



Environment and Natural Resources Trust Fund

2027 Request for Proposal

General Information

Proposal ID: 2027-557

Proposal Title: Developing a Vegetation Monitoring Model in Stearns County

Project Manager Information

Name: Angela McDonnell

Organization: Minnesota State Colleges and Universities - St. Cloud State University

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Project Basic Information

Project Summary: We will collaboratively monitor vegetation in Stearns County parks to assess ecological health and inform management decisions; this will create an actionable plan to improve park quality.

ENRTF Funds Requested: \$355,000

Proposed Project Completion: June 30, 2030

LCCMR Funding Category: Land (F)

Project Location

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

Region(s): Central

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

Region(s): Central

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.

We are reliant on local plants and native vegetation for ecological services; it is imperative we understand the location and quantity of native, nonnative, and invasive plants. Further, thousands of visitors to Stearns county parks each year enjoy county parks for hunting, fishing, hiking, camping, swimming, and other recreation. Their experiences are strongly tied to overall park quality, and a high-quality county park is one that maintains native biodiversity and ecological integrity while providing safe, accessible, and meaningful visitor experiences through intentional, science-based management, sustainable infrastructure, and long-term stewardship (Onofri and Narain, 2025). Enhanced visitor experiences may increase local tax revenue; strategic planning documents show park spending produces multiple dollars in tax revenue for every public dollar invested in WA state parks (parks.wa.gov). In MN, nonnative species, habitat resilience, and balanced recreation and resource protection are common issues which may destabilize park communities; these are labor-intensive to document and often difficult for County professionals to manage. Finally, newer acquisitions, including Chain of Lakes, require new attention as former fields are converted to prairie.

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.

I am proposing a collaborative project between my team at SCSU (myself, graduate students, and undergraduate students) as well as Stearns County parks to develop and implement a plan that will establish vegetation assessment protocols, map and document plant occurrence data, and create an action plan for two Stearns County parks (Rockville and Chain of Lakes). First, we will establish protocols including fieldwork, generation of maps, and procedures for communicating and sharing data. Second, we'll assess ecological health and document standing plant diversity via field surveys and specimen collection followed by creation of new habitat maps and suggested community classifications following MN DNR's native plant community classification system. Finally, direct work with county parks professionals will lead to actionable management plans for both sites. Ultimately, this project will generate data leading to informed decisions that will improve experiences of thousands of users, and can be updated to detect trends indicating management priorities and assess ongoing management activities. Separate projects at each park will be led in the field by two SCSU graduate students who will be trained in research design, plant identification, data analysis, and science communication; all skills needed by future natural resource professionals.

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?

The research will create primary plant biodiversity data, generate detailed vegetation maps, train the next generation of natural resource professionals, and facilitate informed decisions on park planning and management. Many thousands of visitors each year will benefit from informed management including improved sites for hiking, fishing, hunting, and trail riding. Finally, the implementation of this work will create data that can be revisited and used in assessments as well as protocols that are extendable to the dozen other properties managed by Stearns County Parks staff.

Activities and Milestones

Activity 1: Develop vegetation survey plan and implement survey in Rockville county park (RCP)

Activity Budget: \$175,500

Activity Description:

RCP is a 284 acre natural area on the Sauk River containing a tamarack swamp, a native black ash forest, a granite outcrop, and several riparian areas facing a variety of threats and requiring informed management. A popular place for hiking, trail riding, bicycling, camping, snowshoeing, and fishing, assessment by the MN DNR over a decade ago found 14 distinct habitats of varying quality.

First, we will develop a workflow that will include a site analysis informed by current master plans for RCP. Current known habitat types will be assessed, data collection protocols will be developed, and a specimen workflow to process primary data will be established. With protocols established, I will advertise for and hire a graduate student and three undergraduate students to aid in field survey data collection, data entry, and data analysis. Each student will be trained in plant identification, vegetation mapping, and Graphical Information Systems (GIS). The graduate student will be responsible for developing hypothesis-based thesis research related to the data we collect. Undergraduate students will work together to collect data in the non-winter months and process specimens and data in the winter months.

Activity Milestones:

Description	Approximate Completion Date
Draft workflow and data collection protocols	September 30, 2027
Hire and train student staff (3)	September 30, 2027
Complete field survey of Rockville county park	October 31, 2028
Finalize maps, quantify habitat areas, and summarize results	December 31, 2028
Develop draft management plan with County Parks staff.	February 28, 2029

Activity 2: Assess field survey results and implement survey in Chain of Lakes county park (CLCP).

Activity Budget: \$175,500

Activity Description:

CLCP is a newer acquisition by the county just south of the city of Cold Spring and the first in Stearns County to allow open hunting for the public. The 249-acre parcel is planned to undergo wetland and prairie restorations on former farmland, contains wooded areas, a trout stream, and a heron rookery. There are no plans at present to monitor vegetation and assess species there by county parks staff. Following the vegetation survey at RCP, we will first assess whether changes to workflow at CLCP to improve data collection and ensure unique site needs are met. Current known habitat types will be assessed and established protocols will be implemented to collect specimens and vegetation data, map locations of habitats, and prioritize assessment of restoration efforts. Each student staff will receive continual training in plant identification, vegetation mapping, and GIS. The graduate student will be responsible for developing hypothesis-based thesis research related to the data we collect. Undergraduate students will work together to collect data in the non-winter months and process specimens and data in the winter months.

Activity Milestones:

Description	Approximate Completion Date
Consult with county parks staff and revisit/revise protocols if needed	February 28, 2029
Hire and train student staff (3)	April 30, 2029
Complete field survey of Chain of Lakes county park	October 31, 2029
Finalize maps, quantify habitat areas, and summarize results	December 31, 2029

Develop draft management plan with County Parks staff	February 28, 2030
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Activity 3: Dissemination of results

Activity Budget: \$4,000

Activity Description:

We will share our work locally and regionally via scientific poster and oral presentations, led by student researchers. For example, the work will be highlighted at the annual Research Colloquium at SCSU and should be included in regional conferences such as Posters at St. Paul and the MN School Gardens conference. We will create vegetation maps which can be shared on websites, in updated park posters and brochures, and as a peer-reviewed publication in a journal such as the Great Lakes Botanist. I will also write and submit articles targeted to the St. Cloud Times newspaper and the MN Native Plant Society newsletter, which will highlight this work and emphasize how data-informed conservation practices will impact park visitors through clearer prioritization of management goals. Finally, the work will create baseline data that are extendable and reuseable to meet future goals and train local students in essential techniques, making them competitive for jobs with local county governments, the MN DNR, and private organizations focused on conservation and management work.

Activity Milestones:

Description	Approximate Completion Date
Submission of an article to local newspaper	February 28, 2030
Student poster presentations on RCP and CLCP	May 31, 2030
Student oral presentations on RCP and CLCP	May 31, 2030
Dissemination of Maps to Stearns County parks staff for RCP and CLCP	May 31, 2030
Submission of an article to a scholarly journal summarizing research findings	June 30, 2030

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Tom Poser	Stearns County Parks	Consultant and advisor, liaison between SCSU and Stearns County	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.

Efforts and results will be shared in popular press (newspaper article, MN native plant society newsletter), as peer-reviewed published articles (two, one for each site), and in oral presentations at the SCSU research colloquium and at Posters at St. Paul. Opportunities for additional presentations elsewhere will be taken advantage of.

Documentation of our work will include written protocols, field collection data sheets, physical specimens of pressed, dried plants, and written summaries as reports and action plans.

Paper files will be digitized. All digital files (field data, typed data, reports, etc.) will be saved at SCSU on a shared OneDrive folder as well as in Stearns County digital file organization. Physical plant specimens will be labeled and mounted on archival paper prior to digitization and storage in the SCSU Herbarium, where they will be preserved and able to exist in perpetuity.

I aim to extend this work to other public areas in need; our work and the protocols will be adaptable to other sites and other projects and serve as a model to be reused. Minnesotans will hear about this work via popular media but they will also experience improved management of local parks through data-informed management decisions. We will be able to quantify change over time to accurately assess the impact of ongoing work which will lead to better prioritization of limited resources and targeted efforts to improve hiking, hunting, fishing, and other recreational activities in Stearns county.

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?

Findings, results, and products will be developed collaboratively at SCSU and shared through local and regional poster and oral presentations given by student researchers. We will also have ongoing communication (meetings, conferences) with parks staff during which we will share results and collaborate in the creation of maps which can be shared on websites, in brochures, and/or in publications in scholarly journals (i.e.: Great Lakes Botanist). Dissemination will include articles in the St. Cloud Times and the MN Native Plant Society newsletter. Extensions of this work can include future students and infrastructure in place at SCSU.

Project Manager and Organization Qualifications

Project Manager Name: Angela McDonnell

Job Title: Assistant Professor

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

I am an assistant professor of Biology at SCSU and a botanist with expertise in field surveys, biodiversity, and conservation; I also direct the Biology Greenhouses and the SCSU herbarium, a natural history museum of preserved

plants as old as the late 1800's. I am well equipped to manage the proposed project using local resources (herbarium, SCSU students, county parks experts) and committed to development of collaborative relationships (e.g.: with UM's Bell Museum, Stearns County Parks, MN DNR staff) to improve public experiences in parks locally through vegetation mapping, conservation biology, and targeted management. I am experienced in managing grant funds, mentoring and hiring student staff, executing planned projects and research, publishing articles, giving presentations to share and disseminate findings, and assessing outcomes of my work. With the assistance of the SCSU Research and Sponsored Programs office, I am also capable of managing this project from a financial perspective. The proposed work will help establish my lab group as a local center of expertise for plant identification and vegetation monitoring; I currently train two masters students, six undergraduate students, and serve as an academic advisor to more than 20 other SCSU students. I am committed to student success and research excellence and aim to model productive collaboration between the university and the County Parks department, which has strong potential to be adapted and extended beyond the length of the proposed work.

Organization: Minnesota State Colleges and Universities - St. Cloud State University

Organization Description:

St. Cloud State University (SCSU) is a public university in St. Cloud, Minnesota and was founded in 1869. The university is one of the largest institutions in the Minnesota State Colleges and Universities system and has an enrollment of just under 10,000 students. Angela McDonnell is a faculty member in the Biology: Biodiversity, Ecology, and Evolution (BEE) program which currently serves approximately 70 students majoring in the subject. The BEE program faculty, including Dr. McDonnell, also support nearly all of the 25 Biology M.S. students.

The project will leverage existing resources on campus including Dr. McDonnell's lab and office spaces (Wick rooms 274 and 206), the St. Cloud State University Herbarium (Wick room 216), and has potential to use Biology Greenhouse facilities if needed, which are also directed by Dr. McDonnell. As a member of the learning and education community, Dr. McDonnell values collaborative work with several internal partners (such as the SCSU American Indian Center, the SCSU Community Garden, and student organizations including the SCSU Botanical Society) as well as external partners (Tom Poser of the Stearns county parks department and Mike Lee of the MN DNR) which is facilitated by the university.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Principal investigator		Project oversight, undergraduate student mentoring and training, field survey work in the summer, herbarium directorship, data management, manuscript preparation and submission, graduate student mentoring and guidance. PI is on a 9-month appointment, salary here is for summer months.			22%	0.36		\$55,000
Graduate Assistants (split between 2 individuals)		Point person for each vegetation survey treatment, 2 students in Biology MS program, responsible for learning and implementing research design, data collection and analysis, map design and generation, and thesis and manuscript preparation			7.65%	2.07		\$175,000
Undergraduate Student Workers (split between 6 individuals)		Vegetation survey data collection, data management and specimen preparation, data entry, data analysis			0%	1.32		\$100,000
							Sub Total	\$330,000
Contracts and Services								
							Sub Total	-
Equipment, Tools, and Supplies								
	Tools and Supplies	Field press; Qty 5	for the collection of specimens in the field					\$700
	Tools and Supplies	small corona clippers, Qty 10	for specimen collection					\$300
	Tools and Supplies	trowels, Qty: 10	for specimen collection					\$300
	Tools and Supplies	MN flora; Qty 5	plant identification guides for use in the field					\$300

	Tools and Supplies	field notebooks	waterproof notebooks for in the field data collection					\$200
	Tools and Supplies	plant press kit, qty 6	for specimen collection					\$1,000
	Tools and Supplies	specimen mounting paper, archival grade; Qty: 20 boxes of 500 sheets of archival paper (support collection of up to 10,000 plant specimens)	for specimen processing and storage					\$2,000
	Tools and Supplies	folders for specimen storage and filing; Qty: 5 cartons of 100 each	for specimen storage					\$1,000
	Tools and Supplies	cabinet; Qty: 1	herbarium cabinet for storage and processing of new specimens; dedicated specifically to this work					\$6,000
	Tools and Supplies	Kaiser RB 5270 DX Copylizer Lighting Unit; Qty: 1	Lights that will allow for photographing specimens and facilitate data entry.					\$1,000
	Tools and Supplies	specimen digitization tools (scanner and colorgauge) qty 1	scanner for automated entry of specimens into database and a colorgauge calibraton card, both dedicated to this work					\$2,000
	Tools and Supplies	barcode labels; Qty: 10,000	Identifiers to support the storage and databasing/digitization of up to 10,000 plant specimens					\$1,000
	Tools and Supplies	clipboards and paper for printing datasheets	for data collection in the field					\$200
	Tools and Supplies	handheld gps units (such as garmin etrex, 5)	creation of waypoint maps to track work and improve data collection					\$2,000
							Sub Total	\$18,000
Capital Equipment								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	Travel from SCSU to Chain of Lakes (20 mi, one-way) and Rockville County (13 mi, one-way) Parks; 75 round trips each, mileage estimate: 4,950 at	This travel is for the proposed fieldwork over the duration of the project.					\$3,000

		65.5 cents per mile based on SCSU rates for 2026-2027						
							Sub Total	\$3,000
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
	Publication	Open access publishing of article in a peer-reviewed journal	This work will results in two MS theses that will be prepared for publication and made open access (freely available) to all					\$4,000
							Sub Total	\$4,000
Other Expenses								
							Sub Total	-
							Grand Total	\$355,000

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	-

Total Project Cost: \$355,000

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component

File: [5d702312-871.pdf](#)

Alternate Text for Visual Component

Top: map adapted from the Stearns county website) with Rockville and Chain of Lakes county parks highlighted. Bottom: Example preliminary vegetation map, Rockville County park (per old master plan, with respective areas calculated; this map would be updated and vegetation areas reclassified as part of this project)....

Administrative Use

Does your project include restoration or acquisition of land rights?

No

Do you understand that travel expenses are only approved if they follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?

Yes, I understand the Commissioner's Plan applies.

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

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?

Yes

Does the organization have a fiscal agent for this project?

No

Does your project include the pre-design, design, construction, or renovation of a building, trail, campground, or other fixed capital asset costing \$10,000 or more or large-scale stream or wetland restoration?

No

Do you propose using an appropriation from the Environment and Natural Resources Trust Fund to conduct a project that provides children's services (as defined in Minnesota Statutes section 299C.61 Subd.7 as "the provision of care, treatment, education, training, instruction, or recreation to children")?

No

Provide the name(s) and organization(s) of additional individuals assisting in the completion of this proposal:

NA

Do you understand that a named service contract does not constitute a funder-designated subrecipient or approval of a sole-source contract? In other words, a service contract entity is only approved if it has been selected according to the contracting rules identified in state law and policy for organizations that receive ENRTF funds through direct appropriations, or in the DNR's reimbursement manual for non-state organizations. These rules may include competitive bidding and prevailing wage requirements

N/A