



## Lessard-Sams Outdoor Heritage Council

Shallow Lakes and Wetland Enhancements Phase 18

ML 2026 Request for Funding

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### General Information

**Date:** 06/26/2025

**Proposal Title:** Shallow Lakes and Wetland Enhancements Phase 18

**Funds Requested:** \$20,166,500

**Confirmed Leverage Funds:** -

**Is this proposal Scalable?:** Yes

### Manager Information

**Manager's Name:** Ricky Lien

**Title:** Wetland Habitat Team Supervisor

**Organization:** Minnesota Department of Natural Resources

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### Location Information

**County Location(s):** Meeker, Todd, Red Lake, Stearns, Douglas, Mille Lacs, Aitkin, St. Louis, Cass, Lincoln, Brown, Swift, Otter Tail, Murray, Clay, Jackson, Stevens, Cottonwood, Lac qui Parle, Yellow Medicine, Lyon, Pope, Chippewa and Redwood.

### Eco regions in which work will take place:

Forest / Prairie Transition

Northern Forest

Prairie

**Activity types:**

Enhance

Restore

Other : Engineering

**Priority resources addressed by activity:**

Wetlands

**Narrative****Abstract**

This proposal will establish shallow lake and wetland enhancement and restoration work on over 10,500 acres. This proposal will restore wetlands through tile breaks, ditch plugs, sediment removal, and placement of infrastructure. Enhancement will occur through management activities such as cattail management, wild rice seeding, and water level management. Two additional projects will undergo engineering to prepare for future infrastructure construction. The proposal will provide the annual funding needed for aerial cattail spraying undertaken with an OHF-acquired spray unit installed on a DNR helicopter. Waterfowl and other wetland-dependent species will benefit greatly from the proposed habitat work.

**Design and Scope of Work**

In addition to being critical for waterfowl, wetlands and shallow lakes provide habitat for a wide range of species, groundwater recharge, water purification, flood water storage, shoreline protection, and economic benefits. An estimated 90% of Minnesota's prairie wetlands have been lost and more than 50% of our statewide wetlands. Wetlands that remain are often compromised by degraded quality. This proposal will accomplish wetland habitat work throughout Minnesota on state lands and public waters, though the majority of work will occur in the strategic prairie region of Minnesota.

Projects identified on the parcel list were proposed and reviewed by DNR Area and Regional supervisors and Wetland Habitat Team staff. Planned work includes wetland infrastructure construction, including water control structures and dikes, sediment removal, tile breaks, and ditch plugs needed to bring about wetland habitat enhancement and restoration. Direct management actions such as cattail and other invasive species control, water level manipulation, and wild rice seeding will be employed to bring about needed wetland enhancement. Additional parcels that are impacted by this valuable work will be added to the parcel list and reported in full on the Final Report. Additionally, two infrastructure projects will be surveyed and engineered for future construction. Doing this preliminary engineering work allows us to determine project feasibility, identify infrastructure options, and obtain accurate cost estimates.

Herbicide treatments will continue on thousands of acres monotypic hybrid cattails. This work is made possible by an OHF-acquired spray unit mounted on a DNR helicopter, but requires annual funding to secure needed herbicide and pay associated costs for the helicopter. Popular among DNR property managers facing problematic stands of monotypic cattails, it is estimated that approximately 2500 acres of cattails could be treated annually. Parcels to be treated are selected annually during a spring sign-up period and are fully reported in the OHF appropriation final report.

To improve efficiency and meet mutual goals, projects may be done in cooperation with Duck Unlimited or other conservation partners. Parcels may be added, modified, or deleted from the parcel list to accommodate engineering feasibility results, provide resources to new opportunities, or to address the challenges associated with complex shallow lake and wetland projects. All changes shall be in keeping with the scope of the project and will be fully reported in the Final Report.

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

Approximately 50% of all federally endangered animal are wetland-related. As a measure of the importance of wetlands to Minnesota Species of Greatest Conservation Need (SGCN), the word 'wetland' appears 127 times in Minnesota's Wildlife Action Plan 2015-2025 (WAP). Conservation Focus Areas are priority areas for working with partners to identify, design, and implement conservation actions and report on the effectiveness toward achieving the goals and objectives defined in the Wildlife Action Plan. Target Habitat Complexes within Conservation Focus Areas commonly include Prairie Wetland Complexes and other wetland community types.

The protection and management of wetlands and wetland/grassland complexes are noted extensively in the discussion of Conservation Focus Area Target, Conservation Issues and Approaches. Specific management actions mentioned include reed canary grass and invasive cattail control, "natural disturbance management" (i.e. water level management, prescribed fire, woody vegetation removal). Target Habitat Complexes within Conservation Focus Areas commonly include Prairie Wetland Complexes and other wetland community types.

As noted in the WAP, wet meadows and fens typically provide optimal habitat for sedge wrens, yellow rails, Nelson's sharp-tailed sparrows and numerous other SGCN. Wetland Management Options to support SGCN include prevention of wetland degradation, restoration of wetland complexes, and management of invasives.

For shallow lake habitat, examples of SGCN include lesser scaup, northern pintail, common moorhen, least bitterns, American bitterns, marsh wrens, and Virginia rails. Wetland management actions to benefit SGCN include the restoration of large complexes of shallow lakes and wetlands, with attention to the habitat features required by SGCN, management for a natural water regime in shallow lakes, and management of invasives.

Management of wetlands and shallow lakes as noted above will be accomplished through the work described in this proposal.

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

The Status and Trends of Wetlands in Minnesota: Depressional Wetland Quality Assessment (2007 – 2012), produced by the Minnesota Pollution Control Agency, noted that the prairie and central regions of the state wetlands are dominated by degraded vegetation communities. Vegetation communities in more than half of these depressional wetlands are in poor condition (56% ), with only 17% in good condition, similar to the quality of all wetland types in the central hardwood and former prairie regions. Non-native invasive plants are having the greatest impact. In other words, not only have most wetlands been lost in much of the prairie and forest-transition areas of Minnesota, what remains are degraded and need management action to produce quality habitat. Work as described in this proposal will provide needed habitat, while also provide the other benefits found in healthy wetlands - water quality, floodwater storage, places to hunt and recreate, and carbon sequestration.

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

The Minnesota Duck Recovery Plan goals include boosting the state's breeding duck population. The most productive prairie waterfowl habitat is a mix of wetland and grassland as a habitat complex. A complex could be 4 - 9 square miles and should be comprised of 10% temporary/seasonal wetlands, 10% permanent wetlands, and 40% grasslands, with the remaining 40% available for crops. In addition to mixes of grasslands and healthy wetlands, The Duck Plan also called for accelerated efforts to restore 1,800 shallow lakes, including wild rice lakes.

The Minnesota Prairie Conservation Plan, which is a plan for both uplands and wetlands in the prairie region of Minnesota, outlines focal areas (Core Areas and Habitat Complexes) where we can build on an existing base of conservation lands and improve the habitat there. The Prairie Wetland Initiative component of this OHF proposal would contribute to these identified Core Areas and Habitat Complexes by working to actively manage and improve small wetlands on public lands, especially on those lands contributing to the Minnesota Comprehensive Prairie Plan. The Status and Trends of Wetlands in Minnesota: Depressional Wetland Quality Assessment (2007 – 2012), produced by the Minnesota Pollution Control Agency, noted that while most wetlands in northern Minnesota are in good condition, the opposite is true in the central and former prairie regions of the state, where degraded vegetation communities are predominant. Vegetation communities in more than half of these depressional wetlands are in poor condition (56% ), with only 17% in good condition, similar to the quality of all wetland types in the central hardwood and former prairie regions. Non-native invasive plants are having the greatest impact.

The work done by this OHF proposal will directly contribute to expanded and healthy wetland complexes and increased shallow lakes work. Work will renovate existing wetland infrastructure and establish new management, especially in the critical prairie region of Minnesota. More specifically, the projects identified by the Wetland Management Program are targeted to key wetland complexes in the prairie region and bring management actions to the wetlands of those complexes.

## **Which top 2 Conservation Plans referenced in MS97A.056, subd. 3a are most applicable to this project?**

Long Range Duck Recovery Plan

Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife

## **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.**

Highlighting just how important wetlands are to adaptation and climate action, the Global Center on Climate Adaptation noted, "Wetlands capture CO<sub>2</sub> from the atmosphere, making them nature's own solution to the climate emergency. In fact, they store more carbon than any other ecosystem on Earth, and peatlands alone store twice as much as all the world's forests. According to Ramsar's Scientific and Technical Review Panel, wetlands cover only nine percent of the planet's surface, but store up to 35 percent of terrestrial carbon." Additionally, wetlands and shallow lakes provide the ability to hold precipitation and run-off that occur from major storm events that occur more frequently due to climate change.

## Which LSOHC section priorities are addressed in this proposal?

### Forest / Prairie Transition

Protect, enhance, and restore migratory habitat for waterfowl and related species, so as to increase migratory and breeding success

### 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, and restore migratory habitat for waterfowl and related species, so as to increase migratory and breeding success

## 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:

Three elements relate to this proposal's ability to produce a significant and permanent conservation legacy.

First, the scale of shallow lake and wetland work in the proposal projects is impressive. The acreage being impacted by restoration and enhancement work is able to produce results locally and statewide.

Second, the infrastructure (water control structures, dikes, fish barriers) projects in this proposal will be worked on by qualified engineers who will design and oversee construction and renovation to achieve long-lasting results. A typical goal is to have constructed water control structures, dikes and fish barriers with a life expectancy of last a minimum of 30-40 years. These projects will be on public waters or publicly-owned or eased lands.

Third, the type of work being done through this proposal, Shallow lake enhancement and wetland restoration, are key components of all significant conservation plans for Minnesota affecting Minnesota. The work is needed to restore wetlands, 90% of which have been lost in the prairies and many of the remaining ones are degraded. Key state conservation plans such as Minnesota's Prairie Conservation Plan, Long Range Duck Recovery Plan, Minnesota Duck Action Plan, and Managing Minnesota Shallow Lakes for Waterfowl and Wildlife Plan call for the active management of shallow lakes and the restoration/management of wetlands to Minnesota's landscape.

## Outcomes

### Programs in forest-prairie transition region:

Wetland and upland complexes will consist of native prairies, restored prairies, quality grasslands, and restored shallow lakes and wetlands ~ *Intensive wetland management and habitat infrastructure maintenance will provide the wetland base called for in numerous prairie, shallow lake and waterfowl plans. Area wildlife staff and/or shallow lakes staff will monitor completed projects to determine success of implementation and to assess the need for future management and/or maintenance.*

### Programs in the northern forest region:

Improved availability and improved condition of habitats that have experienced substantial decline ~ *Intensive wetland management and habitat infrastructure maintenance will provide the wetland base called for in*

*numerous prairie, shallow lake and waterfowl plans. Area wildlife staff and/or shallow lakes staff will monitor completed projects to determine success of implementation and to assess the need for future management and/or maintenance.*

### Programs in prairie region:

*Protected, restored, and enhanced shallow lakes and wetlands ~ Intensive wetland management and habitat infrastructure maintenance will provide the wetland base called for in numerous prairie, shallow lake and waterfowl plans. Area wildlife staff and/or shallow lakes staff will monitor completed projects to determine success of implementation and to assess the need for future management and/or maintenance.*

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

N/A

### 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 the Minnesota DNR's Section of Wildlife wetland habitat work to a level not attainable but for the appropriation.

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

Qualified engineers and staff will oversee replacement/renovation of infrastructure to achieve long-lasting results. A typical goal is to have water control structures, dikes and fish barriers last a minimum of 30-40 years. The management of completed infrastructure projects will fall on existing staff of the Department of Natural Resources. Enhancement work implemented by this staff such as invasive species removal, supplemental vegetation planting, or water control structure installation, maintenance, or replacement, will be accomplished through annual funding requests to a variety of funding sources including, but not limited to, the Game and Fish Fund, bonding, gifts, the Environmental and Natural Resources Trust Fund, the Outdoor Heritage Fund, and federal sources such as North American Wetlands Conservation Act grants and Pittman-Robertson funds. Wetland enhancement projects such as cattail control, prescribed burns, invasive fish management and the like are implemented to achieve quality, long-lasting habitat benefits, but the benefit lifespan may be variable due to conditions imposed by climate, physical factors, etc. Monitoring by area wildlife staff, wetland management specialists, and shallow lakes specialists will ensure that follow-up management is employed as needed.

### Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
10-12 months post-completion of engineered infrastructure or construction work	DNR	Qualified engineers conduct warranty inspection of project.	-	-
1 year post-implementation of management action	DNR	Wetland Management Program, Shallow Lakes Program, and Area Wildlife staff evaluate management effectiveness.	-	-

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

Actions that have the following specific ties to BIPOC and diverse communities include wild rice seeding which has tribal support to re-establish culturally valuable wild rice. A potential partnership regarding this effort is being discussed.

DNR's OHF projects aim to serve all Minnesotans. At the same time, we are bringing more focus in all our work to BIPOC and diverse communities. The Minnesota DNR has adopted advancing diversity, equity and inclusion (DEI) as a key priority in its 2020-22 strategic plan. The plan focuses on increasing the cultural competence of our staff, creating a workforce that is reflective of Minnesota, continuing to strengthen tribal consultation and building partnerships with diverse communities.

Shallow lake and wetland habitat projects provide ecosystem services like clean water and carbon sequestration that support environmental justice. OHF also supports public access and recreational opportunities on these lands. OHF projects and outcomes benefit BIPOC and diverse communities through recreational opportunities that are close-to-home, culturally responsive and accessible to Minnesotans with disabilities.

The DNR has diversity, equity and inclusion strategies that benefit all OHF projects:

- Multilingual and culturally specific hunting and fishing education programs take place on public lands.
- All hiring is equal opportunity, affirmative action, and veteran-friendly. Contracting seeks out Targeted Group, Economically Disadvantaged and Veteran-Owned businesses.
- Public engagement seeks out BIPOC voices and involves diverse communities. Outreach and marketing of projects has this focus as well.
- Partnerships are at the center of all projects. Tribes in particular are consulted in all pertinent areas of the DNR's work, under EO 19-24.

**Activity Details**

**Requirements**

**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?**

WMA

Permanently Protected Conservation Easements

State Forests

County/Municipal

Public Waters

## Land Use

**Will there be planting of any crop on OHF land purchased or restored in this program, either by the proposer or the end owner of the property, outside of the initial restoration of the land?**

No

**Will insecticides or fungicides (including neonicotinoid and fungicide treated seed) be used within any activities of this proposal either in the process of restoration or use as food plots?**

No

## Other OHF Appropriation Awards

**Have you received OHF dollars through LSOHC in the past?**

Yes

**Are any of these past appropriations still OPEN?**

Yes

Approp Year	Funding Amount Received	Amount Spent to Date	Funding Remaining	% Spent to Date
2024	\$3,136,000	\$93,100	\$3,042,900	2.97%
2023	\$3,695,000	\$1,372,800	\$2,322,200	37.15%
2022	\$2,301,000	\$1,069,600	\$1,231,400	46.48%
2021	\$2,589,000	\$1,689,300	\$899,700	65.25%
2020	\$1,676,000	\$1,086,300	\$589,700	64.82%
2019	\$845,000	\$373,500	\$471,500	44.2%
Totals	\$14,242,000	\$5,684,600	\$8,557,400	39.91%

## Timeline

Activity Name	Estimated Completion Date
Survey and engineer projects	June 2031
Infrastructure Construction Projects	June 2031
Cattail Management Actions	September 2029
Wetland Restorations	June 2031



**Budget****Totals**

<b>Item</b>	<b>Funding Request</b>	<b>Total Leverage</b>	<b>Leverage Source</b>	<b>Total</b>
Personnel	-	-	-	-
Contracts	\$15,688,000	-	-	\$15,688,000
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	-	-	-
Easement Stewardship	-	-	-	-
Travel	-	-	-	-
Professional Services	\$3,798,000	-	-	\$3,798,000
Direct Support Services	\$235,000	-	-	\$235,000
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	-	-	-	-
Other Equipment/Tools	-	-	-	-
Supplies/Materials	\$445,500	-	-	\$445,500
DNR IDP	-	-	-	-
<b>Grand Total</b>	<b>\$20,166,500</b>	<b>-</b>	<b>-</b>	<b>\$20,166,500</b>

**Amount of Request:** \$20,166,500**Amount of Leverage:** -**Leverage as a percent of the Request:** 0.0%**DSS + Personnel:** \$235,000**As a % of the total request:** 1.17%**Easement Stewardship:** -**As a % of the Easement Acquisition:** -**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?**

A reduced funding amount would be addressed by using Program and Regional Wildlife staff to prioritize projects based on need, strategic importance, and efficiency to determine which projects would be funded. Acres and activities may not be proportionally affected due to the variety of project sizes and costs.

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

No personnel funding is requested in this proposal. DSS would also be reduced based on a Department formula.

## If the project received 30% of the requested funding

### **Describe how the scaling would affect acres/activities and if not proportionately reduced, why?**

A reduced funding amount would be addressed by using Program and Regional Wildlife staff to prioritize projects based on need, strategic importance, and efficiency to determine which projects would be funded. Acres and activities may not be proportionally affected due to the variety of project sizes and costs.

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

No personnel funding is requested in this proposal. DSS would also be reduced based on a Department formula.

## Contracts

### **What is included in the contracts line?**

Contract funding will be used to obtain needed construction, engineering, and/or management actions to construct shallow lake and wetland infrastructure projects or to implement wetland management activities.

## Professional Services

### **What is included in the Professional Services line?**

Design/Engineering

Other : Costs associated with using the DNR helicopter and pilot are billed as professional services.

Surveys

## Direct Support Services

### **How did you determine which portions of the Direct Support Services of your shared support services is direct to this program?**

Direct Support Services is determined by a standard DNR process taking into account the amount of funding and the number of allocations made with that funding.

## Federal Funds

### **Do you anticipate federal funds as a match for this program?**

Yes

### **Are the funds confirmed?**

No

### **What is the approximate date you anticipate receiving confirmation of the federal funds?**

The timing and availability of federal funding is unknown, but historically federal funds such as NAWCA, Inflation Reduction Act, Joint Venture funds, Great Lakes Fish and Wildlife Restoration Act, America the Beautiful. The Minnesota DNR would look to use these funding sources as appropriate to expand the scale of shallow lake and wetland work.

Output Tables**Acres by Resource Type (Table 1)**

Type	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	1,237	0	0	0	1,237
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	9,347	0	0	0	9,347
<b>Total</b>	<b>10,584</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10,584</b>

**Restoration/Enhancement Acres Breakdown of Existing Protected Lands (Table 1a.2)**

	RESTORE		ENHANCE	
	Lands acquired with OHF	Lands NOT acquired with OHF	Lands acquired with OHF	Lands NOT acquired with OHF
DNR Lands (WMA, State Forests, etc)	618	619	4,673	4,674
Non-DNR Lands (city, state, federal, etc.)	-	-	-	-
Easements	-	-	-	-
<b>Total</b>	<b>618</b>	<b>619</b>	<b>4,673</b>	<b>4,674</b>

**Total Requested Funding by Resource Type (Table 2)**

Type	Wetland	Prairie	Forest	Habitat	Total Funding
Restore	\$13,096,900	-	-	-	\$13,096,900
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	\$7,069,600	-	-	-	\$7,069,600
<b>Total</b>	<b>\$20,166,500</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$20,166,500</b>

**Acres within each Ecological Section (Table 3)**

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Acres
Restore	0	95	0	1,142	0	1,237
Protect in Fee with State PILT Liability	0	0	0	0	0	0
Protect in Fee w/o State PILT Liability	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0
Enhance	0	3,185	0	5,009	1,153	9,347
<b>Total</b>	<b>0</b>	<b>3,280</b>	<b>0</b>	<b>6,151</b>	<b>1,153</b>	<b>10,584</b>

**Total Requested Funding within each Ecological Section (Table 4)**

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Funding
Restore	-	\$632,400	-	\$12,464,500	-	\$13,096,900
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	-	\$1,372,000	-	\$3,762,600	\$1,935,000	\$7,069,600
<b>Total</b>	<b>-</b>	<b>\$2,004,400</b>	<b>-</b>	<b>\$16,227,100</b>	<b>\$1,935,000</b>	<b>\$20,166,500</b>

### Average Cost per Acre by Resource Type (Table 5)

Type	Wetland	Prairie	Forest	Habitat
Restore	\$10,587	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-
Protect in Easement	-	-	-	-
Enhance	\$756	-	-	-

### Average Cost per Acre by Ecological Section (Table 6)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest
Restore	-	\$6,656	-	\$10,914	-
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	\$430	-	\$751	\$1,678

### Target Lake/Stream/River Feet or Miles

## Parcels

### Sign-up Criteria?

[Yes - Sign up criteria is attached](#)

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

Proposals for individual projects are submitted by DNR Area Wildlife Staff and Wetland Habitat Team members. Projects are reviewed at the regional and central office and appropriate projects are selected for inclusion in this OHF proposal. The parcel list may be modified by the program manager as needed and the Final Report must reflect an accurate and complete parcel list.

In addition to the projects shown on the parcel list, additional projects will be selected for aerial cattail spraying using the attached "Guidelines Aerial Cattail Spraying.docx." The Final Report will accurately show all parcels.

### Restore / Enhance Parcels

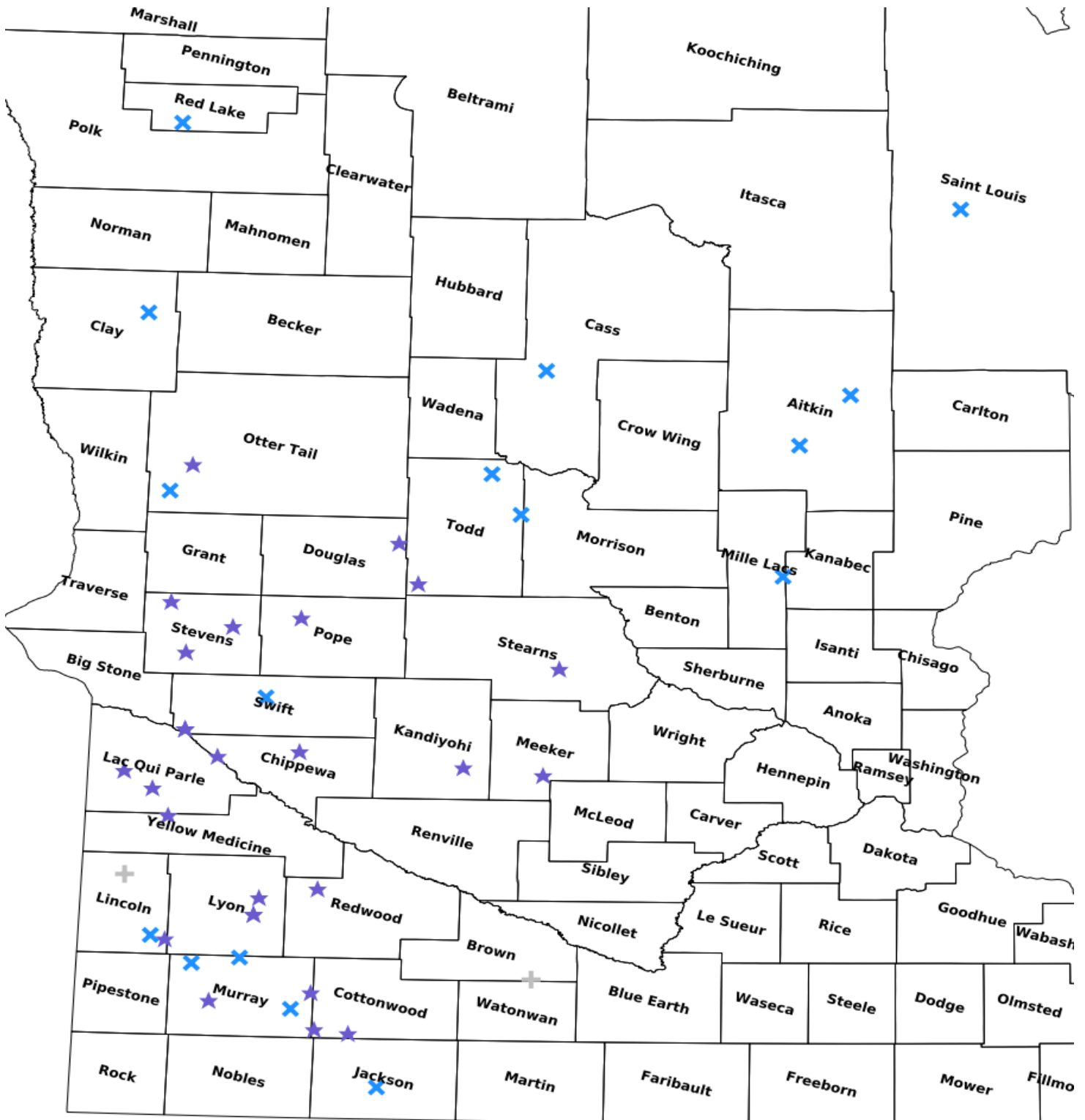
Name	County	TRDS	Acres	Est Cost	Existing Protection	Description
Grayling WCS replacement	Aitkin	04823210	500	\$150,000	Yes	Replace failed WCS
Swamp Lake wild rice seeding	Aitkin	04625226	276	\$62,500	Yes	Seed wild rice
Bull Moose Water Control Structure Replacement	Cass	13831223	80	\$450,000	Yes	Replace failed WCS
Restoration Grace Marshes WMA	Chippewa	11939228	38	\$705,000	Yes	Restoring a wetland that is being drained by a township road culvert
Restoration LQP WMA Churchill Unit	Chippewa	11842203	24	\$361,000	Yes	Restoring wetland basins
Cromwell WMA	Clay	14045201	7	\$100,000	Yes	Repair a berm, remove culvert, add rock spillway
Restoration Pats Pasture WMA	Cottonwood	10537229	33	\$180,000	Yes	Tile breaks, sediment removal, berms
Restoration Talcot WMA Tract 31	Cottonwood	10538219	10	\$200,000	Yes	Tile break, sediment removal, berms, woody removal
Roger M. Holmes WMA Wetland Restoration	Douglas	12936211	50	\$375,000	Yes	Sediment removal, plug ditches
Enhancement Summers WMA	Jackson	10236217	9	\$90,000	Yes	Wetland enhancement
Restoration Hamlin WMA	Lac qui Parle	11744228	14	\$185,000	Yes	Restore 5 basins
Restoration Haydenville WMA	Lac qui Parle	11845233	17	\$319,000	Yes	Restore 10 wetland basins
Restoration Hopeful WMA	Lincoln	10944212	117	\$1,515,000	Yes	Restore 29+ wetland basins
Tyler WMA North Swan WCS replacement	Lincoln	10944204	88	\$335,000	Yes	Replace WCS
Restoration Meadow Creek WMA	Lyon	11141236	72	\$902,000	Yes	Tile break, sediment removal, berms, woody removal
Restoration Meadow Creek WMA	Lyon	11141236	71	\$683,250	Yes	Tile breaks
Restoration Rolling Hills WMA	Lyon	11140206	38	\$476,000	Yes	Tile break, sediment removal, berms, woody removal
Restoration Provencher WMA	Meeker	11831226	5	\$94,500	Yes	Remove sediment, place berms
Restoration Rodewald WMA	Meeker	11833218	25	\$377,500	Yes	Restore 18 wetland basins
Mille Lacs - Groundhouse WCS	Mille Lacs	03926213	235	\$525,000	Yes	Replace three WCS

Enhancement Ellsborough WMA	Murray	10843214	16	\$124,750	Yes	Cattail mgmt, woody removal, dike repair
Irruption WMA Water Control Replacement	Murray	10639220	41	\$313,000	Yes	Replace WCS
Long Lake WCS	Murray	10841204	188	\$500,000	Yes	Recent WMA purchase needs berm repair and replace culvert with rock spillway
Restoration & Impoundment Peters WMA	Murray	10642209	71	\$783,000	Yes	Tile break
Restoration Budolfson WMA	Murray	10739225	17	\$347,000	Yes	Tile break, sediment removal, berms, woody removal
Fergus Falls WMA	Otter Tail	13343222	20	\$240,000	Yes	Sediment removal, tile break, berms.
Orwell WMA Moist Soil Unit	Otter Tail	13244235	20	\$125,000	Yes	Replace failed WCS
White Bear Wetland Restoration	Pope	12539204	42	\$93,000	Yes	Remove sediment, place berms
Marcoux WMA Dike and WCS Rehab	Red Lake	15043219	85	\$310,000	Yes	Fix failed dike by installing notched sheetpile and Texas crossing
Phylis Voosen WMA Wetland Restoration	Redwood	11238219	15	\$250,000	Yes	Alter tile system, construct berm, add WCS
Great Scott WMA Water Control Structure Replacement	St. Louis	05819233	36	\$475,000	Yes	Replace failed WCS
Discovery WMA Wetland	Stearns	12330217	45	\$250,000	Yes	Restore 4 basins, install WCS, ditch plugs
Dolven WMA Wetland Restoration	Stevens	12541219	13	\$90,000	Yes	Sediment removal, ditch plugs
Eldorado WMA Wetland Restoration	Stevens	12644213	100	\$125,000	Yes	Sediment removal, ditch plugs
Enhancement Alberta WMA	Stevens	12443233	23	\$15,000	Yes	Remove drain tile
Danvers WMA WCS Replacement	Swift	12140205	900	\$437,000	Yes	Replace failed WCS
Restoration LQP Anderson Unit	Swift	12043228	22	\$268,000	Yes	Restoring up to 6 wetland basins
Restoration LQP WMA Bahl Unit	Swift	12043228	28	\$350,000	Yes	Tile break, sediment removal, berms, woody removal
Restoration LQP WMA Engebriston Unit	Swift	12043228	131	\$1,665,000	Yes	Tile break, sediment removal, berms, woody removal
Ruff-Nik Paycer Pool WCS Replacement	Todd	13132225	26	\$250,000	Yes	Replace failed WCS
Staples Dike Rehabilitation Phase 3 Construction	Todd	13333225	600	\$793,000	Yes	Dike has failed and needs to be reshaped and sheetpile installed.
West Union WMA Complex	Todd	12735209	200	\$1,750,000	Yes	Sediment removal, ditch plugs
Restoration Teardrop WMA	Yellow Medicine	11544201	19	\$360,000	Yes	Reroute and break tiles

### Other Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
Lake Hanska Dam Feasibility - engineering	Brown	10831233	0	\$150,000	Yes
Bossuyt WCS replacement, engineering	Lincoln	11245204	0	\$60,000	Yes

# Parcel Map



- Protect in Easement
- ▲ Protect in Fee with PILT
- Protect in Fee W/O PILT
- ★ Restore
- ✕ Enhance
- ⊕ Other

**Proposal Outline:**

- Shallow lake and wetland enhancements and restorations in the Prairie, Forest/Prairie Transition, and Northern Forest ecoregions.
  - Enhancement and restoration of at least 10,700 acres
  - 28 wetland restoration projects
  - 58 wetland/shallow lake enhancement projects
  - Helicopter spraying of monotypic cattail stands
  - Wild rice restoration

**Previous Program Accomplishments:**

<b>Appropriation</b>	
ML13 Wetland and Shallow Lake Enhancement, Phase 5	13,811
ML14 Wetland and Shallow Lake Enhancement, Phase 6	19,365
ML15 Wetland and Shallow Lake Enhancement, Phase 7	28,101
ML16 Wetland and Shallow Lake Enhancement, Phase 8	22,142
ML17 Wetland and Shallow Lake Enhancement, Phase 19	5,024
ML18 Wetland and Shallow Lake Enhancement, Phase 10	4,695
ML19 Wetland and Shallow Lake Enhancement, Phase 11	8,359
<b>AVERAGE</b>	<b>14,500</b>

**Highlighted Project:**

Utilizing a specially equipped DNR helicopter and Roving Habitat Crews for ground support, monotypic stands of hybrid cattails are treated to return them to productive waterfowl habitat.





Wetland Management Program work to restore and enhance wetland complexes:



Figure 1 Topography survey are done to identify potential wetland restorations and enhancements and provide data for construction planning.

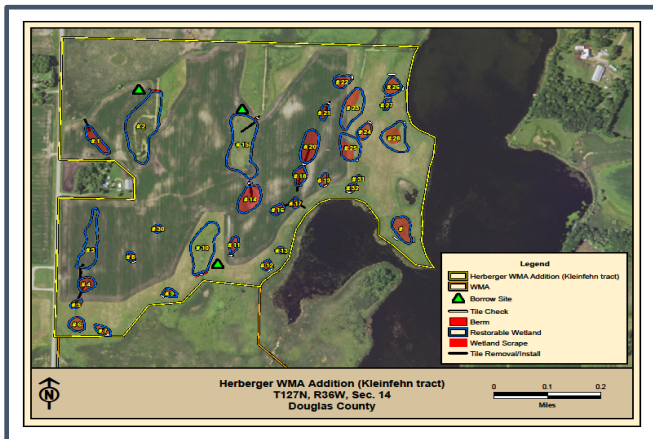


Figure 2 Planning and Design. Wetland Consultant and Specialists prepare for construction.

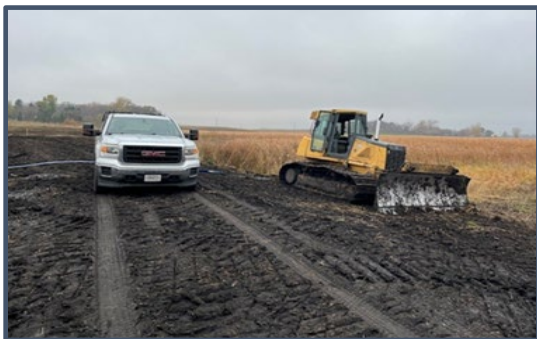


Figure 3. Construction is completed to restore or enhance wetlands on Wildlife Management Areas in the prairie regions of Minnesota.



Figure 4. Before and after images of a restored wetland on a WMA.