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State Wildlife Grant Final Report

Restoration and Enhancement of Mixed Grass, Tall Grass and Sand Prairie in ND State Parks

Cooperative Agreement T2-3-D

ND Parks and Recreation

State Wildlife Grant Final Report

Restoration and Enhancement of Mixed Grass, Tall Grass and Sand Prairie in ND State Parks

Goal

To restore, enhance, and sustain healthy, diverse and sustainable native prairies thus enhancing the biodiversity within North Dakota State Parks.

Project Description

Grant Agreement Period: March 2009 – December 2011

This habitat conservation project focuses on the enhancement and restoration of mixed grass, sand and Tallgrass prairie within North Dakota State Parks.

Restoration and enhancement projects will benefit a suite of Species of Conservation Priority and other species associated with prairies including the arctic shrew, pygmy shrew, Richardson's ground squirrel, plains spadefoot, Canadian toad, smooth green snake and the western hognose snake.

This final report provides a summary of prairie restoration and enhancement actions including planning and implementation efforts from **March 2009 – December 2011.**

Species of Conservation Priority

Ferrugionous Hawk

Upland Sandpiper

Grasshopper Sparrow

Baird's Sparrow

Nelson's Sharp-tailed Sparrow

Lark Bunting

Chest-collared Sparrow

Northern Harrier

Dickcissel

Le Conte's Sparrow

Bobolink

Associated Species

Monarch

Viceroy

Regal fritillary

Garita Skipperling

Tawny Edged Skipper

Long Dash

Dun Skipper

Western White

Clouded Sulphur

Silvery Blue

Variegated Fritillary

Wood Nymph

Project Implementation Locations

Fort Abraham Lincoln State Park, Mandan, North Dakota: **Stables Prairie** restoration site is a degraded grassland located near the Missouri River. This 1.33 *western wheatgrass-green needlegrass mixed grass prairie* restoration site located in T. 138N R. 81W Section 24.

Cross Ranch State Park, Center, North Dakota: **Cottonwood Meadow North and South Prairie** restoration sites are open meadows located near the Missouri River. There are 0.8 and 0.7 acre *western wheatgrass-green needlegrass mixed grass prairie* restoration sites located in T. 143N R 81W Sections 7 and 18. Restoration implementation continued on the south half of this unit and site preparation began on the north unit.

Lake Sakakawea State Park, Riverdale, North Dakota: **JT North Prairie** restoration site is an invaded prairie located north of the parks administrative building along the entrance road. This 11.0 *western wheat – needle-and-thread mixed grass prairie* restoration site is located in T. 147N R. 85W Section 25.

Fort Stevenson State Park, Garrison, North Dakota: **Nelson Prairie** restoration site is a degraded prairie located above Lake Sakakawea. The 5.6 acre *needle-and-thread western wheatgrass mixed grass prairie* restoration site is located in T. 147N R. 84W Section 6 and 11. The **South Enhancement Prairie** site is a 10 acre restored prairie which lacks forb diversity. This site is located in T. 147N R. 84W Section 5. The **North Enhancement Prairie site** is also a restored prairie site that is in good condition but lacks forb diversity. This site is located in T. 147N R. 84W Section 32. Both restored prairie sites were mowed/and or spot sprayed for noxious weeds.

Turtle River State Park, Arvilla, North Dakota: **Loop Prairie** restoration site is a degraded prairie located near the old administrative building site. The 1.4 acre *big bluestem tallgrass prairie* restoration site is located in T. 153N R. 55W Section 4.

Icelandic State Park, Cavalier, North Dakota: The 3 - **Sand Bluestem Prairie** restoration sites are located in T. 161N R. 55W Section 15. Two tracts totaling 16.2 are located west of the park administration office and interpretive center. An additional 2.3 site is located north of the park administration office and interpretive center

Devils Lake State Park, Devils Lake, North Dakota: The **Grahams Island Prairie** enhancement site is located in T. 153N R. 65W Section 30. The site is approximately 11 acres in size located south of the existing campground loop.

State Wildlife Grant Implementation Reports

Twelve *Implementation Reports* were previously submitted and have been updated to reflect additional conservation actions and total project costs. Each *Implementation Report* is accompanied with a GIS produced site map product and digital photo(s) of each site. Reports have been included in this final report.

Quarterly Financial Statements

Eleven quarterly detailed billing statements have been submitted. Total request for reimbursements at end of agreement was $11,606.62. The non-federal contribution in the form of cash and in-kind contributions (seed, chemical, and staff time and equipment use expenses) for project totals $16,830.38. Total Project cost $28,437.00. Revised copies of quarterly reports have been included.

Quarter	NRPRD Share	NDGFD Share	Total Project
Qtr 1	$ 794.00	$ -	$ 794.00
Qtr 2	$ 3,510.31	$ 3,086.67	$ 6,596.98
Qtr 3	$ 1,922.80	$ -	$ 1,922.80
Qtr 4	$ 2,075.99	$ 517.00	$ 2,592.99
Qtr 5	$ 278.18	$ -	$ 278.18
qtr 6	$ 1,318.65	$ 3,374.75	$ 4,693.40
Qtr 7	$ 938.32	$ -	$ 938.32
Qtr 8	$ 1,338.12		$ 1,338.12
Qtr 9	$ 119.22		$ 119.22
Qtr 10	$ 2,650.24	$ 4,628.20	$ 7,278.44
Qtr 11	$ 1,883.75	$ -	$ 1,883.75
Sub Totals	**$ 16,829.58**	**$ 11,606.62**	**$ 28,436.20**

Table 1 Quarterly Summary (March 2009 – December 2011)

Table 2 Budget Summary (March 2009 – December 2011)

	ND Game and Fish Department Share			Cooperator Share		
	Current Period	Cumulative	Budget	Current Period	Cumulative	Budget
Salaries	$0.00	$0.00	$0.00	$1,773.91	$12,443.23	$7,500.00
Fringe	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total Personnel	**$0.00**	**$0.00**	**$0.00**	**$1,773.91**	**$12,443.23**	**$7,500.00**
Travel	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Equipment/Supplies	$0.00	$11,606.62	$12,000.00	$109.84	$4,315.15	$6,500.00
Contractual Costs	$0.00	$0.00	$2,500.00	$0.00	$72.00	$1,500.00
Volunteer Labor	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Other Approved Costs	$0.00	$0.00	$1,000.00	$0.00	$0.00	$0.00
Total Operating	**$0.00**	**$11,606.62**	**$15,500.00**	**$109.84**	**$4,387.15**	**$8,000.00**
Total Direct	$0.00	$11,606.62	$15,500.00	$1,883.75	$16,830.38	$15,500.00
Indirect	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total Cost	**$0.00**	**$11,606.62**	**$15,500.00**	$1,883.75	**$16,830.38**	**$15,500.00**

Table 3 Total Cost by Site (March 2009 – December 2011)

STATE PARK – SITE NAME	Total Cost
Icelandic State Park – Tract 1 Prairie Restoration	$3155.73
Icelandic State Park – Tract 2 Prairie Restoration	$1063.77
Icelandic State Park – Tract 3 Prairie Enhancement	$703.65
Fort Stevenson State Park- Nelson Prairie Restoration	$3324.62
Fort Stevenson State Park – North Prairie Enhancement	$3542.31
Fort Stevenson State Park – South Prairie Enhancement	$2253.44
Fort Abraham Lincoln State Park – Stables Prairie Restoration	$6680.49
Turtle River State Park – Loop Prairie Restoration	$1938.81
Lake Sakakawea State Park – JT North Prairie Restoration	$2137.41
Devils Lake State Park – Grahams Island Prairie Restoration	$1944.33

Restoration and Enhancement Plans

Restoration and enhancement plans have been updated for 12 sites at 6 state parks. The plans identify goals and measurable objectives. Existing conditions and vegetation are described based on vegetation monitoring. The plans outline and detail restoration and enhancement methods, guidance and specification as they relate to site preparation, native seed mix, establishment and seeding, post seeding management, monitoring, management action record keeping and budget. These plans were updated annually. All up to date plans are included in this final report.

Goal: To restore, enhance, and sustain healthy, diverse and sustainable native prairies thus enhancing the biodiversity in North Dakota State Parks.

Objective: Use a high diversity native seed mixture obtained from local seed sources following below identified specifications.

Objective: Conduct monitoring during the first three growing seasons and again at years 5 and 10.

Objective: Over the next five years reduce noxious weeds and invasive plant species composition to <5%.

SITE PREPARATION: 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. Control of noxious weeds must be accomplished prior to planting.

- Remove vegetation using prescribed fire – 1st year spring.
- Interseed native forbs into burned field-1st year spring.

NATIVE SEED MIX: Seed selection will be based on individual site characteristics. Only high diversity native seed the represents the typical mixed grassland community will be selected. Local native seed sources will be a priority. Local seed sources will be no more than 300 miles north or 200 miles south (USDA-NRCS Plant Materials Center, 2005) of restoration site.

ESTABLISHMENT AND SEEDING: Native forbs will be seeded according to the full seeding rate. Establishment and seeding strategies include:

- Proper seeding depth is extremely important. Native forbs need to be seeded at a shallow depth; optimum seeding depth is ¼ inch.
- Conduct final evaluation before planting.
- Seed high diversity forb mix utilizing no-till grass drill.
- Pack the seedbed to ensure good seed to soil contact

POST SEEDING MANAGEMENT: Post-seeding weed control is an important part of successful prairie enhancement. Mechanical and chemical methods will be used.

- First Year: When weed growth is 10-12" tall and before seed set, mow down to about 4-6" in height. Mow again to 4-6" if weed growth reaches 10-12" (this mowing should be in mid- to late September). Mow at a height that does not damage the basal leaves of the desired forbs. Mow often enough so the cuttings do not smother emerging seedlings. Do not use herbicides for broadleaf weed control if forb species have been planted.

- Second Year and Beyond: Burn site on a 3-5 year rotation. Any chemical weed control should be limited to the spot spraying of individual nuisance species (e.g., Canadian thistle, wormwood) or timely clipping. Species enrichment and diversity of the restoration is important -additional forbs can be broadcasted if necessary.

MONITORING: Collecting data in a systematic way 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. Transects of 100m will be set within the plot and plant species and % composition will be collected at 10m intervals. Management decisions will be made to favor native vegetation and move the prairie to a western wheatgrass-green needlegrass mixedgrass prairie.