the ranking by the A-Team largely matched the ultimate ranking when combined with USGS and USACE rankings. The A-Team unanimously approved the science proposal rankings. However, concerns were expressed by Wisconsin DNR and the USFWS regarding the ability of vegetation-related projects to compete for funding due to their non-uniform distribution in the UMR. This and other challenges will be discussed further at the A-Team's upcoming summer meeting. The A-Team is committed to continually improve the science proposal ranking process.

- **The UMRR Coordinating Committee unanimously endorsed all eight science proposals recommended by the UMRR LTRM Management Team for FY 20 funding.**

Habitat Restoration

- MVP's planning priorities include Reno Bottoms and Lower Pool 10. Cost alternatives are being evaluated for Lower Pool 10 and TSP selection is anticipated in August 2020. Design priorities include McGregor Lake and Bass Ponds. The revised design for McGregor Lake will consider constructing floodplain forest at varying elevations to avoid high water concerns and a construction contract may be awarded this year. Construction on Conway Lake is scheduled to begin in May 2020. Three bids were received for Bass Ponds and the contract award is anticipated in June 2020. A construction contract for McGregor Lake is anticipated to be awarded in September 2020. Evaluation of necessary repairs to Harpers Slough were delayed due to Covid-19, but damage to a third island will be included in the letter report that will be submitted at the end of FY 20. MVP is preparing four fact sheets for submission to MVD.

- MVR's planning priorities include Steamboat Island, Lower Pool 13, and Green Island. Due to Covid-19 restrictions, planning activities were conducted virtually, including a public presentation for Steamboat island, a site visit for Green Island, and a mini-charette is planned for Lower Pool 13. Design work for Keithsburg Division Stage II is 65 percent complete and a Corps technical review is scheduled for June 2020. Construction was completed on Pool 12 Stage II rock structure and the contract for Stage III is being closed out. Work on Keithsburg Division Stage I is paused due to a new eagle nest. Construction activities continue at Huron Island Stages II and III. Contactors are dredging at Beaver Island. MVR is finalizing six fact sheets for submission to MVD

- MVS anticipates submitting the feasibility report for Oakwood Bottoms in September 2020 to Mississippi Valley Division. A planning charette for Yorkinut Slough was held virtually and a draft report was produced. Planning for West Alton Islands may begin this year or early FY 21, pending resources. Design is anticipated to be complete for Piasa and Eagles Nest and Harlow Island in July 2020 and contract awards are possible in the fall pending funding availability. Contractor remobilization to Crains Island was delayed due to heightened hydrograph. Water control structures at Clarence Cannon Refuge are being turned over to the sponsor as they are completed. Warranty work for a pump station at Ted Shanks is underway. MVS is finalizing six fact sheets for submission to MVD

- The River Resources Forum recommended the Pool 8 Poolwide Forest Restoration HREP fact sheet for consideration of endorsement by the UMRR Coordinating Committee. The project identifies a large area of Pool 8 where actions such as timber stand improvement, plantings, and topographic diversity with dredge material would be suitable. **The UMRR Coordinating Committee**

unanimously endorsed the Pool 8 Poolwide Forest Restoration HREP fact sheet for submittal to MVD for review and approval.

- The UMRR Program Planning Team convened a meeting on May 6, 2020 to discuss insights and improvements to the recent HREP selection process and guidance documents. District River Team chairs provided summaries of and reflections on their respective processes. Recommendations for improving future efforts included:
  - Limit fact sheets to four pages with option for additional information as an appendix
  - Develop relationships with non-traditional sponsors before next HREP selection process
  - Provide clear ecological and non-ecological criteria for ranking process, but allow for other criteria prioritized by river teams to be incorporated
  - Promote deeper understanding of HNA-II indicators
  - Determine ways to better utilize the Science Support Team
  - Better align timing of fact sheet development with regular work and field work

- **The HREP selection process guidance documents will be revised to include the recommendations and be provided for review at the August 12, 2020 UMRR Coordinating Committee meeting. Finalized guidance documents will be incorporated into the review of the 2013 UMRR Advisory Group Charter in October 2020.**

Other Business

Upcoming quarterly meetings are as follows:

- **August 2020 – Remote**
  - UMRBA quarterly meeting – August 11
  - **UMRR Coordinating Committee quarterly meeting – August 12**
- **October 2020 – St. Paul**
  - UMRBA quarterly meeting – October 27
  - **UMRR Coordinating Committee quarterly meeting – October 28**
- **February 2021 – TBD: Dubuque, Quad Cities, or Muscatine**
  - UMRBA quarterly meeting – February 23
  - **UMRR Coordinating Committee quarterly meeting – February 24**

UMRR COORDINATING COMMITTEE - REGIONAL MANAGEMENT AND PARTNERSHIP COLLABORATION

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

20 May 2020

Upper Mississippi River Restoration
Leading · Innovating · Partnering

US Army Corps of Engineers

U.S. ARMY

UMRR PROGRAM OVERVIEW

- FY 2020 Fiscal Update and FY 21 Outlook
  - COVID Related Challenges
- Statements of UMRR National Significance
- 2015-2025 Strategic and Operation Plan Review
- UMRR Communication Pilot Project
- External Communications and Outreach Events

Upper Mississippi River Restoration

USGS science for a changing world

US Army Corps of Engineers

USDA

PUBLIC

NGOs

FINANCIAL REPORTING

UMRR Quarterly Budget Report: St. Paul District
FY2020 Q2; Report Date: Fri May 01 2020

Habitat Projects

Project Name	Cost Estimates			FY2020 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Bass Ponds, Marsh, and Wetland	-	$6,300,000	$6,300,000	-	$100,000	$100,000	$169,903
Conway Lake	-	$7,413,000	$7,413,000	-	$300,000	$300,000	$16,223
Harpers Slough	-	$13,675,000	$13,675,000	-	-	-	$62,485
Lower Pool 10 Island and Backwater Complex	-	$17,000,000	$17,000,000	$29,702	$450,000	$479,702	$224,011
McGregor Lake	-	$23,550,000	$23,550,000	$32,067	$5,950,000	$5,982,067	$327,261
Reno Bottoms	-	$10,000,000	$10,000,000	-	$300,000	$300,000	$111,737
Total	-	$77,938,000	$77,938,000	$61,769	$7,100,000	$7,161,769	$911,619

Habitat Rehabilitation

Subcategory	FY2020 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management	-	-	-	$532,900
Total	-	-	-	$532,900

Regional Program Administration

Subcategory	FY2020 Financials			
	Carry In	Allocation	Funds Available	Obligations
Habitat Eval/Monitoring	-	-	-	$137,484
Total	-	-	-	$137,484

	Carry In	Allocation	Funds Available	Actual Obligations
St. Paul Total	$61,769	$7,100,000	$7,161,769	$1,582,004

FINANCIAL REPORTING

UMRR Quarterly Budget Report: Rock Island District
FY2020 Q2; Report Date: Fri May 01 2020

Habitat Projects

Project Name	Cost Estimates			FY2020 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Beaver Island	-	$25,288,000	$25,288,000	-	$2,955,000	$2,955,000	$142,182
Green Island, IA	-	$14,600,000	$14,600,000	$48,000	$450,000	$498,000	$111,848
Huron Island	-	$15,773,000	$15,773,000	-	$100,000	$100,000	$67,578
Keithsburg Division	-	$28,643,000	$28,643,000	$83,658	$2,350,000	$2,433,658	$271,452
Lower Pool 13	-	$25,288,000	$25,288,000	$45,522	$425,000	$470,522	$304,218
Pool 12 (Forestry)	-	-	-	-	$400,000	$400,000	-
Pool 12 Overwintering	-	$20,870,822	$20,870,822	-	$50,000	$50,000	-$410,934
Rice Lake, IL	$7,280,000	$13,499,763	$20,739,763	-	-	-	$3,175
Steamboat Island	-	$41,077,000	$41,077,000	-	$350,000	$350,000	$284,764
Total	$7,280,000	$188,999,585	$196,179,585	$175,180	$7,280,000	$7,255,180	$879,537

Habitat Rehabilitation

Subcategory	FY2020 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management	-	-	-	$89,274
Total	-	-	-	$89,274

Regional Program Administration

Subcategory	FY2020 Financials			
	Carry In	Allocation	Funds Available	Obligations
Adaptive Management	-	$300,000	$300,000	$58,641
Habitat Eval/Monitoring	-	$1,125,000	$1,125,000	$103,307
Model Certification/Regional HREP	-	$100,000	$100,000	$1,236
Public Outreach	-	$80,000	$80,000	$1,842
Regional Program Management	-	$1,200,000	$1,200,000	$607,728
Regional Project Sequencing	-	$275,000	$275,000	$26,736
Total	-	$3,050,000	$3,050,000	$799,891

Regional Science and Monitoring

Subcategory	FY2020 Financials			
	Carry In	Allocation	Funds Available	Obligations
Long Term Resource Monitoring	-	$6,000,000	$6,000,000	$56,854
Science in Support of Restoration/Management	-	$2,800,000	$2,800,000	$1,418,434
Total	-	$8,800,000	$8,800,000	$1,475,287

	Carry In	Allocation	Funds Available	Actual Obligations
Rock Island Total	$175,180	$19,130,000	$19,305,180	$3,031,210

FINANCIAL REPORTING

UMRR Quarterly Budget Report: St. Louis District
FY2020 Q2; Report Date: Fri May 01 2020

Habitat Projects

Project Name	Cost Estimates			FY2020 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Clarence Cannon	-	$29,800,000	$29,800,000	$4,325	$1,500,000	$1,504,325	$528,924
Crains Island	-	$36,562,000	$36,562,000	-	$3,330,000	$3,330,000	$3,298,289
Harlow Island	-	$37,971,000	$37,971,000	-	$425,000	$425,000	$111,427
Oakwood Bottoms	-	$29,000,000	$29,000,000	$38,103	$310,000	$348,103	$294,803
Piasa - Eagle's Nest Islands	-	$26,746,000	$26,746,000	-	$335,000	$335,000	$115,709
Rip Rap Landing	$2,848,000	$6,464,000	$9,312,000	-	$75,000	$75,000	$5,596
Ted Shanks	-	$29,506,000	$29,506,000	-	$300,000	$300,000	$110,544
Yorkinut Slough, IL	-	$8,500,000	$8,500,000	$749	$325,000	$325,749	$81,288
Total	$2,848,000	$214,049,000	$216,897,000	$46,872	$6,940,000	$6,986,872	$4,546,578

Habitat Rehabilitation

Subcategory	FY2020 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management	-	-	-	$199,543
Total	-	-	-	$199,543

Regional Program Administration

Subcategory	FY2020 Financials			
	Carry In	Allocation	Funds Available	Obligations
Habitat Eval/Monitoring	-	-	-	$69,167
Total	-	-	-	$69,167

	Carry In	Allocation	Funds Available	Actual Obligations
St. Louis Total	$46,872	$6,940,000	$6,986,872	$4,815,289

FY20 PLAN OF WORK

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	Budget	Obligations 2nd Qtr
TOTAL FY20 Program	**$33,170,000**	**$9,428,502**
Regional Administration and Program Efforts	**$ 1,250,000**	**$ 608,876**
Regional Management	$ 1,000,000	
Program Database	$ 100,000	
Program Support Contract (UMRBA)	$ 100,000	
Public Outreach	$ 50,000	
Regional Science and Monitoring	**$10,500,000**	**$1,858,817**
LTRM (Base Monitoring)	$ 5,000,000	
($4,570,000 FY 19 + $430,000 FY 20)		
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	
HNA II/Regional Project Sequencing	$ 375,000	
District Habitat Rehabilitation Efforts (Planning and Construction)	**$21,420,000**	**$6,960,809**
Rock Island District	$ 7,280,000	
St. Louis District	$ 6,940,000	
St. Paul District	$ 7,100,000	
Model Cert.	$ 100,000	

FY20 PLAN OF WORK

8

	Budget	As of Right Now
TOTAL FY20 Program	**$33,170,000**	***$ 12,167,977***
Regional Administration and Program Efforts	**$ 1,250,000**	
Regional Management	$ 1,000,000	36.6%
Program Database	$ 100,000	
Program Support Contract (UMRBA)	$ 100,000	
Public Outreach	$ 50,000	
Regional Science and Monitoring	**$10,500,000**	
LTRM (Base Monitoring)	$ 5,000,000	
($4,570,000 FY 19 + $430,000 FY 20)		
UMRR Regional Science In Support Rehabilitation/Mgmt. (MIPR's, Contracts, and Labor)	$ 3,800,000	Science Proposals
UMRR Regional (Integration, Adapt. Mgmt.)	$ 200,000	
Habitat Evaluation (split between MVS,MVR,MVP)	$ 1,125,000	
HNA II/Regional Project Sequencing	$ 375,000	
District Habitat Rehabilitation Efforts (Planning and Construction)	**$21,420,000**	
Rock Island District	$ 7,280,000	Forestry Contracts
St. Louis District	$ 6,940,000	
St. Paul District	$ 7,100,000	Bass Ponds & McGregor
Model Cert.	$ 100,000	

FY 21 PBUD

9

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

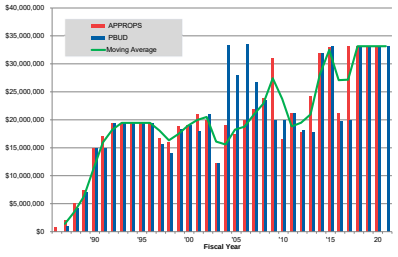
FY21 DRAFT PLAN OF WORK

10

	Budget	Change from FY 20
TOTAL FY21 Program	**$33,170,000**	
Regional Administration and Program Efforts	**$ 1,250,000**	
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**	**($100,000)**
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**	**$100,000**
Rock Island District	$ 7,020,000	($260,000)
St. Louis District	$ 7,125,000	$185,000
St. Paul District	$ 7,275,000	$175,000
Model Cert.	$ 100,000	

UMRR PROGRAM APPROPRIATION/BUDGET HISTORY

11

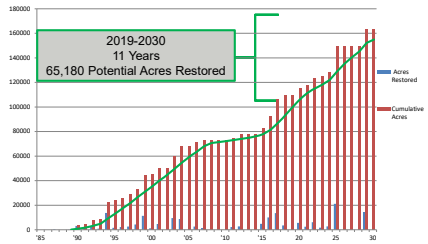


FY1985 to FY2020

UMRR TEN YEAR OUTLOOK

12

ACRES RESTORED



ProjectWise on the Web

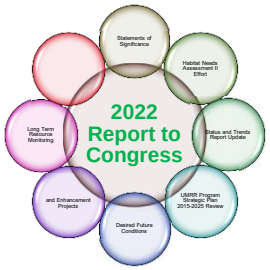
Document management and collaboration with outside agencies

COVID 19 RELATED CHALLENGES

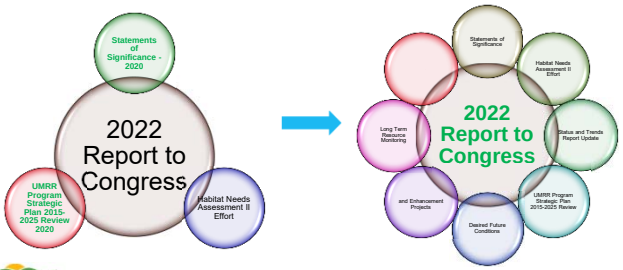
REPORT TO CONGRESS

June 3 2020 Meeting

- Implementation Recommendations
  - Partner Agencies
  - Congress
  - Administration



REPORT TO CONGRESS



STATEMENTS OF SIGNIFICANCE

Path Forward

- 24 March 2020 call
- Additional partner input
- Revised write up that reflect the input received and incorporated into a revised format

STATEMENTS OF SIGNIFICANCE

19

24 March Discussion

- Review of statements
- Draft Storyline
- Motto for UMRR
- Additional partner feedback

STATEMENTS OF SIGNIFICANCE

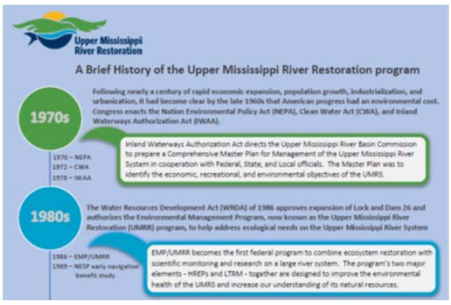
20

Revised Statements

- Organized by categories
  - » Natural Resources, Culture, Recreation, Navigation, Partnership and Economic
  - » Reflect the values of the Partnership
  - » Focused on what we want to communicate
- Set of concerns for the River
- Threats to areas of significance

STATEMENTS OF SIGNIFICANCE

21



STATEMENTS OF SIGNIFICANCE

22

STATEMENTS OF SIGNIFICANCE

23

Motto

- "Building resilience through restoration"
- "Restoring a healthy, resilient river ecosystem"
- "Restoring America's River"
- "Restoration today for a resilient tomorrow"
- "Partnering for a resilient river"

2015 – 2025 STRATEGIC AND OPERATIONAL PLAN

24

Review

- 24 April Webinar on the development of the Strategic Plan
- Pre-meeting Survey
- 6-7 May Web meeting
  - ➢ What has been done in the first 5 years?
  - ➢ What is yet to be accomplished?
    - Are changes needed?
  - ➢ What is not currently in the plan that should be?

2015 – 2025 STRATEGIC AND OPERATIONAL PLAN

Takeaways

- Goals 1 “Habitat Restoration, 2 “Knowledge, and 4 “Partnership” made considerable progress
- Objective 3 “Communication” uncertainty
- Progress has been made under each Goal, but to varying degrees

2015 – 2025 STRATEGIC AND OPERATIONAL PLAN

Some Feedback

- Going Well: HREP selection, resilience, indicators, promoting the value both program elements, transparent decision making
- Areas to Improve: Adaptive management, restoration effects on indicators and resilience, outreach is no ones regular job, communicate meaningful, relevant and timely restoration and science knowledge
- Next Step: Survey to UMRR practitioners

UMRR COMMUNICATIONS PILOT PROJECT

EXTERNAL COMMUNICATIONS & OUTREACH EVENTS

UMRR Lower Illinois River Communication Pilot Project

ANDREW STEPHENSON

UMRR COORDINATING COMMITTEE QUARTERLY MEETING

AUGUST 21, 2019

UMRR Lower Illinois River Communication Pilot Project Team

Marshall Plumley, UMRR Regional Program Manager (USACE – MVR)
Karen Hagerty, UMRR Science & LTRM Manager (USACE – MVR)
Sam Heilig, Public Affairs Specialist (USACE – MVR)
Angela Deen, UMRR St. Paul District Program Manager (USACE – MVP)
Brian Markert, UMRR St. Louis District Program Manager (USACE – MVS)
Brandon Schneider, UMRR Project Manager (USACE – MVS)
Travis Schepker, Environmental Specialist (USACE – MVS)
Sara Schmuecker, Fish and Wildlife Biologist (USFWS – Ecological Services)
Kraig McPeek, Fish and Wildlife Administrator (USFWS – Ecological Services)
Jeff Houser, LTRM Science Director (USGS - UMESC)
Randy Hines, Wildlife Biologist (USGS - UMESC)
Verlon Barnes, Natural Resource Specialist (NRCS)
Sara Strassman, Mississippi River Policy & Planning Expert (WI DNR)
Dave Glover, Rivers and Streams Program Manager (IL DNR)
Olivia Dorothy, UMR Basin Program Director (American Rivers)
Gretchen Benjamin, Large River Specialist (TNC)
Kirsten Wallace, Executive Director (UMRBA)
Andrew Stephenson, Policy and Programs Director (UMRBA)

Introducing Rachel Perrine (USACE) and Jill Bathke (USACE)

Recent Activity

- Aggregated and addressed team members' suggested edits to the draft UMRR Lower Illinois River Communications Framework.
- Addition of Rachel Perrine and Jill Bathke to the pilot team.

UMRR Goals

1) Enhance habitat for restoring and maintaining a healthier and more resilient Upper Mississippi River ecosystem.
2) Advance knowledge for restoring and maintaining a healthier and more resilient Upper Mississippi River Ecosystem
3) Engage and collaborate with other organizations and individuals to help accomplish the UMRR Program vision
4) Utilize a strong, integrated partnership to accomplish the Upper Mississippi River restoration vision.

UMRR 2015-2025 Strategic Plan

- Work with key organizations and individuals in the Upper Mississippi River watershed.
- Provide information to organizations and individuals whose actions and decisions affect the Upper Mississippi River ecosystem.
- Exchange knowledge with other organizations and individuals nationally and internationally

Reflections on past conversations:

- Need for investment in external communications to help advance the vision of a healthier and more resilient river ecosystem
- Increase focus on individuals or organizations having influence in that vision, whether positive or negative
- Target outreach based on influence and ability to change the top primary drivers affecting the ecosystem

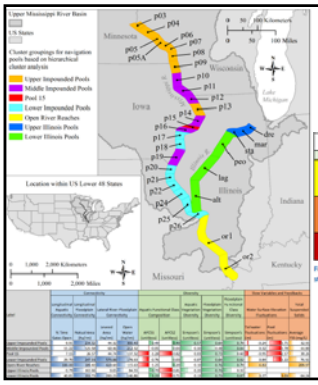
Communication Pilot Project

- At the February 27, 2019 UMRR Coordinating Committee and Communications Team meeting, the group agreed to develop a communications strategy focusing on total suspended solids (TSS) in the Illinois Waterway in the HNA-II Lower Illinois Reach

3.7.3.3 TOTAL SUSPENDED SOLID CONCENTRATIONS

Total suspended solids were identified by the FWIC as a significant management problem that needs to be addressed. The FWIC identified that the load of TSS within the Lower Illinois River cluster is significantly too high…

Results of multivariate cluster analyses of all 12 Indicators (HNA-II)



Color Rating	Lower Illinois Indicators	River Team Importance
Light Green	% Time Gates Open	Low
	Tainwater Flux	Low
Yellow	Aquatic Functional Class 1	Medium
	Lacasal Area	Medium
	Natural Area	Low
Orange	Pool Flux	Low
	Floodplain Functional Class	High
	Floodplain Vegetation	High
	Open Water	Medium
Red	Total Suspended Solids	High
	Aquatic Vegetation	Medium
	Aquatic Functional Class 2	Medium

Figure 3.7. Summary of ratings for the 12 indicators of ecosystem structure and function for the Lower Illinois cluster.

Image credits: Habitat Needs Assessment-II

Communication Pilot Project

Problem Statement

Land use changes in the Illinois River basin have led to increased sediment in the river, resulting in severely degraded environmental conditions along the main stem of the Illinois River by increasing TSS and filling backwater areas, side channels, and channel border areas. TSS concentrations within the Lower Illinois River reduce the ability of the system to support growth of native aquatic vegetation and other food and habitat resources for fish and waterfowl species as well as continuing to degrade backwater and off-channel habitat. TSS concentrations will not improve without actions taken within the watershed or tributaries outside the scope of UMRR.

Communication Pilot Project

Goal

Engage with individuals, communities, and organizations within the Lower Illinois River watershed who can address external stressors, outside the jurisdiction of the UMRR program, to improve the health and resilience of the river by reducing TSS inputs from the watershed.

Communication Pilot Project

Objectives

1) Reduce TSS inputs to Lower Illinois River
2) Create new relationships with organizations and individuals in the Lower Illinois River watershed.
   a) Educate organizations and individuals about UMRR
   b) Encourage action by individuals, communities, and organizations that will reduce TSS
3) Integrate water quality monitoring and knowledge in the watershed with LTRM datasets
4) Integrate restoration and conservation practices on main stem with incoming tributaries

Target Audience and Potential Partners

Assembled initial lists of stakeholders

- Degree of interest in sediment
- Degree of influence over sediment

Messages

What are Total Suspended Solids (TSS)?

These suspended particles can come from soil erosion, runoff, discharges, stirred bottom sediments or algal blooms. Excessive suspended sediment can impair water quality for aquatic and human life, impede navigation, and increase flooding risks.

Sediment is the problem:

Sediment loading within the Lower Illinois River reduces the ability of the system to support growth of native aquatic vegetation and other food and habitat resources for fish and waterfowl species as well as continuing to degrade backwater and off-channel habitat.

Addressing the problem:

Suggest reaching out to those working in the watershed to determine what relevant messaging may already be in use.

Next Steps

Involve people and organizations in the watershed who may help in implementation to review the draft strategy.

Better understand actions being implemented now to reduce sediment and nutrient inputs to the Illinois River.

Solicit input on draft messages from the UMRR partnership.

Establish metrics to evaluate success.

Develop a timeline to guide partners' implementation of outreach actions.

Andrew Stephenson

Astephenson@umbra.org

UPPER MISSISSIPPI RIVER RESTORATION (UMRR)

HARLOW ISLAND
HABITAT REHABILITATION & ENHANCEMENT PROJECT (HREP)

PROJECT SHOWCASE

U.S Army Corps of Engineers, St. Louis District
Sponsor, U.S. Fish and Wildlife Service

May 20, 2020

SPONSOR AND AUTHORITY

- U.S. Fish and Wildlife Service (USFWS)

STUDY AREA

Harlow Island

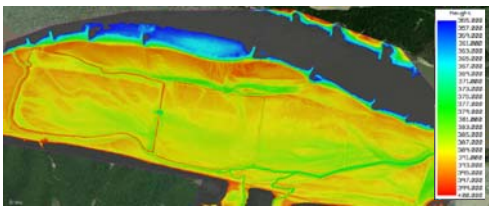
- Entirely within the **Middle Mississippi River National Wildlife Refuge**
  - 100% Federal Project
  - Acquired by USFWS in 2007
- 1,224 Acres
- Right Descending Bank of the Mississippi River, Miles 140.5-144.
- Jefferson County, MO, approximately 35 miles south of St. Louis, MO

PROBLEMS

- Limited topographic diversity (former agricultural fields)
- Degraded side channel structure and connectivity
- Habitat fragmentation of the floodplain ecosystem.
- Loss of/lack of forest community diversity in the MMR

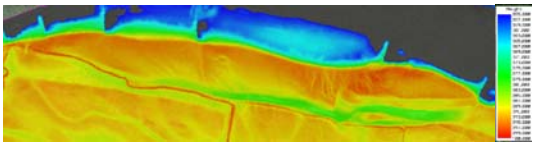
PROBLEMS (CONT'D)

- Limited topographic diversity



PROBLEMS (CONT'D)

- Degraded side channel structure and connectivity



PROBLEMS (CONT'D)

- Degraded side channel structure and connectivity

PROBLEMS (CONT'D)

- Loss of/lack of forest community diversity in the MMR
  - Tree clearing and unfavorable soil types in terrestrial areas resulted in decreased species diversity and the loss of unique floodplain forest habitat.

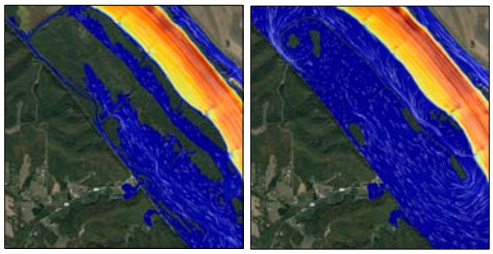
PROJECT OBJECTIVES

1. Restore topographic diversity
2. Increase connected aquatic backwater habitat with depth diversity for enhanced fisheries habitat benefits.
3. Increase acreage protected from coarse sediment deposition and open to backing of water in the Project Area.
4. Restore floodplain forest communities.

FEASIBILITY LEVEL PROJECT DESIGN

- Sediment Deflection Berm
  - Divert sediment and high velocities away from protected area behind the berm
  - Allow for fine sediment deposition and build complex soils capable of supporting wetland plant species in swales and hard mast trees on ridges
- Ridges
  - Higher elevation / less frequent inundation
- Swales
  - Lower elevation / more frequent saturation
- Backwater
  - Partial restoration of side channel, no upstream connection
- Reforestation

HEC-RAS 2D MODELING



CONSTRUCTION CONTRACT (FOCUS OF THIS DQC)

- VE Workshop
  - Ridge and swale constructability and functionality ideas incorporated into final design
- Features
  - Sediment Deflection Berm
    - Work from upstream to downstream areas
  - Ridges
    - Work from upstream to downstream areas
  - Swales
    - Work from upstream to downstream areas
- Contract Duration
  - 18 months
- Contract Value
  - ~$8M - $10M

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

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Projected Climate Change Impacts and Vulnerabilities in the Upper Mississippi River Basin

John Delaney
Biologist
DOI/USGS/Upper Midwest Environmental Sciences Center

Kristen Bouska
Ecologist
DOI/USGS/Upper Midwest Environmental Sciences Center

US Fish and Wildlife Service Partners:
Pat Heglund, Josh Eash, and Andy Allstadt

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

In the Midwest…

- Temperature and precipitation have increased over the 20th century (e.g. Pathak et al. 2016).
- Extreme precipitation and flooding have increased in recent decades (Mallakpour & Vallarini 2015)
- Baseflow has increased over the past 50 years (Ayers et al. 2018).
- Climate change projections show further increases in temperature, precipitation, and shifts in seasonality such as greater precipitation and baseflow earlier in the spring (Byun et al. 2019).

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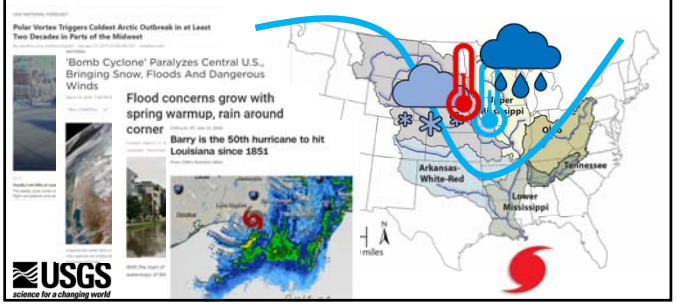
Compound Effects ➔ Intense Impacts



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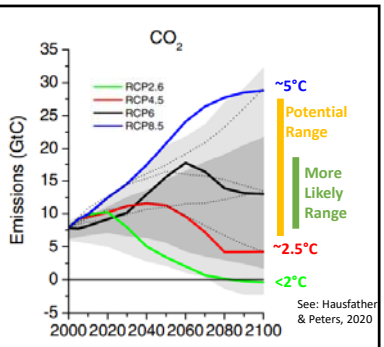
Future Climate Change Scenarios

- Representative Concentration Pathways
  - 4.5
  - 8.5



See: Hausfather & Peters, 2020

From: van Vuuren et al., 2011

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Midwest Climate

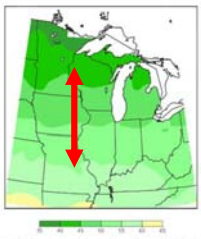

Figure 1. Average annual temperature (°F), 1981-2010. Figure courtesy of Midwestern Regional Climate Center.

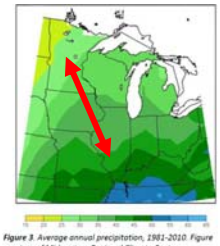

Figure 3. Average annual precipitation, 1981-2010. Figure courtesy of Midwestern Regional Climate Center.

From: Anderson et al 2012

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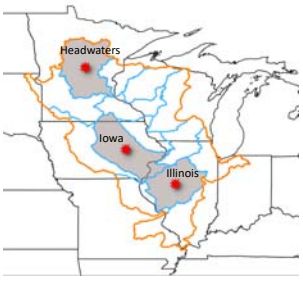
Brief UMRB Climate Summary

- Mississippi Headwaters
- Upper Mississippi-Iowa-Skunk-Wapsipinicon
- Lower Illinois
- 30 Climate Models



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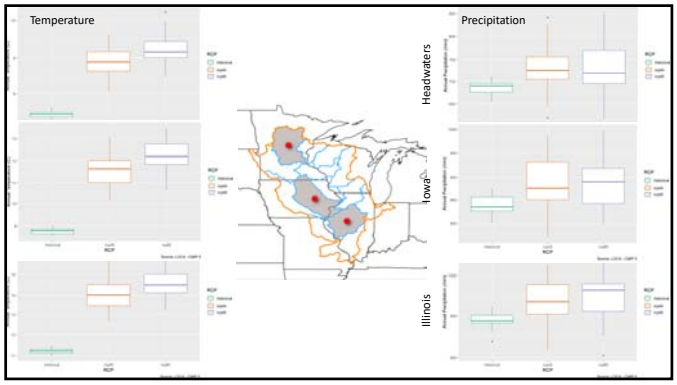
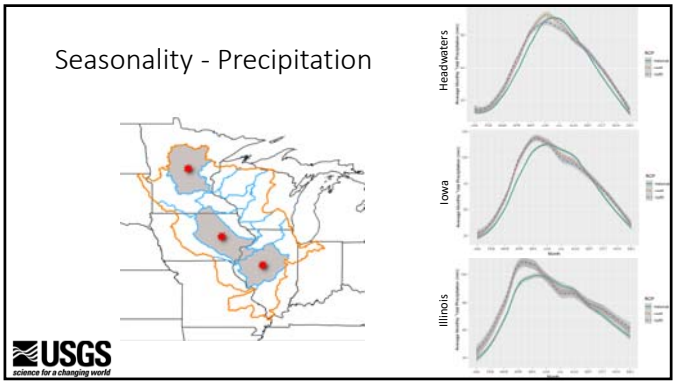


Seasonality - Precipitation



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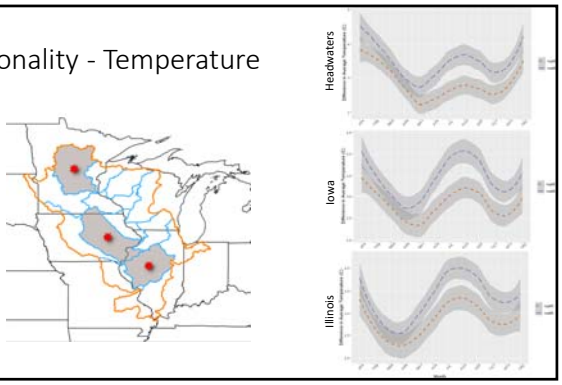
Seasonality - Temperature



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Our Project

- Vulnerability assessment for projected climate changes for watersheds in the Midwest Region
- Adaptation thinking strategies

NECASC Northeast Climate Adaptation Science Center

U.S. FISH & WILDLIFE SERVICE

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Study Area

- USFWS Region 3
- HUC-8 – 360 Watersheds
- Average HUC-8 ~1800 km^2

- *UMRB outline - for reference

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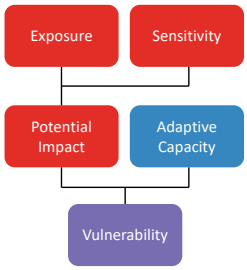
Process for developing vulnerability assessment

- Provides an understanding of the potential impacts of climate change on identified focal resource (i.e., species, habitats)
  - Exposure – expected/projected magnitude and rate of environmental change
  - Sensitivity – considers resource's tolerance to environmental change
  - Adaptive capacity – ability of resource to cope with environmental change



Adapted from Glick et al. 2011

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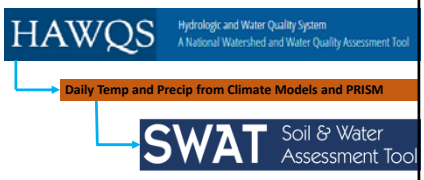
Climate and Hydrology Data

- **Hydrologic and Water Quality System (HAWQS)**
  - Texas A&M, EPA, USDA, ARS
- Advantages:
  - Inputs already compiled
  - Cloud processing
  - Regionally calibrated
- 5 Models
  - 2 scenarios



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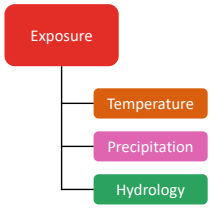
Three Exposure Categories

- 5 Indicators in each category
- Decision-relevant
- Co-produced



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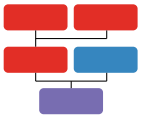
Exposure Indicators

	Exposure Indicator	Description
Temperature	Annual Mean Temperature	Annual mean of daily mean temperature
	Warm Days	Number of days where temperature > 90th percentile from the baseline period
	Growing Season Start	Annual day of year of first 6 consecutive days where daily mean temperature > 5C
	Fall Temp	Average Temperature for Sep, Oct, and Nov
	Freezing Temp Reversals	Count of times sign changes (+,- Celsius) in two coldest months (Jan and Feb)
Precipitation	Annual Precipitation	Total annual precipitation in mm
	Consecutive Wet Days	Annual maximum number of days where precipitation is ≥ 1mm
	Maximum 5 Day Rainfall	Annual maximum amount of rainfall in a five-day window
	Wetter Springs	Increase in total precipitation in the spring (Mar, Apr, and May)
	Drier Summers	Decrease in total precipitation in the summer (Jun, Jul, and Aug)
Hydrology	Number of High Flow Months	Number of months that exceed baseline threshold (Mean 90th percentile from historic period)
	Sediment Load	Annual sediment load in metric tons
	Spring Flow	Mean flow over Mar, Apr, and May
	Runoff	Annual amount of precipitation that runs off the landscape
	Total Nitrogen Load	Annual total nitrogen load in metric tons

All indicators are calculated as a percent change from the baseline to the future period.

Adaptive Capacity Metrics



Indicator Name	File Name	Citation
Density of Dams	National Inventory of Dams (NID)	US Army Corps of Engineers, 2019
Landscape Diversity	The Nature Conservancy Resilient Lands Mapping Project	Anderson et al. 2018
Local Connectedness	The Nature Conservancy Resilient Lands Mapping Project	Anderson et al. 2018
Percent Cultivated	NASS 2018 Cultivated Layer	NASS-CL, 2019
Projected Increase in Developed Land Cover	Conterminous United States Landcover Projections – 1992 to 2100	Sohl et al. 2014

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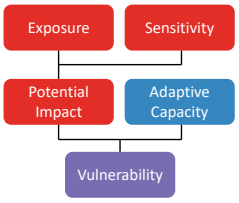
Composite Indicator of Vulnerability

- Min-max normalization
- Where E_i is exposure metrics (indicators),
- S_i is the defined sensitivity score (weighting) for the i^{th} exposure metric,
- and A_j is the weighted (w_j) adaptive capacity metrics.



$$\sum E_i S_i - \sum A_j w_j = V$$

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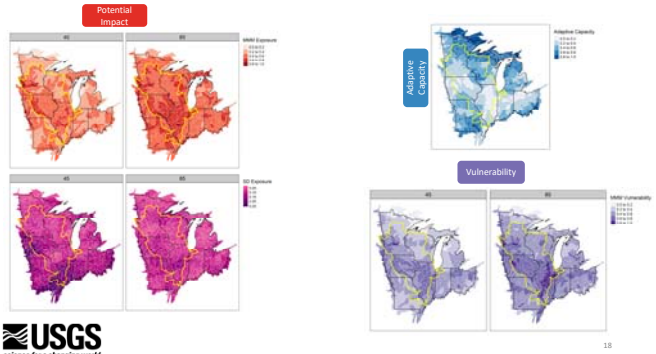

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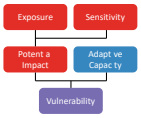
Vulnerability Rankings



Emiquon NWR	6
Meredosia NWR	15
Two Rivers	24
Clarence Cannon	37
Trempealeau	60

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Limitations

- General uncertainty in climate change projections
- Hydrology only based on temperature and precipitation changes
- Regionally calibrated
- Metrics and weights selected specifically for USFWS programs

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What's next?

- Online interactive vulnerability map
- Identify Refuges with high vulnerability rankings
- This Spring: Online webinars/discussions with refuges
  - Goal: Identify needs for climate change adaptation
- Winter 2021: Workshop(s)
  - Bring together resource managers and subject matter experts from across the region.
  - Goal: Develop regional adaptation thinking strategies

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Questions/Discussion

NECASC

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John Delaney
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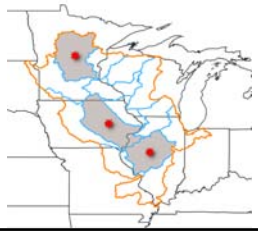
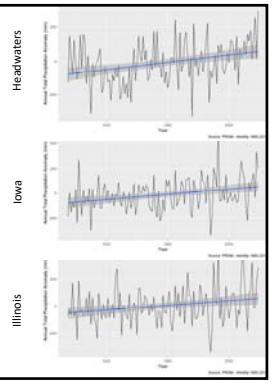
Precipitation Anomaly

- 1895-2019





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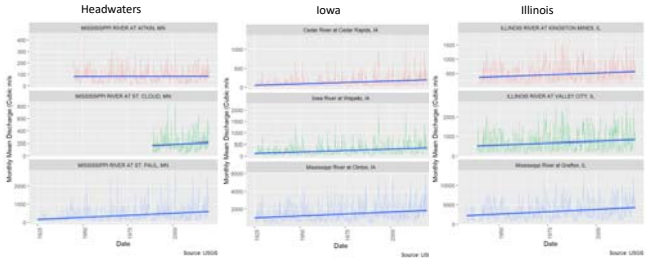
Discharge Over the Historic Period



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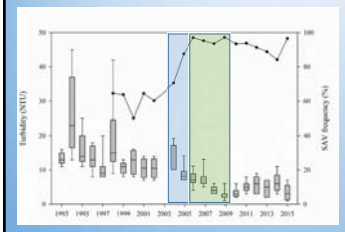
LTRM Science Highlights

May 20, 2020
Conference Call

Photo by KathiJo Jankowski

Publication: R.M. Burdis, S.A. DeLain, E.M Lund, M. Moore, W. Popp. 2020. **Decadal trends and ecological shifts in backwater lakes of a large floodplain river: Upper Mississippi River.** *Aquatic Sciences* 82:27

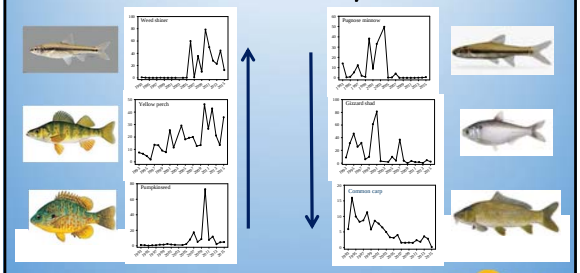


- Hydrological conditions appeared to be associated with changes in SAV
- SAV abundance increased and shifted towards more lentic species
- Abundant SAV and clearer water persisted during return to higher stage and discharge
- Fish community shifted towards species associated with clear water and vegetation
- Results imply that once vegetation is established (due to natural fluctuations in environmental conditions or management actions) other changes in the ecosystem may follow, and these conditions can persist in the face of future fluctuations in ecological drivers

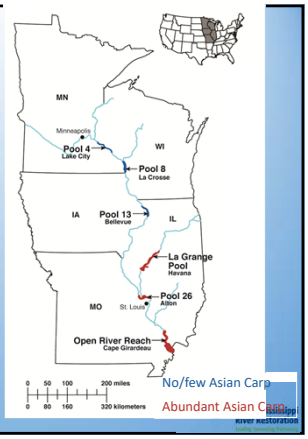
Aquatic Sciences 2020.

Decadal trends and ecological shifts in backwater lakes of a large floodplain river: Upper Mississippi River

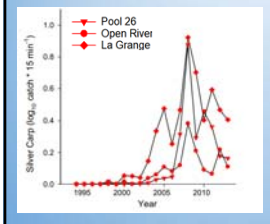
Fish Community Shift



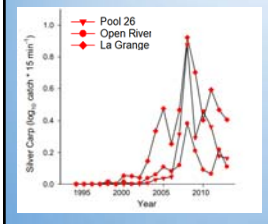
Chick, J.H., D.K. Gibson-Reinemer, L. Soeken-Gittinger, A.F. Casper. 2020. **Invasive silver carp is empirically linked to declines of native sport fish in the Upper Mississippi River System**. Biological Invasions. 22:723-734

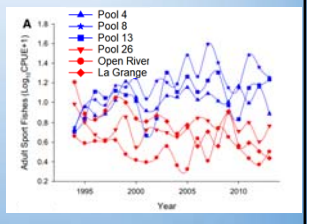


Invasive silver carp is empirically linked to declines of native sport fish in the Upper Mississippi River System



Invasive silver carp is empirically linked to declines of native sport fish in the Upper Mississippi River System





Status, trends, and population demographics of selected sportfish species in the La Grange Reach of the Illinois River (Solomon et al. 2019)

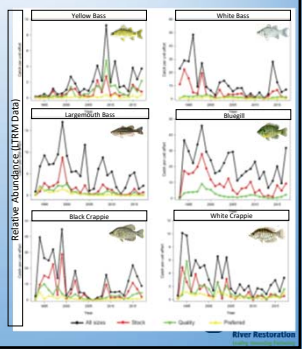
- Objectives:
  - Assess trends and population demographics of 6 fish species of recreational importance in the La Grange Reach of the Illinois River

Solomon, L. E., R. M. Pendleton, K. A. Maxson, J. N. McQuaid, D. K. Gibson-Reinemer, C. A. Anderson, R. L. Anderson, E. G. Lampo, J. T. Lamer, and A. F. Casper. 2019. Status, trends, and population demographics of selected sportfish species in the La Grange Reach of the Illinois River. Illinois Natural History Survey Bulletin 42:2019002.

Upper Mississippi River Restoration

Status, trends, and population demographics.. (Solomon et al. 2019)

- Results:
  - Significant declines in relative abundance of all study species except for Yellow Bass (increasing)
  - Populations of 4 study species dominated by young fish, with few individuals exceeding 3 years of age
    - Sample sizes were too small to analyze Largemouth Bass and White Crappie
  - Study species are growing fast and dying young



River Restoration

Status, trends, and population demographics of selected sportfish species in the La Grange Reach of the Illinois River (Solomon et al. 2019)

- Potential Management Implications:
  - Altered Hydrology:
    - Increased flood frequency = increased sedimentation
    - Changed timing of flood events may result in decoupling with spawning season for many fishes
  - Lack of quality overwintering habitat:
    - Sedimentation resulting from flood events is filling in backwaters, reducing depth diversity
    - Winter floods have resulted in loss of current velocity refuges
  - Direct/indirect competition with bigheaded carps? (Chick et al. 2019)
- Media:
  - Open Access article: https://iopn.library.illinois.edu/journals/inhs/article/view/216/182
  - IL NPR interview with Levi Solomon: https://www.wglt.org/post/native-illinois-river-fish-are-dying-younger-why-isnt-easy-question-answer?fbclid=IwAR2rj64rbtk7bABMSEc132929qAQS2YNU1cuMdGZLpr-C7PlxvhI06O_arN6s#stream/0

Upper Mississippi River Restoration

New UMRS Resilience Assessment publication

Journal of Environmental Management 264 (2020) 110516

Contents lists available at ScienceDirect

Journal of Environmental Management

journal homepage: http://www.elsevier.com/locate/jenvman

Research article

Conceptualizing alternate regimes in a large floodplain-river ecosystem: Water clarity, invasive fish, and floodplain vegetation

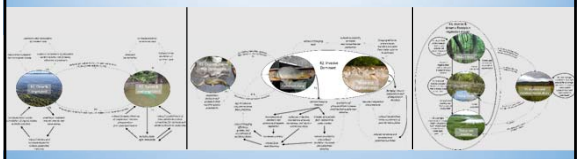
Kristen L. Bouska, Jeffrey N. Houser, Nathan R. De Jager, Deanne C. Drake, Scott F. Collins, Daniel K. Gibson-Reinemer, Meredith A. Thomsen

ABSTRACT

Regime shifts - persistent changes in the structure and function of an ecosystem - are well-documented for some ecosystems and have informed research and management of these ecosystems. In floodplain-river ecosystems, there is growing interest from restoration practitioners in ecological resilience, yet regime shifts remain poorly understood in these ecosystems. To understand how regime shifts may apply to floodplain-river ecosystems, we synthesize our understanding of

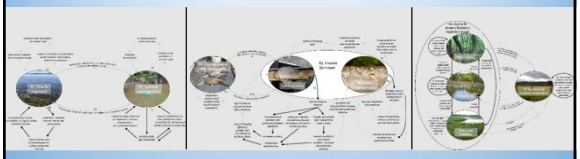
Upper Mississippi River Restoration

Conceptualizing alternative regimes in a large floodplain-river ecosystem



- Synthesize our understanding of possible alternate states in the UMRS using three examples:
  1. Clear water & abundant vegetation regime vs. turbid water & sparse vegetation in lenticareas,
  2. Diverse native fish community regime vs. an invasive-dominated fish community regime,
  3. Diverse & dynamic mosaic of floodplain vegetation types vs. a persistent invasive wet meadow monoculture.

Conceptualizing alternative regimes in a large floodplain-river ecosystem



- Review known or hypothesized controlling variables and feedback mechanisms for each state
- Summarize potential restoration pathways
- Synthesize this information in conceptual models
- Observed long-term changes in the UMRS are consistent with concepts of alternate regimes
- These conceptual models develop specific hypotheses for future testing
- These hypotheses and approaches for testing them are included in: "Scientific Framework for Resilience Research on the Upper Mississippi River System" by K. Bouska
- This paper is an important step towards quantitatively testing hypotheses contained in these conceptual models and explicitly developing restoration actions to influence resilience.

SPECIAL ISSUE PAPER

WILEY

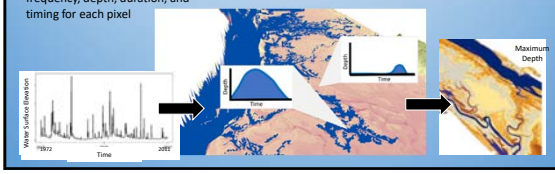
Quantifying and mapping inundation regimes within a large river-floodplain ecosystem for ecological and management applications

Molly Van Appledorn | Nathan R. De Jager | Jason J. Rohweder

Objective:
- To describe how floodplain inundation dynamics vary for different levels of river organization (system-wide, reach, pool, within-pool)

Approach:
- Use a geospatial model to simulate inundation at the 4m X 4m pixel scale, applied across the entire UMRS

Geospatial Model
- Combine 40 years of daily water surface elevations with terrain (topobathy) to simulate depth of water on floodplain surface through time
- Summarize patterns of inundation frequency, depth, duration, and timing for each pixel
- Summarize how inundation frequency, depth, duration, and timing vary across the system, reaches, pools, and within pools



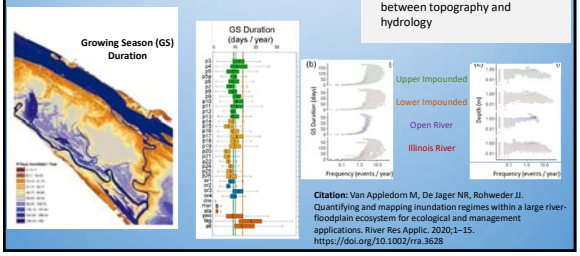
SPECIAL ISSUE PAPER

WILEY

Quantifying and mapping inundation regimes within a large river-floodplain ecosystem for ecological and management applications

Molly Van Appledorn | Nathan R. De Jager | Jason J. Rohweder

Findings:
- Floodplain inundation dynamics vary widely across river organization levels, and can cross critical ecological thresholds on the scale of meters
- Inundation attributes (e.g. depth, duration) exhibit non-linear relationships with each other, suggesting complex interactions between topography and hydrology



Citation: Van Appledorn M, De Jager NR, Rohweder JJ. Quantifying and mapping inundation regimes within a large river-floodplain ecosystem for ecological and management applications. River Res Applic. 2020;1–15. https://doi.org/10.1002/rra.3628

Completion Report: Developing methods of estimating submersed aquatic vegetation biomass in the Upper Mississippi River to expand capabilities within the UMRR program and improve the utility of the long-term vegetation data

D. Drake and E. Lund

This report includes:

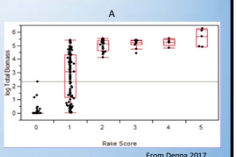
1) Analyses of existing LTRM data to identify analytical challenges and additional information needs

2) New field data collection and anlaysis to test whether weighing SAV captured on the rake improves estimation of biomass

3) Evaluation of past criticisms of estimating biomass using new information and analyses

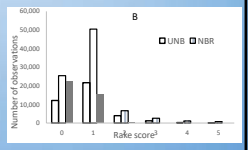
4) Recommendations for going forward

Conclusions:
- Additive rake score is reasonably correlated with biomass
- Estimation of biomass by morphological group (unbranched and branched) rather than by species eliminates error associated with rare species.
- Adding fresh weight of SAV captured on the rake did not substantially improve prediction (except for filamentous algae).



From Deppa 2017

Related work:
- Because biomass values captured by rake score of 1 are so variable (A), and the scores 0 and 1 are ~90% of all observations (B) they field tested the division of rake score =1 (trace and 1).
  - Details provided in forthcoming LTRM Completion report.



UMRS Status and Trends, 3rd edition

1 April	Chapter authors meet to discuss initial results, figures. Format for chapters finalized. Report card ideas discussed.
~~**1 May**~~ **8 May**	Analyses completed [Chapter Leads met 8 May to present/discuss]
5 June	Initial draft of each chapter distributed among report contributors
3 July	Comments back to chapter authors
31 July	Revised chapters to assembled
28 August	Draft for A team review distributed
18 Sep.	A team comments due
30 Oct.	Penultimate draft circulated to all authors
13 Nov.	Final revisions due
4 Dec.	Submit to SPN.

Third Status and Trends Report

- Chapter One: Introductory chapter to set context (Houser and colleagues)
  - Purpose and objectives of the report
  - Connections to other recent UMRR efforts (Resilience assessment, HNA 2, etc). HNA 2 and ST3 should be largely complementary b/c of the scale/resolution of the data included in each.
- Chapter Two: Physical and hydrological template of the UMRS
  - System Overview & Basic Longitudinal Summaries of Geomorphology
    - Hydrology (Van Appledorn)
    - Sediment (Van Appledorn)
    - Land cover (De Jager)
- Chapter Three: Major Changes in the UMRS
  - Long term changes in water clarity and vegetation in the upper impounded reach and coincident changes in other biota (e.g., common carp). (Houser and colleagues)
  - Long term changes in abundance of Asian carp and associated changes in and ecosystem. (Ickes and colleagues)
- Chapter Four: Status and Trends of Indicators of Ecosystem Health:
  - Water Quality (Jankowski)
  - Aquatic vegetation (Larson)
  - Fish (Ickes)
- Chapter 5: Conclusions / synthesis (Houser and colleagues)

LTRM Sampling--Impacts and planning due to COVID-19

WQ; Lead KathiJo Jankowski
Phone Conferences—Team Leaders and Field staff

- Suspended: 2 fixed site episodes April 6 and 20
- Partially suspended: Spring SRS sampling only conducted by Iowa and Missouri
- UMESC WQ Lab Staff has resumed analyzing samples

Fisheries; Lead Brian Ickes
SRS June 15 usual start date period 1

Vegetation; Lead Danelle Larson
SRS June 15 usual start date

Currently communicating with Field staff to address these questions:

- Has your state issued guidance on field work?
- What is the latest date you feel you need to gain access to equipment to prepare for field season (and can you presently gain access to boats, nets, bait, etc...)?
- What is the latest date you feel you would need to begin sampling?
- Do you have access to, or can you gain PPE?

Additional projects that may be impacted by COVID-19 restrictions
(additional information is being gathered)

- Vital rates-fisheries: under discussion
- IWW Fisheries
  - Vegetation
    - Under discussion
    - Potentially no 2020 veg. sampling due to out of state travel restrictions
  - Fisheries
    - Under discussion
    - INHS investigating what would need to be done
  - Water quality (not a separate sampling effort)
    - Chlorophyll and TSS collected with fisheries data
    - Light data & wave loggers collected with vegetation data
- Zooplankton project (Fulgoni and Sobotka): postponed some of their spring sampling until summer.
- Large Woody Debris project: Lab work delayed as student could not access the University. May resume June 1. Reduced field work this summer
- Field testing of ScanLog (WQ field data entry app) updates delayed until WI field station can resume sampling.

UMRR MONITORING AND SCIENCE UPDATE

Karen Hagerty
Rock Island District
20 May 2020

US Army Corps of Engineers

UMRR MONITORING & SCIENCE FY20

2 SOWs in FY20

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 (research)
$2.5M

TOTAL BUDGET: $8.8M

UMRR MONITORING & SCIENCE FY20

LTRM Base+Analysis Under Base	$6,247,360
A. IWW monitoring (FY20)	$ 127,289
B. Chloride monitoring (3 years)	$ 166,196
C. Seamless wind fetch products	$ 24,504
D. LTRM spatial data to web mapping services	$ 24,930
E. Ecohydrology (2 Years)	$ 389,419
F. Funding for FY20 science proposals	**$2,017,500***

UMRR MONITORING & SCIENCE FY20

PROPOSAL	PI(s)	COST
Mapping potential sensitivity to hydrogeomorphic change in the UMRS riverscape and development of supporting GIS database and query tool	Strange (UMESC) Fitzpatrick (USGS)	$391,440
Improving our understanding of historic, contemporary, & future UMRS hydrology by improving workflows, reducing redundancies, & setting a blueprint for modelling potential future hydrology	Sawyer (MVR) Van Appledorn (UMESC)	$224,560
Understanding physical & ecological differences among side channels of the Upper Mississippi River System	Sobotka (MDC)	$247,414
Refining our Upper Mississippi River's ecosystem states framework	D. Larson (UMESC)	$192,091

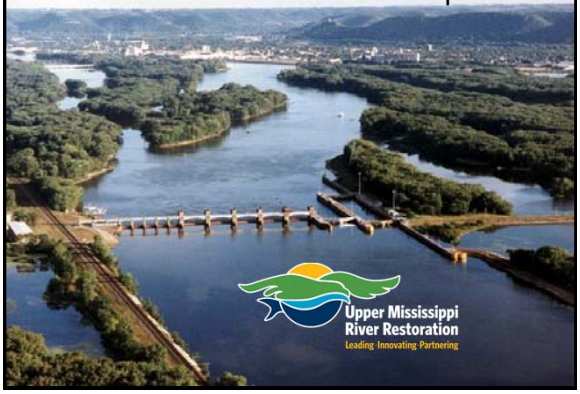
UMRR MONITORING & SCIENCE FY20

PROPOSAL	PI(s)	COST
Augmenting the UMRR fish vital rates project with greater species representation for genetics and otolith microchemistry	Bartels (WDNR) Lamer (INHS)	$306,915
Functional UMRS fish community responses and their environmental associations in the face of a changing river: hydrologic variability, biological invasions, and habitat rehabilitation	Ickes (UMESC) Gatto (INHS)	$92,058
Understanding landscape-scale patterns in winter conditions in the Upper Mississippi River System	Jankowski, Kreiling (UMESC) Dugan (UW) Magee (WDNR)	$325,349
Forest Response to Multiple Large-Scale Inundation Events	Cosgriff (MVS) Guyon (NGRREC) De Jager (UMESC)	$206,029

UMRR MONITORING & SCIENCE FY20

Funding available for proposals	**$2,017,500**
Cost of 8 recommended proposals	**$1,985,855**

2020 UMRR Science Proposals



2020 UMRR Science Meeting Working Groups
WG1: Hydrologic and geomorphic changes *Jim Rogala (UMESC), Jon Hendrickson (USACE), Molly Van Appledorn (UMESC)*
WG2: Side channels *Molly Sobotka (MDC)*
WG3: Aquatic vegetation and wildlife *Danelle Larson (UMESC)*
WG4: UMRS fish community dynamics *Brian Ickes (UMESC)*
WG5: Water quality and eutrophication *KathiJo Jankowksi (UMESC)*
WG6: Floodplain ecology *Nathan De Jager (UMESC)*

Submitted 2020 Proposals (WG 1 – WG3)

- WG1: Hydrologic and geomorphic changes
  - 1. Geomorphic Assessment Techniques for Baseline Assessments and Monitoring Related to Habitat Rehabilitation and Enhancement Project (HREP) Planning, Design, and Evaluation
  - 2. Mapping Potential Sensitivity to Hydrogeomorphic Change in the UMRS Riverscape and Development of Supporting GIS Database and Query Tool
  - 3. Improving our understanding of historic, contemporary, and future UMRS hydrology by improving workflows, reducing redundancies, and setting a blueprint for modelling potential future hydrology
- WG2: Side Channels
  - 4. Understanding physical and ecological differences among side channels of the Upper Mississippi River System
- WG3: Vegetation and Wildlife
  - 5. Refining our Upper Mississippi River's ecosystem states framework
  - 6. Evaluation of how HREPs, aquatic vegetation, and management activities influence waterfowl distributions on the Upper Mississippi River Navigation Pools 4, 8, and 13
  - 7. Expansion of wild rice (*Zizania aquatica L.*) in the UMR: Drivers, restoration risks and opportunities, and implications for waterfowl management.

2020 Proposals Recommended for Funding (WG1 – WG3)

- WG1: Hydrologic and geomorphic changes
  - ~~1. Geomorphic Assessment Techniques for Baseline Assessments and Monitoring Related to Habitat Rehabilitation and Enhancement Project (HREP) Planning, Design, and Evaluation~~
  - 2. Mapping Potential Sensitivity to Hydrogeomorphic Change in the UMRS Riverscape and Development of Supporting GIS Database and Query Tool
  - 3. Improving our understanding of historic, contemporary, and future UMRS hydrology by improving workflows, reducing redundancies, and setting a blueprint for modelling potential future hydrology
- WG2: Side Channels
  - 4. Understanding physical and ecological differences among side channels of the Upper Mississippi River System
- WG3: Vegetation and Wildlife
  - 5. Refining our Upper Mississippi River's ecosystem states framework
  - ~~6. Evaluation of how HREPs, aquatic vegetation, and management activities influence waterfowl distributions on the Upper Mississippi River Navigation Pools 4, 8, and 13~~
  - ~~7. Expansion of wild rice (*Zizania aquatica L.*) in the UMR: Drivers, restoration risks and opportunities, and implications for waterfowl management.~~

Submitted 2020 Proposals (WG4 – WG6)

- WG4:UMRS fish community dynamics
  - 8. Augmenting the UMRR fish vital rates project with greater species representation for genetics and otolith microchemistry
  - 9. Functional UMRS fish community responses and their environmental associations in the face of a changing river: hydrologic variability, biological invasions, and habitat rehabilitation
- WG5: Water Quality and Eutrophication
  - 10. Connectivity and cyanotoxin production
  - 11. Understanding landscape-scale patterns in winter conditions in the Upper Mississippi River System
  - 12. Microplastic abundance in fish and water column in relation to spatial heterogeneity and constructed habitat improvements in the Upper Mississippi River System
- WG6: Floodplain ecology
  - 13. Forest response to multiple large-scale inundation events

2020 Proposals Recommended for Funding (WG4 – WG6)

- WG4:UMRS fish community dynamics
  - 8. Augmenting the UMRR fish vital rates project with greater species representation for genetics and otolith microchemistry
  - 9. Functional UMRS fish community responses and their environmental associations in the face of a changing river: hydrologic variability, biological invasions, and habitat rehabilitation
- WG5: Water Quality and Eutrophication
  - ~~10. Connectivity and cyanotoxin production~~
  - 11. Understanding landscape-scale patterns in winter conditions in the Upper Mississippi River System
  - ~~12. Microplastic abundance in fish and water column in relation to spatial heterogeneity and constructed habitat improvements in the Upper Mississippi River System~~
- WG6: Floodplain ecology
  - 13. Forest response to multiple large-scale inundation events

Mapping Potential Sensitivity to Hydrogeomorphic Change in the UMRS Riverscape and Development of Supporting GIS Database and Query Tool

- Leads: Jayme Strange (USGS UMESC); Faith Fitzpatrick (USGS UMWSC)
- Goal
  - Map potential hydrogeomorphic change characteristics for the UMRS and develop GIS-based database and query tool
- Objectives
  1. Acquire and assemble existing spatial data layers for the hydrogeomorphic change hierarchical classification system,
  2. Generate additional characteristics that are needed to describe the common processes potentially causing hydrogeomorphic change,
  3. Provide maps and interpretive analyses on the spatial distribution and causes for erosion and deposition responsible for changing hydraulic distributions, landform characteristics, ecology, and water quality in the UMRS, and
  4. Provide a query-based GIS tool for use in scientific studies and HREP planning.
- Approach
  - synthesis and interpretation of existing data to create novel GIS database for current and future spatial geomorphological information
  - Analysis of this database to assess where and how the geomorphology of the UMRS is most likely to change
  - Convene expert panel and consult across partnership to communicate progress and receive input as project progresses

Improving our understanding of historic, contemporary, and future UMRS hydrology by improving workflows, reducing redundancies, and setting a blueprint for modelling potential future hydrology

- Leads: Lucie Sawyer (USACE MVR); Molly Van Appledorn (USGS UMESC)
- Questions
  1. Where, and in what ways, has the hydrologic regime of the UMRS changed over time?
  2. What are likely future changes in UMRS hydrology, given plausible climate change and land use scenarios?
- Approach
  - Build a comprehensive, well-documented, standardized, and accessible database of USACE-derived hydrologic data for the UMRS for scientific, management, and restoration applications and create a process for efficiently adding data each year
  - Produce a concise and accessible synthesis of the observed trends describing whether, where, and how the hydrologic regime has changed over the period of record
  - Develop a blueprint for modeling future hydrologic regimes (includes convening a workshop to scope modelling of future hydrologic conditions)

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

- Lead: Molly Sobotka (MDC)
- Goal: develop a reach-scale inventory of side channel classes, improve our understanding of the physical attributes that drive ecological responses within side channels, and synthesize management implications to inform HREP planning and design
- Objectives
  1. Develop a functional classification of side channels based on physical habitat attributes (e.g., connectivity, sediment stability)
  2. Investigate associations between the side channel classes and ecological responses (e.g., LTRM fish and water quality data; new invertebrate data)
  3. Synthesize management implications to identify classification metrics that can be altered to meet restoration objectives
- Approach
  - Analysis of existing GIS and LTRM WQ, Fish and Invertebrate data
  - Collection and analysis of new invertebrate data

Refining our Upper Mississippi River's ecosystem states framework

- Lead: Danelle Larson (USGS UMESC)
- Goal
  - Create a state-and-transition model that synthesizes information about all the UMRS' states, causes of transitions, and management implications
- Questions
  1. What are the various ecosystem states (including different vegetation communities)?
  2. Where are the states in the UMRS and how do they vary with spatial scale (e.g., aquatic area, strata, pool, and reach)?
  3. How often do the states change? What are the main drivers of transitions? What is the evidence for transient dynamics versus major regime shifts, and at what scales should those be defined?
  4. Are some river reaches and backwaters more vulnerable to state transitions, or, "low-hanging fruit" for management?
- Approach
  - Novel analytical methods applied to existing LTRM data
  - Develop state-and-transition model for selected potential state transitions in the UMRS
  - Vulnerability assessment that uses data and expert opinion to understand which backwaters, strata, and pools are stable vs more susceptible to undesirable state changes

Augmenting the UMRR fish vital rates project with greater species representation for genetics and otolith microchemistry

- Leads: Andy Bartels (WDNR); Jim Lamer (INHS)
- Goal
  - Expand the genetics and otolith microchemistry analysis to all of the species included in the vital rates project to incorporate a broader range of life history strategies
- Questions
  1. Are UMR fish populations spatially (genetically) isolated?
  2. Are UMR fish populations produced locally or from distant sources?
  3. Do UMR fish populations appear to be produced within the mainstem or in tributaries?
  4. Are there source locations or reaches that are important for production of multiple UMR fish species, or, conversely, are there locations or reaches of poor habitat quality that act as sinks for multiple UMR fish species?
  5. Do fishes of differing life history strategy exhibit expected spatial patterns of adaptive differentiation?
  6. Can UMR Mimic and Channel Shiner be differentiated into distinct species? If so, where are each located in the UMR, are they intermixed, and do they hybridize?
  7. Does the high head dam separating Pools 19 and 20 (LD19) act as a barrier to upstream gene flow and contribute to genetic structure among certain fish species in the UMR?
- Approach
  - Expanded analysis of existing samples (collected for vital rates assessment)
  - Analysis of LTRM fish data

Functional UMRS fish community responses and their environmental associations in the face of a changing river: hydrologic variability, biological invasions, and habitat rehabilitation

- Leads: Brian Ickes (USGS UMESC); John Gatto (INHS); John Chick (INHS)
- Objective
  - Describe patterns in composition of UMRS fish communities and the environmental conditions associated with those fish communities
- Hypothesis to be tested
  1. There is no difference in the basic functional template of the UMRS fish community (percent of species present in each functional guild class) over 1960 km of river;
  2. Differences in either reproductive, feeding, or habitat guild mass expressions will be demonstrable from north to south within the UMRS;
  3. Habitat rehabilitation has not altered the functional attributes of the UMRS fish community;
  4. Invasive carp have altered the functional attributes of the UMRS fish community in the southern reaches;
  5. The northern reaches are functionally distinct from the southern reaches providing a buffer against invasion.
- Approach
  - Analysis of LTRM fish data

Understanding landscape-scale patterns in winter conditions in the Upper Mississippi River System

- Leads: KathiJo Jankowksi (USGS UMESC); Hilary Dugan (UW-Madison); Becky Kreiling (USGS UMESC); Madeline Magee (WDNR)
- Questions
  1. What are the patterns and drivers of mid-winter habitat conditions in backwater lakes?
  2. How variable is the occurrence, distribution, and extent of favorable winter habitat conditions among pools and backwater lakes among years and what are the drivers of that variation?
  3. How do ice and habitat conditions change during winter across backwater lakes that span a range of connectivity and depth?
- Approach
  - 1) Use LTRM data (WQ component data and system-wide aquatic area data sets (HNA II)) to evaluate the spatial and temporal (inter-annual) variability in the occurrence and drivers of suitable overwintering conditions
  - 2) Conduct a field study that evaluates the short-term temporal variation in conditions within winter in backwater lakes that span a range of depth and connectivity

Forest response to multiple large-scale inundation events

- Leads: Rob Cosgriff (USACE); Lyle Guyon (NGRREC); Nate De Jager (USGS UMESC)
- Objectives
  1. Examine forest responses to two large floods at eight reaches of the UMRS
  2. Identify forest successional patterns following large scale flood disturbance events by examining and comparing survivorship following the 1993 and 2019 floods
  3. Predict individual species and community susceptibility to inundation in response to the 1993 and 2019 floods
  4. Compare regeneration patterns, including species invasions, following the 1993 and 2019 floods
  5. Develop and provide information to managers relevant to managing forest structure and composition given the likely changes in flood intensity, duration and frequency
- Approach
  - Assess the effects of the 2019 flood using new data collected by returning to sites and protocol used in a study of the effects of the 1993 flood on the floodplain forest
  - Use the new and previously collected data to compare the effects of the 1993 and 2018 floods on the floodplain forest

2020 Proposals Recommended for Funding

- WG1: Hydrologic and geomorphic changes
  - Mapping Potential Sensitivity to Hydrogeomorphic Change in the UMRS Riverscape and Development of Supporting GIS Database and Query Tool
  - Improving our understanding of historic, contemporary, and future UMRS hydrology by improving workflows, reducing redundancies, and setting a blueprint for modelling potential future hydrology
- WG2: Side Channels
  - Understanding physical and ecological differences among side channels of the Upper Mississippi River System
- WG3: Vegetation and Wildlife
  - Refining our Upper Mississippi River's ecosystem states framework
- WG4:UMRS fish community dynamics
  - Augmenting the UMRR fish vital rates project with greater species representation for genetics and otolith microchemistry
  - Functional UMRS fish community responses and their environmental associations in the face of a changing river: hydrologic variability, biological invasions, and habitat rehabilitation
- WG5: Water Quality and Eutrophication
  - Understanding landscape-scale patterns in winter conditions in the Upper Mississippi River System
- WG6: Floodplain ecology
  - Forest response to multiple large-scale inundation events

Extras

1. How important is the proposed activity to advancing knowledge and understanding needed for managing and restoring the UMRS**? Base your assessment of importance on how well the work address one or more 2020 Focal Areas.** Raw score (0 to 9): _____ X 2 =total score (0 to 18) _____[**Score 1**].

0 Not important – unlikely to contribute to our understanding of any focal areas.

1 - 3 Somewhat Important –will likely make a small contribution to our understanding of at least one focal area.

4 – 6 Important but could be addressed at any time. Expected to make a significant contribution to our understanding of one or more 2020 Focal Areas.

7 - 9 Very Important and should be addressed now. Expected to make a substantial contribution to our understanding of one or more 2020 Focal Areas and is addressing an urgent need or taking advantage of an unusual opportunity.

2. Are the study objectives clear and realistically achievable? That is, has the problem or question to be addressed been clearly identified and are the research questions or hypotheses clearly stated. Score (0 to 9): ___ [**Score 2**]

0	Objectives (including questions or hypotheses to be addressed) are poorly described or unlikely to be achieved.
1 – 3	Objectives (including questions or hypotheses) are clearly identified but it is unclear the extent to which the proposed work will achieve them; little significant new information is likely to be obtained
4 – 6	Objectives (including questions or hypotheses) are clearly identified and are likely to be at least partially achieved, such that some significant new information is likely to be obtained.
7 – 9	Objectives (including questions or hypotheses) are clearly identified and likely to be fully achieved such that substantial new information is expected to be obtained.

3. Are the methods clearly described? Do the PIs and collaborators have the necessary expertise to conduct the work? Will the methods produce the data or information required to get effectively address project objectives?
Score (0 to 9): ____ [**Score 3**]

• 0	Methods are not clearly stated
• 1 – 3	Methods are clearly stated, but are not likely to produce needed data/information
• 4 – 6	Methods are clearly stated, but unclear how well the results will address specified objectives
• 7 – 9	Methods are clearly stated and likely to effectively address specified objectives

4. What is the scale of the problem (even if tested or applied at a local scale)? Score (0 to 9): _____ [**Score 4**]

• 0	Local problem only
• 1 –3	Local problem with reach-wide generality or application
• 4 – 6	Reach-wide problem
• 7 – 9	Systemic problem, with great generality

HABITAT RESTORATION: DISTRICT REPORTS

ST. PAUL DISTRICT (MVP)

PLANNING

- **Reno Bottoms HREP – Pool 9, MN/IA**
  - Continuing Feasibility
- **Lower Pool 10 HREP – Pool 10, IA**
  - Continuing Feasibility
  - Formulating alternatives

DESIGN

- **McGregor Lake HREP – Pool 9, WI**
  - Floodplain Forest & Backwater Dredging
  - Continuing P&S, Advertise July 2020.
- **Bass Ponds, Marsh, & Wetland HREP**
  - MN River - Water Level Management
  - Completing P&S, Advertise 2nd Qtr.

CONSTRUCTION

- **Conway Lake HREP – Pool 9, IA**
  - Contractor mobilized
  - Construction to start May 2020
- **Bass Ponds, Marsh & Wetland HREP**
  - MN River – Water Level Management
  - Contract Award – June 2020
- **McGregor Lake HREP – Pool 9, WI**
  - "Phase 1" M&R to complete 70k cy
  - Contract Award – September 2020

REPAIRS

- **Harpers Slough HREP – Pool 9, IA**
  - Evaluation repair options
  - Complete Letter Report, 4th Qtr.

NEW FACTSHEETS

- **Finalize 4 Factsheets**
  - MVD Submittal

ST. PAUL DISTRICT PHOTOS

McGregor Lake HREP
- March – May placement

Initial 70K cy at the north end of the lake

3

ROCK ISLAND DISTRICT (MVR)

PLANNING

- **Steamboat Island HREP – Pool 14, IA/IL**
  - PDT addressing ATR comments
  - PDT sent MDM package to MVD
  - Public review started May 15th
- **Lower Pool 13 HREP – Pool 13, IA/IL**
  - PDT is working on features
  - Planning a virtual mini-charette for June
- **Green Island HREP – Pool 13, IA**
  - Virtual site visit on 22 April
  - PDT working on measures

DESIGN

- **Keithsburg Division Stage II – Pool 18, IL**
  - 65% review is schedule for June 12th

CONSTRUCTION

- **Pool 12 Overwintering, Pool 12, IL**
  - ***Stage II*** – Contractor has completed the rock closure structure. BPA –tree planting SOW is out for bid.
  - ***Stage III*** - Closing out the construction contract
- **Keithsburg Division Stage I, Pool 18, IL**
  - No work due to new eagle nest
- **Huron Island Stage II & III, Pool 18, IA**
  - ***Stage II*** - Waiting on final survey submittal
  - ***Stage III*** - Site visit schedule for spring
- **Beaver Island Stage IB, Pool 14, IL**
  - Contractor is on-site dredging

New Fact Sheets

- Finalize 6 Fact Sheets
- Sponsor review
- Submit to MVD

ROCK ISLAND DISTRICT PHOTOS

Pool 12 HREP Stage II

Beaver Island HREP Stage IB

Rock Placement at the Closure Structure

Dredging at Stewart Lake

5

ST. LOUIS DISTRICT (MVS)

PLANNING

Oakwood Bottoms, IL, HREP (Open River)
- Submit Draft Feasibility Report to MVD September

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

West Alton Islands, MO, HREP (Pool 26)
- Initiate Feasibility Report 4th Qtr

DESIGN

Piasa & Eagles Nest, IL HREP (Pool 26)
- Sponsor Review
- P&S Ready to Advertise July.
- Contract Award Sept.

Harlow Island, IL HREP (Open River)
- Sponsor Review
- P&S Ready to Advertise 4th Qtr.

EVALUATION
- Project Evaluation

CONSTRUCTION

Crains Island, IL HREP (Open River)
- Awarded Contract 20 Feb 20 (A)
- Earthwork & Pile Removal

Clarence Cannon Refuge, MO (Pool 25)
- Interior Water Control Structures
- Pump Station
- Exterior Berm Setback

Ted Shanks, MO HREP (Pool 24)
- Reforestation
- Warranty Work

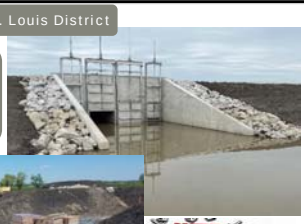
New Fact Sheets
- Finalize six new facts sheets
- Sponsor Review
- 4th Qtr. FY20 & 1st Qtr. FY21
- Submit to MVD for Approval

St. Louis District

Clarence Cannon Island HREP

*Water Control w/ Mgmt. Gates

*Pump Station Foundation



Yorkinut Slough HREP
Virtual Planning Charrette

FY 21-25 HREP SELECTION & FWWG/RRF PROJECT RECOMMENDATION

Pool 8 Poolwide Forest Restoration HREP

Location: Pool 8 (RM 683-702)
Sponsor: USFWS and potentially others
Problem Identification: Loss of forest cover and lack of forest regeneration
Preliminary Objectives:

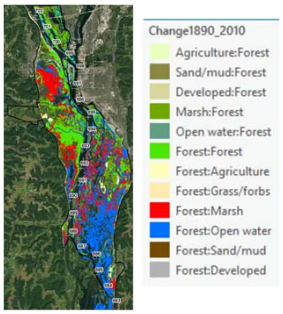
- Protect, enhance and restore quality forest and other terrestrial habitats for native wildlife, trust resources and refuge ROCs
- Backwater restoration for improvement of water quality for native fish species and SAV growth for refuge ROCs; backwater restoration will augment terrestrial restoration

Schedule

- Fact sheet team met on December 20th
- Fact sheet team meeting is February 28th
- FWWG endorsement April 15, 2020
- RRF endorsement May 14, 2020

Next Action

- UMRR CC Endorsement May 20, 2020



HREP SELECTION PROCESS: INSIGHTS AND IMPROVEMENTS

- May 6th Meeting
  - Coordinating Committee
  - River Team Chairs
  - District HREP Managers
  - USGS
  - NGO's

DIRECTIONS TO RIVER TEAM DOCUMENT

- Who is this Program Planning Team?
- Limiting to only develop 3-5 projects. Recommend revise limitations on fact sheets advanced to allow for river teams best judgment.
- No threshold lingo: we understand that we didn't want to put constraints on creativity and proposal ideas; however, some projects are too small or not in the authority of UMRR or AER mission. Recommend providing some realistic thresholds to help focus proposal ideas.
- Structured Decision Making Exercise: As written, appears too rigid of guidance. Allow flexibility in river team decision-making.

PROCESS, GOALS, AND RESPONSIBILITIES DOCUMENT

- Additional descriptions added for each river team since the decision-makers for each river team are slightly different.
- Provide governance structure for each river team.

SELECTION PROCESS DIAGRAM

- For future, the proposal development phase should be longer, 5-6 months was too short.
- Not sure if the PPT is the UMRRCC? Not sure if we submitted our proposals to the PPT.

ADDITIONAL COMMENTS - FWIC

- Keep working through sponsorship challenges
- Concern over using a tiered ranking for fact sheets
- Maintain priorities identified in initial scoping, but not considered high priority during ranking process.
- If desired number of fact sheets already developed; no need for more.
- Avoid "box checking exercise" to hit criteria
- Include some historical basis on identified needs and priorities.
- Consider a higher ranking for NGO supported fact sheets.

ADDITIONAL COMMENTS - RRAT

- Don't be limited by number of fact sheets – if it's a good proposal then it should be included.
- Question: what happens if someone comes with a "new" idea not considered in this round… will they have to wait 5 years? The RRAT would say no. Additional clarity from the Program level would be helpful.
- Continue strategic communication outreach for the Program

ADDITIONAL COMMENTS - FWWG

- Generally thought the guidance documents were good and provided a good framework for the process.
- More interaction between river teams would have been helpful.
- Longer timeframe
- Fewer participants
- Stick to the HNA II metrics to measure merit.
- It seemed that even though the directions asked us to follow the HNA II metrics, in the end, the projects were selected based on what individual agencies wanted to do vs. what best fit the HNA II metrics and the UMR overall.

HREP SELECTION PROCESS: INSIGHTS AND IMPROVEMENTS

- Recommendations
  - Maintain 4 page length guidance on fact sheets
  - Non-traditional sponsors
  - Project evaluation and ranking
  - HNA-II
  - SST
  - Timeline
  - Appendix

HREP SELECTION PROCESS: INSIGHTS AND IMPROVEMENTS

- Next Steps
  - Additional discussion on Charter update
  - Draft updates to the Charter August?
  - Endorsement of revised charter October?

DISCUSSION