



Environment and Natural Resources Trust Fund

2021 Request for Proposal

General Information

Proposal ID: 2021-078

Proposal Title: Developing a Rare Plant Rescue Program for Minnesota

Project Manager Information

Name: Carrie Taylor

Organization: Anoka Conservation District

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Project Basic Information

Project Summary: The Anoka Sand Plain Rare Plant Rescue Project enhances the protection of Minnesota's biodiversity and genetic heritage by developing program capacity and rescuing rare plants that would otherwise be destroyed.

Funds Requested: \$199,000

Proposed Project Completion: 2024-06-30

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?

Region(s): Metro, Central,

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.

In 2018, grading for a residential development resulted in the destruction of more than 2,700 individuals of three state-threatened plant species of the Anoka Sand Plain (ASP). While the developer obtained permits and paid required mitigation, rare plant loss was unavoidable. This major loss of plant-life occurs repeatedly in the ASP of central Minnesota. The ASP is a known hotspot for biodiversity, and is subject to extreme development pressure. Since 2005, at least one-half million rare plants have been destroyed in the ASP as part of permitted development. Additional sites containing rare species are slated for development; these plants could be rescued.

Minnesota invests in conservation of rare species and implements a rigorous permitting/mitigation. However, historically rare plants in the permitted footprint of development were destroyed as rescue of these plants was not permissible, a major gap in Minnesota's conservation efforts. In 2019, we collaborated with MNDNR to develop a permit program to allow the rescue and transplantation of rare plants. A 2019 volunteer pilot project realized the rescue of more than 5,000 rare plants. We seek funding to build capacity and create a rare plant rescue program for the ASP that is scalable and shareable statewide.

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.

We seek funding to fill a gap in the State's conservation of rare species and genetic heritage by completing the following:

- Establish a network of experienced, technical experts to create species specific rescue protocols for priority rare plant species of the ASP.
- Proactively identify and select permanently protected and ecologically significant sites to serve as host sites for rescued plants and genetic material (within 20-miles of plants origin).
- Collaborate with the MNDNR, developers, partner organizations and citizen volunteer groups to take immediate action when opportunities to rescue rare plant populations arise (i.e. when plants are permitted by MNDNR to be destroyed).
- Rescue rare plants from permitted sites (donor site) and transplant the material into host sites, or bank seed and genetic material at the Minnesota Landscape Arboretum for additional conservation, propagation, re-introduction, and research.
- Monitor success and efficacy of our rescue efforts through collection of field data, analysis, and tracking in a new sharable program specific database.
- Scale our efforts beyond the ASP through project promotion. We will create sharable protocols and published materials, complete citizen training/education events, and deliver multiple presentations so that our project can be replicated in other regions of Minnesota.

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?

Our project fills a substantial gap in Minnesota's rare plant conservation efforts, protecting the State's biodiversity and genetic heritage. Our project acts immediately on the newly lawful ability (2019) to rescue rare plants that would otherwise be destroyed. We will promote this little known opportunity by thoughtfully coordinating with the MNDNR, engaging and educating citizen volunteers, researching and field testing science-based repeatable methodologies, and publishing and sharing our findings with conservation organizations so that similar programs can be adapted and

implemented in other ecological regions of Minnesota. This project has the ability to rescue countless rare plants from permanent destruction.

Activities and Milestones

Activity 1: Develop repeatable and shareable protocols for rescuing rare plant species in the Anoka Sand Plain.

Activity Budget: \$45,562

Activity Description:

This activity focuses on positioning our team to execute a rare plant rescue project in real-time. We will establish a network including MNDNR, private developers, consultants, and landowners that will notify us when rare plant populations have been permitted for destruction. Four to ten imperiled populations will be identified. Sharable species specific rescue and conservation plans will be prepared for four to ten rare species, depending on the species contained within permitted destruction areas during the project term. We will identify a minimum of five host sites to receive rescued rare plants. Host sites will be identified through modeling and field assessment to determine a site's ecological suitability (i.e. proximity, habitat) to support rescued species. A sharable written protocol and selection criteria will be developed outlining host site selection methodology.

This will expand on our initial pilot project completed in 2019 when we successfully field tested MN DNR's new permit program for "Propagation of Endangered or Threatened Species". This first project of its kind in Minnesota resulted in the rescue of more than 5,000 plants of *Viola lanceolata* (MN Threatened violet) and *Rubus semisetosus* (MN Threatened blackberry) to the nearby and permanently protected Blaine Wetland Sanctuary.

Activity Milestones:

Description	Completion Date
Create a rare species rescue notification network - MN DNR, LGU, and others	2022-06-30
Identify 4 -10 imperiled rare plant populations (donor sites) permitted for destruction to rescue	2023-05-31
Identify a minimum of 5 ecologically significant and permanently protected host sites (modeling, field assessment)	2023-06-30
Create written, sharable, MNDNR approved protocols for host site selection methodology	2024-06-30
Develop sharable, MNDNR approved rare species specific rescue and conservation plans for 4-10 species	2024-06-30

Activity 2: Complete on-the-ground rescue and transplantation of rare plants otherwise destroyed, develop monitoring protocols to track efficacy and success.

Activity Budget: \$134,090

Activity Description:

This activity focuses on the rescue and transplantation of rare plants otherwise destroyed as a result of development. To prepare for rescue work, appropriate permits will be secured and a network of professionals and citizen volunteers will be organized and mobilized. Plants to be rescued will be located at donor sites by professional ecologists. Previously identified host sites will be prepared to receive rescued materials. Conservation professionals will work with and guide citizen volunteers through appropriate rescue techniques. Rescued plants will be immediately relocated to host sites, which must be located within 20 miles of the donor site. Seed, propagules, and other genetic material from rare species will be transported to the UMLA for additional off-site conservation (i.e. seed banking, propagation research, cultivation of plants for re-introduction). Up to 100,000 rare plants or their propagules/genetic material will be rescued throughout the duration of this project.

We will develop repeatable monitoring methods to track the viability of transplanted material. We will develop a new program specific database to track transplanted populations of rare species that will be separate from the MNDNR's NHIS database for tracking natural rare plant populations. This activity will be coordinated with the MN DNR.

Activity Milestones:

Description	Completion Date
Create a new database customized for tracking rescued rare plant populations in collaboration with MNDNR	2022-04-30
Complete site preparation work at previously identified and ecologically suitable host sites	2024-05-31
Develop and implement a repeatable monitoring protocol to track rare plant transplant success	2024-06-30
Execute rare plant rescue and transplant work, transport additional rare plant material to UMLA	2024-06-30

Activity 3: Engage and educate the public through citizen volunteer events. Promote, share, and disseminate our project findings to a broader audience.

Activity Budget: \$19,348

Activity Description:

This activity focuses on engaging and educating the public about the importance of protecting Minnesota's rare plant species. We will establish a network of citizen volunteers, engaging those from Master Naturalists, Master Gardeners, MN Native Plant Society, local school environmental teachers, environmental staff from local governments, and others. We will hold at least two training events teaching citizen volunteers to rescue and transplant rare plants. These trained groups will be deployed under Activity 2. At project completion, we will have an established network of citizen volunteers trained to assist with rescue activities when opportunities arise throughout Minnesota. Our 2019 pilot project indicated a high level of interest and response to such volunteer events.

We will share our project materials and findings with conservation organizations and interested groups within the ASP and greater Minnesota. We will provide at least four public presentations at conferences or scientific symposia. We will develop final project materials that will be published and shared, enabling similar rescue programs to be developed in other regions of Minnesota. The project team will continue to serve as a resource to others where rare plant species destruction is pending and rescue programs are not currently in place.

Activity Milestones:

Description	Completion Date
Establish a network of 30-100 trained and educated rare plant rescue volunteer citizens	2023-06-30
Conduct at least two educational training events with identified citizen volunteers	2023-08-31
Promote and share project results at four public conferences or scientific symposia	2024-05-31
Develop and publish shareable project materials for dissemination to interested groups statewide	2024-06-30

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
David Remucal	University of Minnesota Landscape Arboretum	Curator of Endangered Plants, will assist with planning and prioritization activities for species and site selection. He will manage and curate salvaged and propagated plant intake and dispersal from UMLA care, assist in seed banking of rare plant populations, and perform outreach about the program.	Yes
Hannah Texler	Minnesota Department of Natural Resources Minnesota Biological Survey	MN Biological Survey Plant Survey Supervisor, will serve as an advisor to the project and is part of the MN DNR Propagation of Endangered and Threatened Plants permit team. Hannah Texler has extensive experience in native plant community and plant species field survey and mapping, land management, and conservation planning.	No
Jason Husveth	Critical Connections Ecological Services	Jason is the key liaison between our team, developers, agencies. Jason will provide expertise and extensive experience relating to rare plants and habitats of the ASP. CCES is required for this project creating efficiency and economic value. This is the reason for single sourcing. CCES rates are competitive and reduced.	Yes
UMLA Greenhouse Technician	University of Minnesota Landscape Arboretum	Greenhouse Technician, will oversee seed germination testing, plant propagation, and daily watering and maintenance of rare plants held at MLA's research center.	Yes
Amanda Weise	University of Minnesota Landscape Arboretum	Plant Conservation Associate, will lead the development of prioritization protocols, draft conservation and salvage plans for target species, and oversee salvage implementation. Amada will also oversee seed banking and assist with monitoring of rare plant populations, and perform outreach about the program.	Yes

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?

Rare plants rescued through our project will be placed in permanently protected and permitted host sites with existing managers, conservation missions, and funding mechanisms. Plants and genetic material at MLA will be maintained with existing capacity, infrastructure, and funding. Our citizen volunteer network will be positioned to complete rescue and monitoring projects at reasonable costs, continuing implementation of our project into the future.

Our project creates essential rare plant rescue protocols that can be shared with existing, motivated and funded conservation groups statewide. Distribution of our project materials will allow these groups to adapt regionally specific rare plant rescue programs.

Project Manager and Organization Qualifications

Project Manager Name: Carrie Taylor

Job Title: Restoration Ecologist

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

Carrie Taylor holds an MS in Land Rehabilitation, a BS in Geological Sciences, and has more than 14 years of natural resources conservation experience. Since 2016, she has worked as a Restoration Ecologist for the Anoka Conservation District (ACD). In this role, Carrie manages a wide variety of ecological restoration projects. She also facilitates county-wide collaborative natural resource and conservation planning projects. Currently, Carrie is focused on implementing

projects and programs funded by the Board of Soil and Water Resources, Minnesota Department of Agriculture, Conservation Partners Legacy Program, and the Lessard-Sams Outdoor Heritage Council. Her actively funded projects include those focused on managing ecological restoration activities on sites containing rare plant populations. Carrie facilitates collaborative partnership projects such as the Anoka Cooperative Weed Management Area, she coordinates volunteer engagement projects, and recently Carrie facilitated the development of the Anoka Sand Plain Partnership 10-Year Strategic Plan. In 2019, Carrie coordinated the rescue and transplanted of more than 5,000 state-threatened lance-leaved violet plants - a pilot effort of the collaborative project proposed for expansion here.

For this proposed project, Carrie will engage and organize our partners from the Minnesota Department of Natural Resources (MN DNR), Critical Connections Ecological Services (CCES), and University of Minnesota Landscape Arboretum (UMLA) who will provide the experience, expertise, and facilities needed to initiate and complete a successful project. In addition to facilitating the core project partners, she will coordinate with land managers in the Anoka Sand Plain and lead citizen volunteer engagement efforts to implement rescue and transplanting projects. Carrie will conduct site preparation work, oversee rescue and transplanting efforts and will manage and monitor rescued populations. She will play a key role in the development of program criteria, protocols and outreach materials and will be responsible for all grant administration and reporting requirements.

Organization: Anoka Conservation District

Organization Description:

Anoka Conservation District is a non-regulatory county level subdivision of state government. ACD's mission is to holistically conserve and enhance Anoka County's natural resources through partnerships and innovation. Since 1946, ACD has developed programs and applied technology to address natural resource issues. In order to meet specific goals, we manage natural resources at the geographic scale that is most effective and efficient and seek collaboration with residents, non-profit and local government entities with varying jurisdictions within and across city, county and watershed boundaries. In 2019, after the release of Minnesota Department of Natural Resources new permit to propagate rare plants, ACD collaborated with the University of Minnesota Landscape Arboretum, Critical Connections Ecological Services and citizen volunteers to develop and initiate a pilot project to conserve Minnesota's rare plants by rescuing threatened and endangered plants from permitted construction sites. Developing and expanding this successful pilot into a county-wide Rare Plant Rescue Program supports ACD's conservation mission and vision, and would provide a new opportunity to take action on protecting biodiversity in Anoka County.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Restoration Ecologist		Facilitate Project, Develop plans and criteria, Inventory Sites, Salvage, Manage and Monitor Plants, Organize Volunteers and Outreach, Budget and Grant Reporting			33.3%	0.42		\$39,547
Technician		Salvage rare plants, Site preparation, Manage and Monitor plants			33.3%	0.21		\$6,702
Office Administrator		Budget Tracking and Grant Reporting			33%	0.03		\$1,553
							Sub Total	\$47,802
Contracts and Services								
University of Minnesota Landscape Arboretum	Sub award	Develop rescue protocols and conservation plans. Oversee rescue implementation and assist with monitoring. Manage and curate rescued and propagated plant intake and dispersal from University of Minnesota Landscape Arboretum research center, seed banking and plant propagation of rare plant populations, and perform outreach about the program.				0.87		\$55,191
Critical Connections Ecological Services	Professional or Technical Service Contract	Jason Husveth is the key liaison between our team, developers, agencies. Jason will provide expertise and extensive experience relating to rare plants and habitats of the ASP. CCES is required for this project creating efficiency and economic value; reason for single sourcing. CCES rates are competitive and reduced.		X		0.36		\$79,860
TBD	Professional or Technical Service Contract	Equipment operator for rare plant rescue implementation.				0.03		\$3,000
							Sub Total	\$138,051

Equipment, Tools, and Supplies								
	Tools and Supplies	field supplies	materials for transplanting rare plants					\$2,990
	Tools and Supplies	raised beds materials	plant propagation at University of MN Landscape Arboretum					\$3,200
							Sub Total	\$6,190
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	11,925 miles at \$0.575/mile	travel for project implementation					\$6,857
							Sub Total	\$6,857
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
	Printing	outreach material	program materials for outreach					\$100
							Sub Total	\$100
Other Expenses								
							Sub Total	-
							Grand Total	\$199,000

5/15/2020

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
<p>Contracts and Services - Critical Connections Ecological Services</p>	<p>Professional or Technical Service Contract</p>	<p>Jason Husveth is the key liaison between our team, developers, agencies. Jason will provide expertise and extensive experience relating to rare plants and habitats of the ASP. CCES is required for this project creating efficiency and economic value; reason for single sourcing. CCES rates are competitive and reduced.</p>	<p>Jason Husveth will provide expertise and extensive experience relating to rare plants and habitats of the ASP. CCES is required for this project creating efficiency and economic value; reason for single sourcing. CCES rates are competitive and reduced. This is a single source contract.</p>

Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
In-Kind	Minnesota Department of Natural Resources 135 hours x \$100 / hour	In-kind Staff time to provide guidance and review program methods and protocols; provide input on post-transplant site management; review selected recipient sites and database for transplanted rare plant populations.	Secured	\$13,500
			State Sub Total	\$13,500
Non-State				
In-Kind	Critical Connections Ecological Services In-kind staff time: 70 hours x \$110/hour Trimble TDC150 Sub-Foot Accuracy GPS Rental Rates: \$110/day x 4 days	CCES staff time including plotting GPS locations of rare plant populations; developing and distributing program materials; publishing and presenting methods and results. Use of Trimble TDC150 Sub-Foot Accuracy GPS to record locations of transplanted rare plant populations.	Secured	\$8,140
In-Kind	University of Minnesota Landscape Arboretum 255 hours x \$42.45 / hour	University of Minnesota Landscape Arboretum in-kind staff time developing rare plant rescue professional network and protocols; drafting MN DNR Permit Application for the Propagation of Endangered or Threatened Species; performing activities at the Landscape Arboretum including seed banking, propagation, and cultivation, and engaging volunteers and presenting results.	Secured	\$10,825
In-Kind	Anoka Conservation District	Use of equipment such as ATV, water tank, weed whips, brush saws, rakes and shovels for preparing sites for rare plant transplants and watering and maintaining rare plant populations at new recipient sites.	Secured	\$1,000
In-Kind	Volunteer Labor 900 hours x \$24.69 / hour (University of MN Landscape Arboretum volunteer rate)	Volunteers will rescue 4-10 rare plant populations and transplant into protected recipient sites; monitor plant populations; perform activities such as seed banking, propagation and cultivation at the MN Landscape Arboretum. Several volunteers assisted in the 2019 Blaine pilot project and several more have expressed interest in future rare plant rescue missions.	Potential	\$22,221
Cash	Anoka Conservation District	Funds will support the additional cost of printing program materials and cost of ACD staff time to implement project activities including developing methods and protocols; coordinating volunteer efforts; transplanting and maintaining rare plant populations,; monitoring and analyzing results; and disseminating program materials.	Secured	\$3,500
			Non State Sub Total	\$45,686
			Funds Total	\$59,186

Attachments

Required Attachments

Visual Component

File: [0f232256-6fe.pdf](#)

Alternate Text for Visual Component

The Anoka Sand Plain Rare Plant Rescue Project will launch a new program to enhance the protection of Minnesota's biodiversity and genetic heritage by developing capacity and rescuing rare plants that would otherwise be destroyed. Photos on the illustration are from the 2019 rescue pilot project in Blaine, MN and highlight activities in the proposal: to identify 5-10 recipient sites using habitat assessments and modeling; rescue up to 100,000 individual rare plants and/or seed and relocate to suitable recipient sites; seed bank, propagate, and grow at the Minnesota Landscape Arboretum; and develop and implement a monitoring program to evaluate relocation efforts. Activities will engage volunteers and the community. Program materials will be shared to expand the program's impact.

Board Resolution or Letter

Title	File
Anoka Conservation District Board Resolution	7337e16e-007.pdf

Optional Attachments

Support Letter or Other

Title	File
Rare Plant Rescue Letter of Support_Ruth Shaw University of MN	61f28a75-306.pdf
Rare Plant Rescue Letter of Support_City of Blaine	b5b6797f-744.pdf
Rare Plant Rescue Letter of Support_Anoka Parks	ed4dbdd7-762.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

No

Does your project have patent, royalties, or revenue potential?

No

Does your project include research?

No

Does the organization have a fiscal agent for this project?

No

Developing a Rare Plant Rescue Program for Minnesota

- Launching a new conservation and rescue program for rare plants throughout the Anoka Sand Plain Ecoregion of east-central Minnesota (1.1 million acres)
- Conducting outreach and sharing program materials to expand the program's impact

Photos from 2019 rescue pilot project.



Identify 5-10 recipient sites using habitat assessments and modeling



Rescue up to 100,000 individual rare plants and/or seed and relocate to suitable recipient sites



Seed bank, propagate, and grow at the Minnesota Landscape Arboretum



Develop and implement monitoring program to evaluate relocation efforts

60 species of rare plants in the ASP

While the Anoka Sand Plain comprises only 2.2% of the lands in Minnesota, this region supports 18% of all Threatened and Endangered plants species in the state.



