

## 2010 Environment and Natural Resources Trust Fund (ENRTF) Work Program

**Date of Report:** December 18, 2009

**Date of Next Progress Report:** September 30, 2010

**Date of Work Program Approval:**

**Project Completion Date:** June 30, 2013

**I. PROJECT TITLE:** Reconnecting Minnesota's Fragmented Prairie Landscapes

**Project Manager:** Steve Chaplin

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**Location:** Two prairie landscapes in the Prairie Province portion of Minnesota. Prior to the start of this project on July 1, 2010, The Nature Conservancy will coordinate with partners to identify as project areas at least two of the 38 prairie landscapes shown in the attached map. The project areas will likely be located in western or central Minnesota.

<b>Total ENRTF Project Budget</b>	ENRTF Appropriation:	\$380,000
	Minus Amount Spent:	\$0
	Equal Balance:	\$380,000

**Legal Citation:**

**Appropriation Language:**

### II. PROJECT SUMMARY AND RESULTS:

Less than 1% of Minnesota's original tallgrass prairie remains today and what is left are scattered remnants. Restoration of healthy prairie ecosystems requires both protection and reconnection of remnants to create prairie-dominated landscape areas of 10,000 to 50,000 acres.

In order to restore and sustain prairie landscapes, we must develop prairie-based economies that generate a sustainable income for local communities. Grazing, haying, and native seed production show great promise, but must be managed to also produce desired conservation results.

This project will work within at least two of the 38 prairie landscapes identified by the Minnesota County Biological Survey (see attached map). For each of these two areas, a prairie reconnection landscape plan will be developed in cooperation with local residents and conservation entities. Plans will

designate criteria to prioritize lands for conservation/protection, reconnection/restoration, and compatible economic ventures. In addition, we will develop monitoring protocols based on a rapid assessment of current conditions in order to measure success in achieving defined landscape goals. Based on what we learn in developing the landscape plans, we will identify economic opportunities for different prairie-based ventures that are appropriate for the market and resources of each landscape.

The second major component of this project is an economic analysis of innovative prairie-based ventures conducted in cooperation with the University of Minnesota. This analysis will focus on removing obstacles to sustainable agriculture and exploring the feasibility of business opportunities such as grass-fed beef, grazing collaboratives, grass banks, native seed production, second-generation bioenergy, and carbon markets.

The project will facilitate direct conservation action across each specific landscape. By showcasing prairie-based agriculture, the project has the long-term potential of leveraging results across dozens of Minnesota's remaining prairie landscapes.

### **III. PROGRESS SUMMARY AS OF:**

### **IV. OUTLINE OF PROJECT RESULTS:**

#### **Result 1: Prairie Reconnection Landscape Plans**

**Budget: \$ 225,500**

Two landscapes will be selected based on feasibility and environmental conditions. In cooperation with local residents and landowners, we will identify a range of options within three main categories of opportunity: 1) conservation/protection of remnants; 2) reconnection and restoration, and 3) compatible economic ventures.

The three categories are interconnected. For example, some types of reconnection and restoration will also convey one or more prairie-based economic development opportunities. In turn, economic development may at times generate funds for landowners that can enable additional reconnection and restoration work. Protected remnants may also contribute to local economies, but likely in different ways than restored reconnections might. Result 1 will entail a thorough exploration of these interrelationships as well as the range of options within each category. We will further assess to what extent the options can be generalized from place-to-place and what options are more situation-specific.

- 1) Conservation/Protection. As a first step, we will coordinate with conservation partners (both agency and non-profit) to determine what currently-available land protection and related conservation incentive programs will most effectively protect different types of native prairie remnants. To inform these discussions we will build a GIS database that will document current landownership and levels of protection. We will also compile information on location of marginal and prime farm land and natural resource features. These GIS datasets will be used to identify priority lands for early conservation action, likely in conjunction with a spatial habitat model. These GIS datasets will be informed by the data developed by the Statewide Conservation and Preservation Plan. We will coordinate with the Board of Water and Soil

Resources (Greg Larson) and other agencies to avoid duplication of effort in developing intra-landscape data. In situations where our current land protection approaches are insufficient, we will propose potential new conservation tools and/or programs that will facilitate the type of large-scale conservation needed to sustain prairie landscapes. New tools may include such approaches as the use of public lands as part of a grazing mosaic for private grazers. While the current conditions are being assessed, we will also hold meetings between conservation partners and local government officials, landowners, producers, and other community members to gather information and get local input.

2) Reconnection and restoration. We will conduct a rapid assessment of the current condition across each landscape. We will use a combination of aerial photographs and drive-by surveys to complete this work. A reconnection analysis will follow, in which we collaborate with the local community to specify a range of desired future ecological conditions across the landscape, including a goal for prairie restoration. The desired future ecological conditions will encompass both terrestrial and wetland habitats and range from high-biodiversity buffers adjacent to native remnants to matrices of moderate biodiversity “working” lands and to low-biodiversity areas that are nonetheless compatible with the ecological and economic goals of the broader landscape. The reconnection analysis will define the types of natural communities that will be restored in each area, the approaches or methods that are most appropriate for each type of environment, and solutions to obstacles to restoration in local areas.

3) Compatible Economic Ventures. Broad categories of sustainable grazing, haying for bioenergy and forage, carbon credits, native seed production, continuation of row-crop agriculture, etc. will be identified and vetted with the local community. The ideas for prairie-based economic ventures that are most appropriate for each prairie landscape will become the subjects for the Economic Analysis of Result 2.

<b>Deliverable</b>	<b>Completion Date</b>	<b>Budget</b>
1. Analysis of 2 prairie landscapes including conservation/protection, reconnection/restoration, and compatible economic ventures; with attention to options, synergies and trade-offs for each category	Spring, 2013	\$ 170,500
2. Landscape concept maps showing specific areas for different protection options and restoration approaches. Methods for evaluation and a tracking system to measure success will also be included.	Winter, 2013	\$ 55,000

**Summary Budget Information for Result 1:**

**ENRTF Budget:** \$225,500  
**Amount Spent:** \$ 0  
**Balance:** \$ 225,500

**Result 1 Completion Date: March 31, 2013**

**Result 1 Status as of September 30, 2010:**

**Result 1 Status as of March 31, 2011:**

**Result 1 Status as of September 30, 2011:**

**Result 1 Status as of March 31, 2012**

**Result 1 Status as of September 30, 2012:**

**Result 1 Status as of March 31, 2013:**

**Final Report Summary:**

**Result 2: Native Perennial Economic Development Frameworks                      **Budget: \$ 154,500****

We will generate economic development plans that compare capital startup costs, annual expenditures, expected revenue, and expected return on investment for conventional agriculture versus various prairie-based agriculture land uses. The type, extent, and suggested location for prairie-based ventures examined will be determined by with local input in the development of the landscape plans of Result 1 but may include the following and other new ideas:

- public grass banks
- prairie beef
- second-generation bioenergy
- carbon markets
- working prairie easements
- grazing leases on public lands
- native seed harvest

Part of the economic analysis will be to identify economic barriers to large-scale conservation and restoration for each landscape. Strategies will focus on removing obstacles to sustainable agriculture and explore innovative business solutions. The key question we will try to answer is: “Can prairie-based economic uses provide a sufficient return on labor and investment to sustain rural families and communities?”

<b>Deliverable</b>	<b>Completion Date</b>	<b>Budget</b>
<b>1.</b> Economic development framework evaluating the feasibility of prairie-based economic ventures identified in Result 1 with a map detailing which lands are most appropriate for each economic venture within the two landscapes.	Winter 2013	\$ 100,500
<b>2.</b> Report on enhancing conservation business capacity in the landscape.	Spring, 2013	\$ 54,000

**Summary Budget Information for Result 2:**

**ENRTF Budget:                      \$ 154,500**  
**Amount Spent:                      \$ 0**  
**Balance:                                \$ 154,500**

**Result 1 Completion Date: March 31, 2013**

**Result 1 Status as of September 30, 2010**

**Result 1 Status as of March 31, 2011:**

**Result 1 Status as of September 30, 2011:**

**Result 1 Status as of March 31, 2012**

**Result 1 Status as of September 30, 2012:**

**Result 1 Status as of March 31, 2013:**

**Final Report Summary:**

**V. TOTAL ENRTF PROJECT BUDGET:**

**Personnel:** \$ 150,600

- |  |         |
|--|---------|
| 1. Senior Project Manager, 50% FTE for 2 years (Chaplin)                         | 108,000 |
| 2. GIS Database Intern (part time 1024 hours = 25% FTE)                          | 13,600  |
| 3. Rapid Assessment Seasonal Staff (1440 hours over 2 field seasons = 37.5% FTE) | 19,400  |
| 4. Monitoring Protocol Design - Aquatic and Terrestrial (200 hours) = 12% FTE    | 9,600   |

**Contracts:** \$ 210,400

1. Conservation/Protection: Identify priority lands using habitat modeling - \$10,000 (One of the following will be selected: USFWS HAPET, Univ. St. Thomas, NRRRI or RFP)
2. Reconnection/Restoration: Conduct detailed reconnection analysis - \$49,400 (One of the following will be selected: University of Minnesota or RFP)
3. Compatible Economic Ventures: Economic analysis of select prairie-based agriculture approaches - \$154,500 (Postdoctoral Research Fellow under supervision of Steve Polasky/University of Minnesota) – Contract includes \$ 151,000 for personnel, \$ 3,000 for travel, and \$ 500 for printing.

**Printing** (Page charges, fliers, and factsheets): \$ 500

**Equipment/Tools/Supplies** (Plat books, maps, binnoculars, GIS data recorder and other): \$ 2,000

**Travel** (Lodging, mileage, car rental (if cost saving), and meals to meetings in prairie landscapes, rapid assessment and other field work): \$ 12,000

**Additional Budget Items** (Expense for hosting meetings - room rental, audio visual rental): \$ 2,000

TOTAL ENRTF PROJECT BUDGET: \$ 380,000

## VI. PROJECT STRATEGY:

- A. Project Partners:** The project will be a partnership involving many different entities. The Nature Conservancy will serve as the project lead, but will work closely with the University of Minnesota as a subrecipient of this grant, in particular on Result 2, Native Perennial Economic Development Frameworks, as well as components of Result 1, Prairie Reconnection Landscape Plans. Several agency partners that will not receive funding from this grant have agreed to assist in launching and implementing the project, including DNR – Division of Ecological Resources; DNR – Section of Wildlife; U.S. Fish and Wildlife Service (Glacial Ridge National Wildlife Refuge); and the Board of Water and Soil Resources (RIM easements). In addition, we will reach out to the Minnesota Native Wildflower/Grass Producers Association and numerous other groups that represent key areas of expertise that will be central to this project.
- B. Project Impact and Long-Term Strategy:** This project addresses fundamental planning needs and economic development guidelines for a long-term prairie landscape conservation initiative. The planning process will design buffers and connections of native perennial plants around and between existing prairie remnants that will provide economic benefits. We envision the products from this work as specific, ready-to-implement projects for which we will pursue additional funding. For example, we have already submitted a “Prairie Recovery” proposal to the Lessard-Sams Outdoor Heritage Council (LSOHC) for cooperative conservation action. We will coordinate the location and activities of the two projects, which are closely related but are separate projects with no mixing of funds. This project will focus on planning and outreach while the LSOHC project will concentrate on acquisition and implementation. We will further explore other sources of funding as well for implementation such as Minnesota Capital Investment funds (bonding), and federal and private sources. We view the current project as an opportunity to demonstrate the power of focused implementation planning and economic modeling to identify those areas with the greatest potential for developing prairie-based economies and scaling up conservation. If successful, a new approach to prairie conservation and restoration may be applied more broadly.

**C. Other Funds Proposed to be Spent during the Project Period:**

\$87,590 (privately-raised funds in the form of unrecovered indirect costs using the Conservancy’s federally approved negotiated indirect cost recovery rate of 23.05% of total project cost)  
\$26,350 (TNC State Science Director will contribute approximately \$26,350 in staff time (10% FTE,))

**D. Spending History:**

TNC staff are likely to engage with partners on conducting preparatory work prior to the official start date of July 1, 2010 at the expense of the Conservancy. Among the activities that may be completed prior to this date are: selecting the two prairie landscapes in which the work will be conducted, posting seasonal positions, and assembling GIS data layers relevant to the project. There is no prior history of state appropriations for this project.

## **VII. DISSEMINATION:**

- Prairie reconnection landscape plans will be available for download and on CD upon request and to all participants in the planning process for each of the two landscapes.
- A ConserveOnline workspace will be set up for each landscape so that products may be posted as they are generated. Links to the workspace will be provided on The Nature Conservancy and Partner websites.
- The economic modeling/trade-off tools will be available in interactive format.
- It is possible that a peer-reviewed scientific publication will be generated by this work, in which case pdfs and/or hard copies may be made available by agreement with the publisher.
- Results will be presented at planner and natural resource forums around the state and nationally as appropriate.

## **VIII. REPORTING REQUIREMENTS:**

We propose to submit preliminary progress reports on the following dates:

September 30, 2010

March 31, 2011

September 30, 2011

March 31, 2012

September 30, 2012

March 31, 2013

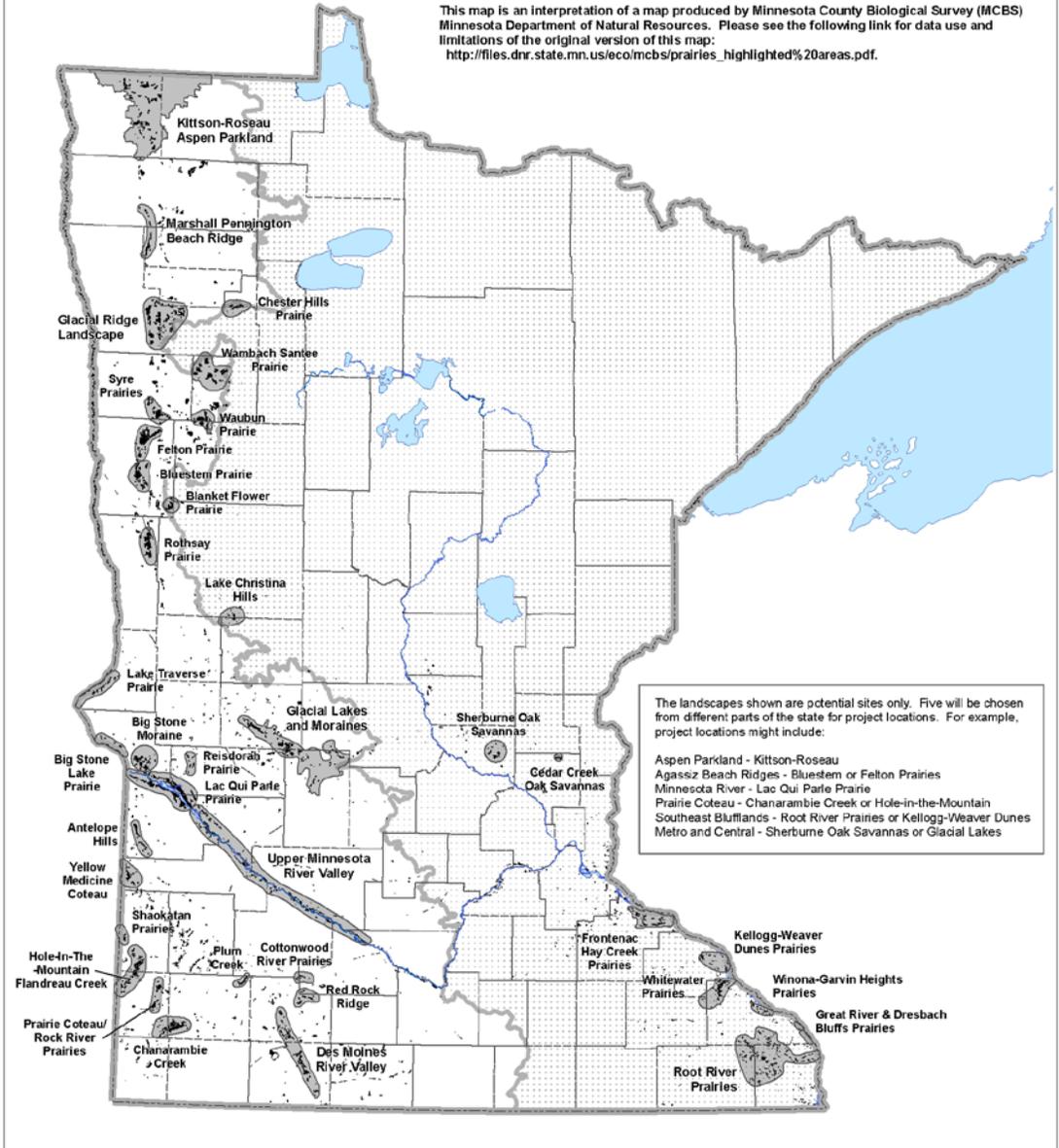
*A Final Report will be submitted by June 30 2013 or as requested by the LCCMR.*

# Reconnecting Minnesota's Fragmented Prairie Landscapes

## The Nature Conservancy

### May 2009 Proposal

This map is an interpretation of a map produced by Minnesota County Biological Survey (MCBS) Minnesota Department of Natural Resources. Please see the following link for data use and limitations of the original version of this map:  
[http://files.dnr.state.mn.us/eco/mcbs/prairies\\_highlighted%20areas.pdf](http://files.dnr.state.mn.us/eco/mcbs/prairies_highlighted%20areas.pdf).



The landscapes shown are potential sites only. Five will be chosen from different parts of the state for project locations. For example, project locations might include:

- Aspen Parkland - Kittson-Roseau
- Agassiz Beach Ridges - Bluestem or Felton Prairies
- Minnesota River - Lac Qui Parle Prairie
- Prairie Coteau - Chanarambie Creek or Hole-in-the-Mountain
- Southeast Blufflands - Root River Prairies or Kellogg-Weaver Dunes
- Metro and Central - Sherburne Oak Savannas or Glacial Lakes

Native Prairie Landscapes (MCBS 2009)

Native Prairie (MCBS 2009)

Prairie Provinces

Forest Provinces

0 12.5 25 50 Miles

Map Created by: RCJ, TNC in MN, ND, SD, 2009/4/29  
 Minnesota Special Project/MN/ND/SD/Science Proposal  
 LC/09/Reconnecting Prairie Project/Map.mxd

Protecting nature. Preserving life.

Attachment A: Budget Detail for 2010 Projects								
Project Title: Reconnecting Minnesota's Fragmented Prairie Landscapes								
Project Manager Name: Steve Chaplin								
Trust Fund Appropriation: \$ 380,000								
2010 Trust Fund Budget	Result 1 Budget:	Amount Spent (12/13/2009)	Balance (12/18/2009)	Result 2 Budget:	Amount Spent (12/13/2009)	Balance (12/18/2009)	TOTAL BUDGET	TOTAL BALANCE
DESCRIPTION	Prairie Reconnection Landscape Plans			Prairie-based Economic Analysis				
BUDGET ITEM								
<b>PERSONNEL: wages and benefits</b>								
Senior Project Manager, 50% FTE for 2 years (Chaplin)	108,000	0	108,000				108,000	108,000
GIS Database Intern (parttime 1024 hours = 25% FTE)	13,600	0	13,600				13,600	13,600
Rapid Assessment Seasonal Staff (720 hours per year for two field seasons = 37.5% FTE)	19,400	0	19,400				19,400	19,400
Monitoring Protocol Design - Aquatic and Terrestrial (200 hours) = 12% FTE	9,600	0	9,600				9,600	9,600
<b>CONTRACTS: Professional/technical</b>								
1) (Conservation/Protection) Identify priority lands for early conservation/habitat modeling ( e.g., USFWS HAPET, Univ. St. Thomas, NRRI or RFP)	10,000	0	10,000				10,000	10,000
2) (Reconnection/Restoration) Conduct detailed reconnection analysis (e.g. University of Minnesota &/or RFP)	49,400	0	49,400				49,400	49,400
3) (Compatible Economic Ventures) Economic frameworks (Postdoctoral Research Fellow under supervision of Steve Polasky/University of Minnesota)*				154,500	0	154,500	154,500	154,500
<b>OTHER DIRECT OPERATING COSTS</b> Expense for hosting meetings - room rental, audio visual rental	2,000	0	2,000				2,000	2,000
<b>PRINTING</b> (Page charges, fliers, and factsheets)	500	0	500				500	500
<b>SUPPLIES</b> (Plat books, maps, binoculars, GIS data recorder and other)	1,000	0	1,000				1,000	1,000
<b>TRAVEL EXPENSES IN MINNESOTA</b> -Lodging, mileage, car rental (if cost saving), and meals to meetings in prairie landscapes, rapid assessment and other field work	12,000	0	12,000				12,000	12,000
<b>COLUMN TOTAL</b>	<b>\$225,500</b>	<b>\$0</b>	<b>\$225,500</b>	<b>\$154,500</b>	<b>\$0</b>	<b>\$154,500</b>	<b>380,000</b>	<b>\$380,000</b>
* to include \$151,000 for personnel, \$3,000 for travel, and \$500 for printing								