Environment and Natural Resources Trust Fund
2010 Request for Proposals (RFP)

LCCMR ID: 148-E2

Project Title:

Collaborative Landscape Management to Enhance Northern Forest Resiliency

LCCMR 2010 Funding Priority:

E. Natural Resource Conservation Planning and Implementation

Total Project Budget: $ $388,554

Proposed Project Time Period for the Funding Requested: 2 years, 2010 - 2012

Other Non-State Funds: $ $0

Summary:

Our project bolsters sustainability in northern Minnesota by forging cross-institutional coalitions at community to regional scales to develop new knowledge and implement collaborative landscape-scale forest management that enhances regional resilience.

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Sponsoring Organization: U of MN

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St. Paul MN 55108

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Email: preich@umn.edu

Fax: (612) 625-5212

Web Address:

Location:

Region: NE

County Name: Aitkin, Beltrami, Benton, Carlton, Cass, Chisago, Clearwater, Cook, Hubbard, Itasca, Kanabec, Koochiching, Lake, Lake of the Woods, Mille Lacs, Morrison, Pine, Roseau, St. Louis, Todd, Wadena

City / Township:

_____ Knowledge Base _____ Broad App. _____ Innovation

_____ Leverage _____ Outcomes

_____ Partnerships _____ Urgency _____ TOTAL

PROJECT TITLE: Collaborative landscape management to enhance northern forest resiliency

I. PROJECT STATEMENT

Minnesota's forests provide benefits vital to Minnesota, including economic and ecosystem services such as timber production, climate regulation, wildlife habitat, watershed protection, and recreational opportunity. However, our northern forests are on the front lines of economic, climatic, and social change. In the face of challenge and uncertainty, what can we do to ensure the best future – healthy ecosystems, vibrant communities, and good jobs? Our project is aimed at addressing these issues by bolstering resilience and sustainability in Minnesota's northern forest region.

Northern forests and people face a diverse set of threats. Changes in land use, pests, and diseases threaten the health, diversity and resilience of forest ecosystems; Minnesota forest industries face global competition; emerging bioenergy industries promise new jobs and cleaner energy while demanding more of our forests; increasing exurban development coupled with likely increased wildfire risk presents a growing challenge, especially given that wildland protection generates heated debate. These and other challenges will be intensified by climate change (to which Minnesota forests may be especially vulnerable) and exacerbated by our complex landscape, society and history.

Critical to maintaining and enhancing the resilience of forest ecosystems is to focus management efforts regionally across broader areas, and across ecologically rather than ownership-defined boundaries. Community-based efforts may be especially important albeit challenging in this regard. However, cohesive management is especially important in a landscape like northern Minnesota with checkerboard ownership and complex spatial patterns of forests, lakes and wetlands. Forging institutional and cross-institutional coalitions at community to regional scales conducive to collaborative and resilient landscape-scale forest management is central to our project, and key to overcoming the challenges ahead for northern forests.

Our project team includes a core of scientists and managers representing university, government, industry, and environmental organizations. The project will engage a stakeholder team with representatives of all relevant communities-- major governmental landowners and land managers, forest industry, tribal and family forests, scientific organizations and conservation groups. We will:

- improve understanding of natural systems (e.g., forests) and human systems (e.g., economic, political) and their interaction,
- develop future scenarios that are instructive about the implications of our societal choices,
- use scenario results to bolster resilience by developing adaptive management capacity, and
- build on and expand existing working partnerships among relevant stakeholder groups (i.e., the Minnesota Forest Resources Council) to design and implement integrated landscape scale adaptive management, focusing on cross-ownership "working landscape" projects.

II. DESCRIPTION OF PROJECT RESULTS

Result 1: Technical assessment and development of optimal strategies. Budget: $135,000.
Ecological, environmental, economic, and social data and future trends projections will be compiled, and used to make analyses and projections of the mix of land uses, forest management, and economic activities that optimize environmental and economic benefits, sustainability, and resiliency.

Deliverable	Completion Date
1. Environmental and economic data base	3/15/2011
2. Quantitative trends analyses	7/15/2011
3. Optimal strategies technical report	12/31/2011

Result 2: Build adaptive capacity/Develop stakeholder strategies. Budget: $98,000.
Stakeholder designed scenarios are a useful tool for building adaptive capacity regionally and locally, because they enhance a community's ability to imagine and plan for multiple futures. Goals are to: (1) develop multiple plausible future scenarios for the region; (2) determine which policies or practices best create adaptability to multiple futures; (3) build systemic thinking in project participants; and (4) develop research questions, quantitative models, landscape plans: i.e. resiliency strategies.

Deliverable	Completion Date
1. Initial stakeholder workshops	4/30/2011
2. Scenarios and Strategies Report	8/15/2011
3. Community outreach meetings	12/31/2011

Result 3: Initiate/implement cross-ownership landscape scale management projects. Budget: $155,554.
There are numerous barriers to implementation, including lack of funding, translation from concept scale to management scale, and cultural, political and institutional obstacles. Therefore, the implementation stage is the most ambitious part of our project. Expanding upon several stakeholder partnerships (and building on the technical and stakeholder strategy plans developed earlier), the project will initiate the implementation of integrated management plans for specific cross-ownership landscape regions. This will build on and expand existing, and develop new landscape scale multi-organization management initiatives.

Deliverable	Completion Date
1. Landscape Projects Workshops	8/15/2012
2. Landscape Projects Plans Reports	1/30/2013
3. Landscape Projects Progress Reports	6/30/2013

III. PROJECT STRATEGY AND TIMELINE

A. Project Partners. ***P. Reich*** is project manager. The steering committee includes: (1) ***D. Zumeta*** (Executive Director, Minnesota Forest Resources Council) provides expertise on stakeholder-driven management processes, (2) ***J. Sanders*** (Supervisor, Superior National Forest) will apply his expertise with managing complex landscapes with multiple objectives and interests, (3) ***S. Polaksy*** (U. Minnesota, applied economics) will provide expertise on environmental economics, (4) ***A. Ek*** (U. Minnesota) will provide forest management expertise. Cooperators (from government agencies, universities, industry, environmental organizations, and elsewhere) will provide expertise on a range of areas such as policy and planning (D. Becker, J. Manolis), law (S. Enzler), social science (K. Nelson), silviculture (B. Palik), tourism (I. Schneider), and others. Through the Minnesota Forest Resources Council and expanded stakeholder groups, representatives of county, state, federal and private organizations will be involved.

B. Timeline Requirements. This is proposed as a three-year project.

C. Long-Term Strategy. By building a multi-organizational community (i.e., the people and organizations that are part of this project) dedicated to the project goals, it should be possible (and is our objective) to make this an ongoing cooperative initiative. In short, many agencies and groups already fund personnel and activities relevant to these issues. Our project will tie the threads together into a working group, and weave a sustaining network to continue this work. Building this network would go a long way towards making our goal of enhancing forest resilience. This proposal closely complements a related multi-organizational initiative of the U. Minnesota's Institute on the Environment tentatively funded to begin later in 2009. LCCMR funding will support unique initiatives and project unique deliverables beyond the scope of the other project. However, implementation of what begins in this LCCMR project will continue in the Institute on the Environment project, which will run for a full five years.

Project Budget

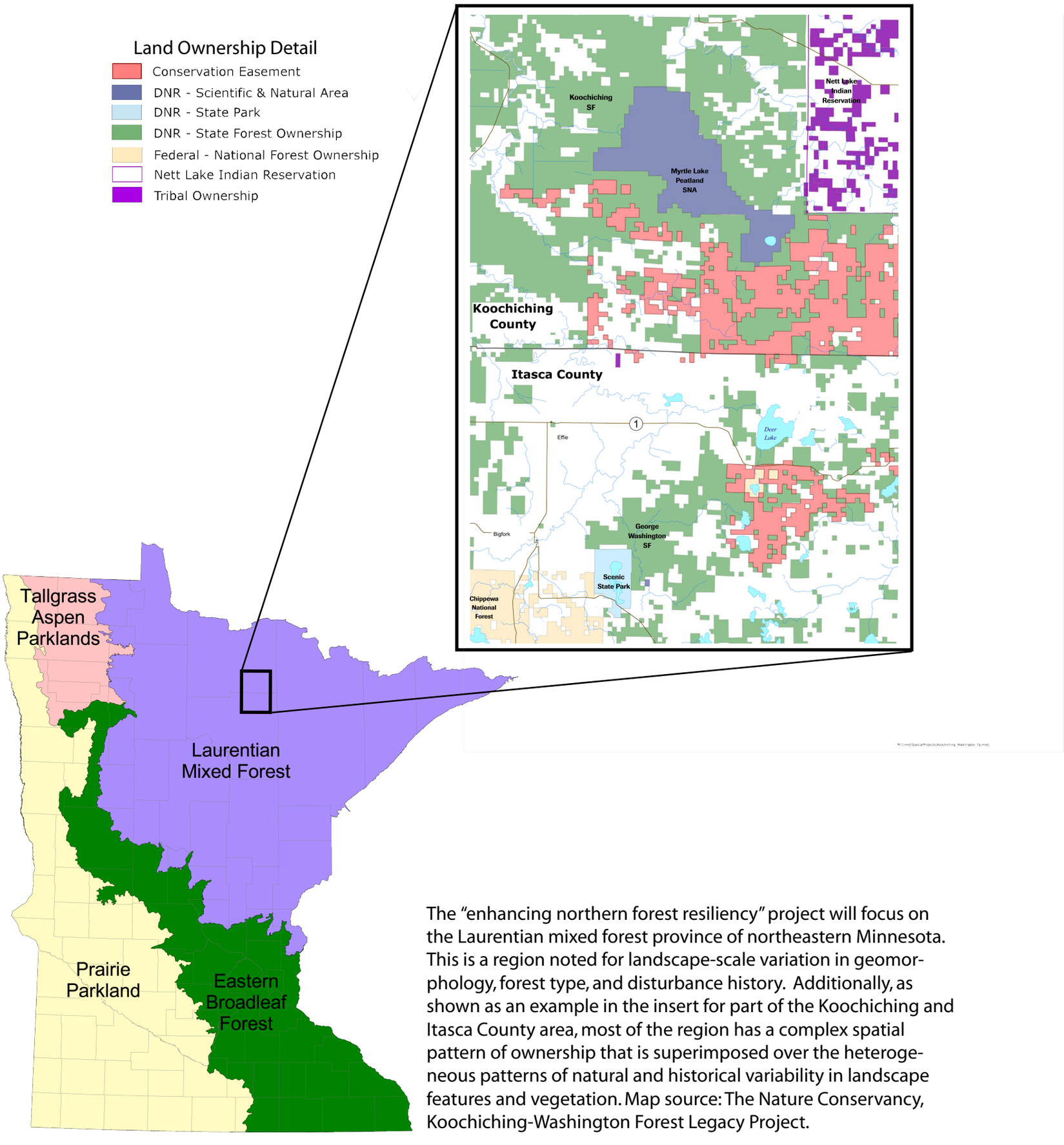
Collaborative landscape management to enhance northern forest resiliency

IV. TOTAL PROJECT REQUEST BUDGET (*2* years)

BUDGET ITEM	AMOUNT
Personnel:	$ -
2 Research Associates, 100%, ($44,596 salary each + $14,405 fringe each) for 2 years; (1) conduct quantitative trends projections & develop the qualitative scenario development process, (2) initiate field based landscape planning	$ 236,002
1 Graduate student, 50%, ($21,000 salary + $3,535 health benefits + $11,170 tuition benefit) for 2 years; develop dissertation project from one of the components	$ 71,412
1 Project assistant, 30%, ($11,000 salary + $4,070 fringe) for 2 years; organizing & running stakeholder workshops & working groups	$ 30,140
Equipment/Tools/Supplies: misc. supplies such as materials preparation & photocopying, for both years	$ 9,000
Travel: in-state travel for stakeholder participants and researchers	$ 14,000
Scenario Worksop & Working group costs: meeting expenses such as space rental, facilitator & refreshments, for both years	$ 28,000
TOTAL PROJECT BUDGET REQUEST TO LCCMR	$ 388,554

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State $ Being Applied to Project During Project Period:	$ -	*Indicate: Secured or Pending*
Other State $ Being Applied to Project During Project Period:	$ -	*Indicate: Secured or Pending*
In-kind Services During Project Period: Time that the Project Manager, partners, and participants spend on the project.	$ 60,000	
Remaining $ from Current Trust Fund Appropriation (if applicable):		*Indicate: Unspent? Not Legally Obligated? Other?*
Funding History:	$ -	



The "enhancing northern forest resiliency" project will focus on the Laurentian mixed forest province of northeastern Minnesota. This is a region noted for landscape-scale variation in geomorphology, forest type, and disturbance history. Additionally, as shown as an example in the insert for part of the Koochiching and Itasca County area, most of the region has a complex spatial pattern of ownership that is superimposed over the heterogeneous patterns of natural and historical variability in landscape features and vegetation. Map source: The Nature Conservancy, Koochiching-Washington Forest Legacy Project.

Project Manager Qualifications and Organization Description

Project Manager: Professor Peter B. Reich
Regents Professor, Distinguished McKnight University Professor, and F.B. Hubachek, Sr., Professor of Tree Physiology and Forest Ecology
Department of Forest Resources, University of Minnesota, St. Paul, MN 55108
E-mail: preich@umn.edu; Phone: 612-624-4270; FAX 612-625-5212

Professional Appointments and Preparation
F.B. Hubachek, Sr., Professor, Dept of Forest Resources, U. Minnesota, 1991-
Assistant/Associate Professor, Dept of Forestry, U. Wisconsin-Madison, 1985-1991
Post-doc (1985) and Ph.D. (1983) Cornell University
M.S. (1977) University of Missouri
B.A. (1974) Goddard College

Honors, Professional Recognition and Service (Selected)
Invited speaker > 120 symposium, conferences, and seminars; e.g., Harvard; Duke; Penn State; Princeton; Stanford; Texas A&M; Cornell; Michigan State; Washington
Institute for Scientific Information (ISI) Science Citation Index, List of Top 10 Ecologists and Environmental Scientists in the World, 2002 – present
Advisor to numerous Federal science and policy agencies
Member of numerous editorial review boards and federal science agency panels

Areas of Expertise
Forest ecosystem ecology and management; global environmental change and terrestrial ecosystem responses, including invasive species, climate, biodiversity, wildfire, elevated CO_2, N pollution, land use change, and sustainability; Carbon cycling; Plant physiology, production; forest ecology, soil fertility and biogeochemistry. Systems studied: forests, woodlands, grasslands, agricultural row crops.

Project Management Experience
Lead PI or co-PI on forest and grassland science projects (total funding, >$18 million 2000- present, from federal [NSF, DOE, USDA, NASA], state, and private sources.

Peer-reviewed publications:
> 310 scientific articles and book chapters, including > 15 in high profile general journals (Nature, Science, etc.) as well as >250 in specialized technical journals

Project Management Qualifications for this Project
Background in forest ecosystem ecology and management, including a focus on the sustainability and resilience of the forest ecosystem and the human community. Extensive experience successfully leading science projects and managing large research teams.

Organization Description
The University of Minnesota is both the state land-grant university, with a strong tradition of education and public service, and the state's primary research university