

# MUKWONAGO RIVER CULVERT REMOVAL PROJECT

Prepared by: Benjamin Heussner

Wisconsin Department of Natural Resources

Project Funding Source: Southeastern Wisconsin Fox River  
Commission

Project Sponsor: Kettle Moraine Natural History Association

# PROJECT UPDATE

- General Overview
- Accomplishments
- Partner  
Acknowledgement
- Future Plans
- Discussion



# PROJECT OVERVIEW

- Improve navigability
- Provide Bank Stabilization
- Enhance Wildlife and Fisheries Habitat
- Protect and Enhance Water Quality



# PERMITTING AND PLANNING

- Chapter 30 – General Permit & Dredging
- NR 216 – Erosion Control Permit
- ACOE General Permit
- Waukesha County Zoning Permit
- Endangered Resources Mussel Survey
- Fisheries Stream Shocking Survey
- Quantitative Fisheries Habitat Survey
- Elevations Survey



# EQUIPMENT AND MATERIALS

- Two dump trucks, two excavators, skid steer
- Aqua-barriers, sandbags
- Fieldstone - 70 tons
- Jute mat, waddles, seed, straw
- Bypass pumps – three six inch
- Dewatering trash pump
- Brush bundles, large woody structure



















# Aqua barrier placement and culvert numbering.









































# Aqua barrier placement and culvert numbering.











ECHO  
800-261-1199























# Future Plans

- Install log jams & brush bundles
- Remove culverts 2 through 6, remove sediment and stabilize banks
- *Kettle Moraine Land Trust & East Troy High School* outdoor classroom/volunteer program
- *NCI* outdoor classroom/volunteer program
- *Trout Unlimited* work days
- Fisheries and mussel sampling



# Building Partnerships



- Local Government
- Trout Unlimited
- Friends Groups
- Educational Institutions
- WDNR



# PARTNERSHIPS

- Dean Falkner & the City of Mukwonago Public Works Department
- Ron Eifler & the City of Brookfield Public Works Department
- Scott Kloskowski & the City of Muskego Public Works Department





# TROUT UNLIMITED - SOUTHEASTERN WISCONSIN & GARY BORGER CHAPTERS

- Work day removing brush and trees from culvert areas.





# NATURE'S CLASSROOM INSTITUTE

- Stream mapping.
- Buckthorn removal.
- Brush bundling.
- Mussel relocation.





# ACKNOWLEDGEMENTS

- *WDNR* - Geri Radermacher, Brian Hartsook, Will Wawrzyn, John Lyons, Lisie Kitchel, Jim Ritchie, Jim D'Antuono, Susan Beyler, Brian Glenzinski, Heidi Nelson
- *SEWRPC* - Dr. Tom Slawski, Dr. Jeffrey Thornton
- *ACOE* - Marie Kopka
- *WAUKESHA COUNTY* - Alan Barrows, Amy Barrows



# Aqua barrier placement and culvert numbering.





# Discussion

## THE MUKWONAGO

### Preserving the Waters



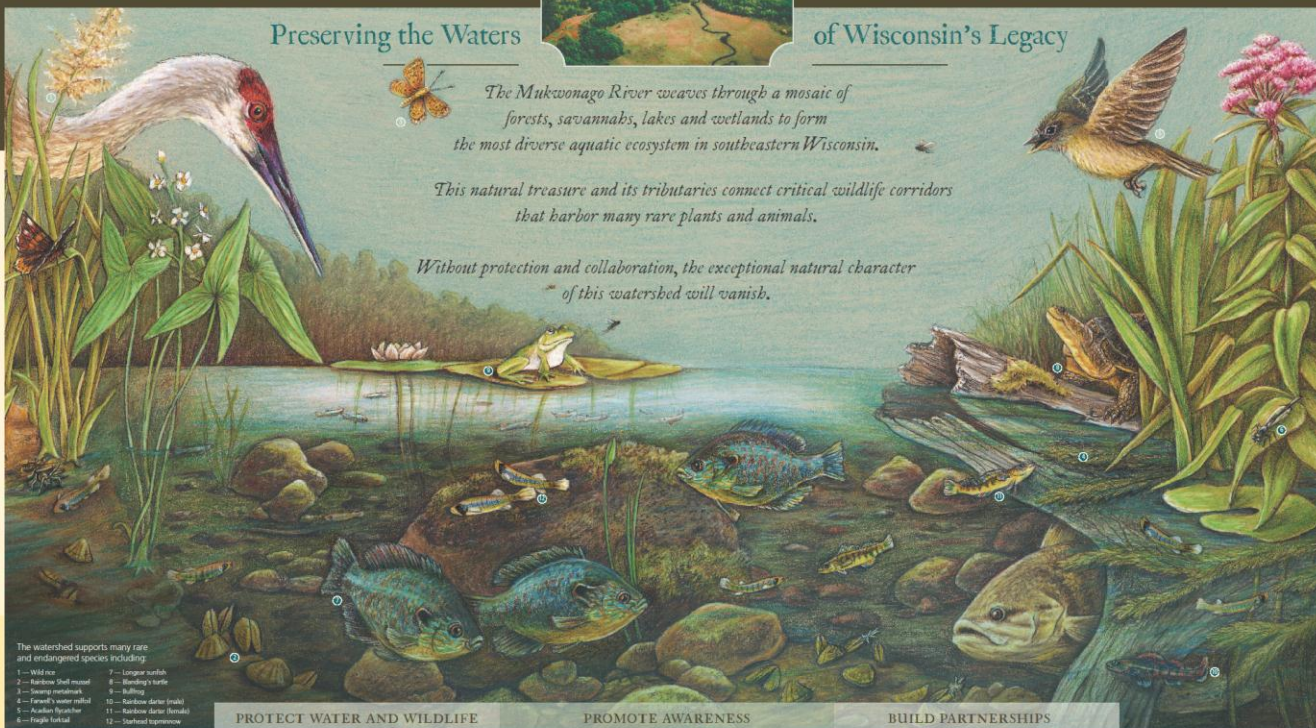
## RIVER WATERSHED

### of Wisconsin's Legacy

*The Mukwonago River weaves through a mosaic of forests, savannas, lakes and wetlands to form the most diverse aquatic ecosystem in southeastern Wisconsin.*

*This natural treasure and its tributaries connect critical wildlife corridors that harbor many rare plants and animals.*

*Without protection and collaboration, the exceptional natural character of this watershed will vanish.*



The watershed supports many rare and endangered species including:

- |                          |                        |
|--------------------------|------------------------|
| 1 - Wild rice            | 7 - Longear sunfish    |
| 2 - Rainbow shell mussel | 8 - Woodcock turtle    |
| 3 - Spotted reed bed     | 9 - Snapping turtle    |
| 4 - Foxglove water lily  | 10 - Rock bass (brook) |
| 5 - American water lily  | 11 - Rock bass (brook) |
| 6 - Purple loosestrife   | 12 - Spotted sunfish   |

#### PROTECT WATER AND WILDLIFE

preserve groundwater recharge

- Groundwater recharge sustains this entire river system.
- Prevent contamination from stormwater access points.
- Practice water conservation.

#### PROMOTE AWARENESS

minimize impacts and threats

- Learn to identify invasive species.
- Plant a rain garden, landscape naturally.
- Maintain natural vegetation along the shores of lakes and rivers.

#### BUILD PARTNERSHIPS

work together to preserve the watershed

- Join a citizen science group or participate in local cleanup efforts.
- Monitor water quality and control invasive species.
- Experience the water. Get outside. Introduce a friend to fishing and wildlife watching.

