

Project Name: Natural Resource Stewardship in North Dakota's Parks, Preserves and Natural Areas

Name of Organization: North Dakota Parks and Recreation Department

Federal Tax ID#: 45-0433249

Contact Person/Title: Kathy Duttenhefner, Coordinator/Biologist

Address: 1600 East Century Ave, Suite 3

City: Bismarck

State: North Dakota

Zip Code: 58503

E-mail Address: kgduttonhefner@nd.gov

Web Site Address: www.parkrec.nd.gov/

Phone: 701-328-5370 701-220-3377 (cell)

Fax # (if available): 701-328-5363

List names of co-applicants if this is a joint proposal

MAJOR Directive:

- Directive A.** Provide access to private and public lands for sportsmen, including projects that create fish and wildlife habitat and provide access for sportsmen;
- Directive B.** Improve, maintain, and restore water quality, soil conditions, plant diversity, animal systems and to support other practices of stewardship to enhance farming and ranching;
- Directive C.** Develop, enhance, conserve, and restore wildlife and fish habitat on private and public lands; and
- Directive D.** Conserve natural areas for recreation through the establishment and development of parks and other recreation areas.

Additional Directive:

- Directive A.** Provide access to private and public lands for sportsmen, including projects that create fish and wildlife habitat and provide access for sportsmen;
- Directive B.** Improve, maintain, and restore water quality, soil conditions, plant diversity, animal systems and to support other practices of stewardship to enhance farming and ranching;
- Directive C.** Develop, enhance, conserve, and restore wildlife and fish habitat on private and public lands; and
- Directive D.** Conserve natural areas for recreation through the establishment and development of parks and other recreation areas.

Type of organization:

- State Agency
- Political Subdivision
- Tribal Entity
- Tax-exempt, nonprofit corporation, as described in United States Internal Revenue Code (26 U.S.C. § 501 (c))

Project Name: Natural Resource Stewardship in North Dakota's Parks, Preserves and Natural Areas

Abstract/Executive Summary

The mission of the North Dakota Parks and Recreation Department is to provide and enhance outdoor recreation opportunities through diverse parks and programs that conserve the state's natural diversity. The Department has many policies, guidelines, programs, and activities that support its mission. Included are a wide variety of management activities, including habitat restoration, prescribed fire management, inventory, and monitoring. In addition, the Department offers expertise in the areas of resource management planning, GPS and GIS mapping and biological conservation database management.

This 5-year Natural Resource Stewardship project involves working together with other's across North Dakota to provide hands-on assistance to manage, protect and enhance North Dakota's prairies, woodlands, plant and animal species of concern, and natural areas ensuring a healthy environment. Clear and measurable objectives have been identified for the increase in prairie restoration and enhancement and tree planting and woodland habitat acres, as well as the expanding of existing noxious weed control efforts, strengthening of the Natural Areas Registry and Natural Heritage Inventory and the upgrade of the statewide biological conservation database.

The Department's Natural Resource Program has a primary responsibility for protecting and enhancing the natural environments within the parks, preserves and natural areas. It is the Programs overall goal to inventory, protect, manage and enhance natural resources to provide a healthy and diverse environment for the enjoyment of visitors and future generations. The Natural Resources program strives to control and eradicate noxious weeds and non-native species and restore native plant diversity to North Dakota's parks, preserves and natural areas. The program also coordinates the Natural Areas Registry, Natural Heritage Inventory and Nature Preserves Programs.

Project goals include: A) conserve and enhance existing prairies, woodlands, tree and shrub plantings, within parklands, preserves and natural areas to maximize biodiversity of plant and animal species; B) provide direction, technical assistance and funding for natural resource activities that are integral to and integrated within parklands, preserves, and natural area uses; C) effective control and eradication of noxious weeds and invasive species on parklands, preserves, and natural areas; D) conduct biological surveys to identify the most significant natural areas of our state; E) assess and expand the existing system of registered natural areas which represent the full range of North Dakota's natural heritage; F) maintain and upgrade the Department's state-wide biological conservation database and G) develop and strengthen working relationships with parkland and natural area owners.

Outdoor Heritage Funding will greatly enhance the Department's limited funding and staffing resources which will allow for the expansion of opportunities for on-the ground enhancement to prairies and woodlands on state and private parklands, preserves and natural areas. Funding will also allow the necessary support needed to strengthen the Natural Heritage Inventory, Natural Areas Registry and state-wide biological conservation database.

Amount of Grant Request **\$ 274,343.70**

Total Project Costs **\$ 645,986.80**

Amount of Matching Funds **\$371,643.10**

Match Share (Cash) \$ 80,000.00

Match Share (In-kind) \$130,000.00

Match Share (Indirect) \$130,743.10

Other Sponsor's Share \$ 30,900.00

Source(s) of Matching Funds

- North Dakota Parks and Recreation Department
- North Dakota Forest Service (Grant Award Pending)
- Arbor Day Foundation (Grant Award Pending)
- NatureServe

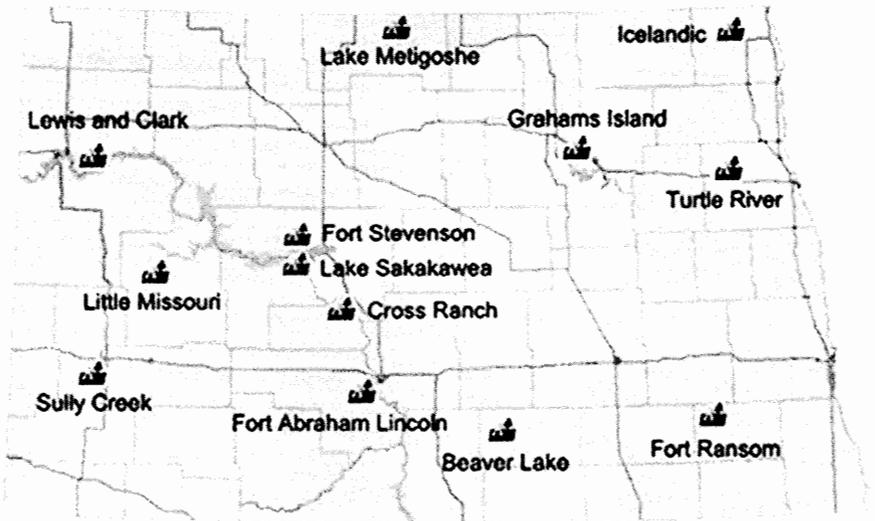
Certifications

✘ I certify that this application has been made with the support of the governing body and chief executive of my organization.

✘ I certify that if awarded grant funding none of the funding will be used for any of the exemptions noted on Page 1 of this application.

Narrative: Organization Information

History: In 1921, North Dakota began the process of establishing state parks. By 1963, North Dakota had six parks, seven recreation areas, and fifty-three state historical monuments. In 1965, a North Dakota Park Service was established. In 1977 the Park Service was changed to North Dakota Parks and Recreation Department. Today there are 13 parks, 28 natural and recreational areas totaling over 119,827 owned and leased acres.



Mission Statement: *Provide and enhance outdoor recreation opportunities through diverse parks and programs that conserve the state's natural diversity.*

Organization: 4 major divisions: administration and finance, recreation and trails, planning and natural resources and parks. The natural resource management coordinator is responsible for administration of State Park Resource Management, Nature Preserves, Natural Heritage Inventory, and Natural Areas Registry.

Programs and Activities: The 1975 Nature Preserves Act gave the Department the responsibility of setting aside a system of natural areas and nature preserves. In 1980, the Department established the *Natural Heritage Inventory Program*. The inventory's main purpose is to identify significant natural features, assess their conservation status, and establish priorities for their conservation. The inventory maintains data on species of concern and significant natural communities in the *Biological Conservation Database (Biotics 4)* which currently has 5,400 records. In 1983 the *North Dakota Natural Areas Registry Program* was established. *The Natural Areas Registry Program* encourages voluntary protection of important natural diversity features through a tradition of citizen-based conservation. The program currently has 54 registered sites.

The **Natural Resource Management Program** focuses on habitat enhancement projects through noxious weed control, tree and shrub planting, woodland management, prairie enhancement and restorations, streambank activities and conservation education.

Staff and Volunteers: Staff and volunteers directly involved include 2 – FTE biologists, 1 – FTE GIS Technician, 1-PT data manager, 2- seasonal biological technicians, park managers, ranger, maintenance staff, and private landowners.

Purpose of Grant

Project Goals

- A. Conserve and enhance existing prairies, woodlands, tree and shrub plantings, within parklands, preserves and natural areas to maximize biodiversity of plant and animal species.
- B. To provide direction, technical assistance and funding for natural resource activities that are integral to and integrated within parklands, preserves, and natural area uses.
- C. Effective control and eradication of noxious weeds and invasive species on parklands, preserves, and natural areas.
- D. Conduct biological surveys to identify the most significant natural areas of our state. Find, re-locate and document locations of species of concern and high quality natural communities.
- E. Assess and expand the existing system of registered natural areas which represent the full range of North Dakota's natural heritage.
- F. Maintain and upgrade the Department's biological conservation database.
- G. Develop and strengthen working relationships with parkland and natural area owners.

Measurable Objectives

1. Within five years, **increase and enhance native prairie restoration acres** on parklands, preserves and natural areas through the use of high diversity native seed mixture obtained from local seed sources.
2. Within five years, **increase the percent species composition of native grasses and forbs on prairie restoration** as determined through systematic monitoring and recorded in restoration plans.
3. Within five years, **Increase woodland habitat and tree and shrub planting acres** on parklands, preserves and natural areas through the creation of a mosaic of woodlands by planting a diverse selection of native trees and shrubs. Maintain a 75% survivability rate.
4. Within in five years, show a decrease in **GPS/GIS noxious weed infestations** on parklands, preserves, and natural areas.
5. **Increase number of noxious weed treatment acres** on parklands, preserves and natural areas. Conduct **annual weed analysis** depicting acres treated vs. acres not treated.
6. Within in five years, **expand and enhance Registered Natural Area Program**. Contact and visit with at least 75% of all Registered Natural Areas landowners. Identify and register new natural areas.

7. Within five years, **develop natural resource stewardship plans** on at least 75% of all Registered Natural Areas landowners.
8. Expand the use of **cooperative agreements** to enable more effective and coordinated land stewardship activities.
9. Within in five years, **inventory, map, monitor, and identify conservation practices for known species of concern and significant ecological communities'** on at least 75% of all parklands, preserves and natural areas.
10. **Maintain, update and upgrade the comprehensive biological conservation database of North Dakota's plant and animal species of concern and significant ecological communities.** Enter and update plant, animal and ecological community data. Upgrade Biotics software.

Strategies – Best Management Practices

The cornerstone of the Department’s Natural Resource Stewardship Initiative is the recognition that in order to have a successful stewardship project, the Department must facilitate a working relationship with the landowners, organizations and agencies such as local NRCS or SCD, local seed companies, ND Department of Agriculture, NDSU, ND Game and Fish, ND Forest Service, tree nurseries, and adjacent landowners. State, federal and private partnerships are key.

Native Prairie Restoration and Enhancements Strategies and Best Management Practices: A multi-site, long term, collaborative project with specific goal to restore, enhance, and sustain a healthy, diverse and sustainable native prairie thus enhancing the biodiversity on parklands, preserves and natural areas.

Table 1 Parkland Prairie Restorations and Enhancement to Date

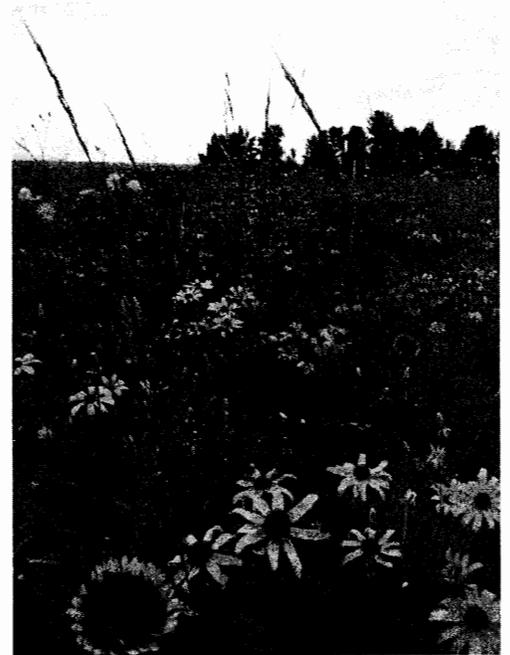
Park Site	Completed Restorations (Acres)	Prairie Enhancements (Acres)
Cross Ranch	10	8
Devils Lake	220	210
Ft. Abraham Lincoln	1	0
Ft. Ransom	90	90
Ft. Stevenson	50	50
Icelandic	20	20
Lake Sakakawea	10	10
Turtle River	8	8
Totals	409	396

With limited funding, small prairie restoration and enhancements have taken place over the past 10 years within parklands. With supplemental funding the Department hopes to increase restoration acres on parklands, preserves and natural areas. *What is new for this project is the ability to provide technical advice and funding support for prairie restoration and enhancements to owners of preserves, natural areas and Registered Natural Area sites.*

The prairie restoration and enhancement strategies and best management practices will include the use of a variety of practices including fire, haying, grazing, tillage, herbicides, and seeding and planting of native grasses and forbs.

Tasks:

- a) Identify and map potential sites utilizing existing natural heritage data, Registered Natural Areas site summaries and existing natural resource plans and assessments.
- b) Develop/update Prairie Restoration Plans
- c) Site preparation as weed control prior to planting is critical. Depending on effectiveness of each application, it may require 1-2 years of weed control to adequately reduce the competition.
- d) Select seed mix and sources. Native seed mix selection will be based on individual site characteristics. Only high diversity native seed that represents the typical native grassland community will be selected. Local native seed sources will be a priority.
- e) Establishment and seeding will be accomplished through broadcasting/drill seeding according to the full seeding rate. Specific seeding strategies are addressed in each restoration plan.
- f) Post-seeding weed control is an important part of successful prairie reestablishment. Mechanical and chemical methods will be used.
- g) Monitoring and collecting data will be necessary to follow long-term changes. Monitoring will be conducted during the first three growing seasons and again at years 5 and 10.
- h) Record keeping and maintaining a written record of observations and management activities is important in order for future management to be informed by the past – avoid repeating mistakes, evaluating effects of management, plan future management actions.
- i) Budget record keeping will be maintained throughout the restoration process and is compiled in the restoration plans.





Woodlands – Tree and Shrub Plantings Strategies and Best Management

Practices: A multi-site, long term, collaborative project with a specific goal to increase woodland and tree row habitat acres and biodiversity on parklands, preserves and natural areas. The project purpose is to create and maintain a mosaic of woodland habitats through the planting of a diverse selection of native trees and shrubs. The diverse plantings of trees and shrubs will provide food, living space, and cover for a variety of wildlife species. Woody plantings will provide nesting

habitats for many songbirds. Additionally, planting trees and shrubs will help improve the biodiversity of the area, aesthetics of the area which in turn will provide visitors and landowners with enhanced outdoor recreational experiences.

Tree and shrub plantings have been a primary focus since parks were established. With limited funding over the years, the majority of the plantings were specifically designed as windbreaks, visual buffers or barriers, shade trees within parkland use areas. With supplemental funding the Department can increase trees and shrubs planting and woodland habitats acres on natural areas, preserves and parks such as but not limited to Lewis and Clark, Sully Creek, Fort Stevenson, Fort Lincoln, and Lake Sakakawea State Parks. In 2015, the Department will be celebrating 50 years and will be commemorating this occasion with special events. One event that is scheduled is the planting of 550 containerized trees and shrubs as a community planting event in 11 state parks. Volunteers and park visitors will be integral to the success of this event. Potential funding partners for these tree and shrub plantings projects are ND Forest Service and the Arbor Day Foundation. *The commemorative plantings and creation of woodland habitats is something new to the Department's tree and shrub planting program as the priority is to benefit wildlife which in turn will enhance visitor's outdoor experiences in parks and natural areas.*

The woodland creation and tree and shrub plantings strategies and best management practices will include the use of a variety of practices ranging from site preparation, planting and monitoring.

Tasks:

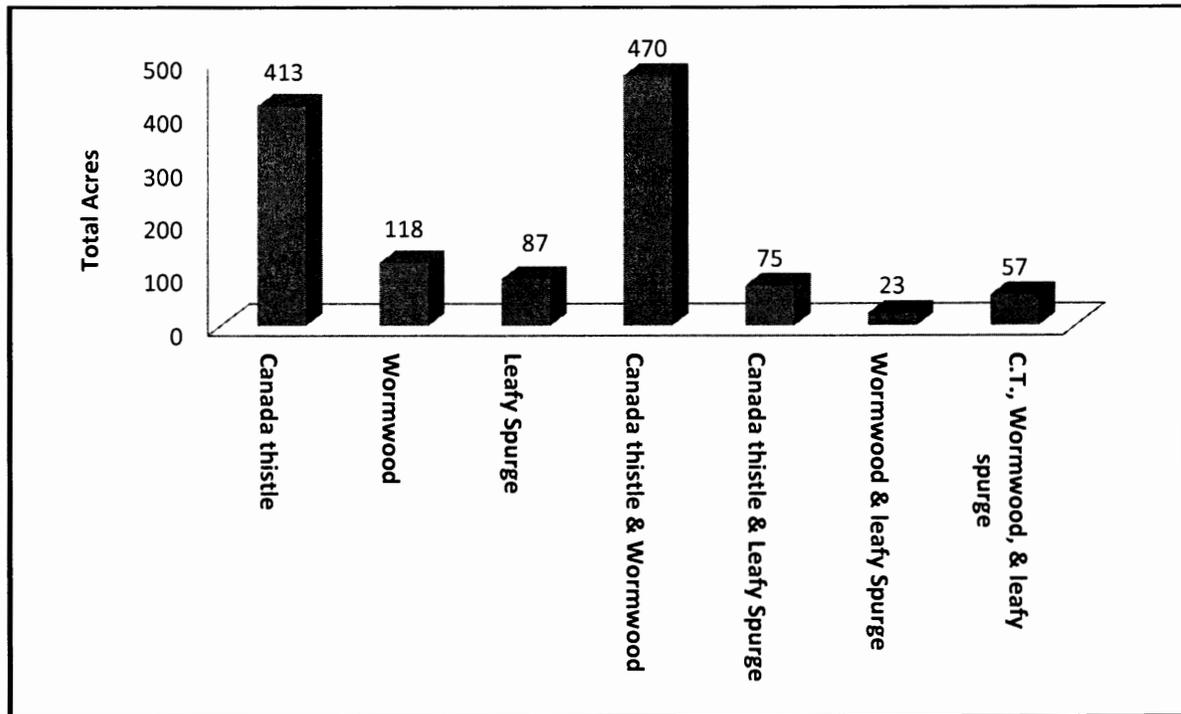
- a) Identify and map potential tree planting sites utilizing resources such as natural areas site summaries and existing natural resource plans and assessments. Several of the plantings on parklands will also serve as a commemoratives event for our state parks 50th anniversary in 2015, so the timing couldn't be better.

- b) Develop Tree planting site plan. GPS/GIS, *SmartDraw Landscape Design software* or *AutoCad* will be used to design and layout each woodland planting site. These designs will not only guide the planting process but will aid in the site monitoring and replacement process.
- c) Site preparation will be used to create favorable growing conditions where needed. Site preparation will vary from site to site and may include plowing, disking, mowing, burning, and herbicide application.
- d) Select and order appropriate native trees and shrubs including bare root and containerized stock.
- e) Planting stock according to NDFS and NRCS standards and guidelines. In order to pass on our enthusiasm for the environment we will entice the local schools, boy and girls scouts, park visitors and natural area landowners to lend a hand in the planting process.
- f) Manage weeds in planting sites. Sites will also be mulched or will have fabric installed.
- g) Annual tree assessments will be conducted and replacement stock order when necessary.

Noxious Weed and Invasive Species Control Strategies and Best Management Practices: A multi-site, long term, collaborative project with specific goals to control noxious weeds as required by state law; reduce nonnative invasive plants; continue the implementation an integrated pest management system to reduce the use of chemical controls. The noxious weeds of primary concern include leafy spurge, Canada thistle, and wormwood. To date, all noxious weeds within major parks have been inventoried and mapped.

Noxious weed control and eradication is not new to the Department. Limited funding and staff has allowed for the treatment of weeds within parklands only. *What is new to the Department's noxious weed control program is the desire for outreach to preserve, natural areas and Registered Natural Area owner's in the form of cooperative stewardship assistance. In addition, with supplemental funding the Department will also be able to inventory, map and more*

Table 2 Acres of Noxious Weeds by Species on Parklands 2012 Data



effectively control noxious weeds on areas outside of parklands including recreational and natural areas. North Dakota Department of Agriculture and been a strong funding partner in the past that has allowed the Department to reach annual goals and objectives.

The noxious weed and invasive species control strategies and best management practices will include the use of a variety of practices ranging from inventory, mapping, implementing integrated biological, chemical and mechanical controls, reporting and monitoring.

Tasks:

- a) Locate and map all noxious weeds utilizing Trimble GPS units and GIS ArcMap software. Generation of weed infestation maps by density and recommended chemical.
- b) Treat all noxious weeds with appropriate control methods.
- c) Follow standard reporting protocol as determined by ND Department of Agriculture.
- d) Monitor and assess sites to determine control effectiveness.
- e) Produce annual noxious weed control analysis report.

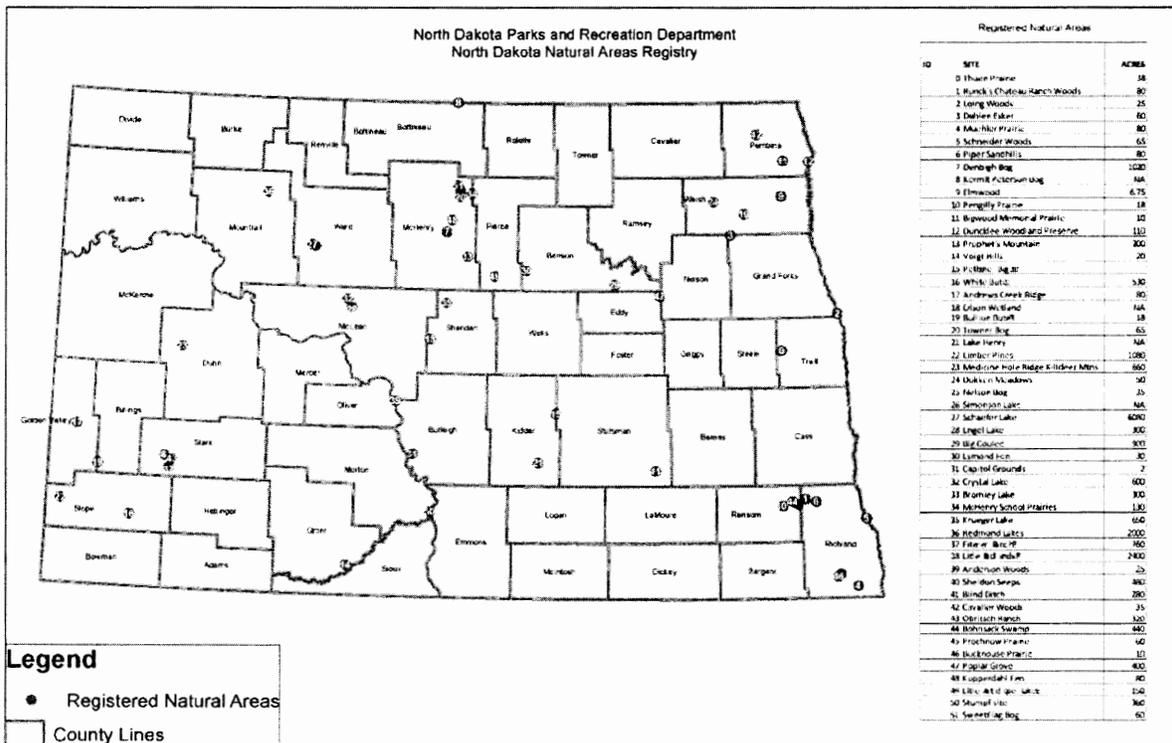
NORTH DAKOTA NATURAL *Areas Registry*

PROTECT A PART OF OUR
NATURAL HERITAGE.

Natural Areas Registry A cooperative program with the *ND Geological Survey*. The Natural Areas Registry Program is citizen-based conservation program that currently has 54 landowners involved in voluntary protection of their significant natural areas.

This project is a multi-site, long term, collaborative project with a specific goal to encourage conservation of important natural lands in private and public ownership. The Natural Areas Registry is a conservation option available to landowners of highly significant natural areas. Dedication is the placement of natural areas, both privately and

publically owned into North Dakota Natural Areas Registry, administered the Department. The landowner retains ownership and transfer rights of the land while voluntarily protecting the land through good stewardship and conservation practices. Registration of natural areas proves no right of public access to a private property.



Although the Natural Areas Registry Program has been around for 30 years a limiting factor of this program has been the lack of staff and funding to take the next step after formal registration and in the identification of potentially new registration. The proposed new goals and objectives will set the stage for strengthening a North Dakota tradition of citizen based conservation. *Increasing outreach, providing natural resource stewardship plans and supplemental funding through cooperative agreements is new for this 30 year program. Additional funding is being sought for one seasonal biological technician and natural resource stewardship dollars for weed control, prairie restoration enhancement and woodland creations.*

To be eligible, a property much include one or more of the natural values:

1. Habitat for state plant or animals species of concern or conservation priority, threatened or endangered plant or animal species;
2. State significant natural communities;
3. Significant paleontological sites;
4. And rare or state significant geological sites.

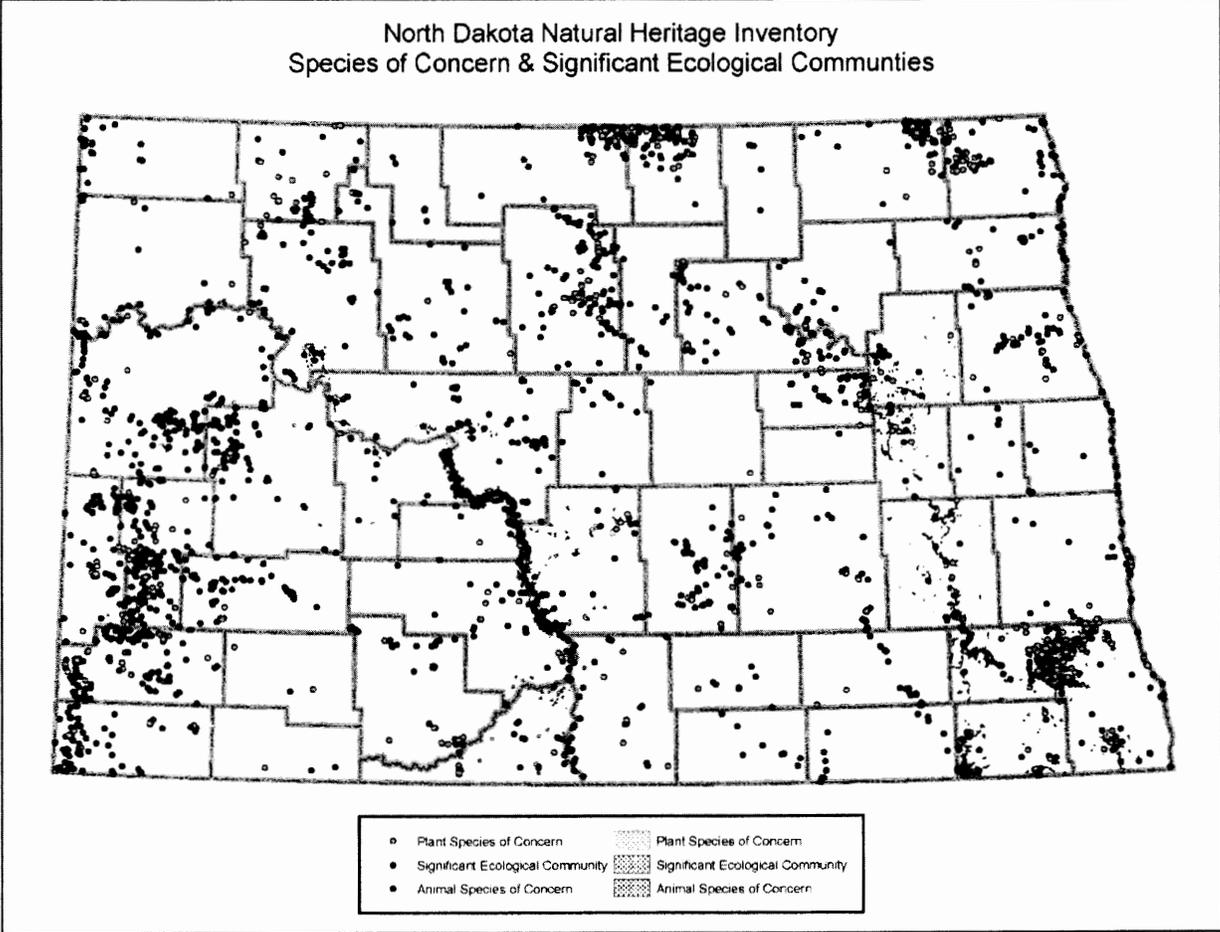
Through the Natural Areas Registry, a landowner is rewarded with the pride of contributing to a statewide conservation effort. Dedication provides the landowner with the satisfaction of preserving an area of beauty for the enjoyment of future generations. The landowner may also receive management advice and if this grant is funded monetary supplemental support for prairie restoration and enhancement, woodland creations or noxious and invasive species control within the boundaries of the registered natural area.

After registration, the landowner may be asked permission for a Registry representative or Department staff to visit the natural area to monitor the status of the habitats, species of concern or paleontological resources.

Tasks:

- a) Contact all Registered Natural Areas owners to set up site visits.
- b) Inventory and asses existing natural areas.
- c) Enter and update natural heritage data in Biotics.
- d) Inventory potential registry sites.
- e) Formally register new natural areas.
- f) Update Registered Natural Area information on the Departments web page.
- g) Create and distribute "North Dakota Steward" newsletter.
- h) Develop assessment field report/natural resource stewardship plan.
- i) Develop cooperative agreements as necessary.

Natural Heritage Inventory - A cooperative program with NatureServe, a non-profit conservation organization whose mission is to provide the scientific basis for effective conservation action. The North Dakota Natural Heritage Program identifies the state's most significant natural areas through a comprehensive inventory of rare plant and animal species, exemplary natural communities, special geological features, and significant natural areas. From the inventory, the Natural Heritage Database compiles information on the distribution, biology, status, and preservation needs of these species and communities. Annually, hundreds of state, federal and private partners and consultants request or receive Natural Heritage data in the form of maps, spreadsheets and GIS layers.



Established in 1980, The Natural Heritage Inventory is part of an international network including State Natural Heritage Programs and Canadian Conservation Data Centers, all building on the same data collection methodology. The biological conservation database (Biotics 4) is updated continuously and is used to set state, national and global priorities for the preservation of natural diversity. Limited funding and staff has greatly hampered efforts to keep up with data entry and in inventory and monitoring incentives outside of other funded projects.

The Natural Heritage Inventory has been supported through the years through grants from The Nature Conservancy, EPA, ND Game and Fish and NatureServe. *What new for the Natural Heritage*

Inventory is the increase in staff time and duration to allow for increased data entry, updating and mapping of new and existing records. In addition, the biological conservation database will be upgraded to a NatureServe web-based program which will require a substantial annual maintenance and support fee.

Tasks:

- a) Conduct a comprehensive inventory of North Dakota's ecological resources in order to provide a continuous process for identifying significant natural areas and setting land protection priorities in the state.
- b) Verify the continued existence of a reported occurrence of a rare plant, animal, or community type (an "element")
- c) Enter, update and map new and existing plant, animal and ecological community records into Biotics biological conservation database.
- d) Conduct environmental reviews incorporating natural heritage database into land management decisions. Continue to provide data to state, federal and private partners.
- e) Upgrade biological conservation database Biotics4 to Biotics5.
- f) Quality control biological conservation database.

Benefits

Native Prairie Restoration Benefits

- Maintains a diversity of plants and animals
- Protects ecosystems and ecological communities
- Improves water quality and reduces erosion
- Promotes beautiful, natural landscapes
- Creates healthier, sustainable land uses
- Promotes education about the natural heritage and a desire to protect and restore the earth's natural resources

Woodland Creations and Tree and Shrub Planting Benefits

- The diverse plantings of trees and shrubs will provide food, living space, and cover for a variety of wildlife species. Woody plantings will provide nesting habitats for many songbirds.
- Planting trees and shrubs will help improve the biodiversity of the area, aesthetics of the park which in turn will provide park visitors with enhanced outdoor recreational experiences.
- Trees offer many environmental benefits from reduce soil erosion and water runoff, which reduces erosion and pollution in our waterways, they also improve our air quality.
- Trees planted in 2015 on parklands will commemorate the Department 50th Anniversary.
- Trees may be placed as visual and sound buffers and barriers within parklands.

- Diverse tree and shrub plantings enhance recreational and education opportunities.

Noxious Weed and Invasive Species Control Benefits

- Reduces the spread of noxious weeds across North Dakota and beyond.
- Improves overall plant diversity which benefits wildlife and entire ecosystems.
- Decreases production loss on both public and private rangeland and hayland.

Natural Heritage Inventory Benefits

- Upgrade of the most comprehensive and leading source of information on the precise locations and conditions of species of concern significant ecosystems.
- Consistent standards for collecting and managing data allow information from different programs to be shared and combined regionally, nationally, and internationally.
- Access to a network of experts in their fields, including some of the most knowledgeable field biologists and conservation planners.
- Access to a sophisticated database that tracks the relative rarity of each species or community and the precise location and status of each known population.
- Representation of more than three decades of continuous ecological inventory and database development, which represents the most complete and up-to-date conservation databases available.
- Information compiled is a powerful conservation tool for planners, landowners, natural area managers, and others.
- Natural heritage data is used to identify the most important natural areas and to set conservation priorities. Local governments use the information to aid in land-use planning.
- Developers and businesses rely on natural heritage data to comply with environmental laws and to improve the environmental sensitivity of development projects.
- Public agencies use it to manage public lands better and help guide natural resource decisions.

Natural Registry Program Benefits

- Preserves and protects the ecological diversity of North Dakota's natural heritage through a tradition of citizen based conservation.
- Registration effectively encourages conservation of important natural lands in private and public ownership.
- Landowner is rewarded with the pride of contributing to a statewide conservation effort.
- Dedication provides the landowner with satisfaction of preserving an area of beauty for the enjoyment of future generations.
- Landowner may receive management advice and financial assistance.
- Landowner will periodically receive Department Natural Areas Registry newsletter "North Dakota Steward".

Timetable:

	Task	Output	2014	2015	2016	2017	2018
Objective 1	Increase and Enhance Native Prairie Restoration Acres						
Task a)	Identify and map restoration and enhancement sites.	GIS map for each site					
Task b)	Develop/update Prairie Restoration Plans	Restoration Plan for each site					
Task c)	Site Preparation	Prepared site documented by photo(s) Updated plan.					
Task d)	Select seed mix and source.	Seed mix order. Updated					
Task e)	Establishment & seeding	Seeded site documented by photo(s). Updated plan.					
Task f)	Post-seeding weed control	Pesticide records. Updated plan.					
Task g)	Monitoring – see below Obj. 2	Monitoring forms. Updated plan.					
Task h)	Record all maintenance and management activities.	Update plan annually.					
Task i)	Budget record keeping	Tracked expenses and time. Updated plan.					
Objective 2	Increase the % species composition of native grasses and forbs with in prairie restorations						
Task g)	Conduct monitoring during first 3 growing years then again at 5 and 10 years.	Monitoring forms. Field season summaries. Updated plans.					
Objective 3	Increase woodland habitat and tree and shrub planting acres						
Task a)	Identify and map potential sites	GIS map for each site.					
Task b)	Develop tree planting plan with designs.	Tree planting plan.					
Task c)	Site Preparation	Prepared site documented by photo(s) Updated plan.					
Task d)	Select and order tree and	Tree order. Updated plan.					
Task e)	Plant tree and shrub stock.	Planted site documented by photo(s). Updated plan					
Task f)	Weed control. Chemical, mechanical means, Installation of fabric or application of mulch.	Weeds controlled within panting. Documented by photo(s). Updated plan.					
Task g)	Tree health assessment	Completed tree assessment form. Tree survival numbers and re-re-plant numbers. Updated plan.					

	Task	Output	2014	2015	2016	2017	2018
Objective 4	Increase acres of GPS/GIS mapping of noxious weeds infestations						
Task a)	Continue to Identify and map noxious weed infestations.	GIS map for each site to include density and recommended					
Objective 5	Treat noxious weeds. Conduct annual weed control analysis.						
Task a)	Treat weed infestations. Follow standard reporting protocol.	Treated vs. non-treated maps. Completed pesticide application records.					
Task b)	Monitor and assess select infestation sites to determine control effectiveness. Follow standard protocol	Completed noxious weed monitoring assessment form.					
Task c)	Complete annual noxious weed control analysis	Annual Noxious Weed Control Analysis report.					
Objective 6	Expand and enhance Registered Natural Area Program						
Task a)	Contact all Registered Natural Lands Owners with letters, phone, and emails and set up site visits.	Contact summary for each site.					
Task b)	Inventory and assess existing areas.	Field survey forms.					
Task c)	Enter and update natural heritage data in Biotics	Eco monitoring summaries for each site					
Task d)	Inventory potential registry sites upon landowner request	Field survey forms.					
Task e)	Formally register new natural areas.	Ceremony and plaque.					
Task f)	Create and distribute biannual North Dakota Steward newsletter	North Dakota Stewardship Newsletter					
Task g)	Update Registered Natural Area information on web site	Updated web page http://www.parkrec.nd.gov/nature/heritage.html					

Objective 7	Develop natural resource stewardship plan for Registered Natural Areas						
Task h)	Natural Areas Assessment report/stewardship plans	Assessment reports/natural resource stewardship					
Objective 8	Develop natural resource stewardship cooperative agreements						
Task i)	Develop cooperative agreements to assist with weed control, tree plantings, or prairie restoration and enhancements.	Cooperative agreements					
Objective 9	Expand inventory, map, monitor, species of concern, which include NDGFD Species of Conservation Priority and						
Task a)	Conduct inventories, map species, and communities on parklands, and natural areas.	Field forms and GIS maps.					
Task b)	Re-locate existing natural heritage elements (plants, animals & ecological communities)	Field forms and GIS Maps					
Objective 10	Maintain and update the existing Biotics biological conservation database.						
Task c)	Enter, update and map new records into Biotics - biological conservation database.	Data records, spreadsheets and maps.					
Task d)	Conduct environmental reviews	Review letter, maps and spreadsheets					
Task e)	Upgrade Biotics4 biological conservation database to Biotics 5 – a web based database.	Biotics 5 Web based database.					
Task f)	Quality control Biotics biological conservation database.	Integrity check and quality control reports.					

Management of Project

The Department's Natural Resource Division manager and coordinator take any natural resource project from concept to reality. From deciding to plant a tree row or woodland habitats, to large landscape level land registry of natural areas, to implementing an effective and efficient noxious weed control program, to converting non-native grasslands to native prairies, they make natural resource stewardship a reality. The Department's natural resource team works with federal, state, local and private partners determine the goals and objectives of each project, then builds the appropriate solution from the ground up.

The natural resource project planning protocols include the following elements:

1. *Conceptualization* - working with the land managers to identify goals to conceptualize a sustainable solution.
 2. *Design* - with the concept in hand, they design the project based on the land manager's needs, the composition of the resource in question, and how it all fits into the larger landscape.
 3. *Development* - they use not only in-house expertise but look to state, federal and private agencies and organizations for expertise to add value to the project and prepare it for implementation.
 4. *Implementation* - with the concept and design phases complete, they work to implement the project in the most environmentally and economically fashion possible.
 5. *Administration* - natural resource projects have a lot of people and tasks being accomplished behind the scenes. These can include writing grant reports, budget summaries, coding costs, and keeping up to date on the latest training requirements.
- **Jesse Hanson – Manager - FTE**
ND Parks and Recreation Department – Planning and Natural Resource Division

Jesse has been with the Department for over 39 years with work experience in the areas of park and natural resource management, and with the last 21 years in park planning and development. Jesse will oversee entire project with the Coordinator providing regular updates. Jesse approves project budgets and expenses and conduct performance evaluations on project coordinator.

- **Kathy Duttenhefner - Coordinator/Biologist - FTE**
ND Parks and Recreation Department – Natural Resource Division/Natural Heritage Inventory/Nature Preserves and Registered Natural Areas Programs

Kathy has been with the Department for over 25 years with work experience in the areas natural resource education and outreach, and natural resource inventory, monitoring and management. Kathy will serve as both the project administrator and task content manager. She will supervise

two FTE employees, a biologist and GIS Technician and part-time seasonal employees including data managers and biological technicians who will be completing associated tasks. Kathy will serve as the contact with state, federal, and private landowners and managers. Kathy will take the lead on overall project administration, work plans, drafting cooperative agreements, hiring and training of seasonal staff, budget and annual reporting requirements, performance and project evaluations. Specifically, Kathy will lead in tree and shrub planting projects, Registered Natural Area tasks and writing and reviewing restoration, noxious weed and tree planting plans, and natural resource assessments and stewardship plans.

- **Chris Dirk** – *GIS Technician/Data Manager - FTE*
ND Parks and Recreation Department – Natural Resource Division

Chris Dirk has been with the Department working as a data manager and GIS Technician for 16 years. Chris's role will be in the development of any GIS spatial layers and products. Chris will work closely with Department botanist and biological technician/ecologist on several tasks including data entry, quality and integrity control checks, environmental reviews, noxious weed, prairie restoration, tree planting project maps and GIS and GPS training.

- **Justin Parks** – *Biologist/Botanist - FTE*
ND Parks and Recreation Department – Natural Resource Division

Justin has spent the last 9 years as a biologist with the Department. Justin's role with the project will be in providing technical assistance in areas on native prairie restoration, noxious weed control, Natural Heritage Inventory projects, monitoring and data management. Justin will work closely with land managers in the field. The role will also involve the compiling of field data and writing natural areas assessment reports/natural resource stewardship plans.

- **Krystal Leidholm** – *Data Manager– PTE*
ND Parks and Recreation Department – Natural Resource Division

Krystal has been working part time with the Department as a biological technical mapping noxious weed and entering and mapping natural heritage data. Krystal's role in the project will be in the data management of species of concern, and ecological communities including updating existing records, entering and mapping of new data in to Biotics biological conservation database.

- **2-Biological Technicians** – Seasonal Employees

The biological technician's primary role is in noxious weed control and tree and shrub planting and maintenance. Technicians are typically work on parklands and natural areas from May - September. Additional funding will allow us to extend their seasonal work by at least two months.

- **1-Biological Technician** – Seasonal Employee- (new seasonal)

One biological technician primary role will be as the field contact with private landowners within and new to the Registered Natural Area Program. The role will be visiting with landowners, conducting site visits, assessing natural resources and assisting with noxious weed control, prairie restoration and tree planting efforts.

- **State Park Field staff** (managers, rangers and maintenance staff)

Park staff will assist with the tree and shrub plantings as well as regular maintenance of the plantings, noxious weed control and prairie restoration maintenance. State Park managers will also work with department public relations staff in setting up 50th anniversary commemorative tree planting event.

- **Registered Natural Areas** (landowners)

Natural areas landowners play an integral role is getting the best management practices on the ground. With technical and financial assistance landowners will be able to create and enhance prairie and woodlands, and more efficiently and effectively control noxious weed and invasive species.

Monitoring and Evaluation

Monitoring and Evaluation is an essential tool for managing natural resources. It is used for accountability, decision making and program improvement and involves looking at the appropriateness, efficiency and effectiveness of a program. Monitoring and evaluation can identify where a program is heading, how it will get there, whether it is heading in the right direction and whether it is using resources in the most cost effective manner. Over the years the Department has developed monitoring and evaluation protocol for prairie restoration, noxious weed control, tree and shrub plantings, and natural heritage elements.

Prairie Restoration Monitoring & Evaluation

Native Prairie Restoration Monitoring and Evaluation Goals: Determine the status of the condition of native prairie restoration to allow managers to make better-informed decisions regarding corrective measures needed to alleviate problems and/or improve the quality of the site. Standard: First 3 years, then every 5 years.

1. Field Survey and Assessment – General Survey the surveyor walks one or more times through the restoration site and around the perimeter of the area.
 - a. Routine observations of existing vegetation are essential in determining the success of the site and in identifying specific existing problems. Identify noxious weeds and/invasive species.
 - b. Identify aggressive native grass and forbs.
 - c. Complete Prairie Restoration Monitoring Form.

- b. Floristic composition – list of all plants.
 - c. GPS prairie monitoring quadrat locations.
 - d. Map native prairie monitoring unit utilizing GPS Trimble unit.
 - e. Establish photographic monitoring location – photo point record data. GPS point.
2. Data Management
- a. Submit brief prairie restoration monitoring status report to coordinator by December 15.
 - b. Report findings.
 - c. Copy of report distributed to land manager.
 - d. Update restoration plan.

Tree Planting Monitoring and Evaluation

Tree Planting Monitoring and Evaluation Goals: Monitor new tree and shrub plantings and take corrective action as needed. Standard: First 5 years. Maintain a 75% survivability rate.

Once trees and shrubs are planted, it is important to annually monitor their survival rate. This gives the Department an indication of the health and vigor of the planting, if replacement tree and shrubs are needed or if additional protection and weed control actions are needed.

Noxious Weed Control Monitoring and Evaluation

Noxious weed Control Monitoring and Evaluation Goals: To accurately identify, delineate and assess parklands, preserves and natural areas with populations of noxious or invasive species. Standard: Specific sites monitored every 2 years.

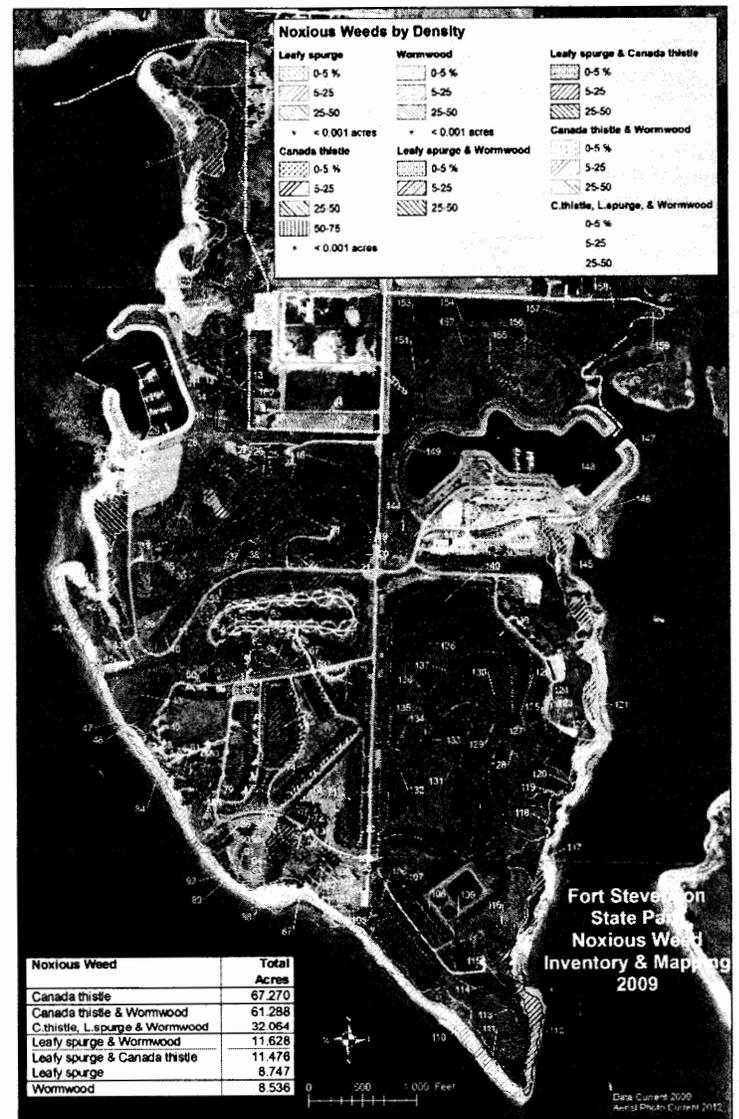
1. Field Inventory and Mapping – Noxious weeds to be surveyed and mapped include:
 - a) Absinth wormwood (*Artemisia absinthium*)
 - b) Canada thistle (*Cirsium arvense*)
 - c) Diffuse knapweed (*Centaurea diffusa*)
 - d) Leafy spurge (*Euphorbia esula*)
 - e) Musk thistle (*Carduus nutans*)
 - f) Purple loosestrife (*Lythrum salicaria*)
 - g) Russian knapweed (*Centaurea repens*)
 - h) Spotted knapweed (*Centaurea maculosa*)
 - i) Yellow starthistle (*Centaurea solstitialis*)
 - j) Dalmatian toadflax (*Linaria dalmatica*)
 - k) Salt cedar (*Tamarix ramosissima*)
2. Survey Type: Floristic Survey - Examining a specific area for noxious weed utilizing established transect routes. Survey will focus on species identification, population numbers and densities.

3. Record Data - Verify the identification of the noxious weed. Complete all forms required.
4. Map Infestations - GPS all noxious weed infestations as a point or polygon, as previously defined.
5. Data Management (Post Field Data Analysis), Review data for accuracy and completeness.
6. Incorporate all data into Noxious Weed Control Comparative Analysis
7. Generation Noxious weed Infestation GIS mapping product by density and recommended control

Noxious Weed Inventory & Mapping Evaluation

Noxious Weed Inventory and Mapping Goals: Accurately identify, delineate and assess parklands, preserves and natural areas with populations of noxious or invasive species. Standard: Inventory and mapping every 5 years

1. Field Inventory and Mapping – Noxious weeds to be surveyed and mapped include:
 - a) Absinth wormwood
 - b) Canada thistle
 - c) Diffuse knapweed
 - d) Leafy spurge
 - e) Musk thistle
 - f) Purple loosestrife
 - g) Russian knapweed
 - h) Spotted knapweed
 - i) Yellow starthistle
 - j) Dalmatian toadflax
 - k) Salt cedar
2. Survey Type: Floristic Survey - Examining a specific area for noxious weed utilizing established transect routes. Survey will focus on species identification, population numbers and densities.



3. Record Data - Verify the identification of the noxious weed. Complete all forms required. Document all noxious weeds and non-native species entering species name and notation on *noxious weed survey field form*. Complete *species level of impact form* after area is surveyed.
4. Map Infestations - GPS all noxious weed infestations as a point or polygon, as previously defined. Produce GIS maps.
5. Data Management (Post Field Data Analysis), Review data for accuracy and completeness.
6. Incorporate all data into Noxious Weed Control Comparative Analysis

Registered Natural Area Monitoring and Evaluation

Ecological monitoring within natural areas is an essential element in any natural resource management activity. The information that is gained through monitoring allows for the focusing of management activities on the areas of greatest need, and provides a method for evaluating the success of restoration and conservation projects. Standard: Site visit every 3-5 years with annual correspondence through telephone, email or newsletters.

Monitoring in the natural areas will be conducted for two general purposes: (1) to track changes to the populations and distributions of special-status species; and (2) to assess the effectiveness of active restoration and conservation efforts. By evaluating the effectiveness of stewardship activities over time, the monitoring plan will contribute to an adaptive management program that will enhance the long-term status of indigenous biodiversity elements.

Natural Heritage Inventory: Plant and Animal Species of Concern Monitoring and Evaluation

Plant Species of Concerns and Significant Ecological Communities Monitoring and Evaluation Goals: Conduct monitoring to assess growth trends as well as determine population threats. Monitoring is essential component in the conservation of North Dakota's species of concern. Standard: Species monitoring every 4 years

- 1) Field Survey– Survey is conducted on suitable habitat areas within the project along with traversing through the area and its perimeter. Ideally, survey suitable species habitat twice during the growing season.
- 2) Data management - Biotics Biological Conservation Database
 - e. Report findings.
 - a) Transcribe, map and enter data in to database. Revising EO record.
 - b) Provide summary of findings with revised EO record, location information photo, and map of each species monitored.

- c) Revise Plant Species of Concern Monitoring Calendar

Financial Information - Project Budget – Attached

✘ I certify that a project budget will be sent to the Commission

Sustainability

Sustainability for this project will be through Department natural resource funding, currently at \$71,000/year and continued aggressive grant writing and partnership developments. The Natural Resource Program will continue to achieve goals and objectives through limited Department funding and state, federal and private partnerships.

The Program has a long history of successful partnerships with state, federal and private agencies and organizations and will continue to develop and strengthen these partnerships. Partnership projects in the past have been funded prairie restorations tree plantings, streambank enhancements, streambank restoration and stabilizations, natural heritage database development and upgrades, education outreach, inventory and monitoring, noxious weed and pest control and training.

The majority of these Department natural resource funds are used to employ seasonal biological technicians with grants making it possible for the purchase of seed, tree stock, chemical and database upgrades. Grant funding sources vary widely from year and year but securing supplemental grant funding will always be a priority. When funds are limited restoration and plantings are decreased but inventory, monitoring, and assessments always remain in work plans. Sustainability of the Natural Resource Program will be in the form of Department grant writing and partnership developments and existing natural resource budget.

Partial Funding

If the Natural Resource Stewardship in North Dakota Parks, Preserve and Natural Areas is partially funded we would respectfully request that the length of the project in years be decreased. A budget breakdown by objectives and years has been included.

Project Budget Summary: Natural Resource Stewardship in North Dakota's Parks, Preserves and Natural Areas						
	OHF Request	Applicant's Match Share (Cash)	Applicant's Match Share (In-Kind)	Applicant's Match Share (Indirect)	Other Project Sponsor's Share	Totals
Salary FTE ¹	\$ -	\$ -	\$ -	\$ 130,743.10	\$ 2,400.00	\$ 133,143.10
Contracted Labor ²	\$ 25,065.40	\$ -	\$ -	\$ -	\$ -	\$ 25,065.40
Other Labor (Biological Technicians) ²	\$ 71,233.30	\$ -	\$ 130,000.00	\$ -	\$ -	\$ 201,233.30
Supplies ³⁻⁸	\$ 163,045.00	\$ 50,000.00	\$ -	\$ -	\$ 13,500.00	\$ 226,545.00
Other- Biotics ⁹	\$ 15,000.00	\$ 30,000.00			\$ 15,000.00	\$ 60,000.00
Subtotals	\$ 274,343.70	\$ 80,000.00	\$ 130,000.00	\$ 130,743.10	\$ 30,900.00	\$ 645,986.80

¹ ND Parks and Recreation majority of the work is conducted by FTE Department employees in-direct rate used \$15/hour

² 2013 USDA-NRCS-ND Cost Data-Tables used these table for site prep, seed planting, noxious weed control, tree planting and protection hiring of 3 seasonal biological technicians @ \$15.00/hour

³ Most recent native seed mix low bid came from either Agassiz Seed and Supply of Chesak Seed House

⁴ Majority of bare root stock comes from Lincoln Oakes Nursery or local Soil Conservation District. Containerized stock with Cashmen Nursery getting low bids the last couple years.

⁵ Dewitt Landscaping Fabric - there are several sources for fabric this is the company that was low bid in most recent Department purchase

⁶ Z's Trees Dakota Mulch - Several of the parks have access to free mulch but that is not the case state-wide Z-Tree provided mulching service for Grahams Island State Park in 2012

⁷ Deer Busters.com often came in with the low bid for deer fence

⁸ Majority of chemical purchased comes from Crop Production Services or Agriliance

⁹ Nature Maintenance Fee for Biotics Upgrade to Web Based Database Annual fee \$15,000

Sponsors and Partners

ND Forest Service \$ 12,400.00 (grant award pending)

Arbor Day Foundation \$ 3,500.00 (grant award pending)

NatureServe \$ 15,000.00

Detailed Budget By Objective and Year : Natural Resource Stewardship in North Dakota's Parks, Preserves and Natural Areas						
	2014	2015	2016	2017	2018	Total Costs
Objective 1 and 2: Increase and Enhance Native Prairie Restoration Acres on Parklands, Preserves and Natural Areas						
Salary FTE ¹	\$ 2,905.00	\$ 3,070.00	\$ 3,595.00	\$ 3,880.00	\$ 4,270.00	\$ 17,720.00
Contracted Labor ²	\$ 794.00	\$ 1,985.00	\$ -	\$ -	\$ -	\$ 2,779.00
Other Labor (Biological Technician) ²	\$ 354.00	\$ 885.00	\$ 2,027.50	\$ 2,027.50	\$ 2,014.00	\$ 7,308.00
Supplies (native seed) ³	\$ 15,000.00	\$ 37,500.00	\$ 3,000.00	\$ 3,000.00	\$ 6,000.00	\$ 64,500.00
Subtotals	\$ 19,053.00	\$ 43,440.00	\$ 8,622.50	\$ 8,907.50	\$ 12,284.00	\$ 92,307.00
Objective 3: Increase Woodland Habitat and Tree and Shrub Plantings Acres in Parklands, Preserves and Natural Areas						
Salary FTE ¹	\$ 6,425.00	\$ 2,018.10	\$ 2,205.00	\$ 2,430.00	\$ 2,505.00	\$ 15,583.10
Contracted Labor ²	\$ -	\$ -	\$ 4,500.00	\$ 14,843.20	\$ 443.20	\$ 19,786.40
Other Labor (Biological Technician) ²	\$ -	\$ 623.10	\$ 777.00	\$ 1,643.20	\$ 18,554.00	\$ 21,597.30
Supplies (tree stock, fabric, mulch) ^{4 5 6 7}		\$ 65,400.00	\$ 16,465.00	\$ 25,680.00	\$ 29,500.00	\$ 137,045.00
Subtotals	\$ 6,425.00	\$ 68,041.20	\$ 23,947.00	\$ 44,596.40	\$ 51,002.20	\$ 194,011.80
Objectives 4-5: Inventory, Map, Treat and Monitor Noxious Weeds and Invasive Species						
Salary FTE ¹	\$ 2,460.00	\$ 2,460.00	\$ 2,610.00	\$ 2,760.00	\$ 3,060.00	\$ 13,350.00
Contracted Labor ²	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 2,500.00
Other Labor (Biological Technician) ²	\$ 19,324.00	\$ 19,324.00	\$ 20,740.00	\$ 20,740.00	\$ 26,050.00	\$ 106,178.00
Supplies (Chemical) ⁸	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 25,000.00
Subtotals	\$ 27,284.00	\$ 27,284.00	\$ 28,850.00	\$ 29,000.00	\$ 34,610.00	\$ 147,028.00
Objectives 6-8: Expand and Enhance Registered Natural Area Program* stewardship addressed in Objective 1-5						
Salary FTE ¹	\$ 4,170.00	\$ 5,910.00	\$ 6,150.00	\$ 6,150.00	\$ 17,610.00	\$ 39,990.00
Contracted Labor ²	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Labor (Biological Technician) ²	\$ 6,030.00	\$ 6,030.00	\$ 6,030.00	\$ 6,030.00	\$ 6,030.00	\$ 30,150.00
Subtotals	\$ 10,200.00	\$ 11,940.00	\$ 12,180.00	\$ 12,180.00	\$ 23,640.00	\$ 70,140.00
Objectives 9-10: Expand and Enhance Natural Heritage Inventory Program- Inventory, Mapping, Monitoring, and Data Management						
Salary FTE ¹	\$ 9,300.00	\$ 9,300.00	\$ 9,300.00	\$ 9,300.00	\$ 9,300.00	\$ 46,500.00
Contracted Labor ²	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Labor (Biological Technician) ²	\$ 7,200.00	\$ 7,200.00	\$ 7,200.00	\$ 7,200.00	\$ 7,200.00	\$ 36,000.00
Biotics Software Web Access Contract Fee ⁹		\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 60,000.00
Subtotals	\$ 16,500.00	\$ 31,500.00	\$ 31,500.00	\$ 31,500.00	\$ 31,500.00	\$ 142,500.00
Total By Year	\$ 79,462.00	\$182,205.20	\$ 105,099.50	\$126,183.90	\$ 153,036.20	\$ 645,986.80
					TOTAL	\$645,986.80