



Lessard-Sams Outdoor Heritage Council

Minnesota Trout Unlimited Coldwater Fish Habitat Enhancement and Restoration, Phase 9
Laws of Minnesota 2017 Final Report

General Information

Date: 09/18/2023

Project Title: Minnesota Trout Unlimited Coldwater Fish Habitat Enhancement and Restoration, Phase 9

Funds Recommended: \$2,403,000

Legislative Citation: ML 2017, Ch. 91, Art. 1, Sec. 2, subd. 5(d)

Appropriation Language: \$2,403,000 in the first year is to the commissioner of natural resources for an agreement with Minnesota Trout Unlimited to restore or enhance habitat for trout and other species in and along cold water rivers, lakes, and streams in Minnesota. A list of proposed restorations and enhancements must be provided as part of the required accomplishment plan.

Manager Information

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Location Information

County Location(s): Winona, Fillmore, Goodhue, Wabasha and St. Louis.

Eco regions in which work will take place:

- Northern Forest
- Southeast Forest

Activity types:

- Enhance

Priority resources addressed by activity:

- Habitat

Narrative

Summary of Accomplishments

Minnesota Trout Unlimited and its partners, chapters, and volunteers enhanced habitat for trout, as well as other fish, game and wildlife, in or along 10 miles of coldwater streams around the state. We adapting to challenging conditions caused by the pandemic by shifting budget from smaller projects using hand labor (which was largely unavailable for the past 3 years) to larger scale projects utilizing heavy machinery.

Process & Methods

We enhanced habitat on 13 different stream reaches. The scope of work varied to match the site conditions, watershed characteristics, and address the specific population limiting factors.

Severely degraded or unstable stream sections received comprehensive, large-scale habitat enhancements to restore stream function and in-stream trout habitat. These included intensive projects on the South Branch Whitewater River near St. Charles, West Indian Creek near Plainview, Rush Creek near Lewiston, and Keene Creek in Duluth. These projects required extensive grading and modification of stream channel patterns to create habitat-filled, stable channels and restored floodplains. Additional habitat enhancements were made on Hay Creek and Pine Creek, including restoring floodplain connectivity to increase resiliency to withstand the increasing severity and frequency of large flood events driven by climate change. The increased pool habitat created on Keene Creek is crucial to survival of native brook trout populations in northern Minnesota during critical low-water periods in late summer and winter.

The COVID-19 pandemic disrupted labor availability and prevented implementation of smaller scale projects around the state. However, we adapted and pivoted to other good habitat enhancement opportunities that could be completed with less DNR involvement and without crews using hand labor. Most of these opportunities were in southeast Minnesota.

In southeast Minnesota, we also completed projects along approximately 4 miles of Trout Run Creek, Rush Creek, Ferguson Creek, Little Pickwick Creek, and the South Fork Root River. These project sites had very cold water temperatures and decent in-stream habitat but suffered from the negative effects of dense corridors of buckthorn, boxelder and other invasives. Here significant habitat gains were realized by removing these invasive trees and shrubs, which do a poor job holding streambanks. We removed invasive trees and shrubs and seeded corridors with grasses and forbs. This allowed native grasses and forbs, which better secure soils, to become reestablished and let beneficial sunlight reach the stream beds and boost stream productivity.

By working with partners and tailoring the habitat enhancement methods to each project site we have maximized long term benefits to the wild trout populations at the lowest possible cost.

How did the program address habitats of significant value for wildlife species of greatest conservation need, threatened or endangered species, and/or list targeted species?

The projects enhanced degraded habitat for fish and wildlife in and along 10 miles of coldwater streams and rivers which historically supported naturally reproducing trout populations that are highly valued by anglers. While trout are the apex predator and key indicator species in coldwater systems, a host of rare aquatic and riparian species uniquely associated with these systems also benefited from the habitat work. The enhanced habitat will also provide great recreational opportunities for anglers and citizens.

How did the program use science-based targeting that leveraged or expanded corridors and complexes, reduced fragmentation, or protected areas in the MN County Biological Survey.

MNTU reviews DNR watershed specific fisheries management plans and other conservation planning efforts, consults with DNR area managers, and applies ranking criteria developed by the DNR. Projects must have the potential to increase the carrying capacity (fish numbers), the streams must have natural reproduction, and the sites must be accessible by the public. Improving the connectivity of good aquatic and riparian habitat is an important consideration. The projects selected expanded or connected gaps in these riparian corridors, reducing fragmentation.

Explain Partners, Supporters, & Opposition

The MNDNR provided valuable input and support on every project, and were a major partner on several. The local Soil & Water Conservation District was a key partner on the Keene Creek project in northeast Minnesota. We partnered with MNDNR Forestry Division on South Fork Root River project in Fillmore County to enhance in-stream and riparian habitat, but also improved forest health. We encountered no opposition to these projects, but frequently encountered anglers who were very happy with the results.

Exceptional challenges, expectations, failures, opportunities, or unique aspects of program

The COVID-19 pandemic caused major disruptions: contractors had difficulty with employee travel, completing hand labor, and obtaining supplies of rock, materials, and replacement parts for equipment break downs. Restrictions on employees of the DNR and other partners hampered planning, design, and permitting. In northern Minnesota, work crews were largely unavailable for manual work and treatment of riparian vegetation. The cascading effects of COVID-19 disruptions, including in supply chains, limited our ability to secure alternative sources of labor, trees, and caging materials essential for northern Minnesota projects for three years. However, since work along streams in southeast Minnesota could be accomplished with heavy machinery rather than hand labor, we accelerated work there. These larger scale projects cost significantly more per acre than the smaller projects using hand labor that we originally proposed. As a result we completed fewer acres overall than originally targeted, but more acres of large-scale habitat work.

What other dedicated funds may collaborate with or contribute to this program?

- N/A

What is the plan to sustain and/or maintain this work after the Outdoor Heritage Funds are expended?

Construction contracts included maintenance/warranty provisions to ensure habitat work is well established. After this period and once riparian vegetation well established, major maintenance work is not typically required to sustain the habitat outcomes for many years. However, we anticipate that long-term monitoring of the integrity of the improvements will be done every three years in conjunction with routine inspections and biological monitoring conducted by local MNDNR staff and MNTU members as appropriate.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
1 to 3 years after the grant ends	MNDNR base and MNTU volunteers	Inspect structural elements and vegetation.	If needed, develop action plan with DNR.	Conduct maintenance with volunteers.
Every 3 years thereafter	MNDNR base and MNTU volunteers	Inspect structural elements and vegetation.	If needed, develop action plan with DNR.	Perform or assist DNR with maintenance if needed.

Budget

Totals

Item	Requested	AP Amount	Spent	Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	\$110,000	\$140,000	\$114,400	-	-	-	\$110,000	\$114,400
Contracts	\$1,116,000	\$1,204,000	\$1,218,100	\$125,000	\$204,200	NRCS; DNR	\$1,241,000	\$1,422,300
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-	-
Travel	\$5,000	\$5,000	\$3,500	-	\$2,500	NRCS	\$5,000	\$6,000
Professional Services	\$445,000	\$295,000	\$316,500	-	-	-	\$445,000	\$316,500
Direct Support Services	\$22,000	\$22,000	\$22,000	\$22,000	\$38,000	TU	\$44,000	\$60,000
DNR Land Acquisition Costs	-	-	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	\$20,000	\$2,000	-	-	-	-	\$20,000	-
Supplies/Materials	\$685,000	\$735,000	\$728,500	\$125,000	\$150,000	NRCS	\$810,000	\$878,500
DNR IDP	-	-	-	-	-	-	-	-
Grand Total	\$2,403,000	\$2,403,000	\$2,403,000	\$272,000	\$394,700	-	\$2,675,000	\$2,797,700

Personnel

Position	Annual FTE	Years Working	Amount Spent	Leverage	Leverage Source	Total
Program manager	0.4	3.0	\$26,500	-	-	\$26,500
Watershed coordinator	0.1	3.0	\$10,700	-	-	\$10,700
Program assistant	0.25	3.0	\$77,200	-	-	\$77,200
Field work interns	0.2	3.0	-	-	-	-

Direct Support Services

How did you determine which portions of the Direct Support Services of your shared support services is direct to this program?

The Direct Support Services requested represents a portion of Trout Unlimited's federal rate, which is approved annually. Trout Unlimited donated the other portion.

Explain any budget challenges or successes:

Although prices increased in the economy during the last 3 years, we continued to secure good prices for construction and professional services. This was due to our maintaining competitive bidding processes. When crews providing hand labor became unavailable due to pandemic disruptions, we shifted funding to larger scale projects that utilize heavy equipment. These larger scale projects cost significantly more per acre than smaller scale projects using hand labor. As a result we completed fewer acres than originally targeted. But we completed more acres of large-scale habitat work than proposed.

Total Revenue: \$0

Revenue Spent: \$0

Revenue Balance: \$0

Of the money disclosed above, what are the appropriate uses of the money:

- E. This is not applicable as there was no revenue generated.

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland (AP)	Wetland (Final)	Prairie (AP)	Prairie (Final)	Forest (AP)	Forest (Final)	Habitat (AP)	Habitat (Final)	Total Acres (AP)	Total Acres (Final)
Restore	0	0	0	0	0	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Fee w/o State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	0	0	0	0	148	112	148	112
Total	0	0	0	0	0	0	148	112	148	112

Total Requested Funding by Resource Type (Table 2)

Type	Wetland (AP)	Wetland (Final)	Prairie (AP)	Prairie (Final)	Forest (AP)	Forest (Final)	Habitat (AP)	Habitat (Final)	Total Funding (AP)	Total Funding (Final)
Restore	-	-	-	-	-	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-
Enhance	-	-	-	-	-	-	\$2,403,000	\$2,403,000	\$2,403,000	\$2,403,000
Total	-	-	-	-	-	-	\$2,403,000	\$2,403,000	\$2,403,000	\$2,403,000

Acres within each Ecological Section (Table 3)

Type	Metro / Urban (AP)	Metro / Urban (Final)	Forest / Prairie (AP)	Forest / Prairie (Final)	SE Forest (AP)	SE Forest (Final)	Prairie (AP)	Prairie (Final)	N. Forest (AP)	N. Forest (Final)	Total (AP)	Total (Final)
Restore	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Fee w/o State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	0	0	88	106	0	0	60	6	148	112
Total	0	0	0	0	88	106	0	0	60	6	148	112

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro / Urban (AP)	Metro / Urban (Final)	Forest / Prairie (AP)	Forest / Prairie (Final)	SE Forest (AP)	SE Forest (Final)	Prairie (AP)	Prairie (Final)	N. Forest (AP)	N. Forest (Final)	Total (AP)	Total (Final)
Restore	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-	-	-
Enhance	-	-	-	-	\$1,428,000	\$2,114,800	-	-	\$975,000	\$288,200	\$2,403,000	\$2,403,000
Total	-	-	-	-	\$1,428,000	\$2,114,800	-	-	\$975,000	\$288,200	\$2,403,000	\$2,403,000

Target Lake/Stream/River Feet or Miles

10

Outcomes

Programs in the northern forest region:

- Improved aquatic habitat indicators ~ *Measured through surveys of fish, aquatic invertebrates and/or exposed substrates. Abundance, size structure and species diversity are considered.*

Programs in southeast forest region:

- Rivers, streams, and surrounding vegetation provide corridors of habitat ~ *Measured through surveys of fish, aquatic invertebrates and/or exposed substrates. Abundance, size structure and species diversity are considered.*

Parcels

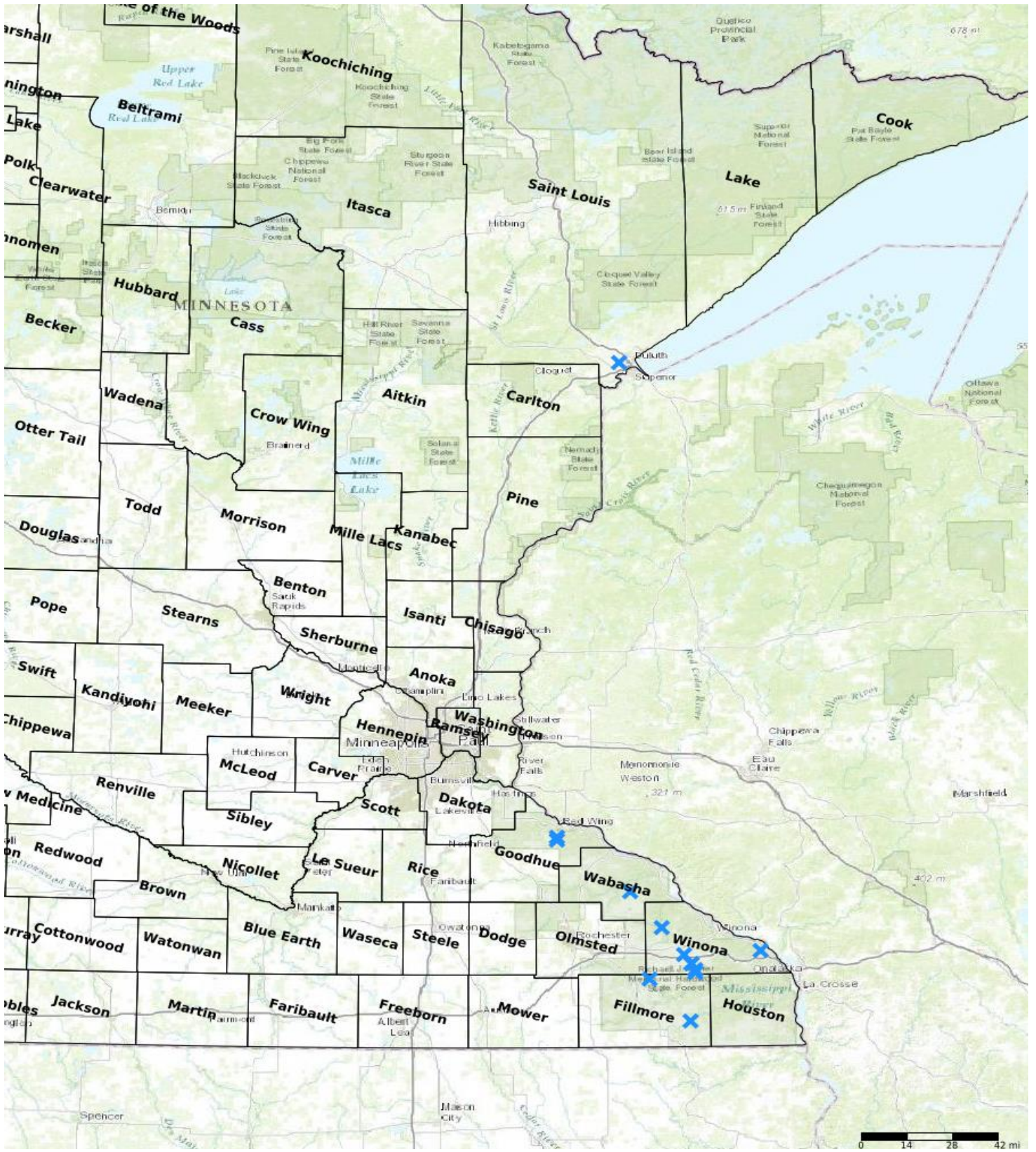
Sign-up Criteria?

No

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
Trout Run Creek	Fillmore	10410208	2	\$10,100	Yes
So Fork Root River	Fillmore	10208219	23	\$97,500	Yes
Hay Creek	Goodhue	11215224	9	\$314,700	Yes
Hay Creek	Goodhue	11215213	7	\$247,000	Yes
Keene Creek	St. Louis	05015236	6	\$288,200	Yes
West Indian Creek	Wabasha	10911217	13	\$301,300	Yes
Ferguson Creek	Winona	10508218	7	\$37,800	Yes
So. Branch Whitewater River	Winona	10710214	9	\$507,800	Yes
Rush Creek	Winona	10609235	10	\$396,400	Yes
Pine Creek	Winona	10508232	11	\$141,400	Yes
Rush Creek	Winona	10508218	9	\$38,800	Yes
Little Pickwick Creek	Winona	10605229	4	\$5,000	Yes
Rush Creek	Winona	10508229	2	\$17,000	Yes

Parcel Map



- Protect in Easement
- ▲ Protect in Fee with PILT
- Protect in Fee W/O PILT
- ★ Restore
- ✕ Enhance
- ⊕ Other