

2013 Project Abstract

For the Period Ending June 30, 2016

PROJECT TITLE: Scientific and Natural Area Restoration, Enhancement & Citizen Engagement
PROJECT MANAGER: Margaret (Peggy) Booth
AFFILIATION: DNR Scientific & Natural Area Program
MAILING ADDRESS: 500 Lafayette Rd N, Box 25
CITY/STATE/ZIP: St. Paul, MN 55155-4025
PHONE: 651-259-5088
E-MAIL: peggy.booth@state.mn.us
WEBSITE: www.mndnr.gov/snas
FUNDING SOURCE: Environment and Natural Resources Trust Fund
LEGAL CITATION: M.L. 2013, Chp. 52, Sec. 2, Subd. 04b

APPROPRIATION AMOUNT: \$1,500,000

Overall Project Outcome and Results

Habitat restoration and enhancement actions increased the quality of habitat on more than 1500 acres of designated Scientific and Natural Areas (SNAs) through achieving: restoration of about 235 acres at 4 SNAs; woody invasive species control on 371 acres at 49 SNAs, herbaceous invasive species treatment on 266 acres at 44 SNAs, and installation of invasive species control boot brush kiosks at 5 SNAs; about 26 miles of burn breaks at 24 SNAs and completion of 720 acres of prescribed burns at 25 SNAs and 141 acres of prescribed haying at 7 SNAs; and site development work (e.g. entry and boundary signs, new gates, and site cleanup) at over 50 SNAs. Conservation Corps Minnesota was involved in 42 of these projects. Adaptive Management Plans have been completed for 19 SNAs. Ecological monitoring has been completed at 7 SNAs; including monitoring of snakes at an SNA which is yielding new information that will inform natural resource management work.

The public's and youth involvement in SNAs and their knowledge and skills about biodiversity conservation has significantly increased through the SNA Outreach Initiative in its second phase through this appropriation. As of September 2015: the SNA Facebook page reached over 34,000 people with over 1500 likes of the page and the quarterly SNA e-newsletter *Nature Notes* reached over 3,250 subscribers. From January 2014 through June 2015, about 170 SNA events were held involving over 1550 people and volunteer site stewards were helping monitor and care for 128 or 80% of SNAs. The statewide color map locating all SNAs was updated and 5000 copies of this second addition were printed.

Project Results Use and Dissemination

Dissemination is primarily achieved through the upgraded SNA webpage on the DNR website: <http://www.mndnr.gov/snas> and through other electronic/social media which are linked through this webpage. With support through this funding, the SNA Facebook page was launched in February 2014; the SNA Facebook page has achieved over 1,500 page likes and total monthly reach of over 34,000 by March 2015. The 11th (Winter 2014) issue of the *Nature Notes* e-newsletter was delivered to over 3,250 subscribers. The statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) was updated and 5000 copies of this second addition were printed and nearly all have been distributed.



Environment and Natural Resources Trust Fund (ENRTF) M.L. 2013 Work Plan Final Report

Date of Status Update Report: August 15, 2016
Date of Next Status Update Report: Final Report
Date of Work Plan Approval: June 25, 2013
Project Completion Date: June 30, 2016

PROJECT TITLE: Scientific and Natural Area Restoration, Enhancement & Citizen Engagement

Project Manager: Margaret (Peggy) Booth
Affiliation: Minnesota Department of Natural Resources, Division of Ecological & Water Resources
Mailing Address: 500 Lafayette Road, Box 25
City/State/Zip Code: St Paul, MN 55155-4025
Telephone Number: (651)259-5088
Email Address: peggy.booth@state.mn.us
Web Address: mndnr.gov/snas

Location: statewide

Total ENRTF Project Budget:	ENRTF Appropriation:	\$1,500,000
	Amount Spent:	1,468,134
	Balance:	\$31,866

Legal Citation: M.L. 2013, Chp. 52, Sec. 2, Subd. 04b

Appropriation Language:

\$1,500,000 the first year is from the trust fund to the commissioner of natural resources to conserve sites of biodiversity significance by restoring and enhancing lands established as scientific and natural areas as provided in Minnesota Statutes, section 86A.05, subdivision 5, and providing volunteer engagement and outreach. This appropriation is available until June 30, 2016, by which time the project must be completed and final products delivered.

I. PROJECT TITLE: SNA Conservation, Restoration, Enhancement & Citizen Engagement

II. PROJECT SUMMARY:

The effectiveness of the DNR Scientific and Natural Area (SNA) Program in conserving and managing sites of biodiversity significance identified by the Minnesota Biological Survey (MBS) will be improved and public support for and involvement in their conservation will be increased. Native habitat restoration and enhancement activities would be implemented on about 1600 acres of SNAs threatened by human impacts, invasives, and lack of natural disturbance regimes. SNA monitoring and strategic targeting of conservation

actions and agreements will achieve additional conservation of biodiversity significance sites. Furthermore, to sustain SNAs and to increase citizen and student knowledge and skills about biodiversity conservation, SNA naturalists will engage youth and volunteers in about 80 events and as SNA site stewards at about 100 SNAs.

III. PROJECT STATUS UPDATES:

Project Status as of November 25, 2013:

Habitat restoration and enhancement project activities completed to date include: invasive species treatment has been initiated at 8 SNAs; about 5 miles of burn breaks at 6 SNAs have been installed; and site development work (e.g. entry and boundary signs and site cleanup) has been done at 10 SNAs. Development of an e-book version of the SNA Guide has been initiated. To date, 4 events have been held with over 75 participants (made possible all or in part with this appropriation) and more than 112 volunteer site stewards have committed to help care for SNAs.

Project Status as of March 15, 2014:

Habitat restoration and enhancement project activities completed to date include: invasive species treatment has been completed on 21 acres at 8 SNAs; about 6.5 miles of burn breaks at 8 SNAs have been installed; and site development work (e.g. entry and boundary signs and site cleanup) has been done at 15 SNAs. The SNA Facebook page was launched reaching about 1000 people per week with 790 likes of the page in its first 5 weeks. The 9th issue of *Nature Notes* reached over 2,130 subscribers. Volunteer site stewards are helping monitor and care for 116 SNAs.

Project Status as of September 10, 2014:

Habitat restoration and enhancement project activities completed to date include: invasive species treatment has been completed on 230 acres at 21 SNAs; prescribed burns have been completed on 47 acres at 2 SNAs; and site development work (e.g. entry and boundary signs and site cleanup) has been done at 27 SNAs. Monitoring of 4 snakes at 1 SNA is yielding new information that will inform natural resource management work. The SNA Facebook page now reaches about 12,000 people per month with over 1100 likes of the page. The 10th issue of *Nature Notes* reached over 2,612 subscribers. About 70 SNA events were held involving over 400 people. Volunteer site stewards are helping monitor and care for 124 SNAs. The statewide color map locating all SNAs was updated and 5000 copies of this second addition were printed.

Project Status as of March 12, 2015:

Habitat restoration and enhancement project activities completed to date include: 19 acres at 3 SNAs have been seeded with locally collected seed; invasive species treatment has been completed on 327 acres at 21 SNAs; prescribed burns have been completed on 53 acres at 5 SNAs; prescribed haying has been done on 57 acres at 3 SNAs; and site development work (e.g. entry and boundary signs and site cleanup) has been done at 37 SNAs. Adaptive Management Plans have been completed for 2 SNAs. Monitoring of snakes at an SNA is yielding new information that will inform natural resource management work. The SNA Facebook page now reaches over 34,000 people with over 1500 likes of the page. The quarterly SNA e-newsletter *Nature Notes* reached over 3,250 subscribers. About 100 SNA events were held involving over 800 people. Volunteer site stewards are helping monitor and care for 133 SNAs. The statewide color map locating all SNAs was updated and 5000 copies of this second addition were printed.

Project Status as of September 15, 2015:

Habitat restoration and enhancement project activities completed to date include: 33 acres at 3 SNAs have been seeded with locally collected seed; invasive species treatment has been completed on 498 acres at 42 SNAs; prescribed burning or haying have been completed on 580 acres at 13 SNAs; and site development work (e.g. entry and boundary signs and site cleanup) has been done at 38 SNAs. Adaptive Management Plans have been completed for 2 SNAs. Monitoring of snakes at an SNA is yielding new information that will inform natural

resource management work. The SNA Facebook page now reaches over 34,000 people with over 1500 likes of the page. The quarterly SNA e-newsletter *Nature Notes* reached over 3,250 subscribers. About 170 SNA events were held involving over 1550 people. Volunteer site stewards are helping monitor and care for 128 or 80% of SNAs. The statewide color map locating all SNAs was updated and 5000 copies of this second addition were printed.

Project Status as of March 24, 2016:

Habitat restoration and enhancement project activities completed to date include: 72 acres at 4 SNAs have been seeded with locally collected seed; invasive species treatment has been completed on 503 acres at 42 SNAs; prescribed burning or haying have been completed on 780 acres at 19 SNAs; and site development work (e.g. entry and boundary signs and site cleanup) has been done at 38 SNAs. Adaptive Management Plans have been completed for 3 SNAs. Ecological monitoring has been completed at 7 SNAs; including monitoring of snakes at an SNA which is yielding new information that will inform natural resource management work. As of September 2015: the SNA Facebook page reached over 34,000 people with over 1500 likes of the page and the quarterly SNA e-newsletter *Nature Notes* reached over 3,250 subscribers. From January 2014 through June 2015, about 170 SNA events were held involving over 1550 people and volunteer site stewards were helping monitor and care for 128 or 80% of SNAs. The statewide color map locating all SNAs was updated and 5000 copies of this second addition were printed.

Overall Project Outcomes and Results:

Habitat restoration and enhancement actions increased the quality of habitat on more than 1500 acres of designated Scientific and Natural Areas (SNAs) through achieving: restoration of about 235 acres at 4 SNAs; woody invasive species control on 371 acres at 49 SNAs, herbaceous invasive species treatment on 266 acres at 44 SNAs, and installation of invasive species control boot brush kiosks at 5 SNAs; about 26 miles of burn breaks at 24 SNAs and completion of 720 acres of prescribed burns at 25 SNAs and 141 acres of prescribed haying at 7 SNAs; and site development work (e.g. entry and boundary signs, new gates, and site cleanup) at over 50 SNAs. Conservation Corps Minnesota was involved in 42 of these projects. Adaptive Management Plans have been completed for 19 SNAs. Ecological monitoring has been completed at 7 SNAs; including monitoring of snakes at an SNA which is yielding new information that will inform natural resource management work.

The public's and youth involvement in SNAs and their knowledge and skills about biodiversity conservation has significantly increased through the SNA Outreach Initiative in its second phase through this appropriation. As of September 2015: the SNA Facebook page reached over 34,000 people with over 1500 likes of the page and the quarterly SNA e-newsletter *Nature Notes* reached over 3,250 subscribers. From January 2014 through June 2015, about 170 SNA events were held involving over 1550 people and volunteer site stewards were helping monitor and care for 128 or 80% of SNAs. The statewide color map locating all SNAs was updated and 5000 copies of this second addition were printed.

IV. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1: Biodiversity Conservation, Habitat Restoration & Enhancement

Description:

Restoration and enhancement activities will be completed on about 1600 acres at ~30 state designated SNAs. Interpretive kiosks will be developed and installed at ~10 SNAs. Restoration and enhancement projects will be based upon ecological restoration and management plans and/or project plans with goals for reconstructing or enhancing plant communities that are native to the site based upon soils, topography, geology, and other factors necessary to sustain the plant community. Each plan includes an implementation timetable which summarizes ongoing management needs and funding. Long-term management costs (e.g. invasives treatments, prescribed fire, and monitoring/evaluation) will be covered by a combination funding sources, including, but not limited to, ENRTF, OHF, federal grants, and other funds as appropriated. New Adaptive Management Plans will

be completed for ~19 SNAs; also including the afore-mentioned ecological goals, considerations, and implementation table (see also below under AMSD).

Activities will be carried out by DNR staff- SNA crews, Conservation Corps Minnesota (CCM), Sentence to Service (STS), volunteers, and/or contractors. Activities include seed collection, planting, exotics control, woody encroachment removal, site clean-up, signing (including development & installation of interpretive kiosks), fencing, prescribed burns (or alternative prescribed disturbance for ecological management purposes, such as prescribed haying or mowing, necessary for sites or conditions where use of fire is limited) and management plan preparation, as well as the monitoring and evaluation, strategic analysis and prioritization, and accomplishment tracking discussed below. All restoration will use seeds/plants of a local ecotype, collected from onsite or within 25 miles. Restoration and enhancement of degraded and rare land features (particularly native prairie, savanna, and forest helps implement the SWAP and achieve Habitat Recommendation 5 of the SCPP. Priority sites for SNA restoration projects (plant community reconstruction or rehabilitation) are shown on the attached map series.

Management practices at ~9 SNAs would be monitored to identify adaptive management process improvements needed to achieve better habitat for rare species and Species of Greatest Conservation Need (SGCN). Monitoring will include the initial evaluation of restoration projects done through this appropriation and periodic subsequent evaluations based upon the monitoring protocols. Restoration project will be evaluated in terms of project goals and to ascertain how well the native plants have been established and non-natives controlled. In order to facilitate long term ecological and site management monitoring and more robust and accurate accomplishment reporting, the Adaptive Management Spatial Database (AMSD) was launched with ENRTF support. Through this appropriation, an updated computer application will be developed with dynamic resource links so that Adaptive Management Plans are actively developed and updated in AMSD and directly tied to project planning, accomplishment reporting, and monitoring. This will foster adaptive management and continuous process improvements by integrating the most current ecological and technical information with dynamic management/project plans, implementation, and monitoring.

Each of the 22 SNA-held conservation easements (protecting over 1510 acres within or adjoining 12 SNAs) that are scheduled for monitoring during this appropriation would be monitored; the goal of the SNA program is to monitor each easement every 2-3 years, so most easements would receive a formal on-site monitoring visit with results entered into the department land records, landowners will be contacted, management opportunities identified, and follow-up visits would be conducted if needed to address issues discovered. The *Scientific and Natural Area (SNA) Program Conservation Easement Long-Term Stewardship, Monitoring and Enforcement Plan* is available upon request. The second phase of the SNA/rare resource strategic prioritization (initiated through an 2011 ENRTF appropriation) will incorporate new information on water quality/watershed approaches, geological features of statewide significance, and new MCBS data into the GIS-based analysis to refine priorities and increase coordinated rare resource protection with other Divisions and partners and to implement State Wildlife Action Plan (SWAP). This tool will aid in targeting at least 9 biodiversity significance sites for SNA-guided management through Natural Area Registry Agreements.

Summary Budget Information for Activity 1:

ENRTF Budget: \$ 1,168,401
Amount Spent: \$ 1,141,481
Balance: \$ 26,920

Activity Completion Date:

Outcome	Completion Date	Budget
1a. ~190 acres of restoration of forest, prairie, & outcrop sites	6/30/16	\$ 65,510
1b. ~650 acres of woody removal & invasives species treatment	6/30/16	\$ 232,310
1c. ~760 acres of prescribed burns or comparable prescribed disturbance	6/30/16	\$ 167,360
1d. ~10 SNA interpretive kiosks installed AND development work on ~25 sites	6/30/16	\$ 190,040

1e. management plans completed for ~19 SNAs	6/30/16	\$ 130,700
1f. adaptive management monitoring on ~9 7 SNA sites & AMSD management plan & monitoring software improvements	6/30/16	\$ 72,000
1g. monitoring of 2 SNA-held conservation easements	6/30/16	\$ 11,360
1h. strategic prioritization (Ph 2); natural area registry agreements on 9 sites	6/30/16	\$ 52,400

Note: total for this Activity includes \$83,830 for direct & necessary services; but individual outcome costs above do not.

Activity Status as of November 25, 2013:

1a. Restoration: Field work on restoration has not yet begun. **1b. Woody removal & Invasive Species Treatment:** Herbaceous invasives treatment (e.g. hand pulling wild carrot) has been initiated on 8 SNAs and woody removal has been initiated at 1 SNA. **1c. Prescribed Burning/Prescribed Disturbance:** About 5.0 miles of burnbreaks were installed at 6 SNAs and burn plans are being prepared for proposed spring 2014 prescribed burning. **1d. Development:** activities completed included: new signs (boundary, entry or rules) at 10 SNAs and site clean-up at 1 SNA. **1e. Management Planning:** Staff are identifying which SNAs will included in an RFP to contract their preparation. **1f. Ecological Monitoring & AMSD & 1g SNA Easement Monitoring:** This work is being done with previous ENRTF appropriations. **1h. Strategic Prioritization & NARs:** Phase 2 of the strategic prioritization has not started; NAR sites are being identified.

Activity Status as of March 15, 2014 – cumulative results to date (since July 2013):

1a. Restoration: Field work on restoration has not yet begun.
1b. Woody removal & Invasive Species Treatment: Woody removal projects have been completed on 14.7 acres at 6 SNAs (including work by CCM) and a contractor burned/disposed of woody material from a previous clearing of 65 acres. Herbaceous invasives treatment has been completed on 105.8 acres at one SNA.
1c. Prescribed Burning/Prescribed Disturbance: About 6.5 miles of burnbreaks were installed at 8 SNAs and burn plans and equipment are being prepared for proposed spring 2014 prescribed burning.
1d. Development: Activities completed included: new signs (boundary, entry or rules) at 13 SNAs and site clean-up at 2 SNAs (including work by CCM).
1e. Management Planning: Staff are identifying which SNAs will included in an RFP to contract their preparation and which plans will be prepared by staff.
1f. Ecological Monitoring & AMSD & 1g SNA Easement Monitoring: To date, this work is being done with previous ENRTF appropriations.
1h. Strategic Prioritization & NARs: Phase 2 of the strategic prioritization has not started; NAR sites are being identified.

Activity Status as of September 10, 2014 – cumulative results to date (since July 2013):

1a. Restoration: Seed harvest has been initiated on 28 acres at Cottonwood River Prairie SNA that will be used for restoration at Rock Ridge Prairie SNA and/or Cedar Mountain SNA.
1b. Woody removal & Invasive Species Treatment: Woody removal projects have been completed on 108.7 acres at 9 SNAs (including work by CCM), projects have been initiated at 4 additional SNAs, and a contractor burned/disposed of woody material from a previous clearing of 65 acres. Herbaceous invasives treatment has been completed on 121.5 acres at 5 SNAs and projects have been initiated at 18 additional SNAs.
1c. Prescribed Burning/Prescribed Disturbance: About 14.3 miles of burn breaks were installed at 11 SNAs and 46.7 of acres have been burned at 2 SNAs.
1d. Development: Site development work has been undertaken at 27 SNAs. Activities completed included: new signs (boundary, entry or rules) at 13 SNAs and site clean-up at 7 SNAs (including work by CCM).
1e. Management Planning: A prioritized list of SNAs in greatest need of new, or updated management plans is complete: 7 Adaptive Management Plans are being written by DNR staff. This appropriation will be used for contractors to prepare an estimated 12 additional plans. Two contracted plans are already in progress.

1f. Ecological Monitoring & AMSD. Two female bullsnakes, one male North American racer, and one female plains hog-nosed snake are being tracked via VHF radio telemetry during the 2014 field season at Kellogg-Weaver Dunes SNA (Wabasha County) primarily through this appropriation. This study continues to provide valuable information on a variety of species in greatest conservation (SGCN) need snake species, including habitat use, nesting sites, and overwintering sites. An individual bullsnake continues to utilize nontraditional marshland habitat that was also used last season. Important patterns of movement and summer habitat usage are emerging in bullsnakes tracked from last season into this season. The female plains hog-nosed snake has shown a definite summer territory utilizing primarily two ridges within the SNA. An additional North American racer has been captured in the SNA drift fence, but overall SGCN snake captures from this array are low compared to the other drift fences. Snakes will continue to be tracked until ingress this fall. Improvements in AMSD are underway which will enhance field staff use and the utility of results reporting.

1g. SNA Easement Monitoring: SNA conservation easement monitoring work has been initiated.

1h. Strategic Prioritization & NARs: Phase 2 of the strategic prioritization has been initiated testing additional refinements in using Marxan/GIS in conjunction with the State Wildlife Action Plan. DNR staff have been collaborating with partners and have identified up to 12 candidate sites for Natural Area Registry (NAR) or Representative Sample Area (RSA). Some of these sites are in current technical discussions regarding the details and the boundaries and resources that should be part of the NAR or RSA.

Activity Status as of March 12, 2015 – cumulative results to date (since July 2013):

WORK PLAN AMENDMENT Approved by LCCMR March 19, 2015: Moved \$81,500 from Activity 2 to Activity 1; moved \$80,500 in personnel from Activity 2 to Activity 1 and \$1000 from supplies in Activity 2 to travel/fleet in Activity 1. **Within Activity 1** increased personnel by \$102,200 (mostly the \$81,500 from Activity 2); decreased professional/technical/service contracts by \$16,070; decreased IT services by \$15,000; decreased equipment/tools/supplies by \$15,000; and increased travel (mostly DNR fleet charges; including \$1K from Activity 2) by \$25,370. The increase in funds for travel/fleet is needed to correct the original estimates to cover actual costs for prescribed burning truck and other fleet equipment, and the increased personnel and fleet costs are needed for two reasons: a) in order to meet deliverables for invasives treatment and prescribed burning, and b) because the snake monitoring work at Kellogg-Weaver Dunes SNA can be more effectively done with DNR staff than with contractors.

WORK PLAN AMENDMENT REQUEST Approved by LCCMR March 19, 2015: Add Wolsfeld Woods and Wood-Rill SNAs to the approved restoration list. Work on these sites is more urgent due to related erosion problems needing rehabilitation of the native plant community understory that would be done instead of work on Boot Lake and Avon Hills SNAs.

1a. Restoration: Seed has been harvested from 59.4 acres at 4 sites that has been seeded on 19.2 acres at Blue Devil Valley SNA and Cedar Mountain SNA (rehabilitation of degraded plant communities after extensive woody removal projects) and on 9.3 acres at Rock Ridge Prairie SNA (reconstruction on former agricultural fields).

1b. Woody removal & Invasive Species Treatment: Woody removal projects have been completed on 202.4 acres at 14 SNAs (including work by CCM at 3 SNAs) and a contractor burned/disposed of woody material from a previous clearing of 65 acres. Herbaceous invasives treatment has been completed on 124.3 acres at 8 SNAs.

1c. Prescribed Burning/Prescribed Disturbance: About 19.8 miles of burn breaks were installed at 20 SNAs (including 1 with CCM) and 53.2 of acres have been burned at 5 SNAs (including 2 with CCM). Prescribed haying has been done on 57.1 acres at 3 SNAs.

1d. Development: Site development work has been undertaken at 37 SNAs. Activities completed included: new signs (boundary, entry or rules) at 14 SNAs and site clean-up at 7 SNAs (including work by CCM). Twelve SNAs have been chosen for new interpretive signs; initial research and development of themes for each site has begun.

1e. Management Planning: Two contracted plans were completed for Franconia Bluffs and Grey Cloud Dunes SNAs. Seven Adaptive Management Plans are being written by DNR staff. Proposals have been received for at least 10 additional contractor written AMPs; bid review, scoring and contractor selections in progress.

1f. Ecological Monitoring & AMSD. Two female bullsnakes, one male North American racer, and one female plains hog-nosed snake are being tracked via VHF radio telemetry during the 2014 field season at Kellogg-Weaver Dunes SNA (Wabasha County) primarily through this appropriation. This study continues to provide valuable information on a variety of species in greatest conservation (SGCN) need snake species, including habitat use, nesting sites, and overwintering sites. An individual bullsnake continues to utilize nontraditional marshland habitat that was also used last season. Important patterns of movement and summer habitat usage are emerging in bullsnakes tracked from last season into this season. The female plains hog-nosed snake has shown a definite summer territory utilizing primarily two ridges within the SNA. An additional North American racer has been captured in the SNA drift fence, but overall SGCN snake captures from this array are low compared to the other drift fences. Snakes were tracked until fall ingress and selected different overwintering sites than in the previous year. Spring-summer field season work is being planned to continue monitoring snakes at Kellogg-Weaver Dunes SNA. Improvements in AMSD are underway which will enhance field staff use and the utility of results reporting.

1g. SNA Easement Monitoring: In accordance with DNR policy to monitor conservation easements once every three years and because most easements were monitored in 2013, fewer SNA conservation easement will be monitored under this appropriation. To date, one conservation easement has been monitored with this appropriation.

1h. Strategic Prioritization & NARs: Phase 2 of the strategic prioritization has been initiated testing additional refinements in using Marxan/GIS in conjunction with the update of Minnesota's Wildlife Action Plan. DNR staff have been collaborating with partners and have identified up to 12 candidate sites for Natural Area Registry (NAR) or Representative Sample Area (RSA).). At least three NAR are going through a regional review process, while the other NARs have been identified are beginning developed by staff from EWR and Forestry. EWR (including SNA) staff have also been identifying NAR candidate locations that are not part of the "forest certification", including non DNR partners.

WORK PLAN AMENDMENT APPROVED September 23, 2015: Moved \$17,545 from Activity 2 to Activity 1; the summary of changes in Activity 1 are: increased salary by \$23,300, decreased contracts by \$34,450, decreased the contract for IT services by \$2,775, increased supplies by \$13,170, added \$6,000 for printing, and increased travel/fleet equipment charges by \$12,300. The increase in funds for staff and travel/fleet is needed primarily to achieve restoration and enhancement acreage targets; the increase in supplies, the printing cost, and some of the salary increases are for completion of the interpretive signs (fabrication of the signs is considered "printing" in SWIFT); the reduction in contracts is primarily because of lower cost bids to complete the Adaptive Management Plans.

WORK PLAN AMENDMENT APPROVED September 23, 2015: Added to the restoration list seeding of up to 170 acres of prairie at Prairie Smoke Dunes SNA. Increased the target acreage for restoration from 30 to 190 acres, increased invasive species control from 270 to 650 acres and decreased the target acreage for prescribed burning and disturbance from 1300 acres to 760 acres. These changes still would achieve the overall target for restoration and enhancement of 1600 acres with better alignment with current SNA program priorities and opportunities.

Activity Status as of September 15, 2015 – cumulative results to date (since July 2013):

1a. Restoration: Seed has been harvested from 59.4 acres at 4 sites that has been seeded on 0.7 acres at Blue Devil Valley SNA and 23.1 ac at Cedar Mountain SNA (both rehabilitation of degraded plant communities after

extensive woody removal projects) and on 9.3 acres at Rock Ridge Prairie SNA (reconstruction on former agricultural fields).

1b. Woody removal & Invasive Species Treatment: Woody removal projects have been completed on 288.3 acres at 24 SNAs (including work by CCM at 7 SNAs) and a contractor burned/disposed of woody material from a previous clearing of 65 acres. Herbaceous invasives treatment has been completed on 210.0 acres at 26 SNAs (including work by CCM at 3 SNAs). Boot brush stands with information for visitors to reduce carrying in (or out) invasive species were installed at 3 SNAs.

1c. Prescribed Burning/Prescribed Disturbance: About 22.5 miles of burn breaks were installed at 22 SNAs (including 2 with CCM) and 452.5 of acres have been burned at 11 SNAs (including 8 with CCM). Prescribed haying has been done on 127.5 acres at 5 SNAs.

1d. Development: Site development work has been undertaken at 38 SNAs. Activities completed included: new signs (boundary, entry or rules) at 16 SNAs and site clean-up at 10 SNAs (including work by CCM). Ten SNAs have been chosen for new interpretive signs (the other 2 SNAs will be done with the ML14 appropriation); content is finalized and final layouts are underway for signs for 7 sites (1 of which will have 5 smaller signs) with the other 3 signs in the initial layout development phases.

1e. Management Planning: Two contracted plans were completed for Franconia Bluffs and Grey Cloud Dunes SNAs. Contractors are in the process of preparing 17 Adaptive Management Plans.

1f. Ecological Monitoring & AMSD. Two female bullsnakes, one male North American racer, and one female plains hog-nosed snake were tracked during the 2014 field season and one female bullsnake was tracked during the 2015 field season via VHF radio telemetry Kellogg-Weaver Dunes SNA (Wabasha County) primarily through this appropriation. This study continues to provide valuable information on a variety of species in greatest conservation (SGCN) need snake species, including habitat use, nesting sites, and overwintering sites. Important patterns of movement and summer habitat usage are emerging in bullsnakes tracked from the 2013-2015 seasons. The female plains hog-nosed snake has shown a definite summer territory utilizing primarily two ridges within the SNA. Two additional drift fences were added spring of 2015, making a total of three drift fences used on Kellogg-Weaver Dunes SNA. Four North American racers have been captured in the SNA drift fences, and all three of the SNA fences have performed very well during the 2015 field season, capturing a variety of SGCN snake species. Telemetry will end fall of 2015, however, 2016 field season work is being planned to continue monitoring snakes at Kellogg-Weaver Dunes SNA utilizing the three drift fences currently in place. Improvements in AMSD are underway which will enhance field staff use and the utility of results reporting.

1g. SNA Easement Monitoring: In accordance with DNR policy to monitor conservation easements once every three years and because most easements were monitored in 2013, fewer SNA conservation easement will be monitored under this appropriation. To date, one conservation easement has been monitored with this appropriation.

1h. Strategic Prioritization & NARs: Phase 2 of the strategic prioritization has been initiated testing additional refinements in using Marxan/GIS in conjunction with the update of Minnesota's Wildlife Action Plan; with completion of this Plan (not through this appropriation) refinements will be initiated to the SNA Strategic Land Protection Plan using new MBS data and additional analyses. Sixteen (16) Natural Area Registry draft agreements are going through regional review.

WORK PLAN AMENDMENT APPROVED by the LCCMR March 28, 2016: Moved \$64,356 from Activity 2 to Activity 1; the summary of changes in Activity 1 are: increased salary by \$60,235, increased contracts by \$8,527, decreased supplies by \$11,157, decreased printing by \$1,300, and increased travel/fleet equipment charges by \$8,051. The increases in funds are needed to achieve restoration and enhancement acreage targets and expend remainder of the appropriation; the decrease in supplies and printing are because costs for fabrication of interpretive signs and purchase of sign frames were less than budgeted.

Activity Status as of March 24, 2016:

2015 – cumulative results to date (since July 2013):

1a. Restoration: Seed has been harvested from 59.4 acres at 4 sites that has been seeded on 0.7 acres at Blue Devil Valley SNA and 23.1 ac at Cedar Mountain SNA (both rehabilitation of degraded plant communities after extensive woody removal projects) and on 9.3 acres at Rock Ridge Prairie SNA (reconstruction on former agricultural fields). At Prairie Smoke Dunes SNA, site preparation was completed on 167.2 acres, locally collected prairie seed was broadcast on 38.9 acres, and post-seeding mowing completed.

1b. Woody removal & Invasive Species Treatment: Woody removal projects have been completed on 293.4 acres at 24 SNAs (including work by 8 CCM contracts at 6 SNAs) and a contractor burned/disposed of woody material from a previous clearing of 65 acres. Herbaceous invasives treatment has been completed on 210.0 acres at 26 SNAs (including work by CCM at 3 SNAs). Boot brush stands with information for visitors to reduce carrying in (or out) invasive species were installed at 4 SNAs.

1c. Prescribed Burning/Prescribed Disturbance: About 26.3 miles of burn breaks were installed at 24 SNAs (including 2 with CCM) and 566.1 of acres have been burned at 15 SNAs (including 8 with CCM). Prescribed haying has been done on 140.7 acres at 5 SNAs.

1d. Development: Site development work has been undertaken at 48 SNAs. Activities completed included: new signs (boundary, entry or rules) at 32 SNAs and site clean-up at 14 SNAs (including work by CCM). Thirteen newly -designed interpretive signs are been fabricated and are ready for installation at 9 SNAs: Blanket Flower, Cherry Grove Blind Valley (5 signs including 4 smaller signs interpreting specific sinkholes and Goliath Cave), Greenwater Lake, Hovland Woods (signs for 2 locations), Kasota Prairie, Kettle River, Mille Lacs Moraine, Rock Ridge Prairie, and Swedes Forest SNA.

1e. Management Planning: Three contracted Adaptive Management Plans (AMPs) were completed for Franconia Bluffs, Grey Cloud Dunes, and Hovland Woods SNAs. Contractors are nearing completion of 15 AMPs and 1 plan prepared by SNA staff is being finalized.

1f. Ecological Monitoring & AMSD. Ecological monitoring was done on 7 SNAs (this is 2 fewer sites than proposed because of the scale and intensity of work done at Kellogg-Weaver Dunes). This appropriation is the primary funding (in consort with a federal State Wildlife Grant) to document the presence and movements of important snake species at Kellogg-Weaver Dunes (Wabasha County) in 2013-15 in order to inform the design, implementation, and evaluation of prescribed burning and invasive species and brush control practices. Two female bullsnakes, one male North American racer, and one female plains hog-nosed snake were tracked during the 2014 field season and one female bullsnake was tracked during the 2015 field season via VHF radio telemetry Kellogg-Weaver Dunes SNA. This study continues to provide valuable information on a variety of species in greatest conservation (SGCN) need snake species, including habitat use, nesting sites, and overwintering sites. Important patterns of movement and summer habitat usage are emerging in bullsnakes tracked from the 2013-2015 seasons. The female plains hog-nosed snake has shown a definite summer territory utilizing primarily two ridges within the SNA. Two additional drift fences were added spring of 2015, making a total of three drift fences monitored within Kellogg-Weaver Dunes SNA. Four North American racers have been captured in the SNA drift fences, and all three of the SNA fences have performed very well during the 2015 field season, capturing a variety of SGCN snake species. Telemetry with this appropriation ended in fall of 2015, however, with federal State Wildlife Grant funds, 2016 field season work is proposed to continue monitoring snakes at Kellogg-Weaver Dunes SNA utilizing the three drift fences currently in place.

Prairie status and trends vegetation monitoring in the 2015 field season was completed with this appropriation (detailed version at Langhei Prairie, Prairie Coteau, Twin Valley Prairie, and Two Rivers Aspen Parkland SNAs; basic version at Lundblad Prairie and Malmberg Prairie SNAs). This is a continuation of the ongoing prairie monitoring work initiated in the ML2008 Accelerated Prairie ENRTF appropriation and continued with subsequent SNA ENRTF appropriations and through federal State Wildlife Grant funding.

Improvements and refinements to the Adaptive Management Spatial Database (AMSD) were made which enhance field staff use to report all restoration and management work completed and to make accessing the data simpler.

1g. SNA Easement Monitoring: In accordance with DNR policy to monitor conservation easements once every three years and because most easements were monitored in 2013, fewer SNA conservation easement will be monitored under this appropriation. Furthermore, the DNR has decided to not do formal easement monitoring on easements where the DNR is also the fee title holder since staff and stewards are routinely looking after the site for other purposes, also reducing the need for easement monitoring. Two conservation easement have been monitored with this appropriation – which will be the total done with this appropriation.

1h. Strategic Prioritization & NARs: Phase 2 of the strategic prioritization has been initiated testing additional refinements in using Marxan/GIS in conjunction with the update of Minnesota’s Wildlife Action Plan; with completion of this Plan (not through this appropriation) refinements will be initiated to the SNA Strategic Land Protection Plan using new MBS data and additional analyses. Further work on strategic prioritization is being done through the ML14 appropriation. Sixteen (16) Natural Area Registry draft agreements are going through regional review.

Final Report Summary:

1a. Restoration: A total of 235 acres on 4 SNAs has been seeded with locally-collected native prairie seed. Seed has been harvested from 59.4 acres at 4 sites (included 1 involving CCM) that has been seeded on 0.7 acres at Blue Devil Valley SNA and 23.1 ac at Cedar Mountain SNA (both rehabilitation of degraded plant communities after extensive woody removal projects) and on 9.3 acres at Rock Ridge Prairie SNA (reconstruction on former agricultural fields). At Prairie Smoke Dunes SNA, locally collected prairie seed was broadcast on 201.8 acres, and post-seeding mowing completed on a portion of those acres. Evaluation reports and site scale map of each of these four restoration projects. See also attached locational map of SNA Restoration and Enhancement Projects Completed.

1b. Woody removal & Invasive Species Treatment: A total of 637 acres of invasive species were treated on SNAs. See attached locational map of SNA Restoration and Enhancement Projects Completed. Woody removal projects have been completed on 371.1 acres at 49 SNAs (including work by CCM at 7 SNAs) and a contractor burned/disposed of woody material from a previous clearing of 65 acres. Herbaceous invasive species treatment has been completed on 266.0* acres at 44 SNAs (including work by CCM at 5 SNAs). Boot brush stands with information for visitors to reduce carrying in (or out) invasive species were installed at 5 SNAs (including 1 with CCM). Of particular note, is that the woody invasive species removal project with this appropriation at Oronoco Prairie SNA resulted in the discovery of new populations of two rare species – special concern Prairie Moonwort (*Botrychium campestre*) and threatened Tuberous Indian-plantain (*Arnoglossum plantagineum*). *Note: beetles to control leafy spurge were released at 2 sites with acreage affected not fully reflected in the total acreage reported.

1c. Prescribed Burning/Prescribed Disturbance: A total of 860 acres received prescribed disturbance treatments (fire or haying). See attached locational map of SNA Restoration and Enhancement Projects Completed. About 26.2 miles of burn breaks were installed at 24 SNAs (including 2 with CCM) and 720 of acres have been burned at 18 SNAs (including work by CCM at 12 SNAs). Prescribed haying has been done on 140.7 acres at 7 SNAs.

1d. Development: Site development work has been undertaken at over 50 SNAs. See attached locational map of SNA Restoration and Enhancement Projects Completed. Activities completed included: new signs (boundary, entry, rules, &/or ENRTF) at 46 SNAs (with CCM at 7 SNAs), site clean-up at 11 SNAs (including work by CCM at 4 SNAs), fence work at 4 SNAs, and access or parking improvements at 13 SNAs (with CCM at 1 SNAs). Thirteen newly-designed interpretive signs are been fabricated and have been installed at 9 SNAs (including CCM doing the installation at 2 SNAs): Blanket Flower, Cherry Grove Blind Valley (1 full size sign – see photo to right – and 4 smaller



signs interpreting specific sinkholes and Goliath Cave), Greenwater Lake, Hovland Woods (signs for 2 locations), Kasota Prairie, Kettle River, Mille Lacs Moraine, Rock Ridge Prairie, and Swedes Forest SNA. With this and the 2014 appropriation, six different temporary signs (like campaign yard signs) were designed, a total of 56 were fabricated, and distributed to be used on SNAs to inform visitors about natural resource management activities (such as invasive species control, prescribed burning) and about sensitive resources to avoid.

1e. Management Planning: Nineteen Adaptive Management Plans (AMPs) were completed by 18 contractors and 1 by SNA staff; sites for which plans were completed are:

- Cedar Rock SNA (Redwood County)
- Des Moines River SNA (Jackson County)
- Gneiss Outcrops SNA (Chippewa County)
- Grey Cloud Dunes SNA (Washington County)
- Gully Fen SNA (Polk County)
- Franconia Bluffs (Chisago County)
- Hovland Woods SNA (Cook County)
- Lutsen SNA (Cook County)
- Mary Crawford Schmidt SNA (Wright County)
- McGregor Marsh SNA (Aitkin County)
- Moose Mountain SNA (St. Louis County)
- Partch Woods SNA (Stearns County)
- Potato Lake SNA (Itasca County)
- River Warren SNA (Renville County)
- Sandpiper Prairie SNA (Norman County)
- Santee Prairie SNA (Mahnomen County)
- Spring Beauty SNA (Cook County)
- Two Rivers Aspen Parkland SNA (Roseau County)
- Wild Indigo SNA (Mower County)

1f. Ecological Monitoring & AMSD. Ecological monitoring was done on 7 SNAs (this is 2 fewer sites than proposed because of the scale and intensity of work done at Kellogg-Weaver Dunes). This appropriation is the primary funding (in consort with a federal State Wildlife Grant) to document the presence and movements of important snake species at Kellogg-Weaver Dunes (Wabasha County) in 2013-15 in order to inform the design, implementation, and evaluation of prescribed burning and invasive species and brush control practices. Two female bullsnakes, one male North American racer, and one female plains hog-nosed snake were tracked during the 2014 field season and one female bullsnake was tracked during the 2015 field season via VHF radio telemetry Kellogg-Weaver Dunes SNA. This study provides valuable information on a variety of species in greatest conservation (SGCN) need snake species, including habitat use, nesting sites, and overwintering sites. Important patterns of movement and summer habitat usage are emerging in bullsnakes tracked from the 2013-2015 seasons. The female plains hog-nosed snake has shown a definite summer territory utilizing primarily two ridges within the SNA. Two additional drift fences were added spring of 2015, making a total of three drift fences monitored within Kellogg-Weaver Dunes SNA. Four North American racers have been captured in the SNA drift fences, and all three of the SNA fences performed very well during the 2015 field season, capturing a variety of SGCN snake species. Telemetry with this appropriation ended in fall of 2015, however, future snake monitoring snakes at Kellogg-Weaver Dunes SNA is expected to utilize the three drift fences currently in place.

Prairie status and trends vegetation monitoring in the 2015 field season was completed with this appropriation (detailed version at Langhei Prairie, Prairie Coteau, Twin Valley Prairie, and Two Rivers Aspen Parkland SNAs; basic version at Lundblad Prairie and Malmberg Prairie SNAs). This is a continuation of the ongoing prairie monitoring work initiated in the ML2008 Accelerated Prairie ENRTF appropriation and continued with subsequent SNA ENRTF appropriations and through federal State Wildlife Grant funding.

Improvements and refinements to the Adaptive Management Spatial Database (AMSD) were made which enhance field staff use to report all restoration and management work completed and to make accessing the data simpler.

1g. SNA Easement Monitoring: Two SNA conservation easements were monitored with this appropriation. In accordance with DNR policy to monitor conservation easements once every three years and because most easements were monitored in 2013, fewer SNA conservation easement were monitored under this appropriation. Furthermore, the DNR has decided to not do formal easement monitoring on easements where the DNR is also the fee title holder since staff and stewards are routinely looking after the site for other purposes, also reducing the need for easement monitoring.

1h. Strategic Prioritization & NARs: Phase 2 of the strategic prioritization was initiated through this appropriation and then work transitioned to the 2014 appropriation to test additional refinements in using Marxan/GIS in conjunction with the update of Minnesota’s Wildlife Action Plan. Nine Natural Area Registry agreements were completed.

ACTIVITY 2: Citizen-Student Engagement in Natural Areas

Description:

The second phase of the SNA Outreach Initiative will engage residents, students, and other interested people in ecological recreation, stewardship, and education activities on SNAs. The site steward network will be expanded and sustained at least 100 SNA volunteer site stewards. Ecological and safety training, guidance, and support materials will be provided for site stewards as necessary to recruit and retain these volunteers and ensure their work on SNAs is safe and ecologically appropriate. About 80 events will be sponsored, co-sponsored or coordinated, including volunteer site restoration and management work days and recreation-educational events (guided nature hikes, birding visits, botanizing, citizen-science activities, etc) aimed at building long-lasting and action-based conservation ethics in the community. The key to engaging people in nature-based events and recruiting, training, supporting SNA site stewards and volunteers is to have a dispersed network of professional naturalists leading this work for the SNA Program. This appropriation makes this possible by funding the SNA-dedicated portions of naturalists shared with State Parks across the state. The effectiveness of site steward recruitment and retention, expansion of participation in SNA events, and other SNA outreach tools will be evaluated, including measuring progress towards meeting the Department’s *Conservation That Works* Goal 2.

Additional visitor features will be added to the SNA web page, such as online site maps with topography, plant communities, and facilities. A new e-book version of the SNA guidebook for visitors will include information and interactive maps for each SNA and feature site-specific video and audio tracks. New or refined electronic/social media communications tools will be developed and disseminated to increase and enhance recreationist’s use of SNAs.

Summary Budget Information for Activity 2:

ENRTF Budget: \$ 331,599
Amount Spent: \$ 326,653
Balance: \$ 4,946

Activity Completion Date:

Outcome	Completion Date	Budget
2a. e-book version of SNA guidebook for visitors, web upgrades & social media	6/30/15	\$ 137,970
2b. ~ 80 volunteer events led/coordinated by part-time naturalists & evaluation	6/30/16	\$ 146,400
2c. network of at least 100 volunteer site stewards coordinated by SNA staff & part-time naturalists ; safety & ecological training & evaluation	6/30/16	\$ 169,392

Note: total for this Activity includes \$41,038 for direct & necessary services; but individual outcome costs above do not.

Activity Status as of November 25, 2013:

2a. E-book & communications tools: Proposals have been developed to initiate an SNA facebook page and for DNR Creative Services to produce the e-book version of the SNA guide. **2b. Events:** To date, 4 events were held involving over 75 people. **2c: Site Stewards:** Through this and previous ENRTF appropriations the total number of SNAs with site stewards has grown to 112 SNAs – with one or more stewards for each of these sites. Regular communications are made with the stewards and SNA staff have met with at least 12 stewards at their individual SNAs and have provided site stewards (and other volunteers) with personal protective equipment to use during SNA events.

Activity Status as of March 15, 2014 – cumulative results to date (since July 2013):

WORK PLAN AMENDMENT APPROVED September 11, 2014: Moved \$1,500 from personnel to printing. The reprint of the SNA map cost more than budgeted (and more than its original printing cost for the same number of copies).

2a. E-book & communications tools: With support through this funding, the SNA Facebook page was launched on Wednesday, February 12th. Within the first 24 hours, 2770 people had visited the page, 470 people liked it, 14 people had commented, and the page had 30 shares. During its first 6 weeks, about 1000 people visit the site per week and 820 people like the page. A writer has been hired to prepare some materials for the e-book version of the SNA guide. The 9th (Spring 2014) issue of the *Nature Notes* e-newsletter was delivered to over 2,130 subscribers.

2b. Events: To date, 4 events were held involving over 75 people. [this number will be updated in the next report]

2c: Site Stewards: Through this and previous ENRTF appropriations the total number of SNAs with site stewards has grown to 116 SNAs – with one or more stewards for each of these sites. A full day safety and ecology training was attended by 26 volunteers/site stewards. Regular communications are made with the stewards and SNA staff have provided site stewards (and other volunteers) with personal protective equipment to use during SNA events.

Activity Status as of September 10, 2014 – cumulative results to date (since July 2013):

2a. E-book & communications tools: With support through this funding, the SNA Facebook page was launched on Wednesday, February 12th; posting on it has increased to almost daily through an individual placement CCM person working fulltime on the SNA Outreach Initiative; currently the SNA Facebook page has achieved over 1,100 page likes and total monthly reach of 12,000 to date, with many SNA visitors posting photos and comments. For the e-book version of the SNA guide, all 160 SNA site descriptions edited, many completely rewritten and begin finalized for including in project; preliminary design is currently in early stages. The 10th (Summer 2014) issue of the *Nature Notes* e-newsletter was delivered to over 2,612 subscribers. The statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) was updated and 5000 copies of this second addition were printed, distribution started in July 2014 including copies disseminated at the State Fair.

2b. Events: Through this appropriation, January 1 through September 1, 2014, 70 events were held involving over 400 people. Events have been done through joint SNA- State Parks naturalists, SNA staff, contractors, Master Naturalists and other volunteers; they include: Photography Workshops at Cottonwood River Prairie SNA and Joseph A. Tauer Prairie SNA, Birding at Mille Lacs Moraine SNA, Exploring Resource Work at Swede's Forest SNA. An electronic survey of SNA event participants was developed in spring 2014 that has a total of 25 questions on topics including SNA site and type of event attended, quality of events, kinds of event preferred, types of outdoor recreation preferred, familiarity with SNA, and demographic information. Survey invitations have been sent monthly to all event participants who have signed up with an email and will conclude in late October. To date 35 people have taken the survey. Results will then be analyzed by DNR Planning Staff.

2c: Site Stewards: The total number of SNAs with site stewards has grown to 124 or 78% of SNAs) SNAs – with one or more stewards for each of these sites. A full day safety and ecology training was attended by 26

volunteers/site stewards. Regular communications are made with the stewards and SNA staff have provided site stewards (and other volunteers) with personal protective equipment to use during SNA events. Site stewards also submit regular reports on their work and findings.

Activity Status as of March 12, 2015: – cumulative results to date (since July 2013):

WORK PLAN AMENDMENT Approved by LCCMR March 19, 2015: Moved \$81,500 from Activity 2 to Activity 1; moved \$80,500 from personnel and \$1000 from equipment/tools/supplies. This will not impact achieving the deliverables under this Activity; the change is possible in part because the person in the shared State Parks-SNA Naturalist position (supported in part by this appropriation) left the position which is now being held vacant by DNR Parks for their own reasons and also a decision was made by Parks not to create another shared State Parks-SNA Naturalist position in a different region at this time. **Within Activity 2** moved \$30,000 from personnel to professional/technical/service contracts and move \$20,000 from contract: IT services (zero out this item) to professional/technical/service contracts because a MNIT Service Level Agreement (SLA) is not needed for SNA website/media development, both moves are for a larger SLA with DNR Creative Services towards completing e-book development and will allow for contracted naturalist-led events.

2a. E-book & communications tools: With support through this funding, the SNA Facebook page was launched in February 2014; posting on it has increased to almost daily through an individual placement CCM person working fulltime on the SNA Outreach Initiative; currently the SNA Facebook page has achieved over 1,500 page likes by late February 2015 and total reach of 34,099 as of January 2015, including a 3500 spike from the first “Scientific Sunday” post on 2/15/15, with many SNA visitors posting photos and comments. The metrics for the page are illustrated on 2 attached PDFs. The prototype of the e-book version of the SNA guide for 12 SNAs is nearing completion and will be published in the next quarter as a beta version to gain insights before full development of all 160 sites. The 11th (Winter 2014) issue of the *Nature Notes* e-newsletter was delivered to over 3,250 subscribers. . The statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) was updated and 5000 copies of this second addition were printed, distribution started in July 2014 including copies disseminated at the State Fair. Twelve new pocket cards were printed for distribution at events, including the Minnesota State Fair.

2b. Events: To date through this appropriation (January 2014 through March 1, 2015) about 103 events were held involving over 800 people. Events have been done through joint SNA- State Parks naturalists, SNA staff, contractors, Master Naturalists and other volunteers; they include: photography workshops at Cottonwood River Prairie SNA and Joseph A. Tauer Prairie SNA, birding at Mille Lacs Moraine SNA, Exploring Resource Work at Swede's Forest SNA, canoe trips at Lost Lake Peatland SNA, snowshoe hikes at Hemlock Ravine SNA, skiing into at Sand Lake Peatland SNA, and a presentation to the Minnesota Native Plant Society. An electronic survey of SNA event participants was developed in spring 2014 that has a total of 25 questions on topics including SNA site and type of event attended, quality of events, kinds of event preferred, types of outdoor recreation preferred, familiarity with SNA, and demographic information. Results of this survey (see attachment) include: 94% of respondents were very satisfied or satisfied with the event they participated in, 91% would recommend the event to a friend, over half had never been to the SNA where the event was held, and for over half this was the first time they had attended an SNA-related event.

2c: Site Stewards: The total number of SNAs with site stewards has grown to 133 or 83% of SNAs) SNAs – with one or more stewards for each of these sites. Regular communications are made with the stewards and SNA staff have provided site stewards (and other volunteers) with personal protective equipment to use during SNA events. Site stewards also submit regular reports on their work and findings.

WORK PLAN AMENDMENT APPROVED September 23, 2015: Moved \$17,545 from Activity 2 to Activity 1; the summary of changes in Activity 2 are: increased salary by \$15,930, decreased contracts by \$27,848, decreased supplies by \$5,692, decreased printing by \$330, and increased travel/fleet equipment charges by \$395. The

changes will allow us to focus the most of the rest of this appropriation's work under this activity on a new initiative to increase outreach, education and citizen science in NE Minnesota through a newly created SNA staff naturalist/specialist position (while also completing the work of a seasonal naturalist in the NW region and towards the CCM contract for SNA outreach).

Activity Status as of September 15, 2015:

2a. E-book & communications tools: With support through this funding, the SNA Facebook page was launched in February 2014; posting on it has increased to almost daily through an individual placement CCM person working fulltime on the SNA Outreach Initiative; the SNA Facebook page has achieved over 1,500 page likes by late February 2015 and total reach of 34,099 as of January 2015, including a 3500 spike from the first "Scientific Sunday" post on 2/15/15, with many SNA visitors posting photos and comments (subsequent Facebook accomplishments are with the 2014 appropriation). The metrics for the page are illustrated on 2 attached PDFs. For the website and the e-book version of the SNA guide all 160 SNA site descriptions were edited or completely rewritten. The prototype of the e-book version of the SNA guide for 12 SNAs was completed and circulated for review (subsequent revisions, testing, and completion of the ebook are with the 2014 appropriation.) The 11th (Winter 2014) issue of the *Nature Notes* e-newsletter was delivered to over 3,250 subscribers (subsequent e-newsletter accomplishments are with the 2014 appropriation). The statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) was updated and 5000 copies of this second addition were printed, distribution started in July 2014 including copies disseminated at the State Fair. Twelve new pocket cards were printed for distribution at events, including the Minnesota State Fair.

2b. Events: Through this appropriation (January 2014 through July 1, 2015) about 170 events were held involving over 1550 people. Events have been done through joint SNA- State Parks naturalists, SNA staff, contractors, Master Naturalists and other volunteers; they include: photography workshops at Cottonwood River Prairie SNA and Joseph A. Tauer Prairie SNA, birding at Mille Lacs Moraine SNA, Exploring Resource Work at Swede's Forest SNA, canoe trips at Lost Lake Peatland SNA, snowshoe hikes at Hemlock Ravine SNA, skiing into at Sand Lake Peatland SNA, and a presentation to the Minnesota Native Plant Society. Events achieved in partnership with Minnesota State Parks include series of specialty tours to Iron Springs Bog, La Salle Lake, and Itasca Wilderness Sanctuary. An electronic survey of SNA event participants was developed in spring 2014 that has a total of 25 questions on topics including SNA site and type of event attended, quality of events, kinds of event preferred, types of outdoor recreation preferred, familiarity with SNA, and demographic information. Results of this survey (previously submitted to LCCMR) include: 94% of respondents were very satisfied or satisfied with the event they participated in, 91% would recommend the event to a friend, over half had never been to the SNA where the event was held, and for over half this was the first time they had attended an SNA-related event.

2c: Site Stewards: The total number of SNAs with site stewards is 128 or 80% of SNAs – with one or more stewards for each of these sites; these numbers have dropped slightly since March because a couple stewards resigned and no steward has been secured yet for the newest SNA. Regular communications are made with the stewards and SNA staff have provided site stewards (and other volunteers) with personal protective equipment to use during SNA events. Site stewards also submit regular reports on their work and findings.

WORK PLAN AMENDMENT APPROVED by the LCCMR March 28, 2016: Moved \$64,356 from Activity 2 to Activity 1; the summary of changes in Activity 2 are: decreased salary by \$56,515, decreased contracts by \$5,000, decreased supplies by \$1,731, decreased printing by \$99, decreased travel/fleet equipment charges by \$1,011. The changes allowed us to focus the rest of this appropriation's work under this activity on work in the NE and NW region (as per above amendment) – which were delayed because of hiring issues – and expend the balance more readily on Activity 1.

Activity Status as of March 24, 2016:

2a. E-book & communications tools: With support through this funding, the SNA Facebook page was launched in February 2014; posting on it has increased to almost daily through an individual placement CCM person

working fulltime on the SNA Outreach Initiative; the SNA Facebook page has achieved over 1,500 page likes by late February 2015 and total reach of 34,099 as of January 2015, including a 3500 spike from the first “Scientific Sunday” post on 2/15/15, with many SNA visitors posting photos and comments (subsequent Facebook accomplishments are with the 2014 appropriation). The metrics for the page are illustrated on 2 attached PDFs. For the website and the e-book version of the SNA guide all 160 SNA site descriptions were edited or completely rewritten. The prototype of the e-book version of the SNA guide for 12 SNAs was completed and circulated for review (subsequent revisions, testing, and completion of the ebook are with the 2014 appropriation.) The 11th (Winter 2014) issue of the *Nature Notes* e-newsletter was delivered to over 3,250 subscribers (subsequent e-newsletter accomplishments are with the 2014 appropriation). The statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) was updated and 5000 copies of this second addition were printed, distribution started in July 2014 including copies disseminated at the State Fair. Twelve new pocket cards were printed for distribution at events, including the Minnesota State Fair.

2b. Events: Through this appropriation (January 2014 through July 1, 2015) about 170 events were held involving over 1550 people (subsequent Events counts are with the 2014 appropriation). Events have been done through joint SNA- State Parks naturalists, SNA staff, contractors, Master Naturalists and other volunteers; they include: photography workshops at Cottonwood River Prairie SNA and Joseph A. Tauer Prairie SNA, birding at Mille Lacs Moraine SNA, Exploring Resource Work at Swede's Forest SNA, canoe trips at Lost Lake Peatland SNA, snowshoe hikes at Hemlock Ravine SNA, skiing into at Sand Lake Peatland SNA, and a presentation to the Minnesota Native Plant Society. Events achieved in partnership with Minnesota State Parks include series of specialty tours to Iron Springs Bog, La Salle Lake, and Itasca Wilderness Sanctuary. An electronic survey of SNA event participants was developed in spring 2014 that has a total of 25 questions on topics including SNA site and type of event attended, quality of events, kinds of event preferred, types of outdoor recreation preferred, familiarity with SNA, and demographic information. Results of this survey (previously submitted to LCCMR) include: 94% of respondents were very satisfied or satisfied with the event they participated in, 91% would recommend the event to a friend, over half had never been to the SNA where the event was held, and for over half this was the first time they had attended an SNA-related event.

2c: Site Stewards: The total number of SNAs with site stewards is 128 or 80% of SNAs – with one or more stewards for each of these sites; these numbers have dropped slightly since March because a couple stewards resigned and no steward has been secured yet for the newest SNA. Regular communications are made with the stewards and SNA staff have provided site stewards (and other volunteers) with personal protective equipment to use during SNA events. Site stewards also submit regular reports on their work and findings.

Final Report Summary: See attached visual illustrating SNA outreach activities completed through this appropriation.

2a. E-book & communications tools: With support through this funding, the SNA Facebook page was launched in February 2014; posting on it increased to almost daily through an individual placement CCM person working fulltime on the SNA Outreach Initiative; the SNA Facebook page achieved over 1,500 page likes by late February 2015 and total reach of 34,099 as of January 2015, including a 3500 spike from the first “Scientific Sunday” post in February 2015, with many SNA visitors posting photos and comments (subsequent Facebook accomplishments are with the 2014 appropriation). For the website and the e-book version of the SNA guide all 160 SNA site descriptions were edited or completely rewritten. The prototype of the e-book version of the SNA guide for 12 SNAs was completed and circulated for review (subsequent revisions, testing, etc. of the ebook are with the 2014 appropriation.) The 11th (Winter 2014) issue of the *Nature Notes* e-newsletter was delivered to over 3,250 subscribers (subsequent e-newsletter accomplishments are with the 2014 appropriation). The statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) was updated and 5000 copies of this second addition were printed, distribution started in July 2014 including copies disseminated at the State Fair. Twelve new pocket cards were printed for distribution at events, including the Minnesota State Fair. This appropriation (along with the 2014 appropriation) was used to print the 2016 series of 12 new pocket cards.

2b. Events: Through this appropriation (January 2014 through July 1, 2015) about 170 events were held involving over 1550 people (subsequent Events counts are with the 2014 appropriation). Events have been done through joint SNA- State Parks naturalists, SNA staff, contractors, Master Naturalists and other volunteers; they include: photography workshops at Cottonwood River Prairie SNA and Joseph A. Tauer Prairie SNA, birding at Mille Lacs Moraine SNA, Exploring Resource Work at Swede's Forest SNA, canoe trips at Lost Lake Peatland SNA, snowshoe hikes at Hemlock Ravine SNA, skiing into at Sand Lake Peatland SNA, and a presentation to the Minnesota Native Plant Society. Events achieved in partnership with Minnesota State Parks include series of specialty tours to Iron Springs Bog, La Salle Lake, and Itasca Wilderness Sanctuary. An electronic survey of SNA event participants was developed in spring 2014 that has a total of 25 questions on topics including SNA site and type of event attended, quality of events, kinds of event preferred, types of outdoor recreation preferred, familiarity with SNA, and demographic information. Results of this survey (previously submitted to LCCMR) include: 94% of respondents were very satisfied or satisfied with the event they participated in, 91% would recommend the event to a friend, over half had never been to the SNA where the event was held, and for over half this was the first time they had attended an SNA-related event.

2c: Site Stewards: As of September 2015, the total number of SNAs with site stewards was 128 or 80% of SNAs – with one or more stewards for each of these sites. Through this appropriation, regular communications were made with the stewards and SNA staff provided site stewards (and other volunteers) with personal protective equipment to use during SNA events (subsequent site steward work is with the 2014 appropriation). Site stewards submit regular reports on their work and findings.

V. DISSEMINATION:

Description:

Dissemination will primarily be achieved through the SNA webpage on the DNR website: and through *Nature Notes* – the SNA Program e-newsletter distributed to SNA site steward and an other interested subscribers. All volunteer events will be listed at the webpage. The SNA webpage will continue to be updated and New or refined electronic/social media communications tools will be developed and disseminated to increase and enhance recreationist's use of SNAs. The SNA naturalists, other SNA staff, and contractors are expected to make presentations and lead field trips at SNAs and/or to promote involvement in SNAs; these will be publicized on the DNR website, via emails or local fliers, and as needed through press releases. The site steward kits will be disseminated to officially recognized site stewards. The new e-book version of the SNA guide for visitors is expected to be disseminated through DNR gift shops, DNR website, and potentially through the Minnesota Bookstore.

Status as of November 25, 2013:

Current communications (website, *Nature Notes*, presentations, events, etc.) are being done through the ML11-122 appropriations. Under this appropriation, a proposal has been developed for DNR Creative Services to produce the e-book version of the SNA guide. A proposal has also been developed to initiate an SNA facebook page.

Status as of March 15, 2014:

With support through this funding, the SNA Facebook page was launched on Wednesday, February 12th. Within the first 24 hours, 2770 people had visited the page, 470 people liked it, 14 people had commented, and the page had 30 shares. During its first 6 weeks, about 1000 people visit the site per week and 820 people like the page. A writer has been hired to prepare some materials for the e-book version of the SNA guide. The 9th (Spring 2014) issue of the *Nature Notes* e-newsletter was delivered to over 2,130 subscribers.

Status as of September 10, 2014 – cumulative results to date (since July 2013):

With support through this funding, the SNA Facebook page was launched on Wednesday, February 12th; currently the SNA Facebook page has achieved over 1,100 page likes and total monthly reach of 12,000 to date. The 10th (Summer 2014) issue of the *Nature Notes* e-newsletter was delivered to over 2,612 subscribers. The statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) was updated and 5000 copies of this second addition were printed, distribution started in July 2014 including copies disseminated at the State Fair.

Status as of March 12, 2015 – cumulative results to date (since July 2013):

With support through this funding, the SNA Facebook page was launched in February 2014; currently the SNA Facebook page has achieved over 1,500 page likes and total monthly reach of over 34,000 to date. The 11th (Winter 2014) issue of the *Nature Notes* e-newsletter was delivered to over 3,250 subscribers. The statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) was updated and 5000 copies of this second addition were printed, distribution started in July 2014 including copies disseminated at the State Fair.

Activity Status as of September 15, 2015 – cumulative results to date (since July 2013):

With support through this funding, the SNA Facebook page was launched in February 2014; the SNA Facebook page has achieved over 1,500 page likes and total monthly reach of over 34,000 by March 2015. The 11th (Winter 2014) issue of the *Nature Notes* e-newsletter was delivered to over 3,250 subscribers. The statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) was updated and 5000 copies of this second addition were printed, distribution started in July 2014 including copies disseminated at the State Fair. Note: additional accomplishments related to SNA Facebook page and *Nature Notes* e-newsletter are being done with the 2014 ENRTF appropriation.

Activity Status as of March 24, 2016 – cumulative results to date (since July 2013): With support through this funding, the SNA Facebook page was launched in February 2014; the SNA Facebook page has achieved over 1,500 page likes and total monthly reach of over 34,000 by March 2015. The 11th (Winter 2014) issue of the *Nature Notes* e-newsletter was delivered to over 3,250 subscribers. The statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) was updated and 5000 copies of this second addition were printed, distribution started in July 2014 including copies disseminated at the State Fair. Note: additional accomplishments related to SNA Facebook page and *Nature Notes* e-newsletter are being done with the 2014 ENRTF appropriation.

Final Report Summary: Dissemination is primarily achieved through the upgraded SNA webpage on the DNR website: <http://www.mndnr.gov/snass> and through other electronic/social media which are linked through this webpage. With support through this funding, the SNA Facebook page was launched in February 2014; the SNA Facebook page has achieved over 1,500 page likes and total monthly reach of over 34,000 by March 2015. The 11th (Winter 2014) issue of the *Nature Notes* e-newsletter was delivered to over 3,250 subscribers. The statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) was updated and 5000 copies of this second addition were printed and nearly all have been distributed. See attached visual illustrating SNA outreach activities completed through this appropriation.

VI. PROJECT BUDGET SUMMARY:

A. ENRTF Budget:

Budget Category	\$ Amount	Explanation
Personnel:	\$ 733,450	Position Type 1: Coordinators – 1.6 FTE for 2 yrs (~0.2 FTE mgmt; 1.0 FTE outreach; ~0.1 FTE planning; ~0.1 FTE AMSD; & ~0.2 FTE region) (~\$214.2) Position Type 2: Specialists, Technicians, & Seasonal Naturalists – 3.3 FTE spread over ~14

		positions (~\$400K) Position Type 3: Laborers & Seasonal Field Crews – 1.1 FTE spread over ~9 to 15 positions (~\$65K) <i>Note: FTE's are calculated for two years only.</i>
Professional/Technical/Service Contracts:	\$ 468,159	Professional/Technical Contracts selected as per state purchasing requirements – Activity 1f. mgmt. plans (~\$60K); Act. 1g. adaptive mgmt. monitoring (~\$42K); Act. 2a. ebook videography etc & participant evaluation (~\$40K); Act. 2b. SNA events (~\$5K) Service Contracts – Activity 1 including 1a; native habitat restoration (~\$28K), 1b. woody encroachment removal & exotics control (~\$175K), 1c. prescribed burning (~\$78K); & 2d. site development (fences, signs, etc) (~\$65K)
	\$ 7,225	Contract: IT Services (Mn.IT service agreements) Adaptive Management Spatial Database, dynamic Adaptive Management Plans, strategic prioritization, & SNA website/interactive media software development, implementation, & IT technical support
Equipment/Tools/Supplies:	\$ 65,582	Activity 1 parts, tools, repair costs & supplies for restoration, invasives control, prescribed burning (or other prescribed disturbance for ecological purposes), management plans, & monitoring (~\$26.25K); interpretive displays, signs & posts, fencing, & other site development tools & supplies (~\$50K) Activity 2: volunteer & school events & site steward supplies (including safety items, handtools, training materials, maps, mailings, etc) (~\$10.74K). This includes computer fleet charges pro-rated for up to 5.9 FTE paid through this appropriation (estimated up to \$6K, about \$500/year/FTE).
Printing:	\$ 8,491	Maps, educational & volunteer materials
Travel Expenses in MN:	\$ 92,735	Fleet charges for trucks, cars, & equipment, e.g. mowers, seeders (~\$40.2K); mileage, lodging & meals as per state contracts (~\$7.43K)
Direct and necessary services:*	\$ 124,358	DNR costs for the appropriation
TOTAL ENRTF BUDGET:	\$1,500,000	

Explanation of Use of Classified Staff: Consistent with approved work plans for previous ENRTF appropriations for the SNA program, this funding will be used to pay project-associated costs for classified and unclassified staff paid almost exclusively with special project funds. These positions would not exist, but for special project funding received through the ENRTF and other funds. Each year these positions are assigned work based on the particular combination of soft funding available to address priority SNA Program activities. No funding from this appropriation will be used to cover personnel costs for this work program's Project Manager.

*Direct and Necessary expenses include both Department Support Services (Human Resources, IT, Financial Management, Communications, Procurement, and Facilities) and Division Support Services. Department Support Services are described in agency Service Level Agreements, and billed internally to divisions based on indices that have been developed for each area of service. Department leadership (Commissioner's Office and Regional Directors) are not assessed. Division Support Services include costs associated with Division and regional leadership, business offices, and clerical support. Those elements of individual projects that put little or no demand on support services such as large single-source contracts, large land acquisitions, and funds that are passed-thru to other entities are not assessed Direct and Necessary costs for those activities.

Explanation of Capital Expenditures Greater Than \$3,500: NA

Number of Full-time Equivalent (FTE) funded with this ENRTF appropriation: 5.9 FTE spread over 20-30 positions

Number of Full-time Equivalent (FTE) estimated to be funded through contracts with this ENRTF appropriation: 0.5 to 0.8 FTE professional technical contract; & 5 to 6 FTE CCM & fieldwork contractors;
Note: FTE's are calculated for two years only.

B. Other Funds:

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
Non-state			Volunteer site stewards contributed significant time and expenses; the monetary value of this was not tracked.
State			
TOTAL OTHER FUNDS:	\$	\$	

VII. PROJECT STRATEGY:

A. Project Partners: This proposal includes the DNR's work and funding to be used by the SNA program towards partnership project work on SNAs being submitted as separate, but coordinated LCCMR projects. This includes work with Metro Conservation Corridors (in lieu of SNA seeking funding). These efforts are complementary not redundant; all accomplishments on joint projects would be prorated.

B. Project Impact and Long-term Strategy: The SNA Long Range Plan goal is protection by SNA designation 5 occurrences of each native plant community and 3 occurrences of each natural heritage element per landscape. Thus, the Division could utilize support from the Environment and Natural Resources Trust fund of \$3M to \$10M per biennium over the next 20 years.

C. Spending History:

Funding Source <i>(including acquisition & native prairie stewardship – when appropriations are combined)</i>	M.L. 2007 or FY08	M.L. 2008 or FY09	M.L. 2009 or FY10	M.L. 2010 or FY11	M.L. 2011 or FY12-13
ENRTF	\$50,000 (4b) \$243,000 (4c)	\$37,500 (3c) \$515,000 (3a) \$1,000,000 (3f)	\$37,500 (4e) \$410,000 (4f) \$703,300 (4d)	\$31,500 (4f) \$1,046,700 (4b)	\$1,640,000 (4e)
OHF				\$2,058,800	\$1,519,000
Bonding		\$5,000,000			
State Wildlife Grant (federal)				\$137,000	\$49,800

VIII. ACQUISITION/RESTORATION LIST: See attached list.

IX. MAP(S): See attached map.

X. RESEARCH ADDENDUM: NA

XI. REPORTING REQUIREMENTS:

Periodic work plan status update reports will be submitted not later than September 15, 2013, March 15, 2014, September 15, 2014, March 15, 2015, and if needed, September 15, 2015 and March 15, 2016. A final report and associated products will be submitted between June 30 and September 15, 2016 (as necessary for state FY closeout data to be available & summarized) as requested by the LCCMR.

Final Attachment A: Budget Detail for M.L. 2013 Environment and Natural Resources Trust Fund Projects								
Project Title:	SNA Conservation, Restoration, Enhancement & Citizen Engagement							
Legal Citation:	M.L. 2013, Chp. 52, Sec. 2, Subd. 04b							
Project Manager:	Margaret (Peggy) Booth							
M.L. 2013 ENRTF Appropriation:	\$1,500,000							
Project Length and Completion Date:	3 years, June 30, 2016							
Date of Update:	August 15, 2016							
	APPROVED BUDGET MARCH 2016			APPROVED BUDGET MARCH 2016			APPROVED BUDGET MAR. 2016	
ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Activity 1 Budget	Amount Spent	Balance	Activity 2 Budget	Amount Spent	Balance	TOTAL BUDGET	TOTAL BALANCE
BUDGET ITEM	Biodiversity Conservation, Habitat			Citizen-Student Engagement in Natural Areas				
Personnel (Wages and Benefits)	\$ 522,035	\$ 521,608	\$ 427	\$ 211,415	\$ 209,459	\$ 1,956	\$ 733,450	\$ 2,383
Position Type 1: Coordinators - 1.6 FTE for 2 yrs (~0.2 FTE mgmt; 1.0 FTE outreach; ~0.1 FTE planning; ~0.1 FTE AMSD; & ~0.2 FTE region) (~\$214.2K)								
Position Type 2: Specialists, Technicians, & Seasonal Naturalists - 3.3 FTE for 2 yrs spread over ~14 positions (~\$400K)								
Position/Position Type 3: Laborers & Seasonal Field Crews - 1.1 FTE for 2 yrs spread over ~9 to 15 positions (~\$66K)								
Professional/Technical/Service Contracts Professional/Technical Contracts - Activity 1f. mgmt. plans (~\$60K); Act. 1g. adaptive mgmt. monitoring (~\$40K); Act. 2a. ebook videography etc & participant evaluation (~\$40K); Act. 2b. SNA events (~\$5K) Service Contracts - Activity 1 including 1a; native habitat restoration (~\$28K), 1b. woody encroachment removal & exotics control (~\$175K), 1c. prescribed burning (~\$78K); & 2d. site development (fences, signs, etc) (~\$65K)	\$ 404,007	\$ 393,302	\$ 10,705	\$ 64,152	\$ 64,152	\$ -	\$ 468,159	\$ 10,705
Contract: IT Services (Mn.IT service agreements) spatial database, strategic prioritization, & SNA website/interactive media development & support	\$ 7,225	\$ 7,225	\$ -		\$ -	\$ -	\$ 7,225	\$ -
Equipment/Tools/Supplies Activity 1 parts, tools, repair costs & supplies for restoration, invasives control, prescribed burning, management plans, & monitoring (~\$26.25K); interpretive displays, signs & posts, fencing, & other site development tools & supplies (~\$50K) Activity 2: volunteer & school events & site steward supplies (including safety items, handtools, training materials, etc) (~\$10.74K). This includes computer fleet charges pro-rated for up to 5.9 FTE paid through this appropriation (estimated up to \$6K, about \$500/year/FTE).	\$ 63,263	\$ 51,979	\$ 11,284	\$ 2,319	\$ 2,061	\$ 258	\$ 65,582	\$ 11,543
Printing Maps, educational & volunteer materials	\$ 4,700	\$ 4,605	\$ 95	\$ 3,791	\$ 3,591	\$ 200	\$ 8,491	\$ 295
Travel expenses in Minnesota Fleet charges for trucks, cars, & equipment, e.g. mowers, seeders (~\$40.2K); mileage, lodging & meals as per state contracts (~\$7.43K)	\$ 83,851	\$ 79,442	\$ 4,409	\$ 8,884	\$ 6,353	\$ 2,531	\$ 92,735	\$ 6,940
Other: Direct & Necessary Services for the Appropriation	\$ 83,320	\$ 83,320	\$ -	\$ 41,038	\$ 41,038	\$ -	\$ 124,358	\$ -
COLUMN TOTAL	\$ 1,168,401	\$ 1,141,481	\$ 26,920	\$ 331,599	\$ 326,653	\$ 4,946	\$ 1,500,000	\$ 31,866

Environment and Natural Resources Trust Fund
Final M.L. 2013 Acquisition/Restoration List

August 15, 2016

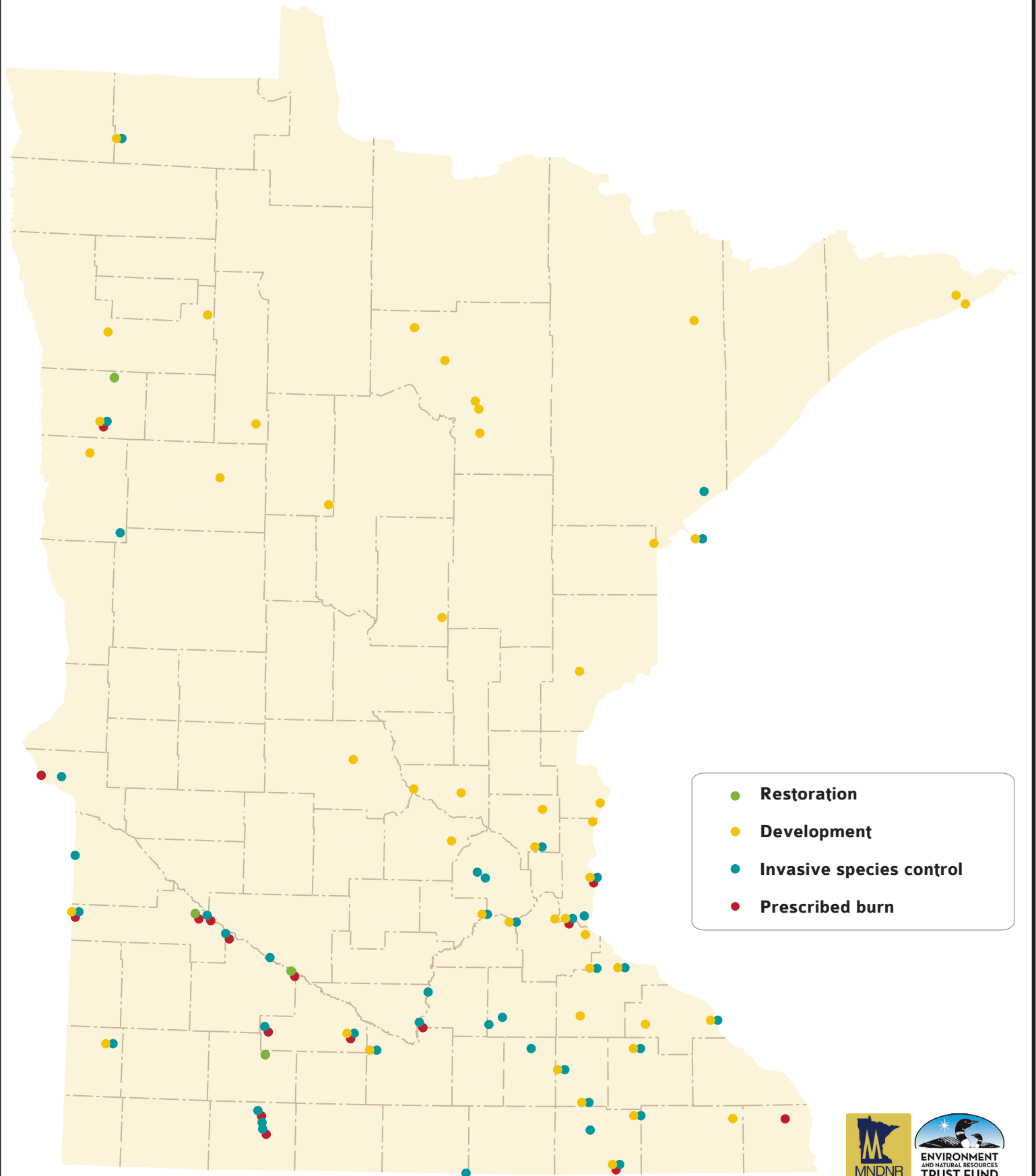
Project Title: SNA Conservation, Restoration, Enhancement & Citizen Engagement
 Project Manager Name: Margaret (Peggy) Booth
 M.L. 2013 ENRTF Appropriation: \$1,500,000

#	Acquisition or Restoration Parcel Name	Geographic Coordinates		Estimated Cost	Estimated Annual PILT Liabilities	County	Ecological Significance	Activity Description	# of Acres	# of Shoreline Miles	Type of Landowner	Proposed Fee Title or Easement Holder (if applicable)	Status
		Latitude	Longitude										
1	Avon Hills Forest SNA	45.60446	-94.47926	\$28,000	NA	Stearns	MCS mapped oak forest & wetlands	forest reconstruction	8		DNR	SNA	work delayed to future appropriation
2	Blue Devil Valley SNA	44.80182	-95.55157	\$8,000	NA	Yellow Medicine	MBS-mapped granite rock outcrop with rare 5-lined skinks	prairie-outcrop rehabilitation	10		DNR	SNA	0.7 acres seeded
3	Boot Lake SNA	45.33693	-93.12404	\$70,000	NA	Anoka	MBS-mapped oak & pine forest, wetlands, Boot Lake shore	forest reconstruction	20		DNR	SNA	work delayed to future appropriation
4	Cedar Mountain SNA	44.50473	-94.90201	\$11,000	NA	Redwood	MBS-mapped rock outcrop, forest, prairie,, wetlands, Mn River frontage	prairie-forest rehabilitation	14		DNR	SNA	18.6 acres seeded
5	Rock Ridge SNA	44.09621	-95.07017	\$15,000	NA	Cottonwood	MBS-mapped mesic & dry prairie & outcrops	prairie reconstruction	10		DNR	SNA	9.3 acres seeded
6	Wolsfeld Woods SNA	44.00090	-93.57277	\$35,000	NA	Hennepin	MBS-mapped sugar maple forest	forest groundlayer rehabilitation	1		DNR	SNA	work delayed to future appropriation
7	Wood-Rill SNA	44.98829	-93.53020	\$10,000	NA	Hennepin	MBS-mapped sugar maple forest	forest groundlayer rehabilitation	1		DNR	SNA	work delayed to future appropriation
8	Prairie Smoke Dunes SNA	47.46366	-96.31315	\$20,000	NA	Norman	MBS-mapped dry barrens oak savanna prairie	prairie reconstruction	168		DNR	SNA	201.8 acres seeded

SNA RESTORATION AND ENHANCEMENT PROJECTS COMPLETED

ML 2013 Final Report

Environment and Natural Resources Trust Fund



Evaluation of ENRTF Restoration Project

Report Date: August 12, 2016

Legal Citation: M.L. 2013, Chp. 52, Sec. 2, Subd. 04b

Project Title: Scientific & Natural Area Restoration, Enhancement & Citizen Engagement

Project Manager: Margaret Booth

Parcel Name: Prairie Smoke Dunes Scientific and Natural Area

Parcel Ownership: DNR administered and owned Scientific and Natural Area

Completed Restoration and Management Plans Consistent with ENRTF Requirements:

Prairie Smoke Dunes SNA Adaptive Management Plan (September 2013)

Summary of Plan Outcomes: Desired future condition: mesic (UPn23) to wet (WPn53) prairie native plant communities.

Reestablishment of these plant communities will provide additional habitat for rare species which have been documented on this site and in similar communities within Sundahl Township. The SNA contains a population of Federally Threatened Western Prairie Fringed Orchid and Northern Single-spoke sedge in the undisturbed wet brush prairie portions of this site.

Activities Completed Through This Project:

A number of management activities were completed using this funding source in the time period between DNR Fiscal Years 2014-2016. These included native prairie reconstruction on approximately 200 acres of old field; permanent firebreaks; invasive woody species control; and site clean-up.

One of the major projects that occurred at this site was the reconstruction of two old farmed fields. A reconstruction takes a lot of planning beginning with site preparation which typically includes multiple years of tillage and spraying, seed harvest, seed planting and follow up maintenance.

The seed harvested for this site came from similar native plant communities at three SNA's located nearby Prairie Smoke Dunes, one WMA, Clay County land-Felton, and a Native Prairie Bank Easement. Seed was harvested from the Santee Prairie and Sandpiper Prairie SNA's for this project. Both sites contain high quality mesic prairie (UPn23) and wet Prairie (WPn53) species. Both sites were custom combined during fall of 2014. Additionally, a native remnant wet prairie mix from the Wambach WMA was used. A dry prairie seed mix (UPn12) from the Bicentennial Prairie SNA was harvested by SNA staff in 2014. Seed from the Clay County land (UPn12b) harvested at Felton in 2011 was used for the drier portions of the southern field at Prairie Smoke Dunes and was seeded on the SNA the following spring, in 2015 via broadcasting on the snow in March. Seed was also gathered from a Native Prairie Bank Easement, privately owned but in the SNA Program's administrative purview. This site has a mix of mesic and wet prairie species (WPn53b) as well and was used for the larger of the two restoration areas. A total of 7,545 pounds of bulk seed was used on both fields.

Multiple contracts using private vendors for site preparation and custom planting were made using this funding over the 3 year period. These included disking, tilling, spraying and seeding. The larger northern field was seeded in June of 2016 by a broadcast method followed up by a soil packing occurrence to ensure good seed to soil contact.

Additionally, multiple sites within this SNA but not within the field restoration areas, were treated for woody invasive species including common buckthorn and honeysuckle. This was accomplished using a cut and stump treatment with herbicide. Other treatments included girdling aspen in several areas near the restored fields. The Conservation Corps of Minnesota was contracted to implement this work over several seasons as well as the removal of woody species to create a permanent firebreak through the mesic hardwoods in the central portion of this SNA.

Woody species that were removed during these projects were piled and burned on disturbed ground during the late winter/early spring of 2015 by DNR staff.

Map of Restoration project: Attached below as Appendix A

Ongoing Management Needs & Funding:

Ongoing management will include clipping of the restoration in the first two years if warranted for invasive species and/or to reduce competition of non-native species; use of prescribed fire; and brush management and targeted herbicide treatments as needed to control invasive and non-native species.

These tasks will be done with funding available through appropriations by the legislature, including future ENRTF and Outdoor Heritage Fund appropriations. Future use of CCM crews is proposed to aide in ongoing management activities, including native seed collection, invasive species control, prescribed fire preparation and implementation.

[Initial Evaluation](#)

Dates: June 2016

Summary of Evaluation: The reconstruction work at Prairie Smoke Dunes is in its initial and early phase. The south 40 acres that was seeded in 2015 is starting to express itself in this part of the SNA. The entire seeding on both portions of the reconstructed areas was clipped this June to help reduce annual weed competition. SNA staff will be able to evaluate the entire site better by years three & four (2018-19).

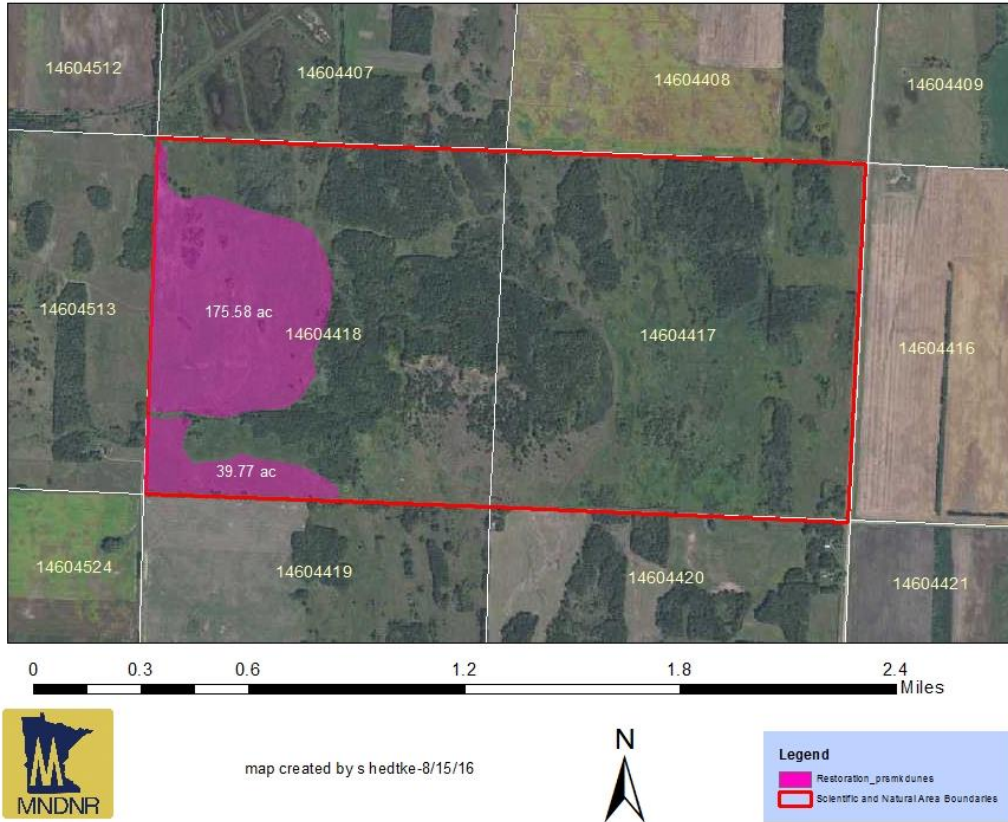
[Three Year Evaluation](#)

Proposed Dates: [insert month(s) & year]

Summary of Evaluation:

Appendix A. Restoration Area at Prairie Smoke Dunes SNA

Prairie Restoration Areas at Prairie Smoke Dunes SNA



Appendix B: List of Species Seeded

Wambach WMA

- Big Bluestem (*Andropogon gerardi*)
- Indiangrass (*Sorghastrum nutans*)
- Little Bluestem (*Schizachyrium scoparium*)
- Golden Alexanders (*Zizia aurea*)
- Tall dropseed (*Sporobolus compositus*)
- Bedstraw (*Galium spp*)
- Kalms Brome (*Bromus kalmii*)
- Aster (*Aster spp*)
- Goldenrod (*Solidago spp*)

Santee Prairie SNA

- Big Bluestem (*Andropogon gerardi*)
- Culvers root (*Veronicastrum virginicum*)
- Mountain mint (*Pycnanthemum spp*)
- Meadow rue (*Thalictrum spp*)
- Black-eyed Susan (*Rudbeckia hirta*)
- Sunflower (*Heliantus spp*)
- Leadplant (*Amorpha canescens*)
- Purple prairie clover (*Dalea purpurea*)
- White death camas (*Zigadenus elegans*)
- Lousewort (*Pedicularis spp*)
- Prairie cinquefoil (*Potentilla argute*)
- Dogbane (*Apocynum spp*)
- Prairie dropseed (*Sporobolus heterolepis*)
- Stiff goldenrod (*Solidago rigida*)
- Gayfeather (*Liatris spp*)
- Bearded wheatgrass (*Elymus trachycaulus*)
- Muhly grass (*Muhlenbergia spp*)
- Wild licorice (*Glycyrrhiza lepidota*)
- Alumroot (*Heuchera spp*)
- Wild onion (*Allium spp*)
- Early sunflower (*Heliopsis helianthoides*)
- Prairie cordgrass (*Spartina pectinata*)
- Milkweed (*Asclepias spp*)
- Switchgrass (*Panicum virgatum*)
- Spotted water-hemlock (*Cicuta maculata*)

Sandpiper Prairie SNA

- Big Bluestem (*Andropogon gerardi*)
- Side-oats grama (*Bouteloua curtipendula*)
- Prairie dropseed (*Sporobolus heterolepis*)
- Tall dropseed (*Sporobolus compositus*)
- Prairie cordgrass (*Spartina pectinata*)
- Sunflower (*Heliantus spp*)
- Wild onion (*Allium spp*)

Sandpiper Prairie SNA con't

- Northern bedstraw (*Galium boreale*)
- Little Bluestem (*Schizachyrium scoparium*)
- Milkweed (*Asclepias spp*)
- Gayfeather (*Liatris spp*)
- Purple prairie clover (*Dalea purpurea*)
- Meadow rue (*Thalictrum spp*)
- Golden Alexanders (*Zizia aurea*)
- Bearded wheatgrass (*Elymus trachycaulus*)
- Bergamot (*Monarda fistulosa*)
- Mountain mint (*Pycnanthemum spp*)
- Muhly grass (*Muhlenbergia spp*)
- Culvers root (*Veronicastrum virginicum*)
- Goldenrod (*Solidago spp*)
- Wild licorice (*Glycyrrhiza lepidota*)
- Leadplant (*Amorpha canescens*)
- Wolfberry (*Symphoricarpos spp*)
- Switchgrass (*Panicum virgatum*)
- Black medick (*Medicago lupulina*)
- Indiangrass (*Sorghastrum nutans*)

Bicentennial Prairie SNA

- Big Bluestem (*Andropogon gerardi*)
- Prairie dropseed (*Sporobolus heterolepis*)
- White prairie clover (*Petalostemon candidus*)
- Purple prairie clover (*Dalea purpurea*)
- Leadplant (*Amorpha canescens*)
- Narrow-leaf coneflower (*Echinacea angustifolia*)
- Northern bedstraw (*Galium boreale*)
- Bearded wheatgrass (*Elymus trachycaulus*)
- Blue grama (*Bouteloua gracilis*)
- Stiff goldenrod (*Solidago rigida*)
- Prairie cinquefoil (*Potentilla arguta*)
- Side-oats grama (*Bouteloua curtipendula*)
- Indiangrass (*Sorghastrum nutans*)
- Little Bluestem (*Schizachyrium scoparium*)
- Prairie cordgrass (*Spartina pectinata*)

Strand NPB-south

- Big Bluestem (*Andropogon gerardi*)
- Gayfeather (*Liatris spp*)
- Kalms Brome (*Bromus kalmii*)
- Sunflower (*Heliantus spp*)
- Prairie dropseed (*Sporobolus heterolepis*)
- Bearded wheatgrass (*Elymus trachycaulus*)
- Prairie cordgrass (*Spartina pectinata*)

Strand NPB-south con't

- Spotted water-hemlock (*Cicuta maculata*)
- Golden Alexanders (*Zizia aurea*)
- Goldenrod (*Solidago spp*)
- Aster (*Aster spp*)
- Eupatorium (*Eupatorium spp*)
- Northern bedstraw (*Galium boreale*)
- Muhly grass (*Muhlenbergia spp*)

Felton Prairie-Clay County land

No species list available-see photos of select species



Wood lily

Appendix C: Photographs:

Felton Prairie-Clay County land



Narrow-leaf coneflower



Death camas



Prairie rose

Evaluation of ENRTF Restoration Project

Report Date: June 30, 2016

Legal Citation: M.L. 2013, Chp. 52, Sec. 2, Subd. 04b

Project Title: Scientific & Natural Area Restoration, Enhancement, and Citizen Engagement

Project Manager: Margaret (Peggy) Booth

Parcel Name: Blue Devil Valley Scientific and Natural Area

Parcel Ownership: DNR administered and owned Scientific and Natural Area

Completed Restoration and Management Plans Consistent with ENRTF Requirements: Management Plan Blue Devil Valley SNA (March, 1992) and Blue Devil Valley SNA Adaptive Management Plan and Inventory (2016 draft)

Summary of Plan Outcomes: Desired future condition: native prairie or savanna (UPs13, UPs23, UPs14, UPs24) native plant community. Reestablishment of this plant community will provide additional habitat for rare species; such as five-lined skink which have been documented on the Blue Devil Valley SNA and in similar communities within Minnesota Falls Township. Restoration of prairie plants will also allow prescribed fire to be used to control buckthorn seedlings.

Related Activities:

The Blue Devil SNA was cleared of existing stands of buckthorn and honeysuckle in previous years. Ongoing follow-up treatments have been required and conducted to try to control buckthorn regrowth and seedling recruitment. Treatments included: cut/treat treatments, foliar spray of early re-sprouts, weed torches, and herbicide wicking on buckthorn. The history of extensive buckthorn cover and the impacts of the buckthorn control methods have largely eliminated nearly all vegetation from parts of the SNA.

Activities Completed Through This Project:

The restoration completed through this appropriation targeted an approximately one acre restoration site which was nearly devoid of native vegetation. Nearly 200 pounds of native grass and wildflower seed was collected from nearby native prairie bank easements (Swedes Forest 20-1, 20-2, and 21-1). The bulk of the seed came from previous mechanical harvesting efforts in 2011 (prior to this appropriation). Additional seed was harvested, mostly by hand, in the fall of 2014. At least 25 species of native grass and wildflowers were collected. The seed mix was dominated by Indian grass, big bluestem, and little bluestem. See partial species list in Appendix A

The restoration site was seeded on January 22nd, 2015 with 200 pounds of native seed, and seed was spread over snow and exposed soil under frozen ground conditions. This small seeding was done by hand, and applied in areas with good soil to seed contact. Slash piles, rock outcrops, and other heavily shaded areas were avoided to ensure adequate sunlight for seed germination.

Map of Restoration project: Attached below as Appendix B

Ongoing Management Needs & Funding:

Ongoing management for the short-term will focus on control of the invasive woody species in the SNA. The control measures will certainly impact the survival of seeded material. Additional inter-seeding may be required once the buckthorn is determined to be better under control. Buckthorn management may include; prescribed fire, weed torch use on seedlings, cut/treat treatments; and targeted herbicide treatments. Activities will be done with funding available through appropriations by the legislature, including future ENRTF and Outdoor Heritage Fund appropriations. Future use of CCM crews will be considered to aide in ongoing management activities, including native seed collection, invasive species control, prescribed fire preparation and implementation. CCM have been involved with several aspects of the buckthorn control to date (and prescribed fire on other parts of the SNA).

[Initial Evaluation](#)

Dates: June 2016

Summary of Evaluation:

Only a few native species are present in the restoration area and native species ground cover is sparse. Ground layer is dominated by common buckthorn and non-native herb species including motherwort. Common buckthorn seedlings which have germinated since the most recent seeding have created a nearly closed canopy over bare soil conditions. This is still early in the plant establishment period for this type of restoration.

Because of overlapping seeding and buckthorn control efforts it is difficult to know if a dearth of observed plants may be due to poor or suppressed germination or seedling establishment due to the allelopathic effect of buckthorn, or whether it may be due to the impacts of current buckthorn control efforts. Additionally, it may be difficult to determine if plants in the target area are remnant hold-outs that survived conditions to this point, if they are evidence of natural recolonization, or if they may be from the seeding efforts. Throughout the next several years, buckthorn control efforts will continue. It is anticipated that the re-establishment of native vegetation will assist with efforts to reintroduce prescribed fire, increase native species diversity, and to manage non-native species. Additional efforts to re-establish prairie species will likely be required in the future.

[Three Year Evaluation](#)

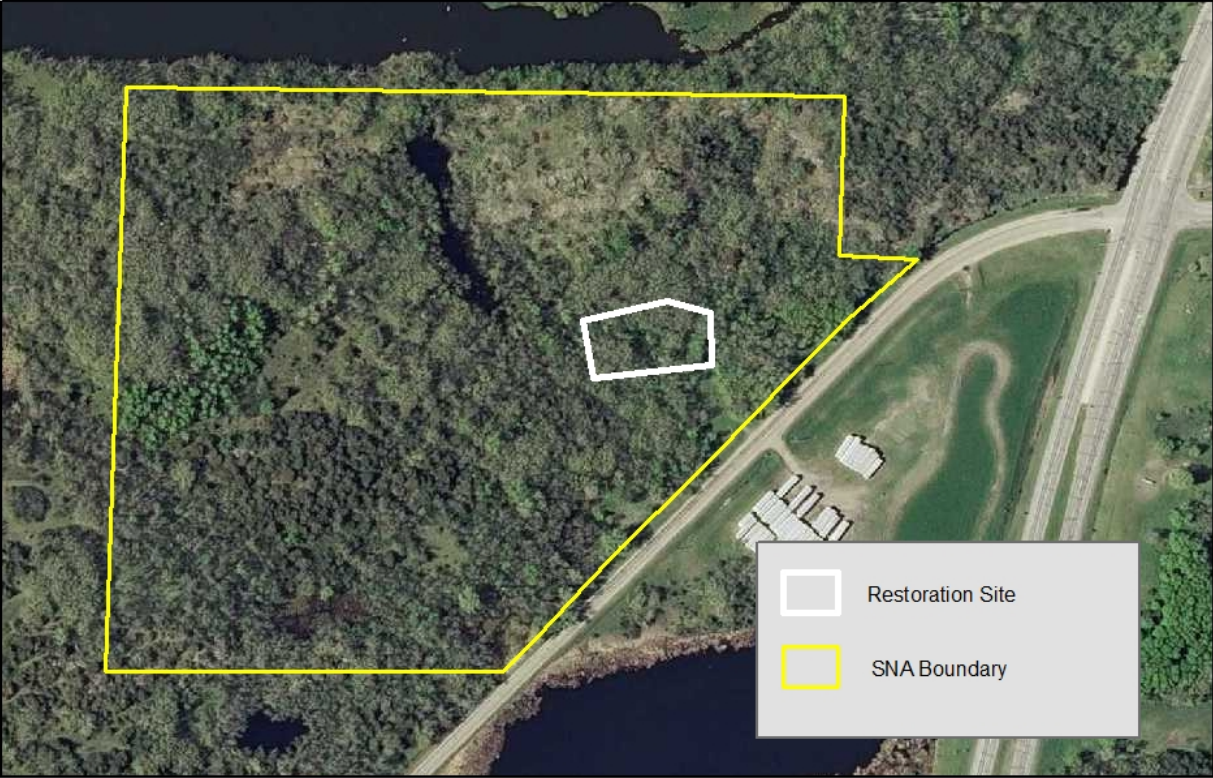
Proposed Dates: July/ August 2018 or 2019

Summary of Evaluation:

Appendix A. Partial list of species seeded

Big Bluestem	<i>Andropogon gerardii</i>
Indian Grass	<i>Sorghastrum nutans</i>
Little Bluestem	<i>Schizachyrium scoparium</i>
Side Oats grama	<i>Bouteloua curtipendula</i>
Common Yarrow	<i>Achillea millefolium</i>
Leadplant	<i>Amorpha canescens</i>
Prairie Rose	<i>Rosa arkansana</i>
White Sage	<i>Artemisia ludoviciana</i>
Green Milkweed	<i>Asclepias viridiflora</i>
Short-leaf Coneflower	<i>Echinacea angustifolia</i>
Wild Bergamot	<i>Monarda fistulosa</i>
Yellow Coneflower	<i>Ratibida pinnata</i>
Purple Prairie Clover	<i>Dalea purpurea</i>
Prairie Cinquefoil	<i>Potentilla arguta</i>
Wild onion	<i>Allium</i> sp.
Aster Species	<i>Aster</i> sp.

Appendix B. Parcel Map: Blue Devil Valley Scientific and Natural Area Showing restoration site



Evaluation of ENRTF Restoration Project

Report Date: June 30, 2016

Legal Citation: M.L. 2013, Chp. 52, Sec. 2, Subd. 04b

Project Title: Scientific & Natural Area Restoration, Enhancement, and Citizen Engagement

Project Manager: Margaret (Peggy) Booth

Parcel Name: Cedar Mountain Scientific and Natural Area

Parcel Ownership: DNR administered and owned Scientific and Natural Area

Completed Restoration and Management Plans Consistent with ENRTF Requirements: Restoration Plan: Cedar Mountain SNA (2014) and Cedar Mountain SNA Adaptive Management Plan and Inventory (2011)

Summary of Plan Outcomes: Desired future condition: Southern Mesic Prairie (Ups23a) or Southern Dry Hill Prairie (Ups13d) native plant community.

Reestablishment of this plant community will provide additional habitat for native species which have been documented on at the Cedar Mountain SNA and in similar communities within Sherman Township. It will reduce the habitat loss and fragmentation resulting from extensive brush encroachment into the prairie and rock outcrop prairie communities.

Related Activities:

In the fall of 2011, the restoration areas were cut using a brush mower. Cut stumps were treated with herbicide to prevent re-sprouting. Slash piles were burned in winter 2013-2014.

Native seed was hand harvested from Morton Outcrops SNA in 2011. On November 30, 2011, eleven pounds of native seed was hand seeded across the bare soil areas (which was formerly heavily shaded by plum) in the target area.

Prescribed fire was applied to the restoration site and adjacent native plant communities in the spring of 2014, (though many of the areas targeted for restoration did not have sufficient fuel to carry a fire). In many portions of the 2011 tree removal area the native vegetation has started to respond; however, the areas that contained the highest density woody vegetation, including wild plum, bare soil conditions still persist. Wild plum and other deciduous species have re-sprouted.

In spring and early summer of 2015, the 2011 tree removal area was again subjected to a prescribed burn. This time, the area that did not carry fire was brush mowed to set back the plum and other brush.

Activities Completed Through This Project:

This restoration site covers approximately 19 acres.

Native seed was mechanically harvested from Cottonwood River Scientific and Natural Area in 2013 and hand harvested at Eden North 19-1 Native Prairie Bank in 2014. This yielded around 35 pounds of native grass and wildflower seed. The seed mix was dominated by big bluestem, little bluestem, Indian grass, and side-oats grama.

This 35 pounds was seeded by hand on February 24th, 2015. Seed was applied into open areas and thinner plum thickets with good soil to seed contact. Areas with dense plum thickets and rock outcrops were excluded, creating a patchy seeding over a large restoration area.

This work was done by DNR staff with Conservation Corps Minnesota assisting with seed harvest.

Map of Restoration project: Attached below as Appendix B

Ongoing Management Needs & Funding:

Original seed collection included a diverse number of species, but the timing of harvest left many early season species out of the seed mix for this restoration. Hand and selective mechanical harvest of additional seed may be considered for this site if bare patches persist. Ongoing management will include prescribed fire, mowing, and brush management and targeted herbicide treatments as needed to control invasive and non-native species. This will be done with funding available through appropriations by the legislature, including future ENRTF and Outdoor Heritage Fund appropriations. Future use of CCM crews is proposed to aide in ongoing management activities, most notably prescribed fire implementation.

[Initial Evaluation](#)

Dates: June 2016

Summary of Evaluation: SNA staff has observed that some desirable native species are appearing, but as is typical with restorations of this kind, invasive species such as thistle, occur at the site. The patchy nature and potential for natural revegetation of this restoration does make it difficult to determine the true success of the seeding. Warm season perennial prairie grasses and wildflowers typically take more than a single growing season to get established. Invasive species control, both chemical and mechanical, along with the planned application of mowing and prescribed fire will enhance the early stages of this restoration and site conditions will continue to improve. Throughout the next several years, prescribed fire will be used to manage the growth of woody species including wild plum, to minimize the effect of shade of the seeded prairie species.

[Three Year Evaluation](#)

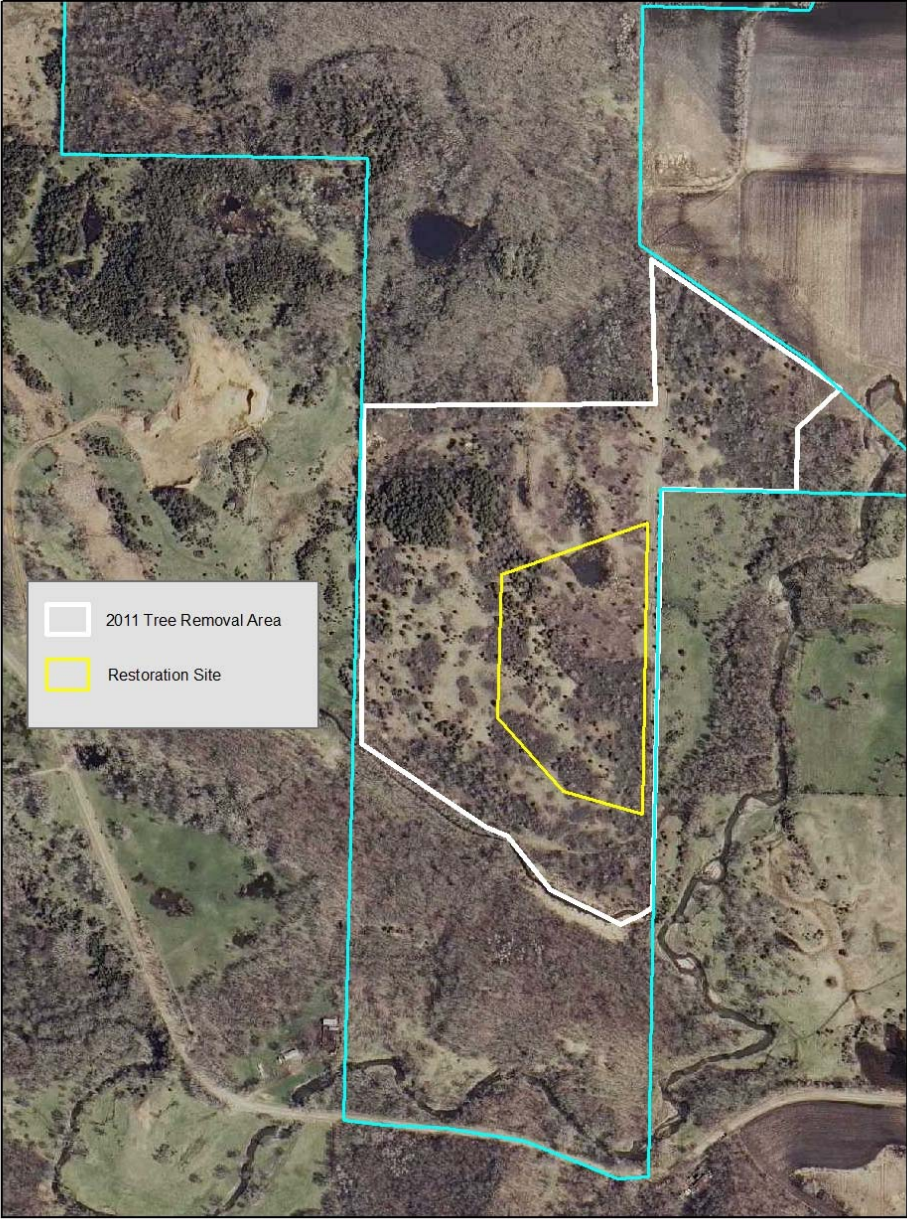
Proposed Dates: June/July 2019

Summary of Evaluation:

Appendix A. Partial list of species seeded

Big Bluestem	<i>Andropogon gerardii</i>
Indian Grass	<i>Sorghastrum nutans</i>
Little Bluestem	<i>Schizachyrium scoparium</i>
Side Oats grama	<i>Bouteloua curtipendula</i>
Prairie Dropseed	<i>Sporobolus heterolepis</i>
Carex	<i>Carex</i> sp.
Leadplant	<i>Amorpha canescens</i>
White Prairie Clover	<i>Dalea candida</i>
Purple Prairie Clover	<i>Dalea purpurea</i>
Prairie Cinquefoil	<i>Potentilla arguta</i>
Hoary Vervain	<i>Verbena stricta</i>
False Boneset	<i>Brickellia eupatorioides</i>
Narrow-leaf coneflower	<i>Echinacea angustifolia</i>
Wolfberry	<i>Symphoricarpos</i> sp.
Round Headed Bush clover	<i>Lespedeza capitata</i>
Prairie Onion	<i>Allium stellatum</i>
Stiff Goldenrod	<i>Solidago rigida</i>
Heath Aster	<i>Symphyotrichum ericoides</i>
Hairy Four-O'Clock	<i>Mirabilis albida</i>
White Sage	<i>Artemisia ludoviciana</i>
Green Milkweed	<i>Asclepias viridiflora</i>
Ground Plum	<i>Astragalus crassicaarpus</i>
Wild Bergamot	<i>Monarda fistulosa</i>
Yellow Coneflower	<i>Ratibida pinnata</i>
Prairie Rose	<i>Rosa arkansana</i>

Appendix B. Parcel Map: Cedar Mountain Scientific and Natural Area Showing restoration site



Evaluation of ENRTF Restoration Project

Report Date: June 30, 2016

Legal Citation: M.L. 2013, Chp. 52, Sec. 2, Subd. 04b

Project Title: Scientific & Natural Area Restoration, Enhancement, and Citizen Engagement

Project Manager: Margaret (Peggy) Booth

Parcel Name: Rock Ridge Prairie Scientific and Natural Area

Parcel Ownership: DNR administered and owned Scientific and Natural Area

Completed Restoration and Management Plans Consistent with ENRTF Requirements: Rock Ridge Restoration Plan (2013) and Rock Ridge Prairie Management Brief (2004)

Summary of Plan Outcomes: Desired future condition: Southern Mesic Prairie (Ups23a) native plant community.

Reestablishment of this plant community will provide additional habitat for rare species which have been documented on the Rock Ridge SNA and in similar communities within Delton Township. The SNA contains populations of prairie bush clover (*Lespedeza leptostachya*), a federally threatened species. The SNA is part of the "Red Rock Ridge" prairie landscape; a series of prairies lying along a ridge of Sioux quartzite outcroppings and including the Jeffers Petroglyphs State Historic Site and TNC Red Rock Prairie Preserve. The prairie was recommended for protection on DNR's Biological Report No. 12 Prairie Bush Clover Inventory and Preserve Design. The row crop fields on the SNA are being restored in stages (including one reported in a ML11 evaluation), with approximately 10-15 acres still in row crop production after this seeding.

Activities Completed Through This Project:

This 9.3 acre restoration site was in row crops for a number of consecutive years. Previously, the non-cropped portions of this SNA were used for pasture and hay production. The final crop in advance of native prairie reconstruction was corn, which was planted and harvested in 2014. Corn and soy bean crops were rotated to help control non-native and other weedy species from dominating the site before restoration seeding. The rotation also provided time to collect enough native grass and wildflower seed from nearby native prairie remnants. The seed was harvested in the fall of 2014 from remnant native prairie and restoration sites at Cottonwood River Scientific and Natural Area and Rock Ridge Scientific and Natural Area. Seed samples - for mechanically harvested seed - were tested in fall 2014. The seed harvested was dominated by big bluestem and Indian grass; 19 additional native taxonomic groups were noted in the seed test. At least seven additional native prairie species were captured by hand harvesting. See species list in Appendix A.

The corn residue was baled and removed after harvest to increase soil to seed contact. The restoration site was seeded using a broadcast seeder. On February 12, 2015, in excess of 551 pounds of bulk harvest seed was spread over snow and exposed soil under frozen ground conditions.

Mowing, prescribed fire, and spot herbicide treatments were selected as the main management tools during the plant establishment period. The use of mowing minimizes the competition from non-native species and allows desirable native species to establish.

This work was done by DNR staff. CCM assisted with seed collection. A nearby landowner did the site prep and mowing in exchange for crop from the remaining field.

Map of Restoration project: Attached below as Appendix B

Ongoing Management Needs & Funding:

Original seed collection harvest included a diverse number of species, but the harvest timing left many species out of the seed mix for this restoration. Hand and selective mechanical harvest of additional seed from within the unit, Cottonwood River Prairie and other nearby remnants, is planned for this site. Ongoing management will include interseeding with native species from local seed source; prescribed fire, mowing, and targeted herbicide treatments as needed to control invasive and non-native species. In addition, the adjoining 10 to 15 acre parcel needs to be restored. This will be done with funding available through appropriations by the legislature, including future ENRTF and Outdoor Heritage Fund appropriations. Future use of CCM crews is proposed to aide in ongoing management activities, including native seed collection, invasive species control, prescribed fire preparation and implementation.

[Initial Evaluation](#)

Dates: June 2016

Summary of Evaluation: SNA staff has observed that some desirable native species are appearing, but as is typical with restorations of this kind, invasive species such as thistle, dominate the site. Warm season perennial prairie grasses and wildflowers typically take more than a single growing season to get established. Invasive species control, both chemical and mechanical, along with the planned application of mowing and prescribed fire will enhance the early stages of this restoration and site conditions will continue to improve. Throughout the next several years, prescribed fire and additional seeding will be used to increase species diversity and to manage non-native species.

[Three Year Evaluation](#)

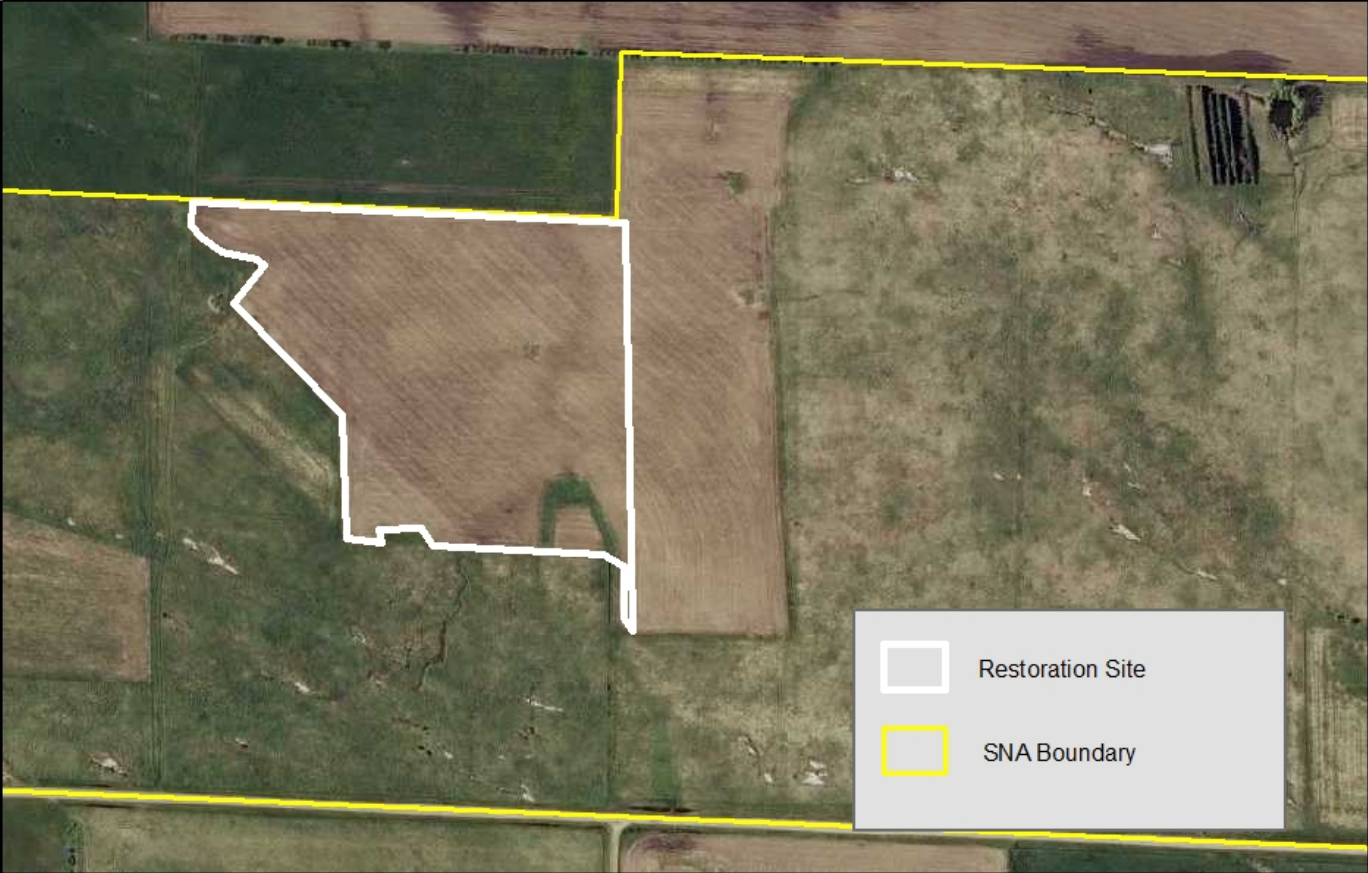
Proposed Dates: June/July 2019


Summary of Evaluation:

Appendix A. Partial list of species seeded

Big Bluestem	<i>Andropogon gerardii</i>
Indian Grass	<i>Sorghastrum nutans</i>
Little Bluestem	<i>Schizachyrium scoparium</i>
Side Oats grama	<i>Bouteloua curtipendula</i>
Leadplant	<i>Amorpha canescens</i>
White Prairie Clover	<i>Dalea candida</i>
Purple Prairie Clover	<i>Dalea purpurea</i>
Prairie Cinquefoil	<i>Potentilla argute</i>
Prairie Rose	<i>Rosa arkansana</i>
Gray-headed Coneflower	<i>Ratibida pinnata</i>
Wild Bergamot	<i>Monarda fistulosa</i>
Gayfeather	<i>Liatris sp.</i>
Hoary Vervain	<i>Verbena stricta</i>
Thimbleweed	<i>Anemone cylindrica</i>
Aster Species	<i>Aster sp</i>
Dropseed	<i>Sporobolus sp.</i>
Prairie Dropseed	<i>Sporobolus heterolepis</i>
Canada Wildrye	<i>Elymus canadensis</i>
Switchgrass	<i>Panicum virgatum</i>
Goldenrod	<i>Solidago sp.</i>
False Boneset	<i>Brickellia eupatorioides</i>
Evening Primrose	<i>Oenothera sp.</i>
Wolfberry	<i>Symphoricarpos sp.</i>
Round Headed Bush clover	<i>Lespedeza capitata</i>
Stiff Goldenrod	<i>Solidago rigida</i>
Carex spp.	<i>Carex sp.</i>

Appendix B. Parcel Map: Rock Ridge Scientific and Natural Area Showing restoration site





Minnesota Scientific and Natural Area Outreach Initiative

The long-term goal of this initiative is building lasting conservation ethics at the community level.

Through ML13 ENRTF appropriation the second phase of the SNA Outreach Initiative achieved:

INFORMATION...

- 🌿 Launch of an SNA Facebook with 1,500 fans in its first year and total reach of 34,000.
- 🌿 Quarterly publication of *Nature Notes* e-news with more than 3,000 subscribers in 2014.
- 🌿 Production of a statewide SNA map and series of 12 pocket cards.
- 🌿 Complete revision of written SNA site descriptions in preparation for a new e-Book guide.

EVENTS

- 🌿 More than 1,550 participants in 170 SNA interpretive events and volunteer projects.
- 🌿 A survey of event participants with 94% very satisfied.

SITE STEWARDS...

- 🌿 Site stewards for 128 (80%) of SNAs caring for and reporting observations.

Find us online at: www.mndnr.gov/snas or www.facebook.com/MinnesotaSNAs

A Sample of Minnesota Scientific and Natural Area Outreach



📍 **Top:** Site steward @ Clinton Falls Dwarf Trout Lily SNA, Invasive removal @ Grey Cloud Dunes SNA
📍 **Center:** Seed collection @ Lost Valley Prairie SNA, Prairie interpretive hike @ Bluestem Prairie SNA
📍 **Bottom:** Snowshoe hike at Burntside Islands SNA, Site steward enrichment @ Mille Lacs Moraine SNA

