

Biological Opinion: Pools

Implement dike modification projects

- Blackbird Island (adj to Ted Shanks) - Completed
- Gilbert Island - Awarded
- Angle island - Planning
- Perry Island – Planning

Evaluate mussel resources

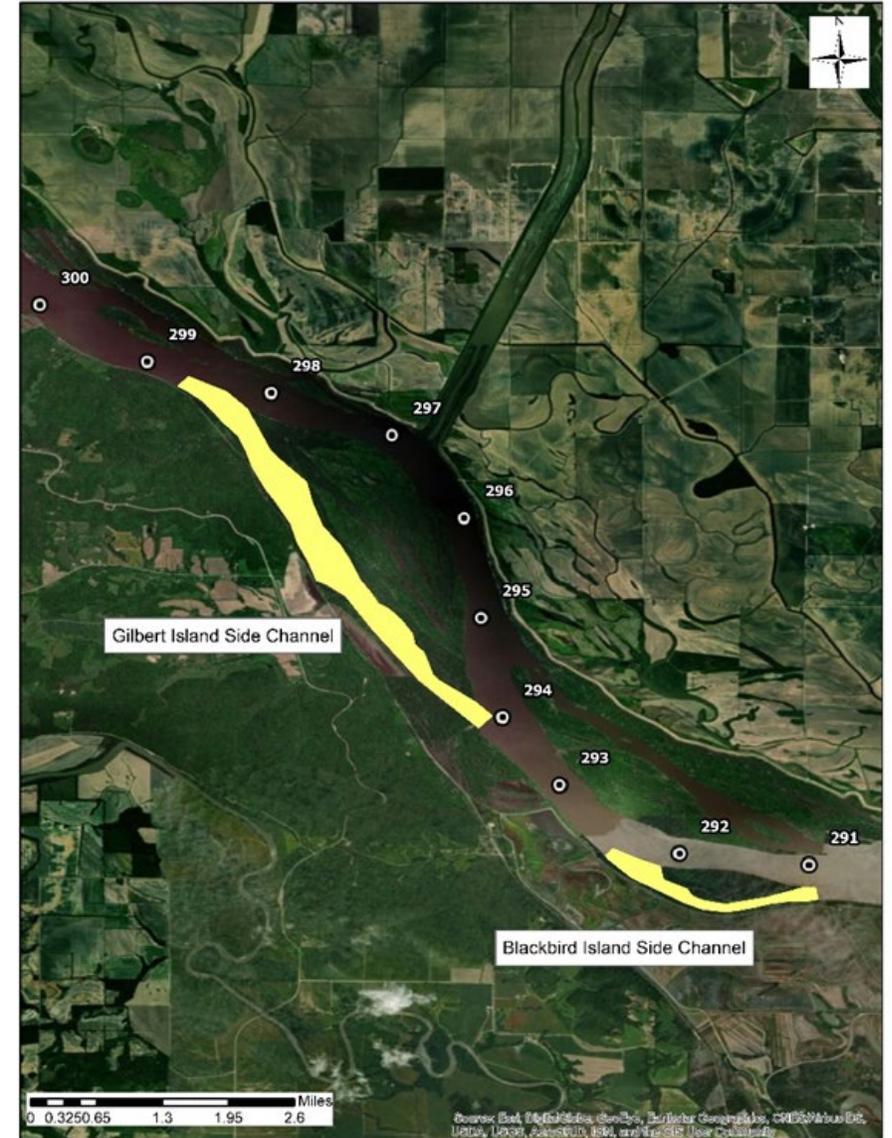
O&M Coordination

- Dike & revetment evaluations
- Gradual sloped revetment

Beneficial Use of Dredge Material

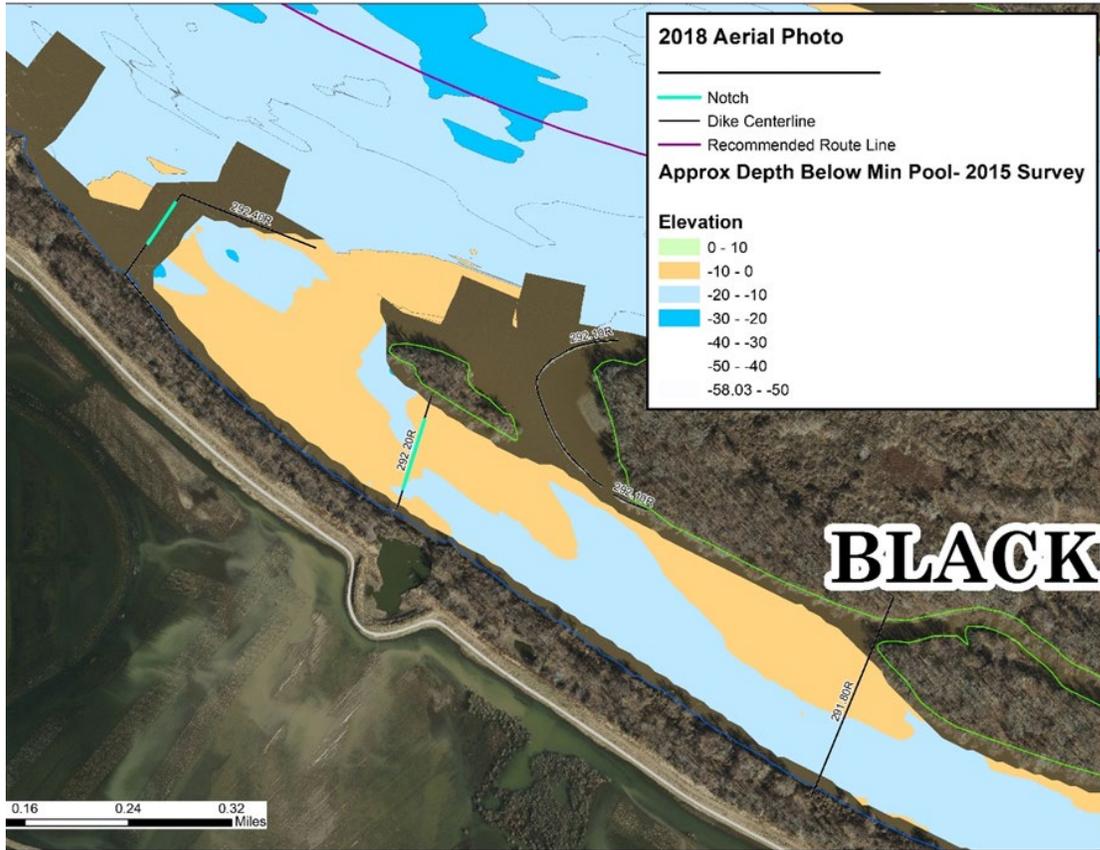
Implement dike modification projects

- Gilbert Island - Dike 298.10R notch 5' deep, 400' wide - Awarded
- Blackbird Island (adj to Ted Shanks) - Completed



Blackbird Island (RM 291 R)

- Transect sampling yielded 280 individuals across 21 species: *Amblema plicata* (three ridge), *Obovaria olivaria* (hickorynut), and *Obliguaria reflexa* (three-horn wartyback). 7.2 unionids/m²
- Two state-listed species (MO) were encountered – *Elliparia lineolata* (butterfly) and *Ligumia recta* (black sandshell).



Dike notching (upper dikes) and lowering (rock riffle) were completed in FY 21. Mussel survey completed in FY22 (August/September 2022).



Mussel Resources & Project Planning

- Angle Island (RM 285 R)
 - Potential dike modification site: substrate diversity
 - Mussel survey completed FY22
 - Transect sampling only: 72 individuals across 13 species with *Amblema plicata* (three ridge) and *Obliguaria reflexa* (three-horn wartyback)
- Perry Island Side Channel (RM 221 R)
 - Potential dike modification site: increase depth, substrate diversity
 - Mussel survey completed FY22
 - Transect sampling: 139 individuals across 14 species with *Amblema plicata* (three ridge), *Quadrula quadrula* (mapleleaf), and *Cyclonaias pustulosa* (pimpleback)
 - 0.6 unionids/m² and 33% juveniles
 - weathered dead *L. recta* (black sandshell) and *Potamils capax* (fat pocketbook)



MDC Sampling @ RM 285L