

**Environment and Natural Resources Trust Fund  
2020 Request for Proposals (RFP)**

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**Project Title:**

**ENRTF ID: 155-D**

Minnesota Invasive Terrestrial Plants and Pests Center (MITPPC) Phase 5

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

**Sub-Category:**

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**Total Project Budget: \$** 7,000,000

**Proposed Project Time Period for the Funding Requested:** June 30, 2025 (5 yrs)

**Summary:**

The Minnesota Invasive Terrestrial Plants and Pests Center (MITPPC) requests \$7 million to accelerate up to 15 new, high-priority research projects that will lead to better management of invasive species on the land.

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**Name:** Robert Venette

**Sponsoring Organization:** U of MN

**Job Title:** Dr.

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**Location:**

**Region:** Statewide

**County Name:** Statewide

**City / Township:**

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**Alternate Text for Visual:**

The visual describes the work of the MITPPC.

|                          |                    |                          |                   |                          |                       |                          |                          |   |
|--------------------------|--------------------|--------------------------|-------------------|--------------------------|-----------------------|--------------------------|--------------------------|---|
| <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"/> |                       | TOTAL                    | <input type="checkbox"/> | % |



## Environment and Natural Resources Trust Fund (ENRTF) 2020 Main Proposal

**PROJECT TITLE:** Minnesota Invasive Terrestrial Plants and Pests Center: Phase 5

### I. PROJECT STATEMENT

Invasive species threaten Minnesota's prairies, wetlands, forests, and agricultural resources. Protecting those lands requires new tools and techniques that can only be developed through applied research and implemented by engaged partners. The Minnesota Invasive Terrestrial Plants and Pests Center (MITPPC) requests \$7 million to accelerate up to 15 new, high-priority research projects that will lead to better management of invasive species on the land.

The MITPPC value-added approach extends to (i) leveraging ongoing research efforts, (ii) facilitating new research team development, (iii) convening stakeholders on terrestrial invasive species topics, particularly on issues that affect both the agricultural and natural resource sectors, and (iv) providing administrative and communications support.

MITPPC is being recognized as the nation's leading university research center to:

- Predict and prevent the arrival of new terrestrial invasive threats;
- Detect and rapidly respond to new pests;
- Mitigate impacts from well-established threats; and
- Quantify the economic impacts of new invasive species and socio-economic barriers to management.

MITPPC's coordinated, multi-disciplinary approach has produced important results: three unprecedented technologies have been developed for a hand-held device to identify invasive fungal pathogens in oak trees, a suite of new pest management options and decision-making tools are being delivered to soybean and berry growers, and a novel management strategy that replaces buckthorn with pollinator-friendly native plants has been rigorously tested. These are just a selection of many promising solutions to emerge from MITPPC work, based in high-quality research science.

The multi-disciplinary approach is augmented by strong external partnerships, both through MITPPC's Advisory Board and with individual research teams. Organizations as diverse as commodity groups, state, federal and tribal agencies, NGOs, growers' associations are actively engaged with the research teams to bring results to the landscape.

### II. PROJECT ACTIVITIES AND OUTCOMES

**Activity 1: Accelerate research on high priority, terrestrial invasive species**

**Budget: \$7,000,000**

Research projects will focus on the prediction and prevention of threats that are not yet in Minnesota, and on early detection and rapid response of threats that are newly arrived. The white paper, "*Minnesota's Top 124 Terrestrial Invasive Plants and Pests: Priorities for Research*," focuses funding by prioritizing the invasive species that pose the greatest threats to Minnesota's forests, prairies, wetlands, and agricultural resources. The prioritization is revisited regularly and updated as new threats arise and new biological information comes available. For example, the MITPPC was able to respond quickly when Palmer amaranth was found in western



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Minnesota and to address the impact of jumping worms on our natural resources due to the coordination with state agencies and UMN research scientists.

It is anticipated that 15 new lines of high-priority research projects would be funded, and fund up to seven graduate students and 15 post-doctoral associates. With this investment, a new generation of applied scientists will be cultivated who will address current and future terrestrial invasive species threats.

| <b>Outcome</b>   | <b>Completion Date</b> |
|--|------------------------|
| 1. New tools and technologies developed to detect and characterize the distribution of invasive species.           | June 30, 2025          |
| 2. New, effective prevention and management alternatives developed and tested.                                     | June 30, 2025          |
| 3. Predictive tools created to account for invasive species issues under future conditions.                        | June 30, 2025          |
| 4. Socio-economic analyses completed to better gauge impacts from, and responses to, terrestrial invasive species. | June 30, 2025          |

**III. PROJECT PARTNERS**

Each project is strongly encouraged to partner with an external entity, preferably one that can implement research findings. Current research project partners include the Minnesota departments of agriculture, natural resources, and transportation, the US Forest Service, Minnesota Soybean Research and Promotion Council, Fond du Lac Band of Lake Superior Chippewa, the Friends of the Mississippi, and the Minnesota Fruit and Vegetable Growers. The MITPPC strongly supports the idea that its success is tied to measurable outcomes on-the-ground. MITPPC partners set the research themes for MITPPC, specifically the need for new techniques and technology to 1) detect and report distributions of invasive species, 2) improve management of terrestrial invasive species, 3) better forecast consequences of future conditions on terrestrial invasive species; and 4) consider socioeconomics to improve invasive species management. Implementation partners engage with researchers at the project level to ensure outcomes will improve management. Some partners may even help to conduct the research by providing labor, land, or other resources. Lastly, implementation partners work to ensure that research has meaningful outcomes.

**IV. LONG-TERM IMPLEMENTATION AND FUNDING**

Terrestrial invasive species affect nearly every Minnesotan and landscape. Invasive weeds, pathogens, insects, and arthropods threaten to lower the biodiversity and aesthetic value of prairies and wetlands, increase damage to urban and rural forests, and increase economic damage to grain and fruit producers. In total, terrestrial invasive species cost Minnesotans at least \$3 billion annually.

**V. TIMELINE REQUIREMENTS**

A typical research project takes 3-5 years, and at least another 3-5 years is needed for implementation. Close collaboration with implementation partners at the outset will allow MITPPC to achieve its goals by 2025.

**Attachment A: Project Budget Spreadsheet**  
**Environment and Natural Resources Trust Fund**  
**M.L. 2020 Budget Spreadsheet**

**Legal Citation:** ML 2020, Ch. XX, Sec. XX, Subd. XX

**Project Manager:** Robert Venette

**Project Title:** Minnesota Invasive Terrestrial Plants and Pests Center, Ph. 5

**Organization:** University of Minnesota

**Project Budget:** \$7,000,000

**Project Length and Completion Date:** June 30, 2025

**Today's Date:** April 2, 2019

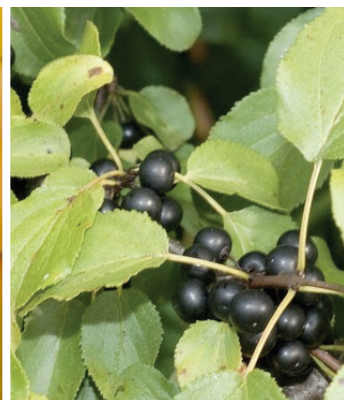


| ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET   |   | Budget        | Amount Spent | Balance        |
|---|---|---------------|--------------|----------------|
| <b>BUDGET ITEM</b>  |   |               |              |                |
| <b>Personnel (Wages and Benefits)</b>   |   | \$ 6,036,000  | \$ -         | \$ 6,036,000   |
| To be named: 10 research faculty PI, 25% FTE (summer salary for 9 mos. appointments) for 4 yrs: \$37,000/yr (66% salary, 33.8% benefits)  |   |               |              |                |
| To be named: 7 graduate research assistants, 50% FTE (academic yr) and 100% FTE (summer) for 4 yrs. (56% salary, 35% tuition, 9% benefits). Graduate research assistants are unable to hold more than a 50% appointment during the academic year. |   |               |              |                |
| To be named: 15 post-doctoral associates, 100% FTE for 4 yrs: \$57,000/yr (79% salary, 21.4% benefits)  |   |               |              |                |
| <b>Professional/Technical/Service Contracts</b>   |   | \$ 142,000    |              | \$ 142,000     |
| Biosecurity lab space: 5 projects for 4 yrs @\$7,100/yr   |   | \$ -          | \$ -         | \$ -           |
| <b>Equipment/Tools/Supplies</b>   |   | \$ 672,000    |              | \$ 672,000     |
| Consumable lab materials (e.g. insect rearing supplies, chemicals for polymerase chain reaction, site license for CLIMEX software): \$11,200/yr per project   |   | \$ -          | \$ -         | \$ -           |
| <b>Travel expenses in Minnesota</b>   |   |               |              | \$ -           |
| \$2,500 /yr per project. All projects must follow UMN and LCCMR travel policies   |   | \$ 150,000    | \$ -         | \$ 150,000     |
| <b>COLUMN TOTAL</b>   |   | \$ 7,000,000  | \$ -         | \$ 7,000,000   |
| <b>SOURCE AND USE OF OTHER FUNDS CONTRIBUTED TO THE PROJECT</b>   |   |               |              |                |
|   | <b>Status (secured or pending)</b>                | <b>Budget</b> | <b>Spent</b> | <b>Balance</b> |
| <b>Non-State:</b> USDA Forest Service, salary for director. These funds are not considered cost-share/matching commitment.  | secured   | \$ -          | \$ -         | \$ -           |
| <b>State:</b> UMN indirect rate, 54%  | secured   | \$ 2,700,000  | \$ -         | \$ 2,700,000   |
| General fund appropriation, ML 2014, Ch. 312, Art. 12, Sec. 8   | secured   | \$ 3,000,000  |              |                |
|   |   | \$ -          | \$ -         | \$ -           |
| <b>In kind:</b> Partner agencies may provide in-kind support for specific research projects.  |   |               |              |                |
| <b>Other ENRTF APPROPRIATIONS AWARDED IN THE LAST SIX YEARS</b>   |   |               |              |                |
|   | <b>Amount legally obligated but not yet spent</b> | <b>Budget</b> | <b>Spent</b> | <b>Balance</b> |
| ML 2014, Ch. 312, Art. 12, Sec. 8   | \$ 17,076   | \$ 1,460,000  | \$ 1,108,672 | \$ 351,328     |
| ML 2015, Ch. 76, Art. 2, Sec. 6a  | \$ 4,964,588                                      | \$ 5,000,000  | \$ 1,662,871 | \$ 3,337,129   |
| ML 2016, Ch. 186, Art. 2, Sec. 6a   | \$ 3,750,000                                      | \$ 3,750,000  | \$ 267,762   | \$ 3,482,238   |
| ML 2018, Ch. 214, Art. 4, Sec. 2, Subd. 6a *currently out for RFP   | 0   | \$ 3,500,000  | 0            | \$ 3,500,000   |



# Minnesota Invasive Terrestrial Plants & Pests Center

Science-based solutions to protect Minnesota's prairies, forests, wetlands and agricultural resources



## Our Mission

The Minnesota Invasive Terrestrial Plants & Pests Center (MITPPC) drives discoveries to prevent and reduce harm from the top invasive species threats in our state.



### World-Class Research

We pull top talent from across departments, campuses, field stations and research and outreach centers of the University of Minnesota system.

### Strategic Partnerships

We engage partners from across Minnesota to ensure that everyone's voice is heard, and that stakeholders can stay informed about the latest research and how to use it.



### Practical Solutions

Our success is measured by the real-world improvements we make to invasive species management in our state.

### Investments for the Future

Researching better solutions pays off – terrestrial invasive species cost Minnesotans around \$3 billion annually.



## What is a terrestrial invasive species (TIS)?

A terrestrial invasive species is any land-based plant, animal, insect or microbe that enters a new environment and causes harm. Invasive species can spread rapidly and damage the ecosystem, economy and human health.



**Environment and Natural Resources Trust Fund (ENRTF)  
2020 Main Proposal**

Attachment A: Project Manager Qualifications and Organization Description

Project teams will be comprised of principal investigators, other faculty and staff from the University of Minnesota and collaborators from other universities, NGOS and public and private sector entities. Eligibility for a principal investigator is may be found in the UMN Board of Regents Policy on SUBMITTING AND ACCEPTING SPONSORED PROJECTS, Section 4, Subd. 2.

The MITPPC was established at the University of Minnesota under ML 2014, Chapter 312, Article 13, Section 44. The MITPPC is administratively located in the College of Food, Agricultural, and Natural Resources Sciences and is guided by a 14-member Advisory Board, comprised of internal and external stakeholders. Activities of the MITPPC are conducted in close collaboration with state, federal, local and tribal governments, nongovernmental agencies, the private sector, University of Minnesota Extension, and other colleges and universities.