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

LCCMR ID: 149-F3+4

Project Title: Woody Biomass Harvesting for the Management of Brushlands

Category: F3+4. Renewable Energy

Total Project Budget: $ $207,250

Proposed Project Time Period for the Funding Requested: 2.25 yrs, July 2011 - Sept 2013

Other Non-State Funds: $ 0

Summary:

Harvesting woody biomass to manage brushlands for open-land habitat will provide an additional renewable energy resource to local MN economies and reduce management costs currently needed to manage brushlands.

Name: Anna Dirkswager

Sponsoring Organization: DNR

Address: 500 Lafayette Rd

Saint Paul MN 55155

Telephone Number: 651-259-5253

Email Anna.Dirkswager@state.mn.us

Web Address

Location

Region: NW, NE, Central

Ecological Section: Western Superior Uplands (212K), Northern Superior Uplands (212L), No. Minnesota and Ontario Peatlands (212M), No. Minnesota Drift and Lake Plains (212N), Lake Agassiz, Aspen Parklands (223N)

County Name: Aitkin, Beltrami, Carlton, Cass, Crow Wing, Hubbard, Itasca, Koochiching, Lake of the Woods, Pine, Roseau, Wadena

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: Woody Biomass Harvesting for the Management of Open-Brushlands

I. PROJECT STATEMENT

1. Why?

By using biomass harvesting to better manage state brushlands, we will expand our knowledge base of open-land management techniques, restore habitat for open-brushland dependent species, and provide economic benefits to local Minnesota economies. Although sheering and mowing have been the traditional management for open-brushlands, few studies have evaluated the response of wildlife and vegetation to this form of management. Evaluating wildlife response is critical because several bird species listed as Species of Greatest Conservation Need in Minnesota's Comprehensive Wildlife Conservation Strategy are declining and depend on open-brushland habitats. Likewise, if we can demonstrate a successful path for brushland biomass to wood energy facilities, then the harvesting of brushlands may someday help to lower the land management costs associated with the maintenance of open-brushlands and allow the Minnesota DNR to treat more acres. The Minnesota DNR currently pays around $100 per acre to mow or sheer overgrown state brushlands for the management of open-land habitat.

Additionally, Minnesota has one of the most aggressive renewable energy mandates in the nation; however, its woody biomass resources are not inexhaustible. The Minnesota DNR and the Governor's Forestry Subcabinet came to the conclusion that woody biomass has an important, but limited, role in our state energy future. Minnesota must strategically target the utilization of woody biomass. As many of the state and privately owned brushlands are located near wood energy facilities, an opportunity exists to harvest brushlands for wildlife habitat and provide local wood energy facilities with an additional resource.

2. Goals

This proposal has four objectives: 1) to accomplish wildlife habitat improvements on state and private brushlands, 2) to evaluate both vegetation and breeding bird response to brushland woody biomass harvesting, 3) to make available an additional energy resource to enhance local Minnesota economies, and, 4) to develop a self-sustaining brushland harvesting supply chain that provides jobs and contributes to energy independence.

3. How?

This proposal will target priority overgrown state and private brushlands that would traditionally be sheered and mowed for open-land habitat and that are near wood energy facilities. Vegetation and wildlife analyses will occur following brushland harvesting demonstrations. Vegetation assessments and bird counts will be conducted prior to harvest and then repeated during the breeding seasons post-harvest. The project will seek to expand market opportunities by attracting existing biomass industries and procurement operators in an effort to stimulate local economies.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Brushland Harvesting Supply Chain Development **Budget:** $168,000

Harvest brushland biomass on up to 500 acres of state and private brushlands located near wood energy facilities and in need of management for wildlife habitat objectives. Also provide an opportunity for demonstrations of different brush procurement systems; an economic analysis comparing production yields to procurement efficiencies will also be developed from

these trials. As part of the supply chain development, we will link existing wood energy users with new sources of available biomass from managed open-brushlands.

Outcome	Completion Date
1. Estimated 500 acres of overgrown brushland harvested for wildlife habitat and for an estimated 8,000 green tons used for energy	July 2013
2. A report that showcases economically efficient brushland harvesting procurement strategies, available equipment, current brushland biomass users, and lessons learned from the harvesting demonstrations	July 2013

Activity 2: Bird and Vegetation Analysis **Budget:** $39,250

Evaluate the response of breeding birds to brushland harvests and compare results to control units using point count methods designed to estimate density and detection probabilities. The analysis will also evaluate growth response of vegetation following biomass harvest compared to traditional brushland management methods.

Outcome	Completion Date
1. Analyses of the response of vegetation and a suite of open-brushland breeding birds of greatest conservation need in Minnesota's Comprehensive Wildlife Conservation Strategy to various open-land management techniques	July 2013

III. PROJECT STRATEGY

A. Project Team/Partners

The primary project team members will be Anna Dirkswager, DNR Forestry Biomass Coordinator; two University of Minnesota graduate students to be funded from ENRTF for project coordination and economic analysis; and J. Wesley Bailey, DNR Wildlife Natural Resource Specialist who will oversee two seasonal technicians funded through ENRTF. The secondary staff support team will consist of: Steve Merchant, DNR Forest Wildlife Program Leader; Keith Jacobson, DNR Forestry Utilization and Marketing Program Leader; Barb Spears, DNR Woody Biomass Project Manager, Dean Current, Center for Integrated Natural Resources and Management, University of Minnesota and, Dana Raines, RC&D Forester. Specific project partners will be developed as project areas are selected and the need for cross-sector work develops.

B. Timeline Requirements

This project is anticipated to take two years to allow for the hiring and training of a University of Minnesota graduate student project coordinator and two consecutive winters during which the brushland harvesting will be conducted. Wildlife and vegetation analyses will be conducted before and after each harvesting demonstration.

C. Long-Term Strategy and Future Funding Needs

This study is the necessary first step in a long-term strategy aimed at reducing the cost of managing brushlands for open-land habitat. This project will demonstrate a successful path for brushland biomass to wood energy facilities that may someday help to offset the land management costs associated with the maintenance of open brushlands. This project will build the knowledge base necessary for biomass production from brushlands by stimulating local market creation and facilitating relationships between local land managers and wood energy industries.

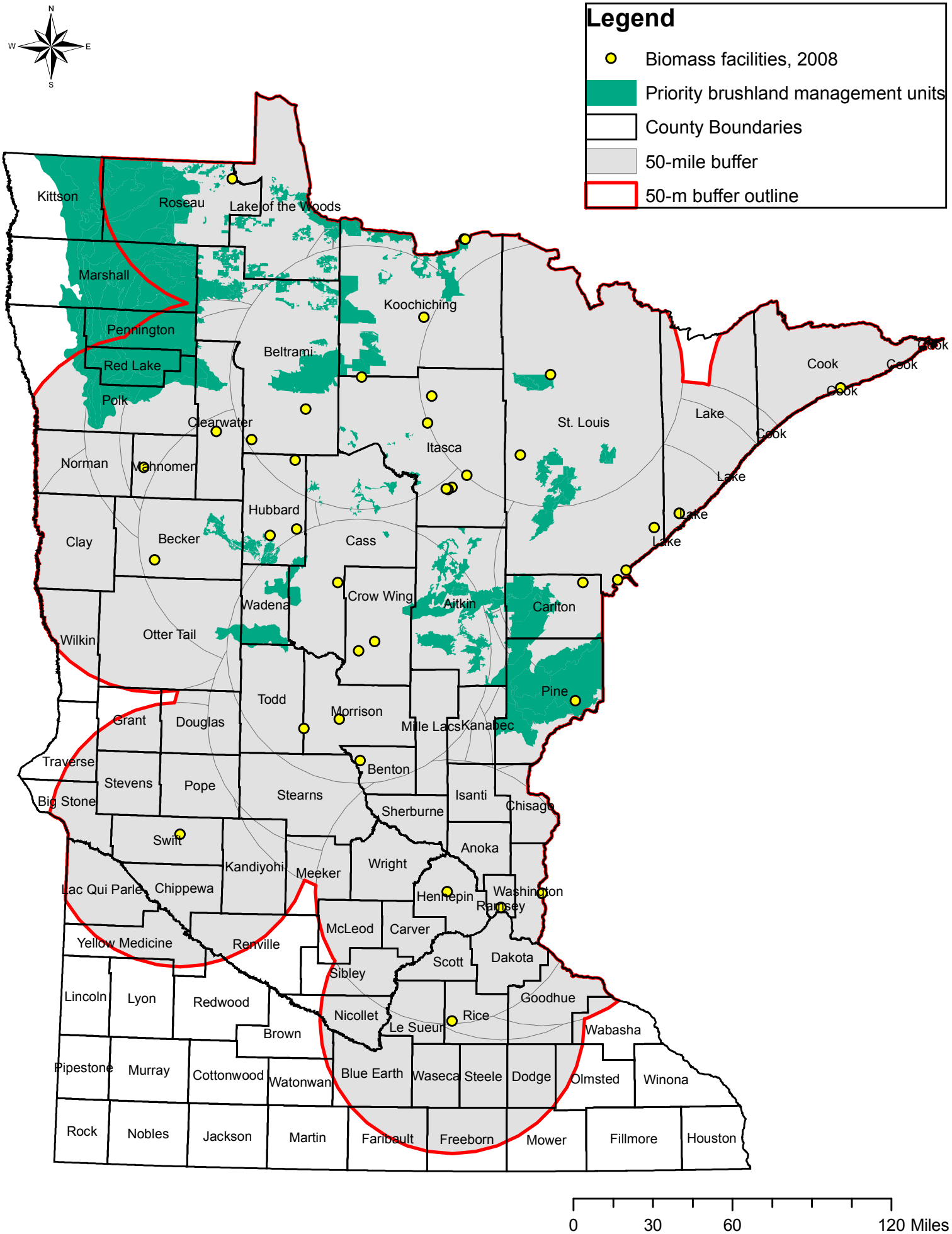
2011-2012 Detailed Project Budget

IV. TOTAL TRUST FUND REQUEST BUDGET 2 years

BUDGET ITEM	AMOUNT
Personnel:	$ -
Project Coordinator - 1 University of MN Graduate Student @ $35,000/yr x 2 years	$ 70,000
Wildlife Analysts - 2 Seasonal Technicians @ $515/week for 11 weeks	$ 23,000
Economic Analyst - 1 University of MN Graduate Student @ $35,000/yr x 1 year	$ 35,000
Contracts:	$ -
Contracts with biomass procurement operators for the harvesting of 1,000 acres of brushland/operator- 5 Contracts @ $10,000/contract	$ 50,000
Equipment/Tools/Supplies: Office supplies, basic field supplies (notebooks, flagging, (2) GPS) for wildlife analysis	$ 3,000
Travel: Project staff coordination, site visits, fleet, project consultations and evaluation, lodging and travel expenses for seasonal technicians, and outreach activities.	$ 25,000
Additional Budget Items: Contingency fund for necessary modifications to allow for harvest (e.g. significant change in the cost of diesel needed to harvest material): $250/contract x 5 contracts	$ 1,250
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND $ REQUEST	$ 207,250

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State $ Being Applied to Project During Project Period: None	$ -	
Other State $ Being Applied to Project During Project Period:	$ -	
Shared Services Costs	$ 16,315	
Other Support Costs	$ 3,099	
In-kind Services During Project Period: None	$ -	
Remaining $ from Current ENRTF Appropriation (if applicable): None	$ -	
Funding History: None	$ -	


Legend
Biomass facilities, 2008
Priority brushland management units
County Boundaries
50-mile buffer
50-m buffer outline
N
W
E
S
Kittson
Roseau
Lake of the Woods
Marshall
Pennington
Red Lake
Polk
Koochiching
Beltrami
Clearwater
Norman
Mahnomen
Hubbard
Clay
Becker
Cass
Itasca
St. Louis
Lake
Cook
Wadena
Crow Wing
Aitkin
Carlton
Wilkin
Otter Tail
Todd
Morrison
Mille Lacs
Kanabec
Pine
Grant
Douglas
Traverse
Stevens
Pope
Stearns
Benton
Isanti
Chisago
Big Stone
Sherburne
Swift
Kandiyohi
Meeker
Wright
Anoka
Lac Qui Parle
Chippewa
Hennepin
Washington
Ramsey
McLeod
Carver
Yellow Medicine
Renville
Scott
Dakota
Sibley
Lincoln
Lyon
Redwood
Nicollet
Rice
Goodhue
Le Sueur
Brown
Wabasha
Pipestone
Murray
Cottonwood
Watonwan
Blue Earth
Waseca
Steele
Dodge
Olmsted
Winona
Rock
Nobles
Jackson
Martin
Faribault
Freeborn
Mower
Fillmore
Houston
0
30
60
120 Miles

PROJECT MANAGER QUALIFICATIONS AND ORGAINZATION DESCRIPTION

PROJECT TITLE: Woody Biomass Harvesting for the Management of Open Brushlands

Project Manager Qualifications

Primary Project Leader (A): Anna Dirkswager, Biomass Coordinator, MN DNR, Division of Forestry. Anna Dirkswager is currently the MN DNR's Woody Biomass Coordinator. Her responsibilities include (but are not limited to): working with stakeholders to aid in developing informed decisions about using woody biomass resources in a sustainable and efficient manner, guiding market development, building support for state and federal biomass energy initiatives, and educating managers, supervisors, and staff about the state's woody biomass resource and policy initiatives. Anna came to the DNR in January 2009 after completing a Master of Science degree in Natural Resources Science Management at the University of Minnesota, Department of Forestry. During her graduate studies, Anna worked extensively with Minnesota's loggers who harvest biomass to understand the constraints and opportunities associated with biomass harvesting.

Primary Project Leader (B): J. Wes Bailey, Wildlife Research Biologist, MN DNR, Division of Wildlife. Wes Bailey is a Research Wildlife Biologist with the Forest Wildlife Populations and Research Group. Wes supports the upland game bird research programs in Minnesota's forest landscape by assisting a Research Scientist in the planning, execution, and reporting of original research on grouse species (50% time) and the development of survey protocols and research that will assist Area Wildlife Managers evaluate the effectiveness of habitat management within their work areas (50% time). Wes' current research includes habitat use, nest-site selection, nest success, and survival of sharp-tailed grouse, greater prairie-chicken and sharp-tailed grouse habitat occupancy models, sharp-tailed grouse habitat selection and habitat connectivity models. Wes came to the DNR in October 2007 after completing a Master of Science degree in Wildlife Science at the University of Missouri, Department of Fisheries and Wildlife. For his master's research, Wes determined factors affecting nest site selection and nest survival of Black-capped Vireos, an endangered songbird in Texas. Wes also assisted in developing and conducting research designed to compare methods for estimating density of forest songbirds from point counts for the Central Hardwoods Joint Venture.

Organization Description

Minnesota Department of Natural Resources

The Minnesota Department of Natural Resources (DNR)'s mission is to work with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life. The department consists of several divisions based on the state's natural resources, including: Fisheries and Wildlife, Forestry, Lands and Minerals, Parks and Trails and Forestry.

The division of forestry aims to provide a long-term sustainable yield of forest resources from state forest lands; to improve the health and productivity of other public and private forest lands and community forest lands; and to protect life, property and natural resources from wildfires. Harvesting state brushlands can improve the stand's health and productivity while providing a long-term sustainable resource of woody biomass material.