

**Environment and Natural Resources Trust Fund  
2012-2013 Request for Proposals (RFP)**

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**Project Title:**

**ENRTF ID: 029-B**

Understanding Opportunities for Minnesotas State Forest Lands

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**Topic Area:** B. Forestry/Agriculture/Minerals

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**Total Project Budget:** \$ 378,664

**Proposed Project Time Period for the Funding Requested:** 3 yrs, July 2013 - June 2016

**Other Non-State Funds:** \$ 0

**Summary:**

Detailed optimization modeling system will be applied to help effectively identify and better understand alternative forest management strategies for county-managed lands and Minnesota School Trust lands.

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**Name:** Howard Hoganson

**Sponsoring Organization:** U of MN

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Grand Rapids MN 55744

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**Location**

**Region:** NW, NE, Central

**County Name:** Aitkin, Becker, Beltrami, Carlton, Cass, Clearwater, Cook, Crow Wing, Hubbard, Itasca, Kanabec, Koochiching, Lake, Lake of the Woods, Mahnomen, Mille Lacs, Morrison, Pine, Roseau, St. Louis, Wadena

**City / Township:**

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<input type="checkbox"/> Funding Priorities	<input type="checkbox"/> Multiple Benefits	<input type="checkbox"/> Outcomes	<input type="checkbox"/> Knowledge Base
<input type="checkbox"/> Extent of Impact	<input type="checkbox"/> Innovation	<input type="checkbox"/> Scientific/Tech Basis	<input type="checkbox"/> Urgency
<input type="checkbox"/> Capacity Readiness	<input type="checkbox"/> Leverage	<input type="checkbox"/> Employment	<input type="checkbox"/> TOTAL <input type="checkbox"/> %



# Environment and Natural Resources Trust Fund (ENRTF) 2012-2013 Main Proposal

## PROJECT TITLE: Understanding Opportunities for Minnesota’s State Forest Lands

### I. PROJECT STATEMENT

Only Alaska has more state-managed forest land than Minnesota. A large portion of Minnesota’s state forest land is managed by county land departments that have limited technical forest planning skills. Project will utilize the forest management analytical capabilities of the University of Minnesota. Analyses will be cost effective, sharing expertise across public land management units. The project is timely as much of Minnesota’s forest are financially over mature with concerns about lost economic opportunities because of slow-growing stands that are at greater risk to fire, blow-down and insects and disease outbreaks. Some suggest large temporary increases in harvesting to help rejuvenate growth and utilize much of the older forest before it is lost to mortality. But how much of a temporary increase in harvesting is reasonable? To consider temporary increases, public land management agencies need a thorough understanding of potential consequences. Independent analyses are also potentially timely for DNR lands. The DNR is under scrutiny about management of Minnesota’s school trust lands. The DNR is charged with managing these lands for economic benefit. It is important to understand how that can be best accomplished and integrated with management of other DNR lands.

The aspen forest cover type is the most common forest cover type in Minnesota, comprising nearly 1/3 of Minnesota’s forest land area and three times the area of any other forest cover type. It is also, by far, the most common forest cover type harvested, comprising approximately 50% of the harvest area. Figure 1 shows the current age class distribution of aspen in Minnesota. For timber production, optimal rotation length is approximately 40-50 years. On average, by age 60, growth rates are low and wood quality is reduced. Some counties have been cutting primarily only aspen over age 60 for decades, not reducing backlogs of older stands. Analyses for this project are not intended to make recommendations regarding appropriate harvest levels. Emphasis will be on developing multiple scenarios to better estimate key trade-offs associated with a range of plausible management strategies.

### II. DESCRIPTION OF PROJECT ACTIVITIES

**Activity 1:** Analyses of County Management Strategies **Budget:** \$192,327

Detailed analyses will be developed to support forest planning for selected Minnesota counties. Counties interested include Becker, Beltrami, Carlton, Crow Wing, and St. Louis. Others will also be considered. Stand-level inventory information will be linked with a stand prescription writer to develop potential management alternatives for all county-managed stands. Stand-level options will be examined using a harvest scheduling model to better understand: (1) forest-wide trade-offs between retaining older forest for environmental benefits, (2) long-term sustainable harvest levels, (3) opportunities for temporary short-term departures in harvest levels and (4) economic returns. County land departments will help define forest-wide scenarios to analyze. Results will be detailed to where management schedules developed can be mapped and compared using county GIS systems.

Activity 1 Outcomes	Completion Date
1. Final report comparing strategies for County #1	12/31/2014
1. Final report comparing strategies for County #2	6/30/2015
1. Final report comparing strategies for County #3	12/31/2015
1. Final report comparing strategies for County #4	6/30/2016

**Activity 2:** Analyses of Minnesota School Trust Lands

**Budget:** \$186,337

Analyses will be developed to examine alternative management strategies for Minnesota’s school trust lands. Emphasis will be on better understanding the value of these lands from a forest-wide perspective and concerns on how management of these lands might be best integrated with management of other lands managed by the DNR. Consideration will be given to a wide range of forest-wide scenarios for balancing economic and ecological objectives. Scenarios will vary the level of short-term temporary increases in harvests as well as goals for retaining older forest for environmental benefits. Goal is to help decision-makers better understand management options for school trust lands including values of coordinating management with management of DNR lands. Intent is to involve the DNR and Minnesota’s Permanent School Fund Advisory Committee in selecting forest-wide scenarios to evaluate. Analyses will be detailed utilizing DNR stand-level inventories, available prescription writers, stand-growth projection models and University of Minnesota forest management scheduling models. Intermediate results will be reviewed with the intent of making each scenario the best that it can be. Intent is to provide information on strengths and weaknesses for a range of plausible scenarios. Intent is not to recommend any one scenario.

<b>Outcome</b>	<b>Completion Date</b>
1. Stand-level prescriptions developed and scenarios defined	12/31/2013
2. Results provided for initial scenarios	6/31/2014
3. Results provided for revised/new scenarios	9/31/2014
4. Completion of final report	12/31/2014

**III. PROJECT STRATEGY**

**A. Project Team/Partners**

Howard Hoganson, Professor, University of Minnesota Department of Forest Resources, will be project leader. Two ¾- time scientists will be hired, with combined skills in harvest scheduling, GIS, growth modeling and forest inventory. These scientists will likely be pursuing graduate degrees, but not as full-time students. Work will be coordinated with key forestry staff of county land departments and Minnesota DNR. County and DNR staff are not proposed to receive money from the Environment and Natural Resources Trust Fund as project results will benefit these organizations.

**B. Timeline Requirements**

Two activities will complement each other with the shared staffing opportunities. Project is data intensive. Draft analyses for Minnesota’s school trust lands will be completed in one year with an associated final report in 18 months. Analyses for the first county will also be completed within 18 months. Interactions with county planning boards can lengthen the planning process so intent is to begin work with all four counties as early as possible.

**C. Long-Term Strategy and Future Funding Needs**

All work for this project can be completed in the 3 years planned for this project.

## 2012-2013 Detailed Project Budget

### IV. TOTAL ENRTF REQUEST BUDGET 3 years

<u>BUDGET ITEM</u>	<u>AMOUNT</u>
<b>Personnel:</b> Scientists 2 @ .75% time starting July 1, 2013 at annual salary \$36,000 for 3 years. Assumes 3% annual salary increase each fiscal year effective July 1. Assumed fringe rate is U of MN civil service rate of 41.3%. Combined, these two positions will have skills in harvest scheduling, growth and yield modeling, forest inventory, and GIS modeling.	\$ 314,456
<b>Personnel:</b> Faculty PI 1 @ full time for 1 summer month in each of the three calendar years. Assumed monthly salary in first year is \$11,912 dollars with a budgeted salary increase of 3% each year. Faculty Fringe rate is 35.41%. Faculty will provide leadership of all elements of project with an additional 10% of his base faculty time (10% of 9 months) contributed to the project.	\$ 49,856
<b>Travel:</b> Includes 1 round trip between Grand Rapids and St Paul each month with scientists also expected to spend 6 of the 36 months working out of Grand Rapids at the North Central Research & Outreach Center.	\$ 14,352
<b>TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =</b>	<b>\$ 378,664</b>

### V. OTHER FUNDS

<u>SOURCE OF FUNDS</u>	<u>AMOUNT</u>	<u>Status</u>
In-kind Services During Project Period: 10% of PI time (10% of 9 months) in each of the 3 project years. Additional in-kind faculty time is the maximum amount allowed by the College each year.	\$ 44,871	Secured
<b>Funding History:</b> /	N/A	



**PROJECT TITLE: Understanding Opportunities for Minnesota's State Forest Lands**

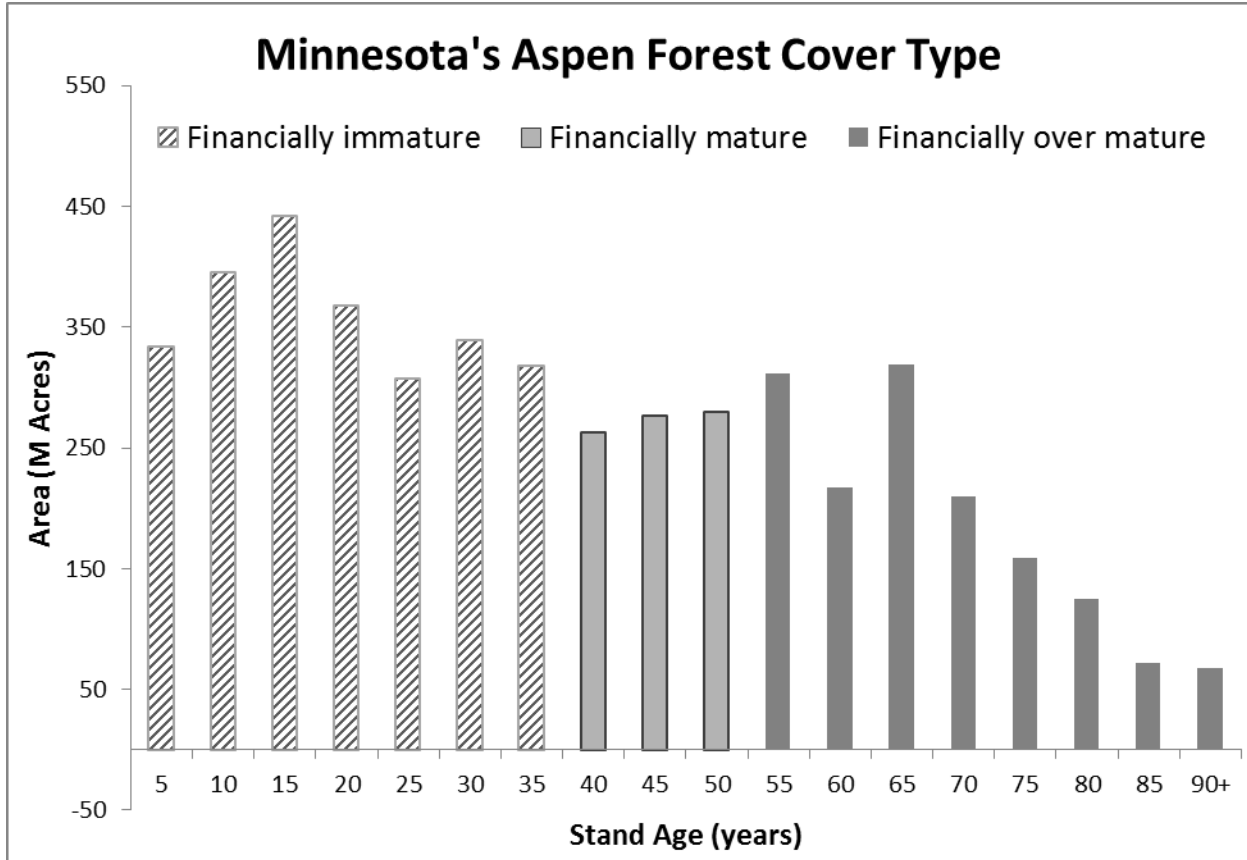


Figure 1. Age class distribution of the aspen forest cover type on timberlands in Minnesota: all Ownerships. Aspen is the most abundant and most harvested forest cover type in Minnesota ( data source: USDA Forest Service, 2006-2010 Statewide FIA Forest Inventory).

**Condensed Vitae**  
**Howard M. Hoganson**

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**Education:** Ph.D., 1981, Forest management, U of MN; M.S, Operations research, U of MN; M.S., Forest management, U of WA; B.S., Forestry, U of MN

**Positions Held:** Prof., Assoc. Prof. & Asst Prof., U of MN Dept. of Forest Resources (1987-present); Asst. Prof., School of Forestry and Wildlife Resources, VPI and State University (1985-1987), Principal Economist, Forest Economics Project, NC Forest Exp. Sta., USDA Forest Service (1981- 1985).

**Professional Experience (selected):**

Lead analyst in forest harvest scheduling efforts for Interagency Information Center of the University of Minnesota. 2008 to present.

Decision Support Tools to Help Achieve Ecologic and Economic Objectives over Large Forest Landscapes. University of Minnesota Agricultural Experiment Station Research Project No. 42-086, lead investigator. 2008 to 2013

Developed solution methods for forest management models that take advantage of the specific mathematical structure of forestry problems. Models have been used in large-scale applications in US, Canada, Sweden, Brazil and Portugal. 1981 to present.

Instructor, Forest Management & Planning Courses, Department of Forest Resources, University of Minnesota, 1987 to present.

Integrating Kirtland's Warbler habitat with timber production in Michigan, Collaborative effort with the Hiawatha National Forest, 2005 to present.

Associate Editor of *Forest Science* for the area of forest management and planning. *Forest Science* is a leading forestry research publication worldwide. 2004 to 2009.

Lead in developing technical timber supply analysis for the Environmental Impact Statement for a proposed \$700 million UPM Blandin Mill Expansion in Grand Rapids, MN. 2005 to 2006

Developed forest management models and served as lead analyst for the 2004 Forest Plans for both the Chippewa and Superior National Forests in Minnesota. 1998 to 2004.

Large-scale spatial models to help coordinate management across ownerships for environmental and economic objectives. Lead investigator. MN Forest Resource Council, 2001 to 2003

Minnesota's Generic Environmental Impact Statement on Timber Harvesting and Forest Management. Developed and applied the forest management scheduling model used as the basis for detailed statewide analyses. 1992 to 1994.

**List of publications provided upon request**