Lessard-Sams Outdoor Heritage Council

Accelerated Shallow Lakes and Wetland Enhancement - Phase VII

Laws of Minnesota 2015 Final Report

General Information

Date: 09/07/2025

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

Funds Recommended: $2,130,000

Legislative Citation: ML 2015, First Sp. Session, Ch. 2, Art. 1, Sec. 2, Subd. 4(d)

Appropriation Language: $2,130,000 in the first year is to the commissioner of natural resources to enhance and restore shallow lakes statewide. A list of proposed land restorations and enhancements must be provided as part of the required accomplishment plan.

Manager Information

Manager's Name: Ricky Lien
Title: Wetland Habitat Team Supervisor
Organization: Minnesota Department of Natural Resources
Address: 500 Lafayette Road Box 20
City: St. Paul, MN 55155
Email: ricky.lien@state.mn.us
Office Number: 651-259-5227
Mobile Number:
Fax Number: 651-297-4961
Website: www.dnr.state.mn.us

Location Information

County Location(s): Stearns, Pope, Kandiyohi, Dakota, Meeker, Nicollet, Roseau, Todd, Wright, Washington, Anoka, Beltrami, Big Stone, Carver, Cottonwood, Cass, Chisago, Kittson, Crow Wing, Douglas, Lyon, Mahnomen, Marshall, Mille Lacs, Morrison, Nobles, Otter Tail, Yellow Medicine, Waseca, Freeborn, Mower, Chippewa, Lac qui Parle, Murray, Olmsted, Swift, Watonwan, Aitkin, Le Sueur, Lincoln and Martin.

Eco regions in which work will take place:

Northern Forest

Forest / Prairie Transition

Prairie

Metro / Urban

Southeast Forest

Activity types:

Enhance

Priority resources addressed by activity:

Wetlands

Narrative

Summary of Accomplishments

The ML15 Accelerated Shallow Lakes and Wetland Enhancement Phase 7 successfully accomplished 101 separate projects to positively impact Minnesota wetland habitat and benefit waterfowl, other wetland wildlife, and provide the array of benefits associated with healthy wetlands. Work involved construction of major wetland infrastructure, engineering, wetland enhancement work by two Roving Habitat Crews, a major drawdown and rotenone treatment of a shallow lake, purchase of capital equipment to rig a Department helicopter for aerial spraying, and subsequent major expansion of the treatment of invasive cattails. 28,101 acres of wetland enhancement are being reported for this appropriation.

Process & Methods

Engineering and construction of major shallow lake and wetland infrastructure includes work on water control structures, dikes, and fish barriers to improve wetland habitat management. Five major infrastructure projects were constructed with funding from this appropriation. The five (Carex Slough/Freeborn County, Mahlke Marsh/Lyon County, Hovland/Mahnomen County, Roseau River WMA Pool 2/Roseau County, and Staples/Todd County) all began with property manager submission of the projects into an annual Section of Wildlife project solicitation process. All projects undergo Regional and Central Office review, with wetland and shallow lake projects receiving additional review by Wetland Habitat Team members. Suitable projects are selected for inclusion in OHF proposals. Given the complexity of major wetland infrastructure projects, OHF project lists in Accomplishment Plans undergo continual adjustments based on engineering assessments, budget projections, and to seek efficient use of appropriation funds. Reflective of the expense often incurred in major wetland infrastructure projects, expenditures for these five projects accounted for 43% of the total expenditures for this appropriation.

Four major shallow lake/wetland management actions were implemented to enhance habitat - Simon Lake Drawdown and Fish Treatment/Pope County, Raguet WMA Wetland Tree Removal/Carver County, a major wetland prescribed burn at Roseau River WMA/Roseau County, and a channel cleanout at Moose-Willow Flowage/Aitkin County. Both projects were initiated, reviewed and selected for inclusion in an OHF appropriation by the aforementioned process and both projects presented unique challenges that are typical of complex wetland projects. Water levels at Simon Lake were reduced by gravity drawdown as much as possible, then was supplemented by pumps. When reduced as much as practical, a private company was hired to apply rotenone to remove unwanted fish. Unfortunately, the private company quit only hours after beginning the rotenone application. In an amazing move, the DNR Shallow Lakes Program immediately began work to undertake the rotenone application in-house. One year after the private company quit the treatment, a highly coordinated operation involving DNR Shallow Lakes and Roving Habitat Crew staff successfully implemented the treatment. Follow up assessments reported a successful fish treatment and a subsequent improvement in habitat quality at Simon Lake. Tree removal at Raguet WMA in Carver proved challenging as well. Existence of a high quality fen in the project area prohibited the use of large equipment. Instead, cut trees were removed by pulling them offsite with cables and winches to protect the fen. The prescribed burn of a wetland occurred in August 2019 at Roseau

River WMA and involved 7,350 acres. The project "burn boss" said the burn was done to set back brush encroachment and cattails in a sedge meadow. One month after the burn, significant rainfall at the site raised water levels and flooded the burned cattails. Thick beds of wild rice were reported in areas in which cattails had previously been dominant. Finally, a channel cleanout was conducted in the downsteam channel of the Moose-Willow Flowage in Aitkin County. Channels often become shallower as sediment is deposited. The shallow channels can be more conducive to growth of cattails. The double-whammy of shallower channels and cattails can result in higher water levels in upstream basins. The Moose-Willow Flowage had declined as habitat due to the described sedimentation and cattail growth. A specialized piece of equipment known as a Cookiecutter was utilized to cleanout the channel is what will be a two phase plan to improve Moose-Willow. Phase I was the channel cleanout. Phase II will see installation of a new water control structure.

An exciting activity undertaken with this appropriation is the outfitting of a DNR helicopter with equipment to all annual spraying of invasive cattails. Credit for initiating this goes to DNR Pilot Brad Maas, who saw the potential to add spray equipment to an existing under-utilized helicopter. OHF funding was used for a capital equipment purchase of both a aerial spray unit and new avionics for the helicopter. This new equipment allows for annual spraying of approximately 2500 acres of invasive hybrid cattails. A standardized process has developed for the annual work. Early in the calendar year, the supervisor of all DNR Roving Habitat Crews puts out a call for potential cattail spray sites. The combined list of projects is mapped and projects to be treated are selected based on property manager ranking of needs and proximity of projects to each other and their statewide location. Helicopter landing sites are chosen and property managers are responsible for mowing the landing sites and proving proper public notice. Specially trained staff from Roving Habitat Crews are utilized as ground support for the helicopter. Thirty-five individual parcels were treated in the first year of utilizing the DNR helicopter. Prior to obtaining the ability to use the DNR helicopter to spray cattails, three parcels were sprayed by contracted companies, also with this appropriation. Direct comparison of these two spray methods (private company vs. DNR helicopter) shows that the DNR helicopter allows us to get this work done at less cost and with more control over the timing of the treatment and size of the treated areas.

Funding from this appropriation was utilized for wetland enhancement work by two Roving Habitat Crews, the Region 3 crew based out of Vermillion and the Region 4 crew based out of Lac qui Parle. Wetland habitat enhancement conducted by Roving Habitat Crews can include tree removal from wetlands, small scale spraying of cattails and other invasive vegetation, seeding wild rice, conducting drawdowns, sediment removal from small wetland basins, and actual construction of small wetland infrastructure projects. Roving Habitat Crew Leaders are constantly receiving submissions from DNR property managers for potential habitat projects and develop priorities based on Department priorities and the need to address requirement imposed by funding rules. Thirty-two individual wetland enhancement projects were reported by the two Roving Habitat Crews. Of the 28,101 wetland acres impacted by this appropriation, the reported wetland enhancement work done by Roving Habitat Crews accounted for 11,056 acres at a cost of just over $35/acre.

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 28,101 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 funded through this appropriation, along with water level management undertaken

through implementation of drawdowns 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

Some challenges were noted in the "Process & Methods" section above. 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. With this appropriation, one Roving Crew was newly created and had the challenges associated with just starting out.

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.

Budget

Totals

Item	Requested	AP Amount	Spent	Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	$420,000	$257,000	$275,000	-	-	-	$420,000	$275,000
Contracts	$943,500	$1,119,500	$990,200	-	-	-	$943,500	$990,200
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-	-
Travel	$160,000	$109,000	$108,500	-	-	-	$160,000	$108,500
Professional Services	$234,000	$267,000	$242,800	-	-	-	$234,000	$242,800
Direct Support Services	$155,000	$88,000	$77,000	-	-	-	$155,000	$77,000
DNR Land Acquisition Costs	-	-	-	-	-	-	-	-
Capital Equipment	-	$68,000	$69,000	-	-	-	-	$69,000
Other Equipment/Tools	-	$10,000	$6,800	-	-	-	-	$6,800
Supplies/Materials	$217,500	$211,500	$197,100	-	-	-	$217,500	$197,100
DNR IDP	-	-	-	-	-	-	-	-
Grand Total	**$2,130,000**	**$2,130,000**	**$1,966,400**	**-**	**-**	**-**	**$2,130,000**	**$1,966,400**

Personnel

Position	Annual FTE	Years Working	Amount Spent	Leverage	Leverage Source	Total
Roving Habitat Crew Laborers	4.0	2.0	$275,000	-	-	$275,000

Capital Equipment

Item	Amount Spent	Leverage	Leverage Source	Total
Helicopter sprayer and avionics	$69,000	-	-	$69,000

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:
This a programmatic request that funds major projects, Roving Habitat Crews, aerial cattail spraying and wetland management activities and the resulting work generates a complicated budget and parcel list that are challenging to administer.

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	0	0	0	0	0	0	0	0	0	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	8,756	28,101	0	0	0	0	0	0	8,756	28,101
Total	**8,756**	**28,101**	**0**	**0**	**0**	**0**	**0**	**0**	**8,756**	**28,101**

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	-	-	-	-	-	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-
Enhance	$2,130,000	$1,966,400	-	-	-	-	-	-	$2,130,000	$1,966,400
Total	**$2,130,000**	**$1,966,400**	**-**	**-**	**-**	**-**	**-**	**-**	**$2,130,000**	**$1,966,400**

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	0	0	0	0	0	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	500	9,019	1,452	14,596	0	61	6,504	2,669	300	1,756	8,756	28,101
Total	**500**	**9,019**	**1,452**	**14,596**	**0**	**61**	**6,504**	**2,669**	**300**	**1,756**	**8,756**	**28,101**

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	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-	-	-
Enhance	$162,000	$459,800	$594,000	$565,800	-	$2,300	$1,156,000	$802,400	$218,000	$136,100	$2,130,000	$1,966,400
Total	**$162,000**	**$459,800**	**$594,000**	**$565,800**	**-**	**$2,300**	**$1,156,000**	**$802,400**	**$218,000**	**$136,100**	**$2,130,000**	**$1,966,400**

Target Lake/Stream/River Feet or Miles

Explain the success/shortage of acre goals

Overall, the acreage of habitat enhancement achieved greatly exceeded the goal. The project benefited from some extremely large projects. While we hope to always overachieve on accomplishments, due to the complexity of engineering wetland/shallow lake projects and the unpredictability of weather that could delay or cancel projects there will likely be appropriations that underachieve. The variance in acres accomplished between regions is typical of the opportunistic nature of this work, with funding being shifted to quality projects wherever they might be.

Outcomes

Programs in forest-prairie transition region:

Improved aquatic habitat indicators ~ *Over 14,000 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 ~ *Over 14,000 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 ~ *Over 9,000 acres of shallow lakes/wetlands in the metropolitan 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 the northern forest region:

Improved availability and improved condition of habitats that have experienced substantial decline ~ *Over 1,750 acres of shallow lakes/wetlands in the northern forest region were enhanced. 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. 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 ~ *2,669 acres of shallow lakes/wetlands in the prairie 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.*

Parcels

Sign-up Criteria?
No

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection	Description
Moose Willow Phase I	Aitkin	05225233	852	$72,154	Yes	Channel cleanout
Carlos Avery Pool 13/17	Anoka	03222218	47	$5,657	Yes	Cattail control
Carlos Avery WMA	Anoka	03222218	5	$177	Yes	Roving habitat crew enhancement
Carlos Avery WMA	Anoka	03222205	3,146	$116,039	Yes	Roving habitat crew enhancement
Carlos Avery WMA	Anoka	03222218	90	$3,320	Yes	Roving habitat crew enhancement
Carlos Avery WMA	Anoka	03222206	1	$37	Yes	Roving habitat crew enhancement
Little Rabideau	Beltrami	14831213	7	$843	Yes	Cattail control
Manomin Lake	Beltrami	14635224	55	$6,620	Yes	Cattail control
Rice Pond	Beltrami	14831222	10	$1,204	Yes	Cattail control
David Steen WMA	Big Stone	12346231	2	$74	Yes	Roving habitat crew enhancement
Lac Qui Parle WMA Von Holtum	Big Stone	12045202	26	$959	Yes	Roving habitat crew enhancement
Victory WMA	Big Stone	12245231	7	$258	Yes	Roving habitat crew enhancement
Wesley Olson WMA	Big Stone	12346202	3	$111	Yes	Roving habitat crew enhancement
Raguet Fen	Carver	11523201	29	$117,247	Yes	Wetland enhancement
Big Rice Lake	Cass	14126225	2	$4,675	Yes	Remove cattail bog
Lac Qui Parle - Chippewa Bottom	Chippewa	11943202	431	$15,897	Yes	Roving habitat crew enhancement
Lac Qui Parle WMA	Chippewa	11842211	16	$590	Yes	Roving habitat crew enhancement
Laq Qui Parle WMA	Chippewa	11943202	28	$1,033	Yes	Roving habitat crew enhancement
Carlos Avery WMA	Chisago	03421228	431	$15,897	Yes	Roving habitat crew enhancement
Carlos Avery WMA	Chisago	03421234	1,047	$38,618	Yes	Roving habitat crew enhancement
Janet Johnson WMA	Chisago	03521235	16	$1,925	Yes	Cattail control
Loerch WMA	Crow Wing	04629231	28	$3,370	Yes	Cattail control
Mud Creek WMA	Dakota	11220229	22	$811	Yes	Roving habitat crew enhancement
Mud Creek WMA	Dakota	11220229	24	$885	Yes	Roving habitat crew enhancement
Vermillion River WMA	Dakota	11419215	1	$37	Yes	Roving habitat crew enhancement
Vermillion River WMA	Dakota	11419214	5	$184	Yes	Roving habitat crew enhancement
Herberger Lake WMA	Douglas	12736224	60	$7,222	Yes	Cattail control
Carex Slough	Freeborn	10319223	17	$282,519	Yes	Engineer and construct wetland infrastructure
Burbank WMA	Kandiyohi	12234226	9	$332	Yes	Roving habitat crew enhancement
Cabin Rock WMA	Kandiyohi	12236232	5	$184	Yes	Roving habitat crew enhancement

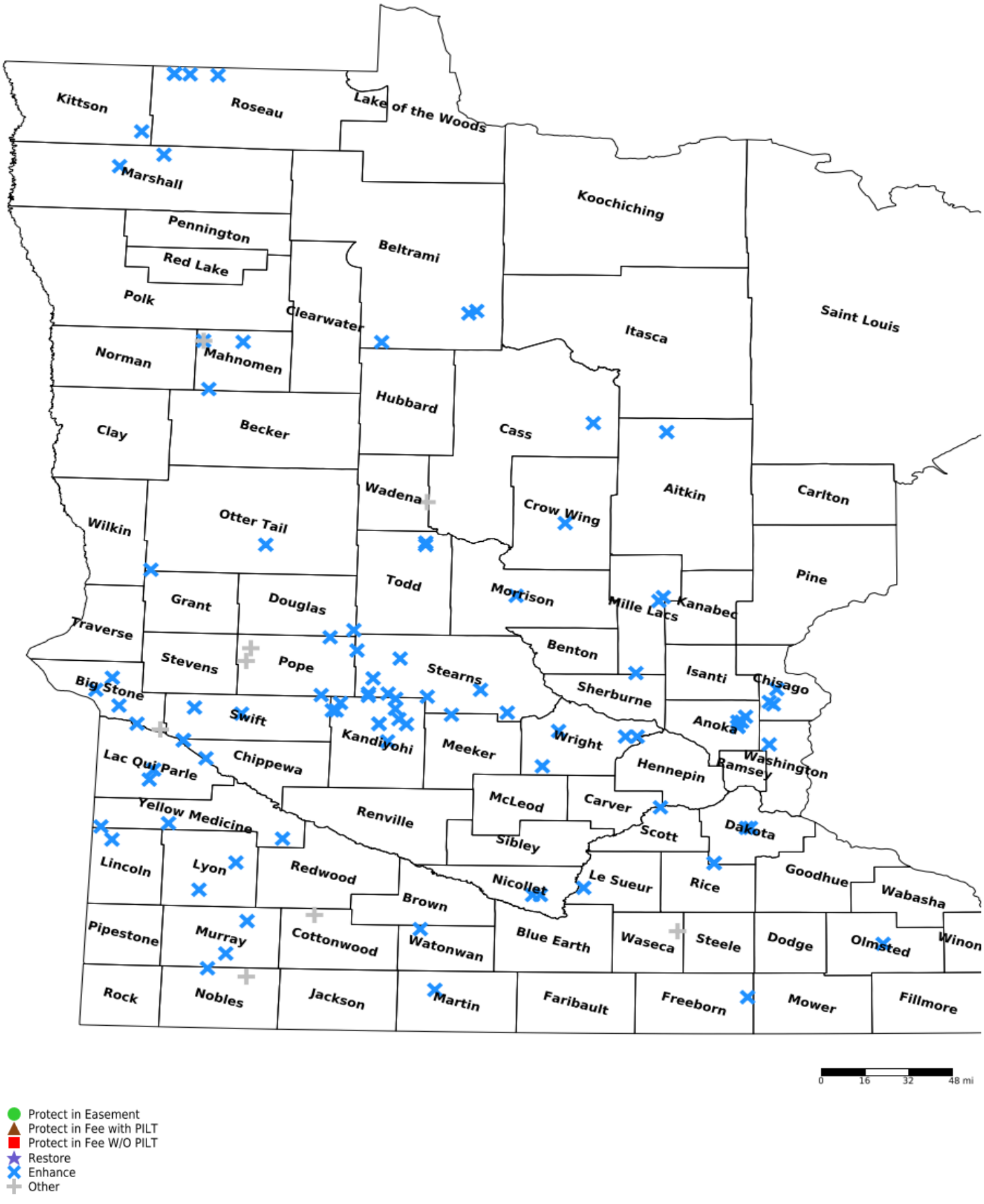
Dietrich Lange WMA	Kandiyohi	12133229	30	$1,107	Yes	Roving habitat crew enhancement
Follies WMA	Kandiyohi	12234202	10	$369	Yes	Roving habitat crew enhancement
Kandi WMA	Kandiyohi	12034233	2	$74	Yes	Roving habitat crew enhancement
New London WMA	Kandiyohi	12134213	2	$74	Yes	Roving habitat crew enhancement
Oleander WMA	Kandiyohi	12236216	9	$332	Yes	Roving habitat crew enhancement
Ringo Nest WMA	Kandiyohi	12134230	38	$4,574	Yes	Cattail control
Ringo/Nest WMA	Kandiyohi	12134230	17	$627	Yes	Roving habitat crew enhancement
Sunberg WMA	Kandiyohi	12236231	12	$443	Yes	Roving habitat crew enhancement
Twin Lakes WMA	Kittson	15945203	208	$6,400	Yes	Cattail control
25th Anniversary	Lac qui Parle	11744203	5	$184	Yes	Roving habitat crew enhancement
Hamlin WMA	Lac qui Parle	11744228	50	$1,844	Yes	Roving habitat crew enhancement
Ottawa WMA	Le Sueur	11026214	4	$148	Yes	Roving habitat crew enhancement
Richard Dorer WMA	Lincoln	11346225	6	$221	Yes	Roving habitat crew enhancement
Clifton/Rolling Hills WMA	Lyon	11140206	17	$627	Yes	Roving habitat crew enhancement
Lyons WMA-Mahlke Marsh	Lyon	11042234	34	$157,248	Yes	Engineer and construct wetland infrastructure
Blair Lake Vanose WMA	Mahnomen	14641225	27	$3,250	Yes	Cattail control
Frog Lake Bejou WMA	Mahnomen	14642229	89	$10,713	Yes	Cattail control
East Park WMA	Marshall	15844222	418	$50,314	Yes	Cattail control
Florian WMA	Marshall	15746214	35	$7,320	Yes	Cattail control
Clam Lake	Martin	10332210	5	$184	Yes	Roving habitat crew enhancement
Teal Scurry WMA	Meeker	12131206	19	$2,287	Yes	Cattail control
Kunkel WMA	Mille Lacs	03627235	32	$3,852	Yes	Cattail control
Mille Lacs WMA	Mille Lacs	04125229	712	$26,262	Yes	Roving habitat crew enhancement
Mille Lacs WMA	Mille Lacs	04026202	36	$1,328	Yes	Roving habitat crew enhancement
Ereaux WMA	Morrison	04131230	54	$6,500	Yes	Cattail control
Hovland Marsh Structure	Mower	14342234	100	$32,161	Yes	Engineer and construct wetland infrastructure
Badger WMA	Murray	10541202	15	$553	Yes	Roving habitat crew enhancement
Buttermilk Run WMA	Murray	10840234	26	$959	Yes	Roving habitat crew enhancement
Little Lake Unit, Swan Lake WMA	Nicollet	11028236	25	$3,009	Yes	Cattail control
Middle Lake Unit, Swan Lake	Nicollet	11028234	48	$5,778	Yes	Cattail control
Fenmont WMA	Nobles	10442201	15	$553	Yes	Roving habitat crew enhancement
Eastside WMA	Olmsted	10613204	61	$2,250	Yes	Roving habitat crew enhancement
Clitheral WMA	Otter Tail	13239206	19	$2,287	Yes	Cattail control
Copeland WMA	Otter Tail	13144232	40	$4,814	Yes	Cattail control
Simon Lake WMA	Pope	12337234	570	$108,673	Yes	Drawdown and fish treatment
Volkman WMA	Pope	12637201	39	$4,694	Yes	Cattail control
Aerial ignition - Roseau River	Roseau	16344212	7,350	$5,058	Yes	Prescribed burn

WMA						
Roseau Pool 2 Dike Riprap	Roseau	16344212	4,600	$140,505	Yes	Engineer and construct wetland infrastructure
Roseau River WMA	Roseau	16342211	398	$47,907	Yes	Cattail control
Roseau River WMA Cattail Control	Roseau	16343210	549	$15,585	Yes	Cattail control
Alice Hamm WMA	Stearns	12229233	14	$1,685	Yes	Cattail control
Crow Lake	Stearns	12335227	27	$3,250	Yes	Cattail control
Crow River WMA	Stearns	12334228	10	$1,204	Yes	Cattail control
Dahlman WMA	Stearns	12335234	8	$963	Yes	Cattail control
Discovery WMA	Stearns	12330217	16	$1,926	Yes	Cattail control
Milton Kjeldahl WMA	Stearns	12435226	8	$963	Yes	Cattail control
Spirit Marsh WMA	Stearns	12534213	14	$1,686	Yes	Cattail control
Tower WMA	Stearns	12635231	18	$2,167	Yes	Cattail control
Zion WMA	Stearns	12332231	22	$2,648	Yes	Cattail control
Danvers WMA	Swift	12140208	111	$4,094	Yes	Roving habitat crew enhancement
Ehrenberg WMA	Swift	12242232	3	$111	Yes	Roving habitat crew enhancement
Staples WMA	Todd	13333236	287	$34,546	Yes	Cattail control
Staples WMA	Todd	13333225	702	$260,521	Yes	Engineer and construct wetland infrastructure
Carlos Avery WMA	Washington	03322228	331	$12,209	Yes	Roving habitat crew enhancement
Paul Hugo Farms WMA	Washington	03121221	13	$1,565	Yes	Cattail control
Wood Lake WMA	Watonwan	10733212	580	$21,393	Yes	Roving habitat crew enhancement
Grass Lake WMA	Wright	11828213	59	$7,102	Yes	Cattail control
Hidden Marsh WMA	Wright	12027203	12	$1,444	Yes	Cattail control
Regal Creek	Wright	12024213	3,674	$128,757	Yes	Roving habitat crew enhancement
School Lake	Wright	12024216	15	$1,806	Yes	Cattail control
Bohemian WMA	Yellow Medicine	11446233	8	$295	Yes	Roving habitat crew enhancement
Curtis Lake	Yellow Medicine	11338218	16	$590	Yes	Roving habitat crew enhancement
James Meger WMA	Yellow Medicine	11443220	5	$32,122	Yes	Engineer and construct wetland infrastructure

Other Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
Lac qui Parle - Killen design	Big Stone	12044214	0	$7,732	Yes
Dry Sand WMA Design	Cass	13533201	0	$13,092	Yes
Typhoon WMA Design	Cottonwood	10837216	0	$15,371	Yes
Frog Lake, Bejou WMA Design	Mahnomen	14642229	0	$14,774	Yes
Lone Tree Design	Nobles	10440222	0	$8,080	Yes
Noordman WMA design	Pope	12540228	0	$7,903	Yes
Nora WMA Design	Pope	12640234	0	$14,395	Yes
Goose Lake Fish Barrier Design	Waseca	10722211	0	$10,205	Yes

Parcel Map


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