

# FY06 Private Stewardship Grant Program Application

U.S. Fish and Wildlife Service

**Project Title:** Southeastern Minnesota Prairie and Savanna Restoration Project

- Objectives:**
- 1) Restore degraded remnant prairies and savannas that support, or have the potential to support and/or buffer, rare and listed species on privately owned land across southeastern Minnesota.
  - 2) Conduct follow-up exotic/invasive species control and management on bluff prairies enrolled in the FY04 FWS Stewardship Program as well as the Landowner Incentive Program.
  - 3) Foster a sense of stewardship among private landowners for the long-term conservation of rare habitats and their associated species.
  - 4) Engage private conservation groups and private landowners in a cooperative effort to conserve rare natural resources in Minnesota.

**Duration:** Date of Award extending out two winter field seasons. For example, if award is summer 2006, we would expend the grant funds through December 2007. However, Prairie Smoke has a long-term commitment to work with private landowners on restoration and maintenance of remnant prairie and savanna communities. We also work in cooperation with the Minnesota Department of Natural Resources on their Landowner Incentive Program and other land management programs on private land. Overall project duration will likely extend upwards of five to ten years.

**Cost:**

Total Grant Requested:	\$181,400
Total Match Provided:	<u>\$67,750</u>
Total Grant Amount:	\$249,150

**Organization:** The Prairie Smoke Chapter of The Prairie Enthusiasts

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**Prairie Smoke DUNS Number:** 14508 8238

**Prairie Smoke Federal Identification Number:** 391-60-1574

Submitted by: Joel Dunnette Date: 1/19/06  
Joel Dunnette, Prairie Smoke President

Grant Coordinator: Jaime Edwards Date: 19 Jan 2006  
Jaime Edwards, Prairie Smoke

## **Project Description:**

Little remains of the prairie and savanna native plant communities in the upper Midwest. These systems were once a dominant feature on the landscape, covering millions of acres, but are now almost non-existent. In fact, less than 1/10<sup>th</sup> of one percent of the original prairie sod remains intact throughout the Midwest. In Minnesota, less than 1% (<150,000 acres) of the original 16 million acres of prairie and less than 0.1% (<4,400 acres) of the original 5.4 million acres of savanna remain on the landscape. As a consequence, many species tied to these communities are now rare. Of the grassland and savanna species found in Minnesota, 71 plants, birds, reptiles, mammals and insects are listed as endangered or threatened. This represents 36% of all Minnesota's E/T species. In addition to listed species, Minnesota recognizes an additional 75 species as Special Concern, meaning these species are at risk of further decline. The Bluffland region of Minnesota has been identified in the State's Comprehensive Wildlife Conservation Strategy as having the highest percentage of listed and at risk species in the state, making this area a high priority for habitat restoration. Since nearly 98% of SE Minnesota is privately owned, a program focused on managing listed and at risk species on private land will have a significant impact on the future of these species and their habitats. Thus, it is imperative to engage private landowners in restoring and protecting these rare communities and their associated plant and animal species.

Prairie and savanna remnants, such as the ones proposed in this grant application, are being lost to invasion by trees, shrubs, and exotic species because landowners have insufficient resources to implement the level of remedial management needed to restore degraded sites. Aside from degradation, many of these remnants are threatened by surrounding land use practices including severe grazing, herbicide drift, and development. As a result, these remnants not only need to be restored, but also need to have adjacent buffer lands planted with prairie or savanna species as a means of increasing their long-term viability and size. Because remediation of these sites may take up to ten years or more on small budgets, most landowners are unable to restore sites on their property. If the major recovery work is completed with the assistance of programs such as this grant, existing available resources can be used on maintaining these sites. Until then, however, significant resources are needed to complete the intense remedial work required to restore these sites. Initial landowner response to our program funded by the FY04 grant award was significant. Nearly 90% of landowners contacted enrolled in a land agreement. All of our funds will be spent or encumbered by June 30, 2006. More work is needed to ensure the long-term recovery of these bluff prairie habitats, as well as continue restoration work.

The projects proposed in this grant will recover, enhance, and expand habitat for 1 Federally listed and 10 State listed species, as well as dozens of at-risk species. The project will affect approximately 221 acres of new habitat on 10 privately owned prairie and savanna remnant complexes, involving more than 36 landowners. Additionally, this project will include follow-up work and monitoring of 110 acres on 4 prairie/savanna complexes already enrolled in a the FWS Stewardship program from FY04 grant money. In total, approximately 331 acres of prairie and savanna habitat restoration and monitoring will be accomplished.

## **Project Partners**

**Prairie Smoke:** This is the Minnesota chapter of a larger, regional non-profit organization, The Prairie Enthusiasts. Prairie Smoke operates in southeastern Minnesota, including the following counties: Dodge, Fillmore, Houston, Mower, Olmsted, Wabasha, and Winona. The purpose of this organization is the conservation of prairies, savannas, and related fire-dependent communities of southeastern Minnesota, and to provide private landowners with the tools and knowledge needed to maintain rare habitats on their land. Prairie Smoke works extensively with private landowners on prairie and savanna restoration and protection, including reintroducing fire as a critical management element. Prairie Smoke is a small chapter, with 50+ members, but has been very successful in reaching out to private landowners across southeastern Minnesota, and accomplishing significant land management activities on private land.

**Minnesota Land Trust:** The Minnesota Land Trust is dedicated to protecting the lands and waters that define our communities and enrich our quality of life. They accomplish this goal through establishing and monitoring permanent conservation easements. The Minnesota Land Trust is the only statewide organization that extensively uses conservation easements as a protection strategy. They completed their first easement in 1993 encompassing 80 acres, and have since completed 246 projects protecting nearly 22,000 acres throughout the state. Many of these sites protect rare habitats and listed or at-risk species. MLT has a notable reputation with landowners, and will be an asset as a partner on this grant.

Clint Miller, Regional Conservation Director, Southeast Region  
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**Zumbro Valley Audubon Society:** The Zumbro Valley Audubon Society (ZVAS), a chapter of National Audubon, has over 400 members, and is active in southeastern Minnesota. Part of ZVAS's mission is to assist with the conservation of Minnesota's native plant communities for the benefit of rare, as well as common, animal and plant species. ZVAS has had an active conservation committee for the past ten years, engaging in such activities as seed harvest, native seed planting, developing local genotype seed production sites, and assisting with prescribed burning. ZVAS will assist with this project by providing in-kind contributions of time and equipment.

Bill Bruins, Conservation Committee Chair, ZVAS  
PO Box 6244  
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### **Associated Programs**

**Landowner Incentive Program:** Several projects in this application will complement two projects under Minnesota's Landowner Incentive Program (LIP), the Timber Rattlesnake and Southeastern Forests and Blufflands project areas. Funding levels awarded to the State of Minnesota, while significant, will not be able to address all the restoration needs of private landowners eligible for the LIP. As a result, Prairie Smoke is committed to working with the Minnesota Department of Natural Resources, Division of Ecological Services, and private landowners on habitat restoration for listed, rare and at-risk species in southeastern Minnesota.

**MN Prairie Stewardship Planning Assistance Program:** Prairie Smoke has applied to the MN Department of Natural Resources' Prairie Stewardship Planning Assistance Program, which will allow us to provide planning and training for private landowners. Additionally, other conservation outfits may be awarded funding through the MNDNR's Stewardship program (allocation announcements should occur by the end of April 2004). Development of stewardship and management plans will facilitate the USFWS Stewardship Grant by providing a detailed conservation strategy for each landowner's property. This will save site assessment time for implementing the management activities on private land. Under this program, as well as through regular organizational activities, Prairie Smoke will be able to provide training to private landowners on prairie restoration, exotic/invasive species identification and control, native plant identification, and prescribed burning. Teaching landowners these skills will contribute to the long-term stewardship of prairies and savannas in southeastern Minnesota.

### **Project Statement of Work:**

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**Prescribed Fire:** Prescribed burns will be conducted in early spring or late fall on portions of most sites. The long-term goal is to burn each site in its entirety, but on a staggered, rotational basis of site parcels over multiple years. The average fire interval for sites will range from two to five years, depending upon site conditions and needs. Initially, some site parcels that are highly degraded will be burned on a more

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frequent rotation, including annual rotations, until site conditions improve. Firebreaks will be cleared and/or mowed, where necessary.

**Invasive Trees and Shrubs:** Invasive native and non-native trees and shrubs will be removed to the greatest extent possible and practical. The long-term goal on prairie project sites is to remove all non-native tree and shrub species, and to reduce native trees and shrubs to a minimum density and distribution so as to restore the treeless nature of this system. Low growing native shrubs that are characteristic components of the prairie flora will be retained. Such species include leadplant (*Amorpha canescens*), New Jersey tea (*Ceanothus americanus* & *C. herbaceus*), wild rose (*Rosa carolina*), horizontal juniper (*Juniperus horizontalis*), sand cherry (*Prunus pumila*), and prairie willow (*Salix humilis*).

Several project sites are steep bluff prairies that historically had the presence of some species that become invasive over time. In an effort to retain the historic composition of these sites, and to ensure the vegetative structure required by several listed or at risk species using these sites, some native, potentially invasive species will be retained at low densities (less than 30% total cover). These species include eastern red cedar (*Juniperus virginiana*), smooth sumac (*Rhus glabra*), American plum (*Prunus american*), hazelnut (*Corylus americana*), and grey dogwood (*Cornus racemosa*).

For savanna sites, the long-term goal is to remove all non-native trees and shrubs, but retain native species at a density, composition, and distribution considered natural of oak savannas as described in Curtis's "The Vegetation of Wisconsin," and is consistent with the Minnesota Department of Natural Resources Natural Heritage Program's native plant community parameters.

Trees and shrubs will be controlled by a combination of cutting and treating the cut stumps with glyphosate herbicide, basal bark application of triclopyr herbicide (in the least sensitive areas only), mowing, cutting, and/or girdling.

**Invasive Herbaceous Species:** Control of invasive, non-native herbaceous plants, mostly sweetclover and wild parsnip, will be done by hand cutting/pulling and selective mowing timed to eliminate seed production. Some limited patches of reed canary grass, and crown vetch are also present on a few sites. These will be controlled by selective use of herbicide.

**Seed Harvest and Planting:** Prairie seed collecting and/or planting will be done at several sites. Seeds will be collected from the project sites, and from other prairie remnants within a 50-mile radius of each site. Some local origin seed may be purchased for species that seed cannot be sufficiently hand harvested from local sites. The seeds will be planted into remnant sod areas cleared of brush and into old-field (former cropland) habitat adjacent to the remnants. Applications of glyphosate may be done to kill old-field sod before prairie seed is put down. The planted areas will be mowed one or more times per year for one to two years post seeding to control weeds.

**Technical Assistance:** Prairie Smoke will provide technical assistance to private landowners by developing and facilitating landowner workshops on topics including prairie restoration, exotic/invasive species identification and control, native plant identification, and prescribed burning. Teaching landowners these skills will contribute to the long-term stewardship of prairies and savannas in southeastern Minnesota.

**Who:** The Prairie Smoke Chapter (PS) of The Prairie Enthusiasts will be the lead entity, with PS member, Jaime Edwards, as the lead person within PS. This is a volunteer position and will serve as match for this grant request.

Volunteers and landowners of project sites will be conducting all prescribed burns and seed planting, and most of the seed collecting. Volunteers and landowners will also be assisting with tree, brush, and weed control work. Prairie Smoke members will conduct training workshops on various stewardship topics, as noted above. In total, volunteer efforts will count for a minimum 10% of the project costs to meet the financial requirements specified in the grant. Contractors will be hired to conduct a significant portion of tree, brush and herbaceous species removal and control, particularly on the steep bluff prairies where increased skill with equipment is necessary. Contractors may also be hired to conduct site preparation for prairie plantings, establish firebreaks, and mowing of plantings for weed control.

**Baseline Condition and Milestones:** Heavy tree and brush invasion exists on the majority of project sites, varying from 10% to 90% cover. Three sites have significant wild parsnip and/or sweet clover infestations. Two sites are in fairly good condition, but have significant threats to the rare species present on the site due to surrounding land use practices. The goal at these sites is to minimize threats by establishing buffer habitat, and expand the size of the remnants.

During the grant period of Date of Award through December 30, 2006, work would be done according to the following project schedule:

Aug - Sept	- Prepare for fall burning, line up contractors for winter cedar/brush removal
Oct - Nov	- prescribed burning and initiation of contract work
Dec - Mar	- tree/brush control, especially on sites with timber rattlesnakes, burn brush piles
Mar - Apr	- prescribed burning
Apr - Jun	- surveys, monitoring of completed work, tree/brush control on less sensitive areas
Jun - Jul	- herbaceous species control, including parsnip, sweet clover, canary grass
Jun - Nov	- seed harvest
Aug - Sep	- prepare for fall burning, line up contractors for winter cedar/brush removal
Oct - Nov	- prescribed burning and initiation of contract work
Nov - Dec	- plant prairie and complete winter cedar/brush removal, burn brush piles

**Evaluating Success:** Success will be determined by the use of surveys, site assessments, and photographic comparison. The following parameters will be evaluated:

- Percent reduction of invasive tree and brush cover
- Amount of acres burned
- Amount of seed harvested and planted
- Establishment of buffers
- An increase in the diversity and flowering of prairie vegetation
- Increase or presence of targeted listed and rare species
- Increased public awareness of bluff prairies and the species associated with them

**Long-term Commitment:** The long-term goal is to protect and maintain the rare habitats on project sites. Prairie Smoke will work with private landowners to achieve this long-term commitment through management agreements (preferably ten-year or longer agreements), conservation easements, or fee title, whichever the landowner is comfortable with. The partners identified in this proposal are committed to assisting landowners with site maintenance once the major remedial work is completed.

**Project Budget**

Please see the table below for budget details. In-kind contributions are based on actual costs of supplies, materials or time of paid staff used to implement this grant. Value of equipment will be based on the LIP docket approved for Bluff Prairie work used by the MN DNR. Volunteer labor is based on \$16/hour (this is a standard amount used under National Park Service guidelines). The in-kind value of prescribed burns is based on acres burned using the following sliding scale: \$150/acre for burns less than 5 acres, \$100/acre for 6-10 acres, \$80/acre for 11-20 acres, \$60/acre for 21-40 acres, \$40/acre for burns greater than 40 acres. The matching contributions of cash (to pay contractors) are from private donations or cooperating partners, all of which are non-federal sources.

**FY06 Private Stewardship Grant Budget Table**

Priority	Site	Woody species removal	Harvest & Planting	Weed Control	Burns (match)	Total Costs	Total Match	Total Request
1	Brown Bluff Complex*	11,500		2,000	1,500	\$15,000	\$2,000	\$13,000
1	Houston Complex*	40,000		2,500	5,000	\$47,500	\$5,000	\$42,500
1	Kingsley Bluff Complex*	17,000			2,500	\$19,500	\$2,500	\$17,000
1	Magelssen Bluff Complex*	25,000	2,000	1,000	3,000	\$31,000	\$4,000	\$27,000
1	Peterson Bluff Complex*	19,000		1,000	2,500	\$22,500	\$3,000	\$19,500
2	Mueller Savanna	1,500	1,000	1,500	1,700	\$5,700	\$2,700	\$3,000
2	Pleasant Valley Prairie Buffer	0	1,200	1,000	750	\$2,950	\$1,550	\$1,400
2	South Rushford Complex*	4,000	2,000	2,500	1,000	\$9,500	\$5,000	\$4,500
3	Oronoco Prairie Buffer	8,000	1,000	3,000	3,500	\$15,500	\$4,500	\$11,000
3	Winnebago Valley Complex*	40,000		2,500	5,000	\$47,500	\$5,000	\$42,500
Subtotals						\$216,650	\$35,250	\$181,400
Grant administration (15%)						\$32,500	\$32,500	\$0
<b>Project Totals</b>		<b>\$166,000</b>	<b>\$7,200</b>	<b>\$17,000</b>	<b>\$26,450</b>	<b>\$249,150</b>	<b>\$67,750</b>	<b>\$181,400</b>

\* These sites require significant cedar removal. Due to extreme steepness, cost for tree/brush removal is higher than average woody species control costs (MNDNR low bid for cedar removal on bluff prairies was \$1000/acre in 2004). Costs calculated for prescribed burning are slightly higher as well since burns are limited to predominantly hand equipment, requiring a greater number of people and resources.

**Table 1: New Work for Project Sites Included in the SE MN Prairie and Savanna Restoration Grant Application**

Site	Acres	County	Landowners	Comments
Brown Bluff Complex	10	Fillmore	4	Listed as a medium to high biodiversity site by the DNR County Biological Survey (CBS)
Houston Complex	40	Houston	5	Listed as a medium to high biodiversity site by the DNR CBS
Kingsley Bluff Complex	16	Fillmore & Houston	4	Listed as a high biodiversity site by the DNR County Biological Survey
Magelssen Bluff Complex	20	Fillmore	3	Listed as a outstanding biodiversity site by the DNR CBS
Mueller Savanna	20	Olmsted	1	Classified as a site with medium biodiversity
Oronoco Prairie Buffer	40	Olmsted	5	Contains a federally listed plant
Peterson Bluff Complex	20	Fillmore	4	Listed as a outstanding biodiversity site by the DNR CBS
Pleasant Valley Prairie Buffer	5	Mower	2	Site not surveyed by the DNR County Biological Survey, but has significant diversity with over 35 native prairie species
South Rushford Complex	10	Fillmore	3	Not surveyed by MCBS, but likely would rank as medium biodiversity
Winnebago Valley Complex	40	Houston	5	Outstanding biodiversity
<b>Totals</b>	<b>10 complexes</b>	<b>221</b>	<b>36</b>	

**Table 2: Follow-up Work for Project Sites Included in the FY04 SE MN Prairie and Savanna Restoration Grant**

Site	Acres	County	Landowners	Comments
Brown Bluff Complex	30	Fillmore	4	Listed as a medium to high biodiversity site by the DNR County Biological Survey (CBS)
Magelssen Bluff Complex	40	Fillmore	5	Listed as a outstanding biodiversity site by the DNR CBS
Kingsley Bluff Complex	10	Olmsted	3	Listed as a high biodiversity site by the DNR County Biological Survey
Peterson Bluff Complex	30	Fillmore	2	Listed as a outstanding biodiversity site by the DNR CBS
<b>Totals</b>	<b>4 complexes</b>	<b>110</b>	<b>14</b>	

**Table 2: Listed and Rare Species Located on Southeastern Minnesota Prairie and Savanna Restoration Project Sites**

Species	MN Stat	Fed Stat	Brown Bluff Complex	Houston Complex	Kingsley Bluff Complex	Magelssen Bluff Complex	Mueller Savanna	Oronoco Prairie Buffer	Peterson Bluff Complex	Pleasant Valley Prairie	South Rushford Complex	Winnebago Valley Complex
Canada frostweed <i>Helianthemum canadense</i>	R					X						
Clasping milkweed <i>Asclepias amplexicaulis</i>	SC					X						
Cliff goldenrod <i>Solidago sciaphila</i>	T	G3				X						
Clustered broomrape <i>Orobanche fasciculata</i>	SC				X	X						
Cowbane <i>Oxypolis rigidior</i>	R											
Goat's rue <i>Tephrosia virginiana</i>	SC											
Hill's thistle <i>Cirsium hillii</i>	SC	G3	X		X	X		X				
Jeweled shooting star <i>Dodecatheon amethystinum</i>	R		X		X	X						
Long-bearded hawkweed <i>Hieracium longipilum</i>	R		X			X						
Plains wild indigo <i>Baptisia bracteata</i>	SC					X						
Prairie turnip <i>Pediomelum esculentum</i>	R				X	X						
Prairie bushclover <i>Lespedeza leptostachya</i>	T	T						X				
Prairie shooting star <i>Dodecatheon meadia</i>	E								X			
Purple cliff-brake <i>Pellaea atropurpurea</i>	SC					X						



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Species	MN Stat	Fed Stat	Brown Bluff Complex	Houston Complex	Kingsley Bluff Complex	Magelssen Bluff Complex	Mueller Savanna	Oronoco Prairie Buffer	Peterson Bluff Complex	Pleasant Valley Prairie	South Rushford Complex	Winnebago Valley Complex
Rattlesnake master <i>Eryngium yuccifolium</i>	SC						X	X				
Rough-seeded fameflower <i>Talinum rugospermum</i>	E	G3				X						
Sterile sedge <i>Carex sterilis</i>	T											
Tuberous Indian plantain <i>Arnoglossum plantagineum</i>	T		X					X				
Valerian <i>Valeriana edulis</i>	T							X	X			X
White wild indigo <i>Baptisia alba</i>	SC			X				X				
Wild quinine <i>Parthenium integrifolium</i>	E									X		
Yellow pimpernel <i>Taenidia integerrima</i>	R		X				X					
Blanding's turtle <i>Emydoidea blandingii</i>	T	G4										
Bullsnake <i>Pituophis catenifer</i>	SC		X	X		X			X			
Prairie vole <i>Microtus ochrogaster</i>	SC											
Timber rattlesnake <i>Crotalus horridus</i>	T	G4	X	X	X	X			X		X	X
<b>Total Occurrences (44)</b>			<b>7</b>	<b>3</b>	<b>5</b>	<b>13</b>	<b>2</b>	<b>6</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>2</b>