

**Environment and Natural Resources Trust Fund
2011-2012 Request for Proposals (RFP)**

LCCMR ID: 155-F3+4

Project Title: Aspen Parkland Ecosystem Conservation and Biomass Use

Category: F3+4. Renewable Energy

Total Project Budget: \$ 220,000

Proposed Project Time Period for the Funding Requested: 3 yrs, July 2011 - June 2014

Other Non-State Funds: \$ 0

Summary:

Integrated resource management planning for Aspen Parkland Region of northwest Minnesota. Use of native vegetation for woody biomass energy to manage brushland habitats and promote sustainable development of local communities.

Name: Dan Svedarsky

Sponsoring Organization: U of MN - Crookston

Address: Agricultural Research Ctr, 2900 University Ave
Crookston MN 56716

Telephone Number: 218-281-8129

Email: dsvedars@umn.edu

Web Address: http://www3.crk.umn.edu/faculty/S/WDaniel_Svedarsky.html

Location

Region: NW

Ecological Section: Lake Agassiz, Aspen Parklands (223N)

County Name: Beltrami, Kittson, Marshall, Norman, Pennington, Polk, Red Lake, Roseau

City / Township:

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ Employment	_____ TOTAL _____%

2011-2012 MAIN PROPOSAL

PROJECT TITLE: *Aspen Parkland - ecosystem conservation biomass use*

I. PROJECT STATEMENT

The Aspen Parkland ecological region of northwest Minnesota is uniquely positioned in North America at the intersection of 3 continental biomes; tallgrass prairie, deciduous forest, and the boreal component of the coniferous forest. It is one of the most extensive open to semi-open landscapes in the eastern U. S. which still retains many natural qualities and is a special wildlife region of the state hosting all 4 species of Minnesota's grouse in specific habitats. A considerable representation of native communities remain in public, NGO, and private ownership. Because of the intermixing of aspen groves and prairie, plant succession causes more open, prairie and "brushland" habitats to be replaced with aspen forests and the concurrent loss of prairie biota; especially sharp-tailed grouse. Resource managers are challenged to keep abreast of this brush encroachment which has been further complicated by recent wetter conditions that reduce burn season windows. Many remnant communities are poorly drained which further complicates management conditions; consequently, brush-mowing by "hydro-axes" or shearing by bulldozers is conducted along with burning but at considerable expense. Management challenges are similar on private as well as public land.

Similar to most of rural America, northwest Minnesota is experiencing a loss of vitality in its rural communities and strategies to promote local employment are a continuing priority. Preliminary assessment of the biomass energy resource in northwest Minnesota has been conducted by the Northwest Regional Development Commission. Integrated management could control plant succession to favor brushland wildlife and plant species while providing renewable energy resources, jobs for local communities, and lessening Minnesota's dependence on non-renewable energy resources.

This project would; 1) Refine existing inventory data of Aspen Parkland habitats in northwest Minnesota with respect to their wildlife habitat and ecosystem management needs; species and ecosystem (i.e. calcareous fens) conservation needs as well as invasive species. 2) Inventory biomass potential of primarily native vegetation on public and private land in the region and identify any special management concerns such as damage to sensitive wetland communities and spread of invasive species related to biomass harvesting. 3) Identify options for economic development in the region by harvesting biomass feedstocks (pellets, bales) that could supply heat/electricity generating plants, and provide heat for larger industries and private individuals. Consult with community planners to determine biomass supply and demand necessary to maintain a viable biomass industry in the region and identify possible locations for utilization facilities. 3) Form a broad-based steering committee to provide guidance to the project and conduct community forums at different sites in the region to inform and gather ideas on practical considerations of biomass harvesting (processing, transportation, storage, utilization) and other possible partnerships, and 4) Accelerate the integrated management of Aspen Parkland by the development of public/private partnerships to simultaneously enhance wildlife management and rural community development.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Native vegetation assessment and development of regional plan for biomass utilization

Budget: \$ 190,000

Access native vegetation databases and interview resource management specialists to determine management needs and sensitivities of public, preserved (TNC) and private lands in the region. Concurrent with this activity will be an assessment of practical biomass harvest potentials based on economics and sustainability. Interviews with community economic development planners, private industry, and citizens from the region will provide input for this plan along with case histories from

other localities. Assess the energy-related implications of proposed actions in the plan to regional climate neutrality by life cycle analysis. Conduct 5 initial community input sessions in fall of 2011 and again in March 2013 with presentation of final plan.

Outcome	Completion Date
1. GIS maps showing habitat management needs and disturbance sensitivities along with biomass potentials of native vegetation	September 2012
2. Complete a draft implementation plan.	February 2013
3. Completion of final report and Master's thesis.	May 2013

Activity 2: Prepare user friendly, informative project booklet.

Budget: \$ 30,000

Produce a generously illustrated educational booklet (with web version) on the Aspen Parkland of northwest Minnesota with an emphasis on the biological resources, ecosystem management needs, and renewable biomass energy as a component of sustainable community development.

Outcome	Completion Date
1. Publish booklet and distribute to community leaders and resource managers.	May of 2013

III. PROJECT STRATEGY

A. Project Team: *Dan Svedarsky, NW ROC, U of MN, Crookston, Project coordinator; *Kent Freberg, U of MN, Crookston, Research associate; *Graduate student; PROJECT ADVISORY COMMITTEE: Nick Jordan, Agronomy, U of MN, St. Paul; Steve Taff, Ag and Applied Econ, U of MN, St. Paul; Tom Landwehr, Neal Feeken, Brian Winter, Keith Mykleseth, Russ Reisz, Rhett Johnson,(The Nature Conservancy); Donovan Pietruszewski, Doug Franke, Terry Wolfe, (MN DNR wildlife managers); Mark Lindquist, MN DNR biomass specialist;*Bill Berg, retired MN DNR/ MN Sharp-tailed Grouse Society; Linda Kingery, NW Regional Sustainable Development Partnership, U of MN; Cam Fanfulik, NW Regional Development Commission

**Will be receiving support from the Environment and Natural Resources Trust Fund*

B. Timeline Requirements. This project will be completed in 3 years.

C. Long-Term Strategy and Future Funding Needs. This proposal addresses integrated resource management planning for the Aspen Parkland ecological region in northwest Minnesota with a focus on biomass use for energy which simultaneously assists with ecosystem management and sustainable development of local communities. This project will focus on public and privately (TNC) preserved lands but planning considerations will be applicable to private lands as well. Other implementation funding will be sought from the Lessard-Sams Outdoor Heritage Council, and federal and private sources.

2011-2012 Detailed Project Budget

IV. TOTAL TRUST FUND REQUEST BUDGET (3 years)

BUDGET ITEM	AMOUNT
Personnel: Personnel: Graduate student (.75 time) @ \$ 25,000 x 3 years = 75,000 (66% salary, 34% fringe). Research associate @ \$ 25,000 per year for 3 years = 75,000.	\$ 150,000
Contracts: a. Consulting by Bill Berg, retired MN DNR biologist. He will provide guidance on habitat needs assessment and logistics of using woody biomass for boiler feedstock fuel. \$ 15,000 fee for time and travel. b. GIS work by NW Reg. Dev. Commission for \$ 10,000 of staff time. c. Layout and printing of summary booklet. Estimate of \$ 30,000 based on experience with similar publication	\$55,000
Equipment/Tools/Supplies:	NA
Acquisition (Fee Title or Permanent Easements):	NA
Travel: To project areas, meet with stakeholders and related projects in Minnesota, and gather community input at regional meetings. \$ 5K per year x 3 years = 15,000	\$ 15,000
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND \$ REQUEST	\$ 220,000

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ Being Applied to Project During Project Period:	NA	
Other State \$ Being Applied to Project During Project Period:	NA	
In-kind Services During Project Period: Project coordination by Svedarsky (20% time) for 3 years = 60,000 (66% salary, 34% fringe). Office location and supplies, \$ 5,000 for 3 years = \$ 5,000.	\$ 65,000	Secured.
Remaining \$ from Current ENRTF Appropriation (if applicable):	NA	
Funding History:	NA	

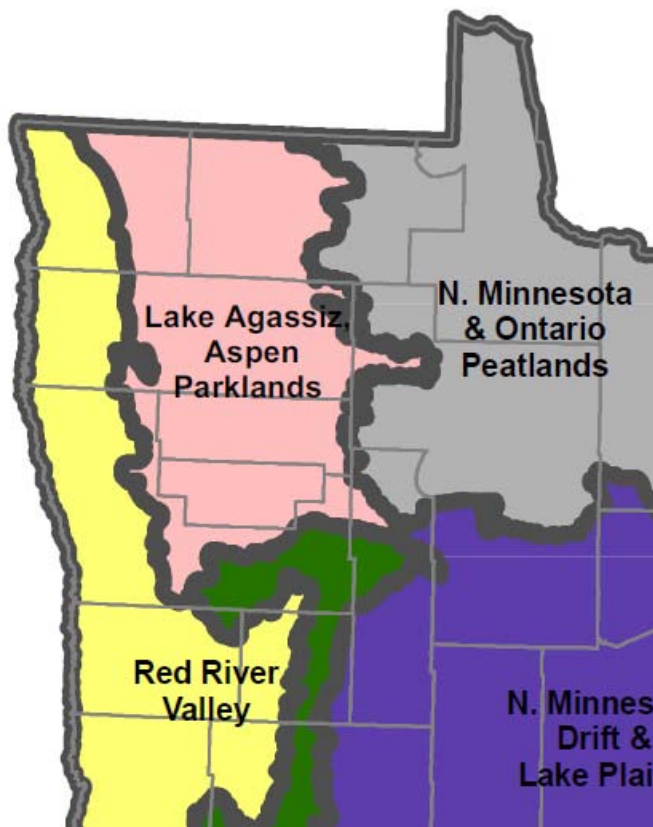


Figure 1. Location of Aspen Parkland study area in northwest Minnesota, Svedarsky proposal.

(Adapted from Ecological Sections map from MN DNR.)

Daniel Svedarsky, Director, Center for Sustainability
Research Biologist, Northwest Research and Outreach Station
U of MN, Crookston, MN 56716
dsvedars@mail.umn.edu
Phone: 218-281-8129

Education:

University of Missouri, Columbia, B.S. (1967), Biology
University of Missouri, Columbia, M.S. (1969), Botany (Plant Ecology)
University of North Dakota, Grand Forks. Ph.D. (1979), Wildlife Biology

Teaching: Former Head of the Natural Resources Department (2005-2009). Have taught a broad spectrum of field oriented classes since 1969 when I initiated the campus Natural Resources program. Currently teaching Integrated Resource Management, Wildlife Habitat Management Techniques, and Environmental Science and Sustainability. Campus advocate for sustainability initiatives by currently directing the Center for Sustainability.

Research and management experience: Hold a joint appointment with the Northwest Research and Outreach Center, (NWROC) where I conduct research on wildlife and related land use issues as they pertain to wetlands, prairies, and agricultural environments. <http://www.nwroc.umn.edu/> In connection with his research appointment I advise graduate students through an adjunct appointment with the University of North Dakota. Research leader/Manager for the following:

1) 2007-2009. **Three-year study of the Greater Prairie Chicken** in conjunction with the Wisconsin Department of Natural Resources; University of Wisconsin, Madison, Minnesota Department of Natural Resources; U. S. Fish and Wildlife Service, The Nature Conservancy, and the University of North Dakota. 169K. 2) 2006. **Ecology of the Aspen Parkland Conference.** Chair of planning committee. 8K. 3) 2006. **Feasibility study for the Northern Prairie Visitor Center.** 30K. 4) 2005. **Habitat Friendly Farming; an exploration of incentive alternatives.** 9.5K. 5) 2005. **Feasibility study of Center for Sustainable Development at U of MN Crookston and the hosting of a 2-day conference on Sustainable Development.** 5K. 5). 2004 **Biological monitoring at the Glacial Ridge Project.** 75K. 6) 1999. **Integrated prairie management** funded by Legislative Commission on Minnesota's Resources, State of Minnesota. 350K.

Service to organizations and agencies: **Past President of The Wildlife Society**, the international organization of professional biologists, teachers, managers, and researchers. As a function of that office, I organized the Plenary session for the 2008 annual meeting in Miami entitled, *Thriving within limits; toward a scenario of hope*. **TWS delegate to the UN Conference on Climate Change in Copenhagen, Denmark, December, 2009.** Chair-Elect of the College and University Wildlife Education Working Group of The Wildlife Society. Past President of the North American Wildlife Technology Association, (1988-89). Past member, Board of Directors, Minnesota Zoo (1988-1992). Advisory committee member of the UMore Park Project; a U of Minnesota effort to develop a 5,000-acre "green" urban community near Minneapolis, Minnesota using sustainable development principles. Active volunteer natural area manager with The Nature Conservancy

Awards:

1. Award of Merit – Gamma Sigma Delta, the Honor Society of Agriculture. 2002.
2. The Minnesota Award – Minnesota Chapter of The Wildlife Society. 1999.
3. University of Minnesota Academy of Distinguished Teachers. 1998.
4. Morse -Alumni Award for Outstanding Contributions to Undergraduate Education. 1997.
5. The Hamerstrom Award – Prairie Grouse Technical Council. 1995.
6. National Stewardship Award - The Nature Conservancy. 1981.