# Lessard-Sams Outdoor Heritage Council
# Laws of Minnesota 2018 Accomplishment Plan

HRE 01

**Date: October 22, 2017**

**Program or Project Title:** Minnesota Trout Unlimited Coldwater Fish Habitat Enhancement and Restoration, Phase 10

**Funds Recommended: $ 2,291,000**

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**Legislative Citation: ML 2018, Ch. X, Art. 1, Sec. 2, subd XX**

**Appropriation Language:**

**County Locations:** Cass, Dakota, Fillmore, Houston, Lake, St. Louis, and Winona.

**Regions in which work will take place:**

- Metro / Urban
- Northern Forest
- Southeast Forest

**Activity types:**

- Enhance
- Protect in Easement
- Restore

**Priority resources addressed by activity:**

- Habitat

## Abstract:

Minnesota Trout Unlimited will enhance and restore habitat for fish and wildlife in and along priority coldwater streams located on existing Aquatic Management Areas and public lands around the state. Accelerating habitat work to reduce the backlog of degraded streams is urgent given the increasing threats to these scarce coldwater fisheries. Population outcomes will be maximized by improving the connectivity of habitat and fish and wildlife populations, and building upon earlier work on adjacent stream segments. Trout stream easements will be acquired in one priority watershed to facilitate this approach. These durable habitat improvements will create more productive, self-sustaining fisheries.

## Design and scope of work:

Just six percent of Minnesota's streams are capable of supporting any trout, and degraded habitat conditions severely limit the productivity of many of them. The riparian corridors of many streams are largely protected from future harm, but this cannot reverse past habitat degradation. Minnesota Trout Unlimited ("MNTU") proposes to directly restore or enhance degraded habitat on nine or more priority streams with existing protections under the Aquatic Management Area system or public ownership. We propose to restore or enhance habitat in and along these public waters (and counties):
1. South Branch of Whitewater River (Winona);
2. Wisel Creek (Fillmore);

3. Winnebago Creek (Houston);
4. Vermillion River (Dakota);
5. Keene Creek (St. Louis);
6. Stewart River (Lake);
7. Silver Creek (Lake);
8. Stoney Brook (Cass);
9. Numerous streams statewide (prioritized maintenance list).
If substantial contracting efficiencies or leveraged funding allows we may extend project lengths and work on Beaver Creek (Houston), Pine Creek (New Hartford Creek) (Winona), Miller Creek (St. Louis) or other streams.
We will protect via trout stream easements segments of the Stewart River which are the highest priority for habitat restoration or enhancement, to ensure access to strategically restore or enhance all priority segments within this watershed. The MNDNR will acquire and hold the easements.
Individual project descriptions are provided in an attachment.

Goals and scope of work.
The goals of each project are to increase the carrying capacity and trout population of the stream, increase angling access and participation, improve water quality and provide other benefits to aquatic and terrestrial wildlife. Each project will accomplish one or more of these objectives: (a) increase adult trout abundance, (b) reduce stream bank erosion and associated sedimentation downstream, (c) reconnect streams to their floodplains to reduce negative impacts from severe flooding, (d) increase natural reproduction of trout and other aquatic organisms, (e) increase habitat for invertebrates and non-game species, (f) improve connectivity of habitat along aquatic and riparian (terrestrial) corridors, (g) improve angler access and participation, and (h) protect productive trout waters from invasive species. The scope of work and methods utilized vary by project and are discussed in the individual project descriptions provided in the attachment.

How priorities were set.
MNTU focuses on those watersheds likely to continue to support viable, fishable populations of naturally reproducing trout and steelhead fifty years and more from now. Work is done only where degraded habitat is a limiting factor for a quality, sustainable fishery. Priority locations are determined using MNTU members' knowledge of watersheds, MNDNR management plans and surveys, other habitat and conservation planning efforts, consultations with MNDNR professionals, and science based criteria. All things being equal, we consider the potential to draw new anglers outdoors, increase public awareness, engage landowners in conservation, foster partnerships, and increase public support for OHF projects.

Stakeholder support.
We continue to receive strong support from landowners, rural communities, and local civic and sporting organizations. We will continue gathering local input and developing partnerships in the planning and implementation stages. Landowners typically become very enthusiastic partners.

## How does the request address MN habitats that have: historical value to fish and wildlife, wildlife species of greatest conservation need, MN County Biological Survey data, and/or rare, threatened and endangered species inventories:

The projects will restore or enhance degraded habitat for fish and wildlife in and along coldwater streams and rivers which historically supported naturally reproducing trout or steelhead populations enjoyed by generations of anglers. While trout are the apex predator and key indicator species in coldwater systems, a host of rare aquatic species are uniquely associated with these systems. Well-functioning coldwater aquatic ecosystem are far less "common" than the 6% of Minnesota's total stream and river miles which theoretically can still support trout. They are very rare in the western half of the state. Even many streams considered to be the best remaining trout streams have badly degraded segments which disrupt connectivity and have significant impacts on the productivity and long term resilience (and self-sustainability) of the overall trout population. Our trout streams face growing threats from warming temperatures, increased frequency of severe flooding, and rising demand for groundwater pumping from the aquifers which sustain cold stream flows. The proposed projects are focused on streams and stream segments which will benefit from improved connectivity and help ensure Minnesota retains at least some high quality coldwater fisheries into the future.

## Describe the science based planning and evaluation model used:

In selecting project sites, MNTU reviews MNDNR watershed specific fisheries management plans and other conservation planning efforts, consults with MNDNR professionals, and applies ranking criteria developed by the MNDNR. Projects must have the potential to increase the carrying capacity (fish numbers), the streams have natural reproduction, and the public have access to them. Improving the connectivity of good aquatic and riparian habitat is an important consideration and the projects selected address this. We are increasingly targeting stream segments which build off earlier habitat or protection work in the same stream or watershed.

## Which sections of the Minnesota Statewide Conservation and Preservation Plan are applicable to this

## program:

- H3 Improve connectivity and access to recreation
- H6 Protect and restore critical in-water habitat of lakes and streams

## Which other plans are addressed in this program:

- Driftless Area Restoration Effort
- Strategic Plan for Coldwater Resources Management in Southeastern Minnesota

## Which LSOHC section priorities are addressed in this program:

**Metro / Urban:**

- Enhance and restore coldwater fisheries systems

**Northern Forest:**

- Protect shoreland and restore or enhance critical habitat on wild rice lakes, shallow lakes, cold water lakes, streams and rivers, and spawning areas

**Southeast Forest:**

- Protect, enhance, and restore habitat for fish, game, and nongame wildlife in rivers, cold-water streams, and associated upland habitat

## Relationship to other funds:

- Not Listed

**Describe the relationship of the funds:**

Not Listed

## How does this program include leverage in funds or other effort to supplement any OHF appropriation:

We anticipate that a number of the individual projects will leverage substantial other funding, including especially federal NRCS funding on the southeast Minnesota projects (estimate $200,000). Our partner on the Miller Creek project in Duluth believes it will secure approximately $400,000 in federal funding for this project; if it does we will redirect funding from one or more of the other projects to seize this opportunity. It is also likely that we will leverage USFWS grants on several projects. We will also leverage not only volunteer labor from TU members and others, but several partners (MNDNR, SWCD offices, etc.) will contribute significant amounts of time and/or dollars assisting on the projects.

## Per MS 97A.056, Subd. 24, Any state agency or organization requesting a direct appropriation from the OHF must inform the LSOHC at the time of the request for funding is made, whether the request is supplanting or is a substitution for any previous funding that was not from a legacy fund and was used for the same purpose:

The request does not supplant nor is it a substitution for any previous funding. The funding is for new stand alone projects.

## Describe the source and amount of non-OHF money spent for this work in the past:

| Appropriation Year | Source | Amount |
|---|---|---|
| n/a | n/a -each project is a new stand alone project | 0 |

## How will you sustain and/or maintain this work after the Outdoor Heritage Funds are expended:

MNTU's coldwater aquatic habitat restoration and enhancement projects are designed for long-term ecological and hydraulic stability. Once in-stream work is completed and riparian vegetation 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. The tenfold increase in trout populations and threefold increase in large trout which are common following completion of a southeast Minnesota project, are gains which are sustainable long-term through natural reproduction.

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. This monitoring will not require separate OHF or other constitutional funding. In the event that there are other 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.

## Explain the things you will do in the future to maintain project outcomes:

| Year | Source of Funds | Step 1 | Step 2 | Step 3 |
|---|---|---|---|---|
| Year after grant ends | MNTU volunteers or part of regular agency visit | Inspect structural elements and vegetation | Alert DNR and develop actions needed | Conduct maintenance with volunteers or contractors if DNR does not. |
| Every 3 years thereafter | MNTU volunteers or agency | Inspect structural elements and vegetation | Develop action plan with DNR if needed. | Perform or assist DNR with mainetenance if needed. |

## Activity Details:

If funded, this program will meet all applicable criteria set forth in MS 97A.056 - **Yes**

Will there be planting of corn or any crop on OHF land purchased or restored in this program - **No**

Will the eased land be open for public use - **Yes**

Open to angling.

Is the land you plan to acquire (easement) free of any other permanent protection - **Yes**

Who will manage the easement?

DNR

Who will be the easement holder?

DNR

Are there currently trails or roads on any of the acquisitions on the parcel list - **No**

Will new trails or roads be developed or improved as a result of the OHF acquisition - **No**

Will restoration and enhancement work follow best management practices including MS 84.973 Pollinator Habitat Program - **Yes**

Is the activity on permanently protected land per 97A.056, subd 13(f), tribal lands, and/or public waters per MS 103G.005, Subd. 15 - **Yes (AMA, County/Municipal, Public Waters, State Forests)**

## Accomplishment Timeline:

| Activity | Approximate Date Completed |
|---|---|
| Begin project planning, design work and permitting follwoing a July 2018 appropriation | Begin July 2018 |
| Begin habitat enhancements during the 2019 field work season. | 2019 filed work season |
| Complete habitat enhancements, including establishment of desireable riparian vegetation. | June 2023 |

**Date of Final Report Submission:** 11/1/2023

## Federal Funding:

Do you anticipate federal funds as a match for this program - **No**

## Outcomes:

**Programs in the northern forest region:**

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

**Programs in metropolitan urbanizing region:**

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

# Budget Spreadsheet

*Budget reallocations up to 10% do not require an amendment to the Accomplishment Plan*

**How will this program accommodate the reduced appropriation recoomendation from the original proposed requested amount**

Four projects had to be dropped.

**Total Amount of Request: $ 2291000**

**Budget and Cash Leverage**

| Budget Name | LSOHC Request | Anticipated Leverage | Leverage Source | Total |
|---|---|---|---|---|
| Personnel | $90,000 | $0 | | $90,000 |
| Contracts | $981,000 | $350,000 | SWCD, NRCS, USFWS | $1,331,000 |
| Fee Acquisition w/ PILT | $0 | $0 | | $0 |
| Fee Acquisition w/o PILT | $0 | $0 | | $0 |
| Easement Acquisition | $190,000 | $0 | | $190,000 |
| Easement Stewardship | $20,000 | $0 | | $20,000 |
| Travel | $10,000 | $0 | | $10,000 |
| Professional Services | $340,000 | $0 | | $340,000 |
| Direct Support Services | $24,000 | $24,000 | TU | $48,000 |
| DNR Land Acquisition Costs | $0 | $0 | | $0 |
| Capital Equipment | $0 | $0 | | $0 |
| Other Equipment/Tools | $20,000 | $0 | | $20,000 |
| Supplies/Materials | $616,000 | $500,000 | SWCD, NRCS, USFWS | $1,116,000 |
| DNR IDP | $0 | $0 | | $0 |
| Total | $2,291,000 | $874,000 | | $3,165,000 |

**Personnel**

| Position | FTE | Over # of years | LSOHC Request | Anticipated Leverage | Leverage Source | Total |
|---|---|---|---|---|---|---|
| Program manager | 0.40 | 3.00 | $55,000 | $0 | | $55,000 |
| Watershed coordinator | 0.10 | 3.00 | $10,000 | $0 | | $10,000 |
| Program assistant | 0.25 | 3.00 | $15,000 | $0 | | $15,000 |
| Field work interns | 0.20 | 3.00 | $10,000 | $0 | | $10,000 |
| Total | 0.95 | 12.00 | $90,000 | $0 | | $90,000 |

| | |
|---|---|
| Amount of Request: | $2,291,000 |
| Amount of Leverage: | $874,000 |
| Leverage as a percent of the Request: | 38.15% |
| DSS + Personnel: | $114,000 |
| As a % of the total request: | 4.98% |

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

Based upon approved federal rate applied only to personnel, travel and contracted "staff" costs

**Does the amount in the contract line include R/E work?**

Yes, 96 percent (all but $40,000 of the total)

**Describe and explain leverage source and confirmation of funds:**

Leverage estimates are estimates only. We anticipate approximately $400,000 in federal funds via our partner, $400,000 in NRCS funding, and $50,000 in USFWS funding.

# Output Tables

## Table 1a. Acres by Resource Type

| Type | Wetlands | Prairies | Forest | Habitats | Total |
|---|---|---|---|---|---|
| Restore | 0 | 0 | 0 | 0 | 0 |
| Protect in Fee with State PILT Liability | 0 | 0 | 0 | 0 | 0 |
| Protect in Fee W/O State PILT Liability | 0 | 0 | 0 | 0 | 0 |
| Protect in Easement | 0 | 0 | 0 | 73 | 73 |
| Enhance | 0 | 0 | 0 | 167 | 167 |
| Total | 0 | 0 | 0 | 240 | 240 |

## Table 2. Total Funding by Resource Type

| Type | Wetlands | Prairies | Forest | Habitats | Total |
|---|---|---|---|---|---|
| Restore | $0 | $0 | $0 | $0 | $0 |
| Protect in Fee with State PILT Liability | $0 | $0 | $0 | $0 | $0 |
| Protect in Fee W/O State PILT Liability | $0 | $0 | $0 | $0 | $0 |
| Protect in Easement | $0 | $0 | $0 | $278,000 | $278,000 |
| Enhance | $0 | $0 | $0 | $2,013,000 | $2,013,000 |
| Total | $0 | $0 | $0 | $2,291,000 | $2,291,000 |

## Table 3. Acres within each Ecological Section

| Type | Metro Urban | Forest Prairie | SE Forest | Prairie | N Forest | Total |
|---|---|---|---|---|---|---|
| Restore | 0 | 0 | 0 | 0 | 0 | 0 |
| Protect in Fee with State PILT Liability | 0 | 0 | 0 | 0 | 0 | 0 |
| Protect in Fee W/O State PILT Liability | 0 | 0 | 0 | 0 | 0 | 0 |
| Protect in Easement | 0 | 0 | 0 | 0 | 73 | 73 |
| Enhance | 9 | 0 | 94 | 0 | 64 | 167 |
| Total | 9 | 0 | 94 | 0 | 137 | 240 |

## Table 4. Total Funding within each Ecological Section

| Type | Metro Urban | Forest Prairie | SE Forest | Prairie | N Forest | Total |
|---|---|---|---|---|---|---|
| Restore | $0 | $0 | $0 | $0 | $0 | $0 |
| Protect in Fee with State PILT Liability | $0 | $0 | $0 | $0 | $0 | $0 |
| Protect in Fee W/O State PILT Liability | $0 | $0 | $0 | $0 | $0 | $0 |
| Protect in Easement | $0 | $0 | $0 | $0 | $278,000 | $278,000 |
| Enhance | $398,000 | $0 | $1,114,000 | $0 | $501,000 | $2,013,000 |
| Total | $398,000 | $0 | $1,114,000 | $0 | $779,000 | $2,291,000 |

## Table 5. Average Cost per Acre by Resource Type

| Type | Wetlands | Prairies | Forest | Habitats |
|---|---|---|---|---|
| Restore | $0 | $0 | $0 | $0 |
| Protect in Fee with State PILT Liability | $0 | $0 | $0 | $0 |
| Protect in Fee W/O State PILT Liability | $0 | $0 | $0 | $0 |
| Protect in Easement | $0 | $0 | $0 | $3808 |
| Enhance | $0 | $0 | $0 | $12054 |

## Table 6. Average Cost per Acre by Ecological Section

| Type | Metro/Urban | Forest/Prairie | SE Forest | Prairie | Northern Forest |
|---|---|---|---|---|---|
| Restore | $0 | $0 | $0 | $0 | $0 |
| Protect in Fee with State PILT Liability | $0 | $0 | $0 | $0 | $0 |
| Protect in Fee W/O State PILT Liability | $0 | $0 | $0 | $0 | $0 |
| Protect in Easement | $0 | $0 | $0 | $0 | $3808 |
| Enhance | $44222 | $0 | $11851 | $0 | $7828 |

## Target Lake/Stream/River Feet or Miles

13

# Parcel List

*For restoration and enhancement programs ONLY: Managers may add, delete, and substitute projects on this parcel list based upon need, readiness, cost, opportunity, and/or urgency so long as the substitute parcel/project forwards the constitutional objectives of this program in the Project Scope table of this accomplishment plan. The final accomplishment plan report will include the final parcel list.*

## Section 1 - Restore / Enhance Parcel List

Cass

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Stoney Brook | 13529208 | 12 | $0 | Yes |

Dakota

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Vermillion River | 11420236 | 9 | $0 | Yes |

Fillmore

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Wisel Creek | 10108206 | 9 | $0 | Yes |

Houston

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Beaver Creek | 10207224 | 0 | $0 | Yes |
| Winnebago Creek | 10105222 | 7 | $0 | Yes |

Lake

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Silver Ceek | 05310216 | 2 | $0 | Yes |

St. Louis

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Keene Creek | 04915212 | 2 | $0 | Yes |
| Miller Creek | 05014218 | 0 | $0 | Yes |

Winona

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Pine Cr. (New Hartford Cr.) | 10505219 | 0 | $0 | Yes |
| So Branch Whitewater River | 10710214 | 18 | $0 | Yes |

## Section 2 - Protect Parcel List

Lake

| Name | TRDS | Acres | Est Cost | Existing Protection? | Hunting? | Fishing? |
|---|---|---|---|---|---|---|
| Stewart River | 05311215 | 73 | $0 | No | Not Applicable | |

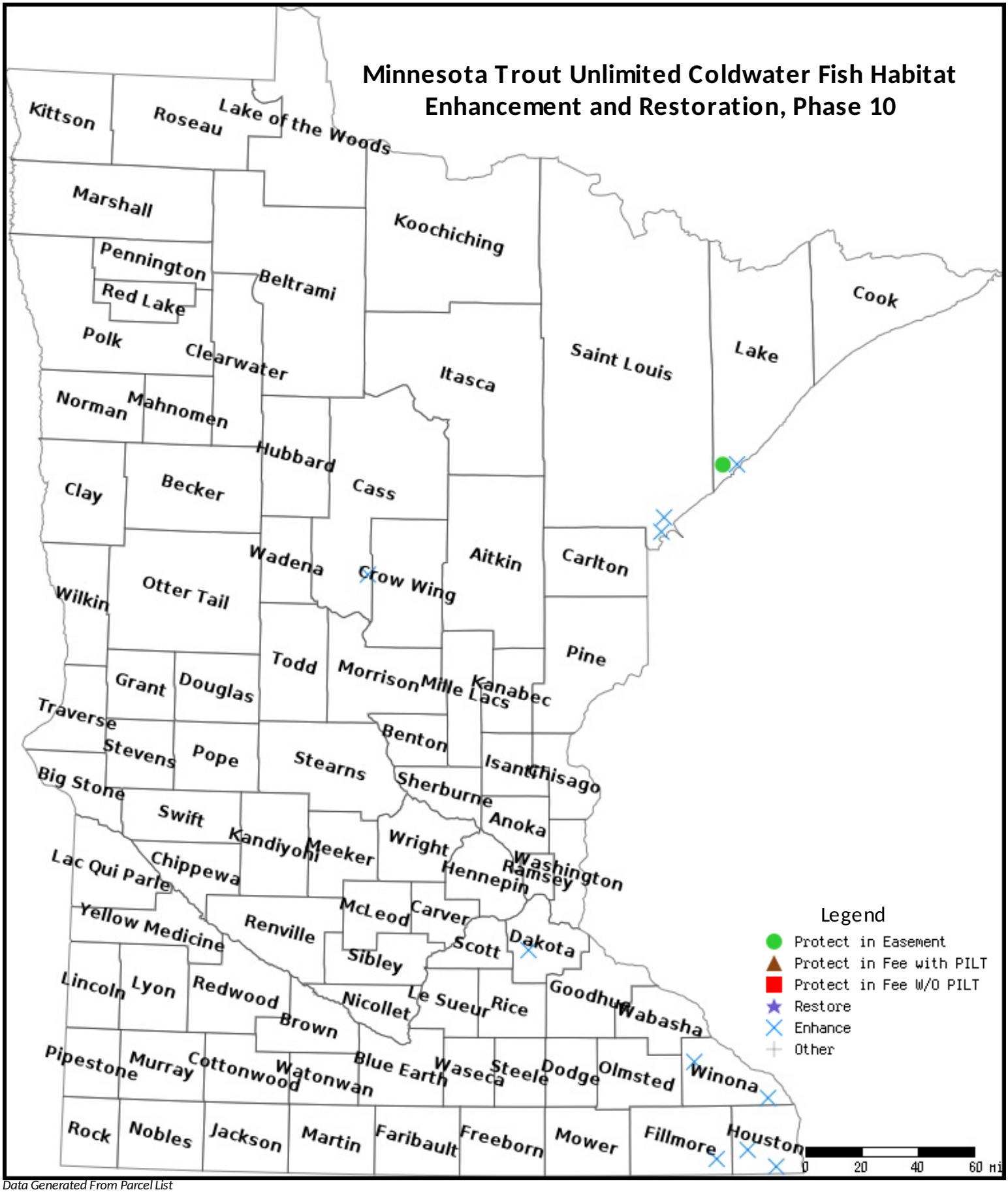
## Section 2a - Protect Parcel with Bldgs

No parcels with an activity type protect and has buildings.

## Section 3 - Other Parcel Activity

No parcels with an other activity type.

# Parcel Map




*Data Generated From Parcel List*

Individual Project Descriptions - Minnesota Trout Unlimited - Fiscal Year 2019 – *Oct 2017*

This attachment briefly summarizes the priority habitat enhancement projects which Minnesota Trout Unlimited proposes to complete using FY2019 funding from the Outdoor Heritage Fund. Additional priority habitats projects may be completed depending upon funds leveraged and construction efficiencies realized. All projects will enhance and/or restore degraded habitat on existing public property, on land permanently protected by a conservation and management easement under the aquatic management area system, or in public waters.

**Methods.** Methods used vary by region and project site. MNTU consults with professional in the MNDNR and uses the best available stream restoration and coldwater aquatic science to select specific habitat improvement methods for each stream that reflect the distinct characteristics of the watershed and ecological region, address the specific limiting factors (e.g. spawning substrate, adult cover, invertebrate production, etc.), and account for the land use practices. Habitat enhancement methods typically include: (1) sloping stream banks back to both remove streamside sediments that have previously been transported from uplands areas and better reconnect the stream to its floodplain, (2) removing shallow rooted woody vegetation (invasive box elder, buckthorn, etc.) 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, (4) installing overhead bank and other in-stream cover for trout, (5) utilizing soil erosion prevention measures, (6) seeding exposed banks and taking steps to firmly establish vegetation (including using native prairie grasses where appropriate and feasible), (7) improving angling accessibility, (8) fencing riparian corridors where appropriate to facilitate managed grazing and prevent damage from over-grazing, (9) restoring large cover logs to the channels of Northern forested streams to increase deep pool habitat, and (10) planting long lived trees along Northern forested streams to shade and cool the water, and provide a source of future cover logs.

These actions directly enhance physical habitat, and typically increase overall trout abundance (biomass), the number of larger trout, and levels of successful natural reproduction. Additional benefits include reduced erosion and sedimentation, cooler water temperatures, improved water quality, and increased connectivity of aquatic and riparian habitat corridors.

**Southeast Forest Section (Driftless area)**

The five projects in southeast Minnesota described below share a legacy of degraded habitat due to agricultural practices of the past century. The following example is typical of how and why MNTU improves habitat along trout streams in this ecological region:

Decades of erosion have led to wider, shallower and warmer streams, and left a legacy of excessive streamside sediments which continually re-erode and cover in-stream habitat, food production areas and spawning habitat. 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. Projects remove invasive trees and grade steep, eroding banks with machinery to remove sediments. Importantly, this reconnects the stream to its floodplain.

Eroding banks are sloped back to a more gradual 3 to 1 slope and the toe anchored to curb erosion. Banks are then seeded with deep rooted grasses to secure soils within the entire corridor and keep them from eroding in high water. The sloped banks allow floodwaters to quickly spread out into the floodplain and slow down, reducing the destructive impact of a flood. Since the projects are designed for long-term ecological and hydraulic stability, once vegetation is well established flood waters typically just flatten grasses temporarily and do not damage the in-stream structures and undercut banks.

Overhead cover habitat is created both by increasing the stream's depth through via narrowing the channel or installing rock weir plunge pools, and by placing cover structures in select stream banks. These trees and wooden structures help recreate the undercut banks which had existed before settlement and land use practices altered the more stable flows which had gradually created and maintained them. The streams flow faster, deeper and cooler, and provide vital overhead cover.

The MNDNR is a key partner in work on all projects. Other partners typically include farmer-landowners, the NRCS and local Soil and Water Conservation Districts.

1. <u>South Branch of Whitewater River (Winona)</u>

The project reach was destabilized and habitat badly damaged as the result of August 2007 floods. In 2015 its trout population was nearly wiped out by a major fish kill. We will enhance habitat on 8,000 feet of this popular section. By providing good habitat and increased carrying capacity, the project will accelerate the recovery of the wild trout population. This is a highly visible, well used section of river. This is an opportunity both to do good habitat work and to demonstrate to anglers that their tax dollars are helping where they desperately want to see it used. This stream segment has been heavily silted and cluttered with downed trees and other woody debris. The proposed work will remove undesirable trees and brush, re-slope the banks, re-contour and stabilize the stream channel, and improve its connection to its natural flood plain. The work will improve trout holding and hiding cover in the project area.

2. <u>Wisel Creek (Fillmore)</u>

Wisel Creek is an important fishery which enters into a high quality section of the South Fork of the Root River near Choice, MN. MNTU recently completed work on a tributary of Wisel Creek and is in the process of designing and implementing habitat improvements a 7,000' reach of Wisel downstream from the proposed Fy2019 project.

The new project site is located where several cold springs enter Wisel Creek. There is little quality habitat for adult trout. Habitat work here will provide adult habitat in this coldwater refuge area and build upon the benefits of nearby work. It will make the overall trout population in the stream more resilient.

The habitat enhancement methods described in the agricultural area example above will be used. Trout habitat, trout populations, and trout angling will increase. Water quality benefits due to the reconnected floodplain and stabilized streambanks will be substantial. We will partner with the MNDNR Lanesboro Area Fisheries Office on implementation and will work with the landowner to leverage NRCS cost sharing funding to keep OHF costs to a minimum. The Hiawatha Chapter of TU will contribute substantial in-kind labor on the project

3. Winnebago Creek (Houston)

The project site is severely degraded segment of stream containing eroding stream banks and poor in-stream habitat. . Habitat will be enhanced using methods described above. We will partner with the MNDNR Lanesboro Area Fisheries Office on implementation and will work with the landowner to leverage NRCS cost sharing funding to keep OHF costs to a minimum.

4. Beaver Creek (Houston) *Dropped due to reduced funding**

The project is near a popular state park. The project site is a severely degraded segment of stream containing eroding stream banks and poor in-stream habitat. . Habitat will be enhanced using methods described above. We will partner with the MNDNR Lanesboro Area Fisheries Office on implementation and will work with the landowner to leverage NRCS cost sharing funding to keep OHF costs to a minimum.

5. Pine Creek (New Hartford Creek) (Winona) *Dropped due to reduced funding**

The project site is severely degraded segment of stream containing eroding stream banks and poor in-stream habitat. . Habitat will be enhanced using methods described above. We will partner with the MNDNR Lanesboro Area Fisheries Office on implementation and will work with the landowner to leverage NRCS cost sharing funding to keep OHF costs to a minimum.

**Metro Urbanizing Section**

6. Vermillion River (Dakota)

The Vermillion River is a unique urban trout fishery located in Dakota County within a half-hour drive of downtown St. Paul. This large river harbors a self-sustaining population of trophy-

sized brown trout. The number of large trout per mile rivals any stream in the state, with some fish approaching 30 inches in length. Its close proximity the majority of the state's residents ensures significant use by anglers happy to find high quality angling in their backyard.

This project reach has been severely degraded by ditching and straightening. The river is still nearly straight here, in stark contrast to the meandering path in unaltered reaches nearby. The lack of bends results in a uniform channel with little depth or other cover which trout require to thrive. Straightened river channels are unstable, and this channel shows signs of erosion in many places where the stream is attempting to return to a more meandered state. Unaided this process can take many decades, and will cause excessive erosion of many tons of soil. The resulting sedimentation will fill holes and smother spawning substrates for miles downstream.

The project reach is located on South Creek, which is the coldest Vermillion River tributary and a key trout nursery area. The habitat enhancement work will create good adult trout habitat, serve as a coldwater refuge for other reaches and has the potential for growing very large wild brown trout. We will restore approximately 2,900 feet of straightened channel to a more natural, stable pattern and create approximately 4,100 feet of good trout habitat in the process. The stream banks will be planted in native vegetation, and integrated into a restoration of wildlife habitat on the wider parcel.

This project builds upon the great habitat acquisition efforts of Dakota County being funded by OHF and county matching funds. We will restore habitat on land which will be protected by Dakota County prior to the effective date of a FY2019 appropriation. A trail will be developed as part of a larger greenway project, but OHF funding will not be used for that complimentary effort. OHF funds will be used only for our habitat restoration work on permanently protected land. Partners include Dakota County, the City of Farmington, and the Vermillion River Watershed Joint Powers Organization. The Twin Cities Chapter has turned out several hundred volunteers to work on Vermillion River project sites in the past 2 years, including many youth and nonmembers from the community. We expect many will assist with planting and other work on this site as well.

**Northern Forest Section**

7. Keene Creek (St. Louis) *Length reduced due to reduced funding**

Keene Creek is one of Duluth's top brook trout fisheries, despite decades of impacts to this "urban" trout stream. Duluth area streams were hammered by unprecedented flooding in June 2012, decimating brook trout habitat and leaving most streams with very unstable channels. Keene Creek did not escape damage. This project will restore a third segment of the stream channel, increase the amount of deep pool habitat and

trout cover, connect good habitat and bolster the size and long term sustainability of this native brook trout fishery.

Keene Creek begins in Hermantown and flows south through a forested park and enters Duluth above Skyline Drive. It then tumbles down the hillside in a series of pools and runs before it enters the St Louis River near Grassy Point. This surprisingly productive stream is a short bicycle ride from thousands of homes and is popular with children and adults alike. It is arguably the most productive, fishable trout stream on the western half of Duluth and supports itself through good natural reproduction. The two most recent rounds of OHF funding are currently being used to enhance habitat in the most badly degraded habitat in the Hermantown portion of the stream where most groundwater and natural reproduction was found. The FY2019 project will restore a third segment of river located in the next high priority reach moving downstream. The project reach is located below Skyline Drive in the parkland owned by the City of Duluth. Trout habitat will be created throughout a 2,000 foot reach which flows through a well-used neighborhood parkway and will create great recreational opportunities for kids and families. MNDNR Duluth Area Fisheries Office agrees that this creek as a top priority for habitat work.

Portions of this reach had been straightened in the past and the 2012 floods destabilized and tore apart the stream channel in many places. Hurried repairs to protect structures did nothing to increase the quantity of pool habitat and woody cover.

In addition to stabilizing the channel, the project will directly increase the amount of deep pool habitat and overhead cover using large logs and boulders, using approaches similar to those employed on MNTU's Sucker River and Stewart River projects. The project will use significant volunteer labor provided by the Gitche Gumee Chapter of TU (Duluth), MNTU, local angling and conservation groups, and Duluth area residents.

The stream corridor is frequented by children and adults, but the poor habitat limits both trout numbers and angling interest. The project will create good habitat capable of holding catchable numbers of adult trout in a setting thousands can reach by a short walk or bike ride.

8. Miller Creek (St. Louis) *Dropped due to reduced funding**

Miller Creek is a native brook trout stream which runs through Hermantown and Duluth, Minnesota. This storied brook trout fishery is where countless young anglers cut their teeth on trout angling, including several well-known outdoor writers. In recent decades has been impacted by development and the community has focused much effort at lowering water temperatures to improve trout survival and reproduction. Monitoring has verified that water temperatures in the project reach, located in the upper portion of the watershed, are suitable for sustaining naturally reproducing brook trout. However, this section of the river was straightened in the past and the resulting lack of habitat is

limiting trout abundance. This project will restore habitat and nearly double the stream length by restoring a natural meandering pattern along 4,000 feet of stream.

We will use natural channel design methodology to restore this channelized reach to a hydrologically stable channel that provides good trout habitat and is re-connected to its floodplain. Restoring the connection to the floodplain will also reduce erosion by slowing down stream velocities during high flows and increasing critical cool water baseflow. The riparian area will be planted with native trees and shrubs, hopefully with significant volunteer involvement by the community.

This highly visible project is a short hike or bike ride for thousands of kids and families.

This project will be done in partnership with the St. Louis County SWCD, and should leverage approximately $400,000 to $700,000 dollars in non-OHF funding. Partners are likely to include the cities of Hermantown and Duluth, the MN Pollution Control Agency, the MNDNR, the MN Dept. of Transportation, St. Louis County, and other entities that have taken steps to restore this urban trout fishery over the past several decades.

9. Stewart River (Lake)

This project is necessary to provide the permanent riparian corridor protection essential to extend watershed scale restoration work to all high priority stream segments within a top North Shore watershed. A lack of permanent trout stream easements on the most degraded segments prevents completion of enduring restoration at a watershed scale. The Stewart River, located outside Two Harbors, MN, is known for its productive and popular wild steelhead fishery, as well as its brook trout fishing. MNTU has been spearheading a collaborate planning process with the MNDNR, conservation and sporting groups, and other agencies to identify the top tier of North Shore watersheds on which to focus future protection, restoration and enhancement actions. Consensus was reached on the top tier watersheds in the Lake Superior basin, and the Stewart River watershed ranks at the head of this select group. Preliminary results of a watershed assessment and master plan confirm that most of the highest priority reaches for habitat restoration currently lack easements due to lack of adequate funding. This component of our habitat program will ensure key easements are secured and access for in-stream habitat restoration secured in a timely manner.

This FY2019 project will enable enhancement and restoration work by MNTU and several partners by securing permanent conservation easements in the riparian corridor of those parcels identified as the highest priority for fish habitat restoration and enhancement.

10. Silver Creek (Lake)

This stream supports a popular steelhead fishery and the project site is important as a nursery area for juvenile steelhead. The project reach will improve habitat for juvenile steelhead as well as brook trout. The project site was impacted by the historically severe flood of June 2012. The channel is now very unstable and stability must be restored along with in-stream cover habitat. The channel will be restored, eroding banks stabilized using toe wood and woody cover, and further erosion and sediment inputs from the site reduced. A properly functioning, stable channel with depth and woody cover will provide habitat for steelhead, brook trout and other aquatic organisms, increase water quality and withstand high flows.

11.. Stoney Brook (Cass)

This small stream is a relatively rare, popular trout fishery in the Gull Lake area near Brainerd, MN. Habitat improvements done in the 1950s to 1980s need repair, modification or replacement. Habitat enhancement work will be concentrated in ten or so areas with a mile or more of stream. New habitat features will be added, increasing habitat for adult brook and brown trout. Work will primarily use hand labor provided by Conservation Corps crews under the direction of MNDNR Fisheries staff.

**Statewide**

12. Numerous streams statewide (prioritized maintenance list)

Many southeast trout stream corridors are being choked by shallow rooted, invasive trees which are severely limiting macroinvertebrate (food) production and trout abundance in the streams. In-stream conditions and riparian wildlife will often benefit from removal of this detrimental canopy and allow a return to more deeply rooted riparian grasses and beneficial sunlight, which triggers the food production cycle. Many streams with good groundwater input need only this vegetation management to improve habitat and allow the streams to naturally narrow and deepen.

Streams in central and northern areas often suffer from historic logging practices and recent neglect which has led to altered riparian forest composition. Unnaturally high beaver densities and increased water temperatures often result.

A prioritized list of stream corridors needing vegetative treatment is being prepared by the DNR with input from Minnesota Trout Unlimited. Sites will be selected which do not need other, more extensive measures such as major bank sloping. Treatment methods will vary based upon site conditions and may include logging, brushing, controlled burns, and herbicide applications. Efforts to restore healthier riparian forests in northern parts of the state are often hampered by unnaturally high beaver densities tied to

second or third growth forest conditions. To prevent inundation of planted areas, as well as to prevent excessive warming of the water, some targeted beaver management may also be undertaken.

**Notes:** The terms "restore" and "enhance" are used interchangeably throughout the grant proposal and the individual project descriptions since the dividing line is not clear and definitions (or interpretations) not well settled. All projects proposed her will enhance habitat, and several will also restore it. These are construction projects and estimates of the relative mix of contract versus materials are rough estimates only.

*If substantial contracting efficiencies and/or leveraged funding allows we may extended the length of the Keene Creek project or other projects and may work on Beaver Creek, Pine Creek, Miller Creek or other streams.

# Lessard-Sams Outdoor Heritage Council
# Comparison Report

**Program Title:** 2018 - Minnesota Trout Unlimited Coldwater Fish Habitat Enhancement and Restoration, Phase 10
**Organization:** Minnesota Trout Unlimited
**Manager:** John Lenczewski

## Budget

Requested Amount: $3,450,000
Appropriated Amount: $2,291,000
Percentage: 66.41%

| | Total Requested | | Total Appropriated | | Percentage of Request | |
|---|---|---|---|---|---|---|
| **Budget Item** | **LSOHC Request** | **Anticipated Leverage** | **Appropriated Amount** | **Anticipated Leverage** | **Percentage of Request** | **Percentage of Leverage** |
| Personnel | $120,000 | $0 | $90,000 | $0 | 75.00% | - |
| Contracts | $1,560,000 | $350,000 | $981,000 | $350,000 | 62.88% | 100.00% |
| Fee Acquisition w/ PILT | $0 | $0 | $0 | $0 | - | - |
| Fee Acquisition w/o PILT | $0 | $0 | $0 | $0 | - | - |
| Easement Acquisition | $190,000 | $0 | $190,000 | $0 | 100.00% | - |
| Easement Stewardship | $20,000 | $0 | $20,000 | $0 | 100.00% | - |
| Travel | $10,000 | $0 | $10,000 | $0 | 100.00% | - |
| Professional Services | $540,000 | $0 | $340,000 | $0 | 62.96% | - |
| Direct Support Services | $24,000 | $24,000 | $24,000 | $24,000 | 100.00% | 100.00% |
| DNR Land Acquisition Costs | $0 | $0 | $0 | $0 | - | - |
| Capital Equipment | $0 | $0 | $0 | $0 | - | - |
| Other Equipment/Tools | $20,000 | $0 | $20,000 | $0 | 100.00% | - |
| Supplies/Materials | $966,000 | $500,000 | $616,000 | $500,000 | 63.77% | 100.00% |
| DNR IDP | $0 | $0 | $0 | $0 | - | - |
| Total | $3,450,000 | $874,000 | $2,291,000 | $874,000 | 66.41% | 100.00% |

## How will this program accommodate the reduced appropriation recommendation from the original proposed requested amount?

Four projects had to be dropped.

# Output

## Table 1a. Acres by Resource Type

| Type | Total Proposed | Total in AP | Percentage of Proposed |
|---|---|---|---|
| Restore | 0 | 0 | - |
| Protect in Fee with State PILT Liability | 0 | 0 | - |
| Protect in Fee W/O State PILT Liability | 0 | 0 | - |
| Protect in Easement | 73 | 73 | 100.00% |
| Enhance | 193 | 167 | 86.53% |

## Table 2. Total Funding by Resource Type

| Type | Total Proposed | Total in AP | Percentage of Proposed |
|---|---|---|---|
| Restore | 0 | 0 | - |
| Protect in Fee with State PILT Liability | 0 | 0 | - |
| Protect in Fee W/O State PILT Liability | 0 | 0 | - |
| Protect in Easement | 278,000 | 278,000 | 100.00% |
| Enhance | 3,172,000 | 2,013,000 | 63.46% |

## Table 3. Acres within each Ecological Section

| Type | Total Proposed | Total in AP | Percentage of Proposed |
|---|---|---|---|
| Restore | 0 | 0 | - |
| Protect in Fee with State PILT Liability | 0 | 0 | - |
| Protect in Fee W/O State PILT Liability | 0 | 0 | - |
| Protect in Easement | 73 | 73 | 100.00% |
| Enhance | 193 | 167 | 86.53% |

## Table 4. Total Funding within each Ecological Section

| Type | Total Proposed | Total in AP | Percentage of Proposed |
|---|---|---|---|
| Restore | 0 | 0 | - |
| Protect in Fee with State PILT Liability | 0 | 0 | - |
| Protect in Fee W/O State PILT Liability | 0 | 0 | - |
| Protect in Easement | 278,000 | 278,000 | 100.00% |
| Enhance | 3,172,000 | 2,013,000 | 63.46% |