

UPPER MISSISSIPPI RIVER RESTORATION (UMRR)

CRAINS ISLAND INFORMATION BRIEF

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For RRAT Boat Trip

September 2023



HISTORY

- Located downstream of Locks 27 (Open River)
- Crains Island acquired by the USFWS ~1993
- Managed as part of the Middle Mississippi River Wildlife Refuge, established May 31, 2000
- USACE HREP began as Harlow & Open River Islands in 2015
 - Previously combined with Harlow & Wilkinson Islands
 - Feasibility Report approved by MVD April 2018
- Stage 1 Construction Initiated in Feb 2020
- Stage 1 Construction Completed in Nov 2022



PRE-CONSTRUCTION CONDITIONS



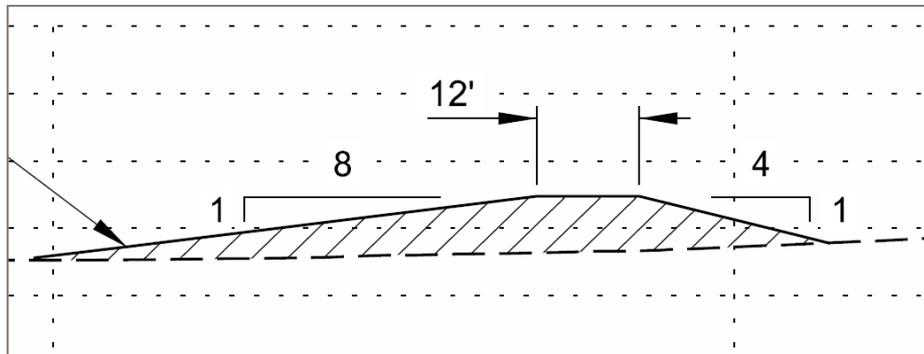
PROJECT OBJECTIVES

- Enhance the island's ability to build floodplain forest (through fine soil deposition)
- Provide seed source for expansion of floodplain forest (berm / ridge tree planting)
- Provide depressional wetland habitat
- Provide aquatic species habitat (interior connectivity, side-channel)



SEDIMENT DEFLECTION (SD) BERM

- Encourage fine-sediment deposition (open-ended berm)
- Deflect coarse sediment
- Limited in height and shape by potential flood impacts
- Use shallow slopes to mimic natural ridges, improve resilience (1:4 Fore and 1:8 Back)



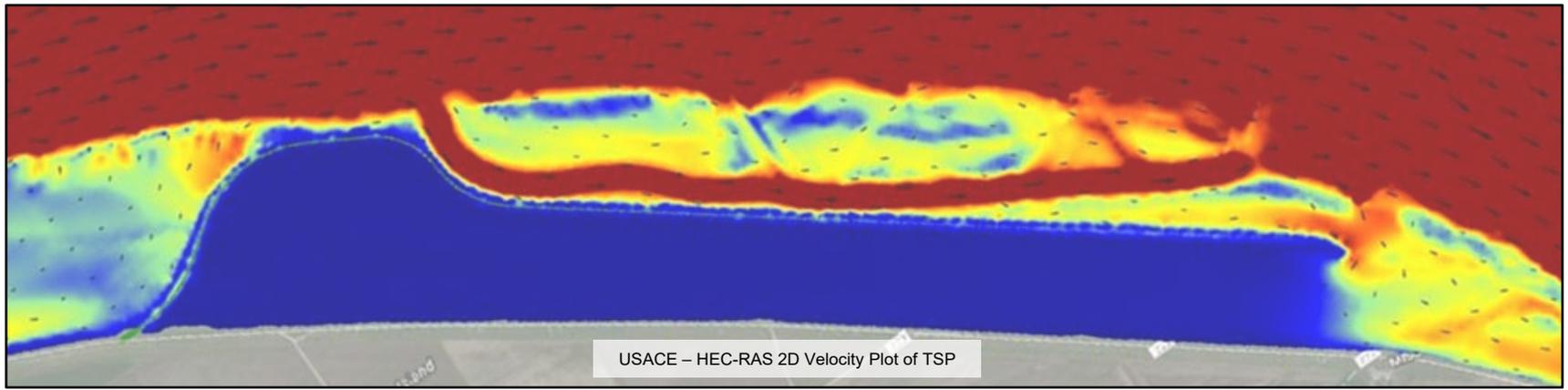
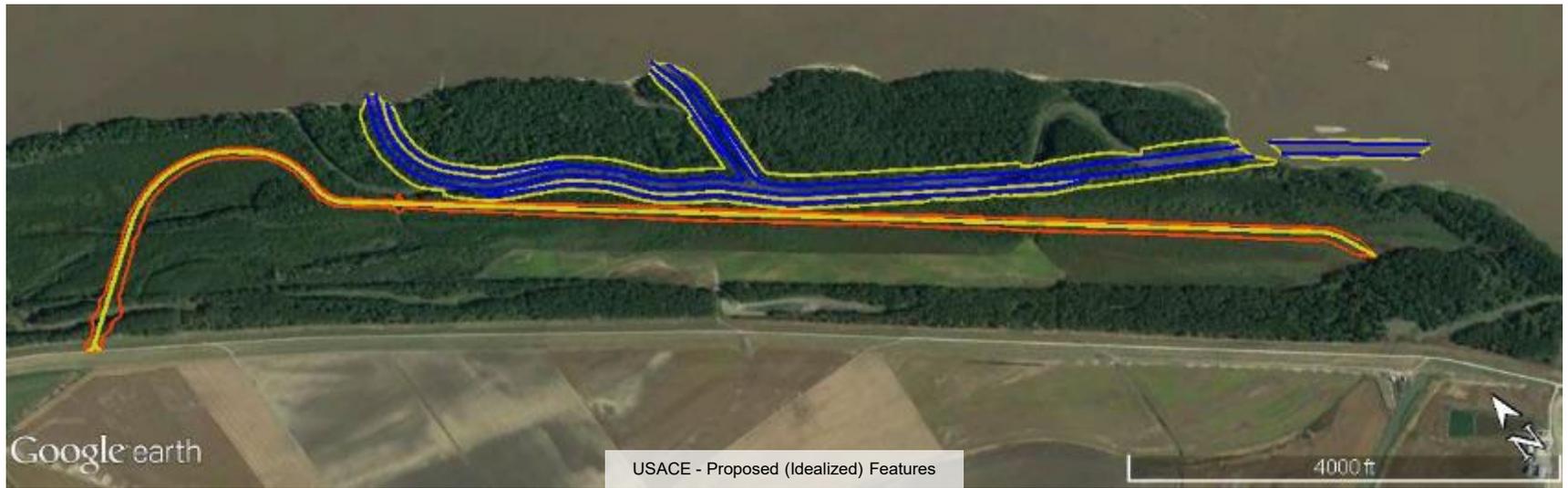
Wilkinson Island Soil Probe



Backwater Deposition (Fine)

Direct-Flow Deposition (Coarse)

BACKWATER DEPOSITION BASIN – CRAINS ISLAND



Upper Mississippi Restoration Program – Sediment Deflection Berm proposed to reestablish fine soils for Floodplain Forest restoration. Feasibility Report approved 4/2018 (USACE)



SIDE CHANNEL

- Reconnect side channel to main
- Provide bathymetric diversity –
benching and shallow slopes
- Minimize impacts to navigation and
dredging programs



DEPRESSIONAL WETLANDS

Cottonwood Island HREP Depressional Wetlands

- Provide disconnected wetland habitat
- Bottom elevation determined relative to river levels or capped in clay to retain water
- Provide topographic diversity within wetland footprint



POST STAGE 1 CONSTRUCTION



POST CONSTRUCTION (STAGE 1) VS. PRE CONSTRUCTION

Aug 2022



Sep 2012



STAGE 1 CONSTRUCTION



STAGE 1 CONSTRUCTION



STAGE 1 CONSTRUCTION



STAGE 1 CONSTRUCTION



STAGE 1 CONSTRUCTION



STAGE 1 CONSTRUCTION



PATH AHEAD

- Stage 2 Construction – FY24
 - Will include additional side channel restoration
- Stage 3 Construction – FY25
 - Completion of side channel excavation
- Stage 4 Reforestation – FY26-28
 - Tree plantings along the berm and ridges

