



Environment and Natural Resources Trust Fund

M.L. 2020 Approved Work Plan

General Information

ID Number: 2020-043

Staff Lead: Becca Nash

Date this document submitted to LCCMR: August 27, 2021

Project Title: Minnesota Invasive Terrestrial Plants And Pests Center, Phase5

Project Budget: \$5,000,000

Project Manager Information

Name: Robert Venette

Organization: U of MN - MITPPC

Office Telephone: (612) 301-1405

Email: venet001@umn.edu

Web Address: <https://mitppc.umn.edu/>

Project Reporting

Date Work Plan Approved by LCCMR: August 26, 2021

Reporting Schedule: April 1 / October 1 of each year.

Project Completion: June 30, 2026

Final Report Due Date: August 14, 2026

Legal Information

Legal Citation: M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 06a

Appropriation Language: \$5,000,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to support the Minnesota Invasive Terrestrial Plants and Pests Center to fund approximately 15 new, high-priority research projects that will lead to better management of invasive plants, pathogens, and pests on Minnesota's natural and agricultural lands. This appropriation is subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2026, by which time the project must be completed and final products delivered.

Appropriation End Date: June 30, 2026

8/27/2021

Narrative

Project Summary: The Minnesota Invasive Terrestrial Plants and Pests Center (MITPPC) requests \$5 million to fund up to 15 new, high-priority applied TIS research projects to improve Minnesota's natural and agricultural resources.

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

Terrestrial invasive species (TIS) affect nearly every Minnesotan and terrestrial 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 plants and pests cost Minnesotans at least \$3 billion annually.

Terrestrial invasive species – or any nonnative plant, animal insect or microbe that causes harm – cost Americans \$150 billion each year. They threaten our food systems, wildlife, recreation spaces, food security, economy and occasionally our health.

For example: Dutch elm disease, buckthorn, oak wilt, garlic mustard, mountain pine beetle and other pests have dramatically changed the way American forests look and feel. Terrestrial invasive species threaten the diversity of native plants, pollinators and wildlife across all ecosystems. Controlling them often carries both an environmental and economic cost due to the use of pesticides and the investment of human labor. New invasive threats will continue to emerge as climate, global trade, land use and human behaviors shift over time.

What is your proposed solution to the problem or opportunity discussed above? i.e. What are you seeking funding to do? You will be asked to expand on this in Activities and Milestones.

Invasive plants, pests, and pathogens threaten Minnesota's prairies, wetlands, forests, and agricultural resources. Efficiently protecting Minnesota's lands requires new tools and techniques that can only be developed through applied research and implemented by engaged partners. The MITPPC relies on a dynamic strategic prioritization process to describe the invasive species that pose the greatest threats to Minnesota's natural and agricultural resources and focuses investments on these high-rated threats. Each successful proposal has been extensively vetted by internal and external reviewers with expertise in terrestrial invasive species research. Proposals are carefully considered and evaluated on a number of criteria, including urgency, extent of impact, contribution to the field, and innovation. The value-added benefits of the center approach extends to (i) leveraging previous/ongoing research efforts, (ii) facilitating new research team development, (iii) convening stakeholders on a terrestrial invasive species topics, particularly on issues that affect both the agricultural and natural resource sectors, and (iv) providing administrative and communications support. Interdisciplinary teams and partnerships with key stakeholders are an integral component of our research approach and assist with research result dissemination to wide audiences.

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state's natural resources?

MITPPC research produced on-the-ground management alternatives for the control of TIS which have resulted in increased yields, while decreasing the amounts of pesticides and herbicides from soybean to raspberry production. Foresters now have new on gypsy moth movement which will help prevent its spread. Genetic sequence research led to identification of Palmer amaranth seeds in seed mixes. Breakthroughs in buckthorn research and its relationship with native vegetation, improves outcomes for forests, pollinators, and soybean production. Early detection and distribution tools have assisted land managers address oak wilt, soybean aphid, and numerous TIS plants and insects.

Project Location

What is the best scale for describing where your work will take place?

Statewide

What is the best scale to describe the area impacted by your work?

Statewide

When will the work impact occur?

In the Future

Activities and Milestones

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

Activity Budget: \$683,883

Activity Description:

MITPPC staff directly support this appropriation by keeping the species prioritization current, refining prioritization methods, issuing requests for proposals, partnering researchers with external reviews, soliciting and processing proposal reviews, reviewing research progress, and communicating about invasive species concerns and research findings with diverse audiences. Detailed reports will be provided when this appropriation is used for these activities. When these activities are supported by other funds (e.g., General Fund appropriation), reporting will be brief.

Milestones reflect priority themes for research. Achieving these milestones will reflect progress towards achieving broader outcomes of importance to communities who are concerned about terrestrial invasive species.

Activity Milestones:

Description	Completion Date
New tools and technologies developed to detect and characterize the distribution of invasive species.	June 30, 2026
New, effective prevention and management alternatives developed and tested.	June 30, 2026
Predictive tools created to account for invasive species issues under future conditions.	June 30, 2026
Socio-economic analyses completed to better gauge impacts from, and responses to, terrestrial invasive species	June 30, 2026

Activity 2: Awarding subprojects

Activity Budget: \$4,316,117

Activity Description:

Research projects will focus on the prediction and prevention of threats that are not yet in Minnesota, the early detection and rapid response of threats that are newly arrived, and solutions to terrestrial invasive species that are well established in the state. Research must address one or more invasive species that pose the greatest threats to Minnesota's forests, prairies, wetlands, or agricultural resources, as identified by MITPPC's prioritization process. The prioritization is revisited and updated regularly.

Proposals will be solicited annually for the first three years of the appropriation. Applicants first submit a preproposal which is reviewed and scored by a panel of up to five researchers in Minnesota. Research teams with the highest scoring preproposals are invited to submit a full proposals which are reviewed by relevant national and international experts. Project selection is based on the outcome of the peer review. Each proposal recommended for funding will be added as its own activity to this work plan for LCCMR review and approval. Budget lines are listed as "to be awarded to sub-projects" and "awarded to sub-projects" in Professional and Technical Contracts. Detailed updates will be limited to when sub-projects are added or funds are returned for redistribution.

Activity Milestones:

Description	Completion Date
Research projects launched	December 31, 2022
Additional research projects launched	December 31, 2023
Final research projects launched	December 31, 2024

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
TBD	TBD	MITPPC encourages each project to partner with an external organization. Some current 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, Friends of the Mississippi, and The Nature Conservancy.	No

Dissemination

Describe your plans for dissemination, presentation, documentation, or sharing of data, results, samples, physical collections, and other products and how they will follow ENRTF Acknowledgement Requirements and Guidelines.

MITPPC will disseminate research findings through multiple outlets. Outlets may vary with the subproject and audience. Common outlets will include a project page on MITPPC's website, <http://mitppc.umn.edu>, and periodic postings through MITPPC's twitter account, @UMNMITPPC. Project features, stories about individual researchers or significant findings, will be prepared by MITPPC communication staff. These features appear on MITPPC's website and have been redistributed through other outlets (e.g., press releases through UMN media relations). Technical findings will be published in the peer-reviewed literature. Researchers are also encouraged to share results through one or more formal in-person meetings or conferences with stakeholders, for example, the Upper Midwest Invasive Species Conference.

The descriptions provided here are for MITPPC staff and for all current sub-projects. Specific activities are listed by sub-project number.

Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this be funded?

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, publications, and media releases. 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.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Minnesota Invasive Terrestrial Plants and Pests Center	M.L. 2014, Chp. 312, Sec. 8	\$1,460,000
Minnesota Invasive Terrestrial Plants and Pests Center	M.L. 2015, Chp. 76, Sec. 2, Subd. 06a	\$5,000,000
Minnesota Invasive Terrestrial Plants and Pests Center - Phase III	M.L. 2016, Chp. 186, Sec. 2, Subd. 06a	\$3,750,000
Minnesota Invasive Terrestrial Plants and Pests Center - Phase 4	M.L. 2018, Chp. 214, Art. 4, Sec. 2, Subd. 06a	\$3,500,000

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Associate director		Admin and program support for research projects; only after General Funds are depleted or expire			33%	2		\$189,264
Communications specialist		Communication support for research project's result dissemination; only after General Funds are depleted or expire			29.5%	2		\$113,248
Director		Principal investigator; only after General Fund or USDA funds are depleted or expire			33%	1		\$180,000
Research Scientist		Update and support MITPPC prioritization			33.5%	2		\$201,371
							Sub Total	\$683,883
Contracts and Services								
To be awarded to sub-projects	Sub award	Budget reserve for awarding sub-projects upon approval by LCCMR				180		\$4,316,117
Awarded to sub-projects	Sub award	This is the cumulative budget, spent, and balance for all sub-projects combined. Detailed sub-project budgets will be submitted in an Excel workbook via the attachments page under "Optional Attachments/Support Letter or Other" with the file name as the date of submission (e.g., "YYYY-MM-DD Budget Update").				0		-
							Sub Total	\$4,316,117
Equipment, Tools, and Supplies								
							Sub Total	-
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								

8/27/2021

							Sub Total	-
Travel In Minnesota								
							Sub Total	-
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
							Sub Total	-
Other Expenses								
							Sub Total	-
							Grand Total	\$5,000,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
---------------	---------------------	-------------	--

Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
Cash	M.L. 2014, Ch 312, Sec 8 RTF	Salaries and fringe for Associate Director, Communications Staff, and a Staff Researcher for the remainder of funding, after which ENRTF funds will be used. The amount listed is an estimate of the remaining funding from the original \$3.4 million appropriation.	Secured	\$750,000
			State Sub Total	\$750,000
Non-State				
Cash	USDA Forest Service	Salary for Director (50% FTE per year, subject to annual approval). These funds are not considered cost-share/matching commitment.	Secured	\$400,000
			Non State Sub Total	\$400,000
			Funds Total	\$1,150,000

Attachments

Required Attachments

Visual Component

File: [210b360e-d7e.pdf](#)

Alternate Text for Visual Component

The document describes the MITPPC and provides an overview of funded research projects....

Optional Attachments

Support Letter or Other

Title	File
Background check certification form	5f3aa08e-979.pdf

Difference between Proposal and Work Plan

Describe changes from Proposal to Work Plan Stage

Changes from proposal to workplan stage were modest, primarily addressing requested points of clarification. The Job Title and PM qualifications now refer to the Director of MITPPC, the project manager. General Information was updated to indicate that sub-projects may generate patents. I have confirmed my understanding of state statutes about implications of patents. PTC contracts for biocontainment research space and supercomputing facilities have been modified to indicate that they are internal services. Greater explanation is provided about the nature of the services. Activities and milestones have not yet been revised to reflect our award process but will be when additional directions are received. The Director's salary is included (2 years) in the budget as a contingency in the event that the US Forest Service decides to discontinue their support of the Center.

More details about Dissemination have been added.

Additional Acknowledgements and Conditions:

The following are acknowledgements and conditions beyond those already included in the above workplan:

Do you understand and acknowledge the ENRTF repayment requirements if the use of capital equipment changes?

N/A

Do you agree travel expenses must follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?

N/A

Does your project have potential for royalties, copyrights, patents, or sale of products and assets?

Yes

Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?

Yes

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?

No

Does your project include original, hypothesis-driven research?

Yes

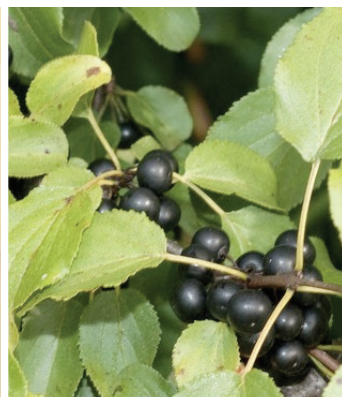
Does the organization have a fiscal agent for this project?

Yes, Sponsored Projects Administration



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.