



## Lessard-Sams Outdoor Heritage Council

Fisheries Habitat Protection on Strategic North Central Minnesota Lakes - Phase III

Laws of Minnesota 2017 Final Report

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### General Information

**Date:** 08/15/2025

**Project Title:** Fisheries Habitat Protection on Strategic North Central Minnesota Lakes - Phase III

**Funds Recommended:** \$1,716,000

**Legislative Citation:** ML 2017, Ch. 91, Art. 1, Sec. 2, subd. 5(b)

**Appropriation Language:** \$1,716,000 in the first year is to the commissioner of natural resources to acquire land in permanent conservation easements to sustain healthy fish habitat on cold water lakes in Aitkin, Cass, Crow Wing, and Hubbard Counties for agreements as follows: \$113,000 to Leech Lake Area Watershed Foundation; and \$1,603,000 to Minnesota Land Trust, of which up to \$120,000 to Minnesota Land Trust is for establishing a monitoring and enforcement fund as approved in the accomplishment plan and subject to Minnesota Statutes, section 97A.056, subdivision 17. A list of permanent conservation easements must be provided as part of the required accomplishment plan.

### Manager Information

**Manager's Name:** Annie Knight

**Title:** Grants Manager & Conservation Specialist

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### Location Information

**County Location(s):** Crow Wing and Cass.

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

Northern Forest

**Activity types:**

Protect in Easement

## Priority resources addressed by activity:

Habitat

## Narrative

### Summary of Accomplishments

Project Partners Northern Water Land Trust (NWLT) and Minnesota Land Trust (MLT) successfully concluded this grant, meeting and exceeding all proposed conservation goals. NWLT conducted effective landowner recruitment, facilitated the technical team, created an interactive online GIS-based Clean Water Critical Habitat map, and administered the grant outreach. The Minnesota Land Trust completed 3 conservation easement projects under this appropriation, protecting a total of 708 acres and 4.57 miles of shoreline.

### Process & Methods

This project focused on fisheries habitat protection of “tullibee refuge lakes.” Tullibee require cold, well-oxygenated waters—a condition most common in lakes with deep water and healthy watersheds. Thirty-eight (38) of these refuge lakes are located in Hubbard, Crow Wing, Cass, and Aitkin counties.

Minnesota DNR Fisheries research recommends that 75% of a lake’s watershed be in permanent protection to ensure sustained water quality. Tullibee refuge lakes near this threshold were the highest priority for protection. In addition, the DNR’s Sensitive Shoreland data were used to help identify priority lakes where conservation investments could be maximized. Landowner recruitment focused on parcels close to protected land and which had a high potential to expand upland and aquatic habitat complexes. Landowner applications were evaluated based on criteria established by the project’s technical team. To ensure the best conservation return on the state’s investment, landowner willingness to donate a portion of the easement value was a key component of the parcel evaluation. Best available data (state and county) was used to prioritize projects and maximize outcomes. The 2013 Minnesota DNR Fish Habitat Plan provided strategic guidance.

NWLT’s role in the program was focused on targeted landowner recruitment, creation of an interactive online GIS-based Clean Water Critical Habitat map, facilitating the technical team, and administering the grant. MLT provided technical support and worked with landowners to secure conservation easements.

Three properties were protected through conservation easements by MLT during this grant. The three are described below. Each is more thoroughly described and illustrated in the Project Summary Sheets uploaded into the final report:

**Star Lake (United Methodist Church) – Crow Wing County:** This spectacular 383-acre property protects over 4.5 miles of shoreline on Star Lake (a lake of outstanding biological significance and tullibee refuge lake), Little Star Lake, Henry Lake, Duck Lake and a perennial stream. Uplands on the property contain high-quality Oak-Aspen Forest, a native plant community considered “vulnerable to extirpation” in Minnesota. Numerous rare wildlife, fish, and plant species have been observed on the property, including least darter, a Minnesota Species of Special Concern.

**Three Island Lake (Vogel-Knittle) – Cass County:** This 347-acre property protects a sweeping landscape of including mesic hardwood forest, pine and hardwood forest, several types of swamp (ash, alder, and tamarack), wet meadow, and 1,214 feet of shoreline on Three Island Lake, a lake of high biological significance. These natural communities provide habitat for a variety of SGCN. Surrounded by Cass County, Chippewa National Forest, and tribal-administered lands, this property provides significant connectivity with surrounding natural lands. The property protects a mosaic of native plant communities.

Cooper Lake (YMCA) – Cass County: This 39-acre property is part of a large complex of lands totaling 869 acres that are protected by permanent conservation easements held by MLT and Cass County. This property protects over 2,000 feet of natural shoreline on Cooper Lake, a lake of moderate biological significance and a tullibee refuge lake. The property features a variety of native plant communities.

### **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?**

Tullibee (aka cisco) is the preferred forage fish for walleye, northern pike, muskellunge and lake trout. They require cold, well oxygenated waters - a condition most common in lakes with deep water and healthy watersheds. Tullibee populations are the "canary in the coal mine" for three significant threats to Minnesota's sport fisheries: shoreland development, watershed health and climate warming. Deep, cold water lakes with high quality, well-oxygenated waters and natural, undisturbed land cover along the shorelines and within their watersheds will have the best chance to sustain tullibee populations in the face of these threats and will serve as a "refuge" for the tullibee if annual temperatures increase.

Minnesota DNR Fisheries Research scientists studied tullibee lakes and designated 68 lakes in Minnesota as primary "refuge lakes" for tullibee that need protection. Forty-eight of these lakes and their minor watersheds are located in Crow Wing, Aitkin, Cass and Hubbard counties. These lakes are premier recreational and sport fishery lakes. Fisheries research has shown that healthy watersheds with intact forest are fundamental to good fish habitat. MN DNR Fisheries Habitat Plan states near shore fish habitat affected by shoreland disturbance can impact fisheries. Maintaining good water quality is critical to sustaining tullibeas as determined by the water's oxygen level and nutrient content. Lakeshore development decreases a lake's ability to function as a healthy ecosystem for sport fish and their forage, due to increased runoff, but also through physical alteration by lakeshore owners.

### **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.**

Through their white paper, "Landscape factors influencing lake phosphorus concentrations across Minnesota," Timothy Cross and Peter Jacobson determined that coldwater fish communities are especially vulnerable to eutrophication from increased phosphorus concentrations. Decreases in hypolimnetic oxygen concentrations have direct negative effects on fish such as tullibee that physiologically require oxygenated cold water to survive, grow and reproduce. Protection is viewed as the most cost-effective strategy when applied to watersheds where human activities have not already significantly elevated phosphorus levels.

Through their publication, "Protecting Watershed of Minnesota Lakes with Private Forest Conservation Easements: A Suggested Strategy", Peter Jacobson and Mike Duval stated that protecting the forests in these watersheds from development is critical for maintaining water quality in these lakes. While large areas of land in forested portions are under public ownership, a considerable amount is also owned by private individuals in some of our most critical lake watersheds. These parcels are increasingly being "split up" and sold. Modeling by MN DNR Fisheries research unit suggests that total phosphorus concentrations remain near natural background levels when less than 25% of a lake's watershed is disturbed. Tullibee "refuge" lakes have watersheds with less than 25% disturbed land uses and are good candidates for protection. Very deep lakes with exceptional water quality to support coldwater fish populations like tullibee were considered priorities by the report.

Minnesota DNR Fisheries researchers studied tullibee lakes and designated 68 lakes in Minnesota as the primary "refuge lakes" for tullibee. We focused our protection efforts on the highest quality tullibee lakes that will require modest to moderate levels of land protection to achieve 75% protection levels with their respective watersheds.

Protecting the habitats of tullibee "refuge" lakes along the shoreline and surrounding forest lands is essential to a sustained sport fishery.

### **Explain Partners, Supporters, & Opposition**

The Program was benefitted by active involvement of number of government agencies and non-governmental organizations: local lake associations, Minnesota DNR, local Soil and Water Conservation Districts, and local county staff.

The Clean Water Critical Habitat Technical Committee was crucial in prioritizing lakes for the program, and evaluating/prioritizing parcels for protection. This committee included various experts from government agencies and non-governmental organizations in the program area. Their evaluation was based on ecological value, percent of watershed protected, parcel size, anticipated involvement of local organizational involvement, and investment by other agencies to protect the lands.

Landowner outreach was conducted with the support of local lake associations, county staff, DNR staff, and community members at large. Outreach was conducted via in-person conversations, referrals from partner organizations, a direct mailing, and social media promotion.

No opposition to the program was encountered, but rather a growing level of interest among landowners.

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

MLT and NWLT continued the success of this grant program by conducting effective outreach to landowners and exceeding both the conservation (acres protected via conservation easement) and easement leverage (easement value donated by participating landowners) goals proposed for the grant. MLT completed three high-quality conservation easement through this grant, protecting a diversity of shoreland habitats and associated uplands. NWLT effectively completed outreach activities, created an interactive online GIS-based "Clean Water Critical Habitat" map that prioritizes parcels for protection, and continued fostering positive relationships with local partners.

### **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?**

Land protected through conservation easements will be sustained through state-of-the-art standards and practices for conservation easement stewardship. Minnesota Land Trust is a nationally-accredited land trust with a very successful stewardship program that includes annual property monitoring, effective records management, addressing inquiries and interpretations, tracking changes in ownership, investigating potential violations and defending the easement in case of a true violation. Funding for these easement stewardship activities was provided through this OHF grant.

In addition, MLT assisted landowners in the development of comprehensive habitat management plans to help ensure that the land will be managed for its wildlife and water quality benefits. Depending upon the property, opportunities for restoration and enhancement in the future will be explored on a case-by-case basis. The Land Trust will assist landowners in procuring funding for these activities or otherwise connecting with appropriate agencies as such needs and opportunities arise.

### **Actions to Maintain Project Outcomes**

<b>Year</b>	<b>Source of Funds</b>	<b>Step 1</b>	<b>Step 2</b>	<b>Step 3</b>
2021 and in perpetuity	MLT Stewardship and Enforcement Fund	Annual monitoring of conservation easements	Enforcement as necessary	-

## Budget

### Grand Totals Across All Partnerships

Item	Requested	AP Amount	Spent	Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	\$150,000	\$140,900	\$140,700	-	-	-	\$150,000	\$140,700
Contracts	\$56,000	\$34,000	\$25,900	-	-	-	\$56,000	\$25,900
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	\$1,232,000	\$1,322,500	\$1,322,400	\$300,000	\$307,000	-, Landowner Donations	\$1,532,000	\$1,629,400
Easement Stewardship	\$120,000	\$70,000	\$55,000	-	-	-	\$120,000	\$55,000
Travel	\$10,000	\$4,100	\$2,800	-	-	-	\$10,000	\$2,800
Professional Services	\$110,000	\$79,000	\$84,600	-	\$3,400	-, MLT	\$110,000	\$88,000
Direct Support Services	\$37,000	\$39,000	\$38,600	\$23,000	-	-	\$60,000	\$38,600
DNR Land Acquisition Costs	-	\$26,500	\$26,500	-	-	-	-	\$26,500
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	-	-	-	-	-	-	-	-
Supplies/Materials	\$1,000	-	-	-	-	-	\$1,000	-
DNR IDP	-	-	-	-	-	-	-	-
<b>Grand Total</b>	<b>\$1,716,000</b>	<b>\$1,716,000</b>	<b>\$1,696,500</b>	<b>\$323,000</b>	<b>\$310,400</b>	<b>-</b>	<b>\$2,039,000</b>	<b>\$2,006,900</b>

## Partner: Minnesota Land Trust

### Totals

Item	Requested	AP Amount	Spent	Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	\$90,000	\$80,000	\$83,700	-	-	-	\$90,000	\$83,700
Contracts	\$36,000	\$17,000	\$8,900	-	-	-	\$36,000	\$8,900
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	\$1,232,000	\$1,322,500	\$1,322,400	\$300,000	\$307,000	Landowner Donations	\$1,532,000	\$1,629,400
Easement Stewardship	\$120,000	\$70,000	\$55,000	-	-	-	\$120,000	\$55,000
Travel	\$6,000	\$4,000	\$2,700	-	-	-	\$6,000	\$2,700
Professional Services	\$96,000	\$60,000	\$66,000	-	\$3,400	MLT	\$96,000	\$69,400
Direct Support Services	\$23,000	\$23,000	\$22,600	\$23,000	-	-	\$46,000	\$22,600
DNR Land Acquisition Costs	-	\$26,500	\$26,500	-	-	-	-	\$26,500
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	-	-	-	-	-	-	-	-
Supplies/Materials	-	-	-	-	-	-	-	-
DNR IDP	-	-	-	-	-	-	-	-
<b>Grand Total</b>	<b>\$1,603,000</b>	<b>\$1,603,000</b>	<b>\$1,587,800</b>	<b>\$323,000</b>	<b>\$310,400</b>	<b>-</b>	<b>\$1,926,000</b>	<b>\$1,898,200</b>

### Personnel

Position	Annual FTE	Years Working	Amount Spent	Leverage	Leverage Source	Total
MLT Legal and Conservation Personnel	0.33	3.0	\$83,700	-	-	\$83,700

## Partner: Northern Waters Land Trust

### Totals

Item	Requested	AP Amount	Spent	Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	\$60,000	\$60,900	\$57,000	-	-	-	\$60,000	\$57,000
Contracts	\$20,000	\$17,000	\$17,000	-	-	-	\$20,000	\$17,000
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-	-
Travel	\$4,000	\$100	\$100	-	-	-	\$4,000	\$100
Professional Services	\$14,000	\$19,000	\$18,600	-	-	-	\$14,000	\$18,600
Direct Support Services	\$14,000	\$16,000	\$16,000	-	-	-	\$14,000	\$16,000
DNR Land Acquisition Costs	-	-	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	-	-	-	-	-	-	-	-
Supplies/Materials	\$1,000	-	-	-	-	-	\$1,000	-
DNR IDP	-	-	-	-	-	-	-	-
<b>Grand Total</b>	<b>\$113,000</b>	<b>\$113,000</b>	<b>\$108,700</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$113,000</b>	<b>\$108,700</b>

### Personnel

Position	Annual FTE	Years Working	Amount Spent	Leverage	Leverage Source	Total
LLAWF Conservation	0.2	3.0	\$38,000	-	-	\$38,000
LLAWF Admin and Project Oversight	0.05	3.0	\$19,000	-	-	\$19,000

### Direct Support Services

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

In a process that was approved by the MNDNR on March 17, 2017, Minnesota Land Trust determined our direct support services rate to include all of the allowable direct and necessary expenditures that are not captured in other line items in the budget, which is similar to the Land Trust's proposed federal indirect rate. We applied this DNR-approved rate only to personnel expenses to determine the total amount of direct support services.

In a process approved by MNDNR on May 24, 2017, Northern Waters Land Trust used a simplified allocation methodology that was approved by the MNDNR. This calculation is annually reviewed and approved by the DNR. This approved rate was applied to personnel, contracts, professional services, travel, and supplies expenses.

#### Explain any budget challenges or successes:

The Minnesota Land Trust received \$307,000 in donated easement value from landowners over the course of this grant, leveraging 102% of the proposed goal. That also enabled MLT to protect 708 acres of critical land in conservation easements, protecting 177% of the proposed goal.

MLT had a budget over-run in excess of 10% in Professional Services that resulted in the organization not able to be reimbursed for about \$3,400, which now shows up as leverage in the row.

**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	400	708	400	708
Enhance	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>400</b>	<b>708</b>	<b>400</b>	<b>708</b>

**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	-	-	-	-	-	-	\$1,716,000	\$1,696,500	\$1,716,000	\$1,696,500
Enhance	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$1,716,000</b>	<b>\$1,696,500</b>	<b>\$1,716,000</b>	<b>\$1,696,500</b>

**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	400	708	400	708
Enhance	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>400</b>	<b>708</b>	<b>400</b>	<b>708</b>

## 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	-	-	-	-	-	-	-	-	\$1,716,000	\$1,696,500	\$1,716,000	\$1,696,500
Enhance	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	-	-	-	-	-	-	-	-	<b>\$1,716,000</b>	<b>\$1,696,500</b>	<b>\$1,716,000</b>	<b>\$1,696,500</b>

## Target Lake/Stream/River Feet or Miles

4.35 miles

## Explain the success/shortage of acre goals

The Minnesota Land Trust protected 708 acres of biologically significant land, protecting 177% of the proposed goal.

## Outcomes

### Programs in the northern forest region:

Healthy populations of endangered, threatened, and special concern species as well as more common species ~ Private shoreline habitat and forested parcels totaling 708 acres was permanently protected from development and fragmentation through conservation easements. Riparian forest lands under easement will maintain healthy habitat complexes for upland and aquatic species; forest cover will enhance water quality habitat for tullibee lakes. Conservation easement properties will protect fish habitat to ensure high quality fishing opportunities.

## Parcels

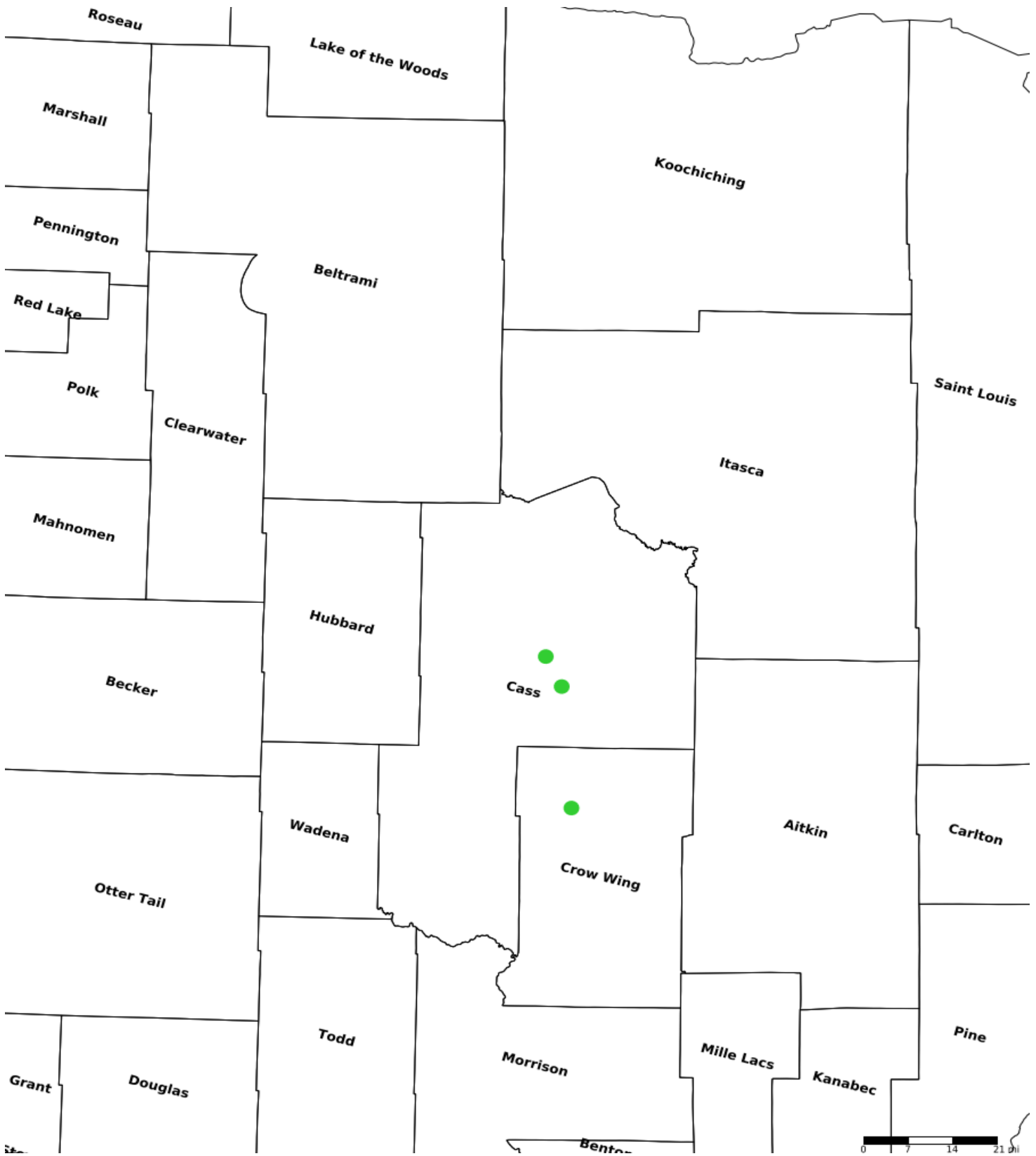
### Sign-up Criteria?

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

### Easement Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
Cooper Lake (YMCA)	Cass	14028210	39	\$318,000	No
Three Island Lake (Vogel-Knittle)	Cass	14128217	347	\$40,000	No
Star Lake (United Methodist Church)	Crow Wing	13728225	303	\$964,400	No

## Parcel Map



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