

Lessard-Sams Outdoor Heritage Council

Fiscal Year 2019 / ML 2018 Request for Funding



Date: May 31, 2017

Program or Project Title: Minnesota Moose Habitat Collaborative - Phase III

Funds Requested: \$6,298,000

Manager's Name: Craig Engwall

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County Locations: Cook, Lake, and St. Louis.

Regions in which work will take place:

- Northern Forest

Activity types:

- Enhance

Priority resources addressed by activity:

- Forest
- Habitat

Abstract:

The Minnesota Deer Hunters Association (MDHA), in collaboration with county, state, federal, tribal, university and non-governmental organizational (NGO) partners, seeks to continue the successful work of the Moose Habitat Collaborative (Collaborative) by improving nearly 30,000 acres of foraging habitat for moose in northeast Minnesota. The project builds on the Collaborative's previous efforts to enhance forest habitat by increasing stand complexity and production while also maintaining thermal components of the landscape with variable thinning and planting methods. Partial and intermediate harvests will increase the occurrence of early successional forest patches, providing abundant quality foraging opportunities and enhancing landscape level habitat heterogeneity.

Design and scope of work:

Moose have an iconic status in Minnesota and are a critical component of the cultural identity, hunting heritage and economy of northern Minnesota. Over the past decade, Minnesota's moose population has dramatically fallen, from an estimated 8,840 in 2006 to this year's estimate of 3,710. Due to the declining population, the Minnesota Legislature directed the Minnesota Department of Natural Resources (DNR) to establish a Moose Advisory Committee (MAC) to make recommendations to form the basis of a Moose Management and Research Plan (Moose Plan).

In 2011, DNR released the Moose Plan, which incorporated the recommendations of the MAC. This included extending to the Moose Plan the strategic vision of the MAC that guided them through their recommendation process:

"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."

The importance of moose to Minnesota is evidenced by the broad range of partners in this Collaborative, whose proposal aligns completely with the strategic vision set forth by the MAC and in the Moose Plan.

Project partners are:

Federal: Superior National Forest (SNF)

State: DNR

Tribal: 1854 Treaty Authority; Fond du Lac Band

Counties: Cook, Lake; St. Louis

University: University of Minnesota Duluth, Natural Resources Research Institute (UMD)

Organizations: MDHA; the Nature Conservancy; Ruffed Grouse Society; Wildlife Management Institute

Collaborative partners will work together to choose sites with forest stands that are partially harvested, decadent, poorly stocked with trees, or provide such poor browse condition that they are of little or no benefit to moose. Selective, low intensity planting of conifers on some parcels will eventually lead to more cover interspersed with browse. In the longer term, establishment of conifers will provide thermal and escape cover. Ultimately, this project will encourage a heterogeneous habitat matrix resulting in a healthier landscape that is more resilient, providing for an ecologically diverse and balanced landscape condition with greater benefit to moose and a number of species of greatest conservation need.

In a draft technical report on Phase I of this project entitled, "Site Verification of Moose Habitat Restoration," (UMD Report, attached), Ronald Moen, Ph.D. and John Frisch, M.S., evaluated the response of browse species and moose to habitat management. The report indicated that moose increased use of areas with habitat restoration and enhancement, whether the habitat restoration and enhancement was small-scale or large-scale. Similar conclusions were reached by Christina Maley in a 2017 report for the 1854 Treaty Authority (attached).

The project has enabled moose habitat management on smaller units in areas where large scale management is not possible. The habitat management has resulted in moose use even though these areas have been classified as low moose density in the aerial moose survey.

Collaborative partners now seek to enhance nearly 30,000 additional acres of moose foraging habitat by brush shearing, prescribed burning, selective planting and through timber harvest (funded by partners).

Which sections of the Minnesota Statewide Conservation and Preservation Plan are applicable to this project:

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

Which other plans are addressed in this proposal:

- Moose Advisory Committee Report to the Minnesota DNR
- Minnesota Moose Research and Management Plan

Describe how your program will advance the indicators identified in the plans selected:

A key objective of the MAC incorporated into the Moose Plan is to "provide high quality habitat across the moose range." A specific problem identified in the Moose Plan was that "mixed ownership and management jurisdiction across the moose range complicates habitat management direction." This project addresses this identified problem head on as the Collaborative partners are precisely the entities that have the mixed ownership and management jurisdiction. This project puts them together on a united path to provide the best quality habitat across moose range regardless of jurisdictional boundaries.

Which LSOHC section priorities are addressed in this proposal:

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

Describe how your program will produce and demonstrate a significant and permanent conservation legacy and/or outcomes for fish, game, and wildlife as indicated in the LSOHC priorities:

The habitat work that has been completed under Phases I and II of the project has already demonstrated positive outcomes for wildlife, and continued work and management by Collaborative partners will provide a lasting conservation legacy. The UMD Report found evidence of the beneficial effect of project habitat management that included:

- Moose browsing and/or moose pellets were found on over 90% of the habitat management units and over 80% of the habitat management units had evidence of use in 2016.

- Moose used these habitat management units even though density has declined in the southern half of the project area and is now classified as low density in the aerial survey.
- Habitat management units all had several browse species present, regardless of past management actions. LSOHC units had an average of 8 browse species 2 to 3 years after treatment, with a range of 6 to 11 browse species.

Conservation benefits from this project will continue long beyond the life of the grant as all partners are committed to protecting and enhancing habitat. The governmental partners that hold these lands will continue to manage them for multiple benefits through the expertise of their biologists, foresters and ecologists.

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

Biologists, foresters, ecologists and GIS specialists from governmental and NGO partners will utilize GIS modeling analysis as well as their expertise and field knowledge to select parcels that have the best potential to achieve project goals and enhance moose habitat as well as habitat for other species. Collaborative partners will quantify the outcomes of different treatments and assess the success of restoration efforts with regard to vegetative response and use by moose and other species. This analysis is part of the first two phases of this project and will continue in Phase III.

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

The DNR listed the moose as a Species of Special Concern in 2013 because of the dramatic decline in the moose population in the last decade. The habitat enhancement actions described in this proposal reflect a goal of managing for healthy northern forests with an emphasis on moose habitat. Prescribed fire, brush removal, selective restoration planting and timber harvest are techniques that help restore the natural variability of northern forests over time. The project will also benefit several other Species of Greatest Conservation Need (SGCN).

Another mammal SGCN species that will benefit from this project is the Canada lynx. Lynx prey mainly on snowshoe hare. The proposed habitat management with interspersed conifer and hardwood species in an earlier stage of succession will benefit snowshoe hare. Other mammal species that also prey on snowshoe hare include bobcat, marten and fisher. Wolves prey primarily on deer, moose, and beaver, and thus would also benefit from a healthier moose population.

Bats are another set of species that could benefit. All seven bat species in Minnesota are SGCN species. Initial indications from an ongoing northern long-eared bat project funded by the ENRTF are that roost trees are not limiting to bats in summer. This could mean that enhancing foraging habitat for insects with openings would benefit bats, just as we are enhancing foraging habitat for moose in this project. This idea needs to be tested experimentally, but if it did result in increased success in raising young, there would be clear benefits for northern long-eared bats, which will likely have over 95% mortality from White Nose Syndrome.

Finally, there are several bird SGCN species that would benefit from the conifer component of this project. Among the bird species are Evening Grosbeak, Olive-sided Flycatcher, Spruce Grouse, Purple Finch, Connecticut Warbler, Black-backed Woodpecker, Winter Wren, and the Boreal Owl.

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

Identify indicator species and associated quantities this habitat will typically support:

Ovenbird

Ovenbirds (*Seiurus aurocapilla*) are found in upland forests statewide; typically in relatively mature forest but can also be found in younger forests. While territories vary in size and may overlap, an average of 10 pairs for every 10 hectares may be translated to roughly 16 pairs for every 40 acres. As approximately 30,000 acres of habitat will be enhanced, this project would support approximately 12,000 pairs of Ovenbirds.

Golden-winged Warblers

Often associated with shrubland habitat and regenerating forests, more current research indicates a variety of forest habitats are required by Golden-winged Warblers (a matrix of shrubby wetlands and uplands, regenerating forests, and mature forests). While territories vary in size, an average of 4 pairs for every 10 hectares, may be translated to roughly 6 pairs for every 40 acres. Thus, this project would support approximately 4,500 pairs of Golden-winged Warblers.

White-tailed deer

White-tailed deer (*Odocoileus virginianus*) use a wide variety of forested habitats, are found throughout Minnesota, and are an important game species in the state. In the 33 forested deer permit areas for which deer densities are estimated, covering most of the LSOHC Northern Forest section, the six-year average (2010-2015) for pre-fawn deer densities across all deer permit areas is 13 deer per square mile of land (excluding water). This translates to 0.02 deer (pre-fawning) per acre of forest land habitat or roughly 1 deer (pre-fawning) for every 50 acres of land. For this project, that would equate to 600 deer.

Outcomes:

Programs in the northern forest region:

- Healthy populations of endangered, threatened, and special concern species as well as more common species *The collaborative will continue the work represented in the UMD report and will enhance habitat for healthy populations.*

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

All habitat lands that will be enhanced by this project are held and managed by governmental agencies that are Collaborative partners. In fulfilling their mission to manage these lands for habitat and forestry values, agency staff will ensure that the benefits of this project will carry on long into the future. NGO partners will continue to work with other Collaborative partners to explore avenues in which they can continue to enhance moose habitat.

Explain the things you will do in the future to maintain project outcomes:

Year	Source of Funds	Step 1	Step 2	Step 3
2022 and ongoing	Governmental Partners Budgets	Manage and monitor lands consistent with project objectives.		

What is the degree of timing/opportunistic urgency and why it is necessary to spend public money for this work as soon as possible:

The MAC report and the DNR Moose Plan illustrate how important moose are to Minnesota, and also made recommendations to halt the precipitous decline in the moose population. A key recommendation was to provide high quality habitat across moose range. Public funds that would be expended on this project would continue the Phase I and II habitat work that helped fulfill this recommendation.

Moose appear to be benefiting from management actions, and continued effort is critical. Although the population is less than half of the 2006 estimate, recent estimates are more stable. A wolf population decline, large fires and focused habitat management in Phases I and II of this project all likely helped. The UMD and 1854 Treaty Authority Reports both indicate moose are using and benefiting from Phase I and II enhancement sites, and continuing with Phase III will enhance additional habitat for moose.

How does this proposal include leverage in funds or other effort to supplement any OHF appropriation:

This proposed Phase III of the Collaborative would build on the excellent habitat work that has been accomplished under the first two phases of the Collaborative. Collaborative partners have learned much during the first two phases of the project and can now more efficiently deliver habitat benefits through improved GIS modeling and other efficiencies. The Collaborative will also attempt to leverage grant dollars through financial and in-kind contributions of partners.

Relationship to other funds:

- Not Listed

Describe the relationship of the funds:

Not Listed

Describe the source and amount of non-OHF money spent for this work in the past:

Not Listed

Activity Details

Requirements:

If funded, this proposal 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 activity on permanently protected land per 97A.056, subd 13(f), tribal lands, and/or public waters per MS 103G.005, Subd. 15 - **Yes (County/Municipal, State Forests, Federal Forests)**

Do you anticipate federal funds as a match for this program - **No**

Land Use:

Will there be planting of corn or any crop on OHF land purchased or restored in this program - **No**

Accomplishment Timeline

Activity	Approximate Date Completed
Funding Available - Secure Contracts	July 2018
Initiate Fall Enhancements	September 2018
Winter Enhancements	February 2019
Spring Enhancements	June 2019
Summer Enhancements	August 2019
Fall Enhancements	September 2019
Winter Enhancements	February 2020
Spring Enhancements	June 2020
Summer Enhancements	August 2020
Fall Enhancements	September 2020
Winter Enhancements	February 2021
Spring Enhancements	June 2021
Summer Enhancements	August 2021
Fall Enhancements	September 2021
Winter Enhancements	February 2022
Spring Enhancements	June 2022

Budget Spreadsheet

Total Amount of Request: \$6,298,000

Budget and Cash Leverage

Budget Name	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	\$55,000	\$0		\$55,000
Contracts	\$6,236,000	\$487,500	Partners	\$6,723,500
Fee Acquisition w/ PILT	\$0	\$0		\$0
Fee Acquisition w/o PILT	\$0	\$0		\$0
Easement Acquisition	\$0	\$0		\$0
Easement Stewardship	\$0	\$0		\$0
Travel	\$4,000	\$0		\$4,000
Professional Services	\$0	\$0		\$0
Direct Support Services	\$0	\$0		\$0
DNR Land Acquisition Costs	\$0	\$0		\$0
Capital Equipment	\$0	\$0		\$0
Other Equipment/Tools	\$0	\$0		\$0
Supplies/Materials	\$3,000	\$0		\$3,000
DNR IDP	\$0	\$0		\$0
Total	\$6,298,000	\$487,500		\$6,785,500

Personnel

Position	FTE	Over # of years	LSOHC Request	Anticipated Leverage	Leverage Source	Total
MDHA Multiple Position	0.50	4.00	\$55,000	\$0		\$55,000
Total	0.50	4.00	\$55,000	\$0		\$55,000

Amount of Request: \$6,298,000

Amount of Leverage: \$487,500

Leverage as a percent of the Request: 7.74%

DSS + Personnel: \$55,000

As a % of the total request: 0.87%

Easement Stewardship: \$0

As a % of the Easement Acquisition: -%

Does the amount in the contract line include R/E work?

Yes, approximately 98% of the contracts line request is for R/E work.

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:

NA

Describe and explain leverage source and confirmation of funds:

Partners have supplied anticipated leverage costs associated with the enhancement work including time and work not billed to this project.

Does this proposal have the ability to be scalable? - Yes

Tell us how this project would be scaled and how administrative costs are affected, describe the "economy of scale" and how outputs would change with reduced funding, if applicable:

The number of enhanced parcels would be reduced, and administrative costs would also be reduced but would constitute a higher proportion of the overall budget due to baseline costs that would exist regardless of project size.

Output Tables

Table 1a. Acres by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	0	0	0	0	0
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	0	0	0	29,838	29,838
Total	0	0	0	29,838	29,838

Table 2. Total Requested Funding by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	\$0	\$0	\$0	\$0	\$0
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	\$0	\$0	\$0	\$6,298,000	\$6,298,000
Total	\$0	\$0	\$0	\$6,298,000	\$6,298,000

Table 3. Acres within each Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	0	0	0	0	0	0
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	0	0	0	29,838	29,838
Total	0	0	0	0	29,838	29,838

Table 4. Total Requested Funding within each Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	\$0	\$0	\$0	\$0	\$0	\$0
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	\$0	\$0	\$0	\$6,298,000	\$6,298,000
Total	\$0	\$0	\$0	\$0	\$6,298,000	\$6,298,000

Table 5. Average Cost per Acre by Resource Type

Type	Wetlands	Prairies	Forest	Habitats
Restore	\$0	\$0	\$0	\$0
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$211

Table 6. Average Cost per Acre by Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest
Restore	\$0	\$0	\$0	\$0	\$0
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	\$0	\$0	\$0	\$0	\$211

Target Lake/Stream/River Feet or Miles

0

I have read and understand Section 15 of the Constitution of the State of Minnesota, Minnesota Statute 97A.056, and the Call for Funding Request. I certify I am authorized to submit this proposal and to the best of my knowledge the information provided is true and accurate.

Parcel List

Explain the process used to select, rank and prioritize the parcels:

Collaborative partner biologists, ecologists and foresters have prioritized parcels that are best suited for moose habitat and align with the overall project goals.

Section 1 - Restore / Enhance Parcel List

Cook

Name	TRDS	Acres	Est Cost	Existing Protection?
Diversity planting - EZ	06301223	100	\$20,000	Yes
Duncan - BWCA burn	06501227	2,800	\$100,000	Yes
EZ TSI	06005206	750	\$187,500	Yes
EZ TSI	06301215	750	\$187,500	Yes
EZ TSI	06303205	750	\$187,500	Yes
Fireball burn	06008224	400	\$50,000	Yes
Grand Portage State Forest	06301214	105	\$44,000	Yes
Lux - BWCA burn	06401221	3,300	\$100,000	Yes
Mechanical site prep - EZ	06301223	100	\$40,000	Yes
No n-harvest site prep - EZ	06205229	345	\$138,000	Yes
No n-harvest site prep - EZ	06402230	310	\$124,000	Yes
RACR burn	06205236	1,880	\$282,000	Yes
Scalp and diversity plant - EZ	06205229	172	\$67,080	Yes
Scalp and diversity plant - EZ	06402230	155	\$60,450	Yes
Swamp River WMA Rx Burn	06304104	200	\$25,000	Yes

Lake

Name	TRDS	Acres	Est Cost	Existing Protection?
3 Eagle - BWCA burn	06408210	915	\$50,000	Yes
4 Sections	05410206	67	\$30,500	Yes
54-10-21	05410221	22	\$10,086	Yes
54-11-27/28/33/34	05411227	118	\$53,820	Yes
54-11-30	05411230	20	\$8,962	Yes
54-11-32	05411232	38	\$17,187	Yes
54-11-9	05411209	41	\$18,527	Yes
551012	05510201	47	\$21,272	Yes
55-10-13	05510213	38	\$17,182	Yes
55-10-19	05510206	42	\$19,279	Yes
55-10-22/23	05510222	41	\$18,842	Yes
55-10-23	05510223	17	\$7,511	Yes
55-10-27	05510227	23	\$10,388	Yes
55-10-30	05510230	36	\$16,244	Yes
55-10-8/9	05510208	19	\$8,450	Yes
55-9-18	05509218	37	\$16,884	Yes
5 Buck	05608201	13	\$5,924	Yes
7-53-11	05311207	17	\$7,535	Yes
Aspen Gone	05608202	93	\$42,390	Yes
Basswood - BWCA burn	06409204	1,680	\$75,000	Yes
Bear Island SF	06111203	100	\$40,000	Yes
Bear Lunch	05709225	151	\$68,869	Yes
Beaver River burn	05710235	1,000	\$150,000	Yes
Beaver River shearing	05610201	500	\$200,000	Yes
Beaver River shearing	05709212	500	\$200,000	Yes
BF OTC	05411232	19	\$8,576	Yes
Big 39 Creek	05609213	58	\$26,269	Yes
Big Egge	05707204	55	\$25,240	Yes
Caribou Spruce	05806214	76	\$34,499	Yes
Dales Hardwood	05510210	19	\$8,427	Yes
Diversity planting - EZ	06008215	100	\$20,000	Yes
Drummond Demo	05411232	11	\$5,022	Yes
Dusty North	05411202	62	\$28,164	Yes
East Baptism	05807225	33	\$15,144	Yes
East Pea	06310218	38	\$17,480	Yes
East River Finale	05811220	80	\$36,622	Yes
EZ TSI	06106234	750	\$187,500	Yes
Fat Italy	05510204	55	\$25,155	Yes
Finland State Forest	05907214	200	\$58,000	Yes
Hardwood Special	05609215	41	\$18,510	Yes
Heffle Beaver	05708222	38	\$17,201	Yes
Heffle Junction	05809226	21	\$9,355	Yes
Highland Firewood	05511234	3	\$1,560	Yes
High Land Hills	05411203	124	\$56,269	Yes
Ice Moose	05807228	249	\$113,398	Yes
It Takes Time	05510227	102	\$46,258	Yes
Kangas burn	06211218	189	\$75,000	Yes
KAW diversity planting, release, and budcap 3 times	06010230	200	\$150,000	Yes
Kevins Request	05707205	6	\$2,764	Yes
Koski Road	05711219	20	\$9,033	Yes
Last Chance	05511202	302	\$137,635	Yes
LAU diversity planting, release, and budcap 3 times	05610201	250	\$187,500	Yes
LAU diversity planting, release, and budcap 3 times	05709212	250	\$187,500	Yes
Lillie North	05709206	100	\$45,440	Yes
Little Egge	05707203	26	\$11,600	Yes
Mad Hawk	05511223	20	\$9,147	Yes
Mechanical site prep- EZ	06008215	100	\$40,000	Yes

Million D Pit	05707203	51	\$23,198	Yes
Moose Rut	05710236	48	\$21,844	Yes
Moosousa	05709236	146	\$66,541	Yes
Nicado	05608201	138	\$62,713	Yes
No n-harvest site prep - EZ	06106201	205	\$82,000	Yes
No n-harvest site prep - EZ	06106223	340	\$136,000	Yes
North 39	05609211	76	\$34,529	Yes
Padden Lands	05411214	139	\$63,420	Yes
Park Hill	05707210	75	\$33,923	Yes
Pintail	05509215	51	\$23,257	Yes
Pit	05411233	38	\$17,153	Yes
Punky Wood	05511234	46	\$20,908	Yes
Rocket Spruce	05709236	116	\$52,757	Yes
Saw Hock	05707219	105	\$47,613	Yes
Scalp and diversity plant - EZ	06106201	103	\$40,170	Yes
Scalp and diversity plant - EZ	06106223	170	\$66,300	Yes
Sect 10 Twp 55 Rng 10	05510210	40	\$18,397	Yes
Sect 11 Twp 55 Rng 10	05510211	38	\$17,113	Yes
Sect 28 Twp 55 Rng 10	05510228	7	\$3,397	Yes
Sect 33 Twp 55 Rng 10	05510233	35	\$16,017	Yes
Sneaky Fisher	05411233	55	\$25,159	Yes
Sonju Pit	05806231	38	\$17,074	Yes
Stony Loop	05909205	50	\$22,792	Yes
The Last Chance	05709214	103	\$46,661	Yes
Trident - BWCA burn	06408203	1,817	\$75,000	Yes
Walking Moose	05708233	47	\$21,348	Yes
West Lake	05311207	12	\$5,385	Yes

St. Louis

Name	TRDS	Acres	Est Cost	Existing Protection?
Crab Lake - BWCA burn	06314214	2,400	\$100,000	Yes
Echo Trail burns - exist	06516201	300	\$75,000	Yes
Echo Trail burns - new	06614215	600	\$150,000	Yes
Echo Trail site prep	06111210	300	\$120,000	Yes
KAW shearing	06012222	82	\$32,800	Yes
newSLC50	05713202	56	\$14,405	Yes
newSLC51	05713202	25	\$6,276	Yes
newSLC52	05713202	24	\$6,185	Yes
newSLC53	05813202	71	\$18,143	Yes
newSLC54	05813235	7	\$1,857	Yes
newSLC55	05812232	9	\$2,181	Yes
newSLC56	05812232	34	\$8,635	Yes
newSLC57	05812232	2	\$583	Yes
newSLC58	05913230	70	\$17,796	Yes
newSLC59	05912231	28	\$7,215	Yes
newSLC59	05913231	1	\$309	Yes
newSLC59	05913231	3	\$647	Yes
newSLC59	05913231	4	\$1,015	Yes
newSLC59	05913231	75	\$19,005	Yes
North Arm burn	06313209	40	\$16,000	Yes
SLC60	05812217	10	\$2,579	Yes
SLC60	05812217	30	\$7,769	Yes
SLC61	05812219	12	\$3,045	Yes
SLC61	05812219	14	\$3,700	Yes
SLC62	05813224	24	\$6,155	Yes
SLC63	05812227	2	\$448	Yes
SLC63	05812227	9	\$2,402	Yes
SLC63	05812227	20	\$5,021	Yes
SLC64	05712215	2	\$517	Yes
SLC64	05712215	5	\$1,246	Yes
SLC64	05712215	6	\$1,561	Yes
SLC64	05712215	13	\$3,427	Yes
SLC65	05812215	21	\$5,471	Yes
SLC66	05812234	8	\$2,097	Yes
SLC66	05812234	10	\$2,629	Yes
SLC66	05812234	15	\$3,854	Yes
SLC66	05812234	25	\$6,319	Yes
SLC67	05812221	20	\$5,069	Yes
SLC68	05713203	7	\$1,763	Yes
SLC69	05813235	17	\$4,286	Yes
SLC70	05813233	2	\$546	Yes
SLC70	05813233	2	\$551	Yes
SLC71	05813234	1	\$307	Yes

Section 2 - Protect Parcel List

No parcels with an activity type protect.

Section 2a - Protect Parcel with Bldgs

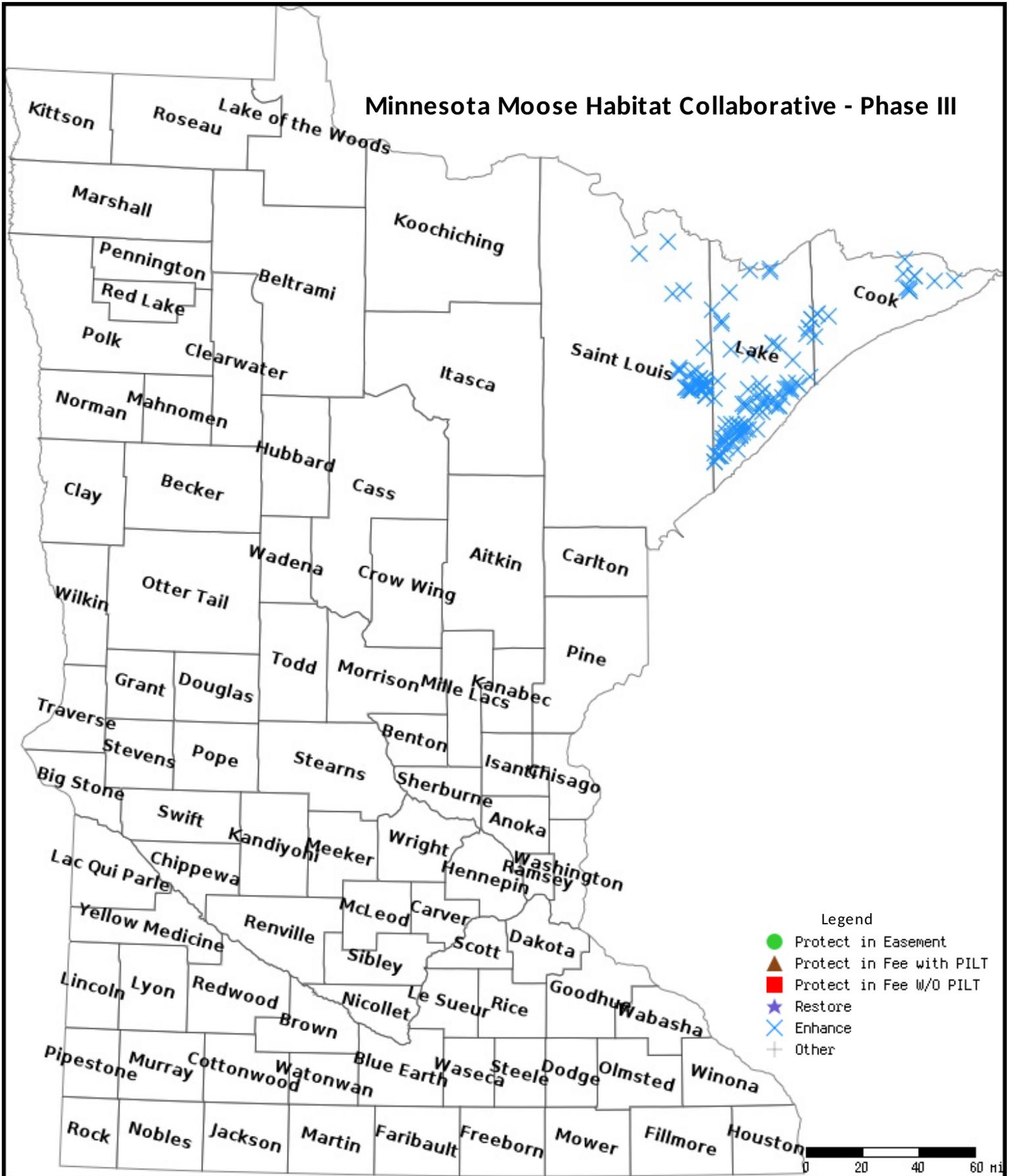
No parcels with an activity type protect and has buildings.

Section 3 - Other Parcel Activity

No parcels with an other activity type.

Parcel Map

Minnesota Moose Habitat Collaborative - Phase III



Data Generated From Parcel List

Minnesota Moose Habitat Collaborative – Phase III

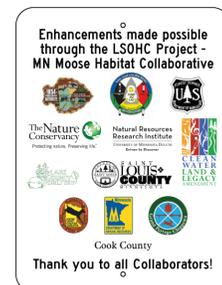


Summary:

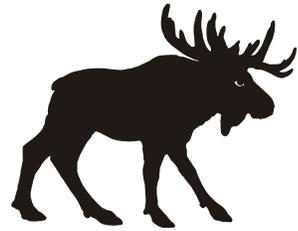
The Minnesota Deer Hunters Association (MDHA), in collaboration with county, state, federal, tribal, university and non-governmental organizational partners, seeks to continue the successful work of the Moose Habitat Collaborative (Collaborative) by improving nearly 30,000 acres of foraging habitat for moose in northeast Minnesota. The project builds on the Collaborative’s previous efforts to enhance forest habitat by increasing stand complexity and production while also maintaining thermal components of the landscape with variable thinning and planting methods. Partial and intermediate harvests will increase the occurrence of early successional forest patches, providing abundant quality foraging opportunities and enhancing landscape level habitat heterogeneity.

Partners:

- Federal:** Superior National Forest (SNF)
- State:** Minnesota Department of Natural Resources
- Tribal:** 1854 Treaty Authority; Fond du Lac Band
- Counties:** Cook, Lake; St. Louis
- University:** University of Minnesota Duluth, Natural Resources Research Institute (UMD)
- Organizations:** MDHA; the Nature Conservancy; Ruffed Grouse Society; Wildlife Management Institute



Minnesota Moose Habitat Collaborative - Phase III



- Phase III Proposed Enhancements
- Phase I & II Enhancements

