



Environment and Natural Resources Trust Fund

2023 Request for Proposal

General Information

Proposal ID: 2023-003

Proposal Title: Keeping American Ginseng Around for Future Generations

Project Manager Information

Name: David Remucal

Organization: U of MN - Landscape Arboretum

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Project Basic Information

Project Summary: American ginseng, a rare native plant prized and harvested, is in danger of disappearing across its range, including Minnesota. We need to assess its current status, monitor, and bank seed.

Funds Requested: \$159,000

Proposed Project Completion: December 31, 2025

LCCMR Funding Category: Small Projects (H)

Secondary Category: Methods to Protect, Restore, and Enhance Land, Water, and Habitat (F)

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?

During the Project and In the Future

Narrative

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

American ginseng (*Panax quinquefolius*) is a plant species highly valued for its medicinal and cultural uses and can be found from the Great Plains to the east coast of North America. It is widely recognized as the most lucrative wild-collected plant crop in North America and is especially coveted in Asia. Largely due to harvest pressure, the species has declined across its entire range, especially so in the eastern United States. Healthy populations have historically been documented in Minnesota, though plants are never naturally abundant. However, because of the known decline in the eastern US, there is an increasing concern that Minnesota populations are undergoing a similar crisis under our noses.

There is currently a legal harvest season in the state but we lack data on population sizes and individual population trends to adequately evaluate its impact to the species. Additionally, illegal harvesting is common and entirely unreported; a 2010 study estimated that 94% of all harvest events in a three state study were illegal in some form. Along with habitat loss and herbivory, illegal harvest may be contributing to the regional decline of this resource as has happened across its range.

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

While general population locations are known by the DNR, the current status of this species is largely unknown. In 1983, it was listed as Special Concern in Minnesota due to threats posed by over-collection and habitat loss or degradation. Moreover, this species is a target food for deer, and with deer overpopulation, overbrowsing represents another serious threat. As Special Concern, the plant is not afforded protected status from human activity other than the harvest season. By evaluating the status of populations in the state, regulatory authorities (DNR and USFWS) will be better able to make a determination on whether the plant is secure or needs increased protection. As it is highly likely this species is declining, or has even severely declined, we will also collect seed for storage in the University of Minnesota Landscape Arboretum's long-term rare plant seedbank to support its conservation.

Proposed solutions:

- 1) Collect population information for most or all American ginseng locations in Minnesota and establish ongoing monitoring for high value populations.
- 2) Collect and store seed from multiple populations for genetic banking as well as for propagation for potential future outplantings.

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?

- 1) Establishment of presence and status of previously known populations to tell if they are persisting or disappearing. This includes verifying populations that are thought to exist but are not yet in the DNR database.
- 2) Comparative analysis of current population sizes to past data to understand population trends and establishment of monitoring sites on at least 4 high value locations for ongoing tracking. These monitored populations would serve as models for expanded monitoring efforts in the future.
- 3) Long-term banking of seed from over 10 populations across the range.
- 4) Reporting of data to relevant agencies (DNR and USFWS).

Activities and Milestones

Activity 1: Evaluate current state of Minnesota's American ginseng in the field

Activity Budget: \$69,000

Activity Description:

To develop an updated picture of American ginseng in MN, we will survey known and unverified populations. The DNR's Natural Heritage Information System contains 258 population records only 130 of which are likely relocatable, and most of which haven't been visited since the 1990s. This work will utilize population information from MN-DNR's databases as well as more recent data available through web-based public databases (i.e., iNaturalist) and information gathered by word of mouth. This work will be done in coordination with the Rare Plant Volunteer Program (a MN-DNR and UMLA collaborative program) and the Minnesota Native Plant Society in order to develop a large, well-trained group that can be mobilized to collect data for many populations.

Activity Milestones:

Description	Completion Date
Determine locations of all target populations and recruit volunteers	October 31, 2023
Survey up to half of the populations	October 31, 2024
Survey remaining target populations and submit data to MN-DNR and USFWS	December 31, 2025

Activity 2: Setup ongoing monitoring of populations

Activity Budget: \$52,000

Activity Description:

Establish monitoring plots in multiple locations and track the populations over time. Include methods to track whether populations are being lost due to deer herbivory, human collection or other factors. This monitoring program will recruit and train volunteers to continue monitoring past the grant end date.

Activity Milestones:

Description	Completion Date
Identify 4 high-risk populations and establish annual monitoring protocol.	October 31, 2023
Finish initial monitoring period for target populations. Submit data to MN-DNR and USFWS.	December 31, 2025

Activity 3: Bank seed of American ginseng in long-term seedbank

Activity Budget: \$38,000

Activity Description:

Collect seed from multiple populations. There are two primary goals for this seed collection activity. The first is to create a long-term seed bank representative of the diverse wild genetics of this species in the state. The second is to collect material that can be used to propagate new plants for reestablishing populations in protected areas.

Activity Milestones:

Description	Completion Date
Bank seed from at least 3 native American ginseng populations.	October 31, 2023
Bank seed from at least 5 native American ginseng populations.	October 31, 2024
Bank seed from at least 5 native American ginseng populations.	October 31, 2025

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Scott Milburn	Minnesota Native Plant Society	Source of vast botanical knowledge with a membership interested in working on conservation issues with native plants.	No

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 work be funded?

Both the population monitoring and seed banking are designed to be long-term efforts. This proposal sets up monitoring sites and establishes a strong base seedbank on which to build for the future. The Arboretum is committed to maintaining their long-term conservation priorities as embodied in this proposal and establishing ongoing program funding for the monitoring and seedbank to accomplish this work.

Project Manager and Organization Qualifications

Project Manager Name: David Remucal

Job Title: Curator of Endangered Plants

Provide description of the project manager's qualifications to manage the proposed project.

Dr. Remucal is the Curator of Endangered Plants at the Minnesota Landscape Arboretum where he has developed and managed the Plant Conservation Program since its inception in 2013. A graduate of Carleton College, he received his PhD in plant reproductive ecology and evolution from the University of Colorado. He will provide overall project direction. As manager of the Plant Conservation Program, he has demonstrated the ability to manage and develop budgets, direct volunteers and staff, work with stakeholders, coordinate with remote and local partners, communicate program information and results to a variety of audiences, and expand the scope and influence of the MLA Conservation Program. As part of outreach and education for the program, he teaches and presents to multiple groups every year and works to reach a broad audience around the state. The Plant Conservation Program strives to work with a broad coalition of partners for its work, engaging with regional NGOs, federal, state and local governmental agencies and researchers and groups nationally and internationally-based. Remucal and the Plant Conservation Program has parlayed two previous LCCMR grants into a nationally-recognized orchid research and conservation program.

Organization: U of MN - Landscape Arboretum

Organization Description:

The UMN Landscape Arboretum (UMLA), founded in 1958, is a 1,200-acre premier northern garden that includes 28 specialty gardens, 45 plant and tree collections, 18 model landscapes and natural areas, and an extensive collection of northern hardy plants. Located 35 minutes west of Minneapolis-St. Paul, UMLA's 12.5 miles of garden paths and hiking trails welcome 500,000 visitors annually who are inspired by their explorations of nature, the many seasonal displays and exhibits, and hands-on educational programming. UMLA's mission is to welcome, inform and inspire all through outstanding displays, protected natural areas, horticultural research and education. Its vision is to be the premier northern landscape arboretum, welcoming all to enjoy, learn from and connect with nature.

One of UMLA's core values from its Strategic Plan: conserving Minnesota's native flora. Two related goals outline how this conservation work has been prioritized over 65 years - by serving as a vital source of expert horticultural information, environmental models, plant conservation and education, and through expanded plant breeding, restoration research, and plant conservation programs. The UMLA's vision is to balance program and guest growth with

unique environmental resources, preserving and protecting the distinct character, openness and natural beauty of Minnesota's landscapes.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Greenhouse Technician		Manage seed bank intake and initial germination testing to verify viability			28.7%	0.25		\$15,000
Field Botanist		Survey and monitoring, seed collection, volunteer field training and support for plant identification and field methods			28.7%	1.5		\$81,600
UMLA Intern		Assist in all aspects of the program, especially learning to work with volunteers and conservation of rare plants			8%	0.69		\$21,900
Curator of Endangered Plants/Project Coordinator		Principal Investigator - Project management, seed collection			33.5%	0.25		\$23,000
							Sub Total	\$141,500
Contracts and Services								
							Sub Total	-
Equipment, Tools, and Supplies								
	Tools and Supplies	Seed banking supplies	Supplies needed for the collection, preparation and storage of seed material in the long-term seed bank.					\$1,000
	Tools and Supplies	Field team supplies	Provide field supplies to staff and qualified volunteers for general survey and field use, including GPS units.					\$3,500
	Tools and Supplies	Database license	Database needed to manage both population survey and monitoring data and seedbank data					\$2,000
							Sub Total	\$6,500
Capital Expenditures								
							Sub Total	-

Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	60 trips (10 overnight), 250 mi, \$182.50 lodging/meals per overnight trip, 1 person per trip, \$0.585/mile	Mileage reimbursement, food and lodging for training, seed collecting, surveying and monitoring trips for UMLA staff					\$11,000
							Sub Total	\$11,000
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
							Sub Total	-
Other Expenses								
							Sub Total	-
							Grand Total	\$159,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
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Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
			State Sub Total	-
Non-State				
			Non State Sub Total	-
			Funds Total	-

Attachments

Required Attachments

Visual Component

File: [3e204952-a79.pdf](#)

Alternate Text for Visual Component

Draft visual summarizing project to conserve American ginseng in Minnesota...

Optional Attachments

Support Letter or Other

Title	File
Letter of support - Minnesota Native Plant Society	c9a710fe-d65.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

No

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

No

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

N/A

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

N/A

Does your project include original, hypothesis-driven research?

No

Does the organization have a fiscal agent for this project?

Yes, Sponsored Projects Administration

Keeping American ginseng around for future generations

American ginseng (*Panax quinquefolius*) is a once common, but now rare, plant found in Minnesota and states further east.

- This plant is highly prized for its cultural and medicinal values for multiple groups.
- Harvesting can be done legally in Minnesota, but studies in other states have shown that almost all harvesting is done illegally and non-sustainably. This hurts both the species and those harvesting legally.



Photo credit: Peter Dzuik, MinnesotaWildflowers.info



Photo credit: Anoka Sand Plain Rescue Program



Photo credit: NPS Photo

A mass of harvested ginseng roots

American ginseng in the wild

Surveying rare plants

The UMN Landscape Arboretum, with support from the Minnesota Native Plant Society, will:

- Survey previously known sites
- Establish monitoring for high values sites
- Collect seed for long-term storage in the Minnesota Rare Plant Seed Bank
- Provide data to MN DNR and USFWS to inform the species status