



## Lessard-Sams Outdoor Heritage Council

Moose Habitat Collaborative, Phase IV - NE MN Forest Habitat Enhancement  
Laws of Minnesota 2021 Accomplishment Plan

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### General Information

**Date:** 05/02/2022

**Project Title:** Moose Habitat Collaborative, Phase IV - NE MN Forest Habitat Enhancement

**Funds Recommended:** \$1,809,000

**Legislative Citation:** ML 2021, First Sp. Session, Ch. 1, Art. 1, Sec. 2, subd. 3(f)

**Appropriation Language:** \$1,809,000 the first year is to the commissioner of natural resources for an agreement with the Ruffed Grouse Society to restore and enhance public forest lands in the northern forest region for moose habitat purposes. A list of proposed land restoration and enhancements must be provided as part of the required accomplishment plan.

### Manager Information

**Manager's Name:** Scott Johnson

**Title:** Forest Conservation Coordinator: MN and NW WI

**Organization:** Ruffed Grouse Society/ American Woodcock Society

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### Location Information

**County Location(s):** Lake, St. Louis and Cook.

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

- Northern Forest

**Activity types:**

- Enhance

**Priority resources addressed by activity:**

- Habitat

## Narrative

### Abstract

The Ruffed Grouse Society (RGS), in collaboration with federal, state, county, tribal, university and non-governmental organizational (NGO) partners, seeks to continue the successful work of previous Moose Habitat Collaborative (Collaborative) grants to stabilize/sustain Minnesota's moose population by enhancing ~8,000 acres of cover/forage habitat for moose. The project builds on the Collaborative's Phase I-III efforts to improve degraded forest habitats by increasing stand complexity through mixed density/cover type planting methods which enhances overall moose habitat across the landscape. Also, non-grant timber harvests planned in coordination with this grant increase the occurrence of early successional/forage.

### Design and Scope of Work

Moose have an iconic status in Minnesota and are a critical component of the cultural identity, hunting heritage and recreational economy of northern Minnesota. Over the past two decades Minnesota's moose population has dramatically fallen, from an estimated 8,840 in 2006 to this year's (2020) estimate of 3,150. Due to a growing public concern and state listing in 2013, the following actions have been undertaken to date:

- the Minnesota Legislature directed the Minnesota Department of Natural Resources (DNR) to establish a Moose Advisory Committee (MAC; August 2009 report).
- primarily based on MAC report recommendations, the DNR completed a Minnesota Moose Research and Management Plan (Moose Plan; December 2011). The strategic vision for this plan is: "Moose have intrinsic value and are recognized for their importance to Minnesota. To the greatest extent possible, moose shall be managed for ecological sustainability, hunting, and viewing opportunities." This plan includes objectives for research, high quality habitat, social science considerations, and dissemination and use of plan information.
- to address research objectives, significant efforts/projects have been undertaken to date: an adult moose mortality study (2013-16), moose calf mortality study (2013-17), and a winter nutrition study (2016-2020).
- to address habitat objectives, significant habitat management efforts have been accomplished through the Moose Habitat Collaborative and related LSOHC Moose Habitat Collaborative grants they have received for Phase I (2,049 acres, \$914,100 in grant funds), Phase II (5,164 acres, \$1,996,400 grant funds), as well as currently funded Phase III (proposed 10,000 affected acres, \$1,938,000 in grant funds).

Due to the success of Moose Habitat Collaborative Phase I-III grants, Collaborative partners would like to build on this success through a FY22 LSOHC grant which will target another ~8,000 acres to enhance/affect at a grant request of ~\$1,809,000.

This effort will again be steered by a broad range of partners that make up the Moose Habitat Collaborative.

Current partners and roles are:

- NGOs: Ruffed Grouse Society (new for Phase IV - grant sponsor, program manager duties, fiscal agent), The Nature Conservancy (site, project, and public land administrator coordination), MN Deer Hunters Association.
- Public land administrators: Superior National Forest; MN DNR – Division of Forestry and Division of Fish and Wildlife; Cook, Lake, St. Louis Counties (site/land manager)
- Tribal authorities: 1854 Treaty Authority, Fond du Lac Band of Lake Superior Chippewa (research/technical)
- Habitat research: University of Minnesota Duluth, Natural Resources Research Institute (UMD-NRRI, research/technical)

Collaborative partners will again work together to choose sites with forest stands that are either partially harvested, decadent, poorly stocked with trees, or provide such poor forage conditions that they are of little or no benefit to moose. This process is guided by the initial designation of priority moose project/landscape areas, the use of a site level checklist/project documentation form to ensure habitat enhancements are properly vetted, and the use of ongoing site monitoring/validation efforts that serve as a final check/adaptive management step.

### **How does the plan address habitats that have significant value for wildlife species of greatest conservation need, and/or threatened or endangered species, and list targeted species?**

As noted in previous sections of this grant application, since 2009 Minnesota has undertaken a series of moose assessments, plans, research, monitoring and habitat enhancement efforts that has included the listing of moose as a species of special concern in 2013, notation as such in Minnesota's current Wildlife Action Plan (MN WAP), and the use of a moose as a cover image and wildlife population indicator in DNR's Conservation Agenda, 10-year Strategic Plan. While moose habitat enhancement actions described in this accomplishment plan reflect a primary goal of managing northern forests with an emphasis on moose habitat, numerous other wildlife populations and species of greatest conservation need (SGCN) are also benefited through: 1) various prescribed fire, brush removal, and selective restoration planting techniques being proposed in this grant, and 2) additional non-grant timber harvest that are planned/implemented in conjunction with this grant.

From a "If we build it, they will come" perspective, the following lists SGCN species by two of the primary habitats/native plant communities enhanced by this grant's efforts (White Pine – Red Pine Forest/FDn43a, and Aspen – Birch Forest /FDn43b).

- Mammals: moose (winter/summer cover and forage), Canada lynx, smoky shrew, northern long-eared bat, and eastern heather vole.
- Birds: Evening Grosbeak, Olive-sided Flycatcher, Spruce Grouse, Purple Finch, Connecticut Warbler, Black-backed Woodpecker, American woodcock, Winter Wren, and the Boreal Owl.

Ultimately, this project will encourage a heterogeneous forest habitat matrix resulting in a landscape that is more resilient, providing for an ecologically diverse and balanced landscape condition with greater benefit to moose, SGCN species, and wildlife as a whole.

### **Describe how the plan uses science-based targeting that leverages or expands corridors and complexes, reduces fragmentation or protects areas identified in the MN County Biological Survey:**

Collaborative biologists, foresters, ecologists and GIS specialists utilize GIS modeling analysis as well as their expertise and field knowledge to select priority landscapes and parcels/sites that have the best potential to achieve project goals to enhance forest habitats for moose as well as other wildlife species that share an affinity to these enhanced moose habitats. At a landscape scale this involves use of USFS moose project management areas and pending DNR moose management opportunity areas. At the site level this is vetted through the use of a Moose Habitat Project Documentation form that lists: 1) Native Plant Community dynamics and a Landscape Context, 2) Short-term desired future condition, 3) Long-term desired future condition, 4) Methods (treatment), 5) Biologist comments, and 6) a listing of moose habitat guidelines.

Also, Collaborative partners will continue to assess the outcomes of different treatment methods and their effectiveness with regard to vegetative response, use by moose and other wildlife species. This analysis has been ongoing since Phase I, and includes:

- Site Verification of Moose Habitat Restoration Report (UMD-NRRI, 2017),
- Monitoring of Moose Habitat Restoration Site Reports (2017, 2018, and 2019) by the 1854 Treaty

Authority, and,

- Moose Habitat Survey Reports (annual) by the Fond du Lac Band of Lake Superior Chippewa.

**Which two sections of the Minnesota Statewide Conservation and Preservation Plan are most applicable to this project?**

- H1 Protect priority land habitats
- LU10 Support and expand sustainable practices on working forested lands

**Which two other plans are addressed in this program?**

- Moose Advisory Committee Report to the Minnesota DNR
- Other : Other: MN Moose Research and Management Plan; MN Forest Resources Council - NE Forest Resources Plan; MN Wildlife Action Plan, 2010-2025; Superior National Forest Land and Resource Management Plan; Fond du Lac Band of Lake Superior Chippewa; Grand Portage Band of Lake Superior Chippewa; DNR's Ruffed Grouse in MN: Long-Range Plan for Management.

**Which LSOHC section priorities are addressed in this program?**

**Northern Forest**

- Restore and enhance habitat on existing protected properties, with preference to habitat for rare, endangered, or threatened species identified by the Minnesota County Biological Survey

**Does this program include leveraged funding?**

Yes

**Explain the leverage:**

This Moose Habitat Collaborative Phase IV accomplishment plan will build on the excellent habitat work that has been accomplished under Phase I-III (~22,500 acres). Collaborative partners have learned a lot over the previous three grants and now are more efficient and effective in the delivery of moose habitat benefits through improved landscape and site-level tools. The Collaborative will continue to leverage grant dollars through the use of a significant level of in-kind support by its partners.

**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.**

Grant funds requested are for moose habitat enhancement efforts (i.e. prescribed fire and/or cover, forage establishment) that have typically not been met by traditional commercial timber harvest and forest management practices, and truly provide an incentive/supplement to public land forest management efforts.

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

All affected moose habitat enhancement acres to be completed under this grant are on public lands managed by Collaborative partners. Goal of this and previous grants has been to establish enhanced cover/forage areas through a process that can take from 1-5 years (i.e. grants supplemental use for prescribed fire, site prep, planting, bud capping, and release efforts). Once these moose habitat/forest stands are established they typically have a 80-100 year stand life, managed by their respective public land administrator.

**Actions to Maintain Project Outcomes**

Year	Source of Funds	Step 1	Step 2	Step 3
2024 and beyond	Governmental partners budget	Manage and monitor lands consistent with grant objectives.	-	-

**Activity Details**

**Requirements**

**If funded, this program will meet all applicable criteria set forth in MS 97A.056?**

Yes

**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?**

Yes

**Where does the activity take place?**

- County/Municipal
- State Forests
- Other : USFS - Superior National Forest
- WMA

**Land Use**

**Will there be planting of any crop on OHF land purchased or restored in this program?**

No

**Timeline**

Activity Name	Estimated Completion Date
Funding available, secure contracts	July-August, 2021
Summer/fall habitat enhancements (i.e. rx fire, cover protection efforts, forage enhancements, etc.)	2/1/22 (6 month status update)
Winter/spring habitat enhancements (i.e. site prep, cover planting, etc.)	8/1/22 (6 month status update)
Summer/fall habitat enhancements (i.e. rx fire, cover protection efforts, forage enhancements, etc.)	2/1/23 (6 month status update)
Winter/spring habitat enhancements (i.e. site prep, cover planting, etc.)	8/1/23 (6 month status update)
Summer/fall habitat enhancements (i.e. rx fire, cover protection efforts, forage enhancements, etc.)	2/1/24 (6 month status update)
Winter/spring habitat enhancements (i.e. site prep, cover planting, etc.)	8/1/24 (final report)

**Date of Final Report Submission: 08/01/2024**

**Budget**

Budget reallocations up to 10% do not require an amendment to the Accomplishment Plan.

**Totals**

Item	Funding Request	Antic. Leverage	Leverage Source	Total
Personnel	\$136,000	\$10,000	Ruffed Grouse Society	\$146,000
Contracts	\$1,669,000	\$100,000	Moose habitat collaborative partners	\$1,769,000
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	-	-	-
Easement Stewardship	-	-	-	-
Travel	\$4,000	-	-	\$4,000
Professional Services	-	-	-	-
Direct Support Services	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	-	-	-	-
Other Equipment/Tools	-	-	-	-
Supplies/Materials	-	-	-	-
DNR IDP	-	-	-	-
<b>Grand Total</b>	<b>\$1,809,000</b>	<b>\$110,000</b>	-	<b>\$1,919,000</b>

**Personnel**

Position	Annual FTE	Years Working	Funding Request	Antic. Leverage	Leverage Source	Total
Forest Conservation Coordinator: MN	0.5	2.5	\$100,000	-	-	\$100,000
Ruffed Grouse Society, admin. & field positions	0.25	3.0	\$36,000	\$10,000	Ruffed Grouse Society	\$46,000

**Amount of Request:** \$1,809,000

**Amount of Leverage:** \$110,000

**Leverage as a percent of the Request:** 6.08%

**DSS + Personnel:** \$136,000

**As a % of the total request:** 7.52%

**Easement Stewardship:** -

**As a % of the Easement Acquisition:** -

**How will this program accommodate the reduced appropriation recommendation from the original proposed requested amount?**

To meet LSOHC's \$1,809,000 funding recommendation for this effort this accomplishment plan site/parcel list was

reviewed and edited to reflect a pool of treatment sites/acres necessary to reach a current goal of enhancing/affecting ~8,000 acres.

**Describe and explain leverage source and confirmation of funds:**

Leverage is expected to primarily come from public land administrators through landscape and project/site planning, related resource assessment needs, and contract support for enhancement efforts (i.e. staff salaries, travel, etc.). RGS will also leverage a portion of their DSS cost and field staff time to monitor and manage.

**Personnel**

**Has funding for these positions been requested in the past?**

No

**Contracts**

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

\$1,649,000 is for contracts (public land administrator bid/contract process) to hire private contractors for moose habitat enhancement efforts; \$120,000 is for GIS support, assessment/monitoring needs, and grant management.

**Travel**

**Does the amount in the travel line include equipment/vehicle rental?**

No

**Explain the amount in the travel line outside of traditional travel costs of mileage, food, and lodging**

none

**I understand and agree that lodging, meals, and mileage must comply with the current MMB Commissioner Plan:**

Yes

**Federal Funds**

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

No

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

Type	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	8,000	8,000
<b>Total</b>	-	-	-	<b>8,000</b>	<b>8,000</b>

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

Type	Wetland	Prairie	Forest	Habitat	Total Funding
Restore	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	\$1,809,000	\$1,809,000
<b>Total</b>	-	-	-	<b>\$1,809,000</b>	<b>\$1,809,000</b>

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

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Acres
Restore	-	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	-	-	-	-	8,000	8,000
<b>Total</b>	-	-	-	-	<b>8,000</b>	<b>8,000</b>

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

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Funding
Restore	-	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	-	-	-	-	\$1,809,000	\$1,809,000
<b>Total</b>	-	-	-	-	<b>\$1,809,000</b>	<b>\$1,809,000</b>

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

Type	Wetland	Prairie	Forest	Habitat
Restore	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-
Protect in Easement	-	-	-	-
Enhance	-	-	-	\$226

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

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest
Restore	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-



Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	-	\$226

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

## Outcomes

### Programs in the northern forest region:

- Healthy populations of endangered, threatened, and special concern species as well as more common species ~ *As has been noted, moose are iconic to NE Minnesota's forests and a key representative of healthy forest ecosystems; are important to the region's recreational economy; and provide a tribal heritage, cultural link. To sustain these desirable outcomes, this grant proposes to enhance 8,000 acres (from the parcel list of ~40,000 treatment acres) of moose cover and forage habitat enhancement so as to sustain at least the current moose population level of ~3,500 animals. The Collaborative will continue to work with its Tribal and University partners to assess and evaluate effectiveness of its enhancement efforts.*

## Parcels

*For restoration and enhancement programs ONLY: Managers may add, delete, and substitute projects on this parcel list based upon need, readiness, cost, opportunity, and/or urgency so long as the substitute parcel/project forwards the constitutional objectives of this program in the Project Scope table of this accomplishment plan. The final accomplishment plan report will include the final parcel list.*

### Parcel Information

#### Sign-up Criteria?

No

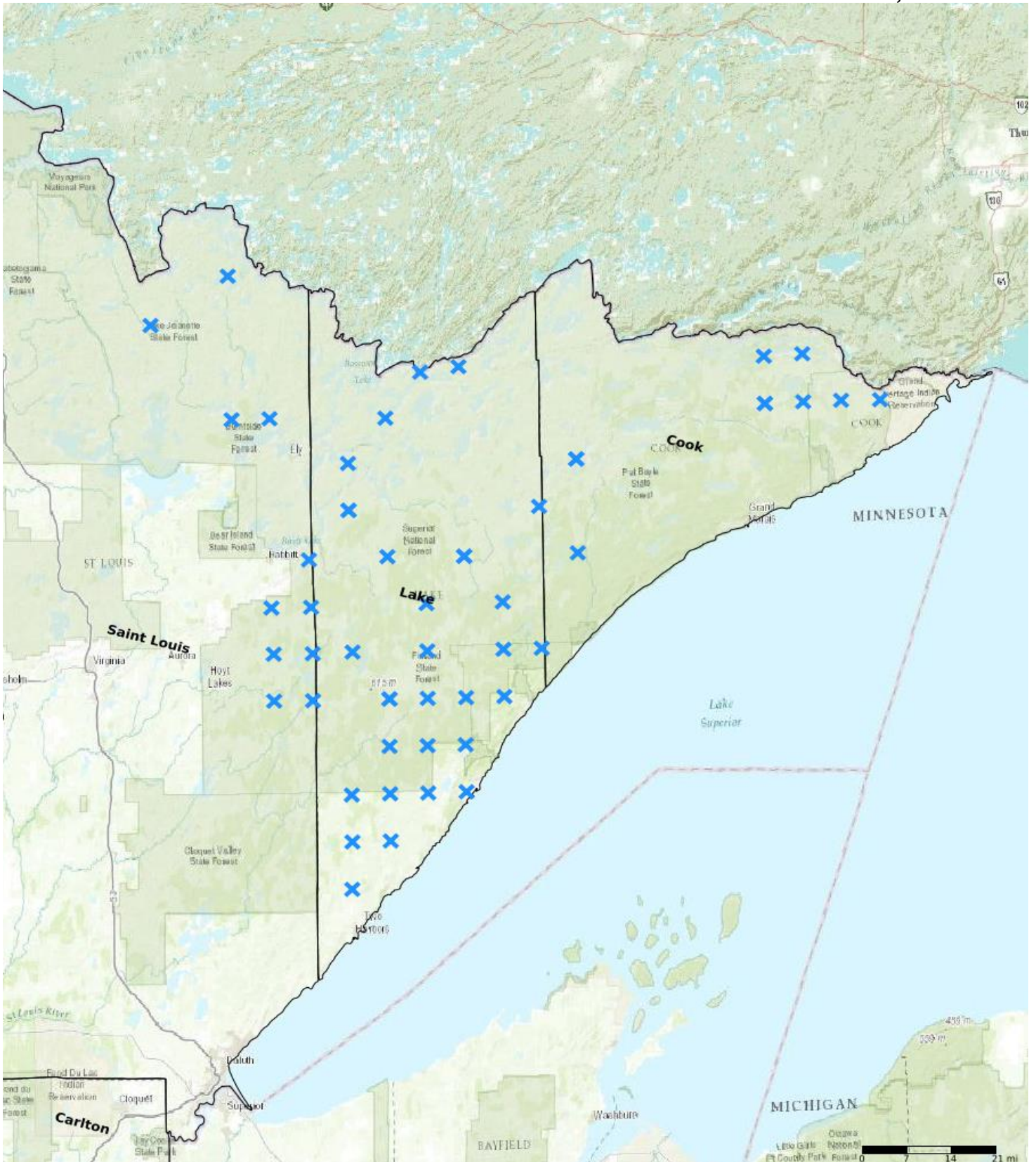
#### Explain the process used to identify, prioritize, and select the parcels on your list:

Parcel list notes potential treatment acres by County by Township (TRDS). Potential treatment sites, acres typically are 3-5 times higher than actual/final affected acres due to the fact that treatment acres are method/step in the process to enhance moose habitat (i.e. site prep, plant, bud cap over three years, release). This grant's accomplishment plan reflects budget numbers and estimated final/affected acres (~8,000) that will be accomplished if the treatment steps (~40,000 acres) are completed from priority sites noted in the parcel list. Affected acres reflect a final product made possible by a series of treatments. Site/parcel names will be formalized when grant partners set field level work plans once funding is in hand.

### Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
Moose cover/forage (mechanical, hand)	Cook	06301201	750	\$187,500	Yes
Moose cover/forage (mechanical, hand)	Cook	06301201	205	\$100,000	Yes
Moose cover/forage (mechanical, hand)	Cook	06005201	1,000	\$250,000	Yes
Moose cover/forage (prescribed fire)	Cook	06008201	400	\$50,000	Yes
Moose cover/forage (mechanical, hand)	Cook	06303201	750	\$187,500	Yes
Moose cover/forage (mechanical, hand)	Cook	06205201	510	\$200,000	Yes
Moose cover/forage (prescribed fire)	Cook	06402201	2,000	\$30,000	Yes
Moose cover/forage (prescribed fire)	Cook	06401201	3,300	\$100,000	Yes
Moose cover/forage (prescribed fire)	Cook	06304101	1,500	\$50,000	Yes
Moose cover/forage (prescribed fire)	Cook	06302201	15,000	\$50,000	Yes
Moose cover/forage (prescribed fire)	Cook	06205201	1,880	\$282,000	Yes
Moose cover/forage (prescribed fire)	Lake	05710201	1,000	\$150,000	Yes
Moose cover/forage (prescribed fire)	Lake	06408201	1,917	\$75,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05508201	500	\$60,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05710201	48	\$21,843	Yes
Moose cover/forage (mechanical, hand)	Lake	05806201	113	\$53,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05807201	282	\$130,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05809201	21	\$9,354	Yes
Moose cover/forage (mechanical, hand)	Lake	05811201	80	\$36,622	Yes
Moose cover/forage (mechanical, hand)	Lake	05907201	200	\$58,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05909201	50	\$22,792	Yes
Moose cover/forage (mechanical, hand)	Lake	06008201	200	\$60,000	Yes
Moose cover/forage (mechanical, hand)	Lake	06010201	200	\$150,000	Yes
Moose cover/forage (mechanical, hand)	Lake	06106201	1,568	\$520,000	Yes
Moose cover/forage (mechanical, hand)	Lake	06111201	100	\$40,000	Yes
Moose cover/forage (prescribed fire)	Lake	06211201	189	\$75,000	Yes
Moose cover/forage (mechanical, hand)	Lake	06310201	38	\$17,480	Yes
Moose cover/forage (prescribed fire)	Lake	06409201	1,680	\$75,000	Yes
Moose cover/forage (prescribed fire)	Lake	05311201	28	\$14,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05410201	89	\$41,000	Yes

Moose cover/forage (mechanical, hand)	Lake	05411201	664	\$320,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05509201	88	\$45,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05510201	559	\$260,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05511201	376	\$175,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05608201	244	\$120,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05609201	175	\$80,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05610201	750	\$390,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05707201	320	\$150,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05708201	85	\$39,000	Yes
Moose cover/forage (mechanical, hand)	Lake	05709201	1,400	\$700,000	Yes
Moose cover/forage (prescribed fire)	St. Louis	06314201	2,400	\$100,000	Yes
Moose cover/forage (prescribed fire)	St. Louis	06516201	300	\$75,000	Yes
Moose cover/forage (prescribed fire)	St. Louis	06614201	600	\$150,000	Yes
Moose cover/forage (prescribed fire)	St. Louis	06313201	40	\$16,000	Yes
Moose cover/forage (mechanical, hand)	St. Louis	06111201	300	\$120,000	Yes
Moose cover/forage (mechanical, hand)	St. Louis	06012201	82	\$32,800	Yes
Moose cover/forage (mechanical, hand)	St. Louis	05913201	152	\$39,000	Yes
Moose cover/forage (mechanical, hand)	St. Louis	05912201	28	\$7,215	Yes
Moose cover/forage (mechanical, hand)	St. Louis	05813201	125	\$32,000	Yes
Moose cover/forage (mechanical, hand)	St. Louis	05812201	242	\$65,000	Yes
Moose cover/forage (mechanical, hand)	St. Louis	05713201	112	\$29,000	Yes
Moose cover/forage (mechanical, hand)	St. Louis	05712201	27	\$7,000	Yes



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

**Parcel Map**  
**Moose Habitat Collaborative, Phase IV - NE MN**  
**Forest Habitat Enhancement**  
**(Data Generated From Parcel List)**

