



Lessard-Sams Outdoor Heritage Council

Coldwater Fish Habitat Enhancement Program, Phase 3

Laws of Minnesota 2011 Final Report

General Information

Date: 11/24/2025

Project Title: Coldwater Fish Habitat Enhancement Program, Phase 3

Funds Recommended: \$1,533,000

Legislative Citation: ML 2011, First Sp. Session, Ch. 6, Art. 1, Sec. 2, Subd. 5(b)

Appropriation Language: \$1,533,000 the first year is to the commissioner of natural resources for an agreement with Minnesota Trout Unlimited to restore, enhance, and protect coldwater river and stream habitats in Minnesota. A list of proposed projects, describing types and locations of restorations and enhancements, must be provided as part of the required accomplishment plan.

Manager Information

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Location Information

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

Eco regions in which work will take place:

Northern Forest

Prairie

Southeast Forest

Activity types:

Enhance

Priority resources addressed by activity:

Habitat

Narrative

Summary of Accomplishments

Minnesota Trout Unlimited enhanced in-stream and riparian fish and wildlife habitat in and along coldwater streams located on public lands and Aquatic Management Areas. We completed all 9 projects originally proposed and three additional. Contracting efficiencies and leveraging of other funding allowed us to add two habitat enhancement projects in southeast Minnesota and another segment on the Sucker River in northeast Minnesota. We enhanced 10 more acres of habitat than originally proposed and increased leverage by \$121,700 (67%).

Process & Methods

The projects completed with FY2012 funding used methods similar to those used on projects completed by MNTU chapters in the past several years and also incorporated new research to improve project designs and fish and wildlife benefits.

The specific fish habitat enhancement methods used on each stream varied depending upon the distinct natural resource characteristics of each watershed and ecological region, the limiting factors identified for each stream, and the variations in the type and magnitude of poor land uses practices within each watershed. MNTU tailored each project accordingly, using the best available science, in close consultation with resource professionals within the Minnesota Department of Natural Resources ("MNDNR").

Purposes: Each project was designed and completed using techniques selected to accomplish one or more of the following purposes: (a) reduce stream bank erosion and associated sedimentation downstream; (b) reconnect streams to their floodplains to reduce negative resource impacts from severe flooding; (c) increase natural reproduction of trout and other aquatic organisms; (d) maintain or increase adult trout abundance; (e) increase habitat and biodiversity for both invertebrates and other non-game species; (f) be long lasting with minimal maintenance required; and (g) improve angler access and participation.

Habitat enhancement methods: Methods used on each project included one or more of the following techniques: (1) sloping back stream banks to both remove accumulated sediments eroded from uplands areas and better reconnect the stream to its floodplain; (2) removing undesirable woody vegetation (invasive box elder, buckthorn, etc.) from riparian corridors to enable removal of accumulated sediments, reduce competition with desirable plant and grass species, and allow beneficial energy inputs (sunlight) to reach the streams; (3) stabilizing eroding stream banks using vegetation and/or rock; (4) selectively installing overhead and other in-stream cover for trout; (5) installing soil erosion prevention measures; (6) mulching and seeding exposed stream banks (including with native prairie plant species where appropriate and feasible); (7) improving or maintaining stream access roads and stream crossings to reduce erosion; (8) fencing grassy riparian corridors, including in such a way as to facilitate managed grazing, in order to prevent damage from over grazing; (9) placing large logs in northern forested streams to restore cover logs removed a half century or more ago; and (10) in northern forested watersheds with little cold groundwater, planting desirable trees in riparian areas to provide shade for the stream channel and help cool the water.

Agricultural area example: Many streams in the agricultural areas of southern and central Minnesota have been negatively impacted by many decades of poor land management practices. The projects in southeast Minnesota

used the following approach to address this:

Erosion has led to wider, shallower and warmer streams, as well as excessive streamside sediments which regularly erode, covering food production and trout reproduction areas. In many cases shallow rooted invasive trees have taken over the riparian corridors, out competing native vegetation which better secures soils, and reducing energy inputs to the stream ecosystem. To remedy this, a typical enhancement project will involve several steps. First, invasive trees are removed from the riparian zone and steep, eroding banks are graded by machinery to remove excess sediments deposited here from upland areas. Importantly, this reconnects the stream to its floodplain. Since many of these agricultural watersheds still experience periodic severe flooding, select portions of the stream banks are then reinforced with indigenous rock. In lower gradient watersheds, or watersheds where flows are more stable, little or no rock is used. After enhancement work is completed the streams flow faster and become deeper, keeping them cooler and providing natural overhead cover through depth and the scouring of sediments deposited by decades of erosion.

Second, overhead cover habitat is created. Bank degradation and the removal of native prairie have dramatically decreased protective overhead cover in the riparian zone. Two methods are used to remedy this situation: increasing the stream's depth, which alone provides natural cover to trout, and installing overhead cover structures in select stream banks. Wooden structures are often installed into banks in hydraulically suitable locations and reinforced with rock as a way to restore or recreate the undercut banks which had existed before settlement and agricultural land use altered the more stable flows which had gradually created and maintained them.

Finally, vegetation is reestablished in the re-graded riparian corridor to further stabilize banks and act as buffer strips to improve water quality. Depending upon the specific site conditions, landowner cooperation, and agricultural use, native prairie grasses may be planted along the stream corridors, although often mixed with fast sprouting annual grains to anchor soils the first year.

Taken together, these actions directly enhance physical habitat, and typically increase overall trout abundance, population structure, the number of larger trout, and levels of successful natural reproduction. In addition to the benefits to anglers of increased trout habitat and trout abundance, project benefits extending well downstream include reduced erosion and sedimentation, cooler water temperatures, improved water quality and numerous benefits to aquatic and terrestrial wildlife populations.

The following projects, totaling more than 7.5 miles of stream and 91 acres, were completed with FY2012 funds:

1. Garvin Brook (Winona);
2. Hay Creek (Goodhue);
3. Seven Mile Creek (Nicollet);
4. Little Isabella River (Lake);
5. Manitou River (Lake);
6. Sucker River (St. Louis) - Ryan Road section;
7. Sucker River (St. Louis) - Old North Shore Road section;

8. Cold Spring Brook (Wabasha);
9. Mill Creek (Olmsted);
10. Pine Creek (Winona);
11. Blagsvedt Creek (Fillmore); and
12. South Fork Root River.

Explain Partners, Supporters, & Opposition

The DNR Fisheries Section was an important partner on every project. We also partnered with the National Fish & Wildlife Foundation, US Fish & Wildlife Service, NRCS and others to leverage and spend an additional \$301,700 on FY2012 projects, including three added projects. This allowed us to enhance 10 more acres of habitat than originally proposed. There was no opposition to any of the projects, but much support and encouragement.

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

The leveraging of substantial federal funding on several projects, together with effective contracting, combined to create unanticipated “budget space” in this grant round. This created great opportunities to add additional habitat projects. We did this and even leveraged more funding (\$121,700) which was applied to work on the ground. This created its own set of challenges pushing to ensure all added work was completed as quickly as possible. In one case, the possibility of a quality habitat project being done led a reluctant landowner to convey a permanent conservation easement to the State and fill the last remaining gap in protection in a large aquatic habitat complex.

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?

Each enhancement project was designed for long-term ecological and hydraulic stability. Once riparian vegetation becomes well established, no significant maintenance is usually required in order to sustain the habitat outcomes for several decades. Reconnected floodplains allow floodwater to quickly spread out and dissipate energy, reducing the destructive impact of a flood. Flood waters typically flatten streamside vegetation temporarily and do not damage the in-stream structures.

We anticipate that long-term monitoring of the integrity of the improvements will be done in conjunction with routine inspections and biological monitoring conducted by local MNDNR staff, MNTU members, or landowners as appropriate. In the event that there are significant maintenance costs, potential sources of funding and volunteer labor include MNTU, MNDNR AMA maintenance funding, and other grant funds and organizations. MNTU volunteers will help provide long-term monitoring and periodic labor.

Budget

Totals

Item	Requested	AP Amount	Spent	Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	\$90,000	\$70,000	\$72,500	-	-	-	\$90,000	\$72,500
Contracts	\$820,000	\$836,500	\$919,800	\$85,000	\$199,100	various federal	\$905,000	\$1,118,900
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-	-
Travel	-	\$3,500	\$3,800	-	-	-	-	\$3,800
Professional Services	-	-	-	-	-	-	-	-
Direct Support Services	-	-	-	-	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	\$20,000	\$20,000	\$20,200	\$20,000	-	-	\$40,000	\$20,200
Supplies/Materials	\$603,000	\$603,000	\$516,700	\$75,000	\$102,600	various federal	\$678,000	\$619,300
DNR IDP	-	-	-	-	-	-	-	-
Grand Total	\$1,533,000	\$1,533,000	\$1,533,000	\$180,000	\$301,700	-	\$1,713,000	\$1,834,700

Personnel

Position	Annual FTE	Years Working	Amount Spent	Leverage	Leverage Source	Total
Program manager	0.43	3.0	\$61,500	-	-	\$61,500
Program coordinator	0.13	3.0	\$11,000	-	-	\$11,000

Explain any budget challenges or successes:

The DNR Fisheries Section was an important partner on every project. We also partnered with the National Fish & Wildlife Foundation, US Fish & Wildlife Service, NRCS and others to leverage and spend an additional \$301,700 on Fy2012 projects, including three added projects. This allowed us to enhance 10 more acres of habitat than originally proposed.

Total Revenue: -

Revenue Spent: -

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	81	91	81	91
Total	0	0	0	0	0	0	81	91	81	91

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	-	-	-	-	-	-	\$1,533,000	\$1,533,000	\$1,533,000	\$1,533,000
Total	-	-	-	-	-	-	\$1,533,000	\$1,533,000	\$1,533,000	\$1,533,000

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	65	74	6	4	11	13	82	91
Total	0	0	0	0	65	74	6	4	11	13	82	91

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	-	-	-	-	\$1,354,000	\$1,348,800	\$80,000	\$104,600	\$99,000	\$79,600	\$1,533,000	\$1,533,000
Total	-	-	-	-	\$1,354,000	\$1,348,800	\$80,000	\$104,600	\$99,000	\$79,600	\$1,533,000	\$1,533,000

Target Lake/Stream/River Feet or Miles

7.5 miles

Explain the success/shortage of acre goals

Minnesota Trout Unlimited enhanced in-stream and riparian fish and wildlife habitat in and along coldwater streams located on public lands and Aquatic Management Areas. We originally proposed 9 projects, yet completed 12 projects. Contracting efficiencies and leveraging of other funding allowed us to add two more habitat enhancement projects in southeast Minnesota and another segment on the Sucker River in northeast Minnesota. We enhanced habitat on 91 acres, rather than just the 81 acres originally proposed.

Outcomes

Parcels

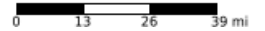
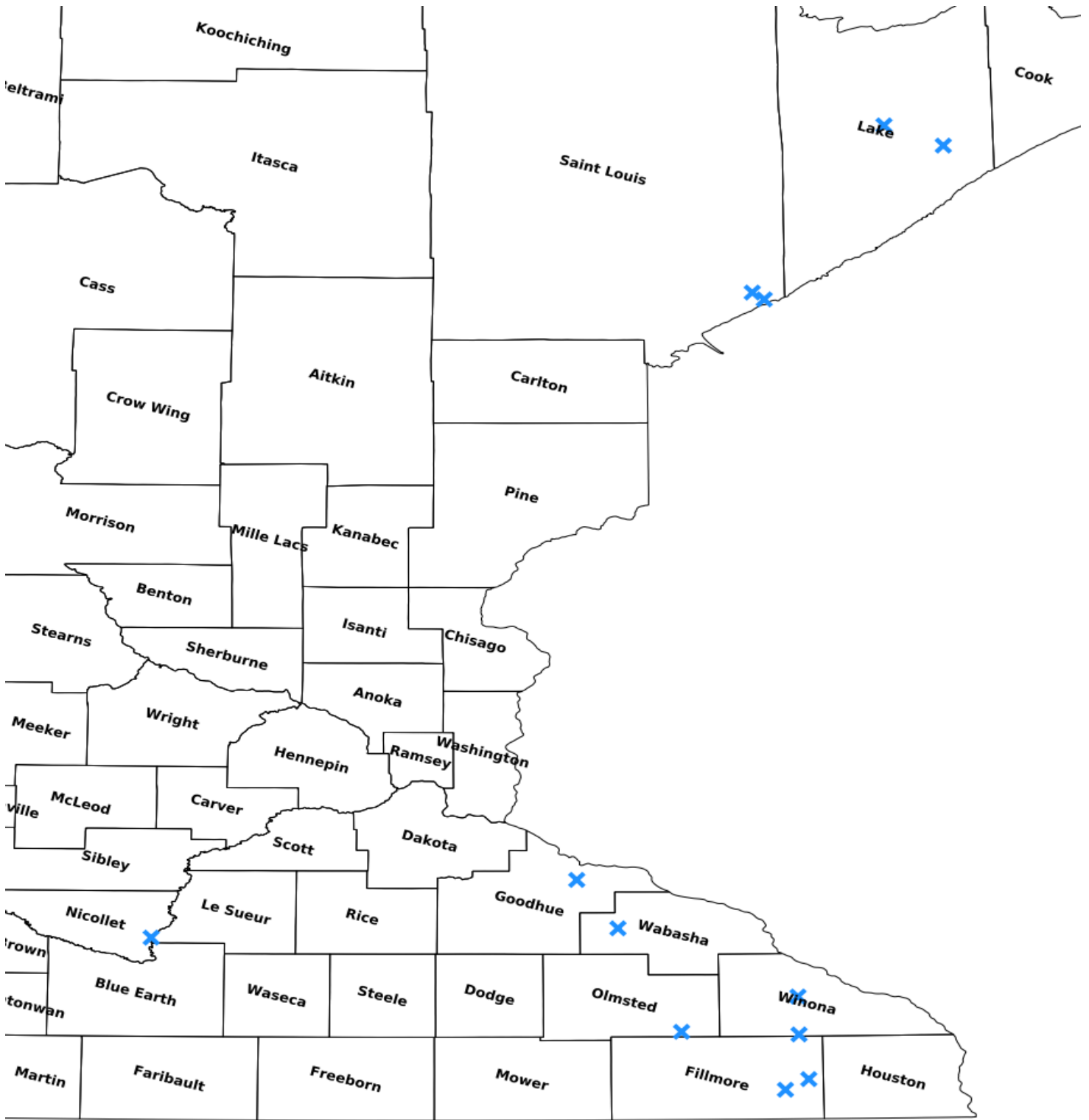
Sign-up Criteria?

No

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection	Description
Blagsvedt Creek	Fillmore	10209224	5	\$73,300	Yes	Enhance 2,300 for brook and brown trout.
South Fork Root River	Fillmore	10208203	7	\$57,700	-	Enhance habitat along approximatley 3,100 foot reach connecting gap in habitat corridor.
Hay Creek	Goodhue	11215213	11	\$219,800	Yes	Enhance habitat on 5,000 feet as part of larger project.
Little Isabella River	Lake	06009225	3	\$5,000	Yes	Enhance brook trout habitat in 1,500 foot reach located in National forest campground.
Manitou River	Lake	05907227	3	\$15,700	Yes	Enhance habitat for brook trout in 1,500 foot reach near coldwater refuge.
Seven Mile Creek	Nicollet	10927212	4	\$104,600	Yes	Enhance trout habitat in 1,700 foot reach in popular county park.
Mill Creek	Olmsted	10512225	12	\$284,700	Yes	Enhance habitat for wild brown trout in one mile reach.
Sucker River	St. Louis	05112204	2	\$20,100	Yes	Enhance 1,000 foot reach for juvenile steelhead in flood damaged reach.
Sucker River	St. Louis	05212230	4	\$38,800	Yes	Enhance 1,700 foot reach torn up by historic flood.
Cold Spring Brook	Wabasha	11013230	12	\$298,400	Yes	Enhance habitat for brook and brown trout along mile of stream.
Garvin Brook	Winona	10608205	14	\$113,600	Yes	Enhance 6,300 foot reach torn apart by flood.
Pine Creek	Winona	10508232	12	\$301,300	Yes	Enhance second mile for wild brown trout.

Parcel Map



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