

Lessard-Sams Outdoor Heritage Council

Knife River Habitat Rehabilitation-PH VII

ML 2024 Request for Funding

General Information

Date: 06/23/2023

Proposal Title: Knife River Habitat Rehabilitation-PH VII

Funds Requested: \$3,000,000

Confirmed Leverage Funds: \$350,000

Is this proposal Scalable?: Yes

Manager Information

Manager's Name: Kevin J. Bovee; Andy Hubley Title: Bovee-Project Manager; Hubley-Fiscal Manager Organization: Lake Superior Steelhead Association (LSSA); Arrowhead Regional Development Commission (ARDC) Address: P. O. Box 16034, Duluth, MN. (LSSA) 221 W. Superior Street. (ARDC) City: Duluth, MN 55816 (LSSA); 55802 (ARDC) Email: outriderduluth@msn.com; ahubley@ardc.org Office Number: 218/269-7427 (LSSA); 218/349-8634 (ARDC) Mobile Number: Fax Number: Website: www.steelheaders.org (LSSA); www.ardc.org (ARDC)

Location Information

County Location(s): Lake and St. Louis.

Eco regions in which work will take place:

• Northern Forest

Activity types:

• Enhance

Priority resources addressed by activity:

- Forest
- Wetlands
- Habitat

Narrative

Abstract

Historic flooding led to severe habitat degradation throughout the Knife River watershed. Including miles of slumping streambanks, thousands of tons of sediment discharge, turbidity measurements exceeding the MPCA's TMDL and loss of instream trout habitat. DNR has documented a 200% increase in adult steelhead population, two miles of restored stream channel, 10,000 feet of stabilized streambanks and annual reduction of sediment discharge by 1,000 tons due to our projects. This seventh project will stabilize over 4,500 feet of slumping streambanks. NOTE: ARDC has agreed to work with the LSSA as fiscal manager. Please see note in ATTACHMENTS.

Design and Scope of Work

The LSSA uses a Watershed Restoration Approach to determine the rehabilitation, enhancement and restoration scope of work. This Approach looks at how landscape parameters affect the river's stability and identifies what the underlying issues are that cause the watershed impacts during a flood event. Habitat rehabilitation projects utilize Natural Channel Design (NCD) parameters. By focusing on the Watershed as a whole and working to fix the root cause, the stream and the immediate riparian zones are much healthier and robust for decades to come, benefitting all trout populations and instream invertebrates.

Our Knife River rehabilitation success has not just restored the watershed parameters but has also translated to an increase in the adult steelhead. From 2012 (the inception of our first grant) to 2021 the population of wild steelhead has increased in the Knife River by 200%. This 200% increase has occurred at a time, when other notable Lake Superior tributaries have observed steelhead populations decrease or crash. Two of the most prominent Lake Superior tributaries the Brule River and Portage Creek both saw their adult steelhead returns noticeably decline. The Brule River steelhead population decreased 4.5% from its 30 year average and Portage Creek steelhead population decreased 201% from its 20 year average.

Another feature we utilize on every rehabilitation project, is a prioritization system to identify specific restoration reaches. Our policy is to work from an upstream to downstream manner. This top-down restoration approach eliminates re-impacting previously restored stream sections and reduces downstream flooding and sedimentation because water and sediments are deposited and held on the newly constructed upstream floodplains. Our reach prioritization also utilizes existing agency studies, such as the MPCA's TMDL to identify erosion areas. These erosion areas are combined with our cool water temperature assessments and annual trout spawning survey to ensure we restore the most critical stream reaches.

Finally, we engage Stakeholders in the final reach selection process. The LSSA has collaborated with the DNR for eleven years to identify key trout habitat sites within the Knife River watershed and discuss key sites proposed for restoration. By utilizing this prioritization approach, we ultimately invest grant funds in the most efficient manner possible.

The Scope of Work for the Reach 15 project will include:

- Assess, survey and design the stream reach(s) to obtain permits.
- Obtain baseline and as-built assessment and survey data.
- Restore the stream channel's shape, dimension and profile.
- Enhance riparian and instream trout habitat.
- Create new floodplain wetlands.
- Reconnect the river channel to the floodplain.
- Raise the groundwater table.

- Stabilize streambanks.
- Rehabilitate the riparian tree canopy.
- Monitor water temperature.

Explain how the proposal addresses habitat protection, restoration, and/or enhancement for fish, game & wildlife, including threatened or endangered species conservation

The Knife River is more unique than other trout streams in Minnesota because this watershed has anadromous (migratory trout), plus resident trout populations, and does not have a barrier falls. The Knife River is the only watershed in Minnesota that has these combined features. So, of the 60 + tributaries that connect to Lake Superior, only the Knife River, has these unique features. Finally, the Knife River Watershed consists of over 65 miles of anadromous trout habitat, which represents over 50% of all the total available anadromous trout habitat in Minnesota's tributary streams to Lake Superior.

The MN DNR has started an initiative to recover "coaster" brook trout populations in Minnesota tributaries to Lake Superior and the Knife River rehabilitation project will support that initiative by providing excellent spawning, rearing and holding habitat for "coasters' and resident brook trout. Anadromous rainbows (steelhead) will benefit in all life stages in the project areas.

What are the elements of this proposal that are critical from a timing perspective?

This grant project is combining two reaches (Reachs 15 and 16) into one restoration project. Reach 15 is the proposed grant reach. This reach resides in public ownership, so grant funds can be used to rehabilitate this stream section. The downstream section proposed for restoration is Reach 16. Reach 16 is private ownership, ineligible for LSOHC grant funding. This reach is being proposed to be restored using private funds. The proposed private funding will be used as a private grant match to the Reach 15 grant work. The Reach 16 private section is directly downstream, so if Reach 15 is not funded then Reach 16 will not restored. This is because the upstream impacts from the eroding Reach 15 streambanks would compromise the privately funded Reach 16 restoration. There is some urgency to obtaining this grant because the private funding is not guaranteed to be available in the future.

Describe how the proposal expands habitat corridors or complexes and/or addresses habitat fragmentation:

The LSSA uses an upstream to downstream restoration approach. This approach is used to ensure upstream impacts do not affect a restored downstream habitat. However, this top-down approach also ensures we do not skip upstream sections where habitat needs to be restored. By sequentially restoring each upstream habitat first before moving downstream, we are stabilizing streambank erosion, restoring the stream channel's shape, dimension and profile, minimizing downstream flooding by holding floodwaters on the landscape and replanting the riparian zone. This provides a continuous habitat corridor by not leaving fragmented upstream habitats to impact downstream projects. Every foot of stream below our project areas greatly benefit from decreased sedimentation along with the near shore waters of Lake Superior as evidenced by the large muddy plumes seen after large rain/runoff events.

Also, by using this continuous top/down approach we hold floodwaters upstream on newly created floodplains and floodplain wetlands. By allowing the rising stream improved access to the floodplain during high water events, the damages due to increased downstream flooding are lessened greatly. We also cool upstream water temperatures by reestablishing shade through riparian plantings, create and enhance trout spawning habitat for juvenile trout to rear in the more fertile upper Knife River and we provide better fish passage throughout the watershed. Our previous six phases of work confirm that the LSSA river restoration process is working because our results have been confirmed by the DNR's Knife River Trap to have increased the steelhead population by 200%.

Which Conservation Plans referenced in MS97A.056, subd. 3a are most applicable to this project?

• Long Range Plan for Fisheries Management

Explain how this proposal will uniquely address habitat resilience to climate change and its anticipated effects on game, fish & wildlife species utilizing the protected or restored/enhanced habitat this proposal targets.

Our habitat restoration projects not only work to improve the instream habitat functions but we also have a large emphasis on riparian planting restoration. The use of NCD parameters allow the river to easier access the floodplain which in turn will reduce erosion and lessen streambed degradation (instream habitat) which will benefit not only all trout species but the all the invertebrate species that are required for a healthy instream environment. Our riparian plantings have been expanded to include tree species that are projected to move into the region by climate assisted migration. We utilize a mix of deciduous and coniferous species without counting on a single specie which may be imperiled in future years due to new invasives, similar to the Emerald Ash Borer found today. Having a diverse planting plan including trees and pollinator shrubs will ensure a healthy riparian zone for decades to come.

Which LSOHC section priorities are addressed in this proposal?

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

Describe how this project/program will produce and demonstrate a significant and permanent conservation legacy and/or outcomes for fish, game, and wildlife, and if not permanent outcomes, why it is important to undertake at this time:

The LSSA uses Natural Channel Design (NCD) parameters for stream restoration projects. This process assesses and survey's the stream channel and landscape to determine the underlying causes for stream impairment and restores the stream's geomorphic parameters by placing natural materials in the streambed to rehabilitate the channel and stabilize streambanks. This is different from traditional restoration techniques that armor streambanks without addressing the underlying deficiencies within the watershed.

Another benefit of NCD projects, is the use of large woody debris. Prior to the turn of the century, large trees fell into the channel providing instream habitat and overhead cover. This instream deposition of wood created deep scour pools and accumulated gravel along current breaks that provide important lifecycle habitat. With the loss of large woody debris in the stream channel these habitat features are largely missing. The LSSA is restoring this lost woody habitat by importing logs from local loggers, which benefits the stream and provides additional income to loggers.

Our riparian plantings using a diversity of long lived trees species will benefit the environment for decades to come providing shade to cool the water and will lessen evaporation while alive. Once dead, these trees will fall into the river providing necessary large woody debris for all types of aquatic life.

Outcomes

Programs in the northern forest region:

• Healthy populations of endangered, threatened, and special concern species as well as more common species ~ *By funding this project, anadromous trout (steelhead, coaster brook trout and brown trout) and resident stream trout (brook trout) populations should increase. Population increases will be seen by MNDNR during the weir operation and upstream population assessment work. This project will also provide habitat to invertebrates, amphibians, reptiles, birds and mammals. This project also will replant the riparian zone of the river with native, old growth tree species and various native shrubs and native pollinator flower species. These multiple specie plantings will establish a varied and lush riparian zone benefitting the entire watershed and neighboring areas for decades to come.*

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

• Clean Water Fund

Per MS 97A.056, Subd. 24, Please explain 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.

This funding request does not supplant nor is a substitution for previous funding.

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

The LSSA uses NCD for stream restoration projects. This process assesses and survey's the stream channel and landscape to determine the underlying causes for stream impairment and restores the stream's geomorphic parameters by placing natural materials in the streambed to rehabilitate the channel and stabilize streambanks. This is different from traditional restoration techniques that armor streambanks without addressing the underlying deficiencies within the watershed.

An advantage of NCD projects, is they are designed and constructed to be self-maintaining by using the natural forces of the stream's current to maintain deep pools and to deposit spawning gravels. The manipulation of the stream's current is achieved by strategically placing log/rock structures to scour the center of pools and burying logs in the streambed to create current breaks that accumulate gravel. These scour pools support juvenile rearing and the accumulated gravels support adult spawning. This results in a sustained project because the current is performing the long term maintenance.

LSSA volunteers and contractor performs annual spring and fall stream walks to ensure the projects have not degraded from the spring melt or summertime floods. We also check for adequate fish passage, trout spawning activity and fish usage.

Provide an assessment of how your program may celebrate cultural diversity or reach diverse communities in Minnesota, including reaching low- and moderate-income households:

Fishing on the Knife River is open to all people no matter their race, religion or sex. The beauty of this specialized type of fishing activity, is there is little gear required to participate. Stream trout and Knife River steelhead fishing is conducted exclusively from shore. The only gear a person needs is a rod, sinker, hook and yarn or bait. There are no expensive boats, electronics or lures to buy. One can usually fish from shore in rubber boots without the need of expensive waders.

The LSSA started a fishing class just for this reason. The class is for kids along with their parents. This class

provides all the gear for the youngsters and teaches the participants to fish in two classroom sessions and a session on the river. Over the 12 years the LSSA has provided this class, we have had youth and parent participants that have included women, minorities and LGBT individuals. We have found that when young folks and their parents (guardians, etc) take the class together, the family spends more time doing something they all like to do. We have seen past participants (youth and adult) on the area rivers after the classes/stream session have been completed.

Activity Details

Requirements

If funded, this proposal will meet all applicable criteria set forth in MS 97A.056? Yes

Will restoration and enhancement work follow best management practices including MS 84.973 Pollinator Habitat Program?

Yes

Is the restoration and enhancement activity on permanently protected land per 97A.056, Subd 13(f), tribal lands, and/or public waters per MS 103G.005, Subd. 15 or on lands to be acquired in this program? Yes

Where does the activity take place?

- Public Waters
- Permanently Protected Conservation Easements

Land Use

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

Will neonicotinoid pesticide products be used within any activities of this proposal? No

Other OHF Appropriation Awards

Have you received OHF dollars in the past through LSOHC that are current OPEN appropriations? Yes

| Approp Year | Funding Amount Received | Amount Spent to Date | Funding Remaining | % Spent to Date |
|-------------|----------------------------|-------------------------|-------------------|-----------------|
| 2021 | \$467,000 | \$35,000 | \$432,000 | 7.49% |
| 2020 | \$700,000 | \$585,000 | \$115,000 | 83.57% |
| 2019 | \$891,000 | \$813,000 | \$78,000 | 91.25% |
| 2018 | \$927,000 | \$917,000 | \$10,000 | 98.92% |
| Totals | \$2,985,000 | \$2,350,000 | \$635,000 | 78.73% |

Timeline

| Activity Name | Estimated Completion Date |
|---|---------------------------|
| Let RFP; Assess/design/permit Reach 15 | July 2025 |
| Construction per designed/permitted project | October 2027 |
| Riparian planting; site rehabilitation | December 2028 |

Budget

Totals

| Item | Funding Request | Total Leverage | Leverage Source | Total |
|-------------------------------|-----------------|----------------|----------------------------|-------------|
| Personnel | \$340,000 | \$4,000 | Private | \$344,000 |
| Contracts | \$2,500,000 | \$300,000 | Private-Other | \$2,800,000 |
| Fee Acquisition w/ PILT | - | - | - | - |
| Fee Acquisition w/o PILT | - | - | - | - |
| Easement Acquisition | - | - | - | - |
| Easement Stewardship | - | - | - | - |
| Travel | - | \$15,000 | Private, LSSA Volunteer | \$15,000 |
| Professional Services | - | \$3,000 | Private, LSSA | \$3,000 |
| Direct Support Services | - | - | - | - |
| DNR Land Acquisition Costs | - | - | - | - |
| Capital Equipment | - | - | - | - |
| Other Equipment/Tools | \$5,000 | \$18,000 | Private, LSSA Volunteer | \$23,000 |
| Supplies/Materials | \$155,000 | \$5,000 | Private, LSSA Volunteer | \$160,000 |
| DNR IDP | - | \$250,000 | DNR | \$250,000 |
| Grand Total | \$3,000,000 | \$595,000 | - | \$3,595,000 |

Personnel

| Position | Annual FTE | Years Working | Funding Request | Total Leverage | Leverage Source | Total |
|------------|------------|------------------|--------------------|-------------------|--------------------|-----------|
| Fiscal | 0.5 | 4.0 | \$170,000 | \$2,000 | Private | \$172,000 |
| Management | | | | | | |
| Project | 0.5 | 4.0 | \$170,000 | \$2,000 | Private | \$172,000 |
| Management | | | | | | |

Amount of Request: \$3,000,000 Amount of Leverage: \$595,000 Leverage as a percent of the Request: 19.83% DSS + Personnel: \$340,000 As a % of the total request: 11.33% Easement Stewardship: -As a % of the Easement Acquisition: -

| Total Leverage (from above) | Amount Confirmed | % of Total Leverage | Amount Anticipated | % of Total Leverage | |
|-----------------------------|------------------|---------------------|--------------------|---------------------|--|
| \$595,000 | \$350,000 | 58.82% | \$245,000 | 41.18% | |
| | | | | | |

Detail leverage sources and confirmation of funds:

Sources: LSSA General/Charitable Gaming funds; work being done (used as match) below Reach 15 area on private property where state funds cannot be applied-this work contingent on obtaining grant; volunteer efforts.

Does this proposal have the ability to be scalable?

Yes

If the project received 50% of the requested funding

Describe how the scaling would affect acres/activities and if not proportionately reduced, why? Scaling would affect how much work can be accomplished under a single grant. Private work (used as leverage) performed downstream in conjunction with Reach 15 could be jeopardized by construction delays due to scaling. If scaled, more than a single grant would be needed.

Describe how personnel and DSS expenses would be adjusted and if not proportionately reduced, why?

Personnel would be adjusted proportionately.

If the project received 30% of the requested funding

Describe how the scaling would affect acres/activities and if not proportionately reduced, why? Scaling would affect how much work can be accomplished under a single grant. Private work (used as leverage) performed downstream in conjunction with Reach 15 could be jeopardized by construction delays due to scaling. If scaled, more than a single grant would be needed.

Describe how personnel and DSS expenses would be adjusted and if not proportionately reduced, why?

Personnel would be adjusted proportionately.

Personnel

Has funding for these positions been requested in the past?

Yes

Please explain the overlap of past and future staffing and position levels previously received and how that is coordinated over multiple years?

We have personnel allocations in all of our grant applications. The category is split into Fiscal ad Project Management. Personnel costs are broken out per each specific grant-i.e.-time put into PHV work is billed ONLY for PH V, no other grant. There is no overlapping in these categories from one grant to another. All expenses, including Personnel, are tracked per grant and to specific categories to ellimanate any overlapping of funding.

Contracts

What is included in the contracts line?

Contracts line includes cost of contractor to complete the project as outlined in the Project RFP. Also included would use of Conservation Corps. Minnesota, NRRI or other professional groups whose skills may be needed to do the best job possible for the taxpayers of the state of Minnesota.

Other Equipment/Tools

Give examples of the types of Equipment and Tools that will be purchased?

Replacement parts/repairs to existing tools (not owned operated by contractor); possible replacement of tools; gas/oil etc for internal combustion tools, etc.

Federal Funds

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

Output Tables

Acres by Resource Type (Table 1)

| Туре | Wetland | Prairie | Forest | Habitat | Total Acres |
|--|---------|---------|--------|---------|-------------|
| 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 | 0 |
| Enhance | - | 0 | - | 300 | 300 |
| Total | 0 | 0 | 0 | 300 | 300 |

Total Requested Funding by Resource Type (Table 2)

| Туре | Wetland | Prairie | Forest | Habitat | Total Funding |
|--|---------|---------|--------|-------------|---------------|
| Restore | - | - | - | - | - |
| Protect in Fee with State PILT Liability | - | - | - | - | - |
| Protect in Fee w/o State PILT Liability | - | - | - | - | - |
| Protect in Easement | - | - | - | - | - |
| Enhance | - | - | - | \$3,000,000 | \$3,000,000 |
| Total | - | - | - | \$3,000,000 | \$3,000,000 |

Acres within each Ecological Section (Table 3)

| Туре | Metro/Urban | Forest/Prairie | SE Forest | Prairie | N. Forest | Total Acres |
|---------------------------|-------------|----------------|-----------|---------|-----------|-------------|
| Restore | 0 | 0 | 0 | 0 | 0 | 0 |
| Protect in Fee with State | 0 | 0 | 0 | 0 | 0 | 0 |
| PILT Liability | | | | | | |
| Protect in Fee w/o State | 0 | 0 | 0 | 0 | 0 | 0 |
| PILT Liability | | | | | | |
| Protect in Easement | 0 | 0 | 0 | 0 | 0 | 0 |
| Enhance | 0 | 0 | 0 | 0 | 300 | 300 |
| Total | 0 | 0 | 0 | 0 | 300 | 300 |

Total Requested Funding within each Ecological Section (Table 4)

| Туре | Metro/Urban | Forest/Prairie | SE Forest | Prairie | N. Forest | Total Funding |
|---|-------------|----------------|-----------|---------|-------------|------------------|
| Restore | - | - | - | - | - | - |
| Protect in Fee with State PILT Liability | - | - | - | - | - | - |
| Protect in Fee w/o State PILT Liability | - | - | - | - | - | - |
| Protect in Easement | - | - | - | - | - | - |
| Enhance | - | - | - | - | \$3,000,000 | \$3,000,000 |
| Total | - | - | - | - | \$3,000,000 | \$3,000,000 |

Average Cost per Acre by Resource Type (Table 5)

| Туре | Wetland | Prairie | Forest | Habitat |
|--|---------|---------|--------|----------|
| Restore | - | - | - | - |
| Protect in Fee with State PILT Liability | - | - | - | - |
| Protect in Fee w/o State PILT Liability | - | - | - | - |
| Protect in Easement | - | - | - | - |
| Enhance | - | - | - | \$10,000 |

Average Cost per Acre by Ecological Section (Table 6)

| Туре | Metro/Urban | Forest/Prairie | SE Forest | Prairie | N. Forest |
|---------------------------|-------------|----------------|-----------|---------|-----------|
| Restore | - | - | - | - | - |
| Protect in Fee with State | - | - | - | - | - |
| PILT Liability | | | | | |

| Protect in Fee w/o State | - | - | - | - | - |
|--------------------------|---|---|---|---|----------|
| PILT Liability | | | | | |
| Protect in Easement | - | - | - | - | - |
| Enhance | - | - | - | - | \$10,000 |

Target Lake/Stream/River Feet or Miles

15

Sign-up Criteria?

No

Explain the process used to identify, prioritize, and select the parcels on your list:

Eroding clay banks were determined to be the main cause of the excess sedimentation/turbidity within the Knife River watershed, which necessitated the inclusion of the Knife River on the impaired waters list for Minnesota. The MPCA identified erosion areas within the Knife River watershed TMDL study. The LSSA assessed these MPCA identified erosion areas, along with other stream reaches in the system for the presence of cool (trout supporting) water, availability for access by trout, existing trout habitat and the potential to restore negative stream impacts. This in-depth analysis has allowed the LSSA to prioritize areas for restoration that provide the best benefit to all aspects of aquatic life and improved water quality.

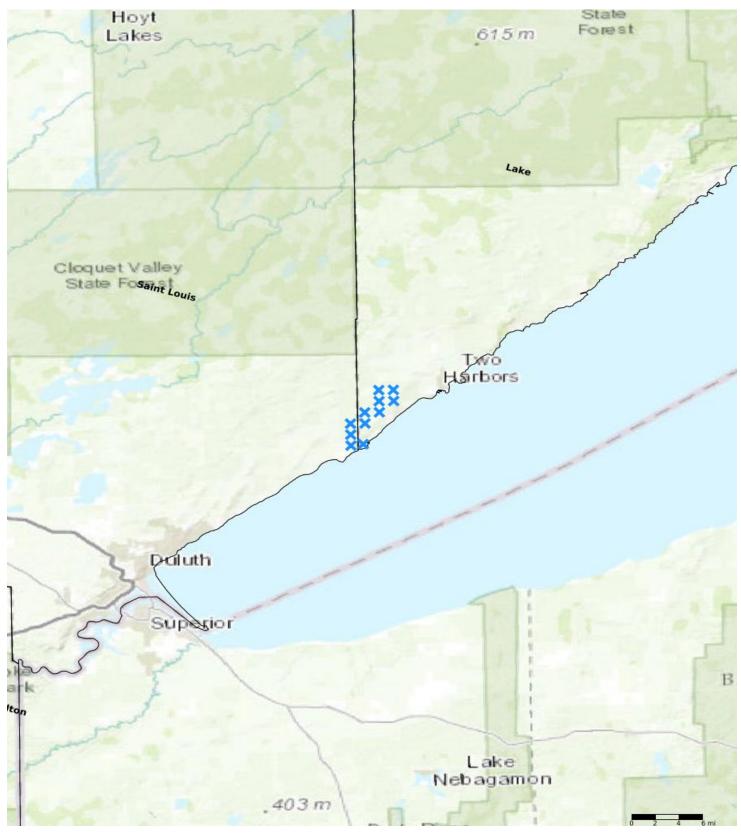
The LSSA also has a policy to work from the top of a reach downstream. Our top-down restoration approach eliminates re-impacting restored reaches downstream and reduces future downstream flooding and sedimentation. As mentioned in the "Design and Scope of Work", the LSSA incorporates a Watershed Restoration Approach in our projects.

For Reach 15 we utilized a BEHI (Bank Erosion Hazard Index) analysis. The BEHI assesses stream-bank erosion condition and potential. Because of a severe outbreak of Spruce Bud Worm, the balsam are dying throughout the watershed. Since balsam is the most predominant tree species in this section, the riparian canopy is expected to be a total loss shortly. This lost tree canopy will greatly accelerate erosion because there will be no stabilizing vegetation remaining on the streambank. NOTE: No OHF funds were used for this report.

| Name | County | TRDS | Acres | Est Cost | Existing Protection |
|------|-----------|----------|-------|----------|------------------------|
| - | Lake | 05211217 | - | - | - |
| - | Lake | 05211219 | - | - | - |
| - | Lake | 05211218 | - | - | - |
| - | Lake | 05211208 | - | - | - |
| - | Lake | 05211231 | - | - | - |
| - | Lake | 05211209 | - | - | - |
| - | Lake | 05211205 | - | - | - |
| - | Lake | 05211204 | - | - | - |
| - | St. Louis | 05212236 | - | - | - |
| - | St. Louis | 05212225 | - | - | - |
| - | St. Louis | 05212224 | - | - | - |

Restore / Enhance Parcels

Parcel Map



Protect in Easement
Protect in Fee with PILT
Protect in Fee W/O PILT
Restore
Enhance
Other



Large-scale streambank erosion. This bank will continue to collapse because the balsam fir on the slope have died due to Spruce Bud Worm. All the trees on the bank will be lost in two years. These dead trees will erode and deposit in the river channel taking hundreds of tons of clay with them. This clay will impact downstream habitats and affect the TMDL.



Another collapsing bank. Balsam Fir on the slope are also infected with Spruce Bud Worm. This bank will most likely be a total loss within the next two years. As these eroded trees move downstream during the next flood event, they will deposit on downstream bends and cause a new eroding streambanks and the process will start all over again



Floodwaters have undercut this stream bank. The granular material at the base of the bank eroded leaving it unstable. This bank will shear and slump during the next large storm and deposit hundreds of tons clay into the channel. This slump will also discharge trees into the channel causing future downstream impacts.



Panaramic photo of a large eroding stream bend. This erosion has displaced healthy trees, which are being deposited into the river. This bank is several hundred feet long and is a major source of the turbidity TMDL exceedance.



Another panaramic photo of a large eroding stream bend. This bank is different because the soil type is a mixture of clay, cobbles and boulders. Much of the cobbles and boulders in this stream channel, originated from this eroded bank. This deposited rubble filled the channel and now is altering the streamflow. At flood stages this altered flow appears to deflect the stream current to the west, causing erosion on the opposite side of the river. This photo was taken at the end of the erosion, the full extent of the erosion is upstream several hundred feet around the corner of the bend.

PETE STAUBER 8TH DISTRICT, MINNESOTA 126 CANNON HOUSE OFFICE BUILDING WASHINGTON, DC 20515 (202) 225-6211

Congress of the United States House of Representatives Mashington, DC 20515–2308

Lessard-Sams Outdoor Heritage Council 100 Rev. Dr. Martin Luther King Jr. Blvd. State Office Building, Room 95 St. Paul, MN 55155

Dear Lessard-Sams Outdoor Heritage Council,

I write in support of the Lake Superior Steelhead Association's (LSSA) grant application in Phase 7 of their plan to restore a section of the Knife River in Lake County, Minnesota. The Knife River is critically important for Steelhead along Minnesota's North Shore and the section the LSSA plans to restore is an ideal area for spawning. This section was heavily impacted by flooding in 2012 and has several steep eroding banks contributing excessive sediment to the stream. I have visited these LSSA sites on Knife River and have observed their restoration work firsthand. Reducing turbidity will not only benefit Steelhead, but the entire riparian ecosystem. Restoration plans for this project are consistent with current best practices aimed at restoring aquatic habitat and helps fulfill Lessard-Sams Outdoor Heritage Council's goal to "...restore, protect, and enhance Minnesota's wetlands, prairies, forests, and habitat for fish, game, and wildlife...".

Fish habitat in our rivers, and especially those along the North Shore of Lake Superior, are critically important to northeastern Minnesota. The Lake Superior Steelhead Association's Knife River restoration project aimed at improving water quality and boosting natural fish reproduction in Lake Superior is immensely beneficial to our area and it has my full support.

Sincerely,

Sel

Pete Stauber Member of Congress Minnesota's 8th Congressional District

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MEMORANDUM

To:Kevin Bovee, Lake Superior Steelhead AssociationFrom:Andy HubleyDate:5-24-2023Re:Technical Assistance

ARDC has been working with the Lake Superior Steelhead Association to determine a work plan for future Technical Assistance (TA). This TA would include grant writing, fiscal management, planning processes, and other duties when they are identified.

We are supportive of the Knife River Habitat Rehabilitation-PH VII grant application to the Lessard-Sams Outdoor Heritage Council.

ARDC supports any grant applications that will lead to preservation and/or restoration of North Shore natural resources. ARDC already has a strong knowledge about North Shore, as we do similar work for the North shore Scenic Drive Council and the Gitchi Gami Trail Association.

as Afubley

Andy Hubley ARDC Planning Director <u>ahubley@ardc.org</u> 218-349-8634