

**Environment and Natural Resources Trust Fund  
2018 Request for Proposals (RFP)**

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**Project Title:**

**ENRTF ID: 151-D**

Boot Brush Use to Prevent Spreading Invasive Species

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**Category:** D. Aquatic and Terrestrial Invasive Species

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**Total Project Budget:** \$ 267,208

**Proposed Project Time Period for the Funding Requested:** 3 years, July 2018 to June 2021

**Summary:**

A better understanding of Minnesota hikers and the tools they use to clean their gear will prevent the spread of terrestrial invasive species and protect natural and scenic resources.

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**Sponsoring Organization:** MN DNR

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**Location**

**Region:** Statewide

**County Name:** Statewide

**City / Township:**

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**Alternate Text for Visual:**

photos of recreationist using a boot brush kiosk, student interns collecting data, scouts installing a boot brush kiosk; map of state trail system to be used in inventory and survey work; diagram of building plans for boot brush kiosk; PlayCleanGo media encouraging recreationists to "Come Clean. Leave Clean."

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



**Environment and Natural Resources Trust Fund (ENRTF)**

**2018 Main Proposal**

**Project Title: : Boot Brush Use to Prevent Spreading Invasive Species**

**PROJECT TITLE: Boot Brush Use to Prevent Spreading Invasive Species**

**I. PROJECT STATEMENT**

Select hiking trails on state lands in all four regions of the state will be inventoried for existing cleaning stations (mounted boot brushes with an informational sign). Based on that inventory, select sites will be observed and boot/shoe cleaning behaviors recorded as hikers enter the trail. Hikers will be surveyed as they exit the trail to determine their attitudes and beliefs around the threat posed by terrestrial invasive species (TIS). Those results will determine where cleaning stations needed to be placed, moved, or repaired. The project will then implement those actions at a minimum of 20 trail heads around the state. We will also use the results to evaluate and modify outreach messaging to better engage hikers in desired cleaning behaviors. In the process, the project will document and optimize hikers’ use of desired cleaning behaviors to reduce the spread of TIS. It will also provide a model for future work with other kinds of trail users, such as bikers and ATV riders.

TIS pose significant environmental and economic threats to Minnesota. Annual costs associated with TIS in the United States are estimated to be \$134 billion (Olson, April 2006, Agricultural and Resource Economics Review). In addition to direct TIS management, this includes reduced revenues for agriculture, forestry and tourism-dependent communities, increased fire suppression and costs associated with hazard tree management. In Minnesota, the cost is estimated to be \$3 billion. Neither of these estimates include habitat services such as clean air, clean water and associated human health, or their effects on pollination (Buhr, January 2015, Legislative Report). Preventing the spread of TIS reduces the risk of damage and the costs to communities, regions and the state.

One way TIS are spread is through recreational land use, and the association between trails and the spread of TIS is especially close. Wind, water, animals and other human activities can also spread TIS. There’s not much we can do about TIS movement through wind and water other than direct management of existing infestations. The DNR and her partners actively encourage use of best management practices to limit the spread of TIS during work activities. That leaves TIS spread through recreational land use still largely unaddressed.

There is little if any data on the relative threat posed by different kinds of recreationists and because of the perceived blame associated with that kind of research, unbiased data will likely remain unavailable. As part of their social marketing strategies, the outreach campaign PlayCleanGo: Stop Invasive Species In Your Tracks launched in 2012 by the Minnesota Department of Natural Resources (DNR), conducted two phone surveys to describe trail users’ behaviors, attitudes and beliefs about invasive species. No observational data confirms self-reported behaviors or assesses the ability of outreach messaging to produce the desired cleaning behaviors. Also it’s not known if existing cleaning stations are being used as intended. While there are a number of types of recreational land use, hiking is by far the most common. More than 50% of all Minnesotans hike in some form or another, making hikers an ideal group to study cleaning behaviors and outreach success.

**II. PROJECT ACTIVITIES AND OUTCOMES**

**Activity 1: Inventorying cleaning station**

Select state lands in each region of the state based on resource similarities and proximity to each other. Inventory existing cleaning stations to determine their status, placement, accessibility and condition.

Select trail heads with and without cleaning stations for activity 2. Budget: \$42000

Outcome	Completion Date
1. A sub-set of trails within each region of the state have been inventoried and the cleaning stations counted, mapped and assessed.	Year one
2. Trail heads with and without cleaning stations have been identified for the next phase of the project.	Year one



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**Activity 2. Collecting hiker observations and surveys**

Trained personnel and volunteers will 1) observe use of cleaning tools and 2) survey visitors on constraints to prevention tool use and other pre/post trip prevention behaviors. Budget: \$187,408

Outcome	Completion Date
1. Observational and survey protocols have been developed, pretested and implemented; the data has been analyzed.	Year two
3. The results have been presented through in-person and online venues	Year three

**Activity 3. Cleaning station installation or repair**

Evaluate and rank trail heads by the work needed to enhance TIS prevention. Purchase the needed materials and carry out the work on a minimum of 20 trail heads across the state. Budget: \$32,000

Outcome	Completion Date
1. Cleaning stations have been identified which need to be repaired, replaced or installed and the work implemented on a minimum of 20 trail heads.	Year three

**Activity 4. Enhancing outreach messaging**

Evaluate the observation and survey data against existing PlayCleanGo outreach efforts and identify where new products are needed or how existing products can be improved. Develop outreach recommendations and present them to the PlayCleanGo Steering Committee. Budget: \$5,800

Outcome	Completion Date
1. Recommended outreach products or product enhancements have been identified and presented.	Year three

**III. PROJECT STRATEGY**

**A. Project Team/Partners**

- University of Minnesota, Forest Resources: Dr. Schneider has more than 20 years of experience in visitor observation and surveys as well as unique experience with TIS perceptions and behaviors in MN and around the world. All field work will be carried out by trained student researchers and volunteers.
- DNR Division of Forestry would administer the grant, provide access to trail data, and state forest sites.
- DNR Division of Parks and Trails would provide research permits, access to trail data, and state park sites.

**B. Project Impact and Long-Term Strategy**

In the short term, the project will identify and address the need for cleaning stations at specific trail heads. The inventory and survey protocols will provide a template to repeat the work in other areas of the state, gradually updating the prevention tools provided across the state’s trail system. Observation and survey protocols will provide a model to expand the work to other recreationists and other types of trails (horse, mountain bike, ATV or dirt bike).

The correlation between past phone survey results and the pending results will provide a strong basis for adaptive management in the PlayCleanGo outreach campaign. Later, as the study is expanded to look at other types of recreationists, new products and messaging can be designed to more effectively engage all recreationists in active TIS prevention.

**C. Timeline Requirements**

It will take three years to complete this project; one year for the inventory work, one year for the social research and one year to install or repair cleaning stations. Outreach recommendations will be developed during this project as well but carrying out those recommendations will depend on future PlayCleanGo partner contributions. For more information on PlayCleanGo, see [www.PlayCleanGo.org](http://www.PlayCleanGo.org).

## 2018 Detailed Project Budget

**Project Title: Boot Brush Use to Prevent Spreading Invasive Species**

**IV. TOTAL ENRTF REQUEST BUDGET: Three years**

<b>BUDGET ITEM</b> (See "Guidance on Allowable Expenses", p. 13)	<b>AMOUNT</b>
<b>Personnel: TOTAL</b>	\$ 215,099
Ingrid Schneider - 6 weeks each summer 2018, 2019, 2020 .115 FTE	\$ 62,081
Graduate Research Assistant 2.5 Years + 3 summers .32 FTE yr1, .50 FTE yr 2 & 3	\$ 106,440
Under Graduate Students \$ 0 FTE yr 1, .22 FTE yr 2 & 3	\$ 46,578
<b>Professional/Technical/Service Contracts: TOTAL</b>	\$ 35,000
Repair and/or produce, deliver & install 20 boot brush kiosks @ \$1500 each	\$ 30,000
Assess and assemble recommended changes in existing PlayCleanGo outreach strategies to address real and perceived barriers to desired cleaning behaviors identified in recreationists' survey responses through an annual work plan.	\$ 5,000
<b>Equipment/Tools/Supplies: TOTAL</b>	\$ 1,144
Copies	\$ 300
Meeting Refreshments Stakeholders 6 @ \$50 each	\$ 300
T Shirts to identify employee 6 @ \$20	\$ 120
Bug Spray 6 @ \$11	\$ 66
Sun Screen 6 @ \$9	\$ 54
Hats to identify employee 3 @ \$20	\$ 60
Tablet rental	\$ 244
<b>Travel: Total</b>	\$ 13,165
Mileage to and from park 5 trips at 3000 miles each at \$0.535/mile	\$ 8,025
Lodging 20 nights @ \$100 per night	\$ 2,000
Per Diem 20 days at \$57per day	\$ 1,140
Travel to conference	\$ 2,000
<b>Additional Budget Items:</b> *Direct and Necessary expenses: HR Support (\$371), Safety Support (\$85), Financial Support (\$0), Communication Support (\$1271), IT Support (\$769), and Planning Support (\$1072) necessary to accomplish funded programs/projects.	3567
<b>TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =</b>	<b>\$ 267,975</b>

**V. OTHER FUNDS** (This entire section must be filled out. Do not delete rows. Indicate "N/A" if row is not applicable.)

*Direct and Necessary expenses include Department Support Services (Human Resources, IT Support, Safety, Financial Support, Communications Support, and Planning Support). Department Support Services are described in the agency Service Level Agreement and billed internally to divisions based on rate that have been developed for each area of service. These services are directly related to and necessary for the appropriation. Department leadership services (Commissioner's Office and Regional Directors) are not assessed. Those elements of individual projects that put little or no demand on support services such as large single-source contracts, large land acquisitions, and funds that are passed through to other entities are not assessed Direct and Necessary costs for these activities.		
<b>SOURCE OF FUNDS</b>	<b>AMOUNT</b>	<b>Status</b>
<b>Other Non-State \$ To Be Applied To Project During Project Period:</b> N/A	\$ -	
<b>Other State \$ To Be Applied To Project During Project Period:</b> State Fish and Game funds cover traditional and social media (\$25k per year), supplies (\$25k per year for boot brushes, trail signs, tee-shirts, etc) and computer services (\$2k per year) for on-going PlayCleanGo® prevention activities.	\$ 156,000	Pending
<b>In-kind Services To Be Applied To Project During Project Period:</b> .93 FTE total (\$53k salary and \$18k fringe): 100 hrs divided over three years from DNR Parks and Trails staff. 250 hrs divided over three years from DNR Forestry staff for the research project and 1500 hrs divided over three years from DNR Forestry staff for on-going TIS prevention outreach. 75 hrs divided over three years for private recreation stakeholders	\$ 16,800	Secured
<b>Past and Current ENRTF Appropriation:</b> N/A	\$ -	
<b>Other Funding History:</b> Past funding for social research and campaign development for PlayCleanGo® (grants in '08 and '12).	\$ 230,000	USFS
<b>Other Funding History:</b> Past in-kind funding provided by PlayCleanGo® partner organizations in Minnesota, based on an estimate of \$1K per year per organization since '12.	\$ 723,800	PCG

# Boot Brush Use to Prevent Spreading Invasive Species

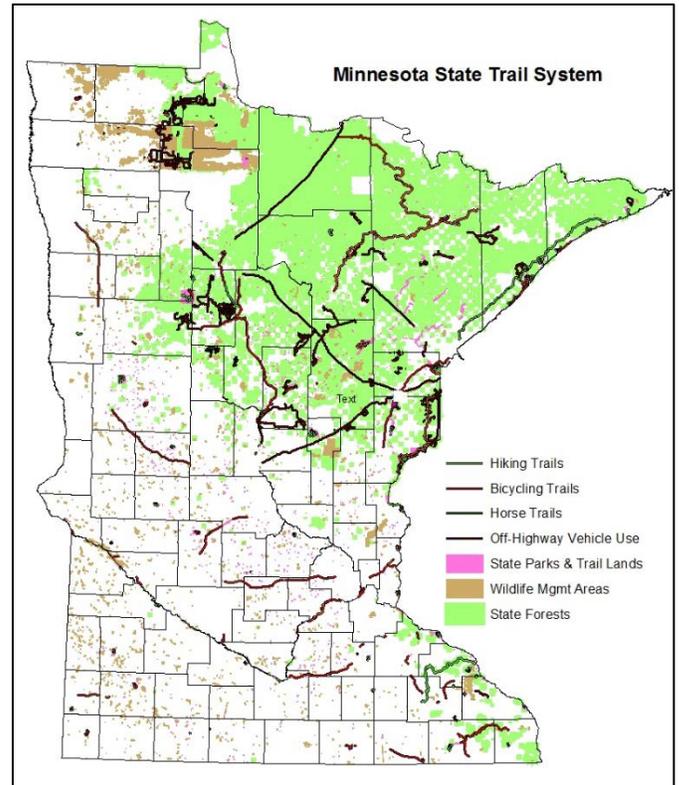
## 2018 Proposal from MNDNR, Division of Forestry

### Activity 1: Inventory Cleaning Stations

**Outcome:** Cleaning stations on select sites have been counted, mapped and assessed for needed maintenance or installation.



Hiker using boot brush kiosk to clean her boots



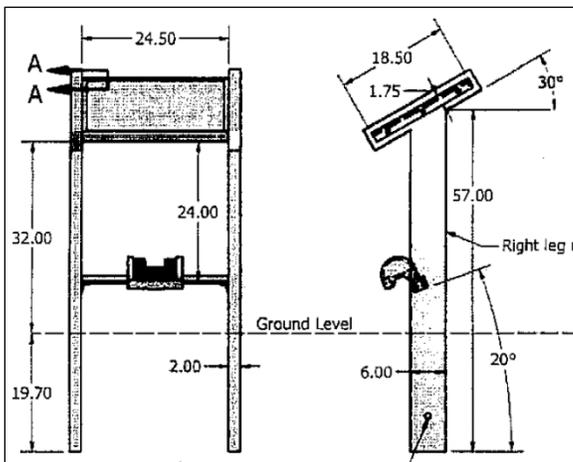
State Trail system to inform site selection

### Activity 2: Observe and Survey Hikers

**Outcome:** Hikers have been surveyed and their cleaning behaviors recorded to inform future planning, design and utilization of state provided cleaning tools.

### Activity 3: Install or Repair Cleaning Stations

**Outcome:** Cleaning stations have been repaired or installed at a minimum of 20 trail heads.



Cleaning station design and plans



Student researchers  
Volunteers installing cleaning station



PlayCleanGo advertisement in trail guide

### Activity 4: Enhance Outreach Messaging

**Outcome:** Based on current results, recommendations for future outreach have been developed and presented to PlayCleanGo campaign managers.

**COME CLEAN. LEAVE CLEAN.**

Give Invasive Species The Brush Off.

**Play Clean Go**

STOP INVASIVE SPECIES IN YOUR TRACKS.

PlayCleanGo.org

## **Boot Brush Use to Prevent Spreading Invasive Species Project Manager Qualification and Organization Description**

**Project Manager Qualifications** for Susan Burks, Minnesota Department of Natural Resources (DNR), Division of Forestry Invasive Species Program Coordinator

**2007 to present: DNR Forestry Invasive Species Program Coordinator.** Susan's responsibilities include implementing the division's invasive species program and leading the department's emerald ash borer, gypsy moth, and firewood programs. Her duties include policy development and implementation of invasive species prevention, monitoring and management activities on state forest lands, and carrying out internal and external outreach as needed to support division and department goals. She currently serves as the primary liaison to the MN Department of Agriculture on subjects related to invasive forest pests.

**Awards:** Commissioner's Behind the Scenes Award for developing the outreach campaign PlayCleanGo: Stop Invasive Species In Your Tracks; USFS Eastern Region Honor Award for cooperative gypsy moth management.

**2000-2007: DNR central region Forest Health Specialist.** Susan was responsible for monitoring forest health in the region and serving as a consultant to staff, partners, landowners and the public on forest health related issues. She also administered the federally funded oak wilt suppression program, supporting management efforts on state and private lands.

**Awards:** Division Partnership Award for leading the department firewood taskforce that resulted in development of the new DNR firewood program; the Division Award of Excellence for proposing and then seeing two new bills through legislation on shade tree and forest pest management, and management of firewood on DNR administered lands; and the U.S. Forest Service Eastern Region Honor Award for collaborative efforts to slow the spread of gypsy moths in Northern Minnesota.

**1992-2000: Missouri Forest Pathologist and forest health program leader.** In addition to the duties described above, Susan co-founded the Missouri Forestkeepers Network, a volunteer program that involved citizens in forest health monitoring of public and private lands around the state.

**Awards:** National Tree Foundation Education Award for the Missouri Forestkeepers member packet, which taught school kids and adults how to sample, assess and report forest health data using variable radius plots and their thumb in place of a forester's prism.

**Education:** BA from the Univ. of Colorado, Susan received her Masters of Science in Plant Pathology from Colorado State Univ. in Ft. Collins.

**Organization Description:** The Minnesota Department of Natural Resources works to integrate and sustain the interdependent values of a healthy environment, a sustainable economy, and livable communities. DNR's integrated resource management strategy shares stewardship responsibility with citizens and partners to manage for multiple interests. DNR protects the state's natural heritage by conserving the diversity of natural lands, waters, and fish and wildlife that provide the foundation for Minnesota's recreational and natural resource-based economy (M.S. 84, M.S. 97A). DNR manages natural lands such as forests, wetlands, and native prairies; maintains healthy populations of fish and wildlife; and protects rare plant and animal communities throughout the state. DNR manages the state's water resources, sustaining healthy waterways and ground water resources. DNR provides access to enrich public outdoor recreational opportunities, such as hunting, fishing, wildlife-watching, camping, skiing, hiking, biking, motorized recreation, and conservation education through a state outdoor recreation system that includes parks, trails, wildlife management areas, scientific and natural areas, water trails, and other facilities (M.S. 86A). DNR supports natural resource-based economies, managing state forest lands for multiple forest values (M.S. 89), ensuring the maximum long-term economic return from school trust lands (M.S. 127A), and providing other economic opportunities in a manner consistent with sound natural resource conservation and management principles. The mission of the Minnesota Department of Natural Resources 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.