Lessard-Sams Outdoor Heritage Council

Accelerated Shallow Lakes and Wetland Enhancement - Phase VIII

Laws of Minnesota 2016 Final Report

General Information

Date: 07/06/2025

Project Title: Accelerated Shallow Lakes and Wetland Enhancement - Phase VIII

Funds Recommended: $2,167,000

Legislative Citation: ML 2016, Ch. 172, Art. 1, Sec. 2, Subd. 4(e)

Appropriation Language: $2,167,000 the second year is to the commissioner of natural resources to enhance and restore shallow lakes and wetland habitat statewide. 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): Red Lake, Marshall, Aitkin, Beltrami, Cottonwood, Carlton, Murray, Polk, Roseau, Lake of the Woods, Norman, Mahnomen and Clearwater.

Eco regions in which work will take place:

Northern Forest

Forest / Prairie Transition

Prairie

Metro / Urban

Activity types:

Restore

Enhance

Other : Preliminary survey and engineering wetland projects

Priority resources addressed by activity:

Wetlands

Narrative

Summary of Accomplishments

The ML2016 Accelerated Shallow Lakes and Wetland Enhancement Phase 8 successfully accomplished the three components of this programmatic appropriation - (1) Fourteen shallow lake and wetland projects to engineer and/or construct wetland infrastructure or perform management actions to improve habitat; (2) Roving Habitat Crew work to enhance wetland habitat on public lands, and (3) Shallow Lakes Program staff work to perform standardized assessments of shallow lakes to determine habitat quality and to implement needed shallow lake management and infrastructure construction. 22,1420 acres of wetland/shallow lake acres were directly impacted, 235% over original goal.

Process & Methods

ML2016 Accelerated Shallow Lakes and Wetland Enhancement Phase 8 entailed three components.

* Engineering, Construction, and/or Management of Individual Shallow Lake/Wetland Projects - Fourteen individual projects were undertaken with funding from this appropriation. Two of these projects, Swamp Lake (Aitkin County) and Puposky Lake (Beltrami County), entailed extensive cleanout of outlet channels leading to better water level management. These projects are necessary when downstream outlets become clogged with sediment and vegetation and water levels in shallow lakes become abnormally high. Specialized (and expensive) equipment such as Swamp Devils, Cookie Cutters, or extended-reach excavators, removed accumulated sediments and other obstructions to surveyed levels. The resulting water elevations return to lower levels and habitat benefits are often dramatic. Five projects - Clear Lake (Murray County) Eckvoll WMA (Marshall County), Typhoon WMA (Cottonwood County), Sterle Pool/Sawyer WMA (Carlton County), and Buena Vista (Beltrami County) - were completed and involved engineering and construction of wetland/shallow lake infrastructure such as dikes and water control structures. In all of these projects, engineering was done in-house (i.e. DNR engineers) and private contractors were used for the construction. Finally, seven infrastructure projects were engineered only, with construction planned for the future. Doing this initial engineering allows us to determine project feasibility, identify construction obstacles, and obtain accurate cost estimates for materials and construction. While five of these engineering-only projects were accomplished with in-house engineers, the other two projects were completed with private engineering consultants, as in-house engineering is becoming more difficult to obtain. Obtaining needed engineering support is an issue we continue to look at.

*Shallow Lakes Program - The Shallow Lakes Program is a high-visibility program within the DNR Section of Wildlife that uses single-focused Shallow Lakes Specialists to (1) perform standardized assessments of shallow lakes and (2) to bring about needed management or infrastructure changes where needed to enhance shallow lake habitat. Work by these Specialists guides Shallow Lakes work by both DNR Wildlife staff and NGOs. Funding from this appropriation allowed the addition of three Shallow Lake Specialists who are stationed at Detroit Lakes, Tower, and Brainerd and provided their funding for three fiscal years - Fy17-FY19. During this time the Specialists reported doing 183 shallow lake assessments covering 76,602 acres. This assessment work directly leads to shallow lake project initiation by the DNR and DU to address needed management and infrastructure issues that

lead to enhanced habitat.

* Roving Habitat Crews - Roving Habitat Crews are teams of DNR staff who are equipped and trained to perform habitat enhancement projects on public lands. Funding from this appropriation was provided to the Region 1 Roving Habitat Crew to enable it to perform wetland enhancement activities through the addition of two roving crew members and their associated costs for three fiscal years (FY17-FY19). Typical wetland enhancement activities undertaken by Roving Habitat Crews include prescribed burns of wetlands, removal of invasive species and trees from wetlands, support of shallow lake drawdowns, and seeding wild rice. The Region 1 Roving Habitat Crew notably was involved in recent wetland management actions for which acres were reported in other appropriations and will not be reported in this report to avoid double-counting. Examples include the 7,000+ acre prescribed wetland burn that was done at Roseau River WMA. The Reg. 1 Roving Habitat Crew initiated, planned, and led the large effort to do this burn, but the acres were reported in the ML2015 Shallow Lakes and Wetland Enhancements Phase 7 Final Report, which provided the funding the helicopter that performed the aerial ignition using a helitorch. Likewise, cattail spraying done with the OHF-funded spray unit on a DNR helicopter used Reg. 1. Roving Habitat Crew members as ground support staff to load herbicide and refuel the helicopter between spray flights, a job liked to being an Indy pit crew, but with a running helicopter. Acres for this activity are reported in the OHF appropriations that fund the helicopter and chemical costs. Finally, the Reg. 1 Roving Habitat Crew stepped in when Covid-19 hiring restrictions prevented the DNR from hiring season technicians to run the OHF-purchased airboat on Rice Lake. Reg. 1 crew members volunteered to get the needed airboat training, then worked in shifts to operate the airboat during the field season. As an added bonus, innovative and mechanically adept Reg. 1 crew members decided they could improve the airboat cutting attachment. They crafted their own cutters which have proven more effective than the original equipment.

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?

A statewide review of Species of Greatest Conservation Need (SGCN) found that wetlands are one of the three habitat types (along with prairies and rivers) most used by these species. The The 22,142 acres of wetland enhancement will provide wetland management actions identified to support SGCN, including reversal of wetland degradation and control of invasives. In the Minnesota County Biological Survey description of the marsh community, special attention is given to two issues faced in Minnesota marshes - stable high water levels that reduce species diversity, often to a point at which a monotypic system evolves, and the "invasion of marshes by the non-native species narrow-leaved cattail" and its hybrids. Both of these issues were directly addressed by the major cattail control activities involving the Roving Habitat Crew, along with water level management undertaken through channel cleanouts or that will now be possible through because of newly installed wetland infrastructure projects.

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.

Shallow lakes in Minnesota are monitored and evaluated by area wildlife staff and dedicated shallow lake specialists who both identify shallow lakes needing management action and monitors the lakes post-management to assess effectiveness. The projects in this proposal were proposed by area wildlife and reviewed by regional and program specialists.

Explain Partners, Supporters, & Opposition

Ducks Unlimited is a valuable partner undertaking wetland habitat work in Minnesota. Prior to OHF proposal submission, DNR and DU staff confer to review projects to ensure project coordination and that the partner best suited to bringing about success is working on each project.

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

As has been previously stated, wetland habitat projects are some of the mostly challenging to work on due to engineering challenges, the time that may be involved, permits, and expense. A continuing challenge is the ability to obtain timely engineering assistance from DNR engineers. We will continue to explore options for our engineering needs.

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

N/A

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

DNR property managers are tasked with evaluating their properties and determining ongoing and future maintenance work. DNR Shallow Lakes Program staff perform standardized assessments to evaluate the effectiveness of shallow lake projects and document their finding to compare habitat quality over time.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
2023	Game and Fish	Area and Shallow Lakes Staff monitor project effectiveness	-	-

Budget

Totals

Item	Requested	AP Amount	Spent	Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	$971,000	$1,043,000	$1,043,000	-	-	-	$971,000	$1,043,000
Contracts	$582,500	$518,300	$389,600	-	-	-	$582,500	$389,600
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-	-
Travel	$237,000	$219,200	$219,200	-	-	-	$237,000	$219,200
Professional Services	$169,000	$189,000	$181,400	-	-	-	$169,000	$181,400
Direct Support Services	$109,000	$109,000	$109,200	-	-	-	$109,000	$109,200
DNR Land Acquisition Costs	-	-	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	$15,000	$15,000	$12,300	-	-	-	$15,000	$12,300
Supplies/Materials	$83,500	$73,500	$72,900	-	-	-	$83,500	$72,900
DNR IDP	-	-	-	-	-	-	-	-
Grand Total	**$2,167,000**	**$2,167,000**	**$2,027,600**	**-**	**-**	**-**	**$2,167,000**	**$2,027,600**

Personnel

Position	Annual FTE	Years Working	Amount Spent	Leverage	Leverage Source	Total
Shallow Lake Interns	2.0	3.0	$80,000	-	-	$80,000
Shallow Lake Specialists	3.0	3.0	$595,000	-	-	$595,000
Roving Habitat Crew Laborer	2.0	3.0	$368,000	-	-	$368,000

Direct Support Services

How did you determine which portions of the Direct Support Services of your shared support services is direct to this program?
Standard DNR process was used to determine Direct Support Services amount.

Explain any budget challenges or successes:
Flexibility is helpful in dealing with complex programmatic appropriations dealing with wetlands and shallow lakes. The ability to add and subtract parcels and then obtain needed budget amendments makes it possible to navigate the challenges posed by complex wetland projects.

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.

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	10	0	0	0	0	0	0	0	10	0
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	9,415	22,142	0	0	0	0	0	0	9,415	22,142
Total	**9,425**	**22,142**	**0**	**0**	**0**	**0**	**0**	**0**	**9,425**	**22,142**

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	$36,900	-	-	-	-	-	-	-	$36,900	-
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-
Enhance	$2,130,100	$2,027,600	-	-	-	-	-	-	$2,130,100	$2,027,600
Total	**$2,167,000**	**$2,027,600**	**-**	**-**	**-**	**-**	**-**	**-**	**$2,167,000**	**$2,027,600**

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	0	0	10	0	0	0	10	0
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	250	0	2,825	11,911	0	0	1,202	203	5,138	10,028	9,415	22,142
Total	**250**	**0**	**2,825**	**11,911**	**0**	**0**	**1,212**	**203**	**5,138**	**10,028**	**9,425**	**22,142**

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	-	-	-	-	-	-	$36,900	-	-	-	$36,900	-
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-	-	-
Enhance	$93,700	$61,400	$559,800	$508,100	-	-	$743,500	$731,400	$733,100	$726,700	$2,130,100	$2,027,600
Total	**$93,700**	**$61,400**	**$559,800**	**$508,100**	**-**	**-**	**$780,400**	**$731,400**	**$733,100**	**$726,700**	**$2,167,000**	**$2,027,600**

Target Lake/Stream/River Feet or Miles

Explain the success/shortage of acre goals

As noted in the narrative, the challenge of doing large wetland/shallow lake projects, the programmatic nature of this appropriation, and the need to modify the parcel list throughout the life of the appropriation means that initial acreage goals are just estimates. Our goal is always to try exceed the initial estimate - and we've been successful in our recent appropriations. This appropriation benefited from large projects that were available in NW Minnesota and the aggressive nature of the Region 1 Roving Habitat Crew.

Outcomes

Programs in forest-prairie transition region:

Improved aquatic habitat indicators ~ *Almost twelve thousand acres of shallow lakes/wetlands in the forest-prairie transition region were enhanced with this appropriation. Cattail control, improved water level management provided by upgraded infrastructure, and and the other implemented management actions should benefit waterfowl and other wetland wildlife. Besides just the additional acreage of wetlands being impacted, annual waterfowl surveys may show an impact in waterfowl numbers. Surveys of waterfowl hunters may show an improvement in hunter satisfaction as they find improved wetlands to hunt and, hopefully, more ducks.*

Wetland and upland complexes will consist of native prairies, restored prairies, quality grasslands, and restored shallow lakes and wetlands ~ *Almost twelve thousand acres of shallow lakes/wetlands in the forest-prairie transition region were enhanced with this appropriation. Cattail control, improved water level management provided by upgraded infrastructure, and and the other implemented management actions should benefit waterfowl and other wetland wildlife. Besides just the additional acreage of wetlands being impacted, annual waterfowl surveys may show an impact in waterfowl numbers. Surveys of waterfowl hunters may show an improvement in hunter satisfaction as they find improved wetlands to hunt and, hopefully, more ducks.*

Programs in metropolitan urbanizing region:

Protected habitats will hold wetlands and shallow lakes open to public recreation and hunting ~ *No acres of wetland enhancement are claimed in this final report in the metropolitan urbanizing region, however funding was spent to engineer a potential future project in this region at Carlos Avery WMA.*

Programs in the northern forest region:

Improved availability and improved condition of habitats that have experienced substantial decline ~ *Just over 10,000 acres of shallow lakes/wetlands in the northern forest region were enhanced. Cattail control, improved water level management provided by upgraded infrastructure and channel cleanouts should benefit waterfowl and other wetland wildlife. Besides just the additional acreage of wetlands being impacted, annual waterfowl surveys may show an impact in waterfowl numbers. Surveys of waterfowl hunters may show an improvement in hunter satisfaction as they find improved wetlands to hunt and, hopefully, more ducks. The improvement in wild rice from some of the projects in this region may be reflected in increased rice harvests.*

Programs in prairie region:

Protected, restored, and enhanced shallow lakes and wetlands ~ *While only 203 acres of shallow lakes/wetlands in the prairie region were enhanced with this appropriation, it represents important work. Cattail control, improved water level management provided by upgraded infrastructure, and other implemented management actions should benefit waterfowl and other wetland wildlife. Besides just the additional acreage of wetlands being impacted, annual waterfowl surveys may show an impact in waterfowl numbers. Surveys of waterfowl hunters may show an improvement in hunter satisfaction as they find improved wetlands to hunt and, hopefully, more ducks.*

Parcels

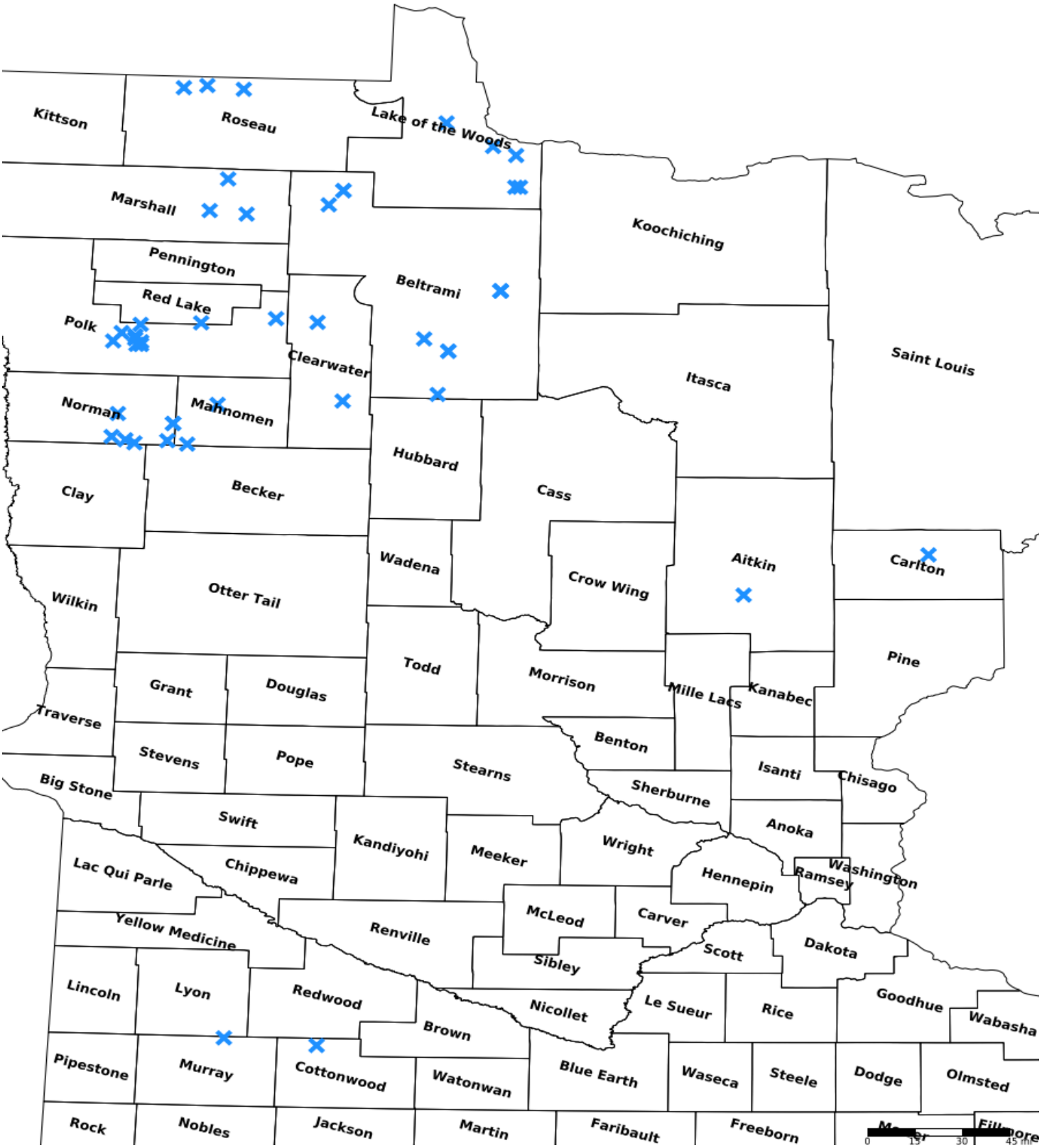
Sign-up Criteria?
No

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection	Description
Swamp Lake	Aitkin	04625226	276	$44,442	Yes	Survey and outlet cleanout
Beltrami Island State Forest	Beltrami	15737201	162	-	Yes	Roving Crew - woody removal
Beltrami Island State Forest	Beltrami	15737201	388	$7,920	Yes	Roving Crew - Rx burning
Bemidji Slough WMA	Beltrami	14633228	49	-	Yes	Roving Crew - woody removal
Buena Vista SF	Beltrami	14833211	7	$168	Yes	Roving Crew - wetland enhancement
Buena Vista WCS	Beltrami	14833211	32	$16,996	Yes	Water control structure design and construction
Moose River WMA	Beltrami	15737233	2,471	-	Yes	Roving Crew - Rx burning
Puposky Lake Outlet Channel	Beltrami	14934224	4,700	$33,293	Yes	Outlet cleanout
Woodrow Pediocetes WMA	Beltrami	15231227	11	-	Yes	Roving Crew - Rx burning
Woodrow Pediocetes WMA	Beltrami	15231227	8	-	Yes	Roving Crew - wetland enhancement
Woodrow Pediocetes WMA	Beltrami	15231227	11	-	Yes	Roving Crew - wetland enhancement
Woodrow Pediocetes WMA	Beltrami	15231227	11	-	Yes	Roving Crew - wetland enhancement
Sterle Pool - (Sawyer WMA)	Carlton	04818216	21	$63,624	Yes	Water control structure design and construction
Upper Rice Lake WMA	Clearwater	14537212	40	$9,600	Yes	Roving Crew - wetland enhance-herbicide trtmnt
Winsor/Greenwood County Land	Clearwater	15037230	160	$3,840	Yes	Roving Crew - Rx burning
Typhoon WMA	Cottonwood	10837216	20	$107,339	Yes	Water control construction
Graceton WMA	Lake of the Woods	16133203	531	$12,744	Yes	Roving Crew - Rx burning
Lake of the Woods SF	Lake of the Woods	16030231	760	$18,240	Yes	Roving Crew - Rx burning
Lake of the Woods SF	Lake of the Woods	15830230	330	-	Yes	Roving Crew - Rx burning
Lake of the Woods SF	Lake of the Woods	15830229	130	-	Yes	Roving Crew - Rx burning
Spooner WMA	Lake of the Woods	16031217	90	-	Yes	Roving Crew - woody removal
Rush Lake WMA	Mahnomen	14541221	5	$120	Yes	Roving Crew - wetland enhance-herbicide trtmnt
Waubun WMA	Mahnomen	14342233	8	$192	Yes	Roving Crew - wetland enhance-herbicide trtmnt
Agassiz NWR	Marshall	15641218	6,700	$16,080	Yes	Roving Crew - wetland enhancement
Eckvoll WMA Dike	Marshall	15640221	2,000	$33,483	Yes	Water control structure design and construction
Thief Lake WMA	Marshall	15841223	45	$1,080	Yes	Roving Crew - wetland enhance-herbicide trtmnt
Clear Lake-Sturslinger	Murray	10840206	105	$52,902	Yes	Water control structure design and construction
Faith WMA	Norman	14443225	2	$48	Yes	Roving Crew - wetland

						enhancement
Faith WMA	Norman	14443225	25	$600	Yes	Roving Crew - wetland enhancement
Ida WMA	Norman	14445212	6	$144	Yes	Roving Crew - wetland enhance-herbicide trtmnt
Moccasin WMA	Norman	14343226	10	$240	Yes	Roving Crew - wetland enhancement
Neal WMA	Norman	14345223	6	$144	Yes	Roving Crew - wetland enhance-herbicide trtmnt
Syre WMA	Norman	14344234	6	$144	Yes	Roving Crew - wetland enhance-herbicide trtmnt
Twin Valley WMA	Norman	14344229	10	$240	Yes	Roving Crew - wetland enhance-herbicide trtmnt
Crookston SNA	Polk	14944219	138	$3,312	Yes	Roving Crew - Rx burning
Dugdale WMA	Polk	14944234	54	$1,296	Yes	Roving Crew - woody removal
Foxboro SNA	Polk	14845203	71	$1,704	Yes	Roving Crew - Rx burning
Glacial Ridge NWR	Polk	14844203	26	$624	Yes	Roving Crew - wetland enhancement
Glacial Ridge NWR	Polk	14944227	340	$8,160	Yes	Roving Crew - Rx burning
Glacial Ridge NWR	Polk	14844209	158	$3,792	Yes	Roving Crew - Rx burning
Glacial Ridge NWR	Polk	14944202	80	$1,920	Yes	Roving Crew - wetland enhancement
Glacial Ridge NWR	Polk	14844210	607	$14,568	Yes	Roving Crew - woody removal
Larix WMA	Polk	15039222	18	$432	Yes	Roving Crew - woody removal
State Trust	Red Lake	15042236	8	$192	Yes	Roving Crew - wetland enhancement
Roseau Lake WMA	Roseau	16340217	257	$6,168	Yes	Roving Crew - wetland enhancement
Roseau River WMA	Roseau	16342212	1,214	$29,136	Yes	Roving Crew - Rx burning
Roseau River WMA	Roseau	16342218	35	$840	Yes	Roving Crew - wetland enhancement

Parcel Map



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