Main Request for Funding Form

Lessard-Sams Outdoor Heritage Council
Fiscal Year 2013

Program or Project Title:

Minnesota Trout Unlimited Coldwater Fish Habitat Enhancement Program

Funds Requested: **$ 2,699,000**

Manager's Name: **John Lenczewski**
Organization: **Minnesota Trout Unlimited**
Street Address: **P. O. Box 845**
City, State, Zip: **Chanhassen, MN 55317**
Telephone: **612-670-1629**
E-Mail: **jlenczewski@comcast.net**
Organization Web Site: **mntu.org**

County Location: *[Only need to enter on web form.]*

Ecological Planning Regions:

X☐ Northern Forest ☐ Forest/Prairie Transition X☐ Southeast Forest

☐ Prairie X☐ Metro/Urban

Activity Type

☐ Protect - Fee ☐ Protect - Easement X☐ Protect - Other

X☐ Restore X☐ Enhance

Priority Resources addressed by activity:

☐ Wetlands X☐ Forests ☐ Prairie X☐ Habitat

Project Abstract

Our members and chapters across the state will enhance in-stream and riparian fish and wildlife habitat in coldwater streams located in existing Aquatic Management Areas, and other existing public lands.

Project Narrative

Design and scope of work

A. The problem being addressed.

Minnesota remaining mileage of coldwater streams represent just six percent of the State's streams and rivers. Minnesota has approximately 12,000 lakes and 5,400 fishable ones, but only about 200 are managed for brook, rainbow and brown trout. However, they are disproportionately popular with anglers and valued by citizens because they generally represent the highest quality aquatic systems remaining. For this reason degraded habitat in and along many of these coldwater lakes, streams, and rivers is a conservation issue of statewide importance that requires accelerated investment through habitat restoration and enhancement projects.

The Lessard-Sams Outdoor Heritage Council ("L-SOHC") has very appropriately identified the restoration and enhancement of coldwater fish habitat as a priority action in each of the L-SOHC Ecological Sections where these projects are located. Minnesota Trout Unlimited ("MNTU") has identified several priority habitat enhancement opportunities around the state which our local members have the capacity to complete with Fiscal Year 2013 funding from the Outdoor Heritage Fund ("OHF"). MNTU respectfully proposes to partner with Minnesota taxpayers to enhance lake, in-stream and riparian fish and wildlife habitat in and along the following Minnesota waters (counties) with FY 2013 funding:

1. Cook County Brook Trout stream (Cook);
2. Kimball, Mink & Boys Lakes (Cook);
3. Garvin Brook (Winona);
4. Rush - Pine Creeks (Winona);
5. Hay Creek (Goodhue);
6. South Creek – Vermillion River (Dakota);
7. Spring Creek (Goodhue);
8. North Shore steelhead river(s) (Lake; St. Louis);

9. East Indian Creek (Wabasha);

10. Mill Creek (Olmsted);

11. Camp Creek (Fillmore).

B. The scope of work.

The projects proposed for FY 2013 funding will use methods similar to those used on projects completed by MNTU chapters in the past several years and will seek to incorporate new research to improve project designs and fish and wildlife benefits. Each discrete project in our habitat enhancement program is a "stand alone" project which will be completed with the requested funding.

The specific fish habitat enhancement methods used on each stream will vary 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 will tailor each project accordingly, using the best available science, in close consultation with resource professionals within the Minnesota Department of Natural Resources ("MNDNR"). Our local chapter members will share not only their passion for conservation, but also their first-hand knowledge of the watersheds and the myriad lessons they have learned from decades of planning, funding, and completing fish habitat restoration and enhancement projects in Minnesota.

Purposes: Each project will be 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, (g) improve angler access and participation, (h) improve lake productivity for trout species, and (i) protect productive trout waters from undesirable invasive species.

Habitat enhancement methods used may include 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, (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. How and why the various habitat enhancement actions are typically taken in these regions is best illustrated by the following example:

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.

Individual Project Descriptions: The following project summaries outline the types of actions, unique opportunities, partnerships and timetables for each project included in this proposal. All of the projects enhance habitat on existing public property or land already permanently protected by a conservation and management easement under the aquatic management area system. No acquisitions are anticipated.

1. Cook County Brook Trout stream (Cook).

Habitat for native brook trout will be enhanced in a 1,500 foot reach of stream in the heart of Minnesota's storied brook trout country. Over the past 50 years and more, numerous streams in Cook County have had habitat improvement projects completed, primarily aimed at increasing the wild brook trout cover which had been stripped away during the settlement era. Many of these improvements have been very effective and these streams are popular fishing destinations for Cook County residents, fishermen and women from across Minnesota, and tourists drawn to the angling from outside the state. These streams are what most people think of when brook trout fishing is mentioned. They include streams such as the Cascade River, Irish Creek, Little Devil Track River, Junco Creek, Kadunce Creek, Kimball Creek, Poplar River, and others. Many habitat structures are now in very poor condition and no longer functioning properly, if at all. In addition, habitat enhancement practices have evolved over the past 20 years, and old improvement sites can in many cases be enhanced or modified to provide much greater resource benefits.

In 2011 MNDNR fisheries personnel conducted field inspections of past habitat improvement sites in Cook County and began developing a catalogue describing the present condition and further enhancement needs of dozens of stream reaches in Cook County. More than 100 separate stream segments have been assessed. Minnesota Trout Unlimited will use the final catalogue as the basis for identifying a top priority stream segment for enhancement work in summer 2013. We will identify a stream segment with the highest natural resource "impact" for the dollar.

The project will use significant volunteer labor provided by MNTU members, as well as members of other local angling and conservation groups interested in joining us. Using hand labor we will likely revitalize and replace failing wood or wood & rock habitat structures originally installed as long as 60 years ago. Using improved understanding of how such structures function in these streams, new structures will be placed so as to provide the deep water cover that the brook trout need. Rock located on and near the site may be added to structures to ensure that they direct both high and low stream flows appropriately

Project planning and initial survey work will begin in summer 2012, with fieldwork in summer 2013. Planning and permitting steps include working with MNDNR to identify the most appropriate, highest priority stream reach, walking prospective sites and scoping work, working with land managers or owners, and securing additional partners. The MNDNR Fisheries office in Grand Marais, MN is our primary project partner, and its most experience habitat installer will provide supervision to volunteers eager to donate their labor to improve fish habitat for all. Additional partners may include local conservation and sporting groups, local residents, the US Forest Service, the USFWS, and others.

The project will improve degraded habitat on existing public lands (State Forest or National Forest land) in Cook County, or on an existing AMA easement. No acquisition will be involved.

2. Kimball, Mink & Boys Lakes (Cook).

These three trout lakes near Grand Marais, totaling 159 acres, are among the most popular destination in Northeast Minnesota for anglers seeking brook, rainbow and brown trout. The draw of trout fishing here packs a public campground on Kimball Lake for much of the summer. Cook County residents also use the lakes heavily. Unfortunately, the lake habitat and trout fishery have been compromised by the unintended, undesirable invasion of non-game fish. This project consists of two separate components targeted at restoring/enhancing the habitat and protecting it from future degradation. All three interconnected lakes must be reclaimed to restore the previously productive lake habitat conditions for brook, brown and rainbow trout. While the Grand Marais Office of the MNDNR ranks this as a very high priority for habitat protection, restoration or enhancement work, they remain unable to find extra money to fund this additional work anytime soon. This project will accelerate reclamation to as early as September 2012, and restore the productivity of these three very popular trout fisheries. After close consultation with the MNDNR we will contract with a qualified contractor specializing in such reclamation projects. Work will take place in late September and early October at the direction of the MNDNR. The reclamation should be completed by freeze up.

A physical barrier against future invasions via Kimball Creek will also be installed by Trout Unlimited volunteers at the outfall of Kimball Lake. It will involve the use of several large logs, lots of large rock, and plenty of old fashioned physical labor. Mosquito repellant will be donated. Everyone, Council members included, is welcome to lend a hand on this and all MNTU projects. The work will be take place under the direction of MNDNR personnel who have agreed to assist volunteer laborers with this project component as well. The completed barrier will protect all three of these interconnected lakes (totaling 159 acres) from future invasions via this pathway.

3. Garvin Brook (Winona).

Garvin Brook is a publicly visible and highly productive trout fishery which is easily accessible from Hwy. 14 between Lewiston and Stockton, Minnesota. The project will begin on the edge of the heavily visited Farmers Park, where the public can easily view and access this stream. Habitat enhancements will extend downstream approximately 2,700 feet through State and County land. This is a great opportunity to provide high quality habitat enhancement in a setting where citizens can see Outdoor Heritage Fund dollars being put to good use. Both this coldwater resource and the OHF funded habitat work are both tremendous benefits for the public. This project will highlight these benefits.

The intense flood of August 2007, a 10,000 year event according to many experts, significantly impaired large portions of Garvin Brook, including this segment. The stream channel was torn apart as large trees and rocks were moved. In addition to destroying in-stream habitat, the flood tore vegetation from the flood plain, leaving bare areas which invasive species such as garlic mustard, wild parsnip, and buckthorn quickly colonized, posing threats to terrestrial wildlife utilizing the county and State Forest lands here. The project will increase the health and resilience of the Garvin Brook fishery and watershed by improving the in-stream habitat and surrounding forest habitat.

This project seizes upon an opportunity to help restore a robust native brook trout fishery. The project extends from Farmers Park downstream to a concrete “spillway” created by the 2007 flood. The MNDNR intends to modify this slightly to create a barrier to upstream movement by brown trout and through electroshocking remove all brown trout to below this barrier and manage the upper portion of Garvin Brook and its tributaries for native brook trout only. This FY 2013 project will be enhance habitat for native brook trout and help create a robust brook trout fishery here to compliment the highly productive wild brown trout fishery which will flourish in the 6,000 foot reach which MNTU will have completed by that time using FY2012 OHF funding and other leveraged contributions.

This enhancement project narrow the stream channel, remove accumulated sediment as needed, re-slope and stabilize stream banks, install overhead cover (including depth cover) for naturally reproducing trout. Damaged trees, invasive trees and other invasive plants will be removed along the riparian corridor and native vegetation re-established. Many of the methods used are more fully described in the “Agricultural area example” above.

Surrounding forest and wildlife habitat will also be enhanced as part of an intensive, systematic, multi-year effort to remove and eradicate invasive plant species threatening this heavily (flood) disturbed area. We propose to act aggressively within the post flood disturbance “window” to prevent invasive species such as garlic mustard from becoming solidly, perhaps irreversibly, established. Volunteers from the Win-Cres Chapter of Trout

Unlimited will work closely with MNDNR Forestry personnel, the local Conservation Corps Minnesota crew, and others on this removal

Pre-project survey work, project design and permitting will begin in summer 2012, following a July 2012 appropriation. Fieldwork will commence the following summer fieldwork season (2013). Members of Win-Cres Chapter TU, as well as other TU members, will donate very substantial amounts of time and energy to showcase this fishery and the OHF funded habitat work. In the past two years Win-Cres Chapter TU members have organized several work days on Garvin Brook removing flood debris, invasive trees, and invasive plants Dozens of high school students and local residents have joined these efforts and we have an opportunity to further foster interest in conservation through this project. Project partners will include the MNDNR Fisheries – Lanesboro Area Office; MNDNR Forestry; Winona State University - Water Resources Center; St Mary's University – Biology Dept., and local residents.

4. Rush - Pine Watershed (Winona).
This large project represents a special opportunity to secure $200,000 of federal funding for use on trout stream habitat projects located in the Rush –Pine Creek subwatershed of the Root River watershed. By pairing OHF funds with these specially earmarked federal funds MNTU can ensure that an additional mile or two of high quality in-stream and riparian fish and wildlife habitat enhancement work is completed in this regionally important trout stream complex. Additionally, these in-stream and riparian habitat projects seizes a timely opportunity to work with partners on upland erosion sites within the context of a comprehensive watershed protection and restoration effort.

The Rush Creek and Pine Creek subwatersheds run from Interstate 90 corridor south into the Root River at Rushford. The combined Rush-Pine subwatersheds contain more than 58 miles of designated trout water. They also host one of the highest densities of public angling access easements in the state with over 35 miles in perpetual easement. Pine Creek and its two tributaries, Hemingway and Coolridge, are considered some of the finest trout waters in the state. Pine Creek and its tributaries are also very significant for regional trout management because they are the only remaining stream complex in Southeast Minnesota that contains native brook trout genetics in a large, robust population. American Brook Lamprey and pickerel frog are just two of the rare aquatic species found throughout this amazing watershed.

Aquatic habitat and stream function have been severely degraded by upland erosion and altered hydrology within the watershed. Historical poor land management practices have caused the stream to become incised and disconnected from its floodplain, contributing to further altered hydrology and sediment re-suspension. For many of the reasons noted above MNTU chapters have worked in the Rush – Pine system for years. And MNTU is set to begin enhancing two miles of habitat in the lower half of Pine Creek with OHF funding.

We propose to improve habitat on an additional mile or two by pairing FY2013 OHF funding with special federal funding. The Natural Resources Conservation Service selected the Rush-Pine Creek Watershed Initiative/Partnership for special funding under the Mississippi River Basin Healthy Watersheds Initiative (MRBI). Through the MRBI, the NRCS and numerous partners will focus efforts in the Rush-Pine subwatershed, helping landowners implement conservation practices that avoid, control, and trap nutrient runoff; improve wildlife habitat; and maintain agricultural productivity. This project represents a perfect opportunity to realize the Council's vision for this region of combining in-stream enhancement work with streamside/riparian work to the top of the watershed in order to slow runoff and keep aquatic habitat clean and productive, with prolific fish, game and wildlife populations.

Phosphorus was identified as the limiting nutrient in this surface water and sediment was the number one water quality problem. Pine Creek and Rush Creek have incised stream channels, and consequently erosion from their banks likely contributes 50 to 90 percent of the stream's sediment and phosphorus loads. MRBI partners agreed with MNTU that stream bank stabilization with additional habitat enhancement measures for trout and nongame species would be one of the practices offered to landowners in the project area. The private landowners along Pine and Rush are edible to sign up for federal cost sharing dollars for in stream and riparian stream bank work. The last sign-up for these special designated conservation funds is federal fiscal year 2013.

MNTU is proposing to pair up to $100,000 in OHF funds for engineering, design, surveying, permitting and construction supervision services on these large construction projects with $200,000 each of NRCS and OHF dollars for materials costs and heavy equipment work.

The project site will likely be on the last mile of Pine Creek on a severely degraded segment of stream containing highly eroding stream banks. Habitat will be enhanced using methods previously described in the "Agricultural area example" above. Work will include sloping and stabilizing stream banks, installing overhead cover for trout, installing soil erosion blankets, and mulching and seeding of exposed stream banks with native plant species as appropriate. After having completing habitat enhancements on Pine Creek all the way to its confluence with Rush Creek, we may have sufficient funding (including by leveraging still more funding) to shift work to a section of Rush Creek.

These Rush-Pine projects are will employ additional contractors and expand the capacity of MNTU, the MNDNR and others to enhance and restore more coldwater habitat in future years. Both the Win-Cres and Hiawatha Chapters of Trout Unlimited will assist with these projects, but their role will be more limited. The MNDNR is a key partner. In addition to Trout Unlimited and the MNDNR, MRBI partners working on

broad watershed efforts include the NRCS, several Soil and Water Conservation Districts, the Land Stewardship Project, the MN Board and Water and Soil Resources, The Nature Conservancy, Winona State University, and others.

5. Hay Creek (Goodhue).

This 5,000 foot long project will nearly complete the enhancement of all degraded sections in the upper half of this popular stream on which there are permanent conservation and angling access easements. The 8,200 feet of Hay Creek which the Twin Cities Chapter improved using Outdoor Heritage Fund and leveraged dollars in the first funding cycle (OHF FY 2010) is already drawing a steady stream of metro anglers enthused to find highly productive trout fishing a short drive from their homes and offices. This summer and fall an adjacent 5,500 foot segment will be improved using FY2011 OHF funding. The present proposal should enable us to improve the remaining segments of degraded fish and riparian habitat along what will then be four miles of continuous, high quality trout habitat improvements.

Hay Creek remains a top priority of the Twin Cities Chapter given its close proximity, extensive public access and increasingly productive, fishable water. Building upon ongoing efforts to restore and enhance this watershed, the proposed project site(s) are adjacent to Trout Unlimited habitat enhancement projects completed, or soon to be completed, here. FY2013 OHF funding should enable us to connect and extend 4 continuous miles of in-stream and riparian habitat improvements to the edge of the property on which a popular campground is located. The Hay Creek Campground, historic Dressen store/stagecoach stop, horse riding trails, Goodhue Pioneer Bike trail, and walking trails are all nearby.

The habitat work proposed will be very similar to recent projects by the Twin Cities Chapter of TU in the upper Hay Creek watershed. Many of the methods described in the “Agricultural area example” above will be used. Work will include sloping and stabilizing stream banks, installing overhead cover for trout, and creating depth cover for naturally reproducing wild brown trout. Pre-project survey work, project design and permitting will begin in summer 2012, following a July 2012 appropriation. Fieldwork will commence in 2013. Trout Unlimited members will again donate very substantial amounts of time and energy to help make this south metro stream into a regional gem.

6. South Creek - Vermillion River (Dakota).

This project consists of two separate components which will protect riverine habitat corridors and enhance and restore coldwater fisheries systems, and thus help the Council achieve its vision of a network of natural lands providing wildlife habitat and quality fisheries, especially cold-water fisheries.

6A. Restoration of a natural channel: One component involves the re-meander of a straightened reach of this important Vermillion River tributary and creation productive fish habitat. A quality angling opportunity and improve fishery will be created within the suburbs. Restoring the natural meander pattern will restore 1,200 or so feet of "ditched" stream channel to approximately 1,700 feet of natural channel, well suited to supporting fishable trout populations here and downstream. This reach lies at the upstream end of South Creek, a major trout tributary identified by the MNDNR as a very important trout refuge. Trout from long distances downstream periodically utilize this refuge during times of adverse conditions, such as drought or periods of unusually hot weather. Improving habitat and carrying capacity should boost year round trout numbers while also improving its ability to function as a seasonal refuge.

6B. Vegetative buffers in riparian wildlife corridors: The second component of the project involves establishing protective vegetative buffers in streams corridors both to protect trout and aquatic habitat and to create wildlife habitat in perpetually protected corridors. The Vermillion River Watershed Joint Powers Organization and the City of Lakeville will be financial and technical partners on this project component. These partners together will contribute approximately one-half the costs. These partners have already identified more than 20 separate riparian parcels located along South Creek at its tributaries. A wide vegetative buffer more than 2,300 feet long (covering more than 6 acres) will be established in the riparian corridor along the remeander project site on South Creek and an adjacent tributary. An additional 20 or so parcels stretch upstream along these streams and establishing quality buffers there is vital to providing long term protection of the trout fishery throughout the length of South Creek. All of these riparian parcels are permanently protected through public ownership, and public access is also assured.

Most of the riparian areas identified are currently in a form that serves as poor wildlife habitat. They range from turf grass, to intact buffers with slightly degraded habitat (i.e. restorations were begun but not completed so that invasive species have started taking hold), to buffers with severely degraded habitat (e.g., overgrown with noxious or invasive species such as reed canary grass and buckthorn). Using a competitive bidding process we will hire one or more qualified prairie/grassland restoration specialists to properly establish vegetation is these protected riparian areas which will serve as wildlife habitat corridors as well as protecting coldwater fisheries habitat. In the process we will eradicate invasive plant species.

By leveraging a $40,000 OHF investment in this component, MNTU and its partners hope to enhance or restore approximately 150 acres of wildlife habitat. Connecting habitat through these enhancements or restorations of numerous riparian parcels we will improve or increase upland game habitat, increase non-game habitat, and greatly improve in-stream trout habitat and water quality. As a result of these habitat

enhancements and restorations this cold-water stream will provide a high quality fishery within walking distance of some suburban homes and well within an hour's drive of the majority of the state's population.

7. Spring Creek (Goodhue).

This south metro stream hosts wild brook just a few miles south of the Dakota County border. The proposed project is located within the Peter Hoffman Spring Brook Valley WMA off of State Hwy 19 near Red Wing, MN. This 396 acre WMA is actively managed by MNDNR Wildlife and stewarded by Pheasants Forever. It boasts recreational opportunities for a wide variety of interests, including hunting, trout fishing, bird watching, and mushroom gathering.

The proposed project would enhance fish, game and wildlife habitat along approximately 3,100 feet of stream. The project reach has numerous unstable and eroding streambanks. Enhancement work will consist of sloping and stabilizing these eroded banks and successfully reconnecting the stream to its floodplain. The larger WMA will reap benefits for many game and nongame species. In-stream habitat will be added to boost this naturally reproducing brook trout population. Bank cover and improved pool depth will ensure that fish populations thrive here, providing quality angling opportunities close to the Twin Cities, Red Wing and Rochester. MNTU members expect to donate more than 500 hours of labor to ensure the project's success. Most of the field work will be completed in 2013, but reestablishing prairie grasses here will require work in subsequent years as well. We plan to partner with Pheasants Forever on the grassland work.

8. North Shore steelhead river(s) (Lake; St. Louis).

These two projects will enhance or restore habitat in important nursery and spawning areas of one or more major North Shore steelhead rivers.

8A. In-stream cover habitat for juvenile steelhead

The first project will immediately increase the amount and quality of year-round cover for juvenile steelhead, coaster brook trout and salmon. The lack of large logs (large woody debris or "LWD") which provide cover, especially critical overwintering cover, for juvenile steelhead and other migratory trout and salmon is a significant problem on most North Shore streams. This project will increase the amount of cover by restoring large

logs to the stream channel in a key nursery stretch accessible to wild spawning steelhead. Depending upon the specific site conditions, large boulders may additionally, or alternatively, be used. In-stream habitat will be significantly enhanced along approximately 2,000 feet of river. Disturbed areas will be planted with trees and native riparian plant species.

The relative absence of juvenile steelhead cover and deep water habitat is a limiting factor in providing a more productive, stable and resilient fishery. Early logging activities removed logjams, large woody debris and boulders from the stream channel, and altered the hydrology. Two or more logging cycles have resulted in a young forest ecosystem which is incapable of naturally replacing this missing LWD anytime soon. Significant recruitment of LWD to the stream channel will not commence for another 50 to 75 years, since most riparian trees are far from recruitment age. Without additional logging within the riparian zone for the next 50 years, recruitment of large limbs will eventually occur. But unless large blow downs occur, recruitment of whole trees into the stream system will not occur for another 75 years or more.

The goal of the project is to directly increase the amount of deep pool habitat and overhead cover using large woody debris and rock veining. Approximately 75 large pine logs with intact root wads will be placed in the stream as will large boulders. This will create direct cover for fish and wildlife, encourage channel complexity through scour and deposition, provide refugia for fish during flood events, and can reduce the erosive power of storm flows.

The precise project site will be carefully selected with MNDNR fisheries biologists and managers, but will be located in one of the important steelhead rivers in western St. Louis County or eastern Lake County. This work will be done where lack of cover is a limiting factor in the survival of juvenile steelhead through two winters, on a river which has a self-sustaining steelhead population which will immediately benefit from the increased carrying capacity for wild juvenile steelhead.

Site selection, initial survey work, site planning, design and permitting will begin immediately following a July 2012 appropriation. Installation of woody cover, rock veining, and other fish habitat enhancement work will begin in 2013. Tree planting and project wrap-up will take place in 2014. This will be a collaborative effort between Minnesota Trout Unlimited and the MNDNR. Trout Unlimited members will volunteer

substantial time and labor, along with volunteers from the Lake Superior Steelhead Association and other conservation groups.

8B. Riparian tree planting

A second project will restore long lived tree species to the riparian corridor of one or more North Shore steelhead rivers. By planting a mix of larger potted and bare root trees the project should quickly begin providing shade along approximately one mile of stream and help reduce summer water temperatures.

Due to human alterations of their watersheds many or most these coldwater streams now experience unnaturally high water temperatures in the summer. North Shore trout streams, unlike those in southeast Minnesota, lack significant groundwater flows and are kept cold by the shade provided by trees along their banks. Without cold water steelhead, trout and salmon will perish. This project will increase shade cover by planting a mixture of long lived tree species, both coniferous and deciduous, within the riparian corridor. Tree planting in these rocky watersheds is not easy. Little maintenance can be accomplished once MNTU volunteers and MCC crews have hauled trees in by hand and planted them. Consequently matting must be used to keep weed growth down, and the larger trees caged to inhibit deer browsing losses.

The project will remedy this most pressing threat (warming water) relatively quickly, and also help sustain the coldwater fisheries by providing many other benefits in the near and long term. Longer term benefits include stabilizing the stream channel, curbing erosion and sedimentation from that point all the way downstream and providing a source of future in-stream cover habitat as trees naturally recruit to channel over time.

The entire stretch of river downstream from the project site will benefit in the near and long term. We will use a mix of bare root and larger potted trees, and some should pretty quickly begin providing shade and leaf litter (i.e., food energy) to drive the food chain for juvenile trout, salmon and steelhead. The benefits of cooler water and more organic matter in the stream will extend downstream to juvenile salmonids in those reaches as well. In the longer term, the trees will stabilize the streambanks and erosion and sedimentation rates will decrease downstream.

Site selection, initial survey work, site planning, design and permitting will begin in the summer of 2012, following a July 2012 appropriation. Installation of woody cover, rock veining, and other fish habitat enhancement work will begin in 2013. Tree planting and project wrap-up will take place in 2014. This will be a collaborative effort between Minnesota Trout Unlimited and the MNDNR. Trout Unlimited members will volunteer substantial time and labor, along with volunteers from the LSSA and other conservation groups. We plan to engage local residents in the project and encourage interest and involvement in broader watershed protection efforts.

Hiawatha Chapter Projects:

9. East Indian Creek (Wabasha),

10. Mill Creek (Olmsted),

11. Camp Creek (Fillmore),

Habitat for naturally reproducing trout populations will be enhanced on each of four southeast Minnesota streams using the methods previously described in the "Agricultural area example" above. The Hiawatha Chapter of Trout Unlimited worked closely with Lanesboro Area and Lake City Area offices of the MNDNR to narrow their lists of high priority projects to those included here. Approximately 3.0 miles of in-stream habitat and stream banks will be enhanced beginning in the 2013 field work season. By leverage additional funds we hope to do additional mileage with no additional OHF dollars. Pre-project survey, final design and project permitting work will begin in 2012, following a July 2012 appropriation. All projects will consist of sloping and stabilizing stream banks, installing overhead cover for trout, installing erosion prevention measures, and re-vegetating exposed stream banks, including with native prairie species, where appropriate and feasible.

All three projects are designed to reduce stream bank erosion and associated sedimentation downstream, reconnect the streams to their floodplains, increase cover (including wintering cover for large trout), increase trout abundance, increase natural reproduction of trout and other aquatic organisms, increase habitat and biodiversity for both invertebrates and other non-game species, increase energy inputs via beneficial sunlight, and increase quality trout angling opportunities. Additional anglers drawn to the improved fishing on these readily accessible and readily fishable waters will also give an economic boost to the local communities.

In addition, the streams have these additional opportunities, features and benefits to fishers, citizens and outdoors people:

9. East Indian Creek (Wabasha).

The upper half of the 10 plus miles of trout water on this stream are capable of supporting a top quality native brook trout fishery with some habitat enhancement work. This project will be the first stage in several miles of habitat improvements on East Indian Creek targeted toward this management goal.

The vast majority of productive trout fisheries in southern Minnesota are wild brown trout. East Indian Creek represents an opportunity to provide productive, easily accessible brook trout fishery in a larger stream then they are typically found in today. This project would begin the transformation of East Indian Creek into a destination for sportsmen and women along the Mississippi River/Hwy 61 corridor.

10. Mill Creek (Root River watershed):

This project will build upon and magnify the fisheries benefits of several habitat enhancement projects completed by TU on this stream in 2010 and earlier years, and on quality work which is slated for completion here in 2011 and 2012. This project site is located upstream from the work to be completed in 2012 that will enhance roughly a half mile of Mill Creek and half mile of the Sprau Creek tributary. The present FY2013 project will improve approximately one additional mile, and complete work on all permanently protected and permanently accessible public water. Mill Creek flows parallel to Hwy 52 and down through the town of Chatfield, MN. The project site is a few miles west of Chatfield and visible from Hwy 52. It experience increased use by local residents and anglers from the Rochester and Twin Cities areas, as well out-of-state fishermen from the south. The project will very visibly demonstrate the effective use of OHF dollars in improving fish habitat for the benefit of outdoor enthusiast.

11. Camp Creek (Fillmore).

The Camp Creek project is adjacent to the extensively used bicycle and walking trail which extends south from Preston, Minnesota. Not only will the project improve habitat and trout fishing opportunities, but it will also exposure many people, anglers and non-anglers alike, to the how OHF funding is being well spent for precisely those purposes for which citizens supported the Legacy amendment. In addition to the myriad fish, wildlife, water quality and recreational benefits which MNTU habitat projects provide, the Camp Creek project will be an economic boon to this rural community. The project is already being planned to provide a positive environmental management exposure to the users of the trail facility and will offer handicapped access to the stream. In partnership with the National Trout Center, we plan to add educational material along the trail which will inform people of benefits of trout stream habitat improvement projects, explain why

a healthy stream habitat for fish, game and nongame wildlife matters, and provide useful information concerning how watershed residents can improve watershed health.

Multiple species benefits:

The projects are designed primarily to enhance habitat and increase stream carrying capacity for trout and salmon species, including wild brook trout, brown trout, steelhead (rainbow trout) and potentially Coho salmon. Other fish species associated with coldwater ecosystems such as native sculpin and redhorse also benefit, as well as aquatic invertebrates too numerous to list. Most habitat changes will be identifiable and readily visible immediately upon completion of each project, and our experience shows that fish begin to utilize new in-stream habitat structures for cover immediately upon installation in a given stream bend.

The projects also enhance habitat for numerous bird species and create habitat corridors for these and other aquatic and terrestrial species The proposed projects will incorporate elements to improve habitat for numerous aquatic and terrestrial non-game species such as turtles, snakes, frogs and other amphibians. The deterioration or loss of habitat is a primary cause of such species' rarity according to Minnesota's Comprehensive Wildlife Conservation Strategy. Specifically, regional MNDNR biologists have identified a number of amphibians and reptiles in southeast Minnesota watersheds which they consider species of greatest conservation need. Trout Unlimited and an ensemble of wildlife professionals have developed the *Driftless Riparian Habitat Guide*, a riparian habitat guide for reptiles and amphibians occupying these riparian corridors. We will use this guide to integrate non-game habitat enhancement measures into our projects in an effort to help protect, preserve, and/or increase habitat for a variety of these and other species.

C. How priorities were set:

Our basic approach: MNTU and its chapters approach the project prioritization process with a strategic focus on watersheds and the key subwatersheds within them. Coldwater stream habitat has been seriously degraded across much of Minnesota, and nearly eliminated in the Twin Cities area. Minnesota's most viable coldwater fisheries are now concentrated in the Northern forested regions (particularly the Northeast) and in groundwater "rich" southeast Minnesota. Other coldwater fisheries are scattered across the state in those subwatersheds that contain both adequate ground water and less harmful land use patterns. We therefore focus our energies and resources on those watersheds which we believe can weather the threats posed by increasing population and the potential impacts of a warming climate. We are in a constant process of engaging the MNDNR, the land trust community, and others in strategic planning to identify and target those Minnesota watersheds and subwatersheds most

likely to withstand these and other threats while sustaining fishable populations of naturally reproducing trout and salmon. While this process is ongoing, we have good idea of which watersheds are more likely support viable coldwater fisheries 25 or 50 years from now. We look for opportunities to work in those watersheds and assess others as opportunities arise. All of the projects proposed here are on streams which we believe can sustain viable coldwater fisheries well into the future.

Criteria used: MNTU reviews the MNDNR's watershed specific fisheries management plans and other existing conservation planning efforts, and then consults with area fisheries professionals in MNDNR to identify potential projects that will protect, restore or enhancement coldwater fisheries. MNTU, with input from the MNDNR, then applies criteria to determine the highest priority projects. We have found that the ranking criteria developed by the MNDNR (shown below) are an effective tool in helping to further prioritize potential projects. We do not weight these, but the highest priority projects meet a majority of these identified objectives. The MNDNR's criteria include:

- The project has the potential to increase the carrying capacity (fish numbers);
- The stream must have natural reproduction;
- No habitat work has been done on the project site in the past;
- Close proximity to cities, anglers, etc;
- Ability of the project to reduce significant amounts of sedimentation to the stream;
- The influence the project site has on the rest of the trout population in the stream; and
- The project site must have public access.

In addition to these criteria, MNTU also strives to have each project be:

- Implemented only where the lack of quality habitat is a limiting factor for the fishery;
- Conducted in locations where the public can access the water and in such a way that they are actually fishable by the public;
- Designed and completed in close partnership with MNDNR fisheries;

- Capable of advancing the long term resource goal of ensuring that robust populations of native and wild trout and salmon thrive in Minnesota's coldwater lakes and streams, so that present and future generations can enjoy healthy fisheries near their homes;
- Chosen to seize conservation opportunities that will be lost or significantly delayed if not immediately funded;
- Capable of leveraging other significant sources of funding;
- Durable, especially to withstand flooding; and
- Done on streams capable of sustaining wild trout fisheries given the likely impacts of a warming climate.

Developing the final list of projects to propose: Assembling a list of the highest priority streams is a science-based process; since MNTU must trim the list to a manageable number, however, we also consider other factors, such as whether the project helps ensure that robust trout populations will thrive where citizens can most enjoy them - near their homes. Science alone cannot always tell us which of several streams to select when each will greatly benefit from work, but for very different reasons. One project could build upon previous restoration or enhancement work in other stream reaches to collectively boost the overall fishery, while another might be on a stream where a first project could significantly boost spawning success by providing scarce adult cover and/or spawning habitat. Our final selections include streams in both categories, including some in the latter category which are in locales currently with very limited opportunities for quality coldwater angling. Final selections then include consideration of what additional opportunities (educational, conservation partnerships, local support) could be seized now, or lost through delay. All things being equal, MNTU considers a project's potential to draw new anglers outdoors, increase public awareness of the value of, and threats facing, coldwater fisheries and watersheds, foster a "conservation ethic" and/or conservation partnerships, and increase public support for OHF projects and stream restoration in general.

Additional considerations in Twin Cities area: While the seven county metropolitan area has roughly 1,900 miles of streams and rivers, only about 70 miles still support trout. Of these, far fewer hold actually fishable populations, making any restoration or enhancement opportunity here a very high priority. Remaining Twin Cities trout fisheries include several St. Croix River tributaries, two small Cannon River tributaries, the Vermillion River, and Eagle Creek. MNTU chapters and the MNDNR have restored or enhanced (or soon will using previously earmarked funding) essentially all trout

stream reaches with public access which the MNDNR feels warrant habitat enhancements. In short, the lack of public access is the limiting factor to restoring or enhancing these metro trout streams. However, several "greater metropolitan area" streams lie just across arbitrary political and planning boundaries. The L-SOHC's vision for the Metropolitan Urbanizing Section uses coldwater fisheries "within an hour's drive" as its benchmark. By this standard, Hay Creek and Spring Creek are "metro" streams. Metro trout anglers certainly consider them to be such.

D. Urgent conservation opportunities the projects seize

Without immediate action, Minnesota's degraded coldwater aquatic habitats will continue to provide severely limited ecological function for a unique segment of fish and wildlife species. For this reason, the L-SOHC identified the restoration and enhancement of coldwater fish habitat as a priority action in most L-SOHC Sections, including those in which the projects are located. The targeted stream reaches are no longer providing habitat benefits, clean water benefits, angling opportunities or other enticements to maintain or increase participation in outdoor recreation, or encourage greater public appreciation and stewardship of aquatic ecosystems. By capitalizing on these opportunities to restore/enhance habitat, we can create productive trout fisheries in highly visible and accessible areas.

In addition to addressing the pressing habitat needs of the streams and improving water quality, the projects will also increase the use and enjoyment our coldwater ecosystems, tangibly re-connect people to the land and water, foster greater understanding of threats to them, and ultimately motivate citizens to become advocates for broad watershed and water quality improvements. Failure to seize these opportunities across the state will not only delay long overdue habitat enhancement, but will only serve to deny Minnesotans these myriad benefits and opportunities, as well as substantial economic impacts.

E. Stakeholder involvement and support

For prior projects, MNTU has been very successful in gathering local input and developing partnerships in the planning stages of our habitat enhancement projects. Oftentimes, landowners end up working side-by-side with local TU chapter volunteers. Most impressively, we've drawn both monetary and volunteer labor assistance from numerous project partners. Many of these partnerships are with local organizations such as civic groups, scout troops, and sporting clubs. Through this volunteer involvement, we've logged thousands of volunteer hours on our projects.

Planning

A. Relationship to the *Minnesota Conservation and Preservation Plan* and Other Published Resource Management Plans

1. Minnesota Statewide Conservation and Preservation Plan – Land & Aquatic Preservation Plan.

   Habitat 2: Protect critical shorelands of streams & lakes…pp. 67-74
   - Target shallow wildlife lakes, natural environment lakes, shallow bays of deep lakes, cold-water/designated trout streams…
   - Habitat 3: Improve connectivity and access to outdoor recreation. pp. 74-77
   - Also provide benefits to wildlife, SGCN, etc.

   Habitat 6: Protect and restore critical in-water habitat of lakes and streams. pp. 81-84
   - Expand efforts to restore critical habitats for aquatic communities in near-shore areas of lakes, in-stream areas of rivers and streams, and deep-water lakes with exceptional water quality
   - Reverse negative effects of stream channelization on in-stream habitats

   Habitat 7: Keep water on the landscape – pp.84-87
   - Habitat benefits include improved water quality, maintaining habitat for wildlife and game species, and enhancing biological diversity
   - Increase riparian buffers along shorelines of rivers, lakes, and sinkholes
   - Maintain and restore headwater wetlands, riparian areas, and floodplains
   - Enhance and expand the use of perennial vegetation.

2. Minnesota's Nonpoint Source Management Program Plan 2008

   Goal 1: Promote a Healthy Hydrological Regime for Minnesota's Streams and Rivers. – pp. 4.3 – 176
   - Promote stream restoration projects that restore connectivity between rivers and their flood plains.
   - Develop an interagency program to assess/control stream bank erosion…

3. Tomorrow's Habitat for the Wild & Rare – an action plan for Minnesota Wildlife.

   Goal I: Stabilize and increase Species in Greatest Conservation Need; 8. Stream habitats, actions include: – pp. 80
   - Maintain good water quality, hydrology, geomorphology, and connectivity in priority stream reaches.
   - Maintain and enhance riparian areas along priority stream reaches.

4. Strategic Plan for Coldwater Resources Management in Southeast Minnesota 2004-2015

   - Theme 1: Provide for the protection, improvement, and restoration of coldwater aquatic habitat and fish communities so that this unique resource is available for future generations. pp. 9.
   - Theme 2: Provide diverse angling opportunities so that a broad range of experiences are available to anglers. pp. 12.

5. Minnesota's 2008-2012 State Comprehensive Outdoor Recreational Plan

    - Strategy 1: Acquire, protect and restore Minnesota's natural resource base on which outdoor recreation depends. pp12.
    - Strategy 2: Develop and maintain a sustainable and resilient outdoor recreation infrastructure. pp. 17.

6. DNR, Division of Fish and Wildlife Long Range Plan for Fisheries Management Covering Fiscal Years 2004-2010

    - Core Function 2. Conserve, Improve, and Rehabilitate Fish Populations and Aquatic Habitat. pp8.
        - Shoreline habitat restoration program – rehabilitate riparian and aquatic vegetation to improve fish habitat, wildlife habitat and water quality;
        - Metro trout stream initiative – conserve and rehabilitate threatened trout stream resources in the Twin Cities metropolitan area;
    - Core Function 4. Provide Opportunities for Partnerships, Public Information, and Aquatic Education. pp8.
        - Increased public involvement with fisheries projects.

7. Trout Unlimited Driftless Area Restoration Effort – Strategic plan

    Goals: Through DARE, TU is partnering with local, state and federal agencies, nongovernmental organizations and private landowners to strategically link upland conservation and stream corridor restoration to achieve the following goals: - pp. 15.
    - Protect and restore habitat for fish and other species of interest to increase angling and other recreational opportunities. – pp. 15.

B. The projects are the result of science based strategic planning and evaluation similar to the USFWS Strategic Habitat Conservation model.

The U.S. Fish and Wildlife Services' Strategic Habitat Conservation Model uses the following methodology and steps: identify priority species; select a subset of priority species; formulate population objectives; assess the current state of priority species; identify limiting factors; and compile and apply models of population-habitat relationships. USFWS encourages a watershed based approach, especially during consideration of the key threats of development pressures and climate change.

As described previously in the section of this proposal dealing with setting priorities, MNTU uses a similar approach. Projects included in this proposal were selected in consultation with MNDNR Fisheries personnel, who use a science based approach to determine high priority streams and project sites. This includes the use of the MNDNR's annual stream monitoring and assessments, which assess limiting factors (including habitat ones) and others factors bearing on macro invertebrate and fish

populations. Ongoing monitoring of the projects and post-project fish populations will assess our success, and can be used to help MNTU and the MNDNR improve future habitat conservation and enhancement strategies.

C. Lessard-Sams Outdoor Heritage Council Section Priorities addressed.

All projects in this program address one of the following priority actions:

Priority Actions for the Northern Forest Section
1. Protect shoreline and restore or enhance critical habitat on wild rice lakes, shallow lakes, cold water lakes, streams and rivers, and spawning areas.

Priority Actions for the Southeast Forest Section
2. Protect, enhance and restore habitat for fish, game and non-game wildlife in rivers, cold water streams and associated upland habitat.

Priority Actions for the Metropolitan Urbanizing Area Section
2. Protect habitat corridors, with emphasis on the Minnesota, Mississippi and St. Croix rivers (bluff to floodplain.)
3. Enhance and restore coldwater fisheries systems.

D. MNTU's Proposal Meets all Statewide Priority Criteria and Proposal Requirements of the L-SOHC

The projects included in this proposal address these L-SOHC's Statewide Priority Criteria: (1) they are part of MNTU's ongoing (decades long) program of coldwater fish habitat restoration and enhancement, which directly addressing the L-SOHC Planning Section priority actions noted above; (2) they produce multiple conservation benefits including game and non-game wildlife benefits, clean water benefits, etc.; (3) they leverage effort and funds to supplement any OHF appropriation; (4) they allow (and facilitate) public access; (5) they address conservation opportunities that will be lost if not acted on; (6) they enhance habitat on state-owned AMAs, State Forest lands, and one WMA; (7) they use science-based strategic planning and evaluation to guide protection, restoration and enhancement, similar to the USFWS's Strategic Habitat Conservation Model; (8) they consider how to integrate one or more design practices to maintain and enhance habitat for wildlife species of greatest conservation need; and (9) they provide Minnesotans with greater public access to high quality angling, and other recreational opportunities; (10) they involve coordination with agencies and nonprofit conservation organizations; and (11) they target unique Minnesota landscapes, including the Driftless area in southeast Minnesota and the North Shore of Lake Superior, both of which have historical value to fish and wildlife.

E. Other

To ensure accountability of project outcomes and transparency in the use of OHF funds, MNTU continues to utilize multiple avenues of oversight and communication. MNTU's

ad hoc LSOHC committee retains primary responsibility for ensuring that the council, its chapters, and LSOHC project partners are aware of and follow the requirements associated with the appropriation and/or MNTU's agreement with MNDNR. The ad hoc committee communicates internally via email and conference call at least weekly, and schedules in person meetings as needed. In addition, as part of its fiduciary role, TU staff on the ad hoc committee compile and update financial progress reports at least monthly during the field season. Finally, the ad hoc committee also provides status reports, including estimates of project completion, funds expended, and work remaining to be done, to MNTU at its regular quarterly council meetings. Externally, MNTU members regularly communicate with MNDNR fisheries staff in the appropriate area office (St. Paul, Lake City, Lanesboro, Duluth, Park Rapids, etc.) regarding project status, and status reports are prepared and submitted to LSOHC in February and November, or as otherwise requested.

With respect to the organizational capacity needed to continue to plan and implement large scale stream habitat enhancement and restoration projects, MNTU continues to build both internal volunteer capabilities and a pool of qualified external contractors to assist with critical technical tasks. Internal volunteers are learning by participating in the projects and by receiving training and mentoring from more experienced volunteers. In addition, a broader pool of external contractors has been assembled from which MNTU can obtain technical assistance if needed. As evidenced by the completion of more than 14 miles of stream work in just over 1 field season, MNTU has established a process that has demonstrated an ability to make use of OHF funds to accelerate aquatic habitat restoration in Minnesota.

Relationship to Other Constitutional Funds

We do not anticipate the use of other constitutionally dedicated state funding on projects included in this proposal. We are not applying for project funding from the other constitutionally dedicated funds. However, we continue to look for partnerships and opportunities to add components such as native prairie restoration, non-game habitat enhancement, improvements to forested lands and improved watershed practices. In the event a partner proposes to apply other constitutional funds to a project we will promptly notify the L-SOHC to coordinate reporting.

Relationship to Current Organizational Budget

Funds appropriated for this program will supplement the cash and in-kind resources typically raised by MNTU and its chapters to support similar projects. This additional habitat enhancement work represents a significant increase in the amount of local projects over several years ago, but our local members have increased their volunteer labor and the projects are within the range of habitat projects managed by Trout Unlimited as an organization.

Sustainability and Maintenance

MNTU's coldwater aquatic habitat restoration and enhancement projects are designed for long-term ecological and hydraulic stability. Once the in-stream projects are completed and riparian vegetation reestablished, we do not anticipate that there will be any significant maintenance required in order to sustain the habitat outcomes for at least several decades. We do 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 unlikely 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. Native vegetation should be well established before the end of the funding period, and require minimal human intervention thereafter. Trout Unlimited volunteers will provide long-term monitoring and periodic labor as needed

Outcomes

- 8.5 + miles of degraded coldwater streams restored with stabilized banks and additional habitat for trout and nongame species
- Over 100 acres of native vegetation restored
- Over 8.5 miles of public access coldwater streams improved for angler access.
- Increase in natural reproduction of trout and other aquatic organisms.
- Reduce stream bank erosion and associated sedimentation downstream
- Reconnect over 8. 5 miles of streams to their floodplains and reduce negative resource impacts from severe flooding.

Activity Type Detail

Fee Acquisition Projects

Will local government approval be sought prior to acquisition?

☐ Yes ☐ No, please explain X☐ not applicable

If no, please explain here:

Is the land you plan to acquire free of any other permanent protection?

☐ Yes ☐ No, please explain X☐ not applicable

If no, please explain here:

Easement Acquisition Projects

Will the eased land be open for public use?

☐ Yes ☐ No, please explain X☐ not applicable

If no, please explain here:

Will the conservation easement be permanent?

☐ Yes ☐ No, please explain X☐ not applicable

If no, please explain here:

Restoration and Enhancement Projects

Is the activity on permanently protected land and/or public waters?

☐ X Yes ☐ No, please explain ☐ not applicable

If no, please explain here:

Does the activity take place on an Aquatic Management Area (AMA), Scientific and Natural Area (SNA), Wildlife Management Area (WMA), or State Forests?

☐ X Yes, which ones ☐ No, please explain ☐ not applicable

If so, please indicate which ones:

Past Outdoor Heritage Fund Appropriations Received for this program

ML 2009	ML 2010	ML 2011
$ 2,050,000	$ 1,269,000	$?

Accomplishment Timeline

Activity	Milestone	Date
On all projects survey work, final project design, and permitting work will begin in July 2011		July 2011
Unless where noted in the	Begin habitat enhancements	2012 fieldwork season

narrative, fieldwork will begin on all projects in 2012		
Complete riparian and in-stream habitat enhancements, unless as noted in the narrative,	Complete riparian and in-stream habit enhancements	October 2013

1. Cook County Brook Trout Stream (Cook):

Activity	Milestone	Date completed
Begin planning, surveying, design, and permitting work.		Begin July 2012
Begin fieldwork	Begin habitat enhancements	Begin Summer 2013
Complete riparian and in-stream habitat enhancements	Approximately 1,500 feet	Late Summer 2013

2. Kimball, Mink & Boys Lakes (Cook):

Activity	Milestone	Date completed
Begin planning, surveying, design, and permitting work.		Begin July 2012
Begin reclamation of three popular trout lakes	159 acres	Begin September/Oct 2012
Install barrier at outfall of Kimball Lake, protecting all three lakes, a tributary and connecting streams	159 acres protected	Summer 2013

3. Garvin Brook (Winona):

Activity	Milestone	Date completed
Begin planning, surveying, design, and permitting work.		Begin July 2012
Begin fieldwork	Begin habitat enhancements	Begin Summer 2013
Complete riparian and in-stream habitat enhancements	Approximately 2,700 feet	October 2014

4. Rush –Pine Creek (Winona):

Activity	Milestone	Date completed
Begin planning, surveying,		Begin July 2012

design, and permitting work.		
Begin fieldwork	Begin habitat enhancements	Begin Summer 2013
Complete riparian and in-stream habitat enhancements on all three streams	Approximately 1.0 to 2 mile reach(es)	October 2014

5. Hay Creek (Goodhue):

Activity	Milestone	Date completed
Begin planning, surveying, design, and permitting work.		Begin July 2012
Begin fieldwork	Begin habitat enhancements	Begin Summer 2013
Complete riparian and in-stream habitat enhancements	Approximately 5,000 feet	October 2014

6. South Creek (Dakota):

Activity	Milestone	Date completed
Begin planning, surveying, design, and permitting work.		Begin July 2012
Prepare EAW		
Begin fieldwork	Begin habitat enhancements	Begin Summer 2013
Complete riparian and in-stream habitat enhancements	Approximately 1,300 – 1,700 feet	October 2013

7. Spring Creek (Goodhue):

Activity	Milestone	Date completed
Begin planning, surveying, design, and permitting work.		Begin July 2012
Begin fieldwork	Begin habitat enhancements	Begin Summer 2013
Complete riparian and in-stream habitat enhancements	Approximately 3,100 feet	Summer 2014

8A. North Shore migratory stream (Lake/St. Louis):

Activity	Milestone	Date completed
Begin planning, surveying, design, and permitting work.		Begin July 2012
Begin fieldwork	Begin habitat enhancements	Begin Summer 2013
Complete riparian and in-stream habitat enhancements	Approximately 2,000 feet	Late Summer 2014

8B. North Shore migratory stream (Lake/St. Louis):

Activity	Milestone	Date completed
Begin planning, and permitting work.		Begin July 2012
Begin fieldwork	Begin tree planting	Spring 2013
Complete riparian habitat enhancements	Approximately 1.0 mile	Spring 2014

9. East Indian Creek (Wabasha),
10. Mill Creek (Olmsted),
11. Camp Creek ( ),

Activity	Milestone	Date completed
Begin planning, surveying, design, and permitting work.		Begin July 2012
Begin fieldwork on one stream	Begin habitat enhancements	Begin Summer 2013
Complete riparian and in-stream habitat enhancements on all three streams	Approximately 3.0 miles total	October 2014

Attachments:

A. Budget
B. Proposed Output Tables 1-5
C. Parcel List

Attachment A. Budget Spreadsheet

Name of Proposal:	Minnesota Trout Unlimited Coldwater Fish Habitat Enhancement Program
Date:	15-Jul-11

Link HERE to definitions of the budget items below.

Total Amount of Request $ 2,699,000 *From page 1 on the funding form.*

Personnel

Position breakdown here	FTE	Over # of years	LSOHC Request	Anticipated Cash Leverage	Cash Leverage Source	Total
Project Manager	*0.425*	*2*	*$ 70,000*			$ 70,000
Watershed Director	*0.125*	*2*	*$ 20,000*			$ 20,000
Program Assistant	*0.25*	*2*	*$ 35,000*			$ 35,000
						$ -
						$ -
						$ -
						$ -
Total	0.8		$ 125,000	$ -	$ -	$ 125,000

Budget and Cash Leverage *(All your LSOHC Request Funds must be direct to and necessary for program outcomes.)*

Please describe how you intend to spend the requested funds.

Budget Item	LSOHC Request	Anticipated Cash Leverage	Cash Leverage Source	Total
Personnel - *auto entered from above*	$ 125,000	$ -	$ -	$ 125,000
Contracts	*$ 1,150,500*			$ 1,150,500
Fee Acquisition w/ PILT *(breakout in table 7)*				$ -
Fee Acquisition w/o PILT *(breakout in table 7)*				$ -
Easement Acquisition				$ -
Easement Stewardship				$ -
Travel (in-state)			*fe*	$ -
Professional Services	*$ 405,500*			$ 405,500
Direct Support Services				$ -
DNR Land Acquisition Costs ($3,500 per acquisition)				$ -
Other				$ 1,018,000
Capital Equipment (*auto entered from below*)	*$ 1,200*	*$ -*		$ 1,200
Other Equipment/Tools				$ -
Supplies/Materials	*$ 1,016,800*			$ 1,016,800
	$ 2,699,000	$ -	$ -	$ 2,699,000

Capital Equipment *(single items over $10,000 - auto entered into table above)*

Item Name	LSOHC Request	Leverage
Automated pump and dispenser of detoxification chemicals for lakes	1,200	
Total	1,200	-

Attachment B. Output Tables

Name of Proposal:	Minnesota Trout Unlimited Coldwater Fish Habitat Enhancement Program
Date:	15-Jul-11

Table 1 and Table 3 column totals should be the same AND Table 2 and Table 4 column totals should be the same

If your project has lakes or shoreline miles instead of land acres, convert miles to acres for Tables 1 and 3 using the following conversion:
Lakeshore = 6 acres per lakeshore mile / Stream & River Shore = 12 acres per linear mile, if both sides

Table 1. Acres by Resource Type

Describe the scope of the project in acres (use conversion above if needed)

	Wetlands	Prairies	Forest	Habitats	Total
Restore				*4*	4
Protect Fee					0
Protect Easement					0
Protect Other				*159*	159
Enhance				*407.4*	407.4
Total	0	0	0	570.4	

Total Acres (sum of Total column)	570.4	*These two cells should be the same figure.*
Total Acres (sum of Total row)	570.4	

Table 2. Total Requested Funding by Resource Type

	Wetlands	Prairies	Forest	Habitats	Total
Restore				*$ 125,000*	$ 125,000
Protect Fee					$ -
Protect Easement					$ -
Protect Other				*$ 2,000*	$ 2,000
Enhance				*$ 2,572,000*	$ 2,572,000
Total	$ -	$ -	$ -	$ 2,699,000	

Total Dollars (sum of Total column)	$ 2,699,000	*These two cells should be the same figure.*
Total Dollars (sum of Total row)	$ 2,699,000	

Check to make sure this amount is the same as the Funding Request Amount on page 1 of Main Funding Form.

Table 3. Acres within each Ecological Section

	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	*4*					4
Protect Fee						0
Protect Easement						0
Protect Other					*159*	159
Enhance	*150*		*78.4*		*179*	407.4
Total	154	0	78.4	0	338	

Total Acres (sum of Total column)	570.4	*These three cells should be the same figure.*
Total Acres (sum of Total row)	570.4	
Total Acres from Table 1.	570.4	

Attachment B. Output Tables

Table 4. Total Requested Funding within each Ecological Section

	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	$ 105,000					$ 105,000
Protect Fee						$ -
Protect Easement						$ -
Protect Other					$ 2,000	$ 2,000
Enhance	$ 40,000		$ 2,372,000		$ 180,000	$ 2,592,000
Total	$ 145,000	$ -	$ 2,372,000	$ -	$ 182,000	

Total Dollars (sum of Total column)	$ 2,699,000	*These two cells should be the same figure.*
Total Dollars (sum of Total row)	$ 2,699,000	

Check to make sure these amounts are the same
as the Funding Request Amount on page 1 of Main Funding Form.

Table 5. Target Lake/Stream/River Miles

8.2 # miles of Lakes / Streams / Rivers Shoreline

Table 6. Acquisition by PILT Status *(enter information in acres)*

	Wetlands	Prairies	Forests	Habitats	Total
Acquired in Fee with State PILT Liability					0
Acquired in Fee w/o State PILT Liability					0
Permanent Easement *NO State PILT Liability*					0
	0	0	0	0	

Table 7. Estimated Value of Land Acquisition by PILT Status *(enter information in dollars)*

	Wetlands	Prairies	Forests	Habitats	Total	*FYI: should match total in budget table that is auto entered below*
Acquired in Fee with State PILT Liability					$ -	$ -
Acquired in Fee w/o State PILT Liability					$ -	$ -
Permanent Easement *NO State PILT Liability*					$ -	$ -
	$ -	$ -	$ -	$ -		

Attachment C. Parcel List

Name of Proposal: _____

Date: _____

Parcel Name	County	Township (25-258)	Range (01-51)	Direction most parcels are 2 with the exception of some areas of Cook County which is 1	Section (01 thru 36)	TRDS	# of acres	Budgetary Estimate (includes administrative, restoration or other related costs and do not include matching money contributed or earned by the transaction)	Description	Activity PF=Protect Fee PE=Protect Easement PO=Protect Other R=Restore E=Enhance	If Easement, what is the easement cost as a % of the fee acquisition?	Any existing protection? (yes/no)	Open to hunting and fishing? (yes/no)
Example Lamberton WMA Addition	*Redwood*	*109*	*37*	*2*	*13*	*10937213*	*114*	*$5,500,000*		*P*			
		106	8	2	8	1068208			Repair flood damaged 6,100' re	E			
Pine Creek	Winona	105	5	2	29	1055229				E			
	Winona	105	5	2	30	1055230				E			
	Winona	105	5	2	32	1055232			1 mile reach in watershed intiai	E			
Spring Creek	Goohue	112	15	2	7	11215207			Enhance 3,100' in existing WMA	E			
East Indian Creek	Wabasha	109	10	2	28	10910228				E			yes, fishing
		109	10	2	29	10910229							
Camp Creek	Fillmore	102	10	2	5	1021025				E			yes,fishing
Mill Creek	Olmsted	105	12	2	25	10512225				E			yes, fishing
Pine Creek	Winona	105	8	2	32	1058232				E			yes, fishing
Garvin Brook	Winona	106	8	2	5	1068205				E	yes	yes*	
		106	8	2	8	1068208				E	yes	yes*	
Hay Creek	Goodhue	112	15	2	23	11215223				E	yes	yes*	
					24	11215224							
Trout Lakes	Lakeview	62	2	2	5	62225				E	yes	yes*	
		62	2	2	6	62226				E	yes	yes*	
		62	2	2	8	62228				E	yes	yes*	
		62	2	2	17	622217				E	yes	yes*	
					18	622218				E	yes	yes*	
Vermillion		114	20	2	33	11420233				E	yes	yes*	