

2011 Project Abstract

For the Period Ending June 30, 2014

PROJECT TITLE: Scientific and Natural Areas Acquisition and Restoration
PROJECT MANAGER: Margaret (Peggy) Booth
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FUNDING SOURCE: Environment and Natural Resources Trust Fund)
LEGAL CITATION: M.L. 2011, First Special Session, Chp. 2, Art.3, Sec. 2, Subd. 04e

APPROPRIATION AMOUNT: \$1,640,000

Overall Project Outcome and Results

The biologically significant 900-acre Badoura Jack Pine Forest SNA was acquired in part through appropriation. Twenty-two conservation easement baseline property reports at 11 SNAs are completed. The SNA Strategic Land Protection Plan has been completed which prioritizes places of ecological importance for protection as SNAs and by partners.

Habitat restoration and enhancement actions are increasing the quality of habitat on SNAs through achieving: restoration of about 30 acres at 4 SNAs; woody invasive species control on 610 acres at 19 SNAs, herbaceous invasive species treatment on 487 acres at 33 SNAs, and installation of invasives control bootbrush kiosks at 6 SNAs; about 36 miles of burn breaks at 21 SNAs and completion of 1,190 acres of prescribed burns at 25 SNAs; and site development work (e.g. entry and boundary signs, new gates, and site cleanup) at 35 SNAs. Conservation Corps Minnesota was involved in 51 of these projects. Substantial monitoring was completed of pollinators at 10 SNAs, of snakes at 1 SNA, and of native plant communities at 2 SNAs.

The public's and youth involvement in SNAs and their knowledge and skills about biodiversity conservation has significantly increased through the SNA Outreach Initiative started through this appropriation. About 215 SNA events were held with over 3300 participants and 124 volunteer site stewards have committed to help care for SNAs. A broad range of communications tools have engaged people in sharing information about SNAs. Electronic communications achievements include: a new quarterly electronic newsletter with over 2600 subscribers, a new SNA Facebook page with over 1,100 likes and monthly reach of 12,000 (including many user posts), and a significantly improved new SNA webpage. Print communications created and distributed include: a statewide map with location and directions to SNAs, a new North Shore SNA guide, 3 series of pocket cards, and site-specific factsheets.

Project Results Use and Dissemination

Dissemination is primarily achieved through the upgraded SNA webpage on the DNR website: <http://www.mndnr.gov/snas>. The SNA Strategic Land Protection Plan is also disseminated through this website: <http://www.dnr.state.mn.us/eco/sna/plan.html>. All volunteer events are listed at the webpage. Volunteer site stewards submit periodic reports via a generic SNA email address sna.dnr@state.mn.us created through this appropriation for a broad variety of constituent communications. An SNA Facebook page provides SNA visitors a place to report and share observations and photographs. Ten issues of the quarterly electronic Nature Notes newsletter were emailed through govdelivery – with over 2600 current subscribers.

A statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) has been designed, 5000 copies printed, and nearly all copies distributed through the DNR Information Center, at DNR region and area offices and state parks, at the State Fair, and through SNA event co-sponsors – with primary emphasis on facilities/organizations that are near SNAs and are cooperating on sponsoring SNA events. A color poster-booklet on “The Ten Best Places of the North Shore: A Visitor’s Guide to North Shore Scientific and Natural Areas” was printed and distributed through a combination of this appropriation and federal Coastal Zone Management funding. Each year series of new business card-size “pocket cards” each featuring 1 SNA (and incorporating a QR code through which a smart phone with camera can directly connect to the SNA web) have been printed and almost all cards for the 32 SNAs produced to date have been distributed through the State Fair, DNR Info Center, and many DNR events.



Environment and Natural Resources Trust Fund (ENRTF) M.L. 2011 Work Plan Final Report

Date of Status Update: 9/8/2014; updated 10/15/14
Date of Next Status Update: Final Report
Date of Work Plan Approval: 6/23/2011
Project Completion Date: 6/30/2014 **Is this an amendment request?**

Project Title: Scientific and Natural Areas Acquisition and Restoration

Project Manager: Peggy Booth

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Location:

Counties Impacted: Statewide

Ecological Section Impacted: Lake Agassiz Aspen Parklands (223N), Minnesota and Northeast Iowa Morainal (222M), North Central Glaciated Plains (251B), Northern Minnesota and Ontario Peatlands (212M), Northern Minnesota Drift and lake Plains (212N), Northern Superior Uplands (212L), Paleozoic Plateau (222L), Red River Valley (251A), Southern Superior Uplands (212J), Western Superior Uplands (212K)

Total ENRTF Project Budget:	ENRTF Appropriation \$:	1,640,000
	Amount Spent \$:	<u>1,636,758</u>
	Balance \$:	3,242

Legal Citation: M.L. 2011, First Special Session, Chp. 2, Art.3, Sec. 2, Subd. 04e

Appropriation Language:

\$820,000 the first year and \$820,000 the second year are from the trust fund to the commissioner of natural resources to acquire lands with high-quality native plant communities and rare features to be established as scientific and natural areas as provided in Minnesota Statutes, section 86A.05, subdivision 5, restore parts of scientific and natural areas, and provide technical assistance and outreach. A list of proposed acquisitions must be provided as part of the required work program. Land acquired with this appropriation must be sufficiently improved to meet at least minimum management

standards, as determined by the commissioner of natural resources. This appropriation is available until June 30, 2014, by which time the project must be completed and final products delivered.

I. PROJECT TITLE: Scientific and Natural Area Acquisition and Restoration

II. FINAL PROJECT SUMMARY:

The biologically significant 900-acre Badoura Jack Pine Forest SNA was acquired in part through appropriation. Twenty-two conservation easement baseline property reports at 11 SNAs are completed. The SNA Strategic Land Protection Plan has been completed which prioritizes places of ecological importance for protection as SNAs and by partners.

Habitat restoration and enhancement actions are increasing the quality of habitat on SNAs through achieving: restoration of about 30 acres at 4 SNAs; woody invasive species control on 610 acres at 19 SNAs, herbaceous invasive species treatment on 487 acres at 33 SNAs, and installation of invasives control bootbrush kiosks at 6 SNAs; about 36 miles of burn breaks at 21 SNAs and completion of 1,190 acres of prescribed burns at 25 SNAs; and site development work (e.g. entry and boundary signs, new gates, and site cleanup) at 35 SNAs. Conservation Corps Minnesota was involved in 51 of these projects. Substantial monitoring was completed of pollinators at 10 SNAs, of snakes at 1 SNA, and of native plant communities at 2 SNAs.

The public's and youth involvement in SNAs and their knowledge and skills about biodiversity conservation has significantly increased through the SNA Outreach Initiative started through this appropriation. About 188 SNA events were held with 2,745 participants and 124 volunteer site stewards have committed to help care for SNAs. A broad range of communications tools have engaged people in sharing information about SNAs. Electronic communications achievements include: a new quarterly electronic newsletter with over 2600 subscribers and a significantly improved new SNA webpage. Print communications created and distributed include: a statewide map with location and directions to SNAs, a new North Shore SNA guide, 3 series of pocket cards, and site-specific factsheets.

III. PROJECT STATUS UPDATES:

Project Status as of March 1, 2012:

Four acquisition projects at three locations to be acquired all or in part with this appropriation are underway: one offer has been made, two other acquisitions are being appraised, and a federal grant application has been submitted to pay for part of 4th project. The SNA Strategic Plan project has been initiated which will apply a GIS-computer based system to prioritize land acquisition and protection of rare resources. Habitat restoration and enhancement project activities completed to date include: seed collection from 9.5 acres for one prairie reconstruction at that site; wood invasive species control on 2.3 acres at 2 SNAs and herbaceous invasive species treatment on about 0.1 acre at 1 SNA; 0.75 miles of burn breaks at two SNAs; installation of signs at 4 SNAs and gates at 2 SNAs; and prescribed burn and other project plans for spring 2012 work are being prepared. Web-based information and resources are being implemented to encourage and support SNA volunteers, site stewards, visitors, and others interested in SNAs. To date, 16 events have been held with about 300 participants (made possible all or in part with this appropriation) and 18 new or returning site stewards have committed to help care for SNAs. Among tools to recruit site stewards was a notice on the ENRTF facebook and twitter sites which leads people to the new SNA site steward webpage.

Project Status as of December 31, 2012:

Offers were made and rejected by the landowner on two acquisition projects and a 3rd project was terminated by the landowner; a 4th project was also halted when federal funding was not received towards its acquisition. Alternative acquisitions are the being explored. One conservation easement baseline property report is completed. The SNA Strategic Plan project is well underway – with progress made on a GAP analysis of protection status of native plant communities and GIS-computer

assessments of conservation priority areas by ecological subsection. Habitat restoration and enhancement project activities completed to date include: seed collection from more than 40 acres for two prairie reconstructions; wood invasive species control on 336 acres at 4 SNAs, herbaceous invasive species treatment on 5 acres at 6 SNAs, and installation of invasives control bootbrush kiosks at 3 SNAs; about 14 miles of burn breaks at 13 SNAs and completion of 144 acres of prescribed burns at 2 SNAs; installation of signs at 7 SNAs and gates at 3 SNAs; and prescribed burn and other project plans for spring 2012 work are being prepared. Web-based information and resources are being implemented to encourage and support SNA volunteers, site stewards, visitors, and others interested in SNAs. To date, 114 events have been held with about 1000 participants (made possible all or in part with this appropriation) and 95 new or returning site stewards have committed to help care for SNAs.

Project Status as of March 1, 2013:

An acquisition of two parcels at Forestville-Saxifrage Hollow are underway which may be acquired with this funding; additional acquisitions are the being explored. One conservation easement baseline property report is completed. Two preliminary results of the SNA Strategic Plan project have been completed: a GAP analysis of protection status of native plant communities and GIS-computer assessments of conservation priority areas by ecological subsection. Habitat restoration and enhancement project activities completed to date include: seed collection from more than 40 acres for two prairie reconstructions of which 10 acres have been seeded with portions of this seed; wood invasive species control on 363 acres at 4 SNAs, herbaceous invasive species treatment on 5 acres at 6 SNAs, and installation of invasives control bootbrush kiosks at 3 SNAs; about 14 miles of burn breaks at 13 SNAs and completion of 144 acres of prescribed burns at 2 SNAs; installation of signs at 7 SNAs and gates at 3 SNAs; and prescribed burn and other project plans for spring 2012 work are being prepared. A statewide map with location and directions to all SNAs has been printed and is being distributed; the five issues of a new quarterly SNA *Nature Notes* e-newsletter have been distributed to an audience now exceeding 1400 people. To date, 120 events have been held with over 1000 participants (made possible all or in part with this appropriation) and 95 new or returning site stewards have committed to help care for SNAs.

Project Status as of September 19, 2013:

Acquisition is proposed to be targeted to one or more of three new large acquisitions, because offers made to date through this appropriation have been rejected by landowners. Twenty-two conservation easement baseline property reports at 11 SNAs are completed. Three preliminary results of the SNA Strategic Plan project have been completed: a GAP analysis of protection status of native plant communities, GIS-computer assessments of conservation priority areas by ecological subsection, and a draft SNA Candidate Site Evaluation Guide and Form; descriptions and maps of Opportunity Areas are under development. Habitat restoration and enhancement project activities completed to date include: locally collected seed has been planted on about 20 acres at 3 SNAs (2 prairie reconstructions and 1 rehabilitation of an existing prairie); wood invasive species control on 402 acres at 7 SNAs, herbaceous invasive species treatment on 218 acres at 19 SNAs, and installation of invasives control bootbrush kiosks at 5 SNAs; about 15 miles of burn breaks at 13 SNAs and completion of 370 acres of prescribed burns at 11 SNAs; and site development work (e.g. entry and boundary signs, new gates, and site cleanup) has been done at 20 SNAs. A statewide map with location and directions to all SNAs has been printed and is being distributed; a new series of pocket cards were produced and distributed; additional SNA website improvements implemented; 9 SNA factsheets developed and distributed; 6 issues of a new quarterly SNA *Nature Notes* e-newsletter have been distributed to an audience now exceeding 1790 people. To date, 170 events have been held with over 1600 participants (made possible all or in part with this appropriation) and 109 volunteer site stewards have committed to help care for SNAs.

Project Status as of March 1, 2014

Acquisition of a large property containing S1-S2 (state endangered) native jack pine woodland native plant community will be completed with about 196 acres (out of 560 acres in Phase 1 and 900 acres in total) acquired through this appropriation. Twenty-two conservation easement baseline property reports at 11 SNAs are completed. Three preliminary results of the SNA Strategic Plan project have been

completed: a GAP analysis of protection status of native plant communities, GIS-computer assessments of conservation priority areas by ecological subsection, and the SNA Candidate Site Evaluation Guide and Form; descriptions and maps of Opportunity Areas are regional review by ecologists and land managers. Habitat restoration and enhancement project activities completed to date include: locally collected seed has been planted on about 20 acres at 3 SNAs (2 prairie reconstructions and 1 rehabilitation of an existing prairie); wood invasive species control on 408 acres at 9 SNAs, herbaceous invasive species treatment on 275 acres at 19 SNAs, and installation of invasives control bootbrush kiosks at 5 SNAs; about 26 miles of burn breaks at 16 SNAs and completion of 437 acres of prescribed burns at 12 SNAs; and site development work (e.g. entry and boundary signs, new gates, and site cleanup) has been done at 23 SNAs. A statewide map with location and directions to all SNAs has been printed and is being distributed; a new series of pocket cards were produced and distributed; additional SNA website improvements implemented including new detailed maps for 10 SNAs; 9 SNA factsheets developed and distributed; 8 issues of a new quarterly SNA *Nature Notes* e-newsletter have been distributed to an audience now exceeding 2,130 people. To date (through Jan 2014 - with subsequent SNA events being done through the ML2012 appropriation), 200 events have been held with over 2400 participants (made possible all or in part with this appropriation) and 116 volunteer site stewards have committed to help care for SNAs.

IV. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1: Protection of Sites of Biodiversity Significance

Description: The SNA Program will protect and buffer MCBS-recommended sites of biodiversity significance by acquisition and SNA designation of about 80 acres. To be acquired and designated as SNA, the site must be recommended for SNA designation by the Commissioner's Advisory Committee (CAC) and in an Ecological Evaluation report which serves as the site's baseline assessment for fee acquisitions and AND must be part of a MCBS-mapped biodiversity significance site (or be a geological feature of statewide significance). All such sites are predominantly MCBS-mapped native plant communities and contain habitat for rare species and Species of Greatest Conservation Need. In addition, SNA staff uses criteria, such as landowner readiness and urgency, degree of threat, and partnership opportunities, to rank which recommended sites are currently pursued. The list of priority projects for this is the M.L. Acquisition/Restoration List table (attached). DNR may request to add other qualifying sites to the list with additional MCBS recommendations and changes in landowner interest, acquisition opportunity, or threats. Most acquisition will be of fee title, but if more appropriate for ongoing management and use, acquisition will be of an SNA program-administered conservation easement with SNA designation.

Conservation easement baseline reports and monitoring would be done on about 10 sites, including sites, if any, acquired through conservation easement with these funds. As of May 2011, the SNA Program manages 20 SNA conservation easements at 12 designated SNAs. One of these has a full baseline property report and ~11 baseline reports need to be completed.

In cooperation with MCBS, the SNA Long Range Plan will be updated and GIS tools developed and applied to evaluate and prioritize candidate sites and to implement the State Wildlife Action Plan (SWAP). This process will include: a) identification and categorization of natural features (specifically native plant communities, rare plants, animals, and geological features, and areas of biodiversity significance) most important for protection in Minnesota and each of its primary landscapes; b) mapping (using geographic information systems – GIS) of current locations and protection status of features, in particular whether within existing SNAs, other state units, and selected other categories of ownership using available data; c) refinement of criteria for prioritizing sites as candidates for SNA designation; 4) identification of candidate areas for land protection – primarily through SNA designation, but considering other land protection tools (including the SNA Program's Natural Area Registry) – and their priority rating; and 5) evaluation and revision of the SNA Long Range Plan with input from the Commissioner's Advisory Committee. This will be primarily an ecological prioritization process that will

also take into account and be coordinated with the work on SWAP, climate change, watershed approaches, and cost-benefit analyses addressing public use, access, management costs, etc.

Summary Budget Information for Activity 1:

ENRTF Budget: \$ 679,629
Amount Spent: \$ 676,550
Balance: \$ 3,079

WORK PLAN AMENDMENT APPROVED September 11, 2014 (see below).

Activity Completion Date:

Outcome	Completion Date	Budget
1a. acquisition as SNA of ~80 acres of high quality habitat	6/30/14	\$504,800
1b. baseline property reports & monitoring for ~10 conservation easements	10/31/13	\$30,200
1c. SNA Long Range Plan update & strategic prioritization tools	3/1/14	\$198,500

Activity Status as of March 1, 2012:

1a. Acquisition: Four acquisition projects at three locations to be acquired all or in part with this appropriation have been initiated and are moving forward; one other project was initiated, but is not proposed for this appropriation at this time. The 13-acre addition to the **Boltuck-Rice Forever Wild SNA** (Itasca County) is being appraised (to be paid fully with this appropriation). An offer is being made on a 367-acre addition to the **Englund Ecotone SNA** (Benton County) and a second 80-acre addition is being appraised (this appropriation will contribute to one or both of these projects). A federal Coastal Zone Management-NOAA grant application has been submitted that proposes to acquire a conservation easement and designate 390 acres as the **proposed Magney-Snively SNA** (St. Louis County) using a combination of this appropriation and the federal funding. Acquisition of the proposed Art Lake Hardwood Ridges SNA (Lake County) was initiated; however, the strategies for protecting land in this location needed to change because of underlying mineral interests in the area; options are being discussed with the county.

1b. Baseline Property Reports and Monitoring: An RFP is expected to be issued in spring 2012 to contract for baseline property report preparation.

1c. SNA Strategic Plan: A full time unclassified planner was hired starting January 3, 2012 to lead and staff the SNA Strategic Planning Project. (Initiation of this project was delayed by six months, in part due to state shutdown and the hiring process.) The first two months of the Project has focused on collecting background information and reviewing potential protocols. This includes: collating existing statewide data and mapping, conducting preliminary investigations into other strategic planning efforts implemented by Natural Area Programs across the country; and reviewing goals, objectives, potential inputs, outputs, and target goals. Review of other planning efforts has been particularly helpful in that a variety of globally-used GIS-based conservation prioritization tools were found to be used by conservation planning organizations. The SNA's counterpart program in Florida uses the most prevalent computer program, Marxan, for updates of its strategic conservation plan every six months. A computer program such as Marxan is particularly useful as it factors in parameters such as rare species habitat, unique features, existing protection and buffering, impacts to land uses such as mining and forestry, and land costs into the prioritization. It runs up to a million iterations to find the most efficient prioritization of land protection that minimizes impacts to financial (acquisition/management), economic (ag/mining/forestry), and environmental resources. The Strategic Planning effort is currently in the middle of evaluating the software programs to determine their potential application to Minnesota's efforts. The planner is working closely with DNR expert advisory group and will be using an advisory committee composed of experts from within and outside the DNR to help determine inputs, and target protection levels. The internal advisory group has been very supportive of planning efforts conducted

to date. Concurrently, reformatting of data has also commenced so that it can be used within the computer programs' formats.

Activity Status as of January 15, 2012:

1a. Acquisition: None of the four primary acquisition project initiated with this funding are going forward at this time. An offer was made and rejected by the private landowner for a 13-acre addition to the **Boltuck-Rice Forever Wild SNA** (Itasca County). The offer on a 367-acre addition to the **Englund Ecotone SNA** (Benton County) was rejected by the private landowners and the landowner of second 80-acre addition sold it to another private landowner before an appraisal was completed. The federal grant application was unsuccessful for the first phase of the **proposed Magney-Snively SNA** (St. Louis County) so this project is on indefinite hold. Acquisition of a 40-acre tax forfeit parcel at Boltuck-Rice Forever Wild SNA is being considered for this funding, but will be deferred pending additional information being provided to the LCCMR for consideration. Acquisition of two parcels at **Forestville-Saxifrage Hollow** (Fillmore County) is being initiated in cooperation with The Nature Conservancy using LSOHC appropriation(s) and may also include this appropriation.

1b. Baseline Property Reports and Monitoring: Two contractors are in the process of preparing 22 baseline property reports for easements at twelve SNAs. One baseline is complete; drafts of more than half of the baseline reports have been submitted to the DNR and are under review by staff.

1c. SNA Strategic Plan: The project planner has conducted the initial GAP analysis of Native Plant Communities already protected within by SNAs. The analysis is currently being expanded to all state-managed lands, and all other public agency and selected conservation non-profit lands at the request of the Commissioner's Advisory Committee (CAC)—the outside expert advisory group. Initial results indicate that an average of approximately 25% of all native plant communities in each landscape subsection currently have some representation in SNAs. In addition, the project planner has determined the protocol for conducting the evaluation of the latest input data for biodiversity significance and native plant communities (with priority given to state endangered and threatened native plant communities) as a way to prioritize areas for potential SNAs. In addition, rare species and Species of Greatest Conservation Need data will be included where appropriate. The protocol has incorporated the use of Marxan software as the decision-support tool that maps the prioritization of areas based on the input data listed above. The approach, and determination and weighting of inputs have been reviewed and concurrence has been obtained from the CAC members. Trials have been completed for six of the sixteen Minnesota landscape subsections with adequate data coverage. For the two prairie subsections that were run, results show good alignment with the Minnesota Prairie Plan-recommended protection areas. Results also show candidate areas for potential corridor or landscape-scale protection areas that would need partnership approaches and multiple conservation tools to be implemented.

Activity Status as of March 15, 2013:

All accomplishments since July 2011 to date (changes from December 2012 are underlined):

1a. Acquisition: Acquisition of two parcels at **Forestville-Saxifrage Hollow** (Fillmore County) is underway in cooperation with The Nature Conservancy using LSOHC appropriation(s) and may also include this appropriation.

1b. Baseline Property Reports and Monitoring: *all accomplishments to date:* Two contractors are in the process of preparing 22 baseline property reports for easements at twelve SNAs. One baseline is complete; drafts of more than half of the baseline reports have been submitted to the DNR and are under review by staff.

1c. SNA Strategic Plan: The preliminary GAP analysis is completed of Native Plant Communities (NPCs) already protected within by SNAs and those owned by all state-managed lands, and all other public agency and selected conservation non-profit lands at the request of the Commissioner's Advisory Committee (CAC)—the outside expert advisory group. The GAP analysis is being further refined to address the size of NPCs and their relative conservation status. In addition, the preliminary

statewide composite of Marxan results for priority areas for conservation has been completed (for those subsections where biodiversity significance and NPC data is available) and has been reviewed by CAC – this analysis is done by subsection based upon biodiversity significance and NPCs (with priority given to state endangered and threatened native plant communities). Results highlight priority areas for SNA protection and also show candidate areas for potential corridor or landscape-scale protection areas that would need partnership approaches and multiple conservation tools to be implemented. SNA acquisition-designation decision-making processes (and associated tools) are being documented and refined including cost-benefit analysis.

Activity Status as of September 16, 2013:

All accomplishments since July 2011 to date (changes from March 2013 are underlined):

1a. Acquisition: Acquisition of two parcels at **Forestville-Saxifrage Hollow** (Fillmore County) in cooperation with The Nature Conservancy is not going forward this fiscal year; an offer made on a 60-acre parcel was rejected by the landowner, the second landowner is not going forward with a possible sale during this appropriation's timeframe.

WORK PROGRAM AMENDMENT APPROVED by LCCMR September 24, 2013 to add three additional acquisitions to possibly use this funding in order to assure full expenditure of this funding by June 2014:

- The proposed new **Brownsville Bluff SNA** (Houston Co) of up to about 290 acres would protect one of only two authenticated hibernacula (den sites) in Minnesota of the threatened Western Ratsnake; this scenic bluff site overlooking the Mississippi River also contains Southern Dry Mesic Oak-Hickory Woodland (FDs38) and Southern Mesic Oak-Basswood Forest (MHs38) – also proposed for the 2010 ENRTF appropriation; to acquire it fully would require both appropriations..
- The proposed new 890-acre **Badoura Jack Pine SNA** (Hubbard Co) which contains Central Dry Pine Woodland (FDc23 with jack pine overstory and dry prairie understory) has been reduced in western Minnesota from 39 stands 30 years ago, to 10 stands today (and of those 10 only 5 are large enough to harbor a full species complement for the community). Therefore this community (including the two sub-communities: FDc23a1 and FDc23a2) has been recommended for S1/S2 status by MBS ecologists familiar with the community. The biggest threat to Jack Pine forests is potato farming, and logging, both of which are occurring in this area of the state. The acquisition is primarily being pursued with funding through the Lessard-Sam Outdoor Heritage Council, but current LSOHC appropriations are insufficient to protect this threatened parcel.
- Acquisition of a new 319-acre new **Mille Lacs Moraine SNA** closed in June 2012 (potential partial funding with this appropriation along with 2010 ENRTF and RIM Match). Acquisition of a 241-acre addition to the **Mille Lacs Moraine SNA** has been reinitiated (new appraisal is underway) which may in part be funded through this appropriation.

1b. Baseline Property Reports and Monitoring: all accomplishments to date: Three contractors have completed their work on 19 of 22 baseline property reports (BPRs) for conservation easements (CEs) at 11 of 12 SNAs. DNR final review is underway, fee landowners will be requested to sign each baseline, and the baseline data needs to be entered into the Department's conservation easement record system. Baselines completed to date are for: Blaine Airport Rich Fen SNA, Burntside Islands SNA, Chamberlain Woods SNA (2 CEs), Felton Prairie SNA – Bicentennial Unit, Lutsen SNA, North Fork Zumbro Woods SNA, Pig's Eye Heron Rookery SNA, Quarry Park SNA (5 CEs), Sugarloaf Point SNA, Wood-Rill SNA (4 CEs), Wykoff-Balsam Fir SNA. Once the St Croix Savanna SNA (3) BPRs are completed, then through this appropriation all SNA conservation easements will have BPRs and the whole backlog of BPRs for SNAs will be addressed.

1c. SNA Strategic Plan: Since the March update, efforts have focused on identifying Opportunity Areas that capture highest priority conservation areas delineated by use of the Marxan decision-support tool. Additional layers reviewed to determine the location of Opportunity Areas include: rare natural features and communities, Ecological Evaluations, existing public lands, and land use/land cover. Data from these layers are being collated for each Opportunity Area. Fact sheets are being prepared

detailing this information, and also conservation challenges and opportunities for each area. Contextual maps showing biological resources and land cover are part of the fact sheet packet for each Opportunity Area. Over the next two months, the Opportunity Areas will be reviewed internally and by the Commissioner's Advisory Committee for ultimate inclusion and prioritization within the Plan. In addition, a SNA Candidate Site Evaluation Guide and Form has been developed and is being tested for rating specific parcels for potential SNA acquisition or designation.

WORK PROGRAM AMENDMENT APPROVED by LCCMR September 24, 2013: To move \$21,200 from Activity 1 to Activity 2 - \$20K from personnel to personnel and \$1.2 K from fleet/travel to fleet/travel – due to less staff time and travel expenses needed for acquisition and the SNA Plan; to move \$12,076 from “Other” (MNIT support) to “Professional/technical Contracts” for completion of the whole backlog of SNA conservation easement baseline property reports.

Activity Status as of March 1, 2014:

All accomplishments since July 2011 to date:

1a. Acquisition: Work is progressing on acquisition of an 80-acre parcel for the proposed new **Brownsville Bluff SNA** (Houston Co) that would protect one of only two authenticated hibernacula (den sites) in Minnesota of the threatened Western Ratsnake; this scenic bluff site overlooking the Mississippi River also contains Southern Dry Mesic Oak-Hickory Woodland (FDs38) and Southern Mesic Oak-Basswood Forest (MHs38). This project is likely to be completed with future funding. The other parcel was sold to a private landowner.

The private landowner has accepted the DNR offer to acquire 900 acres to become the proposed new 890-acre **Badoura Jack Pine SNA** (Hubbard Co). This appropriation is expected to pay for about 196 acres of the 560-acre Phase 1 acquisitions; other funding for Phase 1 of the project includes ML10 ENRTF appropriation and the ML11 Outdoor Heritage Fund; Phase 2 is expected to be paid by DNR Forestry's ML13 OHF appropriation and RIM Critical Habitat Match generated by a previous SNA private landowner donation.

Acquisition of a new 319-acre new **Mille Lacs Moraine SNA** closed in June 2012 with other appropriations. The landowner of the 241-acre addition rejected the DNR offer to acquire it.

1b. Baseline Property Reports and Monitoring: *all accomplishments to date:* Three contractors have completed their work on 22 baseline property reports (BPRs) for conservation easements (CEs) at 12 SNAs. DNR final review has been completed and meetings are being set up with fee landowners where they will be requested to sign each baseline. Baselines completed to date are for: Anoka Co. Blaine Airport Rich Fen SNA, Burntside Islands SNA, Chamberlain Prairie, Chamberlain Woods SNA, Felton Prairie SNA – Bicentennial Unit, Lutsen SNA, North Fork Zumbro Woods SNA, Pig's Eye Heron Rookery SNA, Quarry Park SNA (5 CEs), St Croix Savanna SNA (3) BPRs, Sugarloaf Point SNA, Wood-Rill SNA (4 CEs), Wykoff-Balsam Fir SNA. These completed CE-BPRs addressed a standing need to document the current conditions on these 22 properties where the SNA program has purchased conservation easements. The signed CE-BPRs and associated baseline data will be entered into the Department of Natural Resources Land Records System.

1c. SNA Strategic Plan: Since the September update, efforts have focused on refining and undertaking ecologist review of the Conservation Opportunity Areas (COA) and their description factsheets and maps.

WORK PLAN AMENDMENT APPROVED April 7, 2014: To move \$36,700 from Activity 1 to Activity 2 and \$11,800 from Activity 1 back to Activity 3 - this is possible because this appropriation will acquire a portion of 1 large parcel with no boundary survey and less transaction and other costs and because SNA personnel are doing the GIS/database work initially expected to be done by MNIT. **Within Activity 1 to** increase prof-tech contracts due to additional easement baseline contracts, to reduce supplies and zero out printing and “other”.

Final Report Summary:

1a. Acquisition: The proposed new 900-acre **Badoura Jack Pine SNA** (Hubbard Co) was acquired in part through this appropriation (190 acres pro-rated for this appropriation). The site contains one of the largest remaining examples of the critically imperiled Central Dry Pine Woodland plant community type with jack pine overstory and an understory of both prairie and northern forest species. A portion of the site was harvested prior to SNA acquisition, yet has an intact ground layer into which jack pine is naturally seeding. This offers opportunities to manage, observe, and research successional processes as the jack pine spread back into the openings. This acquisition was completed in 2 phases, the first in June 2014 and the second in July 2014, it will be designated as an SNA in fall 2014 and its restoration and management plan (including a resource inventory and assessment, goal setting, plant community management recommendations, and an action plan for implementation) will be developed by the end of 2015 using other ENRTF funds appropriated for SNA management plans. No plant community reconstruction is expected to be needed on this property, but future management work will be needed to aide in plant community succession and to control any invasive species using funds as appropriated, such as ENRTF and OHF. Typical estimated costs for management of SNAs was provided to the legislature as part of the DNR's 2010 *Long-Range Budget Analysis of Land Management Needs*.

1b. Baseline Property Reports and Monitoring: Twenty-two baseline property reports (BPRs) were completed for conservation easements (CEs) at 12 SNAs. : Anoka Co. Blaine Airport Rich Fen SNA, Burntside Islands SNA, Chamberlain Prairie, Chamberlain Woods SNA, Felton Prairie SNA – Bicentennial Unit, Lutsen SNA, North Fork Zumbro Woods SNA, Pig's Eye Heron Rookery SNA, Quarry Park SNA (5 CEs), St Croix Savanna SNA (3) BPRs, Sugarloaf Point SNA, Wood-Rill SNA (4 CEs), Wykoff-Balsam Fir SNA. These completed CE-BPRs addressed a standing need to document the current conditions on these 22 properties where the SNA program has purchased conservation easements.

1c. SNA Strategic Plan: The *SNA Strategic Land Protection Plan* has been completed and is available on the SNA website: <http://www.dnr.state.mn.us/eco/sna/plan.html>. The Plan provides a multi-tiered approach for prioritizing lands to protect through designation as a Scientific & Natural Area (SNA). Secondly it identifies and prioritizes areas for conserving biodiversity and rare natural resources. The Plan contains:

- **Report Narrative** (~70-pages). The report includes: an executive summary; statement purpose and scope of the plan; an overview of SNA basics (purpose, legislative authority and laws, history of program, and summaries of SNA lands, public use and funding); overview of previous SNA plans; description of the components of the state's natural heritage (biodiversity, native plant communities, rare species, etc) and strategies to address climate change; goals, objectives and targets; overview of the plan approach; descriptions of and methodologies to develop key components of the plan (listed below); a summary of related planning efforts (including the *Statewide Conservation and Preservation Plan*); implementation; partners; conclusions; and references.
- **Conservation Prioritization.** At a statewide scale the Marxan decision-support software was used to prioritize the protection of areas that support the greatest range of biodiversity the most efficiently. The data produced a Conservation Prioritization Results map that identified high priority areas for biodiversity conservation. If 10% of these high priority areas become SNAs, the state would be protecting approximately 325,000 acres or 0.6 % of the state. It would also mean designating 136,000 more acres of SNAs over the next 85 years. This might equate to an estimated 300 SNAs by the end of the 21st century. Currently, the Marxan analysis is limited to ecological (Ecological Classification System) subsections for which Minnesota Biological Survey data is complete. Other subsections will be analyzed through other ENRTF appropriations as new data become available.
- **Conservation Opportunity Areas.** At a regional (multi-county) landscape scale, the SNA Strategic Land Protection Plan describes Conservation Opportunity Areas to focus the work of the SNA Program, partners, and others in protecting biodiversity and rare features. These

Opportunity Areas range in size from approximately 1,200 acres to 410,000 acres. Each of 84 Conservation Opportunity Areas are described in a 4-page (or one 2-sided 11x17 sheet) free-standing handout with maps and photographs.

- **Candidate Site Evaluation Guide**, At the small parcel scale, the SNA Strategic Land Protection Plan provides Candidate Site Evaluation Guide to rate each candidate site and to make informed decisions about pursuing potential acquisitions and designations. This Guide has been tested and used on numerous potential sites. It is a useful way of sifting out sites that are not priorities as SNAs.
- **GAP Analysis** (70 pages). This appendix to the Plan identifies which native plant communities in each ecological subsection are protected within existing SNAs and a broader conservation networks (including publicly and privately own preserves), Over 125 of Minnesota's native plant communities have no representation within any SNAs. Only 16% to 41% of Minnesota's native plant communities are protected by SNAs when looking at individual Ecological Classification System subsections.

WORK PLAN AMENDMENT APPROVED September 11, 2014: Moved \$4,171 from Activity 1 to Activity 2 - this is possible because of a reduction in the proportion of the fee acquisition paid with this appropriation. **Within Activity 1** decrease contracts by \$3011 because costs for baseline reports were less than budgeted; decrease fee title acquisition by \$13K total (for reasons noted above with \$4171 moved to Result 2 and \$8829 moved within Activity 1 as noted here); increase salary by \$4103 in order to complete strategic plan because of additional work done to identify and describe conservation opportunity areas; and increase professional services for acquisition because of combined costs for the completed project as well as projects initiated but not completed under this appropriation (one offer was rejected and 2 projects are expected to be completed with ENRTF ML14 appropriation).

ACTIVITY 2: Native Habitat Restoration & Enhancement

Restoration and enhancement activities would be completed on about 1800 acres at ~30 SNAs. Interpretive signs-kiosks would be developed and installed at ~2 SNAs and other development work done at ~6 SNAs. Management plans will be completed for ~6 SNAs (including any sites acquired through these funds). Management practices at ~10 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).

Restoration and enhancement activities – including bringing sites acquired up to minimum standards – will be carried out by DNR staff- SNA crews, Conservation Corps Minnesota (CCM), Sentence to Serve (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, management plan preparation, and monitoring. 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. This activity would include all work needed to bring up to the Department's minimum standards those SNA parcels acquired through this funding and will include that restoration and enhancement of newly acquired sites which is ecologically advisable and feasible within the appropriation period.

The Department's "Long-Range Budget Analysis of Land Management Needs" estimates the following statewide needs on SNAs: one time actions: ~1700 acres plant community restoration (reconstruction), ~1600 acres woody encroachment removal, and development work (e.g. cleanup, signs, fencing or parking) at ~30 sites; plus ongoing work: ~2000 acres/year prescribed burns, revisiting about ~ 2000 acres/year to do invasive species spot treatments, revisiting ~20 sites per year to replace/repair signs or fences or do small scale mowing.

Summary Budget Information for Activity 2:

ENRTF Budget: \$ 673,177

Amount Spent: \$ 673,177
 Balance: \$ 0

WORK PLAN AMENDMENT APPROVED September 11, 2014 (see below).

Activity Completion Date:

Outcome	Completion Date	Budget
2a. ~18 acres of prairie, forest, etc restoration (reconstruction)	6/30/14	\$23,000
2b. ~600 acres of woody removal & exotics species treatment	6/30/14	\$129,800
2c. ~1300 acres of prescribed burns	6/30/14	\$206,600
2d. development work on ~20 sites	6/30/14	\$27,500
2e. management plans completed for ~6 SNAs	6/30/13	\$49,800
2f. adaptive management monitoring on ~9 SNA sites	6/30/14	\$69,800

Activity Status as of March 1, 2012:

2a. Plant Community Reconstruction & Rehabilitation: Hand seed collection on 9.5 acres was completed for use in the planned ~10 acre native prairie reconstruction project at Zumbro Falls Woods SNA. The 4.2 acre forest reconstruction project at Falls Creek SNA is being done cooperatively with Great River Greening (GRG); GRG planted tree seedlings (using other funding) and the SNA Program installed tree shelters with this appropriation. Two additional native prairie reconstruction projects are being planned with implementation starting in 2012 at Blanket Flower Prairie SNA and Rock Ridge Prairie SNA. **2b. Woody Removal & Invasive Species:** Woody species control activities were completed on 2.3 acres at 2 SNAs; and herbaceous invasive species treatment activities were completed on 0.06 acres at 1 SNA. **2c. Prescribed Burning:** About 0.75 miles of firebreaks were installed at 2 SNAs and burn plans are being prepared for proposed spring 2012 prescribed burns. **2d. Development:** activities completed included: new signs at 4 SNAs, new gates at 2 SNAs, and site clean-up at 1 SNA. **2e. Management Planning:** A federal State Wildlife Grant has been approved for \$49,8000 which will be matched with this funding in order to have contractors prepare 8-12 management plans with these combined funds. The list of candidate sites for plans has been completed, the RFP is prepared and will go out in March 2012. **2f. Monitoring & AMSD:** Work on this outcome under appropriation is not expected to start until summer 2012.

Activity Status as of December 31, 2012:

All accomplishments to date:

2a. Plant Community Reconstruction & Rehabilitation: Hand seed collection on 9.5 acres at Oronoco Prairie was completed for use in prairie reconstruction project at Zumbro Falls Woods SNA. Seed collection across 34.9 acres has also been initiated at Cottonwood River Prairie to be used in the prairie reconstruction at Rock Ridge SNA. The 4.2 acre forest reconstruction project at Falls Creek SNA is being done cooperatively with Great River Greening (GRG); GRG planted tree seedlings (using other funding) and the SNA Program installed tree shelters with this appropriation. **2b. Woody Removal & Invasive Species:** Woody species control activities were completed on 335.7 acres at 4SNAs; herbaceous invasive species treatment activities were completed on 5.5 acres at 6 SNAs; invasives control boot brush kiosks were installed at 3 SNAs. **2c. Prescribed Burning:** About 13.9 miles of firebreaks were installed at 13 SNAs and prescribed burns were completed on 143.6 acres at two SNAs. **2d. Development:** activities completed included: entry signs at 2 SNAs, boundary signs at 3 SNAs, interpretive signs at 3 SNAs, new gates at 3 SNAs, and site clean-up and fence removal at 1 SNA. **2e. Management Planning:** Three contractors are preparing adaptive management plans for 26 SNAs with a combination of this appropriation, the federal State Wildlife Grant, and some 2010 ENRTF funding. **2f. Monitoring & AMSD:** Work on this outcome under appropriation is not expected to start until spring 2013.

WORK PROGRAM AMENDMENT APPROVED by the LCCMR January 23, 2013: To decrease "Other-training" by \$2,102 and add \$102 to "Printing" for costs to publish management plan P/T

contract RFP in State Register (as required by state purchasing policies) and to increase "Travel Expense in MN" by \$2,000 for fleet charges to operate equipment necessary for restoration, woody removal, prescribed burning, and development work.

Activity Status as of March 15, 2013:

All accomplishments since July 2011 to date:

2a. Plant Community Reconstruction & Rehabilitation: Hand seed collection on 9.5 acres at Oronoco Prairie was completed which has been seeded on 10 acres for a prairie reconstruction project at Zumbro Falls Woods SNA. Seed collection across 34.9 acres has also been initiated at Cottonwood River Prairie to be used in the prairie reconstruction at Rock Ridge SNA. The 4.2 acre forest reconstruction project at Falls Creek SNA is being done cooperatively with Great River Greening (GRG); GRG planted tree seedlings (using other funding) and the SNA Program installed tree shelters with this appropriation. **2b. Woody Removal & Invasive Species:** Woody species control activities were completed on 362.5 acres at 4 SNAs; herbaceous invasive species treatment activities were completed on 5.5 acres at 6 SNAs; invasives control boot brush kiosks were installed at 3 SNAs. **2c. Prescribed Burning:** About 14.4 miles of firebreaks were installed at 13 SNAs and prescribed burns were completed on 143.6 acres at two SNAs. **2d. Development:** activities completed included: entry signs at 2 SNAs, boundary signs at 3 SNAs, interpretive signs at 3 SNAs, new gates at 3 SNAs, and site clean-up and fence removal at 1 SNA. **2e. Management Planning:** Draft adaptive management plans for 26 SNAs are under review by SNA staff that were prepared by contractors with a combination of this appropriation, the federal State Wildlife Grant, and some 2010 ENRTF funding. **2f. Monitoring & AMSD:** Work on this outcome under appropriation is not expected to start until spring 2013.

WORK PROGRAM AMENDMENT APPROVED BY LCCMR March 26, 2013: To decrease "Service contracts" by \$15,000 and add \$3,000 to "Supplies" for materials necessary for restoration, invasives treatment, prescribed burning, and development work and to increase "Travel Expense in MN" by \$12,000 for fleet charges to operate equipment necessary for restoration, woody removal, prescribed burning, and development work.

Activity Status as of September 16, 2013:

All accomplishments since July 2011 to date:

2a. Plant Community Reconstruction & Rehabilitation: Hand seed collection on 9.5 acres at Oronoco Prairie was completed which has been seeded on 5.68 acres (corrected acreage) for a prairie reconstruction project at Zumbro Falls Woods SNA. Seeding (using previously collected seed from on site) was completed on 8.76 acres as part of a rehabilitation of an existing degraded prairie at Oronoco (following tree removal using other funding). Seed collection across 34.9 acres completed at Cottonwood River Prairie and planted through broadcast seeding on 5.66 acres of prairie reconstruction at Rock Ridge SNA. The 4.2 acre forest reconstruction project at Falls Creek SNA is being done cooperatively with Great River Greening (GRG); GRG planted tree seedlings (using other funding) and the SNA Program installed tree shelters with this appropriation. **2b. Woody Removal & Invasive Species:** Woody species control activities were completed on 401.5 acres at 7 SNAs; herbaceous invasive species treatment activities were completed on 218.3 acres at 19 SNAs; invasives control boot brush kiosks were installed at 5 SNAs. **2c. Prescribed Burning:** About 14.7 miles of firebreaks were installed at 13 SNAs and prescribed burns were completed on 370.0 acres at 11 SNAs. Because of weather conditions and other factors significantly limiting burn completion, the target acreage for prescribed burning under this appropriation is being reduced from 1700 acres to about 1300 acres. **2d. Development:** activities completed included: entry signs at 3 SNAs, boundary signs at 3 SNAs, new gates at 5 SNAs, and site clean-up and fence removal/repair at 6 SNA; in total, to date, development-related work has been done on 21 SNAs with this appropriation. In lieu of installing 2 interpretive signs through this appropriation the 5 invasive species boot brush kiosks were installed through this appropriation (see above) and 6 instead of 4 signs were installed through the 2010 ENRTF appropriation. **2e. Management Planning:** Adaptive management plans for 26 SNAs were completed – 1 done by SNA staff (paid completely with this appropriation) and 25 done by 3 contractors with a combination of this appropriation, the federal State Wildlife Grant (SWG), 2010 ENRTF funding and some general fund – as listed below – with significant staff time towards gathering information, directing

contractors, and reviewing/revising these plans all funded through this appropriation. **2f. Monitoring & AMSD:** Native prairie plant community monitoring at targeted SNAs is being done in summer 2013 with this appropriation.

SNA Adaptive Management Plans					
Site Name	SWG \$s	ENRTF ML11	ENRTF ML10	General	Total \$s
Butternut Valley				2,672	2,672
Chimney Rock			2,127		2,127
Clinton Falls Dw Trout Lily			2,419		2,419
Eagle's Nest		1,486	1,186		2,672
Englund Ecotone		1,692	1,120		2,812
Felton Prairie-Bicentennial	3,976				3,976
Felton Prairie-Assinaboia	2,048				2,048
Felton Prairie-Shrike	2,038				2,038
Gustafson's Camp	2,790				2,790
Holthe Prairie	3,425				3,425
Iona's Beach		2,820			2,820
Langhei Prairie		2,124		527	2,651
Mille Lakes Moraine	3,360				3,360
Morton Outcrops			2,810		2,810
Mound Prairie	2,774				2,774
Mound Spring Prairie	3,325				3,325
Myhr Creek Ridge				2,790	2,790
Pembina Trail-Crookston	2,810				2,810
Pine & Curry Island	2,900				2,900
Prairie Smoke Dunes	4,125				4,125
Spring Creek Prairie	2,511				2,511
St Croix Savanna	2,880				2,880
Twin Lakes			2,677		2,677
Wabu Woods				3,028	3,028
Wolsfeld Woods	1,821				1,821
TOTAL	40,783	8,122	12,339	9,017	70,261

Note: this is the total project costs; some invoices have not cleared the accounting system and are not in the totals expended.

WORK PROGRAM AMENDMENT APPROVED by LCCMR September 24, 2013 to add Hastings Sand Coulee prairie restoration (reconstruction) project to this funding – to collect on site seed for a restoration project being implemented cooperatively with Friends of the Mississippi River (FMR).

WORK PROGRAM AMENDMENT REQUEST APPROVED by LCCMR September 24, 2013: To move \$21,200 from Activity 1 to Activity 2 - \$20K from personnel to personnel and \$1.2 K from fleet/travel to fleet/travel – and to move \$124,000 from Activity 3 to Activity 2 - \$103.8K from personnel to personnel, \$16.9K from contracts to fleet/travel, \$3.3K from printing to supplies. **Within Activity 2 to move \$30.3K out of P/T contracts, \$53.7K out of service contracts into a combination of personnel, tools/supplies fleet/travel, and MNIT (formerly MIS) support staff and materials necessary for invasives treatment, prescribed burning, and development, for fleet charges to operate equipment necessary for woody removal, prescribed burning, and development work, and for ecological monitoring-related database development.**

Activity Status as of March 1, 2014:

All accomplishments since July 2011 to date:

2a. Plant Community Reconstruction & Rehabilitation: Hand seed collection on 9.5 acres at Oronoco Prairie was completed which has been seeded on 5.68 acres (corrected acreage) for a prairie reconstruction project at Zumbro Falls Woods SNA. Seeding (using previously collected seed from on site) was completed on 8.76 acres as part of a rehabilitation of an existing degraded prairie at Oronoco (following tree removal using other funding). Seed collection across 34.9 acres completed at Cottonwood River Prairie and planted through broadcast seeding on 5.66 acres of prairie reconstruction at Rock Ridge SNA. The 4.2 acre forest reconstruction project at Falls Creek SNA is being done cooperatively with Great River Greening (GRG); GRG planted tree seedlings (using other funding) and the SNA Program installed tree shelters with this appropriation. Seed was collected (by hand and machine) on 30.5 acres at Hastings Sand Coulee to be used in a prairie restoration to be done on site by Friends of the Mississippi River (FMR). **2b. Woody Removal & Invasive Species:** Woody species control activities were completed on 408.4 acres at 9 SNAs; herbaceous invasive species treatment activities were completed on 274.7 acres at 19 SNAs; invasives control boot brush kiosks were installed at 5 SNAs. **2c. Prescribed Burning:** About 26.4 miles of firebreaks were installed at 16 SNAs and prescribed burns were completed on 436.7 acres at 12 SNAs. Because of weather conditions and other factors significantly limiting burn completion, the target acreage for prescribed burning under this appropriation is being reduced from 1700 acres to about 1300 acres. **2d. Development:** activities completed included: entry signs at 3 SNAs, boundary signs at 5 SNAs, new gates at 7 SNAs, and site clean-up and fence installation/removal/repair at 6 SNA; in total, to date, development-related work has been done on 23 SNAs with this appropriation. In lieu of installing 2 interpretive signs through this appropriation the 5 invasive species boot brush kiosks were installed through this appropriation (see above) and 6 instead of 4 signs were installed through the 2010 ENRTF appropriation.

2e. Management Planning: Adaptive management plans for 26 SNAs were completed – 1 done by SNA staff (paid completely with this appropriation) and 25 done by 3 contractors with a combination of this appropriation, the federal State Wildlife Grant (SWG), 2010 ENRTF funding and some general fund – as listed above – with significant staff time towards gathering information, directing contractors, and reviewing/revising these plans all funded through this appropriation.

2f. Monitoring & AMSD: Native prairie plant community monitoring on 2 SNAs - Langhei Prairie SNA (Pope Co) and Prairie Coteau, SNA (Pipestone Co) - was completed in summer 2013 to provide native prairie long term status trend information for managed sites to inform management decisions – this is being done in conjunction with the Grassland Monitoring Team including the USFWS and The Nature Conservancy. Spring 2014 field work will focus on continuation of work begun with ML10 ENRTF SNA appropriation on surveying bees on targeted SNAs and snake telemetry at Kellogg-Weaver Dunes SNA.

WORK PLAN AMENDMENT APPROVED April 7, 2014: Add up to \$1500 for equipment for invasives species herbicide wicking equipment to pull behind a skid loader (see justification below) and to move \$36,700 from Activity 1 to Activity 2 - to personnel. – this to help achieve prescribed burn targets. Within Activity 2 to move \$s into P/T contracts for snake monitoring-related contracts; move \$44.2 out of “other” into a combination of personnel, tools/supplies, and fleet/travel in order to support staff and materials necessary for invasives treatment, prescribed burning, development, and monitoring, for fleet charges to operate equipment necessary for woody removal, prescribed burning, and development work, and for ecological monitoring-related database development; this is possible because MNIT service level agreement for Phase 2 of AMSD has been postponed to future appropriations.

Justification for Purchasing Herbicide Wicking Equipment: Portions of some SNAs, particularly those along the Minnesota River, have become overgrown with brush to the near exclusion of all other species. The SNA Program has cut (and treated) the brush in many of these areas, but thick regrowth will quickly shade out any other vegetation. Consultation with others has determined that the most effective means to control this brush with the least non-target impact would be to wipe the herbicide glyphosate on the brush when and where there is sufficient vertical separation so there should be no

impact to underlying vegetation. Such activities would also likely be occurring predominately early in the growing season while non-woody vegetation is short.

Alternatives considered include repeated mowing, fire, and cut/treat methods:

- Mowing - The areas targeted are generally rocky and mowing and previously have caused significant damage to equipment. Since several years of mowing during the growing season would be required; mowing is essentially cost prohibitive and mowing would also likely prove to be less effective.
- Fire - Fire will still be used as a management tool. However, many of these areas were so dominated by brush that they still will not carry a fire. Frequent fires are also increasingly discouraged due to impacts on fire sensitive species.
- Cut/Treat - Most of these areas experienced a cut and stump treat practice. That practice cleared the larger shrubs, but now the re-sprouting is often several stems per square foot. Wiping of glyphosate on the top of the brushy regrowth once there is sufficient clearance between the regrowth and the non-target vegetation would likely result in much less collateral damage than the cumulative impact of the stump treatment alternative, plus a larger area could be treated with the same effort.

The SNA Program tried a limited pilot last year with a small homemade hand held wick that was wet with a hand sprayer. Efficacy was spotty. It appears that the wick was not kept sufficiently moist. It appears that where we the wick remained wet, excellent control of the brush was achieved with essentially no non-target impact. This year the SNA Program would like to accelerate and improve efforts. The equipment proposed is a fifteen foot wide version of the commercially available product to be pulled behind a skid loader that could be used to control dense regrowth in areas that are vehicle accessible.

Final Report Summary:

2a. Plant Community Reconstruction & Rehabilitation: Native seed was collected on a total of about 75 acres, restoration was completed on 14.4 acres, and substantive restoration establishment work was done on 2 partner projects totaling 15.5 acres. Seed collected on 35.9 acres at Cottonwood River Prairie SNA was mostly used for the Rock Ridge Prairie SNA restoration (described below; but some also broadcast back at Cottonwood River SNA – not considered to be a “restoration” here for reporting purposes). Seed was collected at 9.46 acres at Oronoco Prairie SNA; this seed was originally intended for use in a restoration project initiated but not completed at the Zumbro Falls SNA. Seed collected on 30.3 acres at Hastings Sand Coulee SNA was used in a restoration project done by FMR (not “counted in restoration reported here). The 8.76 acre rehabilitation of an existing degraded prairie at Oronoco Prairie SNA (following tree removal using other funding) was completed (see attached Evaluation report). The 5.66 acre prairie reconstruction at Rock Ridge Prairie SNA was completed (see attached Evaluation report). The forest reconstruction projects of 11.3 acres at Franconia Bluffs SNA and 4.2 acres at Falls Creek SNA were done cooperatively with Great River Greening (GRG); GRG planted acorns and tree seedlings (using other funding) and the SNA Program has done the post planting care for projects with this appropriation (see attached Evaluation reports). **2b. Woody Removal & Invasive Species:** Woody species control activities were completed on 610.4 acres at 19 SNAs (including 19 projects done by CCM); herbaceous invasive species treatment activities were completed on 487.2 acres at 33 SNAs (including 8 projects done by CCM); invasives control boot brush kiosks were installed at 6 SNAs (including 1 projects done by CCM). This exceeds the target of 600 acres of invasive species treatment activities. **2c. Prescribed Burning:** About 35.8 miles of firebreaks were installed at 21 SNAs (including 3 projects done by CCM); and prescribed burns were completed on 1,189.5 acres at 25 SNAs (including 12 projects done by CCM);. Because of weather conditions and other factors significantly limiting burn completion, accomplishments fell slightly short of the target of about 1300 acres. **2d. Development:** activities completed included: entry signs at 10 SNAs (including 4 projects done by CCM); boundary signs at 13 SNAs (including 4 projects done by CCM); new gates at 8 SNAs, and site clean-up and fence installation/removal/repair at 7 SNAs (including 3 projects done by CCM); in total, to date, development-related work has been done on 35 SNAs with this

appropriation. In lieu of installing 2 interpretive signs through this appropriation the 6 invasive species boot brush kiosks were installed through this appropriation (see above) and 6 instead of 4 signs were installed through the 2010 ENRTF appropriation.

2e. Management Planning: Adaptive management plans for 26 SNAs were completed – 1 done by SNA staff (paid completely with this appropriation) and 25 done by 3 contractors with a combination of this appropriation, the federal State Wildlife Grant (SWG), 2010 ENRTF funding and some general fund – as listed above – with significant staff time towards gathering information, directing contractors, and reviewing/revising these plans all funded through this appropriation.

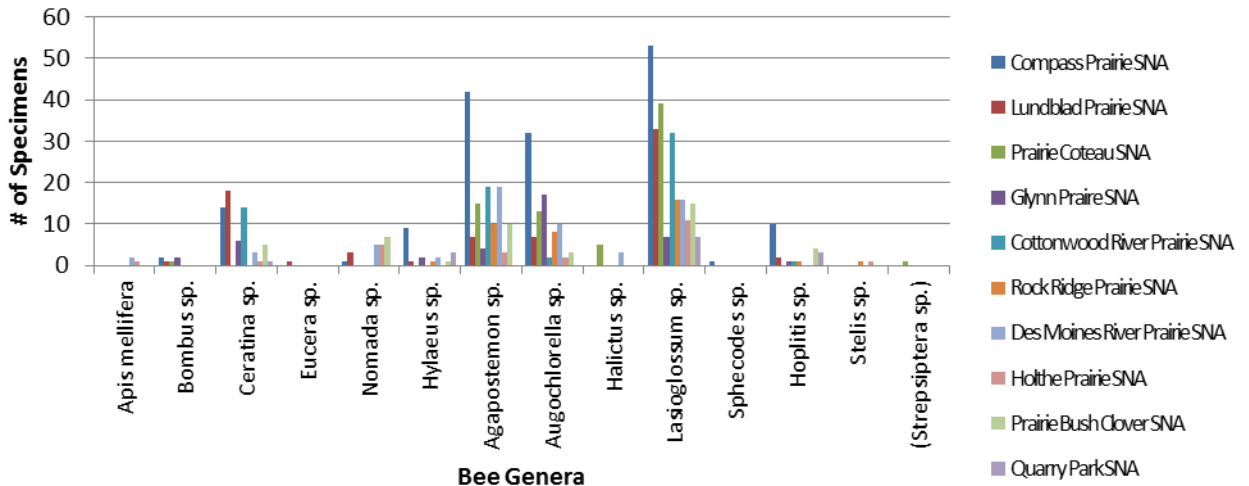
2f. Monitoring:

A. Pollinator Monitoring.

- 1) Specimen Processing
 - a. ~600 specimens collected in 2014 at 10 SNAs in 8 counties identified to genus.
 - b. ~2500 specimens collected in 2013 at 4 SNAs in 3 counties identified and labeled to genus.
- 2) Results
 - a. The genera *Lasioglossum*, *Agapostemon*, and *Augochlorella* were the most abundant on the SNAs. These groups are ground-nesting species. *Ceratina* was also fairly abundant, and this group nests inside grass stems. *Ceratina* (the stem-nesters) were not found at Prairie Coteau or Rock Ridge Prairie (Figure 1).
 - b. Honey bees were not as abundant on SNAs in southwestern Minnesota visited in 2014 as they were on SNAs near the Twin Cities in late summer 2013. This could be a regional or a phenological difference. For example, collections in 2014 were earlier and may have preceded the return of commercial beekeepers.
 - c. Prairie Coteau SNA had one of the lower diversities at the genus level, but was the only site with a specimen of the rarely-captured *Strepsiptera*. *Strepsiptera* are parasites that live on bees or other insects.
 - d. Prairie Bush Clover SNA had the highest abundance of *Nomada*, which is a group of bees that invades the nest of other bees. Presence of these nest parasites might indicate that the bee populations at Prairie Bush Clover SNA are abundant enough to sustain the *Nomada* population.
 - e. These preliminary surveys informed the optimal methods for sampling pollinators. Sampling methodology and data results from these surveys will be utilized in the 2014-2015 LCCMR project titled 006-A Wild Bee Surveys in Prairie-Grassland Habitats.

Figure 1

Bee Genera from SNA Sites (2014)



B. Snake Monitoring.

- 1) Three female Bullsnares, 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 Co) primarily accomplished through this appropriation. Three of the bullsnares tracked in 2013 did not survive to the summer of 2014. As a result, the North American Racer and Plains Hog-nosed Snake were added in 2014.
- 2) Results
 - a. This study continues to provide valuable information on several snake species considered species in greatest conservation need, including habitat use, nesting sites, and overwintering sites.
 - b. Prolonged nontraditional habitat use in marshland habitat was repeated by an individual Bullsnares that utilized this habitat last season.
 - c. Important patterns of movement and summer habitat usage are beginning to emerge in Bullsnares tracked from last season into this season.
 - d. A greater number of North American Racers were documented this season compared to last season, and adult Plains Hog-nosed Snakes were documented this season compared to none documented last season.
 - e. These results will help inform managers on maintaining habitat for these vulnerable snake species.

C. Native Prairie Monitoring.

- 1) Native prairie plant community monitoring on 2 SNAs – Langhei Prairie (Pope Co) and Prairie Coteau (Pipestone Co) in summer 2013.
- 2) Results
 - a. Monitoring provided native prairie long term status trend information for managed sites to inform management decisions – this is being done in conjunction with the Grassland Monitoring Team including the USFWS and The Nature Conservancy.

WORK PLAN AMENDMENT APPROVED September 11, 2014:: Removed line for equipment (this turned out to be simpler and less expensive and was purchased as “supplies”), **move \$4,771 from Activity 1 to Activity 2** to help achieve prescribed burn targets, **and to move a gross amount of \$606 from Activity 3 to Activity 2** (this also includes moving \$5,243 of personnel from Activity 3 to Activity 2 and moving \$3,392 in supplies and \$1073 in travel from Activity 2 to Activity 3) to help achieve prescribed burn targets. **Within Activity 2** decrease professional contracts by \$4,400 because pollinator-related adaptive management monitoring was done by DNR staff instead of contracts;

decrease tools/supplies, travel, and “other” budget to what was actually needed to complete work; and increase budget for personnel and CCM contracts in order to achieve prescribed burn targets

ACTIVITY 3: Citizen-Student Engagement in Natural Areas

Description:

A new naturalist-led, local partnership-based initiative will engage residents, students, and other interested people in ecological recreation and education activities on SNAs. This includes recruiting and assisting a network of 80+ SNA volunteer site stewards; co-sponsoring and coordinating 40+ volunteer site restoration and management work days and ecological 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. New region-based part-time SNA naturalist positions would be established to cultivate and facilitate locally-led citizen-student based activities on SNAs. Work includes: integrating site steward information and volunteer project tracking into the Adaptive Management Spatial Database (AMSD), developing and disseminating a site steward’s kit and electronic newsletter, producing and disseminating (primarily through the web) a map of SNAs featuring activities people can do on SNAs, enhancing SNA visitor information on the web, and developing and launching a web-based tool for SNA stewards and visitors to report and share observations (e.g. bird sightings and phenology observations).

Summary Budget Information for Activity 3:

ENRTF Budget: \$ 287,194
Amount Spent: \$ 287,030
Balance: \$ 164

WORK PLAN AMENDMENT APPROVED September 11, 2014 (see below).

Activity Completion Date:

Outcome	Completion Date	Budget
3a. SNA use information & observation reporting tool	6/30/14	\$55,800
3b. 40+ volunteer events	12/31/13	\$150,000
3c. network of 80+ volunteer site stewards & database tracking	12/31/13	\$194,200

Activity Status as of March 1, 2012:

3a. User Information & Reporting Tool. Progress made towards improving information targeted to SNA users on the DNR webpage includes: posting a downloadable (pdf) version of SNA brochure; design of a new format for each SNA’s page on the web (in the process of being implemented); development of a new GIS parking layer for all SNAs which will be part of a new interactive SNA site map feature; scanning over 5000 slide transparencies and starting to incorporate many of the images in each SNA’s page on the web. A test series of SNA site business card-sized “pocket cards” were distributed throughout the State Fair and subsequently at the DNR Info Center; final designs of the pocket cards and comparable site steward cards (both incorporating a QR code through which a smart phone with camera can directly connect to the SNA web) are being developed. Under development is a e-newsletter and e-communications products for volunteers and site stewards. Also, technologies are being examined to be used for SNA visitors to upload their own SNA wildflower/seasonal photos and other observations.

3b. Events. The SNA volunteer event webpage was redone with increased listings of volunteer opportunities. To date, 16 events have been held with about 300 participants (made possible all or in part with this appropriation). These events included: several nature/bird watching hike/ski outings; a skit presented twice at the Minnesota State Fair; site clean-up or other volunteer work days; and presentations to groups such as 4H, nature photographers, and local naturalists. Plans are underway for many contractor or staff naturalist led events during the growing season and for part-time DNR State Parks naturalists to also have SNA public engagement/site steward recruitment duties.

3c. Site Stewards. A new site steward suite of pages on the DNR SNA website has been created (along with new internal procedures for steward enrollment) and has used to date to enroll three new site stewards. To date, contacts were also made with 21 past site stewards, sites visits conducted with some, and 15 have renewed their involvement. Site steward recruitment has been done through the ENRTF facebook and twitter sites, some of the events (above), and to local environmental learning centers and tribal organizations.

Activity Status as of January 15, 2012:

3a. User Information & Reporting Tool. In addition, to accomplishments listed in the last update, the following has been accomplished. 1) **Statewide Map.** A statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) has been designed, 2500 copies printed, and distribution initiated. The initial proposal to include SNA activity information on the map was changed to locational information instead due to space limits and decision that activity information is kept more up-to-date on the web. 2) **Newsletter.** A quarterly electronic *Nature Notes* newsletter was designed; arrangements made to distribute it to list maintained through govdelivery – with 750 current subscribers (a broader audience than the audience of site stewards initially proposed); 4 issues e-published to date; and emphasis/approach is for each issue to be brief stories with photos and hot links, typically including one site steward observation notes (telling story of site), highlight one SNA site per issue, one feature article per issue e.g. human interest or story they are telling. 3) **Pocket Cards.** A second printing of 7500 “pocket cards” was done and nearly all copies have been distributed. 4) **Website.** the new SNA website is fully operational with interactive maps, updates to each SNA site page (including slide show, interactive locational map, recreation use/visitor notes, and donor recognition) and additions of pages for new SNAs; data from Google analytics has demonstrated that SNA media coverage has led to significant spikes in SNA webpage usage particularly from new visitors; additional upgrades to other pages are in development. 5) **Powerpoints.** Several canned or custom powerpoint presentations have been developed (some with audio, some emphasizing what visitors or volunteers can do at SNAs), presented, and delivered to various audiences for their use and dissemination – this includes Master Naturalists and DNR State Park Naturalists

3b. Events. To date, 114 events have been held with more than 1000 participants (made possible all or in part with this appropriation) – CY11 (July-Dec) 20 events, CY12 27 events, and CY13 to date (July-Dec) 27 events. Most events were promoted on the DNR website and many through local media or partner groups. These events included: many nature/bird watching hike/ski-snowshoe outings; site clean-up or other volunteer work days; and presentations to groups such as 4H, nature photographers, and master naturalists. **SNA Naturalists.** Three SNA-State Parks naturalist positions were created and filled with the SNA portions of their positions paid through this appropriation. Two new seasonal SNA-State Parks naturalists in DNR’s northwest region worked from mid-June through November 2012: one based at Lake Bronson State Park assigned to SNAs in Kittson and Roseau Counties and one based at Buffalo River State Park assigned to SNAs in Clay and Norman Counties. A third new SNA-State Parks naturalist in DNR’s central region who began in October 2012 is based at Great River Bluffs State Park and is assigned to SNAs in Winona, Houston, and Fillmore Counties. The SNA Naturalists have brought significant professionalism to the development and implementation of SNA site-specific interpretive programs, activities, and materials. Interpretive field trips developed and hosted by naturalists include: a series bringing homeschool groups to various SNAs to study prairie soils, seeds, and animals; a senior boat trip to Pine and Curry Island SNA in Lake of the Woods; and a full moon hike and a couple insect-oriented events which included local college students. Before seasonal layoff, one of the naturalists put together a substantial amount of materials to jumpstart the 2013 season, including a script for a podcast tour featuring 4 SNAs.

3c. Site Stewards. To date, 95 site stewards (i.e. stewards for 95 SNAs) have been secured, including refilling some positions where stewards resigned – this exceeds the proposed target of 80 stewards, with additional volunteers continuing to apply to be new stewards. Procedures for enrolling volunteer site stewards have been refined, including a typical welcome packet of information. Stewards are electronically submitting regular reports on the SNA monitoring visits and some stewards are hosting events and volunteer workdays (included above). A holiday thank you card was personalized

and sent to each steward. A steward recognition event and SNA hike was held on January 12th; this included providing stewards with safety gear, information, etc. In addition, to “regular” duties, one steward is volunteering to update the taxonomy (i.e. naming conventions) for all SNA plant lists.

Activity Status as of March 15, 2013:

3a. User Information & Reporting Tool. *For Result 3a the following accomplishments are additions to those listed in the previous updates* 1) **Statewide Map.** CORRECTION to above: 5000 copies statewide color map locating all SNAs were printed and distribution initiated. 2) **Newsletter.** The 5th issue of the quarterly electronic *Nature Notes* newsletter was just distributed to 1420 current subscribers.

3b. Events (*with changes since December 2012 underlined*). To date, about 120 events have been held with more than 1000 participants (made possible all or in part with this appropriation) – CY13 to date (Jan-mid-March) 4 events.

3c. Site Stewards. To date, 95 site stewards (i.e. stewards for 95 SNAs) have been secured, including refilling some positions where stewards resigned – this exceeds the proposed target of 80 stewards, with additional volunteers continuing to apply to be new stewards. Safety vests are being distributed to site stewards.

Activity Status as of September 16, 2013:

3a. User Information & Reporting Tool. *For Result 3a the following accomplishments are additions to those listed in the previous updates* 1) **Pocket Cards.** Twelve new pocket cards were produced for distribution at the State Fair (500 each, 6,000 pieces total). 2) **Newsletter.** The 6th issue of the quarterly electronic *Nature Notes* newsletter was distributed in June to 1,793 current subscribers. 3) **SNA Website.** The “Visiting SNAs” and “How Can You Help” webpages were redesigned and the 1st 16 detailed SNA site maps were added to their site webpages. 4) **SNA Site Factsheets.** Two-side handouts have been created for 9 SNAs each including a site descriptions and map; these have been distributed at dedications, events and tours. Work under this appropriation is going to focus on if/how a web or social-media-based SNA user observation tool (e.g. spring flowers) would be implemented.

3b. Events. To date, about 170 events have been held with more than 1600 participants (made possible all or in part with this appropriation) – CY13 to date (Jan-Sept) 56 events. Events that stand out are: Introduction to Digital Photography at Mound Prairie, Tour of Management Activities at Gneiss Outcrops, Full Moon Hike at Blanket Flower Prairie, and site steward led hikes at Grey Cloud Dunes (monthly June-October).

3c. Site Stewards. To date, 109 volunteer site stewards (i.e. stewards for 109 SNAs) have been secured, including refilling some positions where stewards resigned – this exceeds the proposed target of 80 stewards, with additional volunteers continuing to apply to be new stewards. In addition to their SNA event duties, the roles of 2 SNA-State Parks Naturalists have expanded their roles this year to include site steward mentoring. The Program is developing standards for PPE and training. Steward highlights include: fence removal at Cherry Grove Blind Valley, assistance with Festival of Birds at Greenwater Lake, invasive buckthorn removal at Clinton Falls Dwarf Trout Lily, and kitten-tails (threatened species) inventory at River Terrace Prairie.

WORK PROGRAM AMENDMENT REQUEST APPROVED by LCCMR September 24, 2013: To move \$124,000 from Activity 3 to Activity 2 - \$103.8K from personnel to personnel, \$16.9K from contracts to fleet/travel, \$3.3K from printing to supplies. These changes are possible due achievement of Activity 3 deliverables with less funding than anticipated and with transitioning additional Activity 3 type work from this appropriation to the ENRTF 2013 appropriation. **Within Activity 3 to move \$200 from printing to supplies** (note that printing of the SNA map ended up as a “supplies” charge rather than a “printing” charge.)

Activity Status as of March 1, 2014:

3a. User Information & Reporting Tool. *For Result 3a the following accomplishments are additions to those listed in the previous updates* 1) **Newsletter.** The 7th and 8th issues of the quarterly electronic

Nature Notes newsletter were distributed to 2132 subscribers. 2) **SNA Website.** New detailed maps were developed and posted for 10 SNAs. Work under this appropriation helped initiate the SNA Facebook page which was launched using the ML12 ENRTF appropriation. Development of an SNA user observation webtool will not be done through this appropriation.

3b. Events. To date, about 30 events have been held with about 820 participants (made possible all or in part with this appropriation). Events include: a Hill's Thistle Survey at Blanket Flower Prairie SNA, Showshoe and Ski Outing at Sand Lake Peatland SNA, a Peregrine Falcon Program at King and Queen's Bluff SNA.

3c. Site Stewards. To date, 116 volunteer site stewards (i.e. stewards for 109 SNAs) have been secured, including refilling some positions where stewards resigned – this exceeds the proposed target of 80 stewards, with additional volunteers continuing to apply to be new stewards. In addition to their SNA event duties, the roles of 2 SNA-State Parks Naturalists have expanded their roles this year to include site steward mentoring. The Program is developing standards for PPE and training. Steward highlights include: the first ever steward led volunteer project at Helen Allison Savanna SNA and a steward GPS'd the boundaries of Kettle River SNA.

WORK PLAN AMENDMENT APPROVED April 7, 2014: To move \$11,800 from Activity 1 back to Activity 3 and within Activity 3 to move \$12,000 from "other" to a combination of personnel, contracts, supplies, and printing largely because SNA personnel did the website/web development work initially expected to be done by MNIT. The increase of funding for printing is to contribute towards printing a poster on Northshore SNAs that is being funded in part by federal Coastal Zone Management funds.

Final Report Summary:

3a. User Information/Communications.

1) Electronic Communications. a) **Website.** The nearly new SNA website was developed through this appropriation with interactive maps, updates to each SNA site page (including slide show, interactive locational map, recreation use/visitor notes, and donor recognition) and additions of pages for new SNAs; data from Google analytics has demonstrated that SNA media coverage has led to significant spikes in SNA webpage usage particularly from new visitors. The "Visiting SNAs" and "How Can You Help" webpages were redesigned and the 1st 16 detailed SNA site maps were added to their site webpages. Part of the upgrades were made possible by scanning over 5000 slide transparencies from a professional photographer and contracting to have additional photographs of taken of SNA . The website also includes a downloadable (pdf) version of SNA brochure. b) **Newsletter.** A quarterly electronic *Nature Notes* newsletter was designed; 8 issues were developed through this appropriation and distributed through govdelivery – with 2612 current subscribers. c) **Powerpoints.** Several canned or custom powerpoint presentations have been developed (some with audio, some emphasizing what visitors or volunteers can do at SNAs), presented, and delivered to various audiences for their use and dissemination – this includes Master Naturalists and DNR State Park Naturalists.

2) Print Communications. a) **Statewide Map.** A statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) was designed, 5000 copies printed, and distributed (leading to an update and reprinting in July 2014 with ML13 appropriation). b) **Pocket Cards.** These business card-size cards each featuring 1 SNA (and incorporating a QR code through which a smart phone with camera can directly connect to the SNA web) have been printed and almost all distributed through the State Fair, DNR Info Center, and many DNR events: 1st printing 12 SNAs (~100 each, ~1200 pieces total); 2nd printing of 12 SNAs (~625 each, 7500 pieces total); and 3rd printing highlighting 8 North Shore SNAs (500 each, 4,000 pieces total). c) **SNA Site Factsheets.** Two-side handouts have been created for more than 9 SNAs each including a site descriptions and map; these have been distributed at dedications, events and tours. d) **North Shore Guide.** A color poster-booklet on "The Ten Best Places of the North Shore: A Visitor's Guide to North Shore Scientific and Natural Areas" was printed and distributed through a combination of this appropriation and federal Coastal Zone Management funding.

3b. Events. About 188 SNA educational and stewardship events were held with 2745 participants (made possible all or in part with this appropriation). Events include: Hill's Thistle Survey at Blanket Flower Prairie SNA, Showshoe and Ski Outing at Sand Lake Peatland SNA, a Peregrine Falcon Program at King and Queen's Bluff SNA. Events have been done through joint SNA- State Parks naturalists, SNA staff, contractors, Master Naturalists and other volunteers.

3c. Site Stewards. Through this appropriation, a network of 124 volunteer site stewards (i.e. stewards for 124 SNAs or 78% of SNAs) have been secured, including refilling some positions where stewards resigned – this exceeds the proposed target of 80 stewards, with additional volunteers continuing to apply to be new stewards. The Program developed standards for safety equipment-supplies (including personal protective equipment) and training. Also, a one-day training was provided for stewards on a variety of topics including rare species, native plant communities, and invasives. Steward highlights include: conducted survey for Louisiana waterthrush at Kettle River, removal of invasive garlic mustard at Pine Bend Bluffs, trail inspection to note needed repairs at Wolsfeld Woods SNA, observing osprey regularly on Whitney Island, the first ever steward led volunteer project at Helen Allison Savanna SNA, and GPS'ing the boundaries of Kettle River SNA.

WORK PLAN AMENDMENT APPROVED September 11, 2014: Moved a gross amount of \$606 from Activity 3 to Activity 2 (this also includes moving \$5,243 of personnel from Activity 3 to Activity 2 and moving \$3,392 in supplies and \$1073 in travel from Activity 2 to Activity 3) to help achieve outreach activities **and within Activity 3** (in conjunction with switches with Activity 2 \$s) decrease personnel and "other"; increase printing because of higher costs for the Northshore poster; increase supplies for safety supplies for site stewards; and increase travel for outreach activities.

V. DISSEMINATION:

Description: Dissemination will primarily be achieved through the SNA webpage on the DNR website: <http://www.dnr.state.mn.us/snas/index.html> . All volunteer events will be listed at the webpage and SNA visitors and site stewards will be able to report and share observations (e.g. bird sightings and phenology observations) via a new web-based tool. The updated SNA Long Range Plan and new SNA map (featuring activities people can do at SNAs) will be posted on the webpage. A limited number of printed copies of the plan will be available upon request through the webpage and DNR Information Center. The new map will be distributed through the DNR Information Center, at DNR region and area offices and state parks, at the State Fair, and through SNA event co-sponsors – with primary emphasis on facilities/organizations that are near SNAs and are cooperating on sponsoring SNA events. The SNA naturalists are expected to make presentations and lead field trips at SNAs and/or to promote involvement in SNAs. The site steward kits and e-newsletter will be disseminated to officially recognized site stewards.

Status as of March 1, 2012: Public information and involvement events are discussed above. Site steward information, enrollment, and steward kit information is available at <http://www.dnr.state.mn.us/sna/stewards/index.html> and to date has been promoted on the ENRTF facebook and twitter. A newly updated volunteer page, with the addition of a volunteer events calendar can be found at <http://www.dnr.state.mn.us/volunteering/sna/index.html>. The DNR informational brochure is downloadable at: http://files.dnr.state.mn.us/eco/sna/brochure_sna.pdf.

Status as of January 15, 2012: Public information and involvement events are discussed above and web-links continue as in March 2012 update. A statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) has been designed, 2500 copies printed, and distribution initiated. Four issues of the quarterly electronic *Nature Notes* newsletter were emailed through govdelivery – with 750 current subscribers (see further description above). Naturalist-led events are being held (as discussed above) and being publicized locally such as through posters and

notices at State Parks, a homeschool webpage, via Moorhead Community Education, local newspaper and radio, DNR website (both statewide event list and state park pages).

Status as of March 15, 2013: See comments above including the 5th issue of *Nature Notes* and correction that 5000 copies of the statewide color map were printed and being distributed.

Status as of September 16, 2013: See comments above including the 6th issue of *Nature Notes* and distribution of new pocket cards and SNA pocket cards.

Status as of March 1, 2014): See comments above including the 7th & 8th issue of *Nature Notes*.

Final Report Summary: Dissemination is primarily achieved through the upgraded SNA webpage on the DNR website: <http://www.mndnr.gov/snass>. The SNA Strategic Land Protection Plan is also disseminated through this website: <http://www.dnr.state.mn.us/eco/sna/plan.html>. All volunteer events are listed at the webpage. Volunteer site stewards submit periodic reports via a generic SNA email address sna.dnr@state.mn.us created through this appropriation for a broad variety of constituent communications. Through this appropriation, the quarterly electronic Nature Notes newsletter was initiated and 8 of 10 issues were emailed through govdelivery– with over 2600 current subscribers.

A statewide color map locating all SNAs (with directions to all sites and ENRTF acknowledgement on the back) has been designed, 5000 copies printed, and nearly all copies distributed (reprinted in July 2014 with ML13 appropriation) through the DNR Information Center, at DNR region and area offices and state parks, at the State Fair, and through SNA event co-sponsors – with primary emphasis on facilities/organizations that are near SNAs and are cooperating on sponsoring SNA events. A color poster-booklet on “The Ten Best Places of the North Shore: A Visitor’s Guide to North Shore Scientific and Natural Areas” was printed and distributed through a combination of this appropriation and federal Coastal Zone Management funding. Each year series of new business card-size “pocket cards” each featuring 1 SNA (and incorporating a QR code through which a smart phone with camera can directly connect to the SNA web) have been printed and almost all cards for the 32 SNAs produced to date have been distributed through the State Fair, DNR Info Center, and many DNR events.

VI. PROJECT BUDGET SUMMARY:

A. ENRTF Budget:

Budget Category	\$ Amount	Explanation
Personnel:	\$827,761	Mgmt. Coord.(~0.3 FTE classified); IT-web staff (~1.1 FTE classified & unclassified); Spec’s & Tech’s & Planner (~3 FTE classified & unclassified); Laborers (classified) & Seasonal Crews & Naturalists (unclassified (~2 FTE)
Professional/Technical Contracts:	\$81,525	Activity 1b: SNA easement baseline property reports & monitoring (~\$18K); Activity 2e: SNA adaptive management plans (~\$19K); Activity 2f: adaptive management monitoring (~\$27K); and Activity 3 volunteer/student events/projects (~\$50K)
Service Contracts	\$131,646	Activity 2 deliverables including 2a native habitat reconstruction (~\$10K), 2b woody encroachment removal & exotics control (~\$80K), 2c prescribed burning (~\$100K); and 2d site development (fences, signs, etc) (~\$8K)
Tools/Supplies:	\$42,898	Activity 1: field work & work session supplies; Activity 2: 2a-2c parts, tools, repair costs & supplies

		for restoration, enhancement, management plans, & monitoring; 2d interpretive displays, signs & posts, fencing, etc Activity 2f: field supplies Activity 3: volunteer and school events supplies (including safety items, handtools, etc)
Fee Title Acquisition:	\$437,000	DNR – SNA
Professional Services for Acq:	\$29,099	
Printing:	\$3,629	
Travel Expenses in MN & Fleet Charges:	\$79,350	mileage, lodging & meals as per state contracts) & fleet charges for trucks, cars, & equipment, e.g. mowers, seeders (Note: travel & fleet are now combined because they are in SWIFT.)
Other:	\$3,166	database & web development & support (MIS); training; postage
TOTAL ENRTF BUDGET:	\$1,640,000	

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 & unclassified staff paid almost exclusively with special project funds. The classified Management Coordinator (whose position was created about 18 months ago to be paid with special project funds) will be responsible for providing technical guidance statewide to assure adherence with program standards, and for developing and administering contracts statewide, following the state bid process and procedures (e.g. management plan contracts, etc.). The Specialist and Technician level positions (classified and unclassified) work with landowners and real estate staff to complete acquisition projects and baseline property reports; design, coordinate and oversee restoration and enhancement projects – including ones involving volunteers and site stewards; and recruit, train, and coordinate with site stewards and volunteers. In addition, a combination of SNA and MCBS specialist-level positions (both classified and unclassified) and 1 unclassified planner will provide scientific/field expertise, analysis, etc. for the long range plan-strategic prioritization. Laborers (classified) and other seasonal crews (unclassified) will be used to implement management activities, such as prescribed burning or invasive species treatments. In addition, portions of 2-3 IT positions will be involved in this project: 1-2 classified special project staff doing database development and GIS; and 1 unclassified position doing web development and other duties related to citizen-student-volunteer engagement. 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.

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

Number of Full-time Equivalent (FTE) funded with this ENRTF appropriation: approximately 6.15 FTE spread across approximately 20-30 positions.

B. Other Funds:

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
State:			
General Fund and other funds as appropriate	\$125,600	\$23,270	Shared Services (operations support governance) are services that DNR relies on in order to conduct business and support the work of the department. These services are more efficient when shared.

General Fund	\$98,400	\$0	Division Support Costs that help maintain basic program operations
TOTAL OTHER FUNDS:	\$224,000	\$23,270	

Note: the Department Shared Services costs are fully stated above and are less than proposed; the Division support costs for ENRTF projects were distributed proportionately across all Division funding sources from which those costs can be paid – no specific value for costs for this project were calculated.

VII. PROJECT STRATEGY:

A. Project Partners: Work under this proposal is coordinated with separately funded work of partners including work with Metro Conservation Corridors and Habitat Corridors partners (such as Friends of the Mississippi River for restoration & enhancement), Trust for Public Land (acquisition, including LaSalle Lake Phase 2), and Minnesota River Green Corridors Initiative (acquisition). These efforts are complementary not redundant; all accomplishments on joint projects would be prorated.

B. Project Impact and Long-term Strategy:

This project will help protect and perpetuate rare species, SGCNs, and natural features of state significance across the state, selected because of their importance and strategic value. As a part of the State Outdoor Recreation system, SNAs are open to the public for hiking, nature photography, bird watching, snowshoeing, and other activities that do not disturb the natural conditions. Some SNAs are open to all legal hunting, while others are open only to specific types of hunting to help achieve management goals. SNAs are intended to give people the opportunity to experience undisturbed nature without public convenience facilities.

The goal of the Scientific and Natural Areas (SNA) program is to preserve the ecological diversity of Minnesota’s natural heritage, requiring the protection and management of all features in sufficient quantity and distribution across the state. Protecting multiple sites in each landscape area is critical to capturing the full range of genetic diversity and preventing the loss of important species, communities, and features in the state.

The SNA Long-Range Plan, which was developed with the Commissioner’s Advisory Committee, recommends the protection of 500 sites through SNA designation by 2085, including: 200 prairie SNAs, 135 deciduous forest SNAs, and 165 coniferous forest SNAs. The plan further recommends that five examples of each native plant community and three examples of each rare feature need to be protected as SNAs in each landscape (or subsection) of the state in which they naturally occur.

The SNA program targets acquisition and designation of Minnesota County Biological Survey (MCBS) mapped sites of outstanding and high biodiversity significance. If the program were to target, in the next 10 years, acquisition and protection of one percent of the already mapped unprotected outstanding and high biodiversity significance acres in all ecological sections (excluding the section containing the large peatland SNAs), the resulting total would be a SNA acquisition target of approximately 19,800 in the next 10 years. This 10-year total would equal an average of 1,980 acres acquisition and designation per year which compares to the FY06-10 average of 500 acres acquired per year.

The numerous types of rare resources and native habitats for which the Scientific and Natural Areas are acquired demand a broad and adaptive array of techniques to protect them. Sites acquired as SNA must be in a predominantly high quality natural state. However, peripheral disturbed areas are often part of an acquisition and threats to the integrity of native plant community remnants, such as invasive species or human disturbance, continue to increase. In general, because of scale of remaining natural habitat and the lack of natural disturbance, SNAs which are native prairie and savannas require the

greatest level of management, while the peatland SNAs require the least, and forested SNAs fall in the middle and vary among themselves depending on their location and size.

All SNA acres are intended to be managed as existing or restored native plant communities. This includes reconstruction of native plant communities on sites previously converted to other uses and it may include rehabilitation of degraded sites through interseeding. Specifically, existing SNAs (as of July 1, 2010) have a total of about 1,700 acres statewide that need native plant community reconstruction with seed of local ecotype. All fire dependent plant communities in SNAs should be managed through prescribed burning. Specifically, excluding the peatlands, an estimated 20% of SNAs have prairie-grassland-wetland communities and an estimated 5-10% have forest or brushland communities that need to be managed through prescribed fire; no more than 20-25% of a given site (or site complex) should be burned annually. On all SNAs impacted, control measures are to be implemented to reduce impacts from species that are harming a native plant community or other native feature. Plant management treatments target herbaceous and woody invasive species that displace native plant communities.

C. Spending History:

Funding Source <i>Note: this list is of appropriations by approp. yr. NOT expenditures (except ** which are all acquisition project landowner payments or donated land value)</i>	M.L. 2005-06 or FY 2006-07 (two years)	M.L. 2007 or FY 2008	M.L. 2008 or FY 2009	M.L. 2009 or FY 2010	M.L. 2010 or FY 2011 (may not be complete)
ENRTF	\$66,500 (5a) \$300,000 (5b) \$134,000 (5c)	\$50,000 (4b) \$243,000 (4c)	\$37,500 (3c) \$515,000 (3a) \$1,000,000 (3f) \$140,000 (3m)	\$37,500 (4e) \$410,000 (4f) \$703,300 (4d)	\$31,500 (4f) \$1,046,700 (4b)
OHC					\$1,408,000
G.O. Bonds	\$2,300,000		\$3,000,000		
** Lakeshore Lease Fund	\$179,300				\$17,800
** RIM plate match	\$1,268,400			\$7,000	\$637,000
** Other state	\$161,000				\$7,000
Federal – State Wildlife Grant				\$251,300	
** Federal – LAWCON	\$759,500				
** Federal – Coastal Zone	\$478,000				
** Dakota Co – FNAP	\$566,000			\$80,000	\$100,000
** Partners (TPL)		\$430K			\$2,052,000
** Partners (FMR)					\$50,000
** Mitigation - \$s fr other landowner				\$150,000	
** Landowner donations (not complete information)				>\$40,000	>\$490,000

VIII. ACQUISITION/RESTORATION LIST: See Acquisition/Restoration List.

IX. MAP(S): See Figure 1 map attachment.

X. RESEARCH ADDENDUM: NA

XI. REPORTING REQUIREMENTS:

Periodic work plan status update reports will be submitted not later than March 1 and September 1 of each year starting in 2012. A final report and associated products will be submitted by August 1, 2014 as requested by the LCCMR.

Final Attachment A: Budget Detail for M.L. 2011 (FY 2012-13) Environment and Natural Resources Trust Fund Projects

FINAL REPORT Sept 5, 3014; updated Oct 15, 2014

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Approved September 11, 2014			Approved September 11, 2014			Approved September 11, 2014			Approved September 11, 2014		
	Activity 1 Budget	Amount Spent	Balance	Activity 2 Budget	Amount Spent	Balance	Activity 3 Budget	Amount Spent	Balance	TOTAL BUDGET	TOTAL SPENT	TOTAL BALANCE
BUDGET ITEM	Protection of Sites of Biodiversity Sign.			Native Habitat Restoration & Enhancem't			Citizen-Student Engagement in SNAs					
OVERALL Personnel (Wages and Benefits)	\$ 181,793	\$ 181,793	\$ -	\$ 421,623	\$ 421,623	\$ -	\$ 224,345	\$ 224,345	\$ 0	\$ 827,761	\$ 827,761	\$ 0
Management Coordinator (classified contract & proj. mgmt) (~0.3 FTE; ~20% fringe; part for 1 year & part for 2 yrs) (~\$56.7K)												
IT database staff (~0.1 FTE; ~20% fringe; 1 year); unclassified IT web development staff & naturalist coordinator (~. 1.0 FTE; ~2 year) (~\$101K)												
Specialists & Technicians & Planner (~3 FTE classified & unclassified spread across ~ 20 people; ~20% fringe; part for 1 year & part for 2 yrs) (~\$511.8k)												
Laborers (classified) & unclassified Seasonal Crews & Seasonal Naturalists (~2 FTE spread across ~ 8 people; ~15% fringe; part of 1 year & part for 2 yrs) (~\$86.6K)												
Contracts: Professional/technical Contractors (state bid process) for deliverables including: Activity 1b: SNA easement baseline property reports & monitoring (~\$18K); Activity 2e: SNA adaptive management plans (~\$19K); Activity 2f: adaptive management monitoring (~\$27K); and Activity 3 volunteer/student events/projects & services (~\$50K)	\$ 28,206	\$ 28,206	\$ -	\$ 17,201	\$ 17,201	\$ -	\$ 36,118	\$ 36,118	\$ -	\$ 81,525	\$ 81,525	\$ -
Service contracts: (CCM or state bid process) for Activity 2 deliverables including 2a native habitat reconstruction (~\$10K), 2b woody encroachment removal & exotics control (~\$80K), 2c prescribed burning (~\$100K); and 2d site development (fences, signs, etc) (~\$8K)			\$ -	\$ 133,646	\$ 133,646	\$ -			\$ -	\$ 133,646	\$ 133,646	\$ -
Tools/Supplies: Activity 1: field work & work session supplies; Activity 2: 2a-2c parts, tools, repair costs & supplies for restoration, enhancement, management plans, & monitoring; 2d interpretive displays, signs & posts, fencing, etc Activity 2f: field supplies Activity 3: volunteer and school events supplies (including safety items, handtools, etc)	\$ 133	\$ 65	\$ 68	\$ 30,088	\$ 30,088	\$ -	\$ 11,592	\$ 11,592	\$ -	\$ 41,813	\$ 41,745	\$ 68
Fee Title Acquisition	\$ 440,011	\$ 437,000	\$ 3,011			\$ -			\$ -	\$ 440,011	\$ 437,000	\$ 3,011
Professional Services for Acquisition	\$ 29,099	\$ 29,099	\$ -			\$ -			\$ -	\$ 29,099	\$ 29,099	\$ -
Printing	\$ 61	\$ 61	\$ -	\$ 102	\$ 102	\$ -	\$ 3,466	\$ 3,466	\$ -	\$ 3,629	\$ 3,629	\$ -
Travel expenses in Minnesota (mileage, lodging & meals as per state contracts) & Fleet charges for trucks, cars, & equipment, e.g. mowers, seeders	\$ 326	\$ 326	\$ -	\$ 70,351	\$ 70,351	\$ -	\$ 8,673	\$ 8,673	\$ -	\$ 79,350	\$ 79,350	\$ -
Other: training (<\$100), postage (<\$300), database, website, & observation webtool development & support (MIS)	\$ -		\$ -	\$ 166	\$ 166	\$ -	\$ 3,000	\$ 2,836	\$ 164	\$ 3,166	\$ 3,002	\$ 164
COLUMN TOTAL	\$ 679,629	\$ 676,550	\$ 3,079	\$ 673,177	\$ 673,177	\$ -	\$ 287,194	\$ 287,030	\$ 164	\$ 1,640,000	\$ 1,636,757	\$ 3,243

**Environment and Natural Resources Trust Fund
M.L. 2011 Acquisition/Restoration List**

March 2014 update

Project Title: Scientific and Natural Area Acquisition and Restoration
Project Manager Name: Margaret (Peggy) Booth
M.L. 2011 ENRTF Appropriation: \$ 1,640,000

#	Acquisition or Restoration Parcel Name	Geographical Coordinates		Ecosystem Description	Ecological Significance	Activity Description	# of Acres	# of Shoreline Miles (if applicable)	Proposed Fee Title or Easement	Status
		Latitude or UTM-X	Longitude or UTM-Y							
1	Art-Lake-Hardwood-Ridges	634607	5263234	forest	part-of-4700-acre-MCBS-mapped-ecologically-intact-area-with-old-growth-sugar-maple-and-upland-white-cedar-forest-on-remote-ridges-black-	Fee title acquisition	240	none	DNR-SNA	after-initiating project-- alternative protection strategies being pursued with county-
2	Forever Wild	434298	5240457	forest	lakeshore property with diverse aquatic vegetation and fish habitat on Siseebakwet (Sugar) Lake; remainder of hardwood knob in existing SNA; habitat for forest birds.	Fee title acquisition	3	.91 miles	DNR SNA	offer on 13-acre private parcel rejected by owner.
3	Englund Ecotone	410739	5060868	forest-wetland-savanna complex	Pin Oak-Bur Oak Woodland, Sedge Meadow, and Dry Barrens Oak Savanna and 4 rare plants species	Fee title acquisition	350	none	DNR SNA	offer on 367-acre private parcel rejected by owner; 2nd parcel sold to other party.
4	Savage Fen - Phase 2	471988	4957654	forest-wetland-fen	calcareous fen-wetland complex--forested bluff. Phase 2 is -- 98 acre acquisition from developer who will option it to TPL; this is also proposed as a TPL Metro Corridors project.	Fee title acquisition	98	none	DNR-SNA	This project is on hold & no longer being considered for this approp-
5	Magney-Sniively	558322	5171254	forest	MCBS-mapped-outstanding & high-biodiversity-significance-northern-hardwood-forest-with-rare-features-	Conservation-easement-acquisition	1800	none	DNR-SNA	federal grant not received; project on hold
6	Cold Spring Heron-Reekery	391663	5035496	floodplain-forest	frontage on Sauk River; floodplain-forest-	Fee title acquisition	40	.41 miles	DNR-SNA	project put on hold; funding directed to other projects on this list
7	Forestville-Saxifrage Hollow	558301	4830260	forest	algific talus slope, hardwood forest	Fee title acquisition	100	1.14 miles	DNR SNA	offer on 60-acre parcel rejected by owner; 2nd landowner not ready to proceed & will not be pursued under this approp.
8	Blanket Flower Prairie	254829	5175314	prairie	dry sand-gravel prairie, 3 rare plants--1 rare butterfly	Reconstruction	14	none	DNR-SNA	project will not be done under this appropriation
9	Zumbro Falls Woods	547617	4900507	prairie	dry & mesic oak forest, dry prairie, dry cliff communities, 3 rare plants	Reconstruction	0	NA	DNR SNA	project initiated, but not completed with this approp
10	Oronoco Prairie	540517	4887408	prairie	dry prairie, 6 rare plants	Rehabilitation	9	none	DNR SNA	interseeding of native prairie seed from onsite has been completed on prairie knobs where woody removal was completed
11	Falls Creek	517806	5013729	forest	white pine hardwood forest, 2 rare plants	Reconstruction	4	none	DNR SNA	tree shelters were installed & invasives control performed around trees planted by GRG.
12	Franconia Bluffs	523462	5024081	forest	oak forest, 5 state-listed nesting birds	Reconstruction	11	none	DNR SNA	treeblankets & shelters were installed & invasives control performed around trees planted by GRG.
13	Rock Ridge Prairie	334342	4884630	prairie	dry bedrock prairie, 1 rare plant	Reconstruction	6	none	DNR SNA	project completed with this appropriation
14	Badoura Jack Pine	370851	5191777	forest & prairie	jack pine forest & prairie	Fee title acquisition	900	none	DNR SNA	acquired in part with this appropriation
15	Brownsville Bluff	638475	4836433	forest	Mississippi River bluffs with oak forest supporting rare snake.	Fee title acquisition	300	none	DNR SNA	acquisitions of 2 parcels initiated; to be completed with ML14 funding.
16	Mille Lacs Moraine	432904	5125115	forest	mesic hardwood forest & lakeshore	Fee title acquisition	240	1.72 miles	DNR SNA	landowner rejected offer.
17	Hastings Sand Coulee	513751	4951051	prairie	Dry hill prairie	Reconstruction	8	none	DNR SNA	seed collected on site for project implemented by FMR

NOTES:



SNA CANDIDATE SITE EVALUATION GUIDE

For internal planning process, to determine whether to buy a particular ownership

Maximum score: 100 pts.

Criteria for each point award are met by meeting just one threshold, e.g. all of the three criteria for Occurrence of suitable habitat do not need to be met to obtain the 15-point award for that Evaluation Factor.

Initial Criteria: (all 3 should be answered with “yes” before proceeding)

Has the parcel received an Ecological Evaluation recommending site as SNA?

Yes **No** **In process**

Date EE completed _____ Is a new EE needed? _____

Is public access available to the site? (side borders a public road, or legal access to the site accompanies the deed)

Is the landowner willing to consider selling?

*Note: Parcels nominated solely for their geological features are not evaluated with this form

Evaluation factors:	Points awarded for meeting criteria:					
	20-16 points	15-11 points	10-6 points	5-4 points	3-1 points	0 points
Diversity and quality of the native habitat contained in the parcel (based on DNR Natural Heritage Database, MN Biological Survey or MBS or Regional Ecologist update) (20 pt. maximum)	<ul style="list-style-type: none"> More than half of the site acres consist of a natural community with an A, B, AB, or BC element occurrence (EO) ranking. All of the parcel is identified as MBS site of Outstanding Biodiversity Significance. 	<ul style="list-style-type: none"> About half of the site acres consist of C-ranked community, and the rest is ranked higher than C (EO) ranking. Part of parcel identified as MBS site of Outstanding Biodiversity Significance Parcel or part of parcel identified as MBS site of High Biodiversity Significance. The parcel includes one or more "lakes of biodiversity significance" as identified by MBS 	<ul style="list-style-type: none"> About half of the parcel acres are composed of C-ranked native plant communities, the rest is D-ranked or lower. All of parcel identified as Moderate Biodiversity significance or higher 	<ul style="list-style-type: none"> About half of the parcel acres are composed of C-ranked native plant communities, the rest is D-ranked or lower. Part of parcel identified as Moderate Biodiversity Significance, the rest of parcel lower than "moderate". 	<ul style="list-style-type: none"> Less than 50% of the parcel is C-ranked native communities, and rest is ranked lower than C 	<ul style="list-style-type: none"> The only native community present on parcel has a D ranking All of site is ranked "below threshold" for biodiversity significance
Occurrence of, or suitable habitat for rare species within the parcel OR Occurrence of NPCs missing from SNA program objective (20 pt. maximum)	<ul style="list-style-type: none"> Presence of a federally listed species; and/or presence of one or more state endangered or threatened species occurrences (these state E or T species must have A, B or B/C ranking). Presence of a native plant community that is not already protected by an SNA in the ecological subsection, as identified by the gap analysis. 	<ul style="list-style-type: none"> Presence of <i>habitat</i> for a federally listed species that it would reasonably be expected to use (big enough for its territory, enough food for it, neighboring lands harbor it). An unranked occurrence of a state endangered or threatened species. Site includes a "key habitat" as determined by Tomorrow's Habitat for the Wild and Rare: Minnesota's Comprehensive Wildlife Conservation Strategy Helps to meet the SNA objective of 5 NPCs per ecological subsection – as identified in the gap analysis. 	<ul style="list-style-type: none"> Presence of one or more special concern species with any ranking (A through none). 	<ul style="list-style-type: none"> Presence of one or more listed or special concern species (with any ranking) on nearby properties. 5 or more Species of Greatest Conservation Need (SGCN) for the subsection where the parcel is located, as determined by Tomorrow's Habitat for the Wild and Rare: Minnesota's Comprehensive Wildlife Conservation Strategy 		<ul style="list-style-type: none"> No rare species seen on parcel or within 2 miles The SNAs in the subsection where the parcel is located already protect 3 examples of each species and 5 examples of each NPC found on this parcel.
Size of parcel (15 pt. maximum)		<ul style="list-style-type: none"> NPC is significant in size for this NPC type, and in this ECS subsection. While each NPC is of moderate size for the NPC type, the ownership parcel is large for the area. 	<ul style="list-style-type: none"> Moderately-sized remnant relative to other comparable communities in the ECS subsection. 			<ul style="list-style-type: none"> Small community remnant relative to other examples in the area.
Location of the parcel in relation to other biodiversity hot spots and/or conservation land (15 pt. maximum)		<ul style="list-style-type: none"> Parcel is in a high priority (red or orange) area of the Marxan prioritization mapping; and/or is projected to be in a Marxan high priority area when MBS data are complete. Located in a MN Prairie Plan Core Area (list which one). 	<ul style="list-style-type: none"> Parcel is in a Prairie Plan Corridor Parcel is near or adjacent other permanently protected conservation lands with intact habitat. 	<ul style="list-style-type: none"> Parcel is in a yellow zone of the Marxan prioritization mapping Isolated parcel: Other habitat or conservation lands within 2 miles 	<ul style="list-style-type: none"> Isolate parcel within 5 miles of a red, orange, yellow Marxan zone Prairie within the agricultural matrix (not in a Prairie Plan Core or Corridor) but protecting it would protect significant water resources. 	<ul style="list-style-type: none"> Isolated parcel greater than 10 miles from a red, orange or yellow Marxan prioritization mapping zone.
Potential for long-term habitat management and enhancement of the parcel (15 pt. maximum)		<ul style="list-style-type: none"> SNA ownership of this parcel would improve management options for a larger, contiguous area (e.g. improves ability for prescribed fire mgmt, invasive species control, better coordination with conservation partners). 	<ul style="list-style-type: none"> Parcel has no major limitations to management (had good access to all parts that might require management) Parcel does not require significant management efforts (minimal invasive issues, no reconstruction, no building removal needed no expectation of heavy use, no proposed trail, etc..) 	<ul style="list-style-type: none"> Parcel has some major limitations to management. (may have a building, some invasives, junk piles, etc) 	<ul style="list-style-type: none"> Parcel has significant limitations to management (e.g. surrounding residential development limits Rx fire, exotic weed control issues, canopy community decimated and signs that understory is in peril). Up to 50% of parcel requires heavy management or restoration 	<ul style="list-style-type: none"> Restoration and invasive species removal requires multiple efforts over the majority of the parcel. Expensive and time consuming plant community reconstruction required.
Additional factors (included in the evaluation as appropriate) (15 pt. maximum)		<ul style="list-style-type: none"> Jeopardy of parcel: e.g. parcel is in an area where this type of property is experiencing strong development pressure due to gravel mining, cropland conversion, housing, or other imminent threats AND parcel contains S1 or S2 ranked communities or T and E species Landowner is willing to donate significant acreage of parcel Parcel has geological features of statewide significance 	<ul style="list-style-type: none"> Jeopardy of parcel: e.g. parcel is in an area where this type of property is experiencing development pressure due to gravel mining, cropland conversion, housing, or other imminent threats 	<ul style="list-style-type: none"> Parcel provides good cross-section of geological strata or fossil exposure 		

Overall summary of the parcel's priority for enrollment based on the evaluation criteria. Writing a succinct summary statement here is very helpful as this statement can be used repeatedly for the fact sheet as well as for future LCCMR, LSOHC, Bonding etc. reports.

Native Plant Communities: Presence within Subsections

*Please note that data for the following subsections are missing or very limited, and all NPC acreages are not representative of future final totals:

Agassiz Lowland, Border Lakes, Chippewa Plain, Little Fork-Vermillion Upland, Nashwauk Upland, Pine Moraines Outwash Plain, St. Louis Moraine, Tamarack Lowland

NPC Presence within Subsections: SNAs	NPC Presence within Subsections: Protected Public Lands (Public and NGO Conservancies)	Protected Acreage	NPC Presence within Subsections: Protected Public and Unprotected Private Lands <i>(Subsections in red are missing protected acreage of NPC type)</i>
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ABR_CX			Agassiz Beach Ridge Complex
Red River Prairie	Red River Prairie	1505.3	Red River Prairie
AFP_CX		7071.5	Alder Swamp / Forested Peatland Complex
Laurentian Uplands	Border Lakes	29.9	Border Lakes
	Hardwood Hills	3.6	Hardwood Hills
	Laurentian Uplands	2614.3	Laurentian Uplands
	Nashwauk Uplands	5.8	Nashwauk Uplands
	North Shore Highlands	2498.0	North Shore Highlands
	Pine Moraines & Outwash Plains	4.2	Pine Moraines & Outwash Plains
	St. Louis Moraines	37.7	St. Louis Moraines
	Tamarack Lowlands	7.2	Tamarack Lowlands
Toimi Uplands	1870.9	Toimi Uplands	
AIP_CX		6979.7	Agassiz Interbeach Prairie Complex
Aspen Parklands	Aspen Parklands	6471.4	Aspen Parklands
	Red River Prairie	508.3	Red River Prairie
AOX_CX		2257.7	Aspen - Oak Woodland Complex

	Aspen Parklands	2257.7	Aspen Parklands
APn80		127.1	Northern Spruce Bog
	Laurentian Uplands	6.5	Laurentian Uplands
	St. Louis Moraines	2.8	St. Louis Moraines
	Tamarack Lowlands	117.8	Tamarack Lowlands
APn80a		16615.8	Black Spruce Bog
	Agassiz Lowlands	3225.9	Agassiz Lowlands
	Border Lakes	67.3	Border Lakes
Laurentian Uplands	Laurentian Uplands	2963.3	Laurentian Uplands
	Nashwauk Uplands	12.5	Mille Lacs Uplands
	North Shore Highlands	4762.8	Nashwauk Uplands
	St. Louis Moraines	198.8	North Shore Highlands
	Tamarack Lowlands	90.0	St. Louis Moraine
	Toimi Uplands	5295.3	Tamarack Lowlands
			Toimi Uplands
APn80a1		1725.4	Black Spruce Bog: Treed Subtype
	Border Lakes	21.5	Border Lakes
Laurentian Uplands	Laurentian Uplands	816.2	Laurentian Uplands
	Nashwauk Uplands	42.5	Nashwauk Uplands
	North Shore Highlands	519.5	North Shore Highlands
	St. Louis Moraines	325.7	St. Louis Moraine
APn80a2		2188.5	Black Spruce Bog: Semi-Treed Subtype
	Agassiz Lowlands	2.9	Agassiz Lowlands
	Border Lakes	11.4	Border Lakes
Laurentian Uplands	Laurentian Uplands	403.8	Laurentian Uplands
	Mille Lacs Uplands	307.3	Mille Lacs Uplands
	Nashwauk Uplands	167.9	Nashwauk Uplands
	North Shore Highlands	390.0	North Shore Highlands
	St. Louis Moraines	905.2	St. Louis Moraine
APn81		11529.2	Northern Poor Conifer Swamp
	Agassiz Lowlands	828.9	Agassiz Lowlands
	Aspen Parklands	2356.1	Aspen Parklands

Laurentian Uplands	Border Lakes	56.7	Border Lakes
	Chippewa Plains	24.6	Chippewa Plains
	Laurentian Uplands	2051.8	Laurentian Uplands
	Mille Lacs Uplands	212.2	Mille Lacs Uplands
	Nashwauk Uplands	15.5	Nashwauk Uplands
	North Shore Highlands	4619.4	North Shore Highlands
	Pine Moraines & Outwash Plains	2.7	Pine Moraine & Outwash Plains
	St. Louis Moraines	561.2	Glacial Lake Superior Plain
	Toimi Uplands	800.1	St. Louis Moraine Toimi Uplands
APn81a	12779.6	Poor Black Spruce Swamp	
Laurentian Uplands	Agassiz Lowlands	1050.6	Agassiz Lowlands
	Border Lakes	447.4	Border Lakes
	Glacial Lake Superior Plain	144.6	Glacial Lake Superior Plain
	Laurentian Uplands	3962.3	Laurentian Uplands
	Mille Lacs Uplands	850.1	Mille Lacs Uplands
	Nashwauk Uplands	19.8	Nashwauk Uplands
	North Shore Highlands	2069.9	North Shore Highlands
	St. Louis Moraines	431.8	St. Louis Moraine
	Tamarack Lowlands	17.0	Tamarack Lowlands
Toimi Uplands	3786.1	Toimi Uplands	
APn81b	8023.7	Poor Tamarack - Black Spruce Swamp	
Laurentian Uplands	Agassiz Lowlands	650.9	Agassiz Lowlands
	Border Lakes	77.2	Big Woods
	Chippewa Plains	40.1	Border Lakes
	Hardwood Hills	21.1	Chippewa Plains
	Laurentian Uplands	3750.7	Hardwood Hills
	Mille Lacs Uplands	531.5	Laurentian Uplands
	Nashwauk Uplands	145.8	Mille Lacs Uplands
	North Shore Highlands	497.4	Nashwauk Uplands
	Pine Moraines & Outwash Plains	35.0	North Shore Highlands
	St. Louis Moraines	990.8	Pine Moraine & Outwash Plains
	Tamarack Lowlands	76.7	St. Louis Moraines
	Toimi Uplands	1206.5	Tamarack Lowlands Toimi Uplands

APn81b1		262.5	Poor Tamarack - Black Spruce Swamp: Black Spruce Subtype
	Laurentian Uplands	53.7	Laurentian Uplands
	Mille Lacs Uplands	8.5	Mille Lacs Uplands
	North Shore Highlands	200.2	North Shore Highlands St. Paul Baldwin Plains
APn81b2		3294.3	Poor Tamarack - Black Spruce Swamp: Tamarack Subtype
	Aspen Parklands	2252.1	Aspen Parklands
Laurentian Uplands	Laurentian Uplands	168.0	Hardwood Hills
	Mille Lacs Uplands	464.8	Laurentian Uplands
	North Shore Highlands	409.4	Mille Lacs Uplands North Shore Highlands Pine Moraine & Outwash Plains
APn90		2329.3	Northern Open Bog
	Agassiz Lowlands	2073.4	Agassiz Lowlands
Laurentian Uplands	Laurentian Uplands	241.7	Laurentian Uplands
	Mille Lacs Uplands	14.2	Mille Lacs Uplands North Shore Highlands
APn90a		2322.2	Low Shrub Bog
	Border Lakes	15.2	Border Lakes
Laurentian Uplands	Laurentian Uplands	239.7	Laurentian Uplands
	Mille Lacs Uplands	28.6	Mille Lacs Uplands
	Nashwauk Uplands	5.3	Nashwauk Uplands
	North Shore Highlands	76.5	North Shore Highlands
	St. Louis Moraines	1927.0	St. Louis Moraine
	Toimi Uplands	29.9	Toimi Uplands
APn90b		2.7	Graminoid Bog
	Laurentian Uplands	2.7	Laurentian Uplands Mille Lacs Uplands
APn90b1		115.1	Graminoid Bog: Typic Subtype

Agassiz Lowlands	28.4	Agassiz Lowlands
Laurentian Uplands	40.9	Laurentian Uplands
North Shore Highlands	19.6	North Shore Highlands
Toimi Uplands	26.3	Toimi Uplands

APn91	3696.1	Northern Poor Fen
	Border Lakes	1.8
Laurentian Uplands	Laurentian Uplands	234.3
	Mille Lacs Uplands	650.4
	Nashwauk Uplands	102.2
	North Shore Highlands	456.1
	Pine Moraines & Outwash Plains	3.0
	St. Louis Moraines	634.6
	Tamarack Lowlands	1562.3
	Toimi Uplands	51.4
	Border Lakes	
	Hardwood Hills	
	Laurentian Uplands	
	Mille Lacs Uplands	
	Nashwauk Uplands	
	North Shore Highlands	
	Pine Moraine & Outwash Plains	
	St. Louis Moraine	
	Tamarack Lowlands	
	Toimi Uplands	

APn91a	10620.8	Low Shrub Poor Fen
	Agassiz Lowlands	351.1
Anoka Sand Plain	Anoka Sand Plain	48.4
	Aspen Parklands	4378.2
	Border Lakes	358.2
	Hardwood Hills	242.4
Laurentian Uplands	Laurentian Uplands	1655.6
	Littlefork-Vermillion Uplands	3.6
	Mille Lacs Uplands	581.2
	Nashwauk Uplands	18.0
	North Shore Highlands	710.4
Pine Moraines & Outwash Plain	Pine Moraines & Outwash Plains	863.5
	St. Louis Moraines	1255.7
	St. Paul-Baldwin Plains	3.5
	Toimi Uplands	150.8
	Agassiz Lowlands	
	Anoka Sand Plain	
	Aspen Parklands	
	Border Lakes	
	Hardwood Hills	
	Laurentian Uplands	
	Littlefork-Vermillion Uplands	
	Mille Lacs Uplands	
	Nashwauk Uplands	
	North Shore Highlands	
	Pine Moraine & Outwash Plains	
	St. Louis Moraine	
	St. Paul Baldwin Plains	
	Toimi Uplands	

APn91b	1532.8	Graminoid Poor Fen (Basin)
	Agassiz Lowlands	227.6
	Border Lakes	22.8
	Hardwood Hills	7.6
	Agassiz Lowlands	
	Big Woods	
	Border Lakes	

Laurentian Uplands	Laurentian Uplands	414.2	Hardwood Hills
	Mille Lacs Uplands	23.4	Laurentian Uplands
	Nashwauk Uplands	10.4	Mille Lacs Uplands
	North Shore Highlands	150.9	Nashwauk Uplands
	Pine Moraines & Outwash Plains	396.7	North Shore Highlands
	St. Louis Moraines	267.9	Pine Moraine & Outwash Plains
	Toimi Uplands	11.4	St. Louis Moraine
			Toimi Uplands
APn91c		77.4	Graminoid Poor Fen (Water Track)
	Laurentian Uplands	26.8	Laurentian Uplands
	Nashwauk Uplands	3.7	Nashwauk Uplands
	North Shore Highlands	19.1	North Shore Highlands
	St. Louis Moraines	27.8	St. Louis Moraines
APn91c1		209.7	Graminoid Poor Fen (Water Track): Featureless Water Track Subtype
Laurentian Uplands	Laurentian Uplands	209.7	Laurentian Uplands
APn91c2		466.9	Graminoid Poor Fen (Water Track): Flark Subtype
Laurentian Uplands	Laurentian Uplands	466.9	Laurentian Uplands
ASBH_CX		437.4	Alder Swamp / Wet Alder Swamp / Wet-Mesic Boreal Hardwood-Conifer Forest
	Glacial Lake Superior Plain	437.4	Glacial Lake Superior Plain
ASM_CX		240.5	Alder Swamp / Northern Sedge Meadow Complex
	Glacial Lake Superior Plain	66.7	Glacial Lake Superior Plain
	Mille Lacs Uplands	173.8	Mille Lacs Uplands
ASP_CX		26205.9	Aspen Parkland Complex
Aspen Parklands	Aspen Parklands	26205.9	Aspen Parklands

ASR_CX		1732.5	Agassiz Shoreline Ridge and Swale Complex
	Aspen Parklands	1732.5	Aspen Parklands
AWAF_CX		23297.9	Aspen Woodland/Forest Complex
Aspen Parklands	Aspen Parklands	23297.9	Aspen Parklands
BD_CX		358.1	Complex
	Chippewa Plains	7.6	Chippewa Plains
	Laurentian Uplands	13.4	Laurentian Uplands
	Mille Lacs Uplands	5.5	Mille Lacs Uplands
	Nashwauk Uplands	9.3	Nashwauk Uplands
	North Shore Highlands	2.1	North Shore Highlands
	Pine Moraines & Outwash Plains	287.6	Pine Moraines & Outwash Plains
	St. Louis Moraines	21.3	St. Louis Moraines
	Toimi Uplands	11.2	Toimi Uplands
BW_CX		12310.4	Beaver Wetland Complex
Border Lakes	Border Lakes	252.2	Border Lakes
	Glacial Lake Superior Plain	218.8	Glacial Lake Superior Plain
	Hardwood Hills	86.0	Hardwood Hills
Laurentian Uplands	Laurentian Uplands	1461.6	Laurentian Uplands
	Mille Lacs Uplands	457.3	Mille Lacs Uplands
	Minnesota River Prairie	0.4	Minnesota River Prairie
	Nashwauk Uplands	88.5	Nashwauk Uplands
North Shore Highlands	North Shore Highlands	6368.9	North Shore Highlands
Pine Moraines & Outwash Plai	Pine Moraines & Outwash Plains	1271.5	Pine Moraines & Outwash Plains
	St. Louis Moraines	238.0	St. Louis Moraines
	St. Paul-Baldwin Plains	17.8	St. Paul-Baldwin Plains
	Toimi Uplands	1849.4	Toimi Uplands
BYF_CX		379.7	Complex
	Hardwood Hills	103.1	Hardwood Hills
	Pine Moraines & Outwash Plains	187.6	Pine Moraines & Outwash Plains
	Toimi Uplands	89.0	Toimi Uplands
CMH_CX		1146.0	Complex

	Mille Lacs Uplands	1146.0	Mille Lacs Uplands
CSW_CX		155.5	Conifer Swamp Complex
	Aspen Parklands	155.5	Aspen Parklands
CT		0.4	Cliff/Talus System
	North Shore Highlands	0.4	North Shore Highlands
CTn11		0.6	Northern Dry Cliff
	Nashwauk Uplands	0.6	Nashwauk Uplands
CTn11a		39.1	Dry Mafic Cliff (Northern)
	Glacial Lake Superior Plain	0.4	Glacial Lake Superior Plain
	North Shore Highlands	38.8	North Shore Highlands
CTn11d		6.4	Dry Felsic Cliff (Northern)
	North Shore Highlands	6.4	North Shore Highlands
CTn11e			Dry Sandstone Cliff (Northern)
	Glacial Lake Superior Plain		Glacial Lake Superior Plain
CTn12a		31.3	Dry Open Talus (Northern)
	Laurentian Uplands	1.5	Laurentian Uplands
	North Shore Highlands	29.8	North Shore Highlands
CTn12b		5.4	Mesic Open Talus (Northern)
	Border Lakes	0.3	Border Lakes
	North Shore Highlands	5.2	North Shore Highlands
CTn24a		32.2	Dry Scrub Talus (Northern)
	North Shore Highlands	32.2	North Shore Highlands
CTn24b		34.6	Mesic Scrub Talus (Northern)
North Shore Highlands	North Shore Highlands	38.9	North Shore Highlands
CTn32		1.7	Mesic Cliff (Northern)
	North Shore Highlands	1.7	North Shore Highlands

CTn32a		160.3	Mesic Mafic Cliff (Northern)
Border Lakes	Border Lakes	1.4	Border Lakes
	Laurentian Uplands	3.3	Laurentian Uplands
North Shore Highlands	North Shore Highlands	157.4	North Shore Highlands
CTn32d		5.4	Mesic Felsic Cliff (Northern)
	Border Lakes	2.3	Border Lakes
	North Shore Highlands	3.1	North Shore Highlands
CTn42		0.3	Northern Wet Cliff
	North Shore Highlands	0.3	North Shore Highlands
CTn42a		7.3	Wet Mafic Cliff (Northern)
	North Shore Highlands	7.3	North Shore Highlands
CTn42c		1.4	Wet Felsic Cliff (Northern)
	North Shore Highlands	1.4	North Shore Highlands
CTn42d		1.3	Wet Sandstone Cliff (Northern)
	North Shore Highlands	1.3	North Shore Highlands
CTs12		520.4	Southern Dry Cliff
	Rochester Plateau	2.3	Rochester Plateau
The Blufflands	The Blufflands	518.1	The Blufflands
CTs12a		2.3	Dry Sandstone Cliff (Southern)
	Rochester Plateau	2.3	Rochester Plateau
			St. Paul Baldwin Plains
			The Blufflands
CTs12b		17.6	Dry Limestone - Dolomite Cliff (Southern)
	Rochester Plateau	0.0	Rochester Plateau
The Blufflands	The Blufflands	17.6	The Blufflands
CTs12c		17.6	Dry Sioux Quartzite Cliff (Southern)
	Minnesota River Prairie	0.0	Minnesota River Prairie

CTs23		6.9	Southern Open Talus
	The Blufflands	6.9	The Blufflands
CTs23b		2.7	Mesic Limestone - Dolomite Talus (Southern)
	The Blufflands	2.7	The Blufflands
CTs33		75.9	Southern Mesic Cliff
	The Blufflands	75.9	The Blufflands Rochester Plateau
CTs33a		21.5	Mesic Sandstone Cliff (Southern)
The Blufflands	The Blufflands	21.5	The Blufflands
CTs33b		62.6	Mesic Limestone - Dolomite Cliff (Southern)
	Rochester Plateau	4.4	Rochester Plateau
The Blufflands	The Blufflands	58.1	The Blufflands
CTs43a1		32.1	Moderate Cliff: Limestone Subtype
	Rochester Plateau	0.2	Rochester Plateau
	The Blufflands	31.9	The Blufflands
CTs43a2		9.5	Moderate Cliff: Dolomite Subtype
	Rochester Plateau	0.0	Rochester Plateau
	The Blufflands	9.4	The Blufflands
CTs46a1		39.1	Algific Talus: Limestone Subtype
	Rochester Plateau	0.4	Rochester Plateau
The Blufflands	The Blufflands	38.7	The Blufflands
CTs46a2		49.1	Algific Talus: Dolomite Subtype
	Rochester Plateau	2.7	Rochester Plateau
The Blufflands	The Blufflands	46.3	The Blufflands

CTs53		5.3	Southern Wet Cliff
	The Blufflands	5.3	The Blufflands
CTs53a		0.9	Wet Sandstone Cliff (Southern)
	Big Woods	0.5	Big Woods
	St. Paul-Baldwin Plains	0.4	St. Paul-Baldwin Plains
CTu22a		38.0	Exposed Mafic Cliff (Lake Superior)
North Shore Highlands	North Shore Highlands	38.0	North Shore Highlands
CTu22b		2.0	Exposed Felsic Cliff (Lake Superior)
	North Shore Highlands	2.0	North Shore Highlands
CTu22c		2.0	Sheltered Mafic Cliff (Lake Superior)
	North Shore Highlands	2.0	North Shore Highlands
DCT_CX		55.6	Complex
	North Shore Highlands	55.6	North Shore Highlands
DPW_CX		281.9	Complex
	Aspen Parklands	11.9	Aspen Parklands
	Hardwood Hills	8.0	Hardwood Hills
	Minnesota River Prairie	259.3	Minnesota River Prairie
	Red River Prairie	2.8	Red River Prairie
FCT_CX		73.1	Complex
	North Shore Highlands	73.1	North Shore Highlands
FDc23		423.5	Central Dry Pine Woodland
	Chippewa Plains	294.7	Chippewa Plains
	Pine Moraines & Outwash Plains	128.8	Hardwood Hills Pine Moraines & Outwash Plains
FDc23a		248.9	Jack Pine - (Yarrow) Woodland
	Chippewa Plains	196.6	Chippewa Plains
	Pine Moraines & Outwash Plains	52.3	Pine Moraines & Outwash Plains

FDc23a2		16.3	Jack Pine - (Yarrow) Woodland: Bur Oak - Aspen Subtype
	Anoka Sand Plain	16.3	Anoka Sand Plain Hardwood Hills
FDc24		493.9	Central Rich Dry Pine Woodland
	Aspen Parklands	25.8	Aspen Parklands
	Chippewa Plains	19.4	Chippewa Plains
	Hardwood Hills	110.9	Hardwood Hills
	Pine Moraines & Outwash Plains	337.8	Pine Moraines & Outwash Plains
FDc24a		2389.2	Jack Pine - (Bush Honeysuckle) Woodland
	Anoka Sand Plain	698.3	Anoka Sand Plain
	Chippewa Plains	708.4	Chippewa Plains
Pine Moraines & Outwash Pla	Pine Moraines & Outwash Plains	982.5	Pine Moraines & Outwash Plains
FDc25		520.2	Central Dry Oak-Aspen (Pine) Woodland
	Anoka Sand Plain	22.6	Anoka Sand Plain
	Mille Lacs Uplands	497.6	Mille Lacs Uplands
FDc25a		2837.7	Jack Pine - Oak Woodland
	Mille Lacs Uplands	2837.7	Mille Lacs Uplands
FDc25b		4952.2	Oak - Aspen Woodland
Anoka Sand Plain	Anoka Sand Plain	119.8	Anoka Sand Plain
Mille Lacs Uplands	Mille Lacs Uplands	4669.6	Mille Lacs Uplands
	St. Croix Moraine	2.5	St. Croix Moraine
	St. Paul-Baldwin Plains	160.2	St. Paul-Baldwin Plains
FDc34		86.7	Central Dry-Mesic Pine-Hardwood Forest
	Chippewa Plains	4.3	Chippewa Plains
	Pine Moraines & Outwash Plains	82.4	Pine Moraines & Outwash Plains
FDc34a		10601.7	Red Pine - White Pine Forest
	Chippewa Plains	808.8	Chippewa Plains
	Mille Lacs Uplands	65.0	Hardwood Hills
Pine Moraines & Outwash Plai	Pine Moraines & Outwash Plains	9522.3	Mille Lacs Uplands

	St. Louis Moraines	205.7	Pine Moraines & Outwash Plains St. Louis Moraines
FDc34b		2570.0	Oak - Aspen Forest
	Chippewa Plains	143.7	Chippewa Plains
	Hardwood Hills	15.7	Hardwood Hills
Pine Moraines & Outwash Plai	Pine Moraines & Outwash Plains	2377.1	Pine Moraines & Outwash Plains
	St. Louis Moraines	26.5	St. Louis Moraines
	St. Paul-Baldwin Plains	7.3	St. Paul-Baldwin Plains
FDn12		323.9	Northern Dry Sand Pine Woodland
	Agassiz Lowlands	31.9	Agassiz Lowlands
	St. Louis Moraines	291.9	St. Louis Moraines
FDn12a		2123.9	Jack Pine Woodland (Sand)
	Agassiz Lowlands	2123.9	Agassiz Lowlands
FDn12b		1095.3	Red Pine Woodland (Sand)
	Agassiz Lowlands	1082.6	Agassiz Lowlands
	Nashwauk Uplands	12.5	Nashwauk Uplands
	North Shore Highlands	0.2	North Shore Highlands
FDn22		1.9	Northern Dry Bedrock Pine (Oak) Woodland
	Border Lakes	1.9	Border Lakes
FDn22a		2.6	Jack Pine Woodland (Bedrock)
	North Shore Highlands	2.6	North Shore Highlands
FDn22d		22.4	Red Pine - White Pine Woodland (Eastcentral Bedrock)
	Glacial Lake Superior Plain	9.8	Glacial Lake Superior Plain
	Mille Lacs Uplands	12.6	Mille Lacs Uplands
FDn32		665.7	Northern Poor Dry-Mesic Mixed Woodland
	Laurentian Uplands	245.3	Laurentian Uplands

North Shore Highlands	403.1	North Shore Highlands
Toimi Uplands	17.2	Toimi Uplands

FDn32a		235.9	Red Pine - White Pine Woodland (Canadian Shield)
	Border Lakes	24.8	Border Lakes
	North Shore Highlands	211.1	North Shore Highlands

FDn32b		19.4	Red Pine - White Pine Woodland (Minnesota Point)
North Shore Highlands	North Shore Highlands	19.4	North Shore Highlands

FDn32c		6764.5	Black Spruce - Jack Pine Woodland
	Border Lakes	431.7	Border Lakes
	Laurentian Uplands	1989.8	Laurentian Uplands
	North Shore Highlands	4343.0	North Shore Highlands

FDn32c1		47.3	Black Spruce - Jack Pine Woodland: Jack Pine - Balsam Fir Subtype
	Agassiz Lowlands	3.8	Agassiz Lowlands
	Laurentian Uplands	33.8	Laurentian Uplands
North Shore Highlands	North Shore Highlands	9.7	North Shore Highlands

FDn32c2		83.6	Black Spruce - Jack Pine Woodland: Black Spruce - Feathermoss Subtype
	Border Lakes	4.5	Border Lakes
	Laurentian Uplands	65.4	Laurentian Uplands
	North Shore Highlands	4.4	North Shore Highlands
	North Shore Highlands	9.3	North Shore Highlands

FDn32c3		1107.4	Black Spruce - Jack Pine Woodland: Jack Pine - Black Spruce - Aspen Subtype
	Border Lakes	135.8	Border Lakes
	Laurentian Uplands	971.7	Laurentian Uplands
			North Shore Highlands

FDn32d		1337.2	Jack Pine - Black Spruce Woodland (Sand)
	Agassiz Lowlands	435.7	Agassiz Lowlands
	Laurentian Uplands	311.7	Laurentian Uplands
	North Shore Highlands	191.6	North Shore Highlands
	Toimi Uplands	398.2	Toimi Uplands
FDn32e		114.2	Spruce - Fir Woodland (North Shore)
	North Shore Highlands	114.2	North Shore Highlands
FDn33		623.0	Northern Dry-Mesic Mixed Woodland
	Agassiz Lowlands	2.5	Agassiz Lowlands
	Chippewa Plains	67.9	Chippewa Plains
	Laurentian Uplands	49.1	Laurentian Uplands
	Nashwauk Uplands	36.4	Nashwauk Uplands
	North Shore Highlands	266.2	North Shore Highlands
	Pine Moraines & Outwash Plains	86.7	Pine Moraines & Outwash Plains
	St. Louis Moraines	67.8	St. Louis Moraines
	Toimi Uplands	46.3	Toimi Uplands
FDn33a		4672.2	Red Pine - White Pine Woodland
	Agassiz Lowlands	1076.6	Agassiz Lowlands
	Border Lakes	211.9	Border Lakes
	Chippewa Plains	178.1	Chippewa Plains
	Laurentian Uplands	46.6	Laurentian Uplands
	Littlefork-Vermillion Uplands	15.4	Littlefork-Vermillion Uplands
	Mille Lacs Uplands	95.3	Mille Lacs Uplands
	North Shore Highlands	174.6	North Shore Highlands
	Pine Moraines & Outwash Plains	2002.4	Pine Moraines & Outwash Plains
	St. Louis Moraines	871.3	St. Louis Moraines
FDn33a1		2353.4	Red Pine - White Pine Woodland: Balsam Fir Subtype
	Chippewa Plains	214.6	Chippewa Plains
	Glacial Lake Superior Plain	2.8	Glacial Lake Superior Plain
	Littlefork-Vermillion Uplands	150.9	Littlefork-Vermillion Uplands
	Nashwauk Uplands	1798.3	Nashwauk Uplands
	North Shore Highlands	58.6	North Shore Highlands

Pine Moraines & Outwash Plains	128.1	Pine Moraines & Outwash Plains
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FDn33a2	239.7	Red Pine - White Pine Woodland: Mountain Maple Subtype
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Agassiz Lowlands	25.5	Agassiz Lowlands
Glacial Lake Superior Plain	1.0	Glacial Lake Superior Plain
Mille Lacs Uplands	0.0	Mille Lacs Uplands
North Shore Highlands	201.2	North Shore Highlands
Pine Moraines & Outwash Plains	11.9	Pine Moraines & Outwash Plains

FDn33b	678.2	Aspen - Birch Woodland
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Agassiz Lowlands	125.6	Agassiz Lowlands
Border Lakes	8.2	Border Lakes
Chippewa Plains	7.3	Chippewa Plains
Glacial Lake Superior Plain	11.5	Glacial Lake Superior Plain
North Shore Highlands	525.6	North Shore Highlands

FDn33c	6.3	Black Spruce Woodland
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Laurentian Uplands	6.3	Laurentian Uplands
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FDn43	30326.8	Northern Mesic Mixed Forest
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Agassiz Lowlands	3.7	Agassiz Lowlands
Border Lakes	1258.2	Border Lakes
Laurentian Uplands	6416.5	Laurentian Uplands
Nashwauk Uplands	54.0	Nashwauk Uplands
North Shore Highlands	21765.4	North Shore Highlands
Toimi Uplands	829.0	Toimi Uplands

FDn43a	11040.4	White Pine - Red Pine Forest
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Border Lakes	1064.1	Border Lakes
Laurentian Uplands	5735.3	Laurentian Uplands
Mille Lacs Uplands	21.3	Mille Lacs Uplands
Nashwauk Uplands	299.0	Nashwauk Uplands
North Shore Highlands	2133.3	North Shore Highlands
Tamarack Lowlands	10.0	Tamarack Lowlands
Toimi Uplands	1777.3	Toimi Uplands

FDn43b		10687.3	Aspen - Birch Forest
	Border Lakes	52.1	Border Lakes
	Glacial Lake Superior Plain	64.9	Glacial Lake Superior Plain
	Laurentian Uplands	137.8	Laurentian Uplands
	Mille Lacs Uplands	357.8	Mille Lacs Uplands
North Shore Highlands	North Shore Highlands	10033.0	North Shore Highlands
	Toimi Uplands	41.8	Toimi Uplands

FDn43b1		70953.1	Aspen - Birch Forest: Balsam Fir Subtype
Border Lakes	Border Lakes	3738.8	Border Lakes
Laurentian Uplands	Laurentian Uplands	19371.3	Laurentian Uplands
	Mille Lacs Uplands	44.9	Mille Lacs Uplands
	Nashwauk Uplands	915.0	Nashwauk Uplands
North Shore Highlands	North Shore Highlands	33080.4	North Shore Highlands
	Tamarack Lowlands	49.2	Tamarack Lowlands
	Toimi Uplands	13753.6	Toimi Uplands

FDn43b2		8523.0	Aspen - Birch Forest: Hardwood Subtype
	Border Lakes	100.8	Border Lakes
	Laurentian Uplands	55.7	Laurentian Uplands
	Mille Lacs Uplands	75.5	Mille Lacs Uplands
North Shore Highlands	North Shore Highlands	8171.1	North Shore Highlands

FDn43c		15587.7	Upland White Cedar Forest
Border Lakes	Border Lakes	916.3	Border Lakes
	Glacial Lake Superior Plain	65.6	Glacial Lake Superior Plain
Laurentian Uplands	Laurentian Uplands	1079.1	Laurentian Uplands
	Nashwauk Uplands	23.0	Nashwauk Uplands
North Shore Highlands	North Shore Highlands	12963.4	North Shore Highlands
	Toimi Uplands	563.4	Toimi Uplands

FDn44		33.4	Northern Mesic Mixed Forest
	Laurentian Uplands	33.4	Laurentian Uplands
			Toimi Uplands

FDs27a		3.6	Jack Pine - Oak Woodland (Sand)
The Blufflands	The Blufflands	3.6	The Blufflands

FDs27b		134.5	White Pine - Oak Woodland (Sand)
Oak Savanna	Oak Savanna	16.6	Oak Savanna
	Rochester Plateau	2.3	Rochester Plateau
	The Blufflands	115.6	The Blufflands
St. Paul-Baldwin Plains	St. Paul-Baldwin Plains		St. Paul-Baldwin Plains
FDs27c		632.5	Black Oak - White Oak Woodland (Sand)
	Oak Savanna	7.7	Oak Savanna
The Blufflands	The Blufflands	624.9	The Blufflands
			Rochester Plateau
FDs36		46.8	Southern Dry-Mesic Oak-Aspen Forest
	Oak Savanna	40.6	Oak Savanna
	Rochester Plateau	1.0	Rochester Plateau
	The Blufflands	5.3	The Blufflands
FDs36a		3001.8	Bur Oak - Aspen Forest
	Aspen Parklands	108.2	Aspen Parklands
	Chippewa Plains	30.7	Chippewa Plains
Hardwood Hills	Hardwood Hills	2359.5	Hardwood Hills
Red River Prairie	Red River Prairie	503.4	Red River Prairie
			Rochester Plateau
FDs37		3727.2	Southern Dry-Mesic Oak (Maple) Woodland
Anoka Sand Plain	Anoka Sand Plain	3005.0	Anoka Sand Plain
	Big Woods	0.1	Big Woods
	Minnesota River Prairie	33.7	Hardwood Hills
	Oak Savanna	60.9	Mille Lacs Uplands
	St. Paul-Baldwin Plains	627.5	Minnesota River Prairie
			Oak Savanna
			Rochester Plateau
			St. Paul-Baldwin Plains
FDs37a		2864.7	Oak - (Red Maple) Woodland
Anoka Sand Plain	Anoka Sand Plain	1740.4	Anoka Sand Plain

Mille Lacs Uplands	Hardwood Hills	11.7	Big Woods
	Mille Lacs Uplands	25.0	Hardwood Hills
	St. Croix Moraine	20.8	Mille Lacs Uplands
	St. Paul-Baldwin Plains	1066.9	Glacial Lake Superior Plain
			St. Croix Moraine
			St. Paul-Baldwin Plains
FDs37b		4223.2	Pin Oak - Bur Oak Woodland
Anoka Sand Plain	Anoka Sand Plain	400.3	Anoka Sand Plain
Big Woods	Big Woods	582.4	Big Woods
	Coteau Moraines	0.2	Coteau Moraine
	Hardwood Hills	2561.8	Hardwood Hills
	Minnesota River Prairie	463.8	Mille Lacs Uplands
	Oak Savanna	34.0	Minnesota River Prairie
	Pine Moraines & Outwash Plains	158.9	Oak Savanna
Rochester Plateau	Rochester Plateau	13.4	Pine Moraine & Outwash Plains
	St. Paul-Baldwin Plains	26.6	Rochester Plateau
			St. Paul Baldwin Plains
FDs38		565.6	Southern Dry Mesic Oak Hickory Forest
	Rochester Plateau	18.2	Rochester Plateau
	The Blufflands	547.4	The Blufflands
FDs38a	FDs38a	5352.8	Oak - Shagbark Hickory Woodland
	Oak Savanna	32.8	Oak Savanna
Rochester Plateau	Rochester Plateau	254.7	Rochester Plateau
The Blufflands	The Blufflands	5065.3	The Blufflands
FDw24		1139.7	Northwestern Dry-Mesic Oak Woodland
	Aspen Parklands	1139.7	Aspen Parklands
			Hardwood Hills
FDw24a	FDw24a	212.3	Bur Oak - (Prairie Herb) Woodland
	Aspen Parklands	212.3	Aspen Parklands
FDw24b	FDw24b	124.0	Bur Oak - (Forest Herb) Woodland
	Aspen Parklands	124.0	Aspen Parklands

FDw34		1018.6	Northwestern Mesic Aspen-Oak Woodland
Aspen Parklands	Aspen Parklands	1013.4	Aspen Parklands
Red River Prairie	Red River Prairie	5.2	Red River Prairie
FDw34a	FDw34a	537.1	Aspen - (Prairie Herb) Woodland
	Red River Prairie	537.1	Aspen Parklands Red River Prairie
FDw35		5.4	Northwestern Mesic Aspen-Oak Woodland
Red River Prairie	Red River Prairie	5.4	Red River Prairie
FDw44		5825.7	Northwestern Wet-Mesic Aspen Woodland
	Agassiz Lowlands	100.8	Agassiz Lowlands
	Anoka Sand Plain	24.3	Anoka Sand Plain
Aspen Parklands	Aspen Parklands	5156.0	Aspen Parklands
	Hardwood Hills	11.9	Hardwood Hills
Red River Prairie	Red River Prairie	532.9	Red River Prairie
FDw44a		264.5	Aspen - (Cordgrass) Woodland
	Aspen Parklands	263.3	Aspen Parklands
	Red River Prairie	1.2	Red River Prairie
FDw44b		738.7	Aspen - (Chokecherry) Woodland
	Agassiz Lowlands	358.4	Agassiz Lowlands
	Aspen Parklands	380.3	Aspen Parklands
FF		150.6	Floodplain Forest System
	Hardwood Hills	150.6	Hardwood Hills Red River Prairie
FFn57		109.9	Northern Terrace Forest
	Agassiz Lowlands	39.1	Agassiz Lowlands

Anoka Sand Plain	5.9	Anoka Sand Plain
Aspen Parklands	29.3	Aspen Parklands
Laurentian Uplands	16.1	Hardwood Hills
North Shore Highlands	15.0	Laurentian Uplands
Red River Prairie	4.4	North Shore Highlands
		Red River Prairie

FFn57a	3354.8	Black Ash - Silver Maple Terrace Forest
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Agassiz Lowlands	705.8	Agassiz Lowlands
Anoka Sand Plain	136.8	Anoka Sand Plain
Aspen Parklands	389.4	Aspen Parklands
Glacial Lake Superior Plain	37.6	Glacial Lake Superior Plain
Mille Lacs Uplands	602.6	Hardwood Hills
North Shore Highlands	927.8	Mille Lacs Uplands
Pine Moraines & Outwash Plains	24.2	North Shore Highlands
Red River Prairie	523.7	Pine Moraines & Outwash Plains
Toimi Uplands	7.0	Red River Prairie
		Toimi Uplands

FFn67	37.8	Northern Floodplain Forest
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Agassiz Lowlands	0.7	Agassiz Lowlands
Anoka Sand Plain	8.3	Anoka Sand Plain
Aspen Parklands	28.8	Aspen Parklands

FFn67a	531.9	Silver Maple - (Sensitive Fern) Floodplain Forest
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Agassiz Lowlands	0.4	Agassiz Lowlands
Anoka Sand Plain	20.8	Anoka Sand Plain
Mille Lacs Uplands	508.9	Mille Lacs Uplands
St. Croix Moraine	1.8	St. Croix Moraine

FFs59	1257.6	Southern Terrace Forest
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Anoka Sand Plain	Anoka Sand Plain	52.3	Anoka Sand Plain
	Big Woods	0.3	Big Woods
Coteau Moraines	Coteau Moraines	78.7	Coteau Moraines
	Minnesota River Prairie	228.2	Minnesota River Prairie
	Oak Savanna	171.4	Oak Savanna

Rochester Plateau	15.2	Rochester Plateau
St. Paul-Baldwin Plains	492.9	St. Paul-Baldwin Plains
The Blufflands	218.6	The Blufflands

FFs59a	4325.4	Silver Maple - Green Ash - Cottonwood Terrace Forest
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Anoka Sand Plain	Anoka Sand Plain	161.1	Anoka Sand Plain
Big Woods	Big Woods	130.5	Big Woods
Hardwood Hills	Hardwood Hills	42.2	Hardwood Hills
	Mille Lacs Uplands	62.3	Mille Lacs Uplands
	Minnesota River Prairie	61.3	Minnesota River Prairie
Oak Savanna	Oak Savanna	351.3	Oak Savanna
The Blufflands	The Blufflands	3516.6	Rochester Plateau
			The Blufflands

FFs59b	2212.5	Swamp White Oak Terrace Forest
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The Blufflands	2212.5	The Blufflands
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FFs59c	2824.1	Elm - Ash - Basswood Terrace Forest
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Anoka Sand Plain	Anoka Sand Plain	200.3	Anoka Sand Plain
	Big Woods	21.2	Big Woods
	Hardwood Hills	5.0	Hardwood Hills
	Inner Coteau	30.7	Inner Coteau
	Minnesota River Prairie	218.0	Minnesota River Prairie
Oak Savanna	Oak Savanna	108.0	Oak Savanna
Rochester Plateau	Rochester Plateau	94.9	Rochester Plateau
	The Blufflands	2146.1	St. Paul Baldwin Plains
			The Blufflands

FFs68	313.4	Southern Floodplain Forest
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	Coteau Moraines	7.0	Big Woods
	Minnesota River Prairie	183.5	Coteau Moraines
	Oak Savanna	122.9	Minnesota River Prairie
			Oak Savanna

FFs68a	13988.9	Silver Maple - (Virginia Creeper) Floodplain Forest
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Anoka Sand Plain	Anoka Sand Plain	644.6	Anoka Sand Plain
Big Woods	Big Woods	1403.8	Big Woods
	Hardwood Hills	0.0	Glacial Lake Superior Plain
	Mille Lacs Uplands	7.3	Hardwood Hills
Minnesota River Prairie	Minnesota River Prairie	1235.6	Minnesota River Prairie
	St. Croix Moraine	0.2	Minnesota River Prairie
St. Paul-Baldwin Plains	St. Paul-Baldwin Plains	595.2	St. Croix Moraine
The Blufflands	The Blufflands	10147.0	St. Paul-Baldwin Plains
			The Blufflands
FPn62a		17982.1	Rich Black Spruce Swamp (Basin)
	Border Lakes	193.3	Border Lakes
Laurentian Uplands	Laurentian Uplands	11726.8	Laurentian Uplands
	Nashwauk Uplands	2.3	Nashwauk Uplands
North Shore Highlands	North Shore Highlands	4821.2	North Shore Highlands
	Toimi Uplands	1238.5	Toimi Uplands
FPn63		969.7	Northern Cedar Swamp
	Border Lakes	8.8	Border Lakes
	Nashwauk Uplands	2.8	Nashwauk Uplands
	North Shore Highlands	916.1	North Shore Highlands
	Pine Moraines & Outwash Plains	2.8	Pine Moraines & Outwash Plains
	Tamarack Lowlands	39.1	Tamarack Lowlands
FPn63a		13229.8	White Cedar Swamp (Northeastern)
	Border Lakes	529.5	Border Lakes
	Glacial Lake Superior Plain	92.3	Glacial Lake Superior Plain
Laurentian Uplands	Laurentian Uplands	4329.0	Laurentian Uplands
	Nashwauk Uplands	1.4	Nashwauk Uplands
	North Shore Highlands	6132.9	North Shore Highlands
	Toimi Uplands	2144.6	Toimi Uplands
FPn63b		125.1	White Cedar Swamp (Northcentral)
	Chippewa Plains	0.1	Chippewa Plains
	Pine Moraines & Outwash Plains	100.4	Pine Moraines & Outwash Plains
	St. Louis Moraines	24.7	St. Louis Moraines

FPn63c		1675.2	White Cedar Swamp (Northwestern)
	Agassiz Lowlands	1675.2	Agassiz Lowlands
			Northern Rich Spruce Swamp (Water Track)
FPn71		1060.3	
	Agassiz Lowlands	1060.3	Agassiz Lowlands
FPn71a		5251.0	Rich Black Spruce Swamp (Water Track)
	Agassiz Lowlands	5221.9	Agassiz Lowlands
	North Shore Highlands	29.1	North Shore Highlands
FPn72a		876.6	Rich Tamarack Swamp (Eastcentral)
	Mille Lacs Uplands	876.6	Mille Lacs Uplands
FPn73		3248.1	Northern Rich Alder Swamp
	Agassiz Lowlands	176.3	Agassiz Lowlands
	Aspen Parklands	189.4	Aspen Parklands
	Chippewa Plains	34.4	Chippewa Plains
	Glacial Lake Superior Plain	43.1	Glacial Lake Superior Plain
	Mille Lacs Uplands	85.8	Mille Lacs Uplands
	North Shore Highlands	2678.9	North Shore Highlands
	St. Louis Moraines	34.6	St. Louis Moraines
	Toimi Uplands	5.6	Toimi Uplands
FPn73a		15838.3	Alder - (Maple - Loosestrife) Swamp
	Agassiz Lowlands	2343.2	Agassiz Lowlands
Anoka Sand Plain	Anoka Sand Plain	790.0	Anoka Sand Plain
	Big Woods	3.9	Big Woods
	Border Lakes	78.2	Border Lakes
	Chippewa Plains	5.6	Chippewa Plains
	Glacial Lake Superior Plain	7.7	Glacial Lake Superior Plain
Hardwood Hills	Hardwood Hills	381.6	Hardwood Hills
Laurentian Uplands	Laurentian Uplands	1149.9	Laurentian Uplands
	Littlefork-Vermillion Uplands	4.1	Littlefork-Vermillion Uplands
	Mille Lacs Uplands	1657.4	Mille Lacs Uplands
	Nashwauk Uplands	7.8	Nashwauk Uplands
North Shore Highlands	North Shore Highlands	5443.8	North Shore Highlands

Pine Moraines & Outwash Plai	Pine Moraines & Outwash Plains	2218.8	Pine Moraines & Outwash Plains
	St. Louis Moraines	762.6	St. Louis Moraines
	Tamarack Lowlands	33.6	St. Paul Baldwin Plains
	Toimi Uplands	950.0	Tamarack Lowlands
			Toimi Uplands

FPn81 **674.2** **Northern Rich Tamarack Swamp (Water Track)**

Laurentian Uplands	Laurentian Uplands	417.2	Laurentian Uplands
	St. Louis Moraines	243.0	St. Louis Moraines
	Toimi Uplands	14.0	Toimi Uplands

FPn81a **15884.6** **Not listed in Field Guide to NPCs --> FPn82a?**

Agassiz Lowlands	15884.6
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FPn82 **1566.1** **Northern Rich Tamarack Swamp (Western Basin)**

	Chippewa Plains	7.5	Chippewa Plains
	Hardwood Hills	43.6	Hardwood Hills
Laurentian Uplands	Laurentian Uplands	16.7	Laurentian Uplands
	Mille Lacs Uplands	18.0	Mille Lacs Uplands
	Nashwauk Uplands	14.7	Nashwauk Uplands
	North Shore Highlands	375.2	North Shore Highlands
Pine Moraines & Outwash Plai	Pine Moraines & Outwash Plains	411.8	Pine Moraines & Outwash Plains
	St. Louis Moraines	490.7	St. Louis Moraines
	Tamarack Lowlands	187.9	Tamarack Lowlands

FPn82a **15634.0** **Rich Tamarack - (Alder) Swamp**

	Agassiz Lowlands	4965.3	Agassiz Lowlands
	Chippewa Plains	62.4	Chippewa Plains
Laurentian Uplands	Laurentian Uplands	2135.6	Hardwood Hills
	Littlefork-Vermillion Uplands	14.4	Laurentian Uplands
	Nashwauk Uplands	50.8	Littlefork-Vermillion Uplands
	North Shore Highlands	2796.3	Mille Lacs Uplands
	Pine Moraines & Outwash Plains	148.9	Nashwauk Uplands
	St. Louis Moraines	1704.5	North Shore Highlands

Tamarack Lowlands	2452.1	Pine Moraines & Outwash Plains
Toimi Uplands	1303.7	St. Louis Moraines
		Tamarack Lowlands
		Toimi Uplands

FPn82b	8954.0	Extremely Rich Tamarack Swamp
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Agassiz Lowlands	5536.1	Agassiz Lowlands
Chippewa Plains	213.9	Chippewa Plains
Hardwood Hills	151.2	Hardwood Hills
Pine Moraines & Outwash Plains	3000.7	Pine Moraines & Outwash Plains
St. Louis Moraines	52.1	St. Louis Moraines

FPn63		Southern Rich Conifer Swamp
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Mille Lacs Uplands		Mille Lacs Uplands
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Fps63a	3635.5	Tamarack Swamp (Southern)
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Anoka Sand Plain	Anoka Sand Plain	484.7	Anoka Sand Plain
Aspen Parklands	Aspen Parklands	42.1	Aspen Parklands
Big Woods	Big Woods	4.0	Big Woods
	Chippewa Plains	912.6	Chippewa Plains
Hardwood Hills	Hardwood Hills	1296.2	Hardwood Hills
	Mille Lacs Uplands	368.6	Mille Lacs Uplands
	Minnesota River Prairie	76.2	Minnesota River Prairie
	Pine Moraines & Outwash Plains	332.9	Pine Moraines & Outwash Plains
	St. Paul-Baldwin Plains	118.1	St. Paul-Baldwin Plains

FPT_CX	7330.2	Forested Peatland / Upland Transition Complex
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	Border Lakes	212.2	Border Lakes
Laurentian Uplands	Laurentian Uplands	6046.0	Laurentian Uplands
	North Shore Highlands	0.2	North Shore Highlands
	Toimi Uplands	1071.3	Toimi Uplands

FPw63	1759.6	Northwestern Rich Conifer Swamp
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Agassiz Lowlands	989.3	Agassiz Lowlands
Aspen Parklands	770.3	Aspen Parklands

FPw63a		1560.8	Tamarack - Black Spruce Swamp (Aspen Parkland)
	Agassiz Lowlands	1006.9	Agassiz Lowlands
Aspen Parklands	Aspen Parklands	553.8	Aspen Parklands
FPw63b		437.3	Tamarack Seepage Swamp (Aspen Parkland)
Aspen Parklands	Aspen Parklands	437.3	Aspen Parklands Hardwood Hills
FW_CX		1666.3	Complex
	Chippewa Plains	168.9	Chippewa Plains
	Hardwood Hills	1091.0	Hardwood Hills
	Pine Moraines & Outwash Plains	362.2	Pine Moraines & Outwash Plains
	St. Louis Moraines	44.2	St. Louis Moraines
FWMM_CX		285.8	Complex
	Laurentian Uplands	273.0	Laurentian Uplands
	North Shore Highlands	12.8	North Shore Highlands
JPSW_CX		347.9	Complex
	North Shore Highlands	347.9	North Shore Highlands
LAXXXX		148.2	Complex
	St. Paul-Baldwin Plains	148.2	St. Paul-Baldwin Plains
LKi32		3.7	Inland Lake Sand/Gravel/Cobble Shore
	Minnesota River Prairie	3.3	Big Woods
	Pine Moraines & Outwash Plains	0.4	Minnesota River Prairie Pine Moraines & Outwash Plains
LKi32a		87.0	Sand Beach (Inland Lake)
	Agassiz Lowlands	79.2	Agassiz Lowlands
	Laurentian Uplands	2.9	Laurentian Uplands
	Nashwauk Uplands	2.6	Nashwauk Uplands
	Pine Moraines & Outwash Plains	2.2	Pine Moraines & Outwash Plains

LKi32b		6.5	Gravel/Cobble Beach (Inland Lake)
Big Woods	Big Woods	4.6	Big Woods
	Hardwood Hills	0.3	Hardwood Hills
	Toimi Uplands	1.5	Toimi Uplands
LKi43a		4.9	Boulder Shore (Inland Lake)
	Laurentian Uplands	4.9	Laurentian Uplands
			St. Paul Baldwin Plains
LKi43b		9.2	Bedrock Shore (Inland Lake)
	Laurentian Uplands	9.2	Laurentian Uplands
LKi54		13.5	Inland Lake Clay/Mud Shore
	Minnesota River Prairie	13.5	Minnesota River Prairie
LKi54a		135.9	Clay/Mud Shore (Inland Lake)
		135.9	Hardwood Hills
LKi54b1		135.9	Mud Flat (Inland Lake): Saline Subtype
	Minnesota River Prairie	135.9	Minnesota River Prairie
LKi54b2		0.4	Mud Flat (Inland Lake): Saline Subtype
	Big Woods	0.4	Big Woods
			Oak Savanna
LKu32a		4.8	Beachgrass Dune (Lake Superior)
North Shore Highlands	North Shore Highlands	4.8	North Shore Highlands
LKu32b		6.4	Juniper Dune Shrubland (Lake Superior)
North Shore Highlands	North Shore Highlands	6.4	North Shore Highlands
LKu32c		10.1	Sand Beach (Lake Superior)
North Shore Highlands	North Shore Highlands	10.1	North Shore Highlands
LKu32d		4.3	Beach Rige Shrubland (Lake Superior)
	North Shore Highlands	4.3	North Shore Highlands

LKu32e			32.8	Gravel/Cobble Beach (Lake Superior)
North Shore Highlands	North Shore Highlands		32.8	North Shore Highlands
LKu43			9.2	Lake Superior Rocky Shore
North Shore Highlands	North Shore Highlands		9.2	North Shore Highlands
LKu43a			6.3	Dry Bedrock Shore (Lake Superior)
North Shore Highlands	North Shore Highlands		6.3	North Shore Highlands
LKu43b				Wet Rocky Shore (Lake Superior)
				North Shore Highlands
LKu43b1			0.6	Wet Rocky Shore (Lake Superior): Cobble Subtype
	North Shore Highlands		0.6	North Shore Highlands
LKu43b2			1.3	Wet Rocky Shore (Lake Superior): Bedrock Subtype
North Shore Highlands	North Shore Highlands		1.3	North Shore Highlands
MCT_CX			94.4	Complex
	Laurentian Uplands		5.2	Laurentian Uplands
	North Shore Highlands		89.2	North Shore Highlands
MF_PDMW_CX			82.4	Complex
	Laurentian Uplands		82.4	Laurentian Uplands
MFS_CX			10995.6	Complex
	Aspen Parklands		10995.6	Aspen Parklands
MHc26			14684.6	Central Dry-Mesic Oak-Aspen Forest
	Anoka Sand Plain		97.2	Anoka Sand Plain
	Chippewa Plains		43.6	Chippewa Plains
	Hardwood Hills		272.5	Hardwood Hills
	Mille Lacs Uplands		10212.6	Mille Lacs Uplands

Pine Moraines & Outwash Pla	Pine Moraines & Outwash Plains St. Louis Moraines	3258.0 800.7	Pine Moraines & Outwash Plains St. Louis Moraines
MHc26a		7322.8	Oak - Aspen - Red Maple Forest
	Chippewa Plains	556.6	Chippewa Plains
	Hardwood Hills	0.0	Hardwood Hills
	Mille Lacs Uplands	52.3	Mille Lacs Uplands
Pine Moraines & Outwash Plai	Pine Moraines & Outwash Plains St. Louis Moraines	6509.2 204.7	Pine Moraines & Outwash Plains St. Louis Moraines
MHc26b		7316.0	Red Oak - Sugar Maple - Basswood - (Large-Flowered Trillium) Forest
	Chippewa Plains	153.1	Chippewa Plains
	Mille Lacs Uplands	2577.0	Mille Lacs Uplands
	Pine Moraines & Outwash Plains	4585.9	Pine Moraines & Outwash Plains
MHc36		2204.6	Central Mesic Hardwood Forest (Eastern)
	Chippewa Plains	6.1	Chippewa Plains
Hardwood Hills	Hardwood Hills	293.9	Hardwood Hills
	Mille Lacs Uplands	1831.4	Mille Lacs Uplands
	Pine Moraines & Outwash Plains	73.2	Pine Moraines & Outwash Plains
MHc36a		22159.6	Red Oak - Basswood Forest (Noncalcareous Till)
	Anoka Sand Plain	33.4	Anoka Sand Plain
	Big Woods	883.3	Big Woods
Hardwood Hills	Hardwood Hills	557.1	Hardwood Hills
	Mille Lacs Uplands	20063.6	Mille Lacs Uplands
	Pine Moraines & Outwash Plains	384.3	Pine Moraines & Outwash Plains
	St. Croix Moraine	173.3	St. Croix Moraine
	St. Louis Moraines	1.8	St. Louis Moraines
St. Paul-Baldwin Plains	St. Paul-Baldwin Plains	62.9	St. Paul-Baldwin Plains
MHc36b		694.3	Red Oak - Basswood Forest (Calcareous Till)
	Hardwood Hills	431.1	Hardwood Hills
	Mille Lacs Uplands	263.3	Mille Lacs Uplands

Minnesota River Prairie

MHc37		4223.3	Central Mesic Hardwood Forest (Western)
	Hardwood Hills	3987.3	Hardwood Hills
	Pine Moraines & Outwash Plains	235.9	Pine Moraines & Outwash Plains
MHc37a		4861.7	Aspen - (Sugar Maple - Basswood) Forest
	Chippewa Plains	10.6	Aspen Parkland
	Hardwood Hills	877.1	Chippewa Plains
	Mille Lacs Uplands	17.7	Hardwood Hills
Pine Moraines & Outwash Plai	Pine Moraines & Outwash Plains	3956.4	Mille Lacs Uplands
			Pine Moraines & Outwash Plains
MHc37b		15379.8	Sugar Maple - Basswood - (Aspen) Forest
	Chippewa Plains	32.2	Chippewa Plains
	Hardwood Hills	9397.2	Hardwood Hills
	Mille Lacs Uplands	13.4	Mille Lacs Uplands
Pine Moraines & Outwash Plai	Pine Moraines & Outwash Plains	5937.1	Pine Moraines & Outwash Plains
MHc38a		50.0	White Pine - Sugar Maple - Basswood Forest (Cold Slope)
	St. Paul-Baldwin Plains	20.6	Rochester Plateau
The Blufflands	The Blufflands	29.4	St. Paul-Baldwin Plains
			The Blufflands
MHc47		198.0	Central Wet-Mesic Hardwood Forest
	Mille Lacs Uplands	194.8	Mille Lacs Uplands
	Oak Savanna	3.2	Oak Savanna
MHc47a		7445.4	Basswood - Black Ash Forest
	Anoka Sand Plain	166.6	Anoka Sand Plain
	Hardwood Hills	32.8	Hardwood Hills
	Mille Lacs Uplands	7047.7	Mille Lacs Uplands
	Pine Moraines & Outwash Plains	61.1	Pine Moraines & Outwash Plains
	St. Croix Moraine	137.3	St. Croix Moraine
MHF_CX		273.5	Complex

Hardwood Hills	273.5	Hardwood Hills
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MHn35	6162.9	Northern Mesic Hardwood Forest
Chippewa Plains	33.4	Chippewa Plains
Glacial Lake Superior Plain	0.0	Glacial Lake Superior Plain
Hardwood Hills	426.9	Hardwood Hills
Mille Lacs Uplands	848.6	Mille Lacs Uplands
North Shore Highlands	1224.9	North Shore Highlands
Pine Moraines & Outwash Plains	685.0	Pine Moraines & Outwash Plains
St. Louis Moraines	2885.8	St. Louis Moraines
Tamarack Lowlands	58.4	Tamarack Lowlands

MHn35a	8294.0	Aspen - Birch - Basswood Forest
Border Lakes	35.9	Border Lakes
Chippewa Plains	948.1	Chippewa Plains
Glacial Lake Superior Plain	1714.1	Glacial Lake Superior Plain
Hardwood Hills	129.9	Hardwood Hills
Littlefork-Vermillion Uplands	11.2	Littlefork-Vermillion Uplands
Mille Lacs Uplands	1109.7	Mille Lacs Uplands
North Shore Highlands	162.1	North Shore Highlands
Pine Moraines & Outwash Plains	1643.4	Pine Moraines & Outwash Plains
St. Louis Moraines	2539.6	St. Louis Moraines

MHn35b	12504.9	Red Oak - Sugar Maple - Basswood - (Bluebead Lily) Forest
Chippewa Plains	0.7	Chippewa Plains
Glacial Lake Superior Plain	1975.7	Glacial Lake Superior Plain
Hardwood Hills	55.1	Hardwood Hills
Mille Lacs Uplands	1013.2	Mille Lacs Uplands
North Shore Highlands	5566.0	North Shore Highlands
Pine Moraines & Outwash Plains	701.9	Pine Moraines & Outwash Plains
St. Louis Moraines	3041.2	St. Louis Moraines
Tamarack Lowlands	136.0	St. Paul Baldwin Plains
Toimi Uplands	16.1	Tamarack Lowlands
		Toimi Uplands

MHn44		6966.3	Northern Wet-Mesic Boreal Hardwood-Conifer Forest
	Agassiz Lowlands	36.7	Agassiz Lowlands
	Aspen Parklands	445.1	Aspen Parklands
	Border Lakes	52.6	Border Lakes
	Chippewa Plains	33.0	Chippewa Plains
	Glacial Lake Superior Plain	1176.8	Glacial Lake Superior Plain
	Hardwood Hills	114.6	Hardwood Hills
Laurentian Uplands	Laurentian Uplands	655.8	Laurentian Uplands
	Littlefork-Vermillion Uplands	1.8	Littlefork-Vermillion Uplands
	Mille Lacs Uplands	191.7	Mille Lacs Uplands
	North Shore Highlands	2959.3	North Shore Highlands
	Pine Moraines & Outwash Plains	106.0	Pine Moraines & Outwash Plains
	St. Louis Moraines	917.8	St. Louis Moraines
	Tamarack Lowlands	44.1	Tamarack Lowlands
	Toimi Uplands	230.1	Toimi Uplands
MHn44a		4920.8	Aspen - Birch - Red Maple Forest
	Agassiz Lowlands	3.8	Agassiz Lowlands
	Chippewa Plains	267.0	Chippewa Plains
	Glacial Lake Superior Plain	3750.3	Glacial Lake Superior Plain
	Mille Lacs Uplands	65.4	Mille Lacs Uplands
	North Shore Highlands	109.7	North Shore Highlands
	Pine Moraines & Outwash Plains	499.9	Pine Moraines & Outwash Plains
	St. Louis Moraines	19.1	St. Louis Moraines
	Toimi Uplands	205.6	Toimi Uplands
MHn44b		2077.6	White Pine - White Spruce - Paper Birch Forest
	Glacial Lake Superior Plain	1684.1	Glacial Lake Superior Plain
	Mille Lacs Uplands	311.8	Mille Lacs Uplands
North Shore Highlands	North Shore Highlands	52.1	North Shore Highlands
	St. Louis Moraines	23.3	St. Louis Moraines
	Tamarack Lowlands	6.2	Tamarack Lowlands
MHn44c		20830.1	Aspen - Fir Forest
	Agassiz Lowlands	15970.1	Agassiz Lowlands

Glacial Lake Superior Plain	4106.7	Glacial Lake Superior Plain
North Shore Highlands	711.6	North Shore Highlands
St. Louis Moraines	13.0	St. Louis Moraines
Tamarack Lowlands	2.7	Tamarack Lowlands
Toimi Uplands	25.9	Toimi Uplands

MHn44d	1037.4	Aspen - Birch - Fir Forest
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Hardwood Hills	82.2	Hardwood Hills
Pine Moraines & Outwash Plains	955.1	Pine Moraines & Outwash Plains

MHn45	3117.2	Northern Mesic Hardwood (Cedar) Forest
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North Shore Highlands	Laurentian Uplands	68.7	Laurentian Uplands
	North Shore Highlands	489.5	North Shore Highlands
	Tamarack Lowlands	196.5	Tamarack Lowlands
	Toimi Uplands	2362.2	Toimi Uplands

MHn45a	11944.4	Paper Birch - Sugar Maple Forest (North Shore)
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North Shore Highlands	Border Lakes	77.2	Border Lakes
	Laurentian Uplands	160.8	Laurentian Uplands
	North Shore Highlands	11005.4	North Shore Highlands
	Tamarack Lowlands	135.9	Tamarack Lowlands
	Toimi Uplands	564.9	Toimi Uplands

MHn45b	5986.1	White Cedar - Yellow Birch Forest
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North Shore Highlands	Laurentian Uplands	1623.7	Laurentian Uplands
	North Shore Highlands	3522.9	North Shore Highlands
	Toimi Uplands	839.5	Toimi Uplands

MHn45c	38903.0	Sugar Maple Forest (North Shore)
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Border Lakes	Border Lakes	482.2	Border Lakes
	Laurentian Uplands	74.8	Laurentian Uplands
North Shore Highlands	North Shore Highlands	38036.1	North Shore Highlands
	Toimi Uplands	310.0	Toimi Uplands

MHn46	1605.5	Northern Wet-Mesic Hardwood Forest
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Chippewa Plains	442.9	Chippewa Plains
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Glacial Lake Superior Plain	118.1	Glacial Lake Superior Plain
Hardwood Hills	23.3	Hardwood Hills
Mille Lacs Uplands	109.7	Mille Lacs Uplands
North Shore Highlands	566.6	North Shore Highlands
Pine Moraines & Outwash Plains	96.3	Pine Moraines & Outwash Plains
St. Louis Moraines	92.9	St. Louis Moraines
Tamarack Lowlands	129.4	Tamarack Lowlands
Toimi Uplands	26.4	Toimi Uplands

MHn46a

5510.2

Aspen - Ash Forest

Agassiz Lowlands	85.8	Agassiz Lowlands
Glacial Lake Superior Plain	1689.4	Glacial Lake Superior Plain
Mille Lacs Uplands	2606.1	Hardwood Hills
North Shore Highlands	92.5	Mille Lacs Uplands
St. Louis Moraines	152.3	North Shore Highlands
Tamarack Lowlands	884.0	St. Louis Moraines
		Tamarack Lowlands

MHn46b

2508.7

Black Ash - Basswood Forest

Agassiz Lowlands	99.8	Agassiz Lowlands
Glacial Lake Superior Plain	1863.1	Glacial Lake Superior Plain
Mille Lacs Uplands	316.3	Mille Lacs Uplands
North Shore Highlands	140.6	North Shore Highlands
St. Louis Moraines	29.8	St. Louis Moraines
Toimi Uplands	59.1	Toimi Uplands

MHn47

1.1

Northern Rich Mesic Hardwood Forest

Mille Lacs Uplands	1.1	Mille Lacs Uplands
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MHn47a

6713.1

Sugar Maple - Basswood - (Bluebead Lily) Forest

	Glacial Lake Superior Plain	290.0	Glacial Lake Superior Plain
	Mille Lacs Uplands	375.4	Mille Lacs Uplands
North Shore Highlands	North Shore Highlands	4244.4	North Shore Highlands
	St. Louis Moraines	162.1	St. Louis Moraines
	Toimi Uplands	1641.2	Toimi Uplands

		Sugar Maple - Basswood - (Horsetail) Forest	
MHn47b		270.9	
	Mille Lacs Uplands	4.0	Mille Lacs Uplands
	Tamarack Lowlands	266.8	Tamarack Lowlands
		Not listed in Field Guide to NPCs -->?	
MHn55a		27.2	
	Agassiz Lowlands	27.2	Agassiz Lowlands
		Complex	
MHS_CX		3.2	
	Coteau Moraines	3.2	Coteau Moraines
		Southern Dry-Mesic Oak Forest	
MHs37		3279.5	
	Anoka Sand Plain	0.0	Anoka Sand Plain
Big Woods	Big Woods	38.1	Big Woods
Oak Savanna	Oak Savanna	394.0	Mille Lacs Uplands
	Rochester Plateau	315.1	Minnesota River Prairie
	The Blufflands	2532.3	Oak Savanna
			Rochester Plateau
			The Blufflands
		Red Oak - White Oak Forest	
MHs37a		4161.7	
	Anoka Sand Plain	0.4	Anoka Sand Plain
Oak Savanna	Oak Savanna	77.2	Big Woods
	Rochester Plateau	244.7	Oak Savanna
St. Paul-Baldwin Plains	St. Paul-Baldwin Plains	75.9	Rochester Plateau
The Blufflands	The Blufflands	3763.5	St. Paul-Baldwin Plains
			The Blufflands
		Red Oak - White Oak - (Sugar Maple) Forest	
MHs37b		12669.4	
	Anoka Sand Plain	126.3	Anoka Sand Plain
	Big Woods	11.0	Big Woods
	Hardwood Hills	2.2	Hardwood Hills
Mille Lacs Uplands	Mille Lacs Uplands	10.3	Mille Lacs Uplands
	Oak Savanna	6.9	Oak Savanna
	Rochester Plateau	939.9	Rochester Plateau
	St. Paul-Baldwin Plains	190.9	St. Paul-Baldwin Plains

The Blufflands	The Blufflands	11381.9	The Blufflands
MHs38		1135.8	Southern Mesic Oak-Basswood Forest
	Big Woods	14.7	Big Woods
Coteau Moraines	Coteau Moraines	114.8	Coteau Moraines
	Hardwood Hills	452.7	Hardwood Hills
	Minnesota River Prairie	93.6	Mille Lacs Uplands
	Oak Savanna	411.3	Minnesota River Prairie
Rochester Plateau	Rochester Plateau	1.0	Oak Savanna
The Blufflands	The Blufflands	47.7	Red River Prairie
			Rochester Plateau
St. Paul-Baldwin Plains	St. Paul-Baldwin Plains		St. Paul-Baldwin Plains
			The Blufflands
MHs38a		775.9	White Pine - Oak - Sugar Maple Forest
	Mille Lacs Uplands	22.1	Mille Lacs Uplands
Rochester Plateau	Rochester Plateau	32.4	Rochester Plateau
	St. Paul-Baldwin Plains	9.6	St. Paul-Baldwin Plains
The Blufflands	The Blufflands	711.8	The Blufflands
MHs38b		4821.9	Basswood - Bur Oak - (Green Ash) Forest
	Big Woods	103.4	Aspen Parkland
	Coteau Moraines	746.6	Big Woods
	Hardwood Hills	106.1	Coteau Moraines
	Inner Coteau	104.0	Hardwood Hills
Minnesota River Prairie	Minnesota River Prairie	3564.3	Inner Coteau
	Oak Savanna	60.7	Minnesota River Prairie
	Red River Prairie	14.5	Oak Savanna
	St. Paul-Baldwin Plains	122.3	Red River Prairie
			St. Paul-Baldwin Plains
MHs38c		4131.9	Red Oak - Sugar Maple - Basswood - (Bitternut Hickory) Forest
	Anoka Sand Plain	39.8	Anoka Sand Plain
Big Woods	Big Woods	515.9	Big Woods
	Hardwood Hills	3.2	Hardwood Hills
Mille Lacs Uplands	Mille Lacs Uplands	28.6	Mille Lacs Uplands

	Minnesota River Prairie	234.8	Minnesota River Prairie
	Oak Savanna	669.0	Oak Savanna
Rochester Plateau	Rochester Plateau	156.0	Rochester Plateau
	St. Paul-Baldwin Plains	165.0	St. Paul-Baldwin Plains
The Blufflands	The Blufflands	2319.6	The Blufflands
MHs39		1340.3	Southern Mesic Maple-Basswood Forest
	Big Woods	66.0	Big Woods
	Coteau Moraines	132.3	Coteau Moraines
	Hardwood Hills	99.2	Hardwood Hills
	Minnesota River Prairie	19.5	Minnesota River Prairie
	Oak Savanna	589.9	Oak Savanna
Rochester Plateau	Rochester Plateau	53.2	Rochester Plateau
	The Blufflands	380.2	The Blufflands
MHs39a		1492.1	Sugar Maple - Basswood - (Bitternut Hickory) Forest
	Anoka Sand Plain	8.0	Anoka Sand Plain
	Big Woods	339.6	Big Woods
Minnesota River Prairie	Minnesota River Prairie	13.9	Minnesota River Prairie
Oak Savanna	Oak Savanna	636.2	Oak Savanna
	Rochester Plateau	109.3	Rochester Plateau
St. Paul-Baldwin Plains	St. Paul-Baldwin Plains	33.3	St. Paul-Baldwin Plains
The Blufflands	The Blufflands	351.7	The Blufflands
MHs39b		3195.1	Sugar Maple - Basswood - Red Oak - (Blue Beech) Forest
	Rochester Plateau	174.0	Hardwood Hills
The Blufflands	The Blufflands	3021.1	Rochester Plateau
			The Blufflands
MHs39c		1015.0	Sugar Maple Forest (Big Woods)
	Anoka Sand Plain	3.2	Anoka Sand Plain
Big Woods	Big Woods	812.1	Big Woods
Hardwood Hills	Hardwood Hills	2.9	Hardwood Hills
	Minnesota River Prairie	107.8	Mille Lacs Uplands
Oak Savanna	Oak Savanna	89.0	Minnesota River Prairie

Oak Savanna

MHs49		1509.1	Southern Wet-Mesic Hardwood Forest
Coteau Moraines	Coteau Moraines	746.3	Big Woods
	Minnesota River Prairie	108.5	Coteau Moraines
	Oak Savanna	115.5	Mille Lacs Uplands
	Rochester Plateau	4.0	Minnesota River Prairie
The Blufflands	The Blufflands	534.8	Oak Savanna
			Rochester Plateau
			The Blufflands
MHs49a		835.1	Elm - Basswood - Black Ash - (Hackberry) Forest
Big Woods	Big Woods	219.7	Big Woods
	Coteau Moraines	35.1	Coteau Moraines
Hardwood Hills	Hardwood Hills	2.7	Hardwood Hills
	Minnesota River Prairie	232.0	Inner Coteau
	Oak Savanna	94.7	Minnesota River Prairie
Rochester Plateau	Rochester Plateau	13.1	Oak Savanna
	The Blufflands	237.9	Rochester Plateau
			The Blufflands
MHs49b		946.6	Elm - Basswood - Black Ash - (Blue Beech) Forest
	Rochester Plateau	2.1	Rochester Plateau
	The Blufflands	944.5	The Blufflands
MHw36a		1102.6	Green Ash - Bur Oak - Elm Forest
	Aspen Parklands	800.9	Aspen Parklands
Red River Prairie	Red River Prairie	301.6	Red River Prairie
MMS_CX		5309.1	Meadow - Marsh - Fen - Swamp Complex
	Anoka Sand Plain	4.2	Anoka Sand Plain
	Aspen Parklands	81.7	Aspen Parklands
	Big Woods	413.3	Big Woods
	Coteau Moraines	65.8	Coteau Moraines
	Hardwood Hills	1502.5	Hardwood Hills

	Laurentian Uplands	148.5	Laurentian Uplands
	Mille Lacs Uplands	571.7	Mille Lacs Uplands
	Minnesota River Prairie	679.5	Minnesota River Prairie
	North Shore Highlands	57.0	North Shore Highlands
Pine Moraines & Outwash Plai	Pine Moraines & Outwash Plains	360.6	Pine Moraines & Outwash Plains
	Red River Prairie	1424.5	Red River Prairie
MMWF_CX		321.0	Complex
	Border Lakes	1.6	Border Lakes
	Laurentian Uplands	319.4	Laurentian Uplands
MOW_CX		93.0	Marsh-Open Water Complex
	Hardwood Hills	14.6	Hardwood Hills
Pine Moraines & Outwash Plai	Pine Moraines & Outwash Plains	78.4	Pine Moraines & Outwash Plains
MPCEXX			Mesic Prairie (Central)
			Minnesota River Prairie
MPSXWXX			Mesic Prairie (Southwest)
			Minnesota River Prairie
MRn83		5690.1	Northern Mixed Cattail Marsh
	Agassiz Lowlands	214.5	Agassiz Lowlands
	Anoka Sand Plain	709.9	Anoka Sand Plain
	Aspen Parklands	1846.7	Aspen Parklands
Big Woods	Big Woods	511.0	Big Woods
	Border Lakes	4.5	Border Lakes
	Chippewa Plains	18.0	Chippewa Plains
	Hardwood Hills	95.8	Hardwood Hills
Laurentian Uplands	Laurentian Uplands	1.8	Laurentian Uplands
	Mille Lacs Uplands	816.2	Mille Lacs Uplands
	Oak Savanna	173.4	Oak Savanna
	Pine Moraines & Outwash Plains	72.5	Pine Moraines & Outwash Plains
Red River Prairie	Red River Prairie	1071.8	Red River Prairie
	St. Louis Moraines	36.1	St. Louis Moraines
	St. Paul-Baldwin Plains	77.5	St. Paul-Baldwin Plains
	Tamarack Lowlands	24.0	Tamarack Lowlands

Toimi Uplands	16.4	The Blufflands Toimi Uplands
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MRn83a	2003.8	Cattail - Sedge Marsh (Northern)
	954.6	Agassiz Lowlands
	2.6	Anoka Sand Plain
	509.3	Big Woods
	22.6	Hardwood Hills
	10.7	Laurentian Uplands
	71.4	Mille Lacs Uplands
Minnesota River Prairie	0.2	Minnesota River Prairie
	0.5	Nashwauk Uplands
	101.1	North Shore Highlands
	14.4	Pine Moraines & Outwash Plains
Red River Prairie	0.6	Red River Prairie
	17.6	St. Louis Moraines
	114.5	St. Paul-Baldwin Plains
	158.5	The Blufflands
	25.3	Toimi Uplands

MRn83b	909.4	Cattail Marsh (Northern)
	41.3	Agassiz Lowlands
	7.0	Aspen Parklands
	0.4	Chippewa Plains
	484.2	Hardwood Hills
	1.4	Laurentian Uplands
	70.9	Minnesota River Prairie
	24.6	Oak Savanna
	160.5	Pine Moraines & Outwash Plains
	119.1	Red River Prairie
		The Blufflands

MRn84	0.5	Northern Mixed Cattail Marsh
	0.5	Big Woods
		St. Paul Baldwin Plains

MRn93	6172.2	Northern Bulrush-Spikerush Marsh
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Anoka Sand Plain	Anoka Sand Plain	189.3	Anoka Sand Plain
	Aspen Parklands	830.7	Aspen Parklands
	Big Woods	82.8	Big Woods
	Mille Lacs Uplands	257.0	Mille Lacs Uplands
	Oak Savanna	8.6	Oak Savanna
	Red River Prairie	397.7	Red River Prairie
St. Paul-Baldwin Plains	St. Paul-Baldwin Plains	195.6	Rochester Plateau
The Blufflands	The Blufflands	4210.5	St. Paul-Baldwin Plains
			The Blufflands
MRn93a		2889.7	Bulrush Marsh (Northern)
	Anoka Sand Plain	9.2	Anoka Sand Plain
Big Woods	Big Woods	1211.1	Big Woods
	Laurentian Uplands	1.3	Hardwood Hills
	Minnesota River Prairie	1.1	Laurentian Uplands
	St. Paul-Baldwin Plains	944.0	Minnesota River Prairie
The Blufflands	The Blufflands	722.9	Red River Prairie
			St. Paul-Baldwin Plains
			The Blufflands
MRn93b		1509.0	Spikerush - Bur Reed Marsh (Northern)
	Agassiz Lowlands	76.9	Agassiz Lowlands
	Anoka Sand Plain	24.5	Anoka Sand Plain
Big Woods	Big Woods	46.7	Big Woods
	Chippewa Plains	29.2	Chippewa Plains
	Hardwood Hills	0.0	Hardwood Hills
	North Shore Highlands	5.3	North Shore Highlands
	Oak Savanna	0.2	Oak Savanna
	Pine Moraines & Outwash Plains	812.8	Pine Moraines & Outwash Plains
	St. Paul-Baldwin Plains	19.8	St. Paul-Baldwin Plains
The Blufflands	The Blufflands	493.7	The Blufflands
MRp83		3036.2	Prairie Mixed Cattail Marsh
	Coteau Moraines	2057.9	Coteau Moraines
	Hardwood Hills	18.5	Hardwood Hills
	Inner Coteau	10.3	Inner Coteau
	Minnesota River Prairie	239.0	Minnesota River Prairie

Red River Prairie	Red River Prairie	710.5	Red River Prairie
MRp83a		3000.8	Cattail - Sedge Marsh (Prairie)
Aspen Parklands	Aspen Parklands	769.8	Aspen Parklands
	Big Woods	411.2	Big Woods
Coteau Moraines	Coteau Moraines	402.3	Coteau Moraines
	Hardwood Hills	65.6	Hardwood Hills
	Inner Coteau	57.6	Inner Coteau
	Minnesota River Prairie	497.2	Minnesota River Prairie
Red River Prairie	Red River Prairie	797.2	Red River Prairie
MRp83b		1226.3	Cattail Marsh (Prairie)
	Coteau Moraines	86.8	Big Woods
	Hardwood Hills	123.4	Coteau Moraines
	Minnesota River Prairie	1016.0	Hardwood Hills
			Minnesota River Prairie
MRp93		458.9	Prairie Bulrush- Arrowhead Marsh
	Aspen Parklands	422.9	Aspen Parklands
	Coteau Moraines	13.9	Coteau Moraines
	Minnesota River Prairie	22.0	Minnesota River Prairie
MRp93a		225.1	Bulrush Marsh (Prairie)
Aspen Parklands	Aspen Parklands	109.7	Aspen Parklands
	Coteau Moraines	68.0	Coteau Moraines
	Inner Coteau	14.7	Inner Coteau
Minnesota River Prairie	Minnesota River Prairie	16.6	Minnesota River Prairie
	Oak Savanna	16.2	Oak Savanna
MRp93b		35.9	Spikerush - Bur Reed Marsh (Prairie)
	Coteau Moraines	18.1	Coteau Moraines
	Inner Coteau	10.0	Inner Coteau
Minnesota River Prairie	Minnesota River Prairie	7.8	Minnesota River Prairie
MRp93c		32.0	Arrowhead Marsh (Prairie)
	Minnesota River Prairie	32.0	Minnesota River Prairie
			Oak Savanna

MRu94		4.4	Lake Superior Coastal Marsh
	North Shore Highlands	4.4	North Shore Highlands
MRu94a		13.7	Estuary Marsh (Lake Superior)
	Glacial Lake Superior Plain	8.3	Glacial Lake Superior Plain
	North Shore Highlands	5.4	North Shore Highlands
MSA_CX		5716.8	Complex
	Agassiz Lowlands	404.2	Agassiz Lowlands
	Aspen Parklands	5203.1	Aspen Parklands
	Big Woods	0.0	Big Woods
	Minnesota River Prairie	109.5	Minnesota River Prairie
MSM_CX		93.1	Meadow - Shrub Swamp - Marsh - Wet-Mesic Hardwood Complex
	Pine Moraines & Outwash Plains	93.1	Pine Moraines & Outwash Plains
NPF_CX		885.9	Complex
	Border Lakes	11.8	Border Lakes
	Laurentian Uplands	733.4	Laurentian Uplands
	North Shore Highlands	140.7	North Shore Highlands
NT_CX		24.4	Complex
	North Shore Highlands	24.4	North Shore Highlands
NWF_CX		114.7	Complex
	Red River Prairie	114.7	Red River Prairie
OABWME		0.8	Oak Forest (Big Woods) Mesic Subtype
	Big Woods	0.0	Big Woods
	Oak Savanna	0.7	Oak Savanna
OPn81		1244.7	by
	Border Lakes	12.6	Border Lakes
	Chippewa Plains	0.8	Chippewa Plains
	Hardwood Hills	16.3	Hardwood Hills

Laurentian Uplands	390.3	Laurentian Uplands
Mille Lacs Uplands	38.4	Mille Lacs Uplands
North Shore Highlands	152.5	North Shore Highlands
Pine Moraines & Outwash Plains	11.6	Pine Moraines & Outwash Plains
St. Louis Moraines	483.4	St. Louis Moraines
Toimi Uplands	138.7	Toimi Uplands

OPn81a	3630.7	Bog Birch - Alder Shore Fen
Border Lakes	43.8	Border Lakes
Hardwood Hills	564.8	Hardwood Hills
Laurentian Uplands	448.2	Laurentian Uplands
Mille Lacs Uplands	161.1	Mille Lacs Uplands
North Shore Highlands	78.1	North Shore Highlands
Pine Moraines & Outwash Plains	2324.2	Pine Moraines & Outwash Plains
Toimi Uplands	10.5	Toimi Uplands

OPn81b	470.9	Leatherleaf - Sweet Gale Shore Fen
Border Lakes	14.7	Border Lakes
Laurentian Uplands	150.4	Laurentian Uplands
Mille Lacs Uplands	21.3	Mille Lacs Uplands
North Shore Highlands	114.6	North Shore Highlands
Toimi Uplands	169.9	St. Paul Baldwin Plains
		Toimi Uplands

OPn91	58.7	Northern Rich Fen (Water Track)
Hardwood Hills	28.0	Aspen Parklands
Laurentian Uplands	16.7	Hardwood Hills
St. Louis Moraines	12.5	Laurentian Uplands
Toimi Uplands	0.7	St. Louis Moraines
		Toimi Uplands

OPn91a	4313.2	Shrub Rich Fen (Water Track)
Agassiz Lowlands	4086.6	Agassiz Lowlands
Laurentian Uplands	148.1	Hardwood Hills
North Shore Highlands	5.9	Laurentian Uplands
St. Louis Moraines	67.6	North Shore Highlands
Toimi Uplands	4.9	St. Louis Moraines

Toimi Uplands

OPn91b		355.6	Graminoid Rich Fen (Water Track)
	Agassiz Lowlands	187.5	Agassiz Lowlands
Laurentian Uplands	Laurentian Uplands	81.4	Laurentian Uplands
	North Shore Highlands	3.6	North Shore Highlands
	St. Louis Moraines	83.1	St. Louis Moraines

OPn91b1		5475.0	Graminoid Rich Fen (Water Track): Featureless Water
	Agassiz Lowlands	5470.6	Agassiz Lowlands
Laurentian Uplands	Laurentian Uplands	4.4	Laurentian Uplands
			Pine Moraine & Outwash Plains

OPn91b2		1550.3	Graminoid Rich Fen (Water Track): Flark Subtype
	Agassiz Lowlands	1446.4	Agassiz Lowlands
Laurentian Uplands	Laurentian Uplands	159.9	Laurentian Uplands
	North Shore Highlands	57.1	North Shore Highlands

OPn92		1593.9	Northern Rich Fen (Basin)
	Agassiz Lowlands	136.5	Agassiz Lowlands
Anoka Sand Plain	Anoka Sand Plain	60.3	Anoka Sand Plain
	Aspen Parklands	3.5	Aspen Parklands
	Big Woods	4.5	Big Woods
	Border Lakes	3.6	Border Lakes
	Hardwood Hills	34.4	Hardwood Hills
	Laurentian Uplands	119.8	Laurentian Uplands
	Mille Lacs Uplands	213.1	Mille Lacs Uplands
	Minnesota River Prairie	225.4	Minnesota River Prairie
	North Shore Highlands	127.2	North Shore Highlands
	Pine Moraines & Outwash Plains	658.3	Oak Savanna
	Toimi Uplands	7.3	Pine Moraines & Outwash Plains
			Toimi Uplands

OPn92a		10605.7	Graminoid Rich Fen (Basin)
	Agassiz Lowlands	8749.7	Agassiz Lowlands

Aspen Parklands	95.7	Aspen Parklands
Big Woods	10.9	Big Woods
Border Lakes	14.3	Border Lakes
Chippewa Plains	33.1	Chippewa Plains
Hardwood Hills	187.5	Hardwood Hills
Laurentian Uplands	151.7	Laurentian Uplands
Mille Lacs Uplands	118.2	Mille Lacs Uplands
Minnesota River Prairie	1.7	Minnesota River Prairie
North Shore Highlands	143.1	North Shore Highlands
Pine Moraines & Outwash Plains	697.9	Pine Moraines & Outwash Plains
St. Louis Moraines	171.6	St. Louis Moraines
St. Paul-Baldwin Plains	2.4	St. Paul-Baldwin Plains
Tamarack Lowlands	92.4	Tamarack Lowlands
Toimi Uplands	135.6	Toimi Uplands

OPn92b	6012.7	Graminoid - Sphagnum Rich Fen (Basin)
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	Agassiz Lowlands	4330.1	Agassiz Lowlands
Anoka Sand Plain	Anoka Sand Plain	35.9	Anoka Sand Plain
	Border Lakes	7.1	Big Woods
	Chippewa Plains	63.9	Border Lakes
	Hardwood Hills	414.3	Chippewa Plains
	Laurentian Uplands	110.9	Hardwood Hills
	Minnesota River Prairie	23.1	Laurentian Uplands
	Pine Moraines & Outwash Plains	964.0	Mille Lacs Uplands
	Toimi Uplands	63.2	Minnesota River Prairie
			Pine Moraines & Outwash Plains
			Toimi Uplands

OPn921b1	5.6	Not listed in Field Guide to NPCs --> OPn92b?
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	Agassiz Lowlands	5.6	Agassiz Lowlands
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OPn93	5.0	Northern Rich Fen (Basin)
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	Anoka Sand Plain	5.0	Anoka Sand Plain
			St. Paul Baldwin Plains

OPn93a	6.7	Spring Fen
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Hardwood Hills	5.7	Hardwood Hills
Pine Moraines & Outwash Plains	1.1	Pine Moraines & Outwash Plains

OPp91		11095.0	Prairie Rich Fen
	Agassiz Lowlands	233.4	Agassiz Lowlands
	Anoka Sand Plain	10.0	Anoka Sand Plain
	Aspen Parklands	10569.7	Aspen Parklands
	Hardwood Hills	2.1	Hardwood Hills
	Red River Prairie	279.7	Mille Lacs Uplands Red River Prairie

OPp91a		877.1	Rich Fen (Mineral Soil)
	Aspen Parklands	782.0	Aspen Parklands
	Hardwood Hills	17.4	Hardwood Hills
	Minnesota River Prairie	77.7	Minnesota River Prairie Red River Prairie

OPp91b		6830.5	Rich Fen
Aspen Parklands	Aspen Parklands	6808.0	Aspen Parklands
Pine Moraines & Outwash Pla	Pine Moraines & Outwash Plains	22.4	Pine Moraines & Outwash Plains
	Red River Prairie	0.1	Red River Prairie

OPp91c		968.8	Rich Fen (Prairie Seepage)
Aspen Parklands	Aspen Parklands	717.3	Aspen Parklands
	Hardwood Hills	120.1	Hardwood Hills
	Red River Prairie	131.4	Red River Prairie

OPp93		46.7	Prairie Extremely Rich Fen
	Aspen Parklands	40.1	Aspen Parklands
	Minnesota River Prairie	6.6	Hardwood Hills Minnesota River Prairie

OPp93a		673.8	Calcareous Fen (Northwestern)
Aspen Parklands	Aspen Parklands	128.4	Aspen Parklands
	Red River Prairie	545.4	Hardwood Hills Red River Prairie

OPp93b		67.4	Calcareous Fen (Southwestern)
Coteau Moraines	Coteau Moraines	29.1	Coteau Moraines
	Inner Coteau	5.1	Inner Coteau
	Minnesota River Prairie	33.2	Minnesota River Prairie
OPp93c		352.3	Calcareous Fen (Southeastern)
Big Woods	Big Woods	127.0	Big Woods
	Oak Savanna	19.0	Hardwood Hills
	Rochester Plateau	2.7	Minnesota River Prairie
	St. Paul-Baldwin Plains	196.9	Oak Savanna
	The Blufflands	6.7	Rochester Plateau
			St. Paul-Baldwin Plains
			The Blufflands
OSW_CX		470.2	Crystalline Bedrock Outcrop (Northern) / Bedrock
	Border Lakes	1.0	Border Lakes
	North Shore Highlands	469.3	North Shore Highlands
PBW_CX		3903.7	Parkland Brush Prairie - Wetland Complex
	Aspen Parklands	3903.7	Aspen Parklands
PMA_CX		197.8	Wet-Mesic Prairie / Lowland Aspen Complex
	Aspen Parklands	197.8	Aspen Parklands
PWL_CX		11091.4	Prairie Wetland Complex
	Aspen Parklands	388.2	Aspen Parklands
	Coteau Moraines	968.5	Coteau Moraines
	Hardwood Hills	100.0	Hardwood Hills
	Inner Coteau	160.7	Inner Coteau
Minnesota River Prairie	Minnesota River Prairie	1047.9	Minnesota River Prairie
Red River Prairie	Red River Prairie	8426.2	Red River Prairie
RIP_CX		149.4	Complex
	Aspen Parklands	110.5	Aspen Parklands
	Minnesota River Prairie	38.9	Minnesota River Prairie

ROCW_CX		343.4	Thomson Outcrop / Cliff / Woodland Complex
	Glacial Lake Superior Plain	8.2	Glacial Lake Superior Plain
	Mille Lacs Uplands	335.2	Mille Lacs Uplands
ROn12b		187.3	Crystalline Bedrock Outcrop (Northern)
	Agassiz Lowlands	25.1	Agassiz Lowlands
	Glacial Lake Superior Plain	10.6	Glacial Lake Superior Plain
	Laurentian Uplands	2.7	Laurentian Uplands
	North Shore Highlands	148.8	North Shore Highlands
ROn23		10.8	Northern Bedrock Shrubland
	North Shore Highlands	10.8	North Shore Highlands
ROn23a		387.1	Bedrock Shrubland (Inland)
	Agassiz Lowlands	2.4	Agassiz Lowlands
	Border Lakes	0.4	Border Lakes
	Glacial Lake Superior Plain	5.5	Glacial Lake Superior Plain
	Laurentian Uplands	25.8	Laurentian Uplands
	North Shore Highlands	352.9	North Shore Highlands
ROn23b		38.4	Bedrock Shrubland (Lake Superior)
	North Shore Highlands	38.4	North Shore Highlands
ROP_CX		499.0	Rock Outcrop - Dry Prairie Complex
	Minnesota River Prairie	499.0	Minnesota River Prairie
ROs12a1		432.3	Crystalline Bedrock Outcrop (Prairie): Minnesota River Subtype
	Big Woods	9.6	Big Woods
	Minnesota River Prairie	422.8	Minnesota River Prairie
ROs12a2		418.9	Crystalline Bedrock Outcrop (Prairie): Sioux Quartzite Subtype
	Inner Coteau	350.8	Inner Coteau
	Minnesota River Prairie	74.0	Minnesota River Prairie

ROs12b		69.3	Crystalline Bedrock Outcrop (Transition)
Anoka Sand Plain	Anoka Sand Plain	53.7	Anoka Sand Plain
	Hardwood Hills	0.6	Glacial Lake Superior Plain
	St. Croix Moraine	15.1	Hardwood Hills
			St. Croix Moraine
RRS_CX		48.2	River / Rocky Shore Complex
	Glacial Lake Superior Plain	28.2	Glacial Lake Superior Plain
	Mille Lacs Uplands	20.0	Mille Lacs Uplands
RRV_CX		27.8	Sand / Gravel / Cobble / Bedrock / Boulder Shore (River) Complex
	North Shore Highlands	27.8	North Shore Highlands
RSO_CX		177.7	Lake Superior Rocky Shore / Bedrock Shrubland / Bedrock Outcrop Complex
	Border Lakes	0.7	Border Lakes
	North Shore Highlands	177.0	North Shore Highlands
RVx32		74.1	Sand/Gravel/Cobble River Shore
	Agassiz Lowlands	3.2	Agassiz Lowlands
	Aspen Parklands	55.6	Aspen Parklands
	Chippewa Plains	10.6	Chippewa Plains
	The Blufflands	4.7	The Blufflands
RVx32a		45.4	Willow Sandbar Shrubland (River)
	Anoka Sand Plain	41.1	Anoka Sand Plain
	Mille Lacs Uplands	3.3	Glacial Lake Superior Plain
	The Blufflands	1.0	Mille Lacs Uplands
			St. Paul Baldwin Plain
			The Blufflands
RVx32b		103.6	Sand Beach/Sandbar (River)
	St. Paul-Baldwin Plains	6.3	St. Paul-Baldwin Plains
	The Blufflands	97.3	The Blufflands

RVx32b2			0.5	Sand Beach/Sandbar (River): Permanent Stream Subtype
		North Shore Highlands	0.3	North Shore Highlands
		St. Paul-Baldwin Plains	0.1	St. Paul-Baldwin Plains
	The Blufflands	The Blufflands	6.6	The Blufflands
RVx32c			0.4	Gravel/Cobble Beach (River)
	Laurentian Uplands		0.4	Laurentian Uplands North Shore Highlands
RVx32c2			193.8	Gravel/Cobble Beach (River): Permanent Stream Subtype
		Border Lakes	11.8	Border Lakes
		Mille Lacs Uplands	2.1	Glacial Lake Superior Plain
		North Shore Highlands	170.2	Mille Lacs Uplands
		The Blufflands	2.8	North Shore Highlands
		Toimi Uplands	6.8	Rochester Plateau The Blufflands Toimi Uplands
RVx43a			1.0	Bedrock/Boulder Shore (River)
	North Shore Highlands		1.0	North Shore Highlands
RVx43a1			17.7	Bedrock/Boulder Shore (River): Intermittent Streambed Subtype
		Border Lakes	4.6	Border Lakes
		Laurentian Uplands	3.9	Laurentian Uplands
		North Shore Highlands	9.1	North Shore Highlands
RVx43a2			11.3	Bedrock/Boulder Shore (River): Permanent Stream Subtype
		Glacial Lake Superior Plain	3.3	Glacial Lake Superior Plain
		Mille Lacs Uplands	3.3	Mille Lacs Uplands
		North Shore Highlands	4.7	North Shore Highlands
RVx54			5.2	Clay/Mud River Shore
	Glacial Lake Superior Plain		3.6	Glacial Lake Superior Plain

	Minnesota River Prairie	1.1	Minnesota River Prairie
	Oak Savanna	0.5	Oak Savanna
RVx54a		51.1	Slumping Clay/Mud Slope (River)
	Glacial Lake Superior Plain	46.4	Glacial Lake Superior Plain
	North Shore Highlands	4.7	North Shore Highlands
RVx54b		13.5	Clay/Mud Shore (River)
	Chippewa Plains	13.5	Chippewa Plains
			Laurentian Uplands
RVx54b1		0.9	Clay/Mud River Shore (Intermittent Streambed Subtype)
	Minnesota River Prairie	0.9	Minnesota River Prairie
RVx54b2		1.7	Clay/Mud Shore (River): Permanent Stream Subtype
	Glacial Lake Superior Plain	0.3	Glacial Lake Superior Plain
	Laurentian Uplands	0.6	Laurentian Uplands
	North Shore Highlands	0.9	North Shore Highlands
SEW_CX		1092.5	Seepage Wetland Complex
Aspen Parklands	Aspen Parklands	90.3	Aspen Parklands
	Red River Prairie	1002.2	Red River Prairie
SFS_CX		83.8	Complex
	Laurentian Uplands	83.8	Laurentian Uplands
SS_CX		42.5	Shrub Swamp Complex
	Hardwood Hills	3.1	Hardwood Hills
	Minnesota River Prairie	31.4	Minnesota River Prairie
	Pine Moraines & Outwash Plains	8.0	Pine Moraines & Outwash Plains
SWP_CX		1667.4	Saline Wet Prairie Complex
	Minnesota River Prairie	178.1	Minnesota River Prairie
Red River Prairie	Red River Prairie	1489.2	Red River Prairie

UPn12		5.1	Northern Dry Prairie
	Red River Prairie	5.1	Red River Prairie
UPn12a		864.7	Dry Barrens Prairie (Northern)
	Aspen Parklands	864.7	Aspen Parklands
UPn12b		1196.2	Dry Sand - Gravel Prairie (Northern)
Aspen Parklands	Aspen Parklands	746.9	Aspen Parklands
	Hardwood Hills	37.3	Hardwood Hills
Red River Prairie	Red River Prairie	412.0	Red River Prairie
			Dry Sand - Gravel Brush-Prairie (Northern)
UPn12c		163.0	
	Aspen Parklands	163.0	Aspen Parklands
UPn12d		133.6	Dry Hill Prairie (Northern)
	Hardwood Hills	18.6	Hardwood Hills
	Red River Prairie	114.9	Red River Prairie
UPn13		237.2	Northern Dry Savanna
	Aspen Parklands	237.2	Aspen Parklands
			Hardwood Hills
UPn13b		608.6	Dry Barrens Oak Savanna (Northern)
	Aspen Parklands	102.5	Aspen Parklands
	Hardwood Hills	0.5	Hardwood Hills
Red River Prairie	Red River Prairie	505.7	Red River Prairie
			Dry Sand - Gravel Oak Savanna (Northern)
UPn13c		959.1	
	Aspen Parklands	959.1	Aspen Parklands
			Hardwood Hills
UPn13d		2.6	Dry Hill Oak Savanna (Northern)
	Hardwood Hills	2.6	Hardwood Hills

UPn23		1.9	Northern Mesic Prairie
	Chippewa Plains	1.9	Chippewa Plains
UPn23a		1434.0	Mesic Brush-Prairie (Northern)
Aspen Parklands	Aspen Parklands	956.7	Aspen Parklands
	Red River Prairie	477.3	Red River Prairie
UPn23b		10307.0	Mesic Prairie (Northern)
Aspen Parklands	Aspen Parklands	2179.2	Aspen Parklands
	Hardwood Hills	73.0	Hardwood Hills
	Minnesota River Prairie	132.5	Minnesota River Prairie
Red River Prairie	Red River Prairie	7922.3	Red River Prairie
UPn24		4.0	Northern Mesic Savanna
	Aspen Parklands	4.0	Aspen Parklands
UPn24a		38.7	Mesic Oak Savanna (Northern)
	Red River Prairie	38.7	Red River Prairie
UPn24b		33.0	Aspen Openings (Northern)
	Aspen Parklands	33.0	Aspen Parklands
UPs13		382.1	Southern Dry Prairie
	Anoka Sand Plain	23.8	Anoka Sand Plain
	Coteau Moraines	6.2	Big Woods
	Hardwood Hills	3.2	Coteau Moraines
	Inner Coteau	73.8	Hardwood Hills
	Minnesota River Prairie	37.7	Inner Coteau
	St. Paul-Baldwin Plains	210.4	Minnesota River Prairie
	The Blufflands	27.0	St. Paul-Baldwin Plains
			The Blufflands
UPs13a		1399.7	Dry Barrens Prairie (Southern)
	Anoka Sand Plain	19.6	Anoka Sand Plain
	Big Woods	17.1	Big Woods
	Minnesota River Prairie	8.2	Minnesota River Prairie
Oak Savanna	Oak Savanna	80.2	Oak Savanna

St. Paul-Baldwin Plains The Blufflands	St. Paul-Baldwin Plains The Blufflands	65.3 1209.3	Rochester Plateau St. Paul-Baldwin Plains The Blufflands
UPs13b		4581.1	Dry Sand - Gravel Prairie (Southern)
	Anoka Sand Plain	59.9	Anoka Sand Plain
	Big Woods	55.6	Big Woods
	Coteau Moraines	15.4	Coteau Moraines
Hardwood Hills	Hardwood Hills	955.5	Hardwood Hills
	Inner Coteau	349.3	Inner Coteau
Minnesota River Prairie	Minnesota River Prairie	2947.0	Minnesota River Prairie
Oak Savanna	Oak Savanna	48.4	Oak Savanna
	Red River Prairie	46.1	Pine Moraine & Outwash Plains
Rochester Plateau	Rochester Plateau	2.7	Red River Prairie
	St. Paul-Baldwin Plains	35.7	Rochester Plateau
The Blufflands	The Blufflands	66.8	St. Paul-Baldwin Plains The Blufflands
UPs13c		2192.6	Dry Bedrock Bluff Prairie (Southern)
	Big Woods	0.3	Big Woods
	Oak Savanna	118.1	Oak Savanna
Rochester Plateau	Rochester Plateau	27.4	Rochester Plateau
St. Paul-Baldwin Plains	St. Paul-Baldwin Plains	133.7	St. Paul-Baldwin Plains
The Blufflands	The Blufflands	1923.2	The Blufflands
UPs13d		10643.5	Dry Hill Prairie (Southern)
	Big Woods	21.9	Big Woods
Coteau Moraines	Coteau Moraines	4501.5	Coteau Moraines
	Hardwood Hills	14.9	Hardwood Hills
Inner Coteau	Inner Coteau	1518.6	Inner Coteau
Minnesota River Prairie	Minnesota River Prairie	4457.1	Minnesota River Prairie
	Oak Savanna	24.9	Oak Savanna
	Red River Prairie	104.7	Red River Prairie
UPs14		265.8	Southern Dry Savanna
	Anoka Sand Plain	63.1	Anoka Sand Plain
	Coteau Moraines	89.8	Coteau Moraines

Pine Moraines & Outwash Plains	1.6	Pine Moraines & Outwash Plains
St. Paul-Baldwin Plains	106.7	St. Paul-Baldwin Plains
The Blufflands	4.7	The Blufflands

UPs14a	98.2	Dry Barrens Oak Savanna (Southern)
Anoka Sand Plain	72.1	Anoka Sand Plain
Hardwood Hills	0.5	Hardwood Hills
The Blufflands	25.6	The Blufflands

UPs14a1	200.5	Dry Barrens Oak Savanna (Southern): Jack Pine Subtype
Mille Lacs Uplands	23.7	Mille Lacs Uplands
The Blufflands	176.8	The Blufflands

UPs14a2	2259.0	Dry Barrens Oak Savanna (Southern): Oak Subtype	
Anoka Sand Plain	Anoka Sand Plain	842.1	Anoka Sand Plain
	Big Woods	45.1	Big Woods
	Mille Lacs Uplands	68.8	Mille Lacs Uplands
	Oak Savanna	2.5	Oak Savanna
The Blufflands	The Blufflands	1300.5	Rochester Plateau The Blufflands

UPs14a3	261.0	Not listed in Field Guide to NPCs
Anoka Sand Plain	223.0	Anoka Sand Plain
The Blufflands	38.0	The Blufflands

UPs14b	753.0	Dry Sand - Gravel Oak Savanna (Southern)	
Anoka Sand Plain	Anoka Sand Plain	210.4	Anoka Sand Plain
	Big Woods	336.8	Big Woods
	Hardwood Hills	0.2	Hardwood Hills
	Mille Lacs Uplands	26.1	Mille Lacs Uplands
St. Paul-Baldwin Plains	St. Paul-Baldwin Plains	12.7	Minnesota River Prairie Oak Savanna Rochester Plateau
The Blufflands	The Blufflands	166.8	St. Paul-Baldwin Plains The Blufflands

UPs14c		211.9	Dry Hill Oak Savanna (Southern)
	Coteau Moraines	4.5	Big Woods
	Minnesota River Prairie	178.5	Coteau Moraines
	Oak Savanna	17.0	Minnesota River Prairie
	St. Paul-Baldwin Plains	11.9	Oak Savanna
			Rochester Plateau
			St. Paul-Baldwin Plains

UPs23		38.8	Southern Mesic Prairie
	Big Woods	0.5	Big Woods
	Coteau Moraines	11.1	Coteau Moraines
	Minnesota River Prairie	9.1	Minnesota River Prairie
	Oak Savanna	10.2	Oak Savanna
	Rochester Plateau	6.4	Rochester Plateau
	The Blufflands	1.4	The Blufflands

UPs23a		18334.4	Mesic Prairie (Southern)
	Anoka Sand Plain	51.4	Anoka Sand Plain
Big Woods	Big Woods	67.8	Big Woods
Coteau Moraines	Coteau Moraines	1148.3	Coteau Moraines
Hardwood Hills	Hardwood Hills	3.7	Hardwood Hills
	Inner Coteau	1304.4	Inner Coteau
Minnesota River Prairie	Minnesota River Prairie	14879.4	Mille Lacs Uplands
Oak Savanna	Oak Savanna	465.1	Minnesota River Prairie
	Red River Prairie	114.9	Oak Savanna
Rochester Plateau	Rochester Plateau	6.8	Red River Prairie
	St. Paul-Baldwin Plains	88.1	Rochester Plateau
	The Blufflands	204.6	St. Paul-Baldwin Plains
			The Blufflands

UPs24		80.8	Southern Mesic Savanna
	Hardwood Hills	80.8	Hardwood Hills

UPs24a		46.7	Mesic Oak Savanna (Southern)
	Anoka Sand Plain	2.9	Anoka Sand Plain
	Inner Coteau	4.1	Inner Coteau

Mille Lacs Uplands	3.3	Mille Lacs Uplands
Oak Savanna	30.5	Minnesota River Prairie
Rochester Plateau	5.9	Oak Savanna
		Rochester Plateau

WFn53	3990.6	Northern Wet Cedar Forest
Agassiz Lowlands	145.6	Agassiz Lowlands
Border Lakes	25.4	Border Lakes
Chippewa Plains	4.2	Chippewa Plains
Nashwauk Uplands	10.5	Nashwauk Uplands
North Shore Highlands	2834.5	North Shore Highlands
St. Louis Moraines	160.4	St. Louis Moraines
Tamarack Lowlands	35.9	Tamarack Lowlands
Toimi Uplands	774.0	Toimi Uplands

WFn53a	11469.3	Lowland White Cedar Forest (North Shore)
Border Lakes	305.8	Border Lakes
Glacial Lake Superior Plain	74.3	Glacial Lake Superior Plain
Laurentian Uplands	267.0	Laurentian Uplands
North Shore Highlands	10805.1	North Shore Highlands
Toimi Uplands	17.1	Toimi Uplands

WFn53b	6043.1	Lowland White Cedar Forest (Northern)
Agassiz Lowlands	4305.7	Agassiz Lowlands
Aspen Parklands	54.8	Aspen Parklands
Border Lakes	134.3	Border Lakes
Laurentian Uplands	908.5	Hardwood Hills
Mille Lacs Uplands	80.4	Laurentian Uplands
Nashwauk Uplands	30.1	Mille Lacs Uplands
North Shore Highlands	15.4	Nashwauk Uplands
Pine Moraines & Outwash Plains	25.2	North Shore Highlands
St. Louis Moraines	255.8	Pine Moraines & Outwash Plains
Tamarack Lowlands	183.5	St. Louis Moraines
Toimi Uplands	49.3	Tamarack Lowlands
		Toimi Uplands

WFn55		6000.8	Northern Wet Ash Swamp
	Anoka Sand Plain	0.9	Anoka Sand Plain
	Aspen Parklands	1322.9	Aspen Parklands
	Border Lakes	3.4	Border Lakes
	Chippewa Plains	3.6	Chippewa Plains
	Glacial Lake Superior Plain	654.5	Glacial Lake Superior Plain
	Hardwood Hills	35.8	Hardwood Hills
	Laurentian Uplands	114.2	Laurentian Uplands
	Mille Lacs Uplands	948.1	Mille Lacs Uplands
	North Shore Highlands	510.3	North Shore Highlands
Pine Moraines & Outwash Plai	Pine Moraines & Outwash Plains	340.3	Pine Moraines & Outwash Plains
	St. Louis Moraines	566.6	St. Louis Moraines
	Tamarack Lowlands	1195.1	Tamarack Lowlands
	Toimi Uplands	305.2	Toimi Uplands

WFn55a		4283.0	Black Ash - Aspen - Balsam Poplar Swamp (Northeastern)
	Agassiz Lowlands	1173.8	Agassiz Lowlands
	Anoka Sand Plain	2.1	Anoka Sand Plain
	Border Lakes	54.4	Border Lakes
	Chippewa Plains	103.2	Chippewa Plains
	Glacial Lake Superior Plain	57.4	Glacial Lake Superior Plain
	Laurentian Uplands	123.0	Laurentian Uplands
	Mille Lacs Uplands	41.7	Mille Lacs Uplands
North Shore Highlands	North Shore Highlands	1464.0	North Shore Highlands
	Pine Moraines & Outwash Plains	1029.3	Pine Moraines & Outwash Plains
	St. Louis Moraines	6.3	St. Louis Moraines
	Toimi Uplands	227.6	Toimi Uplands

WFn55b		7533.4	Black Ash - Yellow Birch - Red Maple - Basswood Swamp (Eastcentral)
Anoka Sand Plain	Anoka Sand Plain	1160.4	Anoka Sand Plain
	Hardwood Hills	65.4	Hardwood Hills
	Mille Lacs Uplands	5862.9	Mille Lacs Uplands
	Pine Moraines & Outwash Plains	432.9	Pine Moraines & Outwash Plains
St. Paul-Baldwin Plains	St. Paul-Baldwin Plains	11.8	St. Paul-Baldwin Plains

		Black Ash - Mountain Maple Swamp (Northern)	
WFn55c		989.7	
	Aspen Parklands	18.2	Aspen Parklands
	Hardwood Hills	12.7	Hardwood Hills
	Laurentian Uplands	29.0	Laurentian Uplands
	Mille Lacs Uplands	37.9	Mille Lacs Uplands
	North Shore Highlands	424.1	North Shore Highlands
Pine Moraines & Outwash Plai	Pine Moraines & Outwash Plains	308.0	Pine Moraines & Outwash Plains
	St. Louis Moraines	70.8	St. Louis Moraines
	Toimi Uplands	88.1	Toimi Uplands
		Northern Very Wet Ash Swamp	
WFn64		1996.5	
	Border Lakes	2.6	Border Lakes
	Glacial Lake Superior Plain	71.2	Glacial Lake Superior Plain
	Hardwood Hills	51.2	Hardwood Hills
	Littlefork-Vermillion Uplands	0.5	Littlefork-Vermillion Uplands
	Mille Lacs Uplands	374.5	Mille Lacs Uplands
	North Shore Highlands	548.9	North Shore Highlands
	Pine Moraines & Outwash Plains	349.3	Pine Moraines & Outwash Plains
	St. Louis Moraines	324.0	St. Louis Moraines
	Tamarack Lowlands	1.0	Tamarack Lowlands
	Toimi Uplands	273.3	Toimi Uplands
		Black Ash - Conifer Swamp (Northeastern)	
WFn64a		6755.0	
Border Lakes	Border Lakes	210.5	Border Lakes
	Glacial Lake Superior Plain	396.0	Glacial Lake Superior Plain
	Hardwood Hills	61.8	Hardwood Hills
	Laurentian Uplands	744.9	Laurentian Uplands
	Mille Lacs Uplands	257.3	Mille Lacs Uplands
	Nashwauk Uplands	39.5	Nashwauk Uplands
North Shore Highlands	North Shore Highlands	4715.0	North Shore Highlands
	St. Louis Moraines	102.8	St. Louis Moraines
	Toimi Uplands	226.6	Toimi Uplands
		Black Ash - Yellow Birch - Red Maple - Alder Swamp	
WFn64b		3010.6	

Big Woods	Anoka Sand Plain	55.3	Anoka Sand Plain
	Big Woods	29.8	Big Woods
	Mille Lacs Uplands	2857.3	Mille Lacs Uplands
	St. Paul-Baldwin Plains	68.1	St. Paul-Baldwin Plains
WFn64c	647.6	Black Ash - Alder Swamp (Northern)	
	Agassiz Lowlands	146.6	Aspen Parklands
	Border Lakes	35.7	Agassiz Lowlands
	Chippewa Plains	70.0	Border Lakes
	Hardwood Hills	28.8	Chippewa Plains
	Mille Lacs Uplands	59.6	Hardwood Hills
	North Shore Highlands	109.2	Mille Lacs Uplands
	Pine Moraines & Outwash Plains	48.8	North Shore Highlands
	Tamarack Lowlands	148.9	Pine Moraines & Outwash Plains
			Tamarack Lowlands
WFn74	100.4	Northern Wet Alder Swamp	
	Hardwood Hills	1.6	Hardwood Hills
	Laurentian Uplands	7.2	Laurentian Uplands
	Mille Lacs Uplands	68.8	Mille Lacs Uplands
	Toimi Uplands	22.6	Toimi Uplands
WFn74a	697.4	Alder - (Red Currant - Meadow-Rue) Swamp	
	Agassiz Lowlands	28.9	Agassiz Lowlands
	Chippewa Plains	4.7	Chippewa Plains
	Glacial Lake Superior Plain	127.9	Glacial Lake Superior Plain
	Mille Lacs Uplands	354.3	Mille Lacs Uplands
	Pine Moraines & Outwash Plains	160.2	Pine Moraines & Outwash Plains
	Red River Prairie	15.2	Red River Prairie
	St. Louis Moraines	6.2	St. Louis Moraines
Wfs55	9.4	Southern Wet Aspen Forest	
	Anoka Sand Plain	5.7	Anoka Sand Plain
	Oak Savanna	3.6	Oak Savanna
Wfs55a	263.2	Lowland Aspen Forest	

Anoka Sand Plain	36.6	Anoka Sand Plain
Big Woods	35.6	Big Woods
Hardwood Hills	146.1	Hardwood Hills
Oak Savanna	39.3	Minnesota River Prairie
St. Paul-Baldwin Plains	5.7	Oak Savanna
		St. Paul-Baldwin Plains

WFs57	67.1	Southern Wet Ash Swamp
Oak Savanna	37.7	Oak Savanna
Pine Moraines & Outwash Plains	9.5	Pine Moraines & Outwash Plains
St. Paul-Baldwin Plains	20.0	St. Paul-Baldwin Plains

WFs57a	591.0	Black Ash - (Red Maple) Seepage Swamp
Anoka Sand Plain	0.6	Anoka Sand Plain
Hardwood Hills	358.3	Big Woods
Mille Lacs Uplands	2.0	Glacial Lake Superior Plain
Oak Savanna	35.2	Hardwood Hills
St. Croix Moraine	57.4	Mille Lacs Uplands
St. Paul-Baldwin Plains		Oak Savanna
		Rochester Plateau
		St. Croix Moraine
		St. Paul-Baldwin Plains

WFs57b	81.0	Black Ash - Sugar Maple - Basswood - (Blue Beech) Seepage Swamp
Rochester Plateau	5.4	Rochester Plateau
The Blufflands	75.6	The Blufflands

WFw54	5051.3	Northwestern Wet Aspen Forest
Agassiz Lowlands	637.8	Agassiz Lowlands
Aspen Parklands	4410.7	Aspen Parklands
Hardwood Hills	2.9	Hardwood Hills

WFw54a	1245.9	Lowland Black Ash - Aspen - Balsam Poplar Forest
Agassiz Lowlands	1003.1	Agassiz Lowlands
Aspen Parklands	242.9	Aspen Parklands

WFWM_CX		28.5	Complex
	Laurentian Uplands	0.4	Laurentian Uplands
North Shore Highlands	North Shore Highlands	28.2	North Shore Highlands

WMn82		2010.7	Northern Wet Meadow / Carr
	Anoka Sand Plain	79.8	Anoka Sand Plain
	Aspen Parklands	14.9	Aspen Parklands
	Border Lakes	0.9	Border Lakes
	Chippewa Plains	67.0	Chippewa Plains
	Glacial Lake Superior Plain	9.4	Glacial Lake Superior Plain
	Hardwood Hills	104.0	Hardwood Hills
	Laurentian Uplands	449.3	Laurentian Uplands
	Mille Lacs Uplands	199.1	Mille Lacs Uplands
	Nashwauk Uplands	7.9	Nashwauk Uplands
	North Shore Highlands	738.4	North Shore Highlands
	Pine Moraines & Outwash Plains	19.4	Pine Moraines & Outwash Plains
	St. Louis Moraines	67.0	St. Louis Moraines
	St. Paul-Baldwin Plains	41.2	St. Paul-Baldwin Plains
	Toimi Uplands	212.5	Toimi Uplands

WMn82a		33276.3	Willow - Dogwood Shrub Swamp
	Agassiz Lowlands	3396.6	Agassiz Lowlands
Anoka Sand Plain	Anoka Sand Plain	2691.9	Anoka Sand Plain
	Aspen Parklands	9393.7	Aspen Parklands
Big Woods	Big Woods	85.9	Big Woods
	Border Lakes	209.5	Border Lakes
	Chippewa Plains	927.7	Chippewa Plains
	Glacial Lake Superior Plain	6.6	Glacial Lake Superior Plain
Hardwood Hills	Hardwood Hills	1420.3	Hardwood Hills
Laurentian Uplands	Laurentian Uplands	789.0	Laurentian Uplands
	Littlefork-Vermillion Uplands	41.3	Littlefork-Vermillion Uplands
	Mille Lacs Uplands	8382.6	Mille Lacs Uplands
Minnesota River Prairie	Minnesota River Prairie	356.0	Minnesota River Prairie
	Nashwauk Uplands	0.5	Nashwauk Uplands
	North Shore Highlands	1085.9	North Shore Highlands
	Oak Savanna	15.5	Oak Savanna

Pine Moraines & Outwash Plain	Pine Moraines & Outwash Plains	1160.0	Pine Moraines & Outwash Plains
Red River Prairie	Red River Prairie	776.8	Red River Prairie
	St. Louis Moraines	321.9	Rochester Plateau
	St. Paul-Baldwin Plains	284.8	St. Louis Moraines
	Tamarack Lowlands	395.2	St. Paul-Baldwin Plains
	The Blufflands	40.3	Tamarack Lowlands
	Toimi Uplands	1493.2	The Blufflands
			Toimi Uplands

WMn82b

27250.8

Sedge Meadow

	Agassiz Lowlands	966.9	Agassiz Lowlands
Anoka Sand Plain	Anoka Sand Plain	2552.3	Anoka Sand Plain
	Aspen Parklands	68.1	Aspen Parklands
Big Woods	Big Woods	361.7	Big Woods
	Border Lakes	145.2	Border Lakes
	Chippewa Plains	1036.5	Chippewa Plains
	Glacial Lake Superior Plain	75.4	Glacial Lake Superior Plain
Hardwood Hills	Hardwood Hills	2077.5	Hardwood Hills
	Laurentian Uplands	137.0	Laurentian Uplands
	Littlefork-Vermillion Uplands	0.4	Littlefork-Vermillion Uplands
	Mille Lacs Uplands	13550.4	Mille Lacs Uplands
Minnesota River Prairie	Minnesota River Prairie	580.0	Minnesota River Prairie
	Nashwauk Uplands	5.1	Nashwauk Uplands
	North Shore Highlands	275.6	North Shore Highlands
Oak Savanna	Oak Savanna	43.0	Oak Savanna
Pine Moraines & Outwash Plain	Pine Moraines & Outwash Plains	2973.0	Pine Moraines & Outwash Plains
Red River Prairie	Red River Prairie	381.4	Red River Prairie
	Rochester Plateau	47.5	Rochester Plateau
	St. Louis Moraines	170.2	St. Louis Moraines
	St. Paul-Baldwin Plains	25.7	St. Paul-Baldwin Plains
	Tamarack Lowlands	32.0	Tamarack Lowlands
The Blufflands	The Blufflands	1508.9	The Blufflands
	Toimi Uplands	227.2	Toimi Uplands

WMn82b1

159.2

Sedge Meadow: Bluejoint Subtype

	Agassiz Lowlands	6.7	Agassiz Lowlands
	Chippewa Plains	8.7	Big Woods
	Hardwood Hills	112.0	Chippewa Plains

Nashwauk Uplands	2.3	Hardwood Hills
North Shore Highlands	29.5	Nashwauk Uplands
		North Shore Highlands

WMn82b2	129.7	Sedge Meadow: Tussock Sedge Subtype
Anoka Sand Plain	106.1	Anoka Sand Plain
Big Woods	0.7	Big Woods
Mille Lacs Uplands	4.4	Hardwood Hills
Oak Savanna	18.4	Mille Lacs Uplands
		Oak Savanna

WMn82b3	4.5	Sedge Meadow: Beaked Sedge Subtype
North Shore Highlands	0.6	Hardwood Hills
Pine Moraines & Outwash Plains	0.4	North Shore Highlands
Red River Prairie	3.4	Pine Moraines & Outwash Plains
		Red River Prairie

WMn82b4	85.8	Sedge Meadow: Lake Sedge Subtype
Agassiz Lowlands	5.3	Agassiz Lowlands
Big Woods	53.8	Big Woods
Hardwood Hills	0.7	Hardwood Hills
Mille Lacs Uplands	5.6	Mille Lacs Uplands
Nashwauk Uplands	0.4	Nashwauk Uplands
North Shore Highlands	2.3	North Shore Highlands
Pine Moraines & Outwash Plains	14.2	Pine Moraines & Outwash Plains
Red River Prairie	2.7	Red River Prairie
St. Louis Moraines	0.8	St. Louis Moraines

WMn82b5	0.5	Sedge Meadow: Lake Sedge Subtype
		DUPLICATE?
Red River Prairie	0.5	North Shore Highlands
		Red River Prairie

WMP73	147.0	Prairie Wet Meadow/Carr
Coteau Moraines	139.4	Coteau Moraines
Minnesota River Prairie	7.6	Minnesota River Prairie

WMp73a		3295.9	Prairie Meadow/Carr
	Agassiz Lowlands	120.8	Agassiz Lowlands
Aspen Parklands	Aspen Parklands	2599.9	Aspen Parklands
Coteau Moraines	Coteau Moraines	67.8	Coteau Moraines
	Hardwood Hills	20.1	Hardwood Hills
Inner Coteau	Inner Coteau	263.4	Inner Coteau
Minnesota River Prairie	Minnesota River Prairie	48.0	Minnesota River Prairie
Red River Prairie	Red River Prairie	176.0	Red River Prairie

WMs83		304.1	Southern Seepage Meadow/Carr
Aspen Parklands	Aspen Parklands	44.8	Aspen Parklands
	Big Woods	14.1	Big Woods
Coteau Moraines	Coteau Moraines	81.2	Coteau Moraines
	Minnesota River Prairie	105.2	Minnesota River Prairie
	Oak Savanna	6.2	Oak Savanna
	Red River Prairie	8.3	Red River Prairie
	St. Paul-Baldwin Plains	46.4	St. Paul-Baldwin Plains

WMs83a		4445.3	Seepage Meadow/Carr
Anoka Sand Plain	Anoka Sand Plain	74.4	Anoka Sand Plain
Aspen Parklands	Aspen Parklands	565.4	Aspen Parklands
Big Woods	Big Woods	473.2	Big Woods
Coteau Moraines	Coteau Moraines	21.5	Coteau Moraines
	Hardwood Hills	146.1	Hardwood Hills
	Inner Coteau	22.4	Inner Coteau
	Minnesota River Prairie	177.5	Minnesota River Prairie
	Oak Savanna	483.6	Oak Savanna
	Red River Prairie	1813.7	Red River Prairie
	Rochester Plateau	1.7	Rochester Plateau
	St. Paul-Baldwin Plains	452.5	St. Paul-Baldwin Plains
	The Blufflands	213.3	The Blufflands

WMs83a1		403.6	Seepage Meadow/Carr Tussock: Sedge Subtype
	Aspen Parklands	3.1	Aspen Parklands
	Coteau Moraines	0.1	Big Woods
	Inner Coteau	85.5	Coteau Moraines

Oak Savanna	98.2	Hardwood Hills
Red River Prairie	0.5	Inner Coteau
Rochester Plateau	102.6	Minnesota River Prairie
The Blufflands	113.6	Oak Savanna
		Red River Prairie
		Rochester Plateau
		St. Paul Baldwin Plains
		The Blufflands

Seepage Meadow/Carr: Aquatic Sedge Subtype

WMs83a2	40.5	
Inner Coteau	2.0	Coteau Moraine
Red River Prairie	38.5	Inner Coteau
		Red River Prairie
		St. Paul Baldwin Moraine

Seepage Meadow/Carr: Impatiens Subtype

WMs83a3	17.5	
Coteau Moraines	4.9	Coteau Moraines
The Blufflands	12.6	Minnesota River Prairie
		The Blufflands

Southern Basin Wet Meadow/Carr

WMs92	308.7	
Coteau Moraines	184.9	Coteau Moraines
Hardwood Hills	13.3	Hardwood Hills
Minnesota River Prairie	101.3	Minnesota River Prairie
Oak Savanna	9.2	Oak Savanna

Basin Meadow/Carr

WMs92a	341.5	
Aspen Parklands	22.8	Aspen Parklands
Hardwood Hills	14.9	Big Woods
Inner Coteau	0.3	Hardwood Hills
Minnesota River Prairie	13.9	Inner Coteau
Red River Prairie	289.6	Minnesota River Prairie
		Red River Prairie

Northern Wet Prairie

WPn53	956.1	
Aspen Parklands	389.5	Aspen Parklands

Red River Prairie	Red River Prairie	566.6	Red River Prairie
WPn53a		1575.9	Wet Seepage Prairie (Northern)
	Aspen Parklands	1226.0	Aspen Parklands
Red River Prairie	Red River Prairie	349.9	Red River Prairie
WPn53b		3480.5	Wet Brush-Prairie (Northern)
Aspen Parklands	Aspen Parklands	2952.1	Aspen Parklands
	Hardwood Hills	4.0	Hardwood Hills
Red River Prairie	Red River Prairie	524.3	Red River Prairie
WPn53c		8718.0	Wet Prairie (Northern)
Aspen Parklands	Aspen Parklands	1503.2	Aspen Parklands
	Minnesota River Prairie	0.7	Minnesota River Prairie
Red River Prairie	Red River Prairie	7214.1	Red River Prairie
WPn53d		686.2	Wet Saline Prairie (Northern)
	Aspen Parklands	434.0	Aspen Parklands
Red River Prairie	Red River Prairie	252.1	Red River Prairie
WPs54		132.7	Southern Wet Prairie
	Anoka Sand Plain	10.5	Anoka Sand Plain
	Coteau Moraines	55.7	Coteau Moraines
	Inner Coteau	13.5	Inner Coteau
	Minnesota River Prairie	10.6	Minnesota River Prairie
Oak Savanna	Oak Savanna	28.0	Oak Savanna
	The Blufflands	14.4	The Blufflands
WPs54a		466.9	Wet Seepage Prairie (Southern)
	Big Woods	163.4	Big Woods
	Inner Coteau	5.0	Inner Coteau
	Minnesota River Prairie	64.6	Minnesota River Prairie
	Oak Savanna	233.9	Oak Savanna
WPs54b		4578.1	Wet Seepage Prairie (Southern)
Anoka Sand Plain	Anoka Sand Plain	204.5	Anoka Sand Plain
	Big Woods	5.8	Big Woods

Coteau Moraines	Coteau Moraines	706.8	Coteau Moraines
Inner Coteau	Inner Coteau	581.4	Inner Coteau
Minnesota River Prairie	Minnesota River Prairie	3036.0	Minnesota River Prairie
Oak Savanna	Oak Savanna	44.1	Oak Savanna

Red River Prairie
Rochester Plateau
St. Paul Baldwin Plains

WPs54c

4578.1

Wet Saline Prairie (Southern)

Coteau Moraine
Minnesota River Prairie

YF_CX

40849.5

Young Forest Complex

	Border Lakes	420.7	Border Lakes
	Glacial Lake Superior Plain	947.0	Glacial Lake Superior Plain
	Hardwood Hills	344.2	Hardwood Hills
Laurentian Uplands	Laurentian Uplands	5719.7	Laurentian Uplands
	Mille Lacs Uplands	10957.1	Mille Lacs Uplands
	Nashwauk Uplands	0.7	Nashwauk Uplands
North Shore Highlands	North Shore Highlands	11673.8	North Shore Highlands
	Pine Moraines & Outwash Plains	2889.9	Pine Moraines & Outwash Plains
	St. Louis Moraines	766.0	St. Louis Moraines
	Tamarack Lowlands	3.4	Tamarack Lowlands
	Toimi Uplands	7126.9	Toimi Uplands