



Lessard-Sams Outdoor Heritage Council

Minnesota Trout Unlimited Coldwater Fish Habitat Enhancement and Restoration - Phase VII
Laws of Minnesota 2015 Final Report

General Information

Date: 06/25/2022

Project Title: Minnesota Trout Unlimited Coldwater Fish Habitat Enhancement and Restoration - Phase VII

Funds Recommended: \$1,890,000

Legislative Citation: ML 2015, First Sp. Session, Ch.2, Art. 1, Sec. 2, Subd. 5(c)

Appropriation Language: \$1,890,000 in the first year is to the commissioner of natural resources for an agreement with Minnesota Trout Unlimited to restore and enhance habitat for trout and other species in and along coldwater rivers 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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Title:

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Location Information

County Location(s): Winona, Houston, Hubbard, Fillmore, Wabasha, Dakota, Lake and St. Louis.

Eco regions in which work will take place:

- Northern Forest
- Metro / Urban
- Southeast Forest

Activity types:

- Enhance

Priority resources addressed by activity:

- Forest
- 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 16 miles of coldwater streams around the state. We also worked with Lake County to enhance Forest habitat on a 76 acre parcel through which the Stewart River flows. We exceeded our target for acres of enhanced habitat.

Process & Methods

We enhanced habitat on fourteen different streams. The scope of work varied to match the site conditions, watershed characteristics, and address the specific 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 Amity Creek and Chester Creek in Duluth, the Stewart River near Two Harbors, the Vermillion River in southern Dakota County, and the Root River in Preston. These projects required extensive grading and modification of stream channel patterns to create habitat-filled, stable channels and restored floodplains. The increased pool habitat created is particularly important for northern projects, where lack of pools was a key limiting factor for native trout populations.

Streams in northeast Minnesota need healthy riparian forests to provide shade and improve summer base flows. North Shore streams lack significant groundwater flows and instead are kept cold by the shade provided by trees along their banks. Unfortunately, outbreaks of two tree pests (spruce bud worm and emerald ash borer) are decimating riparian forests near Duluth and the North Shore. To address this we cleared numerous gaps of dead or dying trees along the Stewart River and French River. These areas were then planted with a mixture of long-lived tree species, both coniferous and deciduous. The trees are on their way to providing critical shade and other habitat benefits.

We also worked with Lake County to enhance a 76-acre parcel of forest which straddles the upper Stewart River, converting it from brushland to a forest of long-lived trees dominated by pines. Changing the stand's trajectory in this way is improving the long-term ability of the forest to store water and slowly release cool base flow to sustain the important trout and steelhead fisheries.

In the sandy central part of Minnesota, we used the conservation corps to thin alder thickets and strategically place brush bundles in overly wide sections of Kabekona Creek. These are capturing sand and narrowing and deepening the stream channel.

In southeast Minnesota, we completed projects on Camp Creek, Daley Creek, Duschee Creek, Little Pickwick Creek, Trout Run Creek, and West and East Indian Creeks. 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 forbes. This allowed native grasses and forbes, which better secure soils, to become reestablished and let beneficial sunlight reach the stream beds and boost stream productivity. Similarly, near Farmington, MN TU volunteers spent numerous Saturday mornings to cutting buckthorn from 20 acres along the Vermillion River and set the table for prairie plantings following the in-stream habitat work completed in 2019.

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

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 16 miles of coldwater streams and rivers which historically supported naturally reproducing trout or steelhead 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 and the projects selected expand or connect gaps in these riparian corridors.

Explain Partners, Supporters, & Opposition

The MNDNR provided valuable input and support on every project, and were a major partner on several. Soil & Water Conservation Districts were major partners on projects in northeast Minnesota. We partnered with the City of Preston on the Root River projects, which the improved habitat through the middle of that community has become a showpiece and gathering place. We encountered no opposition to these projects, only anglers happy with the results.

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

A major partner withdrew from projects in the Duluth area. Despite the challenges this caused, we adapted and met our acreage and stream mileage targets.

What other fund may 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 and/or contractors if |

| | | | | |
|--------------------------|--------------------------------|---|--|--|
| | | | | DNR does not. |
| 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 | Antic. Leverage | Received Leverage | Leverage Source | Original Total | Final Total |
|----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-----------------|--------------------|--------------------|
| Personnel | \$90,000 | \$150,000 | \$130,400 | - | - | - | \$90,000 | \$130,400 |
| Contracts | \$1,051,000 | \$1,067,000 | \$1,126,300 | \$1,540,000 | \$860,300 | SWCD, DNR | \$2,591,000 | \$1,986,600 |
| Fee Acquisition w/ PILT | - | - | - | - | - | - | - | - |
| Fee Acquisition w/o PILT | - | - | - | - | - | - | - | - |
| Easement Acquisition | - | - | - | - | - | - | - | - |
| Easement Stewardship | - | - | - | - | - | - | - | - |
| Travel | \$5,000 | \$5,000 | \$4,000 | - | - | - | \$5,000 | \$4,000 |
| Professional Services | \$63,000 | \$63,000 | \$42,100 | - | - | - | \$63,000 | \$42,100 |
| Direct Support Services | - | - | - | - | - | - | - | - |
| DNR Land Acquisition Costs | - | - | - | - | - | - | - | - |
| Capital Equipment | - | - | - | - | - | - | - | - |
| Other Equipment/Tools | \$10,000 | \$5,000 | \$2,600 | - | - | - | \$10,000 | \$2,600 |
| Supplies/Materials | \$671,000 | \$600,000 | \$584,600 | \$1,300,000 | \$573,600 | SWCD, DNR | \$1,971,000 | \$1,158,200 |
| DNR IDP | - | - | - | - | - | - | - | - |
| Grand Total | \$1,890,000 | \$1,890,000 | \$1,890,000 | \$2,840,000 | \$1,433,900 | - | \$4,730,000 | \$3,323,900 |

Personnel

| Position | Annual FTE | Years Working | Funding Request | Antic. Leverage | Leverage Source | Total |
|-----------------------|------------|---------------|-----------------|-----------------|-----------------|----------|
| program manager | 0.4 | 3.0 | \$49,800 | - | - | \$49,800 |
| watershed coordinator | 0.1 | 3.0 | \$15,600 | - | - | \$15,600 |
| program assistant | 0.25 | 3.0 | \$65,000 | - | - | \$65,000 |

Explain any budget challenges or successes:

Despite challenges caused by partners' changed circumstances, we adapted and met our acreage and stream mileage targets. A major partner withdrew from projects in the Duluth area and as a result our original estimates of anticipated leverage, which we indicated were anticipated only, were lower than originally anticipated.

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 | 76 | 76 | 200 | 208 | 276 | 284 |
| Total | 0 | 0 | 0 | 0 | 76 | 76 | 200 | 208 | 276 | 284 |

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 | - | - | - | - | \$84,000 | \$62,600 | \$1,806,000 | \$1,827,400 | \$1,890,000 | \$1,890,000 |
| Total | - | - | - | - | \$84,000 | \$62,600 | \$1,806,000 | \$1,827,400 | \$1,890,000 | \$1,890,000 |

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 | 64 | 29 | 0 | 0 | 89 | 78 | 0 | 0 | 123 | 177 | 276 | 284 |
| Total | 64 | 29 | 0 | 0 | 89 | 78 | 0 | 0 | 123 | 177 | 276 | 284 |

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 | \$360,000 | \$264,500 | - | - | \$680,000 | \$910,200 | - | - | \$850,000 | \$715,300 | \$1,890,000 | \$1,890,000 |
| Total | \$360,000 | \$264,500 | - | - | \$680,000 | \$910,200 | - | - | \$850,000 | \$715,300 | \$1,890,000 | \$1,890,000 |

Target Lake/Stream/River Feet or Miles

16

Outcomes

Programs in metropolitan urbanizing 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 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 ~ *Enhancement of in-stream and riparian corridor habitat creates miles of connected habitat. Outcomes are further measured through surveys of fish and aquatic invertebrates. Abundance, size structure and species diversity are considered.*

Parcels

Sign-up Criteria?

No

Restore / Enhance Parcels

| Name | County | TRDS | Acres | Est Cost | Existing Protection |
|-----------------------|-----------|----------|-------|-----------|---------------------|
| Vermillion River | Dakota | 11418229 | 29 | \$264,500 | Yes |
| Camp Creek | Fillmore | 10210205 | 3 | \$18,800 | Yes |
| Root River | Fillmore | 10210205 | 19 | \$592,400 | Yes |
| Duschee Creek | Fillmore | 10310224 | 6 | \$27,600 | Yes |
| Daley Creek | Houston | 10407233 | 5 | \$28,300 | Yes |
| Kabekona Creek | Hubbard | 14333203 | 64 | \$12,900 | Yes |
| Stewart River | Lake | 05411226 | 76 | \$62,600 | Yes |
| Stewart River | Lake | 05411234 | 12 | \$11,900 | Yes |
| Stewart River | Lake | 05311215 | 8 | \$75,000 | Yes |
| Chester Creek | St. Louis | 05014216 | 7 | \$469,800 | Yes |
| French River | St. Louis | 05213228 | 9 | \$42,500 | Yes |
| Amity Creek | St. Louis | 05113232 | 1 | \$40,600 | Yes |
| East Indian Creek | Wabasha | 10910228 | 10 | \$66,300 | Yes |
| West Indian Creek | Wabasha | 10911205 | 10 | \$34,800 | Yes |
| Little Pickwick Creek | Winona | 10605229 | 14 | \$71,900 | Yes |
| Trout Run Creek | Winona | 10510230 | 11 | \$70,100 | Yes |

