Lessard-Sams Outdoor Heritage Council

DNR Stream Habitat

Laws of Minnesota 2016 Final Report

General Information

Date: 06/19/2026

Project Title: DNR Stream Habitat

Funds Recommended: $2,074,000

Legislative Citation: ML 2016, Ch. 172, Art. 1, Sec. 2, Subd. 5(f)

Appropriation Language: $2,074,000 the second year is to the commissioner of natural resources to restore and enhance habitat to facilitate fish passage, degraded streams, and critical aquatic species habitat. A list of proposed land restorations and enhancements must be provided as part of the required accomplishment plan.

Manager Information

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Location Information

County Location(s): Winona, Swift, Redwood, Otter Tail, Kittson, Becker and Douglas.

Eco regions in which work will take place:

Forest / Prairie Transition

Prairie

Southeast Forest

Northern Forest

Activity types:

Restore

Enhance

Priority resources addressed by activity:

Habitat

Narrative

Summary of Accomplishments

This DNR Aquatic Habitat appropriation used a programmatic approach to achieve prioritized aquatic habitat restoration and enhancement of lakes and streams. DNR modified eight dams and replaced 20 culverts to restore fish passage on five streams. Seven acres of habitat were restored on three streams and two acres of stream habitat were enhanced with this appropriation. All of these projects will provide excellent opportunities to educate the public on the importance of lake and stream habitat restoration and enhancement.

Process & Methods

Lake Carlos Dam Modification
During the winter and spring of 2021, the Lake Carlos Dam was replaced with a rock arch-shaped rapids to restore upstream fish passage. We expect that migratory species from Lake Carlos and upstream Lake Le Homme Dieu will benefit from improved access to 121 miles of river that could be used for spawning and rearing habitat. Rare mussel species such as creek heelsplitter and black sandshell are found downstream of the outlet, and may also find suitable habitat in tributary streams to Lake Carlos. The rock arch rapids structure is located within Lake Carlos State Park, and will provide an opportunity to educate the public on the importance of lake and stream connectivity.

Cottonwood Dam Modifications – Soldier's and Sailor's Park, Kuhar and Sanborn Golf Course Dams
This project was originally funded to provide fish passage at three dams by modifying the dams to rock arch rapids structures. However during the course of project development, at two of the dam sites, the grantee opted to install riffles along the river corridor to slowly step the river down and to provide more habitat than originally anticipated. Two of the dam sites now have 6-7 riffles and deep pool associated with those riffles. Fish use these pools as is evident by the fishermen seen at various riffles. Fish have also been seen passing through the riffles to get upstream. Construction of this project started in February of 2020; that spring construction was put on hold due to high flows and the COVID pandemic. However, as the flows were rising the contractor continued to work. This proved to be an issue when the contractor was unable to finish installing that riffle. As a result, the unfinished structure caused some significant erosion; this lead to additional work at that riffle site for the contractor once flows receded. For the most part this project was constructed during the COVID pandemic which significantly limited the availability of Department oversight during construction. Additional oversight by the Department would have been beneficial in implementation and would likely have avoided the contractor working in rising flows. Construction of the projects were finished in fall of 2020. Overall the project accomplished the goals of fish passage and has the added benefit of additional habitat along the river corridor.

Prairie/Lizzie Dam Modifications
The Prairie Lake and Lizzie Lake dam outlets were modified to rock arch rapids to improve fish passage. Construction finished in summer of 2019 and reconnected 2 consecutive dams, which when combined reconnected 20 stream miles. Recently, there has been some momentum in the Otter Tail watershed to improve fish passage. Because of this support, the timeline went really quickly for Lizzie and Prairie and the construction was very efficient. This was due, in part, to local DNR, the consultant and contractors' experience working on prior dam modifications. The Prairie Dam was unique in that we needed to do the modification on both sides of the road/bridge. Since construction was completed the vegetation has reestablished and fish have been seen using the

rapids.

Hallock Dam Modification
Construction on the Hallock dam finished spring of 2021. This project has a unique river setting with the dam immediately upstream of a meander bend and an incised reach of stream. This led to a unique design of modifying the dam by installing two sections of rock arch rapids upstream and downstream of the meander. There were also some riffles downstream of the rapids to partially address the incision and provide additional habitat. Fish passage was achieved at the site by modifying the dam into a rock arch rapids; channel catfish movement has already occurred and a variety of sizes were sampled earlier in the summer. Due to the drought this year, the vegetation has been struggling to get established. The project partner (City of Hallock) has responded by setting up a pump and watering the newly seeded area.

Drywood Creek Dam Removal and Channel Restoration
The Drywood Creek project removed the dam and restored the stream to a stable dimension, pattern and profile. Toe-wood sod mat was used to protect the banks while vegetation establishes and 2 rock riffles were installed to account for the grade change from the dam. After construction was finished, it was determine that one of the riffles was built too narrow and not according to plan specifications. Construction of this project was consistently up against high flows; which is likely why it wasn't clear that the riffle didn't meet specifications. DNR funding was used to adjust the riffle to the correct width.

Coolridge Creek Restoration
Construction for the Coolridge Creek restoration project was completed in May 2019. The project removed 18 culverts from the stream channel and three additional culverts from side channels. Removing the culverts restored 1,800 feet of stream channel.

Shell River Culvert Replacement
Three culverts on the Shell River were replaced in fall 2020. The previously undersized culverts were replaced with larger culverts to restore fish passage and improve stream conditions. One culvert replacement was funded through ML 18 and two replacements were funded through ML 16.

Stream habitat work for this appropriation and other LSOHC-funded projects from other appropriations was aided by funding for a stream restoration coordinator and interns. Here are some of the highlighted work of these positions using funding from this appropriation:

- Project development and public outreach.
- Management of project funding.
- Analyze and prioritize culverts for replacement – Buffalo River, Cottonwood River and Otter Tail River watersheds.
- Annual updates of the Stream Restoration Priority List
- Geomorphic monitoring of Buffalo River and Lake Shady
- Collected culvert data in Lake Pepin and Chippewa watersheds.
- Assisted with geomorphic monitoring of stream restoration projects.

How did the program address habitats of significant value for wildlife species of greatest conservation need, threatened or endangered species, and/or list targeted species?

The Cottonwood River Dams, Carlos Dam, and Prairie/Lizzie Dams projects were 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. Projects with the potential to benefit rare species was one of

the criteria by which stream projects are ranked. All projects were searched with the MNDNR's Natural Heritage Database that tracks known locations of rare species or plant communities. Project plans incorporated that information into design so that impacts to rare species were minimized to the greatest extent possible.

How did the program use science-based targeting that leveraged or expanded corridors and complexes, reduced fragmentation, or protected areas in the MN County Biological Survey.

MNDNR used a science-based planning model for selection of stream projects. The prioritization incorporated factors known to be important for stream health, as well as measures of stakeholder support and urgency. Evaluation of projects by MNDNR allows assessment of project success, and provides lessons to be used in future projects.

Explain Partners, Supporters, & Opposition

Pomme de Terre River Association partnered with DNR on the Drywood Creek project.

For the Cottonwood River Restoration project, DNR partnered with Redwood County, the City of Sanborn, and Farmer's Golf and Health Club.

Becker County partnered with DNR on the Shell River project.

For the Hallock Dam project, DNR partnered with the City of Hallock, Two Rivers Watershed District, Kittson County, and Two Rivers Golf Club.

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

The scope of the Cottonwood River Restoration project expanded after design started. Including additional habitat features in this project created some design challenges. However, anglers are already using the additional pools that were constructed for this project, suggesting that fish are relating to these habitat features.

The dam modification and stream enhancement of the Two Rivers in Hallock received much local publicity and has motivated nearby cities with similar dams to consider projects to restore fish passage and enhance stream habitat.

What is the plan to sustain and/or maintain this work after the Outdoor Heritage Funds are expended?

Once construction is completed and vegetation is established, stream habitat projects generally do not require ongoing maintenance. DNR has multiple sources of funding that could be used for this purpose, should it arise. These funding sources include the Game and Fish Fund, Heritage Enhancement account, and Trout Stamp revenue.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
Annual	Combination of DNR Game and Fish Funds and OHF	Inspect projects	Monitor for Invasive Species	Make instream adjustments as needed

Budget

Totals

Item	Requested	AP Amount	Spent	Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	$220,000	$240,000	$241,300	-	-	-	$220,000	$241,300
Contracts	$1,734,000	$1,589,000	$1,562,200	$85,000	$104,400	USFWS, Pomme de Terre River Assoc.	$1,819,000	$1,666,600
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-	-
Travel	$30,000	$24,000	$28,100	-	-	-	$30,000	$28,100
Professional Services	-	$184,000	$199,800	-	-	-	-	$199,800
Direct Support Services	$40,000	$29,000	$33,200	-	-	-	$40,000	$33,200
DNR Land Acquisition Costs	-	-	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	-	-	-	-	-	-	-	-
Supplies/Materials	$50,000	$8,000	$8,500	-	-	-	$50,000	$8,500
DNR IDP	-	-	-	-	-	-	-	-
Grand Total	**$2,074,000**	**$2,074,000**	**$2,073,100**	**$85,000**	**$104,400**	**-**	**$2,159,000**	**$2,177,500**

Personnel

Position	Annual FTE	Years Working	Amount Spent	Leverage	Leverage Source	Total
Stream Habitat Coordinator	1.0	2.0	$201,300	-	-	$201,300
Interns	1.0	2.0	$40,000	-	-	$40,000

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 fair share to pay for support costs directly related to and necessary for the appropriation."

Explain any budget challenges or successes:
Stream restoration and enhancement projects are difficult to time with each appropriation due to unanticipated design and permitting challenges. However, we have successfully moved projects to different appropriations when needed.

Total Revenue: $0

Revenue Spent: $0

Revenue Balance: $0

Of the money disclosed above, what are the appropriate uses of the money:

E. This is not applicable as there was no revenue generated.

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

N/A

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland (AP)	Wetland (Final)	Prairie (AP)	Prairie (Final)	Forest (AP)	Forest (Final)	Habitat (AP)	Habitat (Final)	Total Acres (AP)	Total Acres (Final)
Restore	0	0	0	0	0	0	16	8	16	8
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Fee w/o State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	0	0	0	0	6	7	6	7
Total	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**15**	**22**	**15**

Total Requested Funding by Resource Type (Table 2)

Type	Wetland (AP)	Wetland (Final)	Prairie (AP)	Prairie (Final)	Forest (AP)	Forest (Final)	Habitat (AP)	Habitat (Final)	Total Funding (AP)	Total Funding (Final)
Restore	-	-	-	-	-	-	$1,974,000	$740,400	$1,974,000	$740,400
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-
Enhance	-	-	-	-	-	-	$100,000	$1,332,700	$100,000	$1,332,700
Total	**-**	**-**	**-**	**-**	**-**	**-**	**$2,074,000**	**$2,073,100**	**$2,074,000**	**$2,073,100**

Acres within each Ecological Section (Table 3)

Type	Metro / Urban (AP)	Metro / Urban (Final)	Forest / Prairie (AP)	Forest / Prairie (Final)	SE Forest (AP)	SE Forest (Final)	Prairie (AP)	Prairie (Final)	N. Forest (AP)	N. Forest (Final)	Total (AP)	Total (Final)
Restore	0	0	0	0	10	4	6	4	0	0	16	8
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Fee w/o State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0	0	0
Enhance	1	0	0	3	4	0	0	2	1	2	6	7
Total	**1**	**0**	**0**	**3**	**14**	**4**	**6**	**6**	**1**	**2**	**22**	**15**

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro/ Urban (AP)	Metro/ Urban (Final)	Forest / Prairie (AP)	Forest / Prairie (Final)	SE Forest (AP)	SE Forest (Final)	Prairie (AP)	Prairie (Final)	N. Forest (AP)	N. Forest (Final)	Total (AP)	Total (Final)
Restore	-	-	-	-	$300,000	$74,100	$1,674,000	$666,300	-	-	$1,974,000	$740,400
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-	-	-
Enhance	$17,000	-	-	$881,000	$53,000	-	-	$351,500	$30,000	$100,200	$100,000	$1,332,700
Total	**$17,000**	**-**	**-**	**$881,000**	**$353,000**	**$74,100**	**$1,674,000**	**$1,017,800**	**$30,000**	**$100,200**	**$2,074,000**	**$2,073,100**

Target Lake/Stream/River Feet or Miles

1.3

Explain the success/shortage of acre goals

Stream restoration projects are difficult to time with each appropriation due to unanticipated design and permitting challenges. However, we have successfully moved projects to different appropriations when needed. With this appropriation, we needed to shuffle multiple projects around with other appropriations. In the end, the total number of acres benefited in this appropriation slightly exceeded goals in the amended accomplishment plan.

Outcomes

Programs in forest-prairie transition region:

Protected, restored, and enhanced nesting and migratory habitat for waterfowl, upland birds, and species of greatest conservation need ~ *For the Lake Carlos and Prairie/Lizzie Dams projects, we will use routine fish surveys to gauge changes to the fish community, and compare with pre-project data.*

Programs in metropolitan urbanizing region:

Improved aquatic habitat indicators ~

Programs in the northern forest region:

Improved aquatic habitat indicators ~ *For the Shell River culvert replacement project, we will use routine fish surveys to gauge changes to the fish community, and compare with pre-project data.*

Programs in prairie region:

Other ~ *For the Two Rivers and Cottonwood River dams projects, we will use routine fish surveys to gauge changes to the fish community, and compare with pre-project data. The Drywood 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 ~ *For the Coolridge Creek dams project, we will use routine fish surveys to gauge changes to the fish community, and compare with pre-project data.*

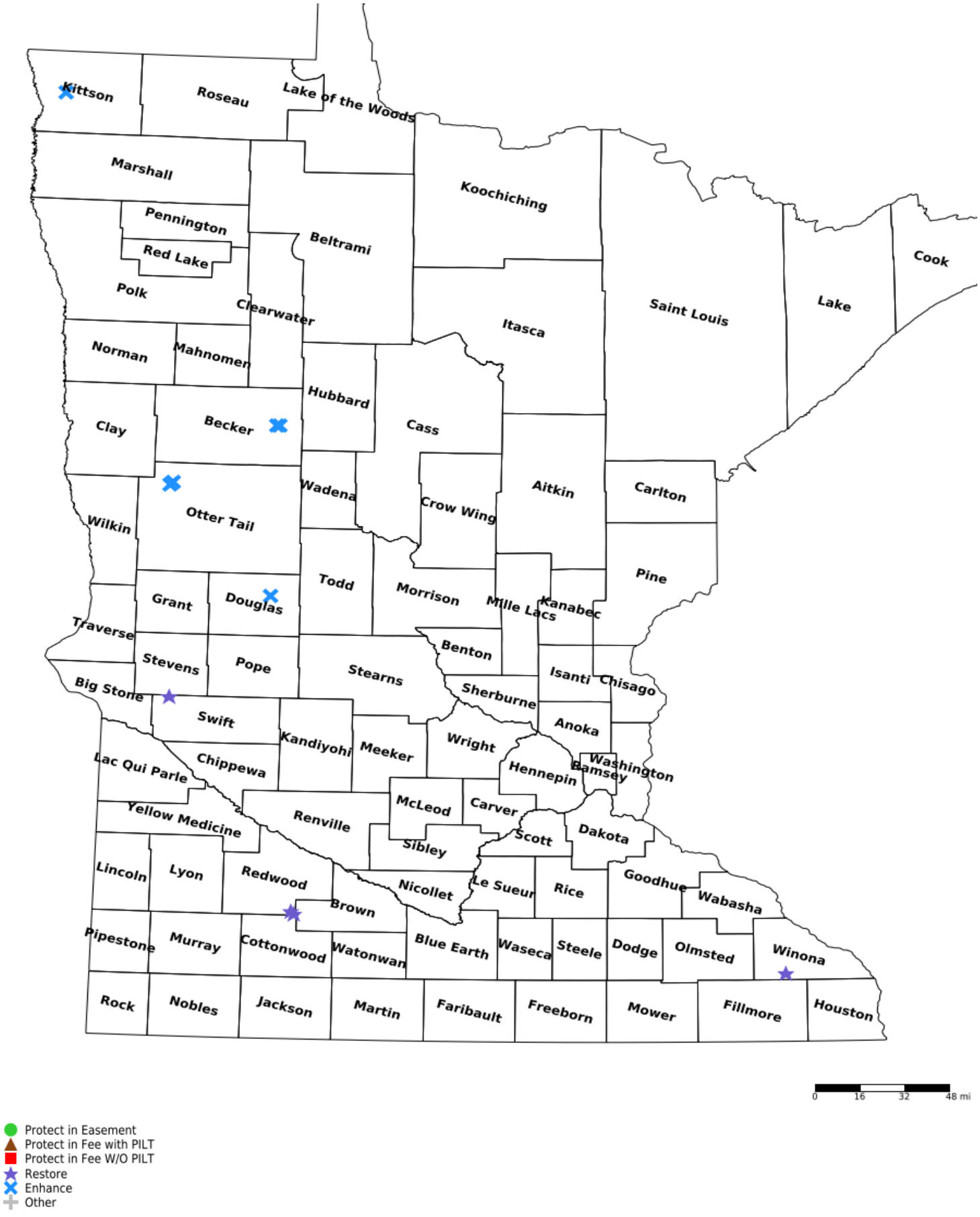
Parcels

Sign-up Criteria?
No

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection	Description
Shell River - 520th Ave. Culvert	Becker	14037214	1	$32,000	Yes	Culvert Replacement for Fish Passage
Shell River -Guyles Road Culvert	Becker	14037215	1	$32,000	Yes	Culvert Replacement for Fish Passage
Lake Carlos Dam Modification	Douglas	12937216	1	$443,000	Yes	Dam modification
South Branch of Two Rivers	Kittson	16149213	2	$470,000	Yes	Stream Habitat Enhancement
Lizzie Lake Dam Modification	Otter Tail	13643212	1	$200,000	Yes	Dam modification for fish passage
Prairie Lake Dam Modification	Otter Tail	13643214	1	$200,000	Yes	Dam modification for fish passage
Cottonwood R. Dam - Sanborn Golf Course	Redwood	10936226	1	$300,000	Yes	Dam removal for fish passage
Cottonwood R. Dam - Sanborn Park	Redwood	10936236	1	$300,000	Yes	Dam removal for fish passage
Drywood Creek	Swift	12243201	2	$50,000	Yes	Dam removal for fish passage
Coolridge Creek	Winona	10509223	4	$50,000	Yes	Trout stream restoration

Parcel Map


Kittson
Roseau
Lake of the Woods
Marshall
Pennington
Red Lake
Polk
Beltrami
Clearwater
Koochiching
Itasca
Saint Louis
Lake
Cook
Norman
Mahnomen
Hubbard
Cass
Clay
Becker
Wadena
Crow Wing
Aitkin
Carlton
Wilkin
Otter Tail
Todd
Morrison
Mille Lacs
Kanabec
Pine
Grant
Douglas
Traverse
Stevens
Pope
Stearns
Benton
Isanti
Chisago
Big Stone
Swift
Kandiyohi
Meeker
Sherburne
Wright
Anoka
Chippewa
Lac Qui Parle
Hennepin
Ramsey
Washington
Yellow Medicine
Renville
McLeod
Carver
Scott
Dakota
Sibley
Lincoln
Lyon
Redwood
Nicollet
Le Sueur
Rice
Goodhue
Wabasha
Brown
Pipestone
Murray
Cottonwood
Watonwan
Blue Earth
Waseca
Steele
Dodge
Olmsted
Winona
Rock
Nobles
Jackson
Martin
Faribault
Freeborn
Mower
Fillmore
Houston
0
16
32
48 mi
Protect in Easement
Protect in Fee with PILT
Protect in Fee W/O PILT
Restore
Enhance
Other