

Lessard-Sams Outdoor Heritage Council

Fiscal Year 2019 / ML 2018 Request for Funding



Date: May 31, 2017

Program or Project Title: Northern Minnesota Forest Recovery Project

Funds Requested: \$6,123,600

Manager's Name: Jim Manolis

Organization: The Nature Conservancy

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County Locations: Beltrami, Carlton, Cass, CASS, Cook, COOK, Itasca, ITASCA, Lake, LAKE, St. Louis, and ST. LOUIS.

Regions in which work will take place:

- Northern Forest

Activity types:

- Enhance

Priority resources addressed by activity:

- Forest

Abstract:

Minnesota's northern forests are in trouble. These forests are not healthy and diverse enough to cope with accelerating challenges from invasive species, insect pests, and a changing climate. Furthermore, both long-lived-conifer and young-forest habitats have declined substantially in many areas. These habitats are critical for numerous game and non-game species of concern. Through enhancements applied to 14,000 acres of degraded forests, the proposed project will increase long-lived conifers, young forest gaps, and diversity in riparian forests. By acting today, we can improve the health and resilience of our forests for all the benefits they provide.

Design and scope of work:

Northern Minnesota's forests are at a crossroads. Hundreds of thousands of acres of forest are now in poor condition with diminished value for both wildlife and forest health. Long-lived conifers and early successional habitats have declined in many areas. Rapidly changing economic conditions, plus threats such as invasive species, disease, a warming climate, and habitat loss pose great challenges for forest and wildlife managers. Over time, forest health issues tend to become more difficult and expensive to reverse. Significant investments in Minnesota's forests are urgently needed now to improve forest health for wildlife, clean water, and local economies.

Major goals of this project are to:

- Enhance productivity in degraded stands to benefit forest wildlife
- Enhance riparian and upland forests to improve water quality and fish habitat
- Enhance tree species and age-class diversity to improve habitat and increase forest resilience
- Strengthen collaborative partnerships

This work will build on the already strong partnerships convened by The Nature Conservancy and others over the last 20 years. Nature Conservancy staff have worked collaboratively with many partners to enhance forest habitat across large geographic areas. Since 2009, we have planted over two million trees across 10,000 acres of forests and have applied numerous enhancement treatments to those acres. The work being proposed builds on this foundation.

Enhancement activities will include:

- Site preparation including winter shearing, and raking/scarification
- Long-lived conifer, oak, and yellow birch planting
- Brush removal around seedlings
- Browse protection
- Blister rust pruning
- Prescribed burning
- Black Ash treatments to prepare for Emerald Ash Borer

We are using a collaborative approach to identify sites and expect to include additional county, tribal, and industry partners over time. Sites included in this proposal are on US Forest Service, DNR, and Lake, Cook, and St. Louis County lands. The project will coordinate with other projects including the Moose Habitat Collaborative to ensure that we don't duplicate efforts. We will also work with and provide leadership and capacity to existing collaborations such as the Minnesota Forest Resource Council Landscape Committees, the Minnesota Forest Wildlife Habitat Collaborative, and the North Shore, Manitou, Sand-Lake Seven Beavers collaboratives. Other specific partners will include the American Bird Conservancy, the Minnesota Deer Hunters Association, and the US Fish and Wildlife Service.

We used multiple criteria to select sites including:

- Landowner priorities and potential for cost-share/leverage
- Opportunity for cross-boundary management
- Ranking within the State Wildlife Action Network
- Opportunity to enhance habitat for species of greatest conservation need
- Opportunity to increase forest resilience

Geographic locations in this proposal emphasize:

- Public lands in Northeastern Minnesota, especially riparian forests and collaborative landscapes within St. Louis, Lake, and Cook Counties, and
- Mississippi Headwaters forests within the Chippewa National Forest Proclamation Boundary.

For project implementation, we will hire two Forest Recovery foresters, one located in Northeast Minnesota, and one located in North Central Minnesota. These foresters will coordinate management with landowners, supervise contractors and contracting crews, and strengthen local partnerships. This is a successful staffing model that TNC has used with the Prairie Recovery Project.

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

- H5 Restore land, wetlands and wetland-associated watersheds
- LU10 Support and expand sustainable practices on working forested lands

Which other plans are addressed in this proposal:

- Minnesota Forest Resource Council Landscape Plans
- Minnesota's Wildlife Action Plan 2015-2025

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

This project will advance selected goals and objectives of several multi-partner plans including:

The Minnesota Forest Resources Council Landscape Plans:

- Northeast Landscape Plan, Goal 2: Maintain, Restore, and Enhance Native Biodiversity, Including Wildlife Habitat and Populations. Promote forest management practices that ensure the protection, restoration, and enhancement of terrestrial habitats in the region. Forest management should provide a variety of young and old age classes and structures to meet the ecological conditions needed to enhance viable populations of all existing native and desired non-native species.

- Draft North-Central Landscape Plan, Goal 1: Enhance the ability of the forest ecosystems in the region to adapt and respond to current and future threats by fostering ecosystem resilience, resistance, and adaptability.

State Wildlife Action Plan:

- Goal 1: Ensure the long-term health and viability of Minnesota's wildlife, with a focus on species that are rare, declining, or vulnerable to decline.

Which LSOHC section priorities are addressed in this proposal:

Northern Forest:

- Restore forest-based wildlife habitat that has experienced substantial decline in area in recent decades

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 Nature Conservancy is committed to conserving a dynamic mosaic of healthy lands and waters that will sustain and enhance a broad diversity of species and local communities. From protecting discrete pieces of land to conserving entire ecosystems through strategic planning and mobilizing policy initiatives, we seek to make tangible, lasting, and measurable results in critical places. We have been actively protecting and managing forests in Minnesota for more than 30 years. Funds available through this program provide critical resources for enhancing and restoring degraded forests in the state. Investment in site preparation, tree planting for diversity enhancement, brush removal, browse protection, and implementing controlled burns is costly up-front, but becomes more sustainable once those investments have been made. The Nature Conservancy has a strong track record of finding a wide array of funds and garnering partner resources to mobilize ongoing enhancement and restoration. We are committed to sustaining the long-term legacy of investments made through our work.

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:

We are using a combination of GIS data layers to prioritize sites that will enhance corridors and complexes, limit fragmentation, and enhance priority areas identified by the MN Biological Survey. These data layers include the Minnesota Wildlife Action Network, Minnesota Biological Survey Biodiversity significance ranks, existing areas of collaborative focus identified by The Nature Conservancy and partners, and areas with poor forest stocking identified by agencies. For the initial pool of sites that we considered for this proposal, we used a GIS overlay approach of these different data sets to choose sites that meet partner priorities and meet LSOHC Northern Forest Section priorities. LSHOC priorities that were weighted most heavily included high-ranking locations within the Wildlife Action Network (indicating value for Species of Greatest Conservation Need and high ranking areas identified by the Minnesota Biological Survey) and proximity to water (indicating value for cold-water lakes and watersheds). In addition, if this project is funded we will refine site selection using new data layers developed by a multi-state initiative called "Conserving Nature's Stage." Pioneered and led by TNC, this approach maps and ranks habitat connectivity and habitat resilience across large regions. We will also incorporate one or more LiDAR derived assessments of forest structure that help identify areas of greatest restoration need.

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:

This proposal addresses Species of Greatest Conservation Need in two main ways. First, it clearly addresses Objective 1 of the State Wildlife Action Plan: "Within the Wildlife Acton Network, maintain and enhance the resilience of the habitats upon which Species in Greatest Conservation Need (SGCN) and other wildlife depend." The proposed habitat projects increase forest diversity and thus maintain or enhance resilience. The majority of proposed sites fall within higher ranking areas of the Wildlife Action Network. Second, specific treatments carried out by this project will benefit at least 20 SGCNs. For example, treatments that increase long-lived conifer abundance will benefit:

- Evening Grosbeak
- Olive-sided Flycatcher
- Spruce Grouse
- Purple Finch
- Connecticut Warbler
- Black-backed Woodpecker
- Winter Wren
- Moose
- Boreal Owl
- Canada Lynx

Treatments that create young forest conditions or gaps will benefit:

- Veery
- Wood Thrush
- Golden-winged Warbler
- Moose

Gap creation and planting in riparian areas will benefit:

- Veery
- Black-billed Cuckoo
- Olive-sided Flycatcher
- Common Merganser
- Winter Wren
- Four-toed salamander
- Eastern red-backed salamander
- Coaster Brook Trout
- Lake Sturgeon

At initiation of this project, we will convene a panel of experts on these species and review approaches for improving their habitat. Following that we will convene periodic meetings to review progress and new information on habitat needs and population status.

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

The following forest indicator species have been identified by the Minnesota DNR. We view these as placeholders until a more complete set of indicator species is developed.

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.

Golden-winged Warblers (*Vermivora chrysoptera*) are often associated with shrubland habitat and regenerating forests. However, recent current research indicates a variety of forest habitats are required, including 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.

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.

Outcomes:

Programs in the northern forest region:

- Improved availability and improved condition of habitats that have experienced substantial decline *We will seek and leverage funds to measure regeneration success, structural variables, and other measures of stand condition of treated sites. We will encourage landowner partners to do the same.*

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

This project will strengthen and support the many collaborative efforts across the forested region by mobilizing efforts to increase the pace and scale of forest restoration and enhancement. Through this effort, we are developing consistent methodologies and approaches that can be institutionalized through a collaborative process, thus ensuring a long-term commitment that follows ecological need and urgency. When possible, Outdoor Heritage funds will be used to leverage federal and private funds to expand restoration and enhancement efforts to the most critically needed locations.

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

Year	Source of Funds	Step 1	Step 2	Step 3
1-7	We will seek a mix of private and public funds	Install browse protection on planted seedlings	Monitor seedling survival	
5	We will seek a mix of private and public funds	Release/cut competing brush around seedlings		
7, 10	We will seek a mix of private and public funds, landowner responsibility	Check sapling condition	Prune white pines for blister rust	
20, 40, 60	Landowner responsibility	Check stand condition	Thin or treat as appropriate	

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

To put it simply, Minnesota's forests are in trouble. Urgent action is needed to address widespread and increasing forest health issues that degrade wildlife habitat. A recent analysis conducted by the Superior National Forest found that over 200,000 acres of forest have lost their capacity for viable timber harvests, which are key tools for maintaining habitat diversity for numerous wildlife species and forest types. Forest fragmentation, habitat loss, and degradation, combined with large-scale perturbations such as climate change and forest pests and pathogens further exacerbate the threats posed to our forested systems and the game and non-game species that are dependent upon them. Over time, forest health issues tend to become more difficult and expensive to reverse. Significant investments are urgently needed now to improve northern Minnesota's forests for wildlife and all the benefits forests provide.

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

To support our ongoing forest enhancement work, we continually seek and acquire private foundation grants, and donations from corporations and individuals. We expect that to continue through the life of the proposed project (see track record of past support below). In addition, by the start date of the proposed project, we expect to have two new Stewardship Agreements in place with the National Forests in Minnesota. These agreements will fund enhancement and restoration work and provide a mechanism for collaboration. We also have an agreement established with the Chippewa National Forest that funds assessment and partnership development, focused on riparian enhancement. Finally, as previously mentioned, we play a strong coordinating role in ongoing, cross-ownership collaborations, and we will use these collaborations to seek additional in-kind and fiscal leverage with partners.

Relationship to other funds:

- Private Contributions to TNC, US Forest Service Funds and in-kind work.

Describe the relationship of the funds:

We are leveraging state funds with private funds through a contribution of 50% of our Direct Support Services.

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 (WMA, County/Municipal, State Forests, US Forest Service Lands)**

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 - **January 2018**

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
Complete first season of site preparation	April 2019
Complete first season of planting	May 2019
Complete first season of browse protection	November 2019
Complete second season of site preparation	April 2020
Complete second season of planting	May 2020
Complete second season of browse protection	November 2020
Complete third season of site preparation	April 2021
Complete third season of planting	May 2021
Complete final prescribed burns	June 2021

Budget Spreadsheet

Total Amount of Request: \$6,123,600

Budget and Cash Leverage

BudgetName	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	\$799,300	\$0		\$799,300
Contracts	\$2,979,600	\$650,000	US Forest Service	\$3,629,600
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	\$12,600	\$0		\$12,600
Professional Services	\$0	\$0		\$0
Direct Support Services	\$639,200	\$639,200	TNC	\$1,278,400
DNR Land Acquisition Costs	\$0	\$0		\$0
Capital Equipment	\$13,500	\$0		\$13,500
Other Equipment/Tools	\$75,000	\$0		\$75,000
Supplies/Materials	\$1,604,400	\$0		\$1,604,400
DNR IDP	\$0	\$0		\$0
Total	\$6,123,600	\$1,289,200		\$7,412,800

Personnel

Position	FTE	Over # of years	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Forest Recovery Specialists	2.00	3.00	\$419,500	\$0		\$419,500
Project Management	0.90	3.00	\$236,000	\$0		\$236,000
Grant Admin	0.13	3.00	\$34,500	\$0		\$34,500
GIS staff	0.40	3.00	\$109,300	\$0		\$109,300
Total	3.43	12.00	\$799,300	\$0		\$799,300

Capital Equipment

Item Name	LSOHC Request	Anticipated Leverage	Leverage Source	Total
6-wheeler ATV	\$13,500	\$0		\$13,500
Total	\$13,500	\$0		\$13,500

Amount of Request: \$6,123,600

Amount of Leverage: \$1,289,200

Leverage as a percent of the Request: 21.05%

DSS + Personnel: \$1,438,500

As a % of the total request: 23.49%

Easement Stewardship: \$0

As a % of the Easement Acquisition: -%

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

DSS is based on The Nature Conservancy's Federally Negotiated rate as proposed and subsequently approved by the US Dept. of Page 7 of 13Interior on an annual basis. The proportion requested from the grant represents 50% with the other 50% contributed as leverage.

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

The entire contract line item is dedicated to enhancement work.

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

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

Vehicle rental is also included.

Describe and explain leverage source and confirmation of funds:

TNC will leverage privately sourced funds to cover half of direct support services (DSS) costs.

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 proposed funding level maximizes efficiency by balancing limited personnel with contracting. A lower funding amount would increase cost per acre, or reduce geographic scale of impact. With a higher amount of funding we could increase acres treated while reducing cost per acre.

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	14,000	0	14,000
Total	0	0	14,000	0	14,000

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	\$6,123,600	\$0	\$6,123,600
Total	\$0	\$0	\$6,123,600	\$0	\$6,123,600

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	14,000	14,000
Total	0	0	0	0	14,000	14,000

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	\$6,123,600	\$6,123,600
Total	\$0	\$0	\$0	\$0	\$6,123,600	\$6,123,600

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	\$437	\$0

Table 6. Average Cost per Acre by Ecological Section

Type	Metro/Urban	Forest/Prairie	SEForest	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	\$437

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:

For the pool of sites that we considered for this proposal, we used a GIS overlay approach to choose sites that meet partner priorities and meet LSOHC Northern Forest Section priorities. LSHOC priorities that were weighted most heavily included high-ranking locations within the Wildlife Action Network (indicating value for Species of Greatest Conservation Need and high ranking areas identified by the Minnesota Biological Survey) and proximity to water (indicating value for cold-water lakes and watersheds).

Section 1 - Restore / Enhance Parcel List

Beltrami

Name	TRDS	Acres	Est Cost	Existing Protection?
16 of Sugarbush	14731216	53	\$20,935	yes

Carlton

Name	TRDS	Acres	Est Cost	Existing Protection?
113	04616222	11	\$1,100	yes

Cass

Name	TRDS	Acres	Est Cost	Existing Protection?
Bena Burbs	14528228	8	\$800	yes
Bena Cty 8 Burn	14528234	6	\$7,260	yes
Big Fish burn	14528228	30	\$30,000	yes
Bug School	14529223	18	\$18,000	yes
JP Fence	14431211	6	\$6,000	yes
Lake Hessie Fence	14431211	30	\$30,000	yes
Mark Lake Burn	14530201	6	\$6,000	yes
Moss Lake WP prep&plant	14431203	30	\$11,850	yes
Natural origin pine	14431211	4	\$1,400	yes
Oak Point Goshawk	14331206	14	\$4,130	yes
Oak Point Potlatch sale	14331201	7	\$700	yes
Oak Point Potlatch sale	14331201	7	\$755	yes
School protection	14529215	17	\$1,105	yes
Strawberry Lake	14530218	5	\$293	yes
Ten Lake	14529215	26	\$2,600	yes
White pine protection	14431210	2	\$200	yes

CASS

Name	TRDS	Acres	Est Cost	Existing Protection?
2016 LYDICK BROOK-1	14529204	271	\$27,100	yes
2016 LYDICK BROOK-2	14529205	69	\$6,930	yes
oakptrx1	14331224	285	\$14,250	yes
oakptrx2	14331226	177	\$8,850	yes
Pinpoint	14231202	482	\$24,100	yes
Takagami1	14530210	87	\$8,700	yes
Takagami2	14530211	85	\$8,500	yes
Takagami3	14530204	134	\$13,400	yes
Takagami4	14531236	91	\$9,100	yes

Cook

Name	TRDS	Acres	Est Cost	Existing Protection?
DNR-10	05905216	38	\$9,500	yes
East Colvill WMA	06103106	35	\$16,560	yes
hdwd-diversity	05904208	9	\$2,250	yes
hdwd-diversity-2	05904216	9	\$2,250	yes
Sugarlo af-1	05805204	450	\$204,750	yes
Sugarlo af-2	05805208	450	\$204,750	yes
Sugarlo af-3	05805209	450	\$204,750	yes
Sugarlo af-4	05805216	450	\$204,750	yes
Sugarlo af-5	05805217	450	\$204,750	yes
Super-permit 1	06204101	100	\$45,500	yes
Super-permit 1	06204102	100	\$45,500	yes
Super-permit 1	06304125	100	\$45,500	yes
Super-permit 1	06304136	100	\$45,500	yes

COOK

Name	TRDS	Acres	Est Cost	Existing Protection?
Cook Cty1	06304131	15	\$5,635	yes
SNF09090700026043	06205231	34	\$12,706	yes
SNF09090700033033	06204233	75	\$27,650	yes
SNF09090700034042	06204234	53	\$19,769	yes
SNF09090700044019	06104207	59	\$21,852	yes
SNF09090700048004	06205231	43	\$15,847	yes
SNF09090700061056	06104214	41	\$15,159	yes
SNF09090700063012	06104213	35	\$12,935	yes
SNF09090700063045	06104213	18	\$6,756	yes
SNF09090700077008	06105213	9	\$3,160	yes
SNF09090700077041	06104218	34	\$12,613	yes
SNF09090700089052	06005209	11	\$3,989	yes
SNF09090700114001	06005205	21	\$7,755	yes

Itasca

Name	TRDS	Acres	Est Cost	Existing Protection?
Bear Lk, Stand 228	06023221	18	\$11,250	yes
Beatrice Lk, Stand 267	06022201	3	\$2,500	yes
Beatrice Lk, Stand 415	06022201	17	\$1,650	yes
Beatrice Lk, Stand 425	06022201	26	\$2,570	yes
Beatrice Lk, Stand 578	06022201	6	\$4,000	yes
Beatrice Lk, Stand 580	06022201	12	\$7,375	yes
t05926w1360054 - Seed Dispersal Zone	05926236	5	\$2,000	yes
t06026w1030052 - Pine Release	06026203	8	\$750	yes
t06026w1100078 - Pine Release	06026210	9	\$800	yes
t14928w1140210 - Lowland Conifer Winter Shearing	14928214	39	\$4,800	yes

IT ASCA

Name	TRDS	Acres	Est Cost	Existing Protection?
ashtreat1	15025232	4	\$3,492	yes
ashtreat10	14825227	17	\$15,327	yes
ashtreat11	14625220	15	\$13,851	yes
ashtreat12	14826230	6	\$5,445	yes
ashtreat13	14825222	5	\$4,464	yes
ashtreat14	14826217	9	\$7,650	yes
ashtreat15	14825228	34	\$30,888	yes
ashtreat16	14925203	10	\$9,261	yes
ashtreat17	14925229	16	\$14,040	yes
ashtreat18	14925213	14	\$12,537	yes
ashtreat19	14925223	7	\$6,012	yes
ashtreat2	14925202	6	\$5,049	yes
ashtreat20	14925203	13	\$11,475	yes
ashtreat21	15025232	16	\$13,995	yes
ashtreat22	14725201	14	\$12,348	yes
ashtreat23	14725201	7	\$6,183	yes
ashtreat24	14826235	11	\$10,062	yes
ashtreat25	06026217	17	\$15,561	yes
ashtreat26	05826219	26	\$23,085	yes
ashtreat27	14925203	17	\$15,561	yes
ashtreat3	14826214	5	\$4,743	yes
ashtreat4	14925206	17	\$14,940	yes
ashtreat5	14827211	16	\$14,337	yes
ashtreat6	15025233	9	\$8,514	yes
ashtreat7	14925229	23	\$20,394	yes
ashtreat8	14826231	9	\$7,722	yes
ashtreat9	14625220	14	\$12,951	yes
Sunken Lake	14727216	640	\$32,000	yes
West Winnie	14629235	90	\$11,250	yes

Lake

Name	TRDS	Acres	Est Cost	Existing Protection?
531006	05310206	28	\$10,338	yes
54-10-14	05410214	78	\$28,893	yes
54-10-2	05410202	35	\$12,978	yes
54-10-21	05410221	36	\$13,252	yes
54-9-10	05409210	53	\$19,766	yes
550920	05509220	46	\$17,147	yes
55-9-31	05509231	43	\$15,836	yes
55-9-32/33/28	05509228	206	\$76,249	yes
Aerial_seed_1_DNR	05908216	300	\$19,500	yes
Blueberry Birch	05409214	8	\$2,845	yes
Bud Hill	05509220	100	\$36,900	yes
Caribou Falls WMA	05806236	20	\$9,200	yes
Caribou Falls WMA	05806236	60	\$27,600	yes
DNR-11	05906216	105	\$26,250	yes
DNR-8	05411220	20	\$5,000	yes
DNR-9	05708229	25	\$6,250	yes
Little Marais WMA	05706216	70	\$37,200	yes
Lookout-Egge Ridges Diversity Gap Planting	05807228	29	\$1,000	yes

LAKE

Name	TRDS	Acres	Est Cost	Existing Protection?
SNF09090100175001	05711227	41	\$15,281	yes
SNF09090100193038	05611219	35	\$13,024	yes
SNF09090100193040	05611218	18	\$6,475	yes
SNF09090100200010	05611219	84	\$31,191	yes
SNF09090500003024	06409234	12	\$4,292	yes
SNF09090500003085	06309205	46	\$17,131	yes
SNF09090500004024	06309207	33	\$12,284	yes
SNF09090500005034	06409231	30	\$11,174	yes
SNF09090500006032	06310211	8	\$2,775	yes
SNF09090500007016	06310211	37	\$13,616	yes
SNF09090500007017	06310211	39	\$14,393	yes
SNF09090500011045	06310217	89	\$32,930	yes
SNF09090500054009	06111219	6	\$2,035	yes
SNF09090500061043	06211230	41	\$15,133	yes
SNF09090500061044	06211230	8	\$3,034	yes
SNF09090500061055	06211230	21	\$7,844	yes
SNF09090500061060	06211230	9	\$3,404	yes
SNF09090500061061	06211230	27	\$9,990	yes
SNF09090500061071	06211219	36	\$13,246	yes
SNF09090500062013	06211218	56	\$20,535	yes
SNF09090500062047	06211219	13	\$4,773	yes
SNF09090500062049	06211219	13	\$4,810	yes
SNF09090500062051	06211207	31	\$11,470	yes
SNF09090500062057	06211208	9	\$3,330	yes
SNF09090500062069	06211209	19	\$6,919	yes
SNF09090500063014	06211219	9	\$3,293	yes
SNF09090500063019	06211230	50	\$18,574	yes
SNF09090500063053	06211219	14	\$5,032	yes
SNF09090500064075	06211220	14	\$5,032	yes
SNF09090500065008	06211232	12	\$4,551	yes
SNF09090500066008	06111206	30	\$10,989	yes
SNF09090500066009	06111206	65	\$23,939	yes
SNF09090500066020	06211231	14	\$5,217	yes
SNF09090500068003	06211231	23	\$8,362	yes
SNF09090500068011	06211231	35	\$12,802	yes
SNF09090500068012	06211231	12	\$4,477	yes
SNF09090500069003	06111207	8	\$2,812	yes
SNF09090500069005	06111207	33	\$12,025	yes
SNF09090500069008	06111207	9	\$3,145	yes
SNF09090500069018	06111218	8	\$2,960	yes
SNF09090500069019	06111218	13	\$4,921	yes
SNF09090500069020	06111218	21	\$7,770	yes
SNF09090500069022	06111218	17	\$6,142	yes
SNF09090500069023	06111218	25	\$9,102	yes
SNF09090500069024	06111218	13	\$4,773	yes
SNF09090500069030	06111219	42	\$15,540	yes
SNF09090500069032	06111219	33	\$12,025	yes
SNF09090500069035	06111218	62	\$22,829	yes
SNF09090500069038	06111218	300	\$110,815	yes
SNF09090500070034	06111219	11	\$4,070	yes
SNF09090500070035	06111219	29	\$10,582	yes
SNF09090500070036	06111219	46	\$17,168	yes
SNF09090500074006	06111210	29	\$10,656	yes
SNF09090500074026	06111210	37	\$13,616	yes
SNF09090500074043	06111215	56	\$20,609	yes
SNF09090500074046	06111217	50	\$18,574	yes
SNF09090500075016	06111208	16	\$5,772	yes
SNF09090500075018	06111205	9	\$3,330	yes
SNF09090500075030	06111205	20	\$7,326	yes

SNF09090500075035	06111205	38	\$13,986	yes
SNF09090500075062	06211233	17	\$6,179	yes
SNF09090500075069	06211233	44	\$16,317	yes
SNF09090500075079	06111204	82	\$30,340	yes
SNF09090500076042	06211203	18	\$6,697	yes
SNF09090500076044	06211203	24	\$8,695	yes
SNF09090500076082	06211215	21	\$7,733	yes
SNF09090500078051	06210229	26	\$9,731	yes
SNF09090500078065	06210220	87	\$32,116	yes
SNF09090500079001	06211233	16	\$5,846	yes
SNF09090500079026	06211226	15	\$5,513	yes
SNF09090500079052	06211223	23	\$8,621	yes
SNF09090500079062	06211233	8	\$2,849	yes
SNF09090500080006	06211225	27	\$9,990	yes
SNF09090500082009	06210230	55	\$20,424	yes
SNF09090500082094	06210229	14	\$5,180	yes
SNF09090500083015	06110218	13	\$4,921	yes
SNF09090500095027	06110216	153	\$56,425	yes
SNF09090700117003	06006212	27	\$9,868	yes
SNF090907001195115	06107217	7	\$2,738	yes
SNF09090700248047	06006231	41	\$15,200	yes
SNF09090700248055	06006231	16	\$5,868	yes
SNF09090700248075	06006231	17	\$6,183	yes

St. Louis

Name	TRDS	Acres	Est Cost	Existing Protection?
229	05314209	14	\$1,400	yes
265, 268	05415236	81	\$8,100	yes
346	05514223	11	\$1,100	yes
38, 52	05513216	59	\$5,900	yes
576, etc.	05514236	98	\$9,800	yes
625	05514227	10	\$1,000	yes
87	05513236	58	\$5,800	yes
Beauty Mtn, Stand 125	05521230	48	\$29,875	yes
Beauty Mtn, Stand 132	05521230	22	\$1,381	yes
Beauty Mtn, Stand 135	05521230	12	\$7,688	yes
Beauty Mtn, Stand 237	05521230	9	\$5,875	yes
Bird Lk, Stand 101	05814236	33	\$11,480	yes
Bird Lk, Stand 79	05814236	33	\$11,480	yes
Bird Lk, Stand 81	05814236	23	\$7,875	yes
DNR-7	05312216	45	\$11,250	yes
Eveleth, Stand 104	05817228	42	\$4,170	yes
Eveleth, Stand 129	05817233	17	\$1,720	yes
Eveleth, Stand 196	05817233	13	\$1,280	yes
Eveleth, Stand 201	05817228	3	\$280	yes
Eveleth, Stand 204	05817228	5	\$500	yes
Giants Ridge, stand 70	05916236	24	\$2,360	yes
Giants Ridge, stand 82	05916236	11	\$1,130	yes
Giants Ridge, stand 85	05916236	6	\$570	yes
Hardwoods_White Pine	05510216	150	\$37,500	yes
Knife-River fisheries	05412225	100	\$45,500	yes
Knife-River fisheries-2	05412236	100	\$45,500	yes
Shiver Crk, Stand 177	05714236	25	\$8,715	yes
Shiver Crk, Stand 189	05714236	25	\$8,680	yes
Shiver Crk, Stand 197	05714236	25	\$8,610	yes
Shiver Crk, Stand 199	05714236	10	\$3,325	yes
Shiver Crk, Stand 209	05714236	34	\$11,970	yes
Shoepack Lk, Stand 814	05921212	24	\$8,813	yes
Stand 104	05917216	24	\$2,360	yes
Stand 126	05614228	4	\$420	yes
Stand 171	06019227	70	\$24,360	yes
Stand 188	05718236	28	\$9,765	yes
Stand 190	05614216	13	\$1,310	yes
Stand 194	05917217	15	\$1,490	yes
Stand 200	05718236	7	\$2,415	yes
Stand 227	06017222	6	\$2,100	yes
Stand 268	06018216	12	\$1,845	yes
Stand 309	06018216	15	\$2,248	yes
Stand 310	06018216	7	\$1,070	yes
Stand 369	05617216	4	\$1,170	yes
Stand 369	05921206	36	\$12,600	yes
Stand 419	05617221	8	\$840	yes
Stand 419	06019226	8	\$2,730	yes
Stand 425	06017233	13	\$4,480	yes
Stand 448	05616236	13	\$4,480	yes
Stand 457	05616236	10	\$3,570	yes
Stand 501	05616236	50	\$17,395	yes
Stand 51	05614218	39	\$3,880	yes
Stand 616	05617216	2	\$630	yes
Stand 770	05921206	20	\$7,140	yes
Stand 778	05921206	16	\$5,460	yes
Stand 899	05921206	5	\$1,645	yes
Stand 95	05921206	8	\$2,625	yes
St Louis County Fox 44	05313233	37	\$3,700	yes

ST. LOUIS

Name	TRDS	Acres	Est Cost	Existing Protection?
SNF09090100050005	05814225	8	\$3,104	yes
SNF09090100050006	05813230	19	\$6,893	yes
SNF09090100051019	05813230	20	\$7,352	yes
SNF09090100071004	05814233	27	\$9,983	yes
SNF09090100071008	05814233	19	\$7,060	yes
SNF09090100194002	05612235	13	\$4,958	yes
SNF09090500048077	06112205	7	\$2,738	yes
SNF09090500051025	06113224	50	\$18,389	yes
SNF09090500054039	06112232	7	\$2,664	yes
SNF09090500054044	06112231	39	\$14,282	yes
SNF09090500054051	06113224	5	\$1,998	yes
SNF09090500059065	06212232	23	\$8,621	yes
SNF09090500059073	06112205	12	\$4,292	yes
SNF09090500061072	06212224	33	\$12,062	yes
SNF09090600031043	06618223	57	\$21,053	yes
SNF09090600031064	06618224	46	\$17,020	yes
SNF09090600033110	06717230	28	\$10,360	yes
SNF09090600035090	06618215	9	\$3,402	yes
SNF1045	06618226	41	\$15,181	yes
SNF1215	06618226	108	\$39,790	yes
SNF1232	06619214	41	\$15,340	yes
SNF1261	06519214	68	\$25,175	yes
SNF1511	06618226	101	\$37,355	yes
SNF1526	06719234	42	\$15,577	yes
SNF1629	06720234	56	\$20,842	yes
SNF1694	06720228	40	\$14,711	yes
SNF2049	06519211	41	\$15,059	yes
SNF252	06519209	43	\$16,021	yes
SNF284	06719222	58	\$21,601	yes
SNF338	06619211	48	\$17,616	yes
SNF458	06720224	154	\$57,024	yes
SNF565	06618235	54	\$20,084	yes
SNF587	06519207	46	\$16,924	yes
SNF66	06419214	218	\$80,801	yes
SNF687	06519214	59	\$21,726	yes
SNF693	06618220	76	\$28,194	yes
SNF77	06419213	63	\$23,440	yes
SNF801	06618226	79	\$29,404	yes
SNF94	06618218	80	\$29,452	yes

Section 2 - Protect Parcel List

No parcels with an activity type protect.

Section 2a - Protect Parcel with Bldgs

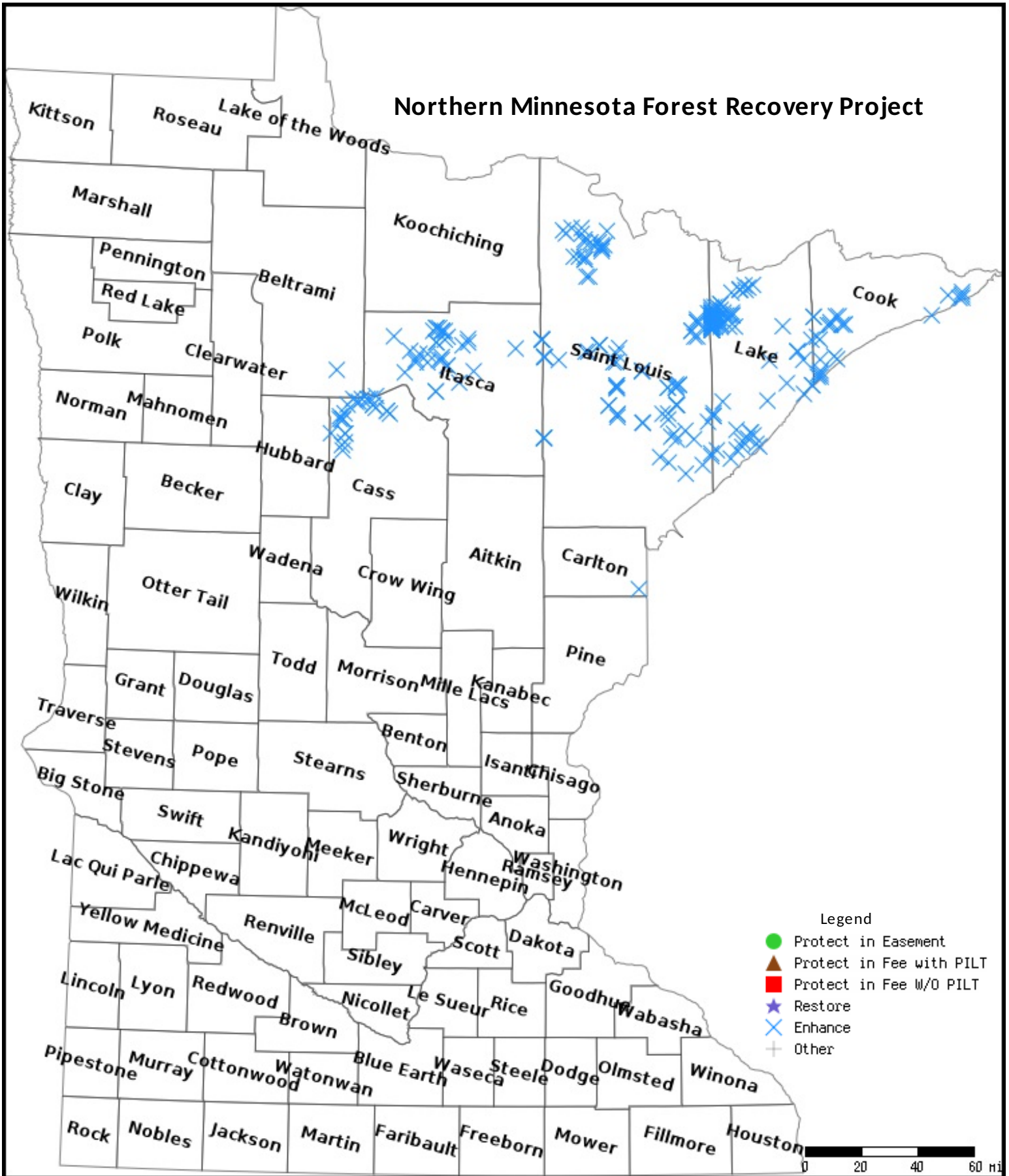
No parcels with an activity type protect and has buildings.

Section 3 - Other Parcel Activity

No parcels with an other activity type.

Parcel Map

Northern Minnesota Forest Recovery Project



Data Generated From Parcel List

The Northern Minnesota Forest Recovery Project:

Partnering to renew the forest

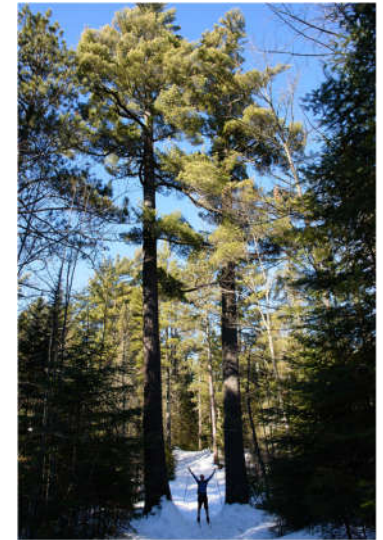
The Need

Minnesota's northern forests are in trouble. They are not healthy and diverse enough to cope with accelerating challenges from invasive species, insect pests, and a changing climate. Furthermore, both long-lived-conifer and young-forest habitats have declined substantially in many areas. These habitats are critical for many game species and species of greatest conservation need.



Declining birch near the North Shore of Lake Superior.

©Coldsnap Photography



Planting and browse protection help restore long-lived conifer species such as the white pines depicted here. The pine sapling in the middle photo successfully grew through its "bud cap," a folded paper cover that was stapled over the terminal bud to protect it from hungry deer.

The Response

The project will enhance 14,000 acres of degraded forest habitats in northern Minnesota, specifically by increasing long-lived conifers, young forest gaps, and diverse riparian forests. Treatments will include:

- ⇒ Site preparation to remove brush, create gaps of young growth, and prepare for planting.
- ⇒ Planting long-lived conifers, oaks, and yellow birch.
- ⇒ Protecting seedlings from herbivores and removing competing vegetation.
- ⇒ Prescribed burning.
- ⇒ Riparian forest diversity enhancement.



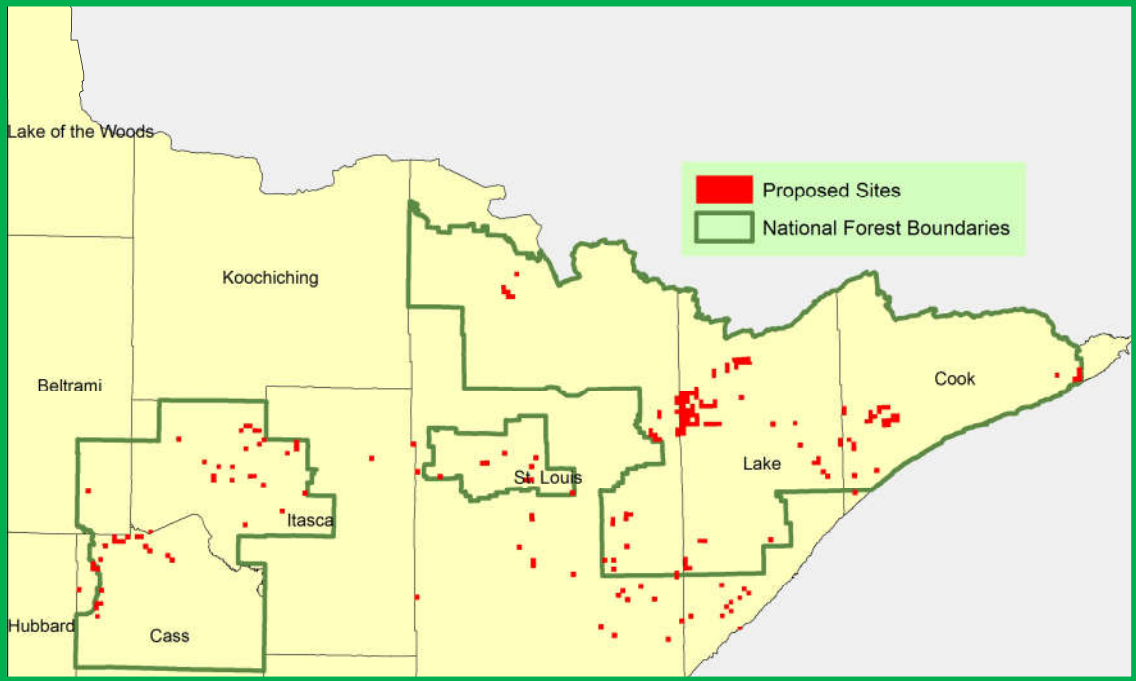
The evening grosbeak is a conifer-dependent species that has declined by more than 90% since 1970. It is considered a species of greatest conservation need in the Minnesota Wildlife Action Plan.

Implementation

For project implementation, we will hire two Forest Recovery foresters, one located in Northeast Minnesota, and one located in North-central Minnesota. These foresters will coordinate management with landowners, supervise contractors and contracting crews, and strengthen local partnerships. We will use a science-based analysis to refine site selection to ensure that the highest priority sites are treated.

Benefits

The project will improve habitat for conifer-dependent species of greatest conservation need such as the evening grosbeak (right), early successional species such as golden-winged warblers, and others that require multiple habitats such as moose. Riparian-focused projects will benefit species like coaster brook trout and winter wrens. Improving these habitats will also generate wider benefits for water quality, forest health, and local economies.



Partners and multiplier effect:

Proposed sites are located on partner lands including St. Louis, Lake, and Cook counties, DNR holdings, and the National Forests. The Nature Conservancy will reach out to new partners and work to enhance existing collaborations such as the Minnesota Forest Resource Council Landscape Committees, the Minnesota Forest Wildlife Habitat Collaborative, and local groups such as the Manitou and North Shore Collaboratives. We will also coordinate with other OHF forest projects to share information, avoid duplication, and maximize benefits to a wide array of species. We aim to generate a multiplier effect that catalyzes improved forest habitat and forest health across northern Minnesota.