

NAVIGATION & ECOSYSTEM SUSTAINABILITY PROGRAM – ECOSYSTEM RESTORATION

FY24 LAYDOWN

SHANE SIMMONS



FY24 PROGRAM

Planning:

- MMR Stone Dike Alteration
 - Denmark and Drift Island Complex
 - Systemic Water Level Management
 - Hausgen Island Side Channel Restoration
 - Clarksville/Carroll Island Side Channel Restoration
 - MMR National Wildlife Refuge
-

Design:

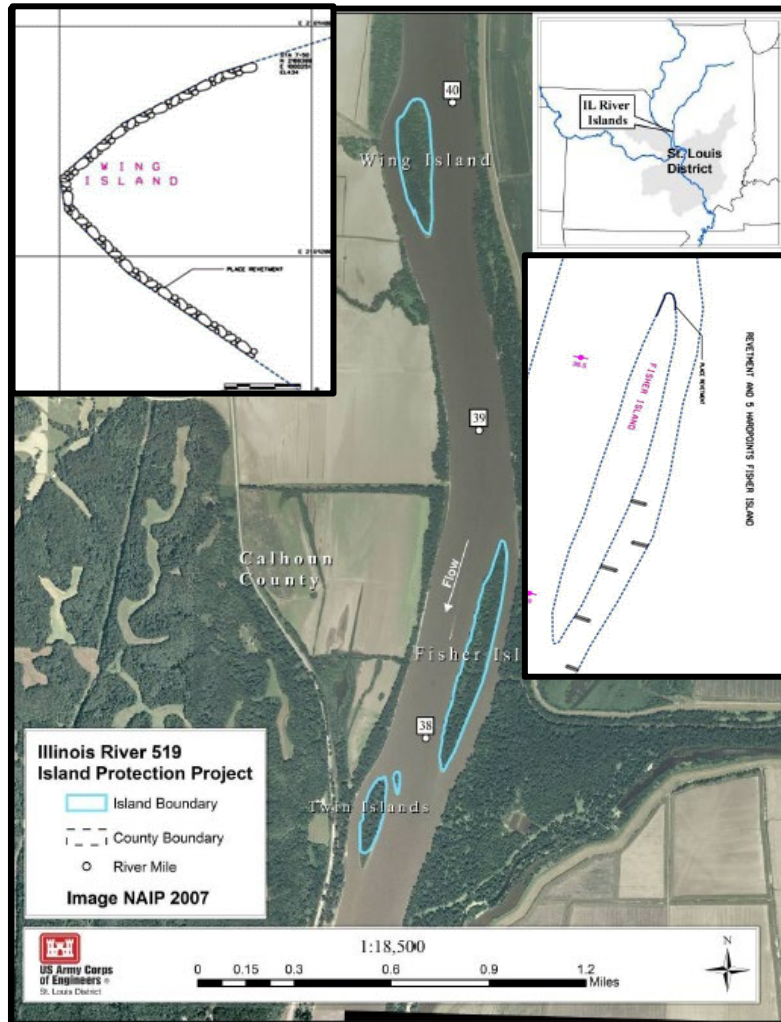
- MMR Stone Dike Alteration
 - Denmark and Drift Island Complex
-

Construction:

- Moore's Towhead Systemic Mitigation
- Alton Pool Islands
- Twin Islands

ALTON POOL ISLANDS AND TWIN ISLANDS

SITE PLAN



PROJECT AREA

The Alton Pool Islands Restoration Project area is located in Pike and Greene Counties, Illinois, between River Miles (RM) 37.9 and 40.1.

PROBLEM

The primary habitat problem in the area is loss of islands and associated side channel habitat due to excessive erosion. Existing side channel habitat throughout the Illinois Waterway and Upper Mississippi River System are gradually being lost due to sedimentation and erosion (Simons et al. 1974). Natural river processes which historically created new islands and side channel habitat are typically precluded by navigation and agricultural structures.

PURPOSE

- Decrease deposition of sediment from Apple Creek
- Decrease amount of sediment eroding from heads of islands
- Prevent loss of islands and associated side channels

PROJECT MEASURES

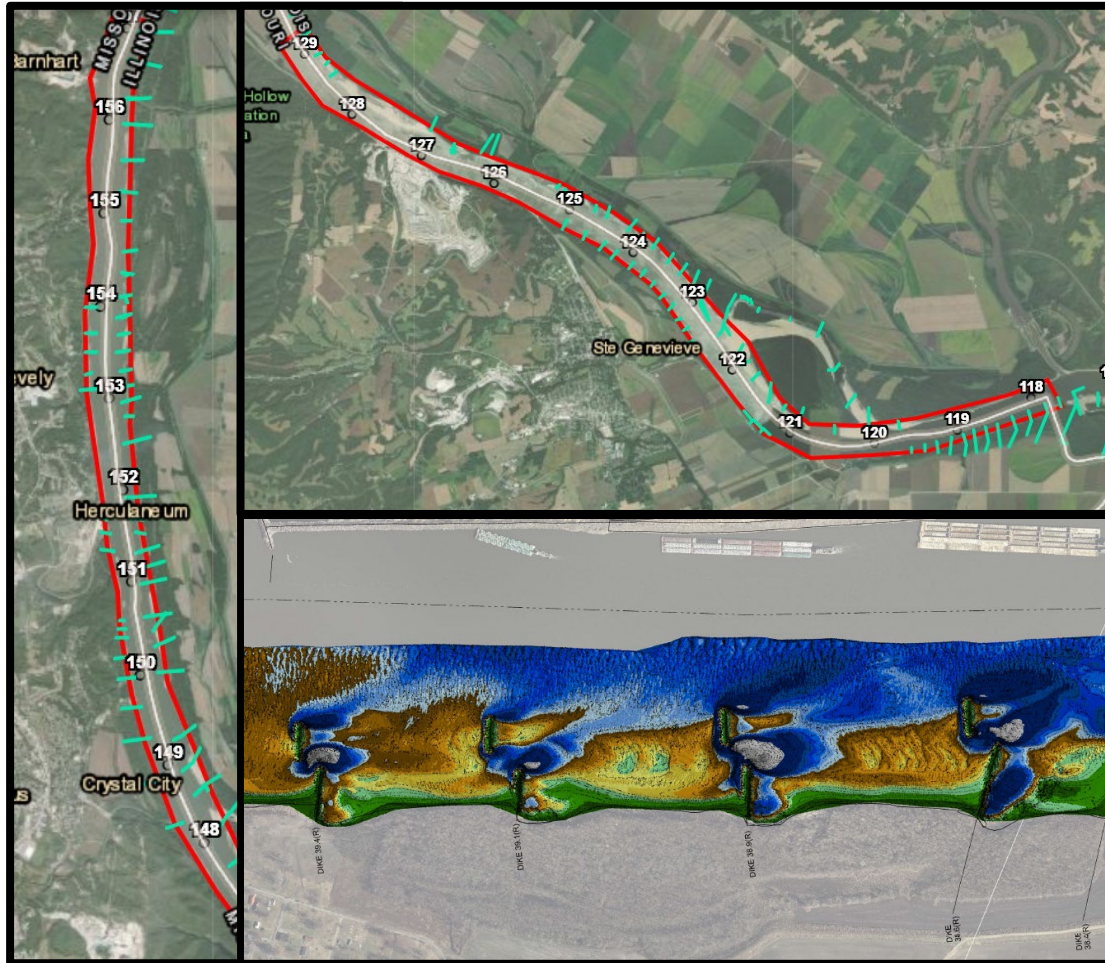
- Head of island revetment
- Alternating hard points inside channel (to create sinuosity in the backwater/side channel)

PROJECT STATUS

- Estimated total project cost is less than \$5 million
- The PIR was approved in December 2015
- Contract awarded in September 2023

MMR STONE DIKE ALTERATION

SITE PLAN



PROJECT AREA

The Middle Mississippi River (MMR) Stone Dike Alterations study area includes opportunistic sites between RM 200-0. The study area includes the following river miles: RM 157-147 & 129-118.

PROBLEM

River training structures have caused a homogeneous pattern of sediment deposition that has limited the quality and diversity of aquatic habitat for riverine fishes within the MMR.

PURPOSE

- Improve flow and depositional diversity within dike fields
- Improve aquatic habitat for native riverine fishes
- Improve energetic efficiency pathways for migratory spawners
- Improve substrate diversity

POTENTIAL MEASURES

- Dike alteration (including but not limited to removal, lowering, degrading, raising, extending, or notching)
- Opportunistic incorporation of woody structure with dike alteration
- Reallocate altered dike material to form areas of cobble substrate

PROJECT STATUS

- Estimated total project cost is less than \$5 million
- Anticipated TSP to be completed October 2023
- Anticipated Construction Contract Award in September 2024

DENMARK AND DRIFT ISLANDS

SITE PLAN



PROJECT AREA

The study area includes Denmark and Drift Islands and surrounding aquatic habitats in Pool 24 between river miles 295-289

PROBLEM

This area has seen an increase in sedimentation in recent years and recent large scale flooding has exacerbated the problem. Water is currently unable to drain off these sites effectively following a flood, resulting in the degradation of floodplain forests and wetlands, as well as quality aquatic habitat.

PURPOSE

- Restore flow diversity, connectivity, and substrate diversity throughout project area (side channel, main channel, off channel, backwaters, etc.)
- Restore native aquatic and terrestrial vegetation diversity
- Restore topographic and bathymetric diversity and structural complexity
- Reduce inundation hydroperiod on impacted forest stands

POTENTIAL MEASURES

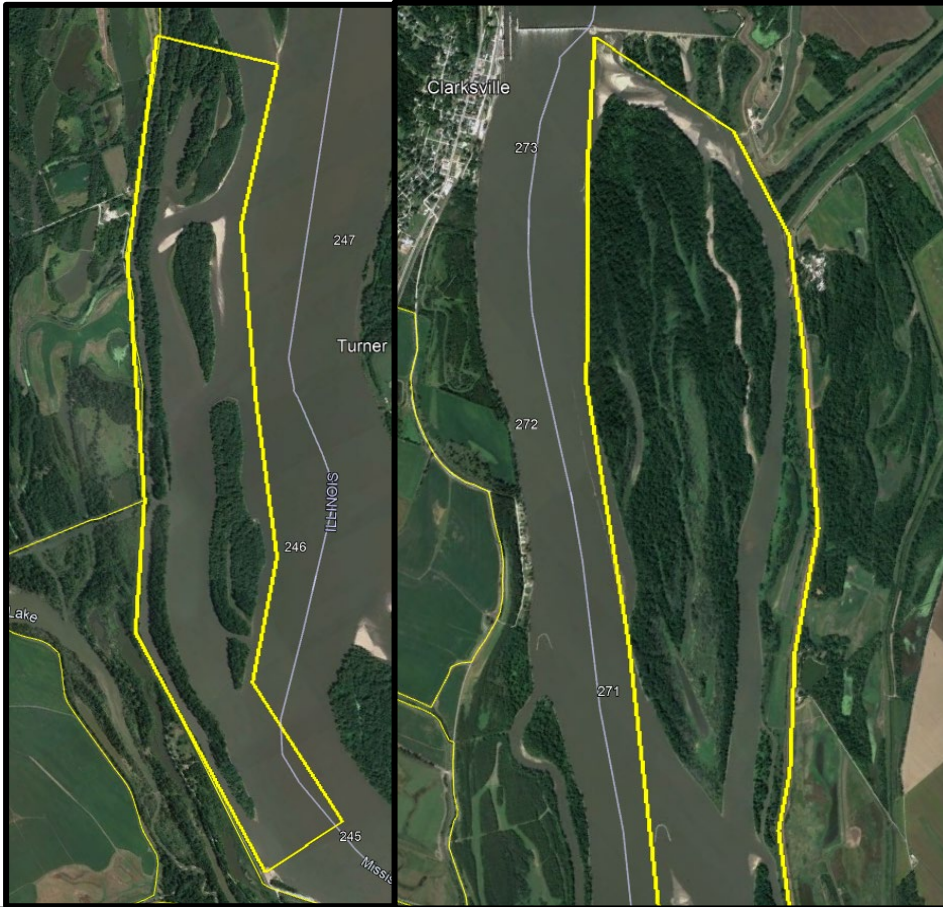
- Timber stand improvement, tree planting
- Riffle structures for bed stability and substrate heterogeneity (mussel habitat)
- Excavation of backwater areas and sloughs
- Dike notching
- Improve topographic diversity

PROJECT STATUS

- Estimated total project cost is greater than \$10 million
- Anticipated TSP to be completed in September 2023
- Anticipated Construction Contract Award in FY25 (Summer 2025)

POOL 25 SIDE CHANNEL RESTORATION (2 PROJECTS)

SITE PLAN



PROJECT AREA

The Pool 25 Side Channels study area includes two discrete reaches. The first includes approximately 950 acres of side channel habitat along the Illinois bank between river miles 273-266L from Clarksville Island to Carroll Island. The second, between river miles 247-245R, includes approximately 250 acres of side channel habitat along the Missouri bank between Jim Crow and Hausgen islands.

PROBLEM

Side channels are important aquatic habitat for many native species including UMR riverine fishes and freshwater mussels. Historically, the study area had freshwater mussel beds, but these beds have been impacted through time due to degraded side channel conditions (e.g., increased siltation, sediment homogenization).

PURPOSE

- Restore side channel connectivity and flow to benefit native riverine fish and wildlife
- Improve side channel habitat, including substrate stability, to benefit native freshwater mussels.

POTENTIAL MEASURES

- Dike alteration (including but not limited to removal, lowering, degrading, raising, extending, or notching)
- River training structures
- Rock-gravel substrate enhancement
- Gradual slope revetment
- Beneficial use of dredge material
- Natural and nature-based features

PROJECT STATUS

- Estimated total project cost is between \$5-10 million
- Anticipated TSP date is September 2024
- Anticipated Construction Contract Award is FY26 (Summer 2026)

MMR NATIONAL WILDLIFE REFUGE: HORSE ISLAND

SITE PLAN



PROJECT AREA

The Middle Mississippi River National Wildlife Refuge is located on the Mississippi River downstream from St. Louis, Missouri. Meissner Island Division is near Valmeyer, Illinois (RM 154). Beaver Island Division is near Kaskaskia, Illinois (RM 117 and RM 111 respectively), and Rockwood Division is near Rockwood, Illinois (RM 102).

PROBLEM

Existing floodplain forest communities have been degraded from past land use and flood events resulting in low species richness. The flood-induced tree mortality and inundation stress has allowed for invasive species (i.e., Japanese hops) establishment and spread altering native tree recruitment and canopy gap closure dynamics.

PURPOSE

- Restore topographic diversity
- Increase native forest species richness and structural complexity
- Promote native understory plant habitats

POTENTIAL MEASURES

- Afforestation
- Canopy Gap Restoration
- Timber Stand Improvement
- Native Vegetation Underplanting
- Ridge & Swale Restoration (topographic diversity)

PROJECT STATUS

- Estimated total project cost is between \$5-10 million
- Anticipated TSP date is September 2024
- Anticipated Construction Contract Award is FY26 (Summer 2026)



WATER LEVEL MANAGEMENT PROJECT



PROJECT SCOPE

- Develop a Systematic WLM approach and needs to the current lock and dam operations in MVP, MVR, and MVS in support of environmental and ecological benefits.
- Determine suitable lock and dam(s) to be selected for additional drawdown capability for environmental and ecological benefits.
- Establish prioritization for future lock and dam additional drawdowns for environmental and ecological benefits.



SCHEDULE

- Kick-off was held July 11th, 2023.
- Planning and scoping being finalized.
- Schedule development ongoing with PDT.
- Future Planning Workshop with Partners is TBD.

