Lessard-Sams Outdoor Heritage Council

Laws of Minnesota 2021 Accomplishment Plan

General Information

Date: 07/06/2021

Project Title: DNR Aquatic Habitat Restoration and Enhancement - Phase 4

Funds Recommended: $2,790,000

Legislative Citation: ML 2021, First Sp. Session, Ch. 1, Art. 1, Sec. 2, subd. 5(k)

Appropriation Language: $2,790,000 the first year is to the commissioner of natural resources to restore and enhance aquatic habitat in degraded streams and aquatic management areas and to facilitate fish passage. A list of proposed land restorations and enhancements must be provided as part of the required accomplishment plan.

Manager Information

Manager's Name: Jamison Wendel
Title:
Organization: Minnesota DNR
Address: 500 Lafayette Road
City: St. Paul, MN 55155
Email: jamison.wendel@state.mn.us
Office Number: 651-259-5205
Mobile Number:
Fax Number:
Website:

Location Information

County Location(s): Carver, Otter Tail, Clay, Olmsted, St. Louis and Pine.

Eco regions in which work will take place:

- Northern Forest
- Forest / Prairie Transition
- Prairie
- Metro / Urban
- Southeast Forest

Activity types:

- Restore

- Enhance

Priority resources addressed by activity:

- Habitat

Narrative

Abstract

Diverse habitat is critical to sustaining quality fish populations in lakes and rivers. The Minnesota Department of Natural Resources (MNDNR) will complete six fish passage projects to restore habitat connectivity for fish and other aquatic life, and restore reaches of four different rivers, creating 24.4 miles of diverse aquatic habitat. Though the actual footprint of fish passage projects is relatively small, these projects will reconnect over 27,000 acres of lake and river habitat. Stream projects were selected from a statewide list, prioritized by factors such as ecological benefit, scale of impact, urgency of completion, and local support.

Design and Scope of Work

The Minnesota Department of Natural Resources (MNDNR) annually updates a statewide list of stream habitat projects. Project submittals come both from MNDNR staff and from partner organizations. Projects are prioritized based on scale-of-impact, urgency, local support, and critical habitat for rare species. Based on this list, MNDNR and our partners are proposing six fish passage projects and four channel restorations, leveraging a confirmed $3,225,000 and an additional $980,000 requested from other sources.

Access to diverse habitats is critical for fish and other aquatic organisms to complete various life stages. The habitats they use at different life stages may all vary widely. These habitats can be fairly unique, such as high-gradient riffles favored by many spawning fish, and may be miles apart. When dams or other obstructions prevent aquatic life from reaching ideal habitat, they are forced to use less optimal locations that can reduce their success. In some cases this leads to the complete loss of sensitive species upstream of a barrier. Research by MNDNR River Ecologist Luther Aadland found that on average, species richness declined by 37% upstream of near complete barriers to fish passage. Subsequent removal of 11 barriers in this study resulted in upstream recolonization of an average of 66% of the species that had been absent.

Modifying or removing the barriers through our two proposed fish passage projects would have a total footprint of 6 acres, but create upstream access to over 27,000 acres of lake and river habitat. This will benefit fish such as Walleye and Brook Trout present in these rivers, as well as five mussel species classified as threatened or special concern. Restoring connectivity also expands fishing opportunities by acting as a conduit for recolonization should something catastrophic such as drought happen in one portion of a watershed.

Streams naturally form habitat through the meandering of the river. Deeper, slower habitat is created by scour into the bed of the river around the outside of bends, while faster water and a rockier bottom is found in the straight sections in between. Wood, overhanging vegetation, and boulders serve as cover and current breaks for fish. In degraded sections of river, these natural processes are disrupted. Some reaches have been artificially straightened, preventing the meandering that forms diverse habitat. In other places, streams have become surrounded by tall

banks that prevent high flows from spilling out onto a floodplain. When floods are trapped within the stream channel, the river erodes the banks. This not only mobilizes tons of sediment that degrades downstream habitat, but results in a wide, shallow channel during low-flow periods that is avoided by adult fish. Channel restoration projects will utilize reference locations with high-quality habitat to improve habitat. Working with partners, we will restore 24.4 miles of habitat on four streams.

How does the plan address habitats that have significant value for wildlife species of greatest conservation need, and/or threatened or endangered species, and list targeted species?

The Otter Tail River dams project is a key component to Lake Sturgeon restoration efforts in the Red River basin. Lake Sturgeon are an important game species and also listed as a species of Special Concern in Minnesota. Dams that blocked migrations to spawning habitat, overharvest, and poor water quality contributed to the extirpation of Lake Sturgeon from the Red River basin in the early 1900's. Lake Sturgeon reintroduction in the Red River basin has been ongoing for 20 years and mature fish are being captured during spring surveys now. However, these dams are blocking upstream migrations of mature Lake Sturgeon on the Otter Tail River. Removing these barriers to fish passage is key to restoring a naturally reproducing population of Lake Sturgeon in the Red River basin.

The Otter Tail River dams and Buffalo River culverts fish passage projects are known to have rare mussel species in the vicinity. These projects have the potential to benefit those species by allowing their upstream movement past the barriers. Restoration of fish passage will help to return fish and mussel diversity that was present upstream of dams prior to their construction. Potential to benefit rare species is one of the criteria by which stream projects are ranked.

There are 68 species of greatest conservation need that utilize headwaters to large streams, including birds, turtles, frogs, fish, and insects. Stream habitat projects are not designed with one species in mind, but instead are intended to benefit multiple functions and habitats of the river both within the stream and in the riparian area, which will have benefits for rare species.

Describe how the plan uses science-based targeting that leverages or expands corridors and complexes, reduces fragmentation or protects areas identified in the MN County Biological Survey:

Science-based targeting was used to identify, design, and prioritize restoration and enhancement projects included in this proposal. Projects were prioritized based on multiple criteria, including scale-of-impact, critical habitat, technical feasibility, and compatibility with other resource initiatives.

Our proposal features projects intended to reduce fragmentation. Dams and other obstructions in rivers fragment areas of suitable habitat, similar to when pieces of prairie are separated by large areas of row-crop farmland. By removing or modifying barriers in streams, we will allow fish and other aquatic life to move between different patches of habitat that may be critical for their life-processes, such as spawning. Connectivity also expands fishing opportunities by acting as a conduit for recolonization should something catastrophic such as drought happen in one portion of a watershed. We have prioritized fish passage projects that connect large areas of high-quality habitat.

Similarly, our stream channel restoration projects target reaches of river where habitat is poor due to past alterations. Lengths of poor habitat can themselves act as barriers to animal movement, where a fish may choose not to migrate through a reach without adequate depth or cover to reach more suitable habitat upstream. Restoring the stream channel removes that "barrier" of poor habitat that fragments the stream. In the process, we also create high-quality habitat within the formerly degraded reach.

Which two sections of the Minnesota Statewide Conservation and Preservation Plan are most applicable to this project?

- H5 Restore land, wetlands and wetland-associated watersheds
- H6 Protect and restore critical in-water habitat of lakes and streams

Which two other plans are addressed in this program?

- Minnesota DNR Strategic Conservation Agenda
- Red River of the North Fisheries Management Plan

Which LSOHC section priorities are addressed in this program?

Forest / Prairie Transition

- Protect, enhance, and restore wild rice wetlands, shallow lakes, wetland/grassland complexes, aspen parklands, and shoreland that provide critical habitat for game and nongame wildlife

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

Prairie

- Protect, enhance, or restore existing wetland/upland complexes, or convert agricultural lands to new wetland/upland habitat complexes

Does this program include leveraged funding?

Yes

Explain the leverage:

The Natural Resources Conservation Service has committed $3,200,000 to the Whiskey Creek stream restoration project through the National Water Quality Initiative. Landowner buy-in will be required to fully utilize this grant. Given the high interest of local landowners in the project, we hope that most of this grant will be utilized for this project.

Carver County Watershed Management Organization has committed $25,000 to the Beven's Creed Dam project.

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 request is an acceleration of DNR aquatic habitat work to a level not attainable but for the appropriation.

Non-OHF Appropriations

Year	Source	Amount
2019	Game and Fish, Heritage Enhancement, and Federal Grants	$4,094,900
2018	Game and Fish, Heritage Enhancement, and Federal Grants	$3,618,100
2017	Game and Fish, Heritage Enhancement, and Federal Grants	$3,681,500
2016	Game and Fish, Heritage Enhancement, and Federal Grants	$3,267,000
2015	Game and Fish, Heritage Enhancement, and Federal Grants	$3,596,000

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

MNDNR has multiple potential avenues that could be used for ongoing maintenance of projects, including the Game and Fish fund which is supported by license sales, the Heritage Enhancement account funded by taxes on lottery tickets, funds raised through the sale of Trout Stamps, people who volunteer to help the department with projects, and future potential OHF appropriations.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
Annual	Game and Fish	Inspect Project	Control Invasives	Make instream adjustments as needed

Activity Details

Requirements

If funded, this program 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?
Yes

Where does the activity take place?

- AMA
- County/Municipal
- Public Waters

Land Use

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

Timeline

Activity Name	Estimated Completion Date
Design of fish passage and channel restoration projects	March 2022
Permitting and environmental review of fish passage and channel restoration projects	December 2022
Construction of fish passage and channel restoration projects	September 2024
Vegetation maintenance on fish passage and channel restoration projects	June 2025

Date of Final Report Submission: 11/01/2026

Budget

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

Totals

Item	Funding Request	Antic. Leverage	Leverage Source	Total
Personnel	-	-	-	-
Contracts	$2,677,400	$929,600	NRCS, EPA, BWSR, Carver County WMO	$3,607,000
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	-	-	-
Easement Stewardship	-	-	-	-
Travel	-	-	-	-
Professional Services	$100,400	-	-	$100,400
Direct Support Services	$12,200	-	-	$12,200
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	-	-	-	-
Other Equipment/Tools	-	-	-	-
Supplies/Materials	-	-	-	-
DNR IDP	-	-	-	-
Grand Total	**$2,790,000**	**$929,600**	**-**	**$3,719,600**

Amount of Request: $2,790,000
Amount of Leverage: $929,600
Leverage as a percent of the Request: 33.32%
DSS + Personnel: $12,200
As a % of the total request: 0.44%
Easement Stewardship: -
As a % of the Easement Acquisition: -

How will this program accommodate the reduced appropriation recommendation from the original proposed requested amount?
We will implement stream projects based on our prioritized list, completing the highest priorities with available funding.

Describe and explain leverage source and confirmation of funds:
For the Whiskey Creek project, the Buffalo Red Watershed District has committed $914,648 through The Natural Resources Conservation Service National Water Quality Initiative, Section 319 EPA funds, and BWSR.

Carver County Watershed Management Organization has committed $15,000 to the Beven's Creek Dam project.

Contracts

What is included in the contracts line?
100% of contracts are for R/E work.

Direct Support Services

How did you determine which portions of the Direct Support Services of your shared support services is direct to this program?
DNR calculates the program's fair share to pay for support costs directly related to and necessary for the appropriation, and an internal Service Level Agreement (contract) guarantees each program will receive the services for the calculated amount.

Federal Funds

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

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	-	-	-	39	39
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	5	5
Total	**-**	**-**	**-**	**44**	**44**

Total Requested Funding by Resource Type (Table 2)

Type	Wetland	Prairie	Forest	Habitat	Total Funding
Restore	-	-	-	$1,440,000	$1,440,000
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	$1,350,000	$1,350,000
Total	**-**	**-**	**-**	**$2,790,000**	**$2,790,000**

Acres within each Ecological Section (Table 3)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Acres
Restore	-	-	-	29	10	39
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	1	4	-	-	-	5
Total	**1**	**4**	**-**	**29**	**10**	**44**

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Funding
Restore	-	-	-	$520,000	$920,000	$1,440,000
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	$238,600	$1,111,400	-	-	-	$1,350,000
Total	**$238,600**	**$1,111,400**	**-**	**$520,000**	**$920,000**	**$2,790,000**

Average Cost per Acre by Resource Type (Table 5)

Type	Wetland	Prairie	Forest	Habitat
Restore	-	-	-	$36,923
Protect in Fee with State PILT Liability	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-
Protect in Easement	-	-	-	-
Enhance	-	-	-	$270,000

Average Cost per Acre by Ecological Section (Table 6)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest
Restore	-	-	-	$17,931	$92,000
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State	-	-	-	-	-

PILT Liability					
Protect in Easement	-	-	-	-	-
Enhance	$238,600	$277,850	-	-	-

Target Lake/Stream/River Feet or Miles

3.7 miles

Outcomes

Programs in forest-prairie transition region:

- Rivers and streams provide corridors of habitat including intact areas of forest cover in the east and large wetland/upland complexes in the west ~ *Both MNDNR and PCA conduct periodic surveys of the Otter Tail River watershed. For the Otter Tail Lakes Dams project, we will compare warmwater fish communities before and after project completion. We will also compare catch rates for critical species before and after project completion as indicators of population density changes.*

Programs in metropolitan urbanizing region:

- Improved aquatic habitat indicators ~ *For the Beven's Creek dam project, we will use routine fish surveys to gauge changes to the fish community, and compare with pre-project data.*

Programs in the northern forest region:

- Improved aquatic habitat indicators ~ *For the Kingsbury Creek project, we will evaluate instream habitat as well as brook trout populations to assess success. For the Grindstone Dam project, we will use routine fish surveys to gauge changes to the fish community and compare to pre-project data.*

Programs in prairie region:

- Other ~ *The Whiskey Creek channel restoration project in this region will improve in-channel and riparian habitat. We will use metrics that evaluate instream and floodplain habitat to assess our success.*

Programs in southeast forest region:

- Rivers, streams, and surrounding vegetation provide corridors of habitat ~ *We will evaluate instream and riparian habitat measures to evaluate the success of the North Branch Whitewater River restoration. Changes in fish populations will also be evaluated.*

Parcels

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

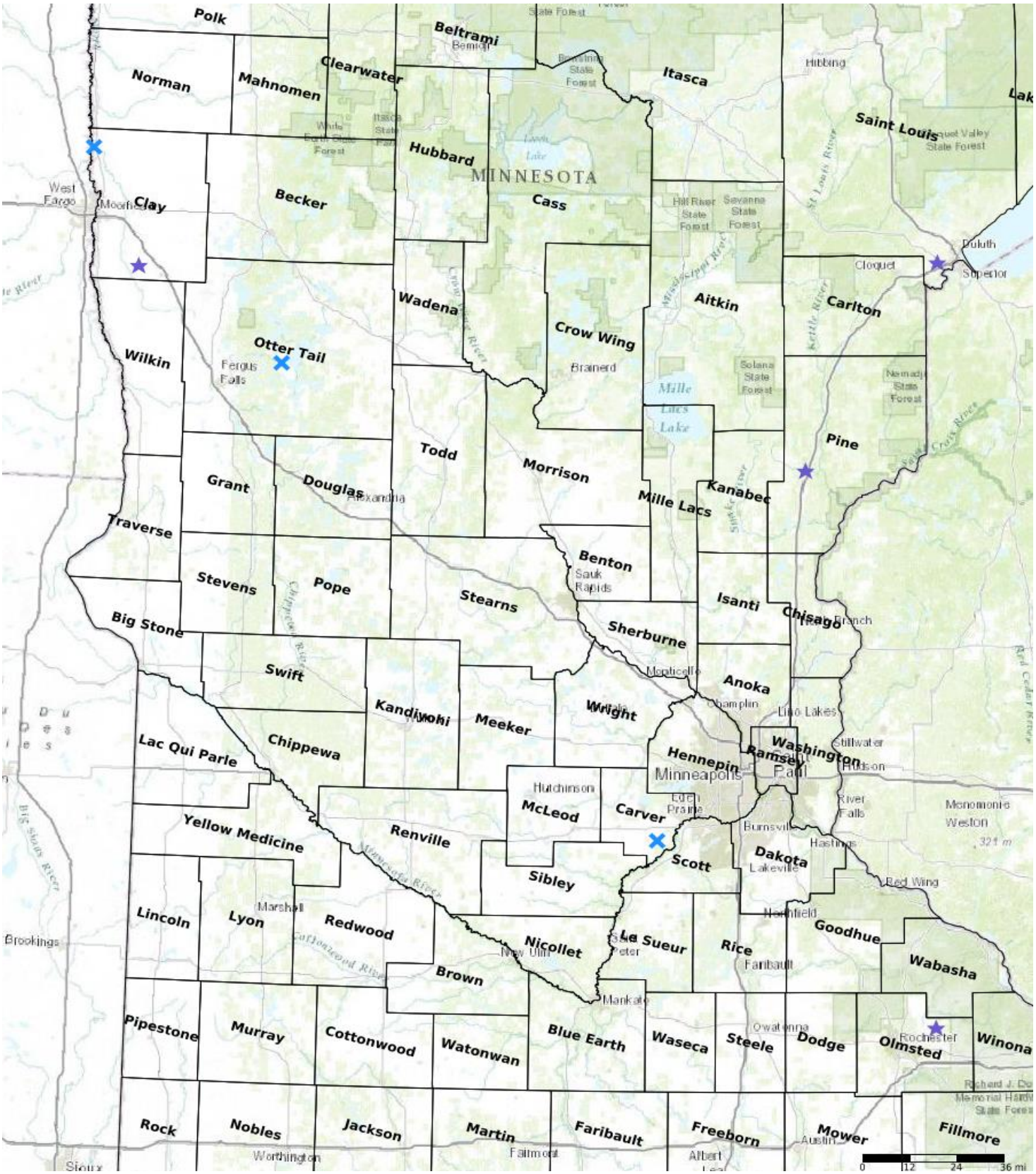
Parcel Information

Sign-up Criteria?
No

Explain the process used to identify, prioritize, and select the parcels on your list:
MN DNR uses a prioritized list to select stream habitat projects for submission. Project submissions are solicited from MN DNR staff as well as partner organizations. Criteria used to rank projects includes the scale of impact, critical habitat for rare species, the urgency of completing the project, feasibility, and local support. From that list we select the highest-ranked projects that we feel could be completed during the life of the OHF appropriation.

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
Bevens Creek	Carver	11524233	1	$263,000	Yes
Buffalo River	Clay	14248230	1	$400,000	Yes
Whiskey Creek	Clay	13746218	243	$2,000,000	Yes
North Branch of Whitewater River	Olmsted	10712216	26	$1,400,000	Yes
Otter Tail River	Otter Tail	13340205	4	$1,150,000	Yes
Grindstone River	Pine	04121224	10	$900,000	Yes
Kingsbury Creek	St. Louis	04915210	7	$355,500	Yes



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

Parcel Map
DNR Aquatic Habitat Restoration and Enhancement - Phase 4
(Data Generated From Parcel List)