



HA 05

Fisheries Habitat Protection on Strategic North Central Minnesota Lakes – ML2026

Northern Waters Land Trust

 The Minnesota Star Tribune

By Kim Hyatt
The Minnesota Star Tribune

‘Priceless property’: 3M’s historic northern Minnesota resort to become public land

Public trusts paid \$5.3 million for the 450 acres near Park Rapids and will turn over the property to the DNR



Tori McCormick// March 20, 2025

MPRnews

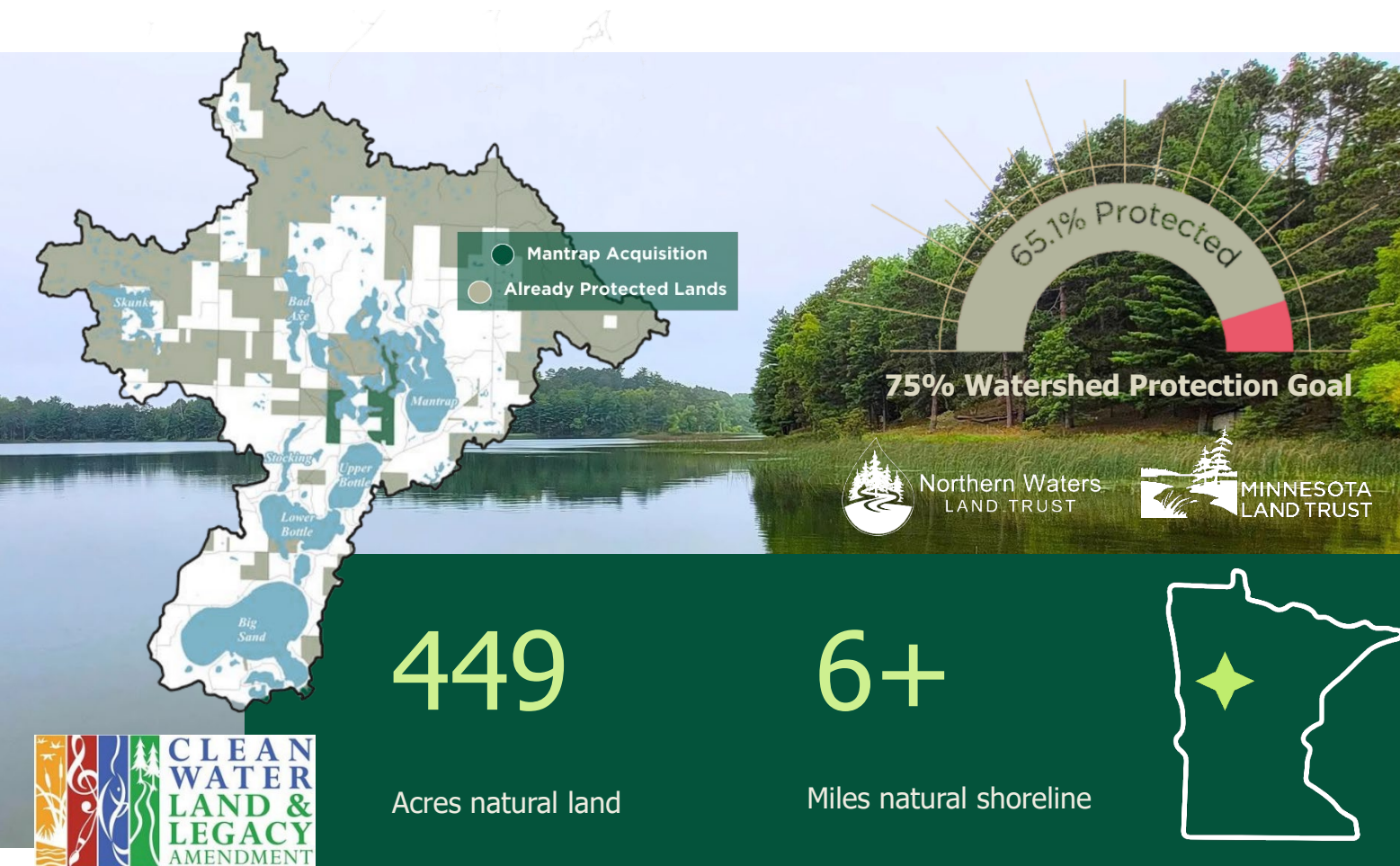
Land deal leads to 450-acre wildlife management area on Minnesota’s Mantrap Lake near Park Rapids

Environmental News

Matthew Holding Eagle III

March 14, 2025 5:50 PM

Former 3M property in Hubbard County will become WMA



Goals & Outcomes



1,517

Acreage Goal

2,217

Acres Protected

6.16

(mi) shoreline goal

7.26

(mi) shoreline protected

890K

Leverage goal

2.2 MM

Leverage achieved

16

Properties transferred to public ownership

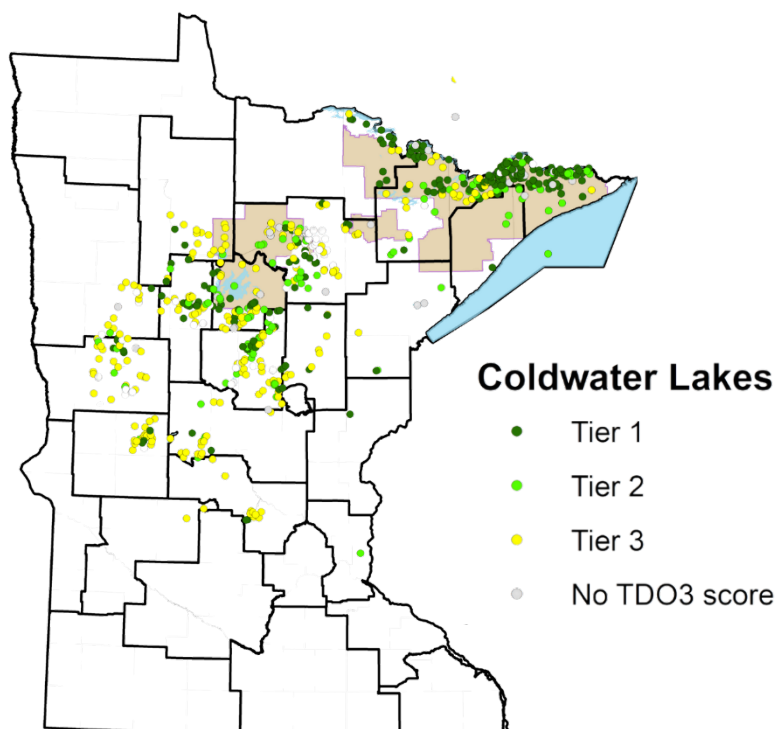
More work to be done

Cold-water fisheries are increasingly under threat, putting at risk the walleye, loon, and muskie populations that rely on them. When priority lands become available, timing is everything. Continued OHF funding ensures we can respond right away and protect cold-water lakes, like Mantrap Lake, before these unique habitats are lost.

Proven success

We have been working to protect cold-water fisheries through this program for over ten years. In that time, NWLT has consistently exceeded our leverage, acreage and shoreline protection goals. A majority of our available funds are now committed to in-progress projects.

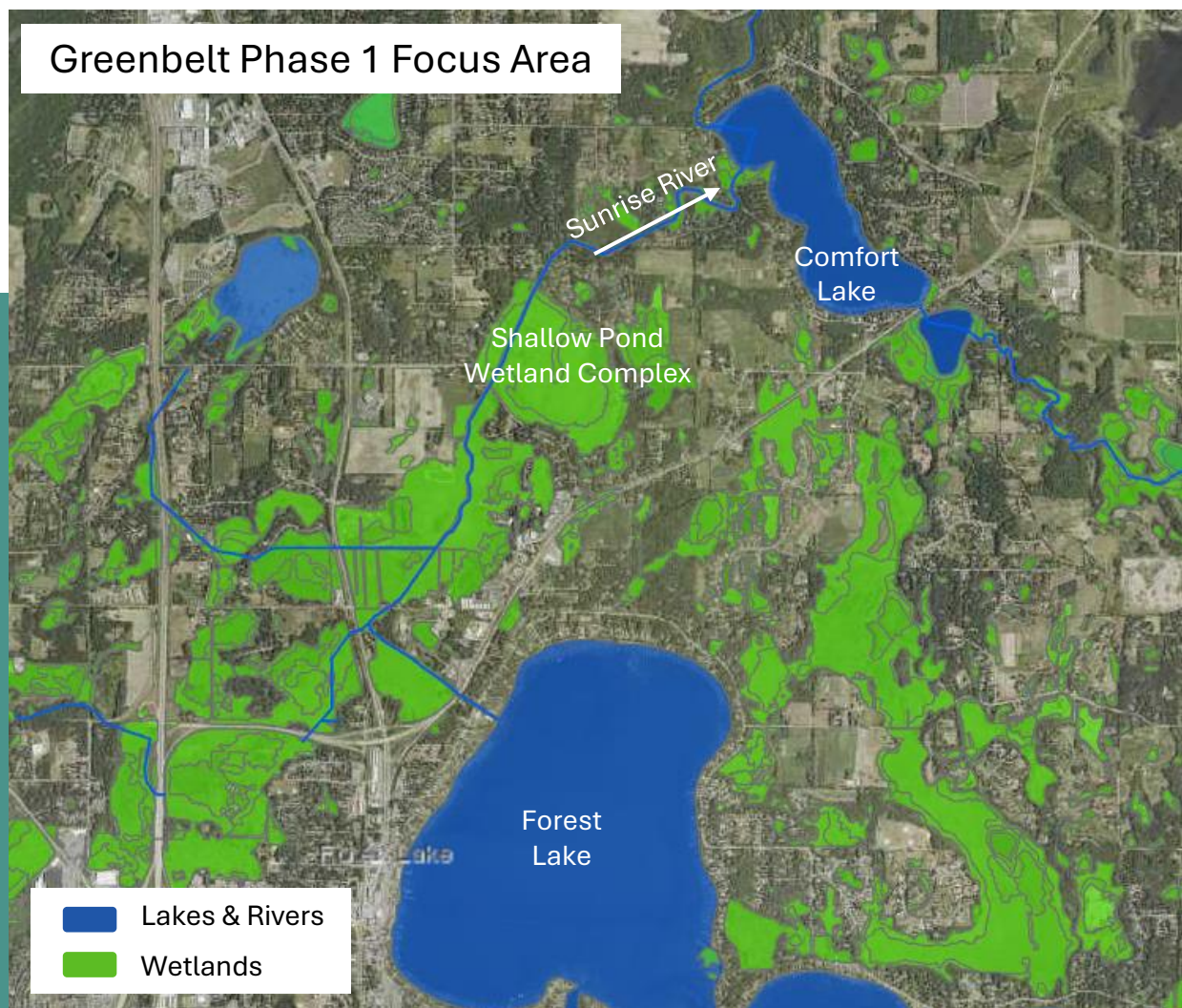
Spent vs. Committed Funds for Open Fisheries Grants





Proposal Highlights

- Grant Request: \$3.3 million | Confirmed Leverage: \$150,000 (4.5%)
- Permanently protect 300 acres of wetland habitat and some surrounding upland buffer with easements and acquisitions – achieve multiple habitat benefits and hydrologic benefits
- Rapidly developing cities with altered wetlands and no wetland bank credits in our area (Area 6) – must protect existing wetlands against further degradation and outsourcing credits elsewhere
- Note that our 2023 Lessard-Sams OHF grant will be completely spent by yearend 2025, purchase agreement is executed





Project Benefits

- Prevents habitat fragmentation due to development and protects habitats.
 - Hardwood swamp, shallow marsh, shrub swamp, riparian, shallow open water, wet meadow, and seasonally flooded basins
 - DNR-mapped area of black-ash-yellow-birch-red maple-basswood swamp (WFn55b) is present at the inflow to Comfort Lake, and is a native plant community vulnerable to extirpation (S3)
 - Multiple records of Blanding's turtles are present within the area and vicinity. The varied wetland habitats and adjacent sandy uplands provide a large tract of habitat for this state-threatened species.
 - A lake sturgeon record is also present at near the inlet to Comfort Lake, likely due to connectivity with the Sunrise River which flows through the corridor (DNR Fisheries Survey Report, 2005).
- Aligns with state plans and One Watershed One Plan
 - DNR Wildlife Action Network, important under climate change scenarios
 - DNR Fish Habitat Plan, moderate watershed disturbance, realistic chance for full restoration
 - Lower St. Croix River One Watershed One Plan, Sunrise River priority subwatershed for critical habitat protection, groundwater sensitivity, wetland restoration/creation, native plant communities that support Species of Greatest Conservation Need, climate resiliency
- Recreational benefits
 - Hiking
 - Wildlife and bird watching
 - Hunting and fishing within local municipality ordinances

HA-09 Metro Big Rivers

Metro Big Rivers (MBR) Phase 16 will protect, restore and enhance 2,233 acres of wildlife habitat in the Metropolitan Urbanizing Area, with an emphasis on the Mississippi, Minnesota and St. Croix Rivers and their tributaries.

Metro Big Rivers is a proven, dynamic partnership* that gets results with Outdoor Heritage Funds for the LSOHC. MBR protects, connects and improves conservation lands in the metropolitan urbanizing area, expanding habitat for wildlife and Species of Greatest Conservation Need. MBR also creates and enhances opportunities for Twin Cities residents to connect with nature and wildlife near where they live.

Metro Big Rivers Phase 16 - 2,233 acres
Protect 841 acres • Restore / Enhance 1,392 acres

Outdoor Heritage Fund Request - \$21,386,800
Anticipated Leverage - \$1,549,600 (7.5%)

Metro Big Rivers exceeds goals and leverages OHF funds. Results to-date (through Phase 14):

- 11,400 acres complete + 2,000 in progress = 13,400 acres
- 100% + of acreage goals achieved
- OHF funds leveraged > 40% with \$20 million of other funds to-date

Why invest OHF funds in the Metro Urbanizing Area:

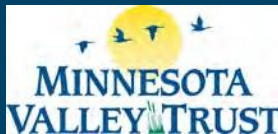
- Protect critical habitat and improve degraded habitat along and near the migratory flyways and tributaries in the metro area
- Protect significant habitat in the metro area from development
- Benefit wildlife and Species of Greatest Conservation Need
- Improve water quality and in-stream food availability
- Ensure 3 million Twin Cities metro residents have high-quality opportunities to connect with nature near where they live
- Introduce more people to nature-based activities like hunting, fishing, wildlife observation, photography, hiking and paddling

Why trust and invest in Metro Big Rivers Phase 16:

- MBR achieves the LSOHC's goals in the Metropolitan Urbanizing Area.
- MBR aggressively leverages OHF funds.
- By July 2026, MBR will have completed Phases 1-11, be almost done with Phase 12 and be well into Phases 13 - 15.
- MBR has spent \$52 million in OHF grants to-date. We have \$13.3 million left in current grants (excluding Phase 15 that just started).

Metro Big Rivers works with public partners and landowners committed to conservation to achieve the priorities of the LSOHC for Outdoor Heritage Funds in the Metro Urbanizing Area

**MN Land Trust is not participating in the Phase 16 proposal but remains an integral partner.*



For more information:
Neal Feeken
Minnesota Valley Trust
952-207-0247
nfeeken@mnvalleytrust.org



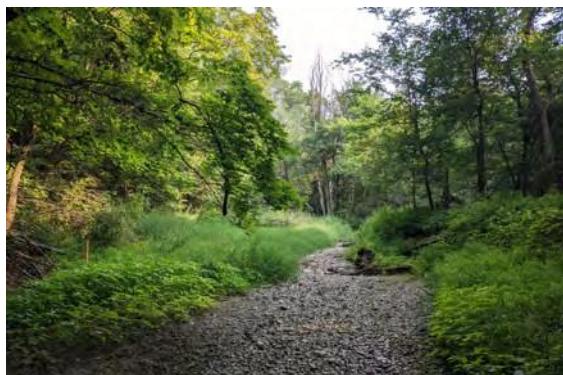
Metro Big Rivers Selected Accomplishments

Friends of the Mississippi River restored and enhanced prairie and forest habitat at the new William H. Houlton Conservation Area through MBR Phases 5, 7, 8 and 12. This 335-acre site at the confluence of the Elk River and Mississippi River was acquired by the Trust for Public Land with MBR Phases 2 and 3. FMR and volunteers removed invasive woody and herbaceous plants from the floodplain and upland forest. The former agricultural fields and degraded grasslands were restored to diverse native prairie through seeding, mowing and prescribed burns. Through evaluation of restoration techniques and how well wildlife is returning, FMR found high success in the restoration efforts. A bird survey identified the endangered Henslow's sparrow and four other Species of Greatest Conservation Need: the dickcissel, grasshopper sparrow, LeConte's sparrow and sedge wren.



Great River Greening enhanced 74 acres of oak forest through MBR Phase 8 at Carroll's Woods & Schwarz Pond Parks. Located in Dakota County adjacent to Rosemount High School, the urban park complex is a mix of oak savanna and woodland forests providing an oasis for wildlife habitat in an otherwise built-up urban environment. Enhancement activities focused heavily on addressing the infestation of invasive tree, shrub and herbaceous species. This required multiple years of activities including cutting and removing, follow-up treatments and goat grazing. The final seasons of activities also included planting native understory plugs and sowing native seed into enhanced areas. Through numerous volunteer events hosted by GRG, community members and high school students assisted with habitat restoration and learned about the ecology and importance of the site.

Minnesota Valley Trust acquired 196 acres in Carver County for the Rapids Lake and San Francisco Units of the Minnesota Valley National Wildlife Refuge with four OHF grants - MBR 5, 6, 7 & 8. These strategic acquisitions protected priority lands from residential development and created new opportunities for the public to engage in wildlife-based recreation, education and interpretation. MVT and FWS have been restoring the oak savannas and remnant prairies, as well as converting former agricultural fields to high-quality prairies and wetlands. The restoration and enhancement work was completed with MBR 7, MBR 9, Conservation Partners Legacy Grants and other non-state funds.



Minnesota Land Trust protected with conservation easement the 84-acre Sand Creek (Norris) property in Scott County in November 2022 with MBR 9.

The conservation easement permanently protects forested bluffs, a perennial stream, and wet-mesic hardwood forest within the Sand Creek watershed, a tributary of the Minnesota River. The property is near an extensive complex of public natural areas along the Lower Minnesota River, including the 5,490-acre Minnesota Valley State Recreation Area and the 14,000-acre Minnesota Valley National Wildlife Refuge.



Trust for Public Land acquired in fee title 1,833 acres of diverse habitat in northern Washington County to create the new Keystone Woods WMA. Acquired in 2 phases

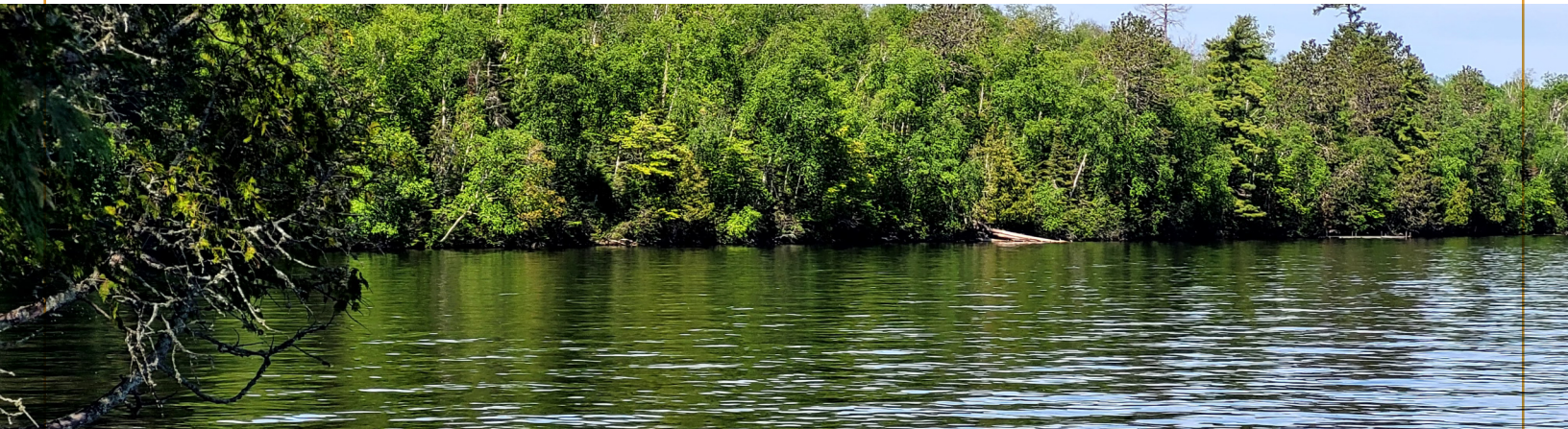
in the fall of 2023, this acquisition utilized 7 OHF appropriations (4 MBR grants). Formerly known as Kelley Farm, this property was one of the largest tracts of undeveloped land in the Metro Region. It provides high biodiversity habitat for a variety of wildlife species. The land was transferred to the MN DNR last fall and is providing outstanding outdoor recreation opportunities.

TPL is leading a multi-phase restoration and enhancement process on this land, which will include prairie, wetland, woodland, and oak savanna. Work has already begun to remove woody invasive species. Over the next 5 to 7 years, approximately 1,700 acres of prairie, forests, and wetlands will be restored or enhanced, ensuring resilient, high-quality habitat for wildlife and recreational users to enjoy.



HA13

Protecting Minnesota's Lakes of Outstanding Biological Significance



Minnesota Land Trust & Northern Waters Land Trust have completed seven easement and two acquisition projects that have protected 1,019 acres and 30,727 feet of shoreline. Here is one highlight project from 2025:

The Lake Vermilion (VLM) easement closed in June of 2025. This project protects 284 acres of quality habitat and 2,055 ft of shoreline on Lake Vermilion, a Lake of Outstanding Biological Significance and one of Minnesota's premier recreational lakes on the edge of the BWCAW.

The conservation easement protects important habitats that support a variety of Species in Greater Conservation Need, including northern

goshawk, common loon, bald eagle, red-shouldered hawk, yellow-bellied sapsucker, Laurentian tiger beetle and, Canada lynx. This conservation easement supports the continuation of Camp Vermilion. Over the past year, 436 campers and 4,500 retreat guests enjoyed this property. In addition, the camp provided outdoor leadership development opportunities for 29 camp counselors.

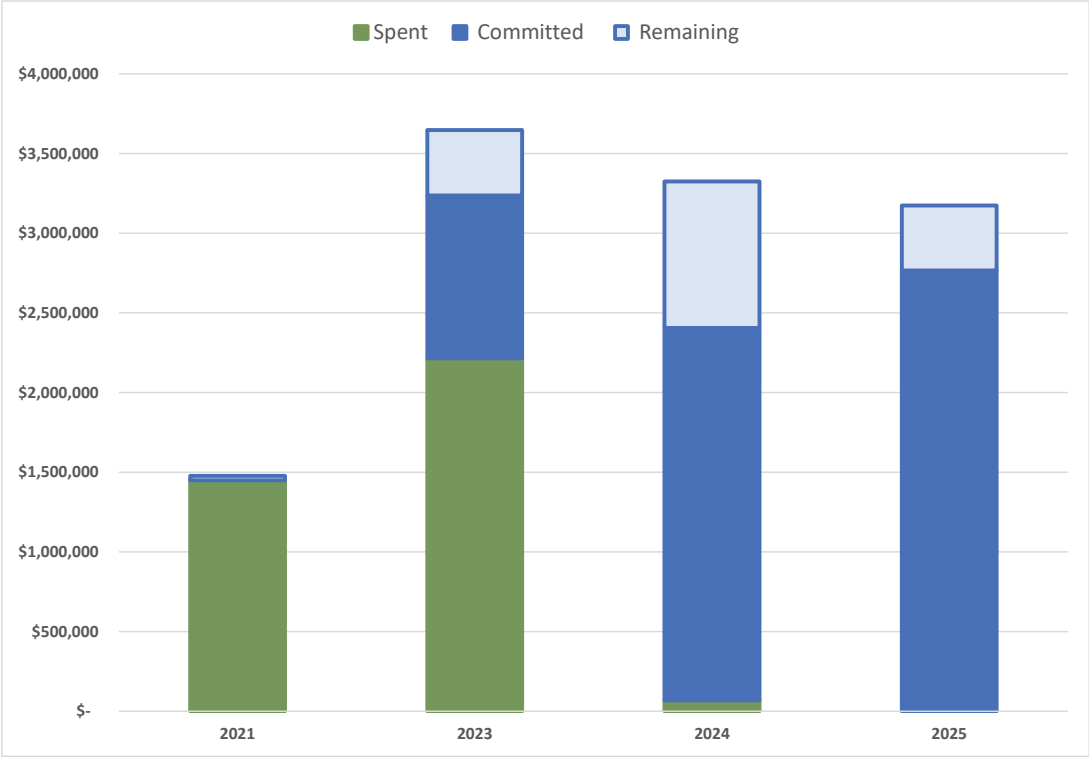


Photos: Camp Vermilion part of Voyageurs Lutheran Ministry



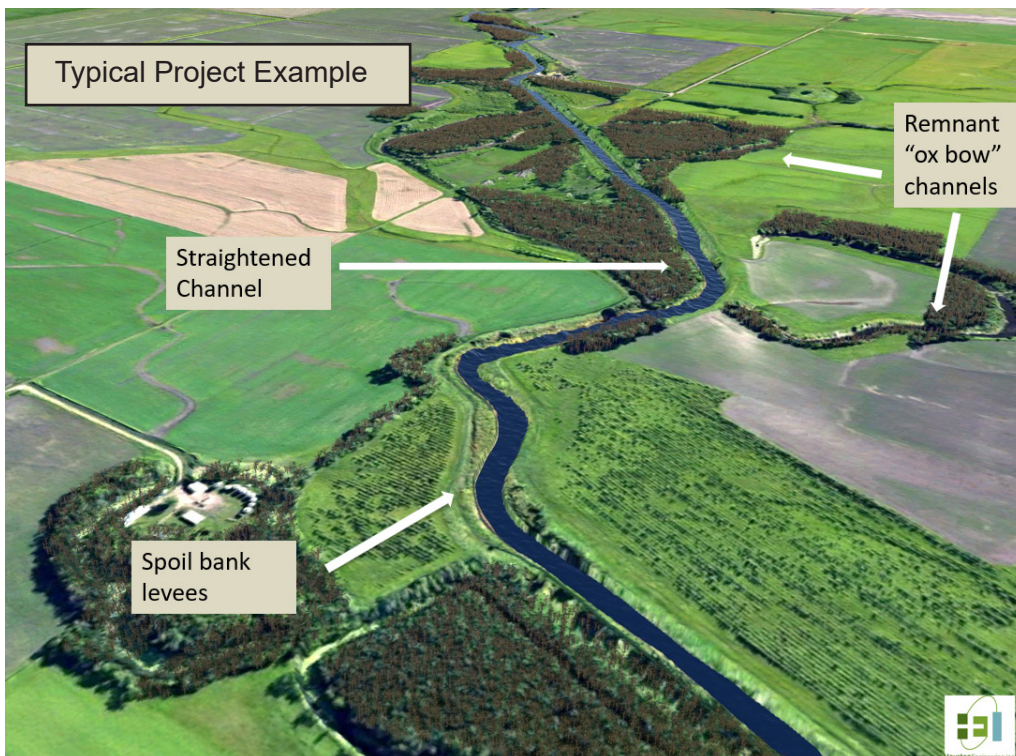
Grant Phase		Budget							Output									
		Protection			Total				Leverage			Protection						
												Acres Protected			Shoreline (mi) Protected			Projects
		Award	Spent	Committed	Award	Spent	Committed	Remaining	Proposed	Actual	% of Goal	Proposed	Outcome	% of Goal	Proposed	Actual	% of Goal	
2021 LOBS 1	In Progress	\$ 1,477,000	\$ 1,448,902	\$ -	\$ 1,477,000	\$ 1,448,902	\$ -	\$ 28,098	\$ 180,000	\$ 442,500	246%	216	715	331%	0.50	4.64	928%	6
2023 LOBS 2	In Progress	\$ 3,648,000	\$ 2,215,034	\$ 1,022,000	\$ 3,648,000	\$ 2,215,034	\$ 1,022,000	\$ 410,966	\$ 408,600	\$ 950,165	233%	451	304	67%	0.50	1.18	237%	1
2024 LOBS 3	In Progress	\$ 3,324,000	\$ 67,867	\$ 2,337,700	\$ 3,324,000	\$ 67,867	\$ 2,337,700	\$ 918,433	\$ 470,000	\$ -	0%	624	0	0%	1.00	0.00	0%	0
2025 LOBS 4	In Progress	\$ 3,173,000	\$ 1,422	\$ 2,764,000	\$ 3,173,000	\$ 1,422	\$ 2,764,000	\$ 407,578	\$ 265,200	\$ -	0%	474	0	0%	1.00	0.00	0%	0
2026 LOBS 5	Proposed	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		0	0		0.00	0.00		0
Program Totals		Budget							Protection									
		Protection			Total				Leverage			Acres Protected			Shoreline Protected			Projects
												Proposed	Outcome	% of Goal	Proposed	Actual	% of Goal	
		Award	Spent	Committed	Award	Spent	Committed	Remaining	Proposed	Actual	% of Goal	Proposed	Outcome	% of Goal	Proposed	Actual	% of Goal	
	In Progress	\$ 11,622,000	\$ 3,733,225	\$ 6,123,700	\$ 11,622,000	\$ 3,733,225	\$ 6,123,700	\$ 1,765,075	\$ 1,323,800	\$ 1,392,665	105%	1,765	1,019	58%	3.00	5.82	194%	7
Totals Across All Grants		\$ 11,622,000	\$ 3,733,225	\$ 6,123,700	\$ 11,622,000	\$ 3,733,225	\$ 6,123,700	\$ 1,765,075	\$ 1,323,800	\$ 1,392,665	105%	1,765	1,019	58%	3.00	5.82	194%	7

This program has a strong pipeline of high-quality projects, with landowner interest exceeding funding availability. During our Spring landowner outreach we received 12 quality landowner applications for an estimated easement value of \$3.9 million dollars. This landowner interest exceeds available funding by approximately \$2 million dollars. We see continued strong interest in our LOBS program and have been receiving inquiries for high quality properties throughout the year. Based on this strong pipeline of projects and ongoing strong interest, we feel confident we can deliver high quality easements at the requested funding level.



Red River Basin Riparian Habitat Program Phase II

Red River Watershed Management Board



History of the Red River Watershed Management Board

The Red River Watershed Management Board (RRWMB) was created in 1976 by the Minnesota Legislature to provide an organization with a basin-wide focus on flooding solutions. It exists as a Joint Powers Board of seven watershed districts within the Red River Valley, including the Joe River, Two Rivers, Roseau River, Middle-Snake-Tamarac Rivers, Red Lake, Wild Rice, and Bois de Sioux. The RRWMB encompasses 21 counties in its jurisdictional boundary, and many cities. Additionally, the RRWMB is a taxation authority.

Goals of the Red River Basin Riparian Habitat Program

- Increased permanent riparian habitat
- Increased quality of habitat
- Enhanced connectivity with existing habitat corridors
- Enhanced water quality
- To have a program in place that allows landowners to enroll marginal riparian agricultural lands into the Red River Basin Riparian Habitat Program (RRBRHP) rather than having continued farming when land ownership changes.



Accomplishments of the RRWMB

60 + Flood Mitigation
Projects



30+ Water Quality
Projects



LiDAR



Various Other
Modelling, Technical,
and Educational Efforts



And now the Red
River Basin Riparian
Habitat Program

Red River Watershed Management District

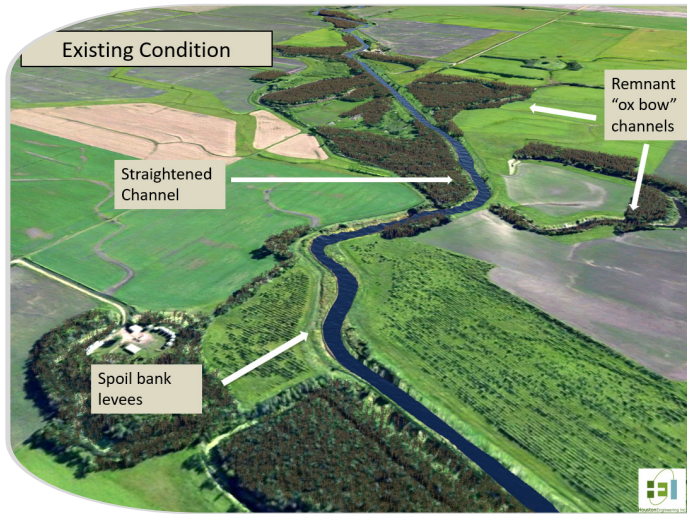
11 5th Ave East Ste B
Ada, MN 56510

218.784.9500

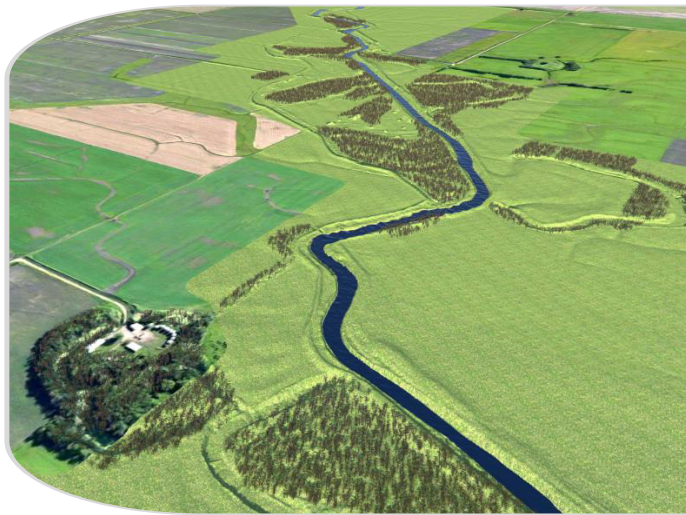
rrwmb.us

Proposal #: HA15

Typical Project Implementation Process



**Existing
Condition**



Phase 1:
Land Easements
and Vegetative
Habitat Restoration

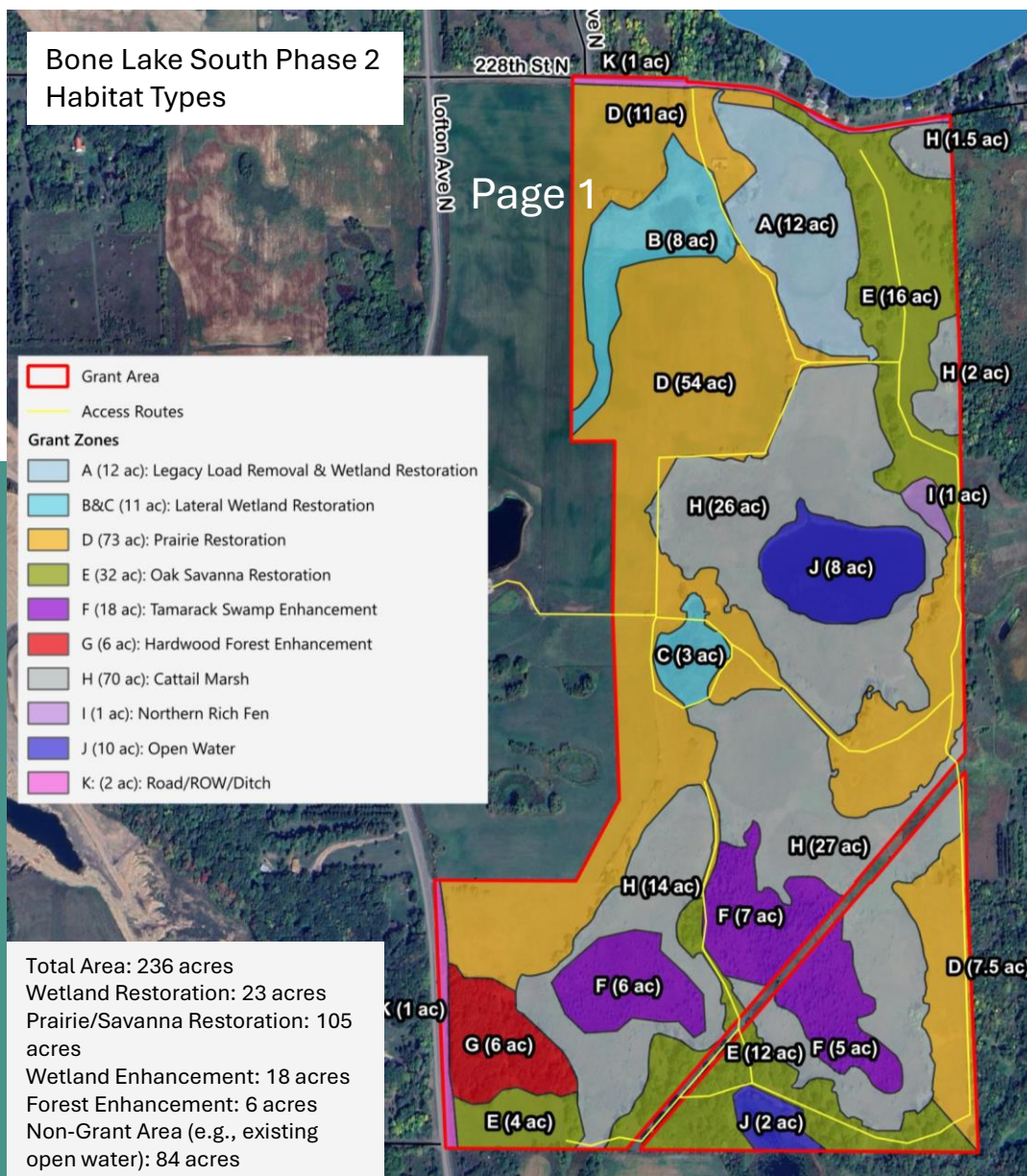


Phase 2:
Channel
Rehabilitation



Proposal Highlights

- Grant Request: \$1.6 million | Confirmed Leverage: \$162,500 (10%)
- Phase 1 (2023 LSOHF): Purchase agreement for target 238-acre property in hand. Closing date anticipated to occur prior to the end of 2025. Full grant to be spent by yearend.
- Phase 2 (2026 LSOHF): Restore and enhance wetland, Tamarack swamp, prairie/oak savanna, hardwood forest
- Habitat for Blandings turtles, monarch butterfly, trumpeter swan, mallards, Rusty patched bumblebee
- Excellent opportunity for public use: hunting, hiking, bird watching



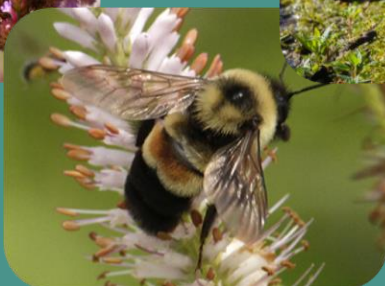


Habitat Benefits

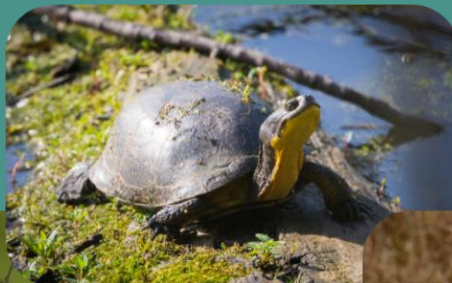
- LSOHC section priority for Northern Forest Region: “Restore and enhance habitat on existing protected properties, with preference to habitat for rare, endangered, or threatened species identified by the Minnesota County Biological Survey”
- Restoration Activities: 128 acres
 - Remove legacy phosphorus-laden sediments and restore wetland to natural functionality: 23 acres
 - Prairie restoration and oak savanna restoration: 105 acres
- Enhancement Activities: 24 acres
 - Tamarack swamp enhancement: 18 acres
 - Hardwood forest enhancement: 6 acres
- Aligns with state plans and One Watershed One Plan
 - DNR Fish Habitat Plan, moderate watershed disturbance, realistic chance for full restoration
 - Lower St. Croix River One Watershed One Plan, groundwater sensitivity, wetland restoration/creation, native plant communities that support Species of Greatest Conservation Need, climate resiliency



Monarch Butterfly



Rusty Patched Bumblebee



Blanding's
Turtle



Trumpeter Swan



Mallards

Dam Removal

Options, Example, & Benefits

In this appropriation, MN DNR proposes several dam removal projects as a means of restoring stream health. These projects are restoring and reconnecting hundreds of miles of riverine habitat. *See list of benefits on back.*

The following three options have been used to address dams by MN DNR. They are listed in order of benefit to river ecosystems.

- 1. Complete removal**, full restoration of stream function
 - » applicable for dams on stream networks, not lake outlets
 - » provides the most ecologic and safety benefits
 - » constraints including upstream uses, community ties, land ownership, accumulated reservoir sediment
- 2. Dam modification** with Rock Arch Rapids, *see below*
 - » provides numerous ecologic, safety, and recreational benefits
 - » versatile design
- 3. By-pass fishway**, nature-like channel around dam
 - » when dam removal or modification is not an option
 - » provides fish passage, but does not address other ecologic or safety issues of dams



The deteriorating dam in Pelican Rapids was modified into a Rock Arch Rapids winter 2022/2023. The ramp gradually steps down the water 5 feet over 12 arches.

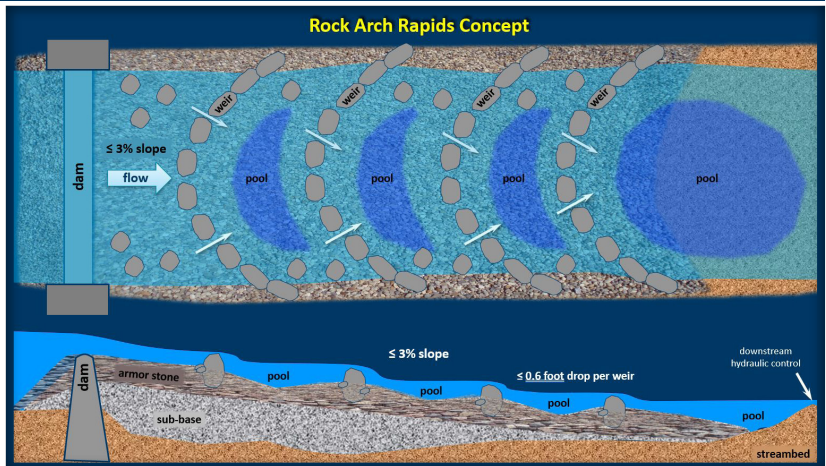


Rock Arch Rapids Development and Features

The Rock Arch Rapids (RAR) design concept was developed from years of research on natural stream features. Various naturally occurring riffle and rapids features were surveyed and analyzed for function, stability, fluid dynamics, habitat, and passability. Variations of this design have been constructed around the state (first one in 1994), studied, and refined over the years. (*Simplified graphic*) Currently, over 75 RAR have been constructed around the state.

Each RAR project is designed specifically since each river site is unique - considering total drop in water level, ramp length, flow conditions, flood size and frequency, floodplain concerns, structural constraints, fish community, etc. Each project also goes through a rigorous modeling process.

The RAR is composed of a rock ramp base that replaces the abrupt drop in water level with a gentle slope (less than 3%). The rock arches, or weirs, nested within the ramp are made of large boulders positioned in an arch with the top of the arch facing upstream and set lower than the 'legs' of the arch. This focuses the flow to the mid-line of the rapids. The large weir boulders are



buried halfway or more in the rock base with the top of each boulder set at very precise elevations, to ensure less than half a foot of drop per weir. The boulders are set higher continuing towards the banks to dissipate flow energy along the banks and create slower flow areas for weaker swimming fishes. The boulders are also placed with varying sized gaps in between to create fish passage openings through the weirs. Deeper pool habitat is created between the arches for resting areas and low flow refuge.

Benefits of dam modification using the Rock Arch Rapids design

Structural and Safety Benefits:

- » structurally stable
- » require minimal or no maintenance
- » improve safety by eliminating hydraulic undertows or rollers known as drowning machines
- » protect banks by directing flow towards mid-channel

Ecological Benefits:

- allows fish passage under all flow conditions (from spring floods to summer droughts) for fishes of all sizes and swimming abilities
- can include a low-flow channel for year-round aquatic passage
- fish species absent upstream return after dams are modified
- upstream expansion of native mussels via native fish hosts
- wildlife passage can be incorporated with bankfull flats
- creates high gradient stream habitat that is rare and crucial to the stream community that is often buried/submerged by dams
- accumulated reservoir sediments are stabilized in place
- stabilizes stream grade, or slope, preventing further up or downstream damage or degradation
- interstitial spaces in the rock ramp allow some subsurface flow through the hyporheic zone (the river's liver) that is very important to stream health and water quality
- restores natural sediment transport during higher flows through the boulder gaps and proper cross-sectional area
- design can be modified into alternating sine waves to accommodate larger, deeper pools for larger bodied fish species

Recreational Benefits:

- ◆ recreational boating opportunities for canoes, kayaks, paddle-boards, and tubing (flatter slopes are safer)
- ◆ fishing opportunities - migrating and spawning fish are drawn to this habitat and intentionally placed flat boulders can be incorporated as fishing platforms
- ◆ wildlife viewing opportunities for spawning fish and visiting birds and wildlife

Additional benefits of complete dam removal:

- full restoration of river processes, including transport of water, sediment, debris, nutrients, and more by returning lake-like reservoirs back into riverine habitat
- full restoration of migratory pathways
- full recovery of riverine habitat that was buried or inundated which is often high-gradient, rare, crucial to spawning habitat





Mud River Enhancement Project

Marshall County, Minnesota

This project will improve the Agassiz National Wildlife Refuge migratory bird habitat by designing a nature-based channel to convey incoming Mud River flow. These enhancements will mimic natural function and provide an ecosystem benefit that is lacking on the landscape in northwest Minnesota.

PROJECT GOALS

1

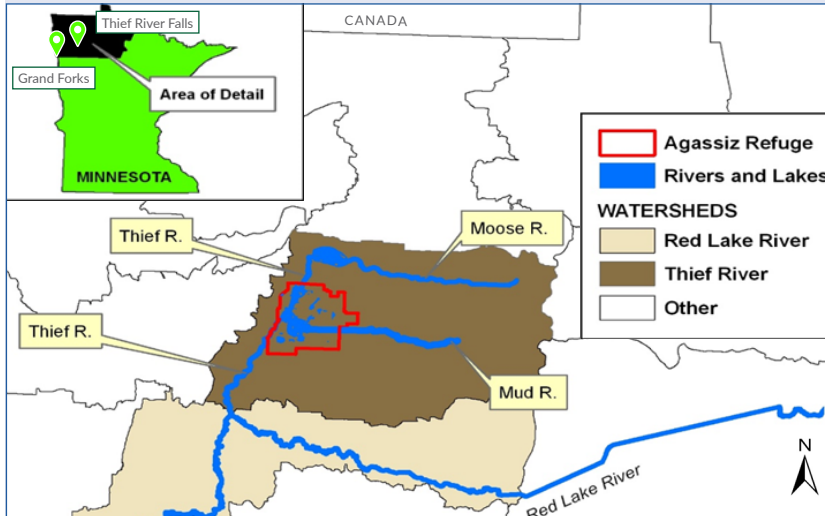
Enhance natural riverine, riparian, and floodplain functions along the Mud River.

2

Improve migratory bird habitat and restore ecological functions that were lost due to drainage practices.

3

Mitigate upstream influences that negatively effect the refuge's wetlands.



Project Outcomes and Benefits

- Increase meandered stream habitat for wildlife
- Increase floodplain access during flood events
- Improve water quality and quantity across the watershed
- 6 mile increase in stream habitat and 700 acres of floodplain access



BEFORE

Limited Value Habitat
Low Plant Diversity



AFTER

High Value Aquatic Stream
Transitioning to Riparian
Habitat and Upland Trees

Mud River Enhancement	Funding Request	Total Leverage	Leverage Source	TOTAL
	\$5,100,000	\$655,000	DNR, USFWS, RLWD	\$5,755,000

Total Requested Funding by Resource Type

Type	Wetland	Prairie	Forest	Habitat	TOTAL FUNDING
Restore	\$4,000,000	-	-	-	\$4,000,000
Enhance	\$1,100,000	-	-	-	\$1,100,000
Total	\$5,100,000	-	-	-	\$5,100,000

Complete Project Scope:

Balancing Functionality and Cost

Constructing only a portion of the stream restoration would make it difficult to achieve meaningful ecological function while remaining financially responsible.

LEARN MORE

For more information about this or other projects contact the RLWD.



Redlakewatershed.org



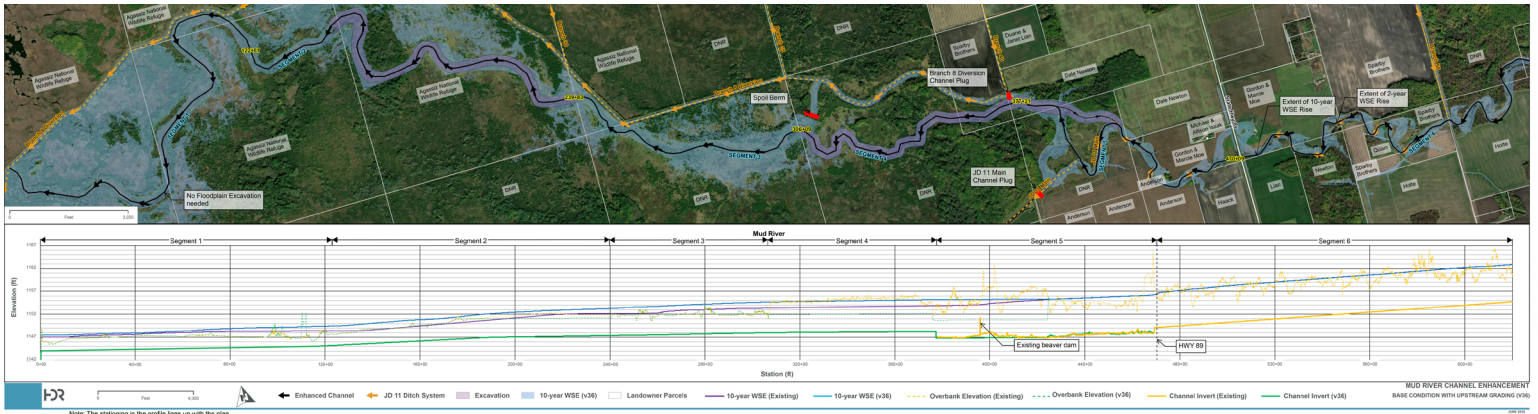
218.681.5800



RLWD@redlakewatershed.org

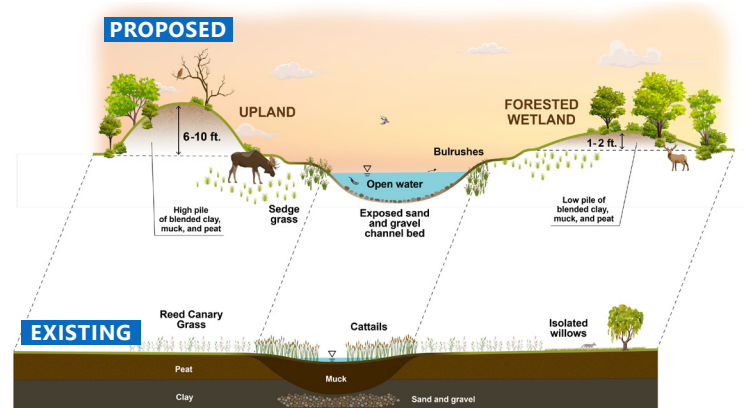


PROJECT DESIGN

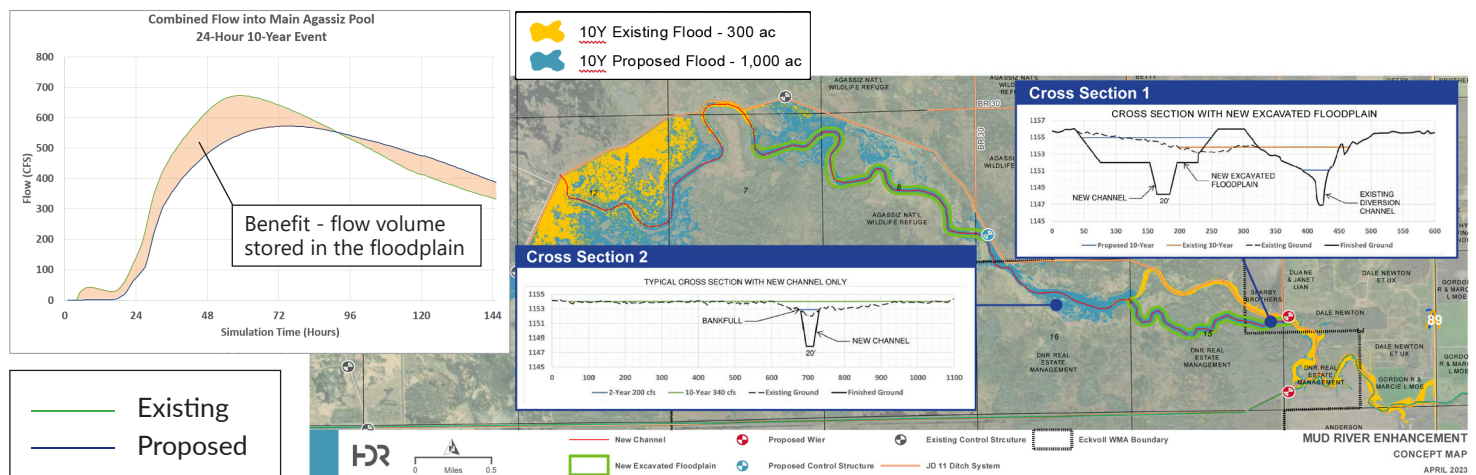


CHANNEL DESIGN PRINCIPLES

- Cost-effective, functioning channel design based on fluvial geomorphic principles.
- At least 80% of Mud River flow will be directed to channel enhancement.
- Self-sustaining channel—meaning the majority will not require regular mowing or sediment cleanout.
- Diverse vegetative communities connecting with existing desirable species, irregular floodplain grading, and plantings to disrupt the existing monoculture.



INCREASED FLOODPLAIN ACCESS



Peak Flow into Agassiz Pool

EXISTING = 675 cfs PROPOSED = 575 cfs



Downstream flow reductions will reduce sediment transported to Thief River Falls water supply.

LEARN MORE

For more information about this or other projects contact the RLWD.



Redlakewatershed.org

218.681.5800

RLWD@redlakewatershed.org

Woods Creek Restoration Project

Restoring stream connectivity and fish habitat for naturally occurring brook trout in the Lake Superior Basin



Project Lead:

Cook County

Project Partner:

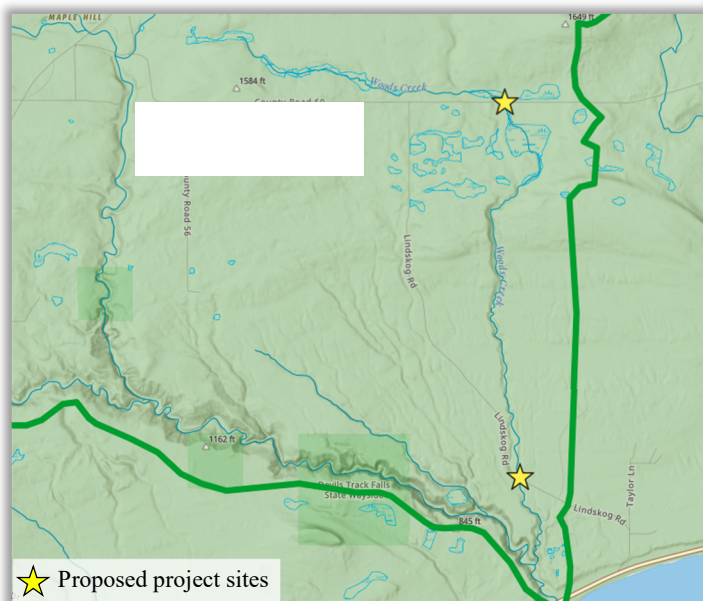
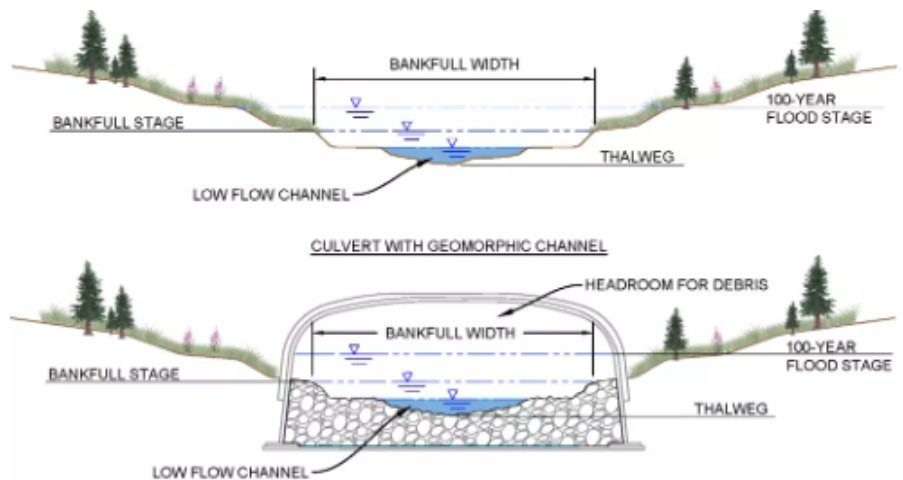
Cook County Soil and Water Conservation District

The proposed project is another in a series of projects where transportation and environmental projects intersect. Leveraging funding from both sources allows projects like this to proceed.

Changes in regional precipitation patterns have led to alternating flood and drought conditions that negatively impact aquatic habitat. *It is predicted that climate change will reinforce and amplify these patterns.* Removing these fish barriers, and restoring the river to bankfull condition will improve the watershed's climate change resiliency. By doing the improvements now, the river and aquatic habitat will have more time to revegetate and stabilize, further increasing that resiliency.

The proposed project will address habitat fragmentation and reduce sediment loading. Once the barriers are removed additional river will be opened up for fish passage and sediment loading due to erosion will decrease. Crossings will be correctly sized to meet bankfull requirements, stream velocities will decrease, and habitat will improve. This project is in direct alignment with the high priority goals of restoring fish passage laid out by MN DNR fisheries. Leveraging state transportation dollars the entire project will be fully funded with support from this council.

Below: Example of what the proposed project will achieve.



Project Benefits

- A minimum of 2 miles of the river will open up as an upstream, cold-water refuge for fish in the river and connecting tributaries.
- Expanded fish habitat will encourage a more diverse genetic pool and, ultimately, healthier, more resilient, fish populations.
- Increased climate resiliency through restored stream geomorphology, restored bankfull conditions, restored riparian corridor, additional riparian planting with resilient, native species, and the reduction of sedimentation.

Above: Map of Devil Track River watershed and adjacent watersheds

Cook County has adopted the Lake Superior North One Watershed, One Plan. The County has been working with partners towards accomplishing activities in the plan. The project achieves the following activities in the plan:

- SC 1.2 - Based on stream network inventory results, initiate implementation of projects that remove anthropogenic barriers, with the goal of removing ten barriers within ten years
 - SM 41. - Utilize culvert inventory results to update one problematic culvert per year in priority watersheds in terms of stream connectivity, aquatic organism passage, and erosion.
 - SM 2.1 - Address existing erosion problems by conducting targeted erosion control projects using current natural resource engineering methodologies in order to reduce sedimentation and nutrient loading into surface waters and wetlands.
-

The proposed project is developed to be a permanent solution to provide fish habitat and maintain water quality.

Measurability of the project is long term. The most immediate outcome is the reconnection of at least 2 miles of the river downstream to upstream, including tributaries.

Partners in the watershed have a history of collecting data on fish and aquatic invertebrates in the river. The trend to collect the data is expected and will provide information to compare before and after the project data.

Support for this project is broad at the county, SWCD, MN DNR fisheries, Grand Portage Band, and even House and Senate members. This support shows how important these types of projects are to Cook County and how committed we are to delivering them.



Above: Native Brook Trout

Partnerships locally are strong and ready to work together to benefit the resources, pooling together efforts, schedules, and staff. Cook County, Cook SWCD, and local DNR Fisheries are committed to creating long-term sustainable solutions to maintain and preserve our natural resources.