

Lessard-Sams Outdoor Heritage Council

Laws of Minnesota 2011 Final Report



Date: October 20, 2016

Program or Project Title: Accelerated Forest Habitat Enhancement, Phase 2

Funds Recommended: \$826,000

Manager's Name: Bob Welsh

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Legislative Citation: ML 2011, First Sp. Session, Ch. 6, Art. 1, Sec. 2, Subd. 3(c)

Appropriation Language: \$826,000 the first year is to the commissioner of natural resources to restore and enhance lands in state forests, pursuant to Minnesota Statutes, section 89.021.

County Locations: Aitkin, Becker, Beltrami, Cass, Fillmore, Goodhue, Hubbard, Itasca, Kanabec, Koochiching, Lake, Marshall, Mille Lacs, Morrison, Olmsted, Roseau, Stearns, St. Louis, St. Louis, Wadena, and Winona.

Regions in which work was completed:

- Northern Forest
- Forest / Prairie Transition
- Southeast Forest
- Prairie

Activity types:

- Restore
- Enhance

Priority resources addressed by activity:

- Forest

Summary of Accomplishments:

This program of on-the-ground conservation projects increased the wildlife and ecological values of forest communities on Minnesota's public forestlands. Restoration and enhancement projects in this program enhanced more than 10,000 acres of forest.

Process & Methods:

The projects in this program were designed to address the following management objectives:

1. Enhance forest communities by altering the plant species composition and/or structure. These projects were accomplished by, for example, conducting hand release to enhance the growth of Northern red oak saplings and trees to increase mast available for wildlife, and meet the Forest Planning goal to FRMP goal of "improving the regeneration and increasing the presence of oak and pine across the landscape."
2. Enhance brushland habitat by altering the plant species structure and/or composition. Shearing projects were performed on lowland brush to set back succession in mature willow stands to improve cover and forage for deer and moose, and to enhance nesting and brood rearing habitat for a variety of game and non-game brushland dependent avian species. Perpetuation of the brushland

component of the Aspen Parklands landscape helped to predispose these stands to future management with prescribed fire.

This program worked to enhance oak regeneration and create a mix of young hardwood forest with more open meadow/brush lands to benefit grouse, elk, and deer. Enhancement of conifer stands and mixed hardwood/conifer forests provided habitat for fisher and marten, and thermal cover for deer and moose. Shearing of trees and brush in large open landscape priority areas enhanced habitat for sharp-tailed grouse. Shearing and mowing of hardwoods and brush in smaller patches enhanced habitat for woodcock and deer.

The program also enhanced habitat for a number of nongame species, including yellow rails, sandhill cranes, northern harriers, bobolinks, and sandpipers. Activities that created/enhanced forest openings provided habitat for nongame species, including least chipmunks, northern flickers, cooper's hawks, and song sparrows. Some of the less intensive timber management in our program helped protect rare native plant communities and a number of nongame species through retention and enhancement of plant species diversity and structure.

Explain Partners, Supporters, & Opposition:

DNR staff administered the projects by engaging contractors or CCM to perform the field work, and supervise activities in the field to assure effectiveness. Requested funds were primarily used for contracting with private vendors and CCM, and for purchasing supplies/small equipment, and related fleet expenses. A small amount of the funds (\$1,520; 0.2%) were for personnel to cover overtime on a large prescribed burn utilizing firefighters from outside the Section of Wildlife.

Additional Comments:

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

This program was tremendously successful at achieving accomplishments that exceeded planned accomplishments by almost 40% and by completing the work at a rate of about 30% less per acre than planned. Work sometimes slowed due to inclement weather or winter conditions that would not allow shearing. The multi-year nature of the funding provided for adequate opportunities for mother nature's cooperation.

Other Funds Received:

- Not Listed

How were the funds used to advanced the program:

Not Listed

What is the plan to sustain and/or maintain this work after the Outdoor Heritage Funds are expended:

Area land managers will monitor project sites and take any necessary actions to sustain the habitat improvements as part of their public land management responsibilities. Maintenance work will be carried out by existing staff, CCM crews, temporary project staffing or through vendor contracting. Periodic enhancements (beyond routine management) will be funded through annual funding requests from a variety of funding sources, including Game and Fish Fund, Bonding, Gifts, Federal Sources, Environmental Trust, and Outdoor Heritage Fund.

Outcomes:

The original accomplishment plan stated the program would

Programs in the northern forest region:

- Not Listed

How will the outcomes be measured and evaluated?

Enhancing forest habitats through prescriptive treatments are measured through satisfactory execution of landscape level plans provided through the Subsection Forest Resources Management Planning process. Contracted work was evaluated by Area Staff through on-sight visual evaluation and measured with a combination of GIS and aerial photography prior to approving payment of invoice.

Programs in forest-prairie transition region:

- Not Listed

How will the outcomes be measured and evaluated?

Enhancing forest habitats through prescriptive treatments are measured through satisfactory execution of landscape level plans provided through the Subsection Forest Resources Management Planning process. Contracted work was evaluated by Area Staff through on-sight visual evaluation and measured with a combination of GIS and aerial photography prior to approving payment of invoice.

Programs in southeast forest region:

- Not Listed

How will the outcomes be measured and evaluated?

Enhancing forest habitats through prescriptive treatments and restoration of state forestlands are measured through satisfactory execution of landscape level plans provided through the Subsection Forest Resources Management Planning process. Contracted work was evaluated by Area Staff through on-sight visual evaluation and measured with a combination of GIS and aerial photography prior to approving payment of invoice.

Programs in prairie region:

- Not Listed

How will the outcomes be measured and evaluated?

The forest enhancement project in this region was measured through satisfactory execution of landscape level plans provided through the Subsection Forest Resources Management Planning process. Contracted work was evaluated by Area Staff through on-sight visual evaluation and measured with a combination of GIS and aerial photography prior to approving payment of invoice.

Budget Spreadsheet

Final Budget line item reallocations are allowed up to 10% and do not need require an amendment to the Accomplishment Plan

Total Amount: \$826,000

Budget and Cash Leverage

BudgetName	Request	Spent	Cash Leverage (anticipated)	Cash Leverage (received)	Leverage Source	Total (original)	Total (final)
Personnel	\$0	\$1,500	\$0	\$0		\$0	\$1,500
Contracts	\$783,600	\$696,400	\$0	\$0		\$783,600	\$696,400
Fee Acquisition w/ PILT	\$0	\$0	\$0	\$0		\$0	\$0
Fee Acquisition w/o PILT	\$0	\$0	\$0	\$0		\$0	\$0
Easement Acquisition	\$0	\$0	\$0	\$0		\$0	\$0
Easement Stewardship	\$0	\$0	\$0	\$0		\$0	\$0
Travel	\$13,000	\$3,500	\$0	\$0		\$13,000	\$3,500
Professional Services	\$0	\$0	\$0	\$0		\$0	\$0
Direct Support Services	\$10,400	\$10,400	\$0	\$0		\$10,400	\$10,400
DNR Land Acquisition Costs	\$0	\$0	\$0	\$0		\$0	\$0
Capital Equipment	\$0	\$0	\$0	\$0		\$0	\$0
Other Equipment/Tools	\$9,000	\$5,400	\$0	\$0		\$9,000	\$5,400
Supplies/Materials	\$10,000	\$107,200	\$0	\$0		\$10,000	\$107,200
DNR IDP	\$0	\$0	\$0	\$0		\$0	\$0
Total	\$826,000	\$824,400	\$0	\$0		\$826,000	\$824,400

Personnel

Position	FTE	Over # of years	Spent	Cash Leverage	Leverage Source	Total
Manager of Programs	0.00	0.00	\$0	\$0		\$0
Miscellaneous Rx Fire Crew Members	0.03	0.00	\$1,500	\$0		\$1,500
Total	0.03	0.00	\$1,500	\$0		\$1,500

Explain any budget challenges or successes:

The large discrepancy between Contracts and Supplies was accounted for in that tree stock was often purchased directly by the Area Wildlife Manager to assure quality stock, and was then planted by a contractor. As a result, the expense of the trees show as a supply rather than in the contract line as they would if the contractor provided the tree stock. These expenditure changes were approved through amendment requests on paper forms.

Output Tables

Table 1a. Acres by Resource Type

Type	Wetlands (original)	Wetlands (final)	Prairies (original)	Prairies (final)	Forest (original)	Forest (final)	Habitats (original)	Habitats (final)	Total (original)	Total (final)
Restore	0	0	0	0	25	24	0	0	25	24
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	0	0	7,371	11,066	0	0	7,371	11,066
Total	0	0	0	0	7,396	11,090	0	0	7,396	11,090

Table 2. Total Funding by Resource Type

Type	Wetlands (original)	Wetlands (final)	Prairies (original)	Prairies (final)	Forest (original)	Forest (final)	Habitats (original)	Habitats (final)	Total (original)	Total (final)
Restore	\$0	\$0	\$0	\$0	\$18,500	\$23,600	\$0	\$0	\$18,500	\$23,600
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0	\$807,500	\$800,800	\$0	\$0	\$807,500	\$800,800
Total	\$0	\$0	\$0	\$0	\$826,000	\$824,400	\$0	\$0	\$826,000	\$824,400

Table 3. Acres within each Ecological Section

Type	Metro Urban (original)	Metro Urban (final)	ForestPrairie (original)	Forest Prairie (final)	SE Forest (original)	SE Forest (final)	Prairie (original)	Prairie (final)	N Forest (original)	N Forest (final)	Total (original)	Total (final)
Restore	0	0	0	0	25	24	0	0	0	0	25	24
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	1,213	2,158	489	550	5	5	5,664	8,353	7,371	11,066
Total	0	0	1,213	2,158	514	574	5	5	5,664	8,353	7,396	11,090

Table 4. Total Funding within each Ecological Section

Type	Metro Urban (original)	Metro Urban (final)	ForestPrairie (original)	Forest Prairie (final)	SE Forest (original)	SE Forest (final)	Prairie (original)	Prairie (final)	N Forest (original)	N Forest (final)	Total (original)	Total (final)
Restore	\$0	\$0	\$0	\$0	\$18,500	\$23,600	\$0	\$0	\$0	\$0	\$18,500	\$23,600
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$145,700	\$142,600	\$134,200	\$134,500	\$7,000	\$4,800	\$520,600	\$518,900	\$807,500	\$800,800
Total	\$0	\$0	\$145,700	\$142,600	\$152,700	\$158,100	\$7,000	\$4,800	\$520,600	\$518,900	\$826,000	\$824,400

Target Lake/Stream/River Feet or Miles (original)

0

Target Lake/Stream/River Feet or Miles (final)

0

Explain the success/shortage of acre goals:

The program was tremendously successful at achieving accomplishments that exceeded planned accomplishments by almost 40% and by completing the work at a rate of about 30% less per acre than planned. Work sometimes slowed due to inclimate weather or winter conditions that would not allow shearing. But all-in-all, the multi-year nature of the funding provided for adequate opportunities to take advantage when mother nature cooperated.

Parcel List

Section 1 - Restore / Enhance Parcel List

Aitkin

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
FY15 Brushland Aitkin WMA Highline - Mow	04726202	35	\$3,292	Yes	This project rejuvenated rank lowland brush species via skid steer mowing which will improve deer browse and stand structure.

Becker

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Smoky Hills SF jack pine aerial planting	14037215	29	\$316	Yes	This project involved aerial planting of jack pine seed to enhance and accelerate the re-establishment or establishment of jack pine in recent clearcut areas. This was done on sites where jack pine is native to the area but currently healthy stands are depleating due to other tree species taking over disturbed forest.
Two Inlets SF jack pine aerial planting	14136229	113	\$1,230	Yes	This project involved aerial planting of jack pine seed to enhance and accelerate the re-establishment or establishment of jack pine in recent clearcut areas. This was done on sites where jack pine is native to the area but currently healthy stands are depleating due to other tree species taking over disturbed forest.
White Earth SF jack pine aerial planting	14237233	9	\$98	Yes	This project involved aerial planting of jack pine seed to enhance and accelerate the re-establishment or establishment of jack pine in recent clearcut areas. This was done on sites where jack pine is native to the area but currently healthy stands are depleating due to other tree species taking over disturbed forest.

Beltrami

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Beltrami Island SF jack pine aerial planting	16037208	244	\$2,657	Yes	This project involved aerial planting of jack pine seed to enhance and accelerate the re-establishment or establishment of jack pine in recent clearcut areas. This was done on sites where jack pine is native to the area but currently healthy stands are depleating due to other tree species taking over disturbed forest.
Mertz Shear	15737221	537	\$35,585	Yes	This project rejuvenated lowland brush species by shearing old, rank species comprising mainly of willow.

Cass

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Badoura Woodcock Brushland Project	13931218	589	\$46,007	Yes	This project regenerated and enhanced just over 588 acres of brushland and young upland forest habitats for woodcock, sandhill crane and for various other brushland habitat community species. This project included both winter and growing season shearing or rotary axe treatments in order to provide varying treatments that produce different responses from the woody vegetation. Work was performed on state forest and county administered forest land.
Dry Sand WMA Lowland Brush Mowing	13532206	58	\$7,666	Yes	This project set back succession and rejuvenated the woody vegetation by mowing old, rank lowland willow and other brush species to enhance woodcock, ruffed grouse and deer habitats.
FY15 Goose Lake Meadow Brush Mowing	14426233	47	\$13,619	Yes	This project cut old rank willow utilizing a rotary axe to rejuvenate the brushland woody species in order to improve deer browse and winter yarding habitat.

Fillmore

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Nosek Hardwood Planting	10113224	5	\$4,836	Yes	This project re-established hardwood forest on a portion of Nosek WMA in an area of old pasture. Trees and shrubs were planted and many invading boxelder were girdled and chemically treated.

Goodhue

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Hoffman Hardwood Seeding	11215207	0	\$1,190	Yes	The objective of this project was to restore forest habitat on a small agricultural field located in a floodplain area on Hoffman WMA. The restoration to native hardwood trees and shrub species would have benefited deer, turkey and song birds in the area. The small ag field was planted in the spring of 2013. The planting had failed due to the site flooding shortly after planting and the site ultimately turned into a noxious weed patch. The manager decided not to try planting again.

Hubbard

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Paul Bunyan SF jack pine aerial planting	14132208	20	\$218	Yes	This project involved aerial planting of jack pine seed to enhance and accelerate the re-establishment or establishment of jack pine in recent clearcut areas. This was done on sites where jack pine is native to the area but currently healthy stands are depleting due to other tree species taking over disturbed forest.
Paul Bunyan SF upland brushland mowing	14233205	86	\$11,631	Yes	This project created prime woodcock and to a lesser extent, ruffed grouse habitat by rejuvenating the willow species to a younger age class by mowing old willow around the perimeter of small wetlands in Paul Bunyan SF.
Trust Land aerial jack pine planting	13935236	89	\$969	Yes	This project involved aerial planting of jack pine seed to enhance and accelerate the re-establishment or establishment of jack pine in recent clearcut areas. This was done on sites where jack pine is native to the area but currently healthy stands are depleting due to other tree species taking over disturbed forest.

Itasca

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Bass Brook Brush Removal and Oak Planting	05526213	4	\$4,245	Yes	Oak trees provide hard mast for a variety of wildlife species as well as contributing to forest diversity. Oaks also provide wildlife nesting and denning sites. This project area is an oak stand in the Bass Brook WMA. Seven gaps in the forest canopy were identified for a total of 4 acres. These gaps contain dense stands of beaked hazelnut. Brush saws will be used to hand cut the hazelnut to create an open habitat free of competition for oak production during summer of 2011. A total of about 1000 bur oak and 1000 pin oak were planted in the forest gaps in the spring of 2013.
Freeley Oak Seeding	05525233	28	\$2,123	Yes	Oak acorns were hand planted on 28 acres of public land to provide and enhance wildlife habitat and increase forest diversity. The future acorn mast crop produced by these trees will provide food for wildlife. This planting will also restore oak that was lost from a past outbreak of the two-lined chestnut borer insect.
FY15 Feeley Oak Enhancement	05523236	70	\$6,160	Yes	This project involved hand thinning oak saplings that were resprouting from stumps of a previous oak harvest. Thinning stumps, at 4 healthy stems per stump, will help stimulate oak recovery and help ensure a healthier oak stand in the near future.

Kanabec

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Ann Lake WMA Brushland Mowing	04024230	45	\$4,804	Yes	This project rejuvenated old, rank brushland species, mainly alder, by mowing via skid steer. The treatment will benefit woodcock, deer and ruffed grouse by setting back succession and creating younger woody vegetation in the immediate area.

Koochiching

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Littlefork Shear 2015	07023221	174	\$14,046	Yes	This project sheared mature brush on frozen ground to improve habitat by setting back succession for openland SG CN wildlife species such as sharp-tailed grouse, short-eared owls and northern harriers. These sites are all within a priority brushland complex identified for openland habitat projects and are in continuation of a previously funded project.

Lake

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Boomers Rd.	05511235	45	\$11,575	Yes	The project involved a single pass disc trenching & planting of a mix of conifer and shrub species to increase diversity & long lived conifers on site. This project was located on Lake County owned lands.
Clark Lake Rd Timberdoodle	05611235	26	\$10,421	Yes	This woodcock habitat enhancement project created small openings for woodcock singing grounds. It also produced more diversity by creating younger forest conditions on the treatment sites that will result in better feeding and nesting habitat for woodcock and other wildlife species. The planting of mixed native fruit-bearing shrubs will add some diversity to the site.
FY15 Conifer Release	05806236	36	\$4,392	Yes	This project involved hand thinning or releasing of white pine, white cedar and spruce that were planted in 2007. Pine and cedar were protected. The hand releasing will help produce a healthier stand of conifers on this site.
FY15 Twin-Mitchell Conifer Enhancement	06317218	103	\$14,661	Yes	The treatments on this project will increase upland conifers (i.e., upland black spruce, jack pine, white pine, white spruce) as a component in cover types to meet goals set forth in the Border Lakes and North 4 SFRMP plans. This project will result in mixed stands with increased species diversity which will benefit a variety of both game and non-game wildlife species. Increasing the conifer component in stands will also improve thermal cover for moose.

Marshall

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Thief River Falls Brushland Enhancement	15538222	1,135	\$71,200	Yes	This project sheared several hundred acres of old, rank lowland brush on Wolf Trail WMA to set back succession, rejuvenate the brush species ultimately creating a young age class of willow and other brushland species.

Mille Lacs

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Mille Lacs and Four Brooks Brushland Burns	04125226	4,150	\$23,595	Yes	This project utilized contract helicopters to assist in prescribed burn ignition and control activities. Two large burns were completed for a total of 4050 acres of old, rank willow and alder burned in lowland brush habitats. The prescribed fire will set back succession of old willow and rejuvenate the lowland willow stands thus improving deer browse and wintering habitat. 100 acres of a lowland brush area was sprayed in order to kill invasive cattail and encourage the re-establishment of willow and alder.

Morrison

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Popple Lake Buckthorn Control	04032215	96	\$70,145	Yes	This project utilized CCM crews to cut and chemically treat all invasive buckthorn found on the forested portion of Popple Lake WMA.

Olmsted

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Yeager Direct Seeding	10713232	18	\$20,294	Yes	This project restored forest habitat on an old agricultural field which was previously being farmed in a floodplain area on Gordy Yeager WMA. A lowland forest tree and shrub species mix was used to re-establish forest and will benefit deer, turkeys, song birds and small mammals native to the area.

Roseau

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Juneberry Brush Shearing	16244226	222	\$15,403	Yes	This project rejuvenated lowland brush species by shearing old, rank species comprising mainly of willow.
Nelson Bridge Brush Shearing	16343225	781	\$47,277	Yes	This project rejuvenated hundreds of acres of lowland brush species by shearing old, rank species comprising mainly of willow.

Stearns

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Sauk Rapids Brushland Management	12434215	20	\$8,703	Yes	This project removed certain tree species, mainly cottonwood, that were invading brushland areas where the cottonwood was taking over and displacing more desirable species for native wildlife in the immediate area.

St. Louis

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Cloquet River Conifer Release in Wood Turtle Habitat	05513230	469	\$65,548	Yes	This project involved hand release of jack pine and long lived conifer species by cutting competing species such as aspen and balsam fir over growing season. It also involved the planting and bud capping of conifers. These activities will help ensure healthy and vigorous conifer stands will develop. This project involved treatment on many sites over several wildlife work areas in Region 2. Many project sites are within MCBS sites of outstanding or high biodiversity significance ranked for their significance for wood turtle.
Forest Enhancement Moose Zone 30 Project	05812222	134	\$20,050	Yes	This project enhanced moose habitat, mainly in Moose Zone 30 near the St. Louis and Lake County interface. Treatment regenerated forest stands with site level thinning to increase white spruce and other upland conifers to improve within-stand diversity for moose and other boreal forest species.
SNF/DNR Coop Blueberry Oak Habitat Enhancement	06515206	278	\$65,574	Yes	This project's objectives are to manage oak outcrop forest habitats to enhance oak and fruiting shrub components. Treatment included the hand release of oaks and fruiting shrubs. Follow-up treatment (not requested in this proposal) will be the reintroduction of low intensity fire.
Tower Areas Forestry Conifer Enhancement	06421236	29	\$4,057	Yes	This project increased upland conifers (i.e., upland black spruce, jack pine, white pine, white spruce) as a component in cover types to meet goals set forth in the Border Lakes and North 4 SFRMP plans by direct planting and release cutting. This project will result in mixed stands with increased species and structural diversity which will benefit a variety of both game and non-game wildlife species. Increasing the conifer component in stands will improve thermal cover for moose across portions of their range in NE Minnesota.

St. Louis

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
FY15 Sax-Zim Mowing	05518234	151	\$12,666	Yes	This project set back succession and reduced the overall density of woody vegetation by mowing old rank willow and other brushland woody species. It will create a habitat that contains a more patchwork of woody vegetation instead of a solid stand of woody vegetation. It will improve nesting cover for ground-nesting bird species, improve browse for deer (i.e. rejuvenate the willow component), and create a more open landscape for sharp-tailed grouse use. Subsequent management will include prescribed fire to maintain the site in a more open state with less and young brushland woody species.

Wadena

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Huntersville SF jack pine aerial planting	13833221	35	\$381	Yes	This project involved aerial planting of jack pine seed to enhance and accelerate the re-establishment or establishment of jack pine in recent clearcut areas. This was done on sites where jack pine is native to the area but currently healthy stands are depleting due to other tree species taking over disturbed forest.
Jack Pine Woodland Enhancement	13834224	480	\$50,340	Yes	This project mainly restored and enhanced jack pine forest habitats on state forest, wildlife management area and county forest lands in the Park Rapids and Bemidji areas. A minor portion of these funds were used to enhance approximately 12 acres of oak savanna habitats.
Lyon SF jack pine aerial planting	13533205	63	\$686	Yes	This project involved aerial planting of jack pine seed to enhance and accelerate the re-establishment or establishment of jack pine in recent clearcut areas. This was done on sites where jack pine is native to the area but currently healthy stands are depleting due to other tree species taking over disturbed forest.
Lyons SF Lowland Brush Mowing/Mulching	13533208	83	\$10,126	Yes	This project set back succession and rejuvenated the woody vegetation by mowing old, rank lowland willow and other brush species.

Winona

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Whitewater Hardwood Planting and Post Sale Treatment	10810226	550	\$134,491	Yes	This project enhanced hundreds of acres of forests in numerous sites on Whitewater WMA through planting of trees, post-harvest site treatments and release cutting to reduce competition on naturally regenerating trees. The enhancement will benefit deer, turkey and numerous other native bird and mammal species native to the area.
White Water Wildlife Management Area FY15 Direct Seeding	10710214	6	\$2,080	Yes	This project involved preparing a site via light disking then planting a mix of black walnut, bur oak, red oak and a mix of native shrubs on the 6 acre site to improve habitat for deer, turkeys and other native wildlife species.

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.

Completed Parcel: Ann Lake WMA Brushland Mowing

# of Total Acres:	45
County:	Kanabec
Township:	040
Range:	24
Direction:	2
Section:	30
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	45
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$4,804

Completed Parcel: Badoura Woodcock Brushland Project

# of Total Acres:	588.5
County:	Cass
Township:	139
Range:	31
Direction:	2
Section:	18
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	588.5
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$46,007

Completed Parcel: Bass Brook Brush Removal and Oak Planting

# of Total Acres:	4
County:	Itasca
Township:	055
Range:	26
Direction:	2
Section:	13
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	4
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$4,245

Completed Parcel: Beltrami Island SF jack pine aerial planting

# of Total Acres:	244
County:	Beltrami
Township:	160
Range:	37
Direction:	2
Section:	08
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	244
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$2,657

Completed Parcel: Boomers Rd.

# of Total Acres:	45
County:	Lake
Township:	055
Range:	11
Direction:	2
Section:	35
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	45
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$11,575

Completed Parcel: Clark Lake Rd Timberdoodle

# of Total Acres:	26
County:	Lake
Township:	056
Range:	11
Direction:	2
Section:	35
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	26
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$10,421

Completed Parcel: Cloquet River Conifer Release in Wood Turtle Habitat

# of Total Acres:	469
County:	St. Louis
Township:	055
Range:	13
Direction:	2
Section:	30
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	469
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$65,548

Completed Parcel: Dry Sand WMA Lowland Brush Mowing

# of Total Acres:	58
County:	Cass
Township:	135
Range:	32
Direction:	2
Section:	06
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	58
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$7,666

Completed Parcel: Forest Enhancement Moose Zone 30 Project

# of Total Acres:	134
County:	St. Louis
Township:	058
Range:	12
Direction:	2
Section:	22
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	134
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$20,050

Completed Parcel: Freeley Oak Seeding

# of Total Acres:	28
County:	Itasca
Township:	055
Range:	25
Direction:	2
Section:	33
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	28
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$2,123

Completed Parcel: FY15 Brushland Aitkin WMA Highline - Mow

# of Total Acres:	35
County:	Aitkin
Township:	047
Range:	26
Direction:	2
Section:	02
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	35
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$3,292

Completed Parcel: FY15 Conifer Release

# of Total Acres:	36
County:	Lake
Township:	058
Range:	06
Direction:	2
Section:	36
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	36
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$4,392

Completed Parcel: FY15 Feeley Oak Enhancement

# of Total Acres:	70
County:	Itasca
Township:	055
Range:	23
Direction:	2
Section:	36
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	70
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$6,160

Completed Parcel: FY15 Goose Lake Meadow Brush Mowing

# of Total Acres:	47
County:	Cass
Township:	144
Range:	26
Direction:	2
Section:	33
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	47
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$13,619

Completed Parcel: FY15 Sax-Zim Mowing

# of Total Acres:	151
County:	St. Louis
Township:	055
Range:	18
Direction:	2
Section:	34
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	151
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$12,666

Completed Parcel: FY15 Twin-Mitchell Conifer Enhancement

# of Total Acres:	103
County:	Lake
Township:	063
Range:	17
Direction:	2
Section:	18
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	103
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$14,661

Completed Parcel: Hoffman Hardwood Seeding

# of Total Acres:	0
County:	Goodhue
Township:	112
Range:	15
Direction:	2
Section:	07
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	0
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$1,190

Completed Parcel: Huntersville SF jack pine aerial planting

# of Total Acres:	35
County:	Wadena
Township:	138
Range:	33
Direction:	2
Section:	21
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	35
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$381

Completed Parcel: Jack Pine Woodland Enhancement

# of Total Acres:	479.7
County:	Wadena
Township:	138
Range:	34
Direction:	2
Section:	24
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	479.7
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$50,340

Completed Parcel: Juneberry Brush Shearing

# of Total Acres:	222
County:	Roseau
Township:	162
Range:	44
Direction:	2
Section:	26
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	222
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$15,403

Completed Parcel: Littlefork Shear 2015

# of Total Acres:	174
County:	Koochiching
Township:	070
Range:	23
Direction:	2
Section:	21
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	174
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$14,046

Completed Parcel: Lyon SF jack pine aerial planting

# of Total Acres:	63
County:	Wadena
Township:	135
Range:	33
Direction:	2
Section:	05
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	63
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$686

Completed Parcel: Lyons SF Lowland Brush Mowing/Mulching

# of Total Acres:	83
County:	Wadena
Township:	135
Range:	33
Direction:	2
Section:	08
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	83
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$10,126

Completed Parcel: Mertz Shear

# of Total Acres:	537
County:	Beltrami
Township:	157
Range:	37
Direction:	2
Section:	21
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	537
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$35,585

Completed Parcel: Mille Lacs and Four Brooks Brushland Burns

# of Total Acres:	4150
County:	Mille Lacs
Township:	041
Range:	25
Direction:	2
Section:	26
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	4150
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$23,595

Completed Parcel: Nelson Bridge Brush Shearing

# of Total Acres:	781
County:	Roseau
Township:	163
Range:	43
Direction:	2
Section:	25
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	781
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$47,277

Completed Parcel: Nosek Hardwood Planting

# of Total Acres:	5
County:	Fillmore
Township:	101
Range:	13
Direction:	2
Section:	24
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	5
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$4,836

Completed Parcel: Paul Bunyan SF jack pine aerial planting

# of Total Acres:	20
County:	Hubbard
Township:	141
Range:	32
Direction:	2
Section:	08
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	20
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$218

Completed Parcel: Paul Bunyan SF upland brushland mowing

# of Total Acres:	86
County:	Hubbard
Township:	142
Range:	33
Direction:	2
Section:	05
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	86
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$11,631

Completed Parcel: Popple Lake Buckthorn Control

# of Total Acres:	96
County:	Morrison
Township:	040
Range:	32
Direction:	2
Section:	15
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	96
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$70,145

Completed Parcel: Sauk Rapids Brushland Management

# of Total Acres:	20
County:	Stearns
Township:	124
Range:	34
Direction:	2
Section:	15
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	20
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$8,703

Completed Parcel: Smoky Hills SF jack pine aerial planting

# of Total Acres:	29
County:	Becker
Township:	140
Range:	37
Direction:	2
Section:	15
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	29
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$316

Completed Parcel: SNF/DNR Coop Blueberry Oak Habitat Enhancement

# of Total Acres:	278
County:	St. Louis
Township:	065
Range:	15
Direction:	2
Section:	06
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	278
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$65,574

Completed Parcel: Thief River Falls Brushland Enhancement

# of Total Acres:	1135
County:	Marshall
Township:	155
Range:	38
Direction:	2
Section:	22
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	1135
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$71,200

Completed Parcel: Tower Areas Forestry Conifer Enhancement

# of Total Acres:	28.5
County:	St. Louis
Township:	064
Range:	21
Direction:	2
Section:	36
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	28.5
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$4,057

Completed Parcel: Trust Land aerial jack pine planting

# of Total Acres:	89
County:	Hubbard
Township:	139
Range:	35
Direction:	2
Section:	36
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	89
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$969

Completed Parcel: Two Inlets SF jack pine aerial planting

# of Total Acres:	113
County:	Becker
Township:	141
Range:	36
Direction:	2
Section:	29
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	113
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$1,230

Completed Parcel: White Earth SF jack pine aerial planting

# of Total Acres:	9
County:	Becker
Township:	142
Range:	37
Direction:	2
Section:	33
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	9
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$98

Completed Parcel: Whitewater Hardwood Planting and Post Sale Treatment

# of Total Acres:	549.5
County:	Winona
Township:	108
Range:	10
Direction:	2
Section:	26
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	549.5
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$134,491

Completed Parcel: White Water Wildlife Management Area FY15 Direct Seeding

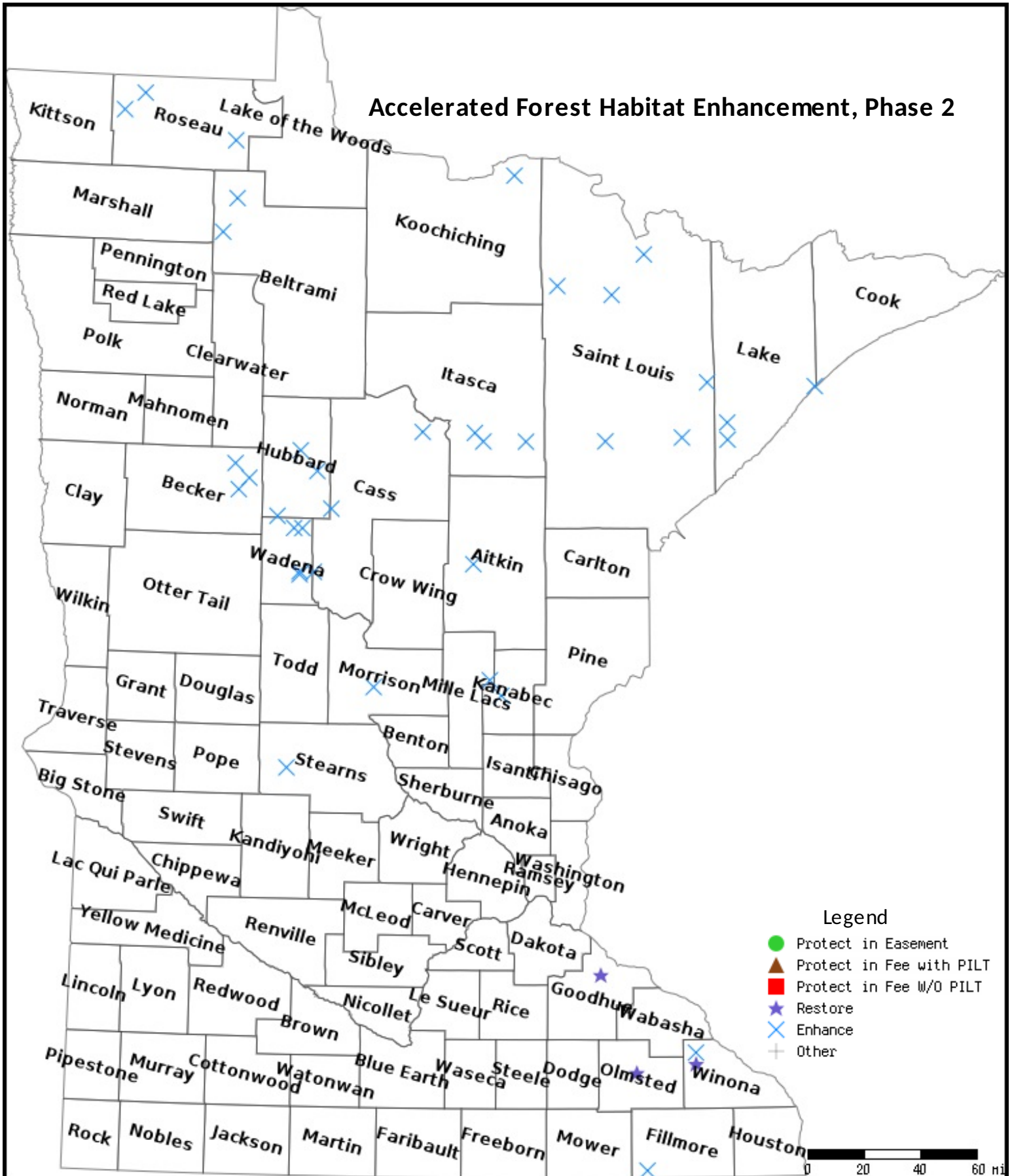
# of Total Acres:	6
County:	Winona
Township:	107
Range:	10
Direction:	2
Section:	14
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	6
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$2,080

Completed Parcel: Yeager Direct Seeding

# of Total Acres:	18
County:	Olmsted
Township:	107
Range:	13
Direction:	2
Section:	32
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	18
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$20,294

Parcel Map

Accelerated Forest Habitat Enhancement, Phase 2



Data Generated From Parcel List