



Environment and Natural Resources Trust Fund (ENRTF)

M.L. 2020 ENRTF Work Plan (Main Document)

Today's Date: February 14, 2020

Date of Next Status Update Report: June 30, 2021

Date of Work Plan Approval:

Project Completion Date: June 30, 2025

Does this submission include an amendment request? No

PROJECT TITLE: Minnesota Invasive Terrestrial Plants and Pests Center, Ph. V

Project Manager: Robert Venette

Organization: University of Minnesota

College, Department, or Division: College of Food, Agriculture, and Natural Resource Sciences

Mailing Address: 1992 Folwell Ave.

City, State, Zip Code: St. Paul, MN 55105

Project Manager Direct Telephone Number:

Email Address: venet001@umn.edu

Web Address: www.mitppc.umn.edu

Location: Statewide

Total Project Budget: \$5,000,000

Amount Spent: \$0

Balance: \$5,000,000

Legal Citation: M.L. 2020, Chp. xx, Sec. xx, Subd. xx

Appropriation Language:

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. OVERALL PROJECT STATUS UPDATES:

First Update June 30, 2021

Second Update December 30, 2021

Third Update June 30, 2022

Fourth Update December 30, 2022

Fifth Update June 30, 2023

Sixth Update December 31, 2023

Seventh Update June 30, 2024

Eighth Update December 30, 2024

Ninth Update June 30, 2025

Final Report between project end June 30 and August 15, 2025

III. PROJECT ACTIVITIES AND OUTCOMES:

Activity 1: Accelerate research on high priority, terrestrial invasive species Budget: \$5,000,000

Description:

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 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 12 new lines of high-priority research projects would be funded, and fund up to seven graduate students and 12 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.

Outcome	Completion Date
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

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IV. DISSEMINATION:

Description:

Findings will be shared with agencies and citizen groups so that public information and decision making is based on the best available science. Updates on progress and research results will be disseminated through University of Minnesota, College of Food, Agricultural, and Natural Resource Sciences, and College of Biological Sciences via websites, social media, and publications. Media releases will also be used when warranted. Additionally, findings will be presented at local and national conferences and via peer-reviewed publication and student theses.

The Minnesota Environment and Natural Resources Trust Fund (ENRTF) will be acknowledged through use of the trust fund logo or attribution language on project print and electronic media, publications, signage, and other communications per the [ENRTF Acknowledgement Guidelines](#).

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Eighth Update December 30, 2024

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V. ADDITIONAL BUDGET INFORMATION:

A. Personnel and Capital Expenditures

Explanation of Capital Expenditures Greater Than \$5,000:

Explanation of Use of Classified Staff:

Total Number of Full-time Equivalents (FTE) Directly Funded with this ENRTF Appropriation:

Enter Total Estimated Personnel Hours for entire duration of project: 43,680/yr	Divide total personnel hours by 2,080 hours in 1 yr = TOTAL FTE: 21
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Total Number of Full-time Equivalents (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation:

Enter Total Estimated Contract Personnel Hours for entire duration of project: 0	Divide total contract hours by 2,080 hours in 1 yr = TOTAL FTE:
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VI. PROJECT PARTNERS:

Partners outside of project manager's organization NOT receiving ENRTF funding

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.

VII. 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.

VIII. REPORTING REQUIREMENTS:

- Project status update reports will be submitted February 1 and August 1 each year of the project
- A final report and associated products will be submitted between June 30 and August 15, 2025.

IX. SEE ADDITIONAL WORK PLAN COMPONENTS:

A. Budget Spreadsheet

B. Visual Component or Map

C. Parcel List Spreadsheet- N/A

D. Acquisition, Easements, and Restoration Requirements-N/A

E. Research Addendum: A research addendum was developed after a panel of researchers from the University of Minnesota provided competitive reviews of the pre-proposals under this appropriation. The addendum was distributed to relevant experts outside the University of Minnesota and reviewed for scientific novelty, appropriateness of methods, qualifications of the research team, and potential impact on invasive species management. The research addendums were modified as necessary in response to comments received during the peer-review process. The final documents provide a technically detailed description of the research to be completed under this sub-project work plan. The research addendums are on file with the Minnesota Invasive Terrestrial Plant and Pest Center.

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: \$5,000,000

Project Length and Completion Date: June 30, 2025

Today's Date: February 14, 2020



ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET		Budget	Amount Spent	Balance
BUDGET ITEM				
Personnel (Wages and Benefits)		\$ 3,862,968	\$ -	\$ 3,862,968
To be named: 3research faculty PI, 25% FTE (summer salary for 9 mos. appointments) for 4 yrs: \$37,000/yr (66% salary, 33.8% benefits)				
To be named: 9 graduate research assistants, 50% FTE (academic yr) and 100% FTE (summer) for 4 yrs.: \$50,638 (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: 7 post-doctoral associates, 100% FTE for 4 yrs: \$57,000/yr (79% salary, 21.4% benefits)				
Professional/Technical/Service Contracts				\$ -
Biosecurity lab space: 3 projects for 4 yrs @\$7,100/yr		\$ 85,200	\$ -	\$ 85,200
DaRT and other genome sequencing services 3 projects @\$25,000		\$ 75,000		\$ 75,000
MSI data storage 7projects @\$15,000		\$ 105,000		\$ 105,000
Other fee for service/professional contracts related to research		\$ 617,832		\$ 617,832
Equipment/Tools/Supplies				\$ -
Consumable lab materials (e.g. insect rearin supplies, chemicals for polymerase chain reaction, site liecense for CLIMEX software): \$11,200/yr per project		\$ 100,000	\$ -	\$ 100,000
Printing				
Journal and open access fees for peer reviewed publications 14 publications @\$6,000		\$ 84,000		\$ 84,000
Travel expenses in Minnesota				\$ -
\$2,500 /yr per project. All projects must follow UMN and LCCMR travel policies		\$ 70,000	\$ -	\$ 70,000
COLUMN TOTAL		\$ 5,000,000	\$ -	\$ 5,000,000
SOURCE AND USE OF OTHER FUNDS CONTRIBUTED TO THE PROJECT	Status (secured or pending)	Budget	Spent	Balance
Non-State: USDA Forest Service, salary for director. These funds are not considered cost-share/matching commitment.	secured	\$ -	\$ -	\$ -
State: UMN indirect rate, 54%	secured	\$ 2,700,000	\$ -	
General fund appropriation, ML 2014, Ch. 312, Art. 12, Sec. 8	secured	\$ 3,000,000		
In kind: Partner agencies may provide in-kind support for specific research projects.		\$ -	\$ -	\$ -
Other ENRTF APPROPRIATIONS AWARDED IN THE LAST SIX YEARS	Amount legally obligated but not yet spent	Budget	Spent	Balance
ML 2015, Ch. 76, Art. 2, Sec. 6a	\$4,993,890	\$5,000,000	\$3,101,237	\$ 1,898,763
ML 2016, Ch. 186, Art. 2, Sec.6a	\$3,750,000	\$3,750,000	\$1,004,727	\$ 2,745,273
ML 2018, Ch. 214, Art. 4, Sec. 2, Subd. 6a	\$2,626,593	\$3,500,000	0	\$ 3,500,000