

**Environment and Natural Resources Trust Fund
2014 Request for Proposals (RFP)**

Project Title:

ENRTF ID: 105-D

Minnesotas Forest Invasives: Threats, Assessment and Recommendations

Category: D. Aquatic and Terrestrial Invasive Species

Total Project Budget: \$ 308,000

Proposed Project Time Period for the Funding Requested: 2 Years, July 2014 - June 2016

Summary:

Assessment of threats from terrestrial invasive species to Minnesotas forests and urban trees and development of recommendations regarding optimal policy instruments, needed investments, and key information needs, better positioning Minnesota.

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Sponsoring Organization: Minnesota Forest Resources Council

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Location

Region: Statewide

County Name: Statewide

City / Township:

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



PROJECT TITLE: Minnesota's forest invasives: Threats, assessment and recommendations

I. PROJECT STATEMENT

As Minnesotans invest millions of dollars to fight aquatic invasives, many terrestrial invasive species with potentially devastating economic and ecological impacts to the state's trees, are not being adequately addressed. As we have learned from recent invaders, the ability to stay ahead of invading species through prevention, early eradication, suppression, and slowing their spread is paramount in minimizing their impacts. Failure to do so can have great economic and ecological impacts. Across the country, governments, private entities and individuals have spent hundreds of millions of dollars in treating outbreaks of the invading species listed above and are expected to spend much more in the future.

Many invading pests and pathogens are newly arrived or are rapidly approaching Minnesota's borders and threaten our native tree species. We are well acquainted with some challenges, such as Dutch Elm Disease and Oak Wilt, but we may be less familiar with others invasive species that impact:

- Ash (Emerald Ash Borer),
- Aspen and Oak (Gypsy Moth),
- Oak (Sudden Oak Death and Goldspotted Oak Borer),
- Jack, red, and white pines (Mountain Pine Beetle),
- Maple (Asian Long-Horned Beetle), and
- Walnut (Thousand Cankers Disease).

This list is non-exhaustive, and problems are expected to worsen. On average, two new exotic forest pests are introduced to the United States each year. Most efforts have actually experienced recent declines in funding. Minnesota's public and private patchwork of ownership increases the state's susceptibility to terrestrial invasives and complicates the design of public policy. Coupled with increasing development pressure, wildlife habitat fragmentation, domestic and international trade, climate change and other factors, terrestrial invasive species management becomes a very complex problem to address, buoying the need for a more strategic and integrated response.

We will assess the state's capacity to address threats from terrestrial invasive species to our forests and the development of recommendations to better position Minnesota in the years to come, by identifying current and future threats, analyzing these threats and making recommendations regarding response to these threats. Determining the potential economic impacts to the state and understanding our abilities to influence the movement of these invasives will allow for a more strategic use of our limited resources in managing landscapes in the face of these pests and pathogens.

Recognizing the complex web of federal and state agencies and their roles that complicate efforts to develop meaningful coordinated policy recommendations, our goal is to

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Synthesis and assessment of current knowledge, analysis and response.

Budget: \$250,065

Building on past efforts within the state (e.g. MN Forest Protection Plan, MN forest pest work group, MN State Management Plan for invasive species) and elsewhere in the region and beyond (Great Lakes Forestry Alliance, Northeastern Area - USDA Forest Service), we propose an update and synthesis of threats and impacts, both economic and ecological, and an assessment of the adequacy of our collective response to terrestrial invasives affecting forests. This analysis would include an updated review of terrestrial pests and pathogens, as well as a synthesis of risk and economic impact assessments. We would also conduct a thorough review of agency plans and responses, including a review of agency roles and responsibilities, adequacy of risk assessment activities, and current funding and infrastructure in place to deal with these problems.



Outcome	Completion Date
1. Compilation/Determination of extent and location of current and potential forest pests and pathogens (Emerald Ash Borer, European Gypsy moth).	November 1, 2015
2. Synthesis of current risk assessments, impact analyses, and prioritization criteria including estimates of future spread and associated economic impacts.	November 1, 2015
3. Synthesis of response (federal, state, local agencies, other private and non-profit sectors) including current control strategies and monitoring efforts.	November 1, 2015

Activity 2: Identification and analysis of information needs and adequacy of response. **Budget:** \$35,042

Utilizing the information gathered and expertise of stakeholders, we will assess the adequacy of current information used to make strategic and efficient decisions and make recommendations regarding crucial information needs. The analysis of response will be assessed through interviews and questionnaires including the following questions:

- Is the current response sufficient?
- What are current funding trends and what are the needs?
- Are we investing in the right areas and what are the tradeoffs?
- What are the costs of various responses including doing nothing?
- What could be done with additional funding? and
- Why have some efforts been successful while others failed?

Outcome	Completion Date
1. Identification of priority information needs ensuring strategic decisions.	November 1, 2015
2. Analysis of public and private response to terrestrial forest invasives including a synthesis of current laws and statutes, agency programs, as well as efforts tested in other states	November 1, 2015

Activity 3: Development of statewide policy recommendations

Budget: \$23,215

Positioning Minnesota to be better able to move forward in a strategic and integrated manner that allows us to use resources efficiently, better recognizing when actions are warranted and when actions are fruitless. We will develop recommendations to ensure that our scarce public and private resources are used in the most efficient, strategic and coordinated manner possible.

Outcome	Completion Date
1. Development of criteria for evaluating current and potential policies (effectiveness, economic efficiency, implementable, politically palatable).	November 1, 2015
2. Development of recommendations regarding critical information needs, effective policy responses, agency roles and responsibilities, needed levels of investment, and needs for coordinated threat and impact analyses.	July 1, 2016

III. PROJECT STRATEGY

A. Project Team/Partners

The project team will be led by Dr. Calder Hibbard, policy analyst for the Minnesota Forest Resources Council. Other team members will include Dr. Brian Aukema, assistant professor of entomology (UMN), Dr. Frances Homans, professor in applied economics (UMN); and Dr. Robert Venette, research biologist with the USDA-Forest Service. We will utilize a cross-disciplinary approach, including expertise in entomology, forestry, biology, economics and policy development in assessing and evaluating forest-related invasive species. The trust fund would fund one research technician, four grad students, and one month of Dr. Aukema's summer salary. Dr. Hibbard, Dr. Venette and Dr. Homans, as well the balance of Dr. Aukema's, time, will not be funded by the Trust Fund, contributing substantial in-kind resources from those listed above.

B. Timeline Requirements

The project will be completed in less than 30 months: approximately 12 months for Activity #1, 16 months to conduct Activity #2 and 12 months to complete Activity #3 (some of these activities can be conducted simultaneously).

C. Long-Term Strategy and Future Funding Needs

It is important to note that though this project is of a relatively short duration, it is intended to inform a broad range of future efforts in activities related to forest-based terrestrial invasive pests and pathogens.

2014 Detailed Project Budget

Project Title: Minnesota's Forest Invasives: Threats, assessment and recommendations

IV. TOTAL ENRTF REQUEST BUDGET over 2.5 years

BUDGET ITEM (See "Guidance on Allowable Expenses", p. 13)	AMOUNT
Personnel: Salary for graduate student worker for 1.5 years (1324 hrs @ 13.25/hr)(\$17550)	\$ 18,000
Contracts: UMN Dr. Brian Aukema - 1.5 months of summer salary \$18,000 ; One full-time research technician - 1.5 years (\$66,750) and 1 grad student 1.5 yrs (\$60,000) all administered by Brian Aukema to compile and update and analyze current and potential threats. One grad student, 1.5 years, (\$51,221), administered by Dr. France Homans to review and synthesize existing economic impact analyses; One grad student/post doc (\$91,800) administered by Dr. Rob Venette for synthesis of risk assessment modeling and other impact analyses	\$ 287,000
Travel: This project will require some in-state travel for interviews and convening meetings with stakeholders.	\$ 3,000
Additional Budget Items:	
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =	\$ 308,000

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ Being Applied to Project During Project Period: Indicate any additional non-state cash dollars to be spent on the project during the funding period. For each individual sum, list out the source of the funds, the amount, and indicate whether the funds are secured or pending approval.	\$ -	Indicate: Secured or Pending
Other State \$ Being Applied to Project During Project Period: Indicate any additional state cash dollars (e.g. bonding, other grants) to be spent on the project during the funding period. For each individual sum, list out the source of the funds, the amount, and indicate whether the funds are secured or pending approval.	\$ -	Indicate: Secured or Pending
In-kind Services During Project Period: Calder Hibbard, project manager, salary and fringe (0.35) 1.5 years (0.5 FTE) Will be additional in-kind from collaborators.	\$64,561	Secured
	\$ -	Indicate: Unspent? Not Legally Obligated? Other?
Funding History: Indicate funding secured prior to July 1, 2014, for activities directly relevant to this specific funding request, including past ENRTF funds. State specific source(s) of funds.	\$ -	

Asian gypsy moth (oaks, pines)



New and Emerging Forest Pests

European gypsy moth (oaks, pines)



Mountain pine beetle (pines)



Sirex woodwasp (pines)



Walnut twig beetle (walnut, butternut)

prairie grassland

coniferous forest

deciduous forest

Asian longhorned beetle (maples)



Emerald ash borer (ash)

Goldspotted oak borer (oaks)

07/25/2013

Project Manager Qualifications

Calder Hibbard, Minnesota Forest Resources Council (MFRC) policy analyst, leads the policy development program with the MFRC and has extensive experience in project management and forest policy analysis. He has a Ph.D. in Natural Resource Sciences and Management, a M.S. in Forestry, and a B.S. in Natural Resources and Environmental Studies. He has conducted analysis of forest policy on a local, state, and national level and managed many projects. Most recently he has served as the Project Director for a project entitled 'Maintaining the forestland base in Minnesota.' His additional experiences include assessment of state forest tax policies, intergovernmental roles regarding non-federal forestland, state strategic planning for the use and management of forest resources, assessment of family forest certification, assessment of public participation and access to information frameworks, review of state legal property rights frameworks, among many other projects. Prior to his current position, Calder worked for the University of Minnesota as a research specialist, as well as in the private sector.

Organization Description

The Minnesota Forest Resources Council (MFRC) is a 17-member governmental organization working to promote long-term sustainable management of Minnesota's forests by coordinating implementation of the Sustainable Forest Resources Act (SFRA) (M.S. 89a), and advising the Governor and federal, state, and local governments on sustainable forest resource policies and practices. Created in 1995, the MFRC operates within the policy framework set forth in the SFRA to (1) pursue the sustainable management, use, and protection of the state's forest resources to achieve the state's economic, environmental, and social goals, (2) encourage cooperation and collaboration between public and private sectors in the management of the state's forest resources, (3) recognize and consider forest resource issues, concerns, and impacts at the site and landscape levels, and (4) recognize the broad array of perspectives regarding the management, use, and protection of the state's forest resources, and establish processes and mechanisms that seek these perspectives and incorporate them into planning and management.

The primary responsibilities of the MFRC include: advising the Governor and public agencies on forest policies and practices that result in sustainable forest management, use, and protection; developing landscape-level forest planning and coordination processes; and developing comprehensive timber harvesting and forest management guidelines and a monitoring program. Recent accomplishments within the policy program include providing staffing to the Governor's task force on the competitiveness of the primary forest products industry, providing advice to the Governor on federal roadless areas, providing advice to the Governor and public agencies regarding invasive species, and the commissioning of a study of forestland parcelization in Minnesota.

The MFRC is made-up of a diverse group of public and private interests and is designed to encourage collaboration between those entities represented as well as many others that have an interest in Minnesota's forest resources. The MFRC plays a unique statewide role in bringing together the key interests regarding forest resources issues and policies to work collaboratively in crafting workable policies and solutions to key strategic forest resource management issues and problems.