Environment and Natural Resources Trust Fund

2023 Request for Proposal

General Information

Proposal ID: 2023-108

Proposal Title: From Science to Stewardship for Students

Project Manager Information

Name: Monica Zachay

Organization: Wild Rivers Conservancy

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Project Basic Information

Project Summary: From Science to Stewardship equips 500 6th-12th grade students with the knowledge to become the next generation of environmental stewards through water quality monitoring and student-led stewardship projects.

Funds Requested: $188,000

Proposed Project Completion: June 30, 2026

LCCMR Funding Category: Small Projects (H)

Secondary Category: Environmental Education (C)

Project Location

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

Region(s): Metro, Central, NE,

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

Region(s): Central, Metro, NE,

When will the work impact occur?

During the Project

Narrative

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

The average American child is said to spend about 4 to 7 minutes a day playing outside and over 7 hours a day in front of a screen. (childmind.org) It is no secret that children are becoming increasingly "nature deprived", choosing technology and screen time over time outdoors. The future of Minnesota's natural resources is at risk if we do not act now to build the next generation of environmental stewards.

Since 2015, Conservancy has been working throughout the watershed to build a K-12 program called "Rivers Are Alive" (RAA). Over the past seven years participation in RAA has grown from just over 500 students to more than 6,500 students annually. The growth of our programs show the need is ever increasing to get students outside to experience their environment through programs like birding, snowshoeing, ice fishing, and an overall favorite – river mucking!

Students and teachers alike are fascinated by macroinvertebrates and the story they tell about the health of our local rivers and streams. We seek to build upon this momentum, taking our mucking program beyond a one-time exploratory activity and making it a full-blown student science and stewardship in-action program for up to 500 students.

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.

The overall goal of this project is to protect and enhance Minnesota's natural resources in the St. Croix Watershed by empower youth to become the next generation of environmental stewards.

This will be accomplished through the following activities:

- Program Development - The Conservancy will work with local schools to adapt and integrate existing water quality science programs, such as the Red River Basin's RiverWatch program, into standards aligned curriculum for middle and high school students in the St. Croix watershed. Traditionally underserved schools and areas without strong environmental programs will be of priority.
- Science in the Field - Students will conduct water quality monitoring and macroinvertebrate sampling, identification, and assessment using protocols approved by MN Pollution Control Agency. Information will be tracked through a database to determine trends and year-to-year changes in conditions.
- Stewardship in Action - Students will use monitoring results to identify, plan, and implement stewardship projects throughout the community that will result in multiple benefits for water quality, habitat, and community resiliency.

Additionally, students will share monitoring and stewardship project results with the scientific community and fellow students at the annual St. Croix Youth Summit to encourage peer-to-peer learning.

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?

This project will: 1) train and empower the next generation of environmental stewards; 2) increase the knowledge and skills of students for a more sustainable lifestyle; and 3) protect and restore a healthy and biodiverse St. Croix watershed.

Over the project period 500 students from at least 15 schools will conduct bi-annual water quality and macroinvertebrate monitoring in at least 15 different tributaries and river stretches in the St. Croix watershed. Students will design and implement 15 stewardship projects in their communities and upwards of 1,000 students will be engaged in peer learning at the St. Youth Summit.

Activities and Milestones

Activity 1: Program Development and Integration Into Schools

Activity Budget: $52,000

Activity Description:
Building upon past momentum working with K-12 schools on the Minnesota side of the St. Croix River watershed, Conservancy educators will expand our existing river mucking program. Using Minnesota State standards and working directly with teachers, gaps will be assessed and curriculum will be adapted to work in classrooms to meet education requirements. Using templates, such as the RiverWatch biological monitoring program, at least 15 schools, representing up to 500 students will be equipped with training, materials, and opportunity to participate in annual student-led water quality monitoring and stewardship projects. Teacher training will be offered at least two times a year to learn the program and integrate activities into their lesson plans.

Activity Milestones:

Description	Completion Date
Develop two program modules - one for monitoring and one for stewardship activities	December 31, 2023
Build 5 monitoring kits to be shared among classrooms	March 31, 2024
Recruit 15 teachers from 15 schools to participate in teacher trainings offered twice annually	April 30, 2024

Activity 2: Water Quality and Macroinvertebrate Monitoring, Identification, and Assessment

Activity Budget: $72,500

Activity Description:
Each spring and fall students will use basic water quality monitoring techniques and chemistry tests, reviewed and approved by the Minnesota Pollution Control Agency, to collect information on water pH, temperature, clarity, and nutrient levels. Using data sheets, students will record site conditions such as location, weather, stream morphology, stream bank and bed features. Nets will be used to collect macroinvertebrates in the field and samples preserved to identify in a classroom setting. Index of Biological Integrity scores will be calculated based on macroinvertebrate samples and results tabulated into a database to indicate water quality conditions and trends over time. Conservancy educators will quality check student results and help develop monitoring reports and trend analysis.

Activity Milestones:

Description	Completion Date
15 schools, representing 500 students, will conduct water quality and macroinvertebrate monitoring twice a year	June 30, 2026
15 stream and river stretches monitored by students each year	June 30, 2026
Monitoring result quality assurance, reporting, and trend analysis completed annually	June 30, 2026

Activity 3: Stewardship Project Idea Development, Implementation, and Sharing

Activity Budget: $63,500

Activity Description:
Conservancy educators will work with students and teachers to connect water quality and macroinvertebrate monitoring and results with stewardship activities to protect and restore local ecosystems and foster stewardship. Students will choose, design, and implement their projects as a group with guidance from their teachers and Conservancy staff. Stewardship activities may include rain garden plantings, storm water drain stenciling, lawn to native

vegetation conversion, and community education projects for example. Students will share their monitoring and stewardship projects with other students at the annual St. Croix Youth Summit.

Activity Milestones:

Description	Completion Date
3-5 St. Croix Youth Summit presentations by students annually	April 30, 2026
Design and implementation of 15 student-led stewardship projects	June 30, 2026

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?

In the long term, this student science and stewardship program will protect and restore the water quality of the St. Croix River and habitats within its watershed. Developing a student-led program will empower students and community members to act to ensure the long-term protection of the Riverway. These efforts will all either integrate into existing funded programs, or aim to establish community commitment to ensure longevity beyond the funding period. This project has potential to be highly visible to the public, and if successful, could be duplicated in other Minnesota watersheds.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Shoreland Protection for the Lower St. Croix River	M.L. 2015, Chp. 76, Sec. 2, Subd. 08j	$190,000

Project Manager and Organization Qualifications

Project Manager Name: Monica Zachay

Job Title: Director of Programs

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

Monica has been with the Conservancy since 2012. With over 15 years of experience in the field of natural resources, she has extensive experience in multi-stakeholder and team leadership, project management, GIS mapping and analysis of watersheds, and strategies for the protection and restoration of land and water resources. Alongside her talented team, Monica takes joy in overseeing and managing the Conservancy's three core program areas: Education and Outreach, Land and Water Resources, and Invasive Species. She holds a Bachelor of Science in Natural Resources from the University of Minnesota and a Master of Public Affairs degree from the University of Missouri.

Organization: Wild Rivers Conservancy

Organization Description:

The mission of the Wild Rivers Conservancy of the St. Croix and Namekagon (Conservancy) is to inspire stewardship to forever protect the rare ecological integrity of the St. Croix and Namekagon Riverway . Since its inception in circa 1911, the Conservancy has been a grassroots, citizen-led effort inseparably linked to the St. Croix River. From early petitions to protect fisheries from over harvesting, to hydroelectric dam operations, to new highway construction, to threats of direct sewage discharge, the idea of protecting the river has remained constant.

The Conservancy works throughout the watershed to protect the national park that flows through its heart. Our staff along with interns, volunteers and partners, conducts activities to meet these objectives:

- Ensure improved water quality and ecological health through thoughtful and strategic private, local, state, and federal investments.
- Raise awareness and create a shared understanding about the threats, needs, resources and value of the St. Croix River and its watershed.
- Establish and implement common sense policies and communication strategies to advance the protection of the St. Croix.

- Create vibrant natural areas where people of all ages and income levels can access the St. Croix, participate in stewardship programs, and enjoy the health benefits of River time.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
Conservancy Educator		coordinate schools and program activities			20%	3		$140,000
Community Engagement Coordinator		Project assistance and administration			20%	0.45		$30,000
							Sub Total	**$170,000**
Contracts and Services								
							Sub Total	-
Equipment, Tools, and Supplies								
	Equipment	Two water quality meters ($1,000 each), 5 water quality test kits ($100 each), 10 D-nets ($100 each), 15 chest waders ($100 each), sample collecting and preserving supplies, stewardship project supplies & equipment	water quality monitoring and stewardship project implementation					$15,000
							Sub Total	**$15,000**
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	Educator travel - 1,500+ miles annually to schools/monitoring locations	Travel to schools and monitoring/stewardship project locations					$3,000

							Sub Total	**$3,000**
Travel Outside Minnesota								
							Sub Total	**-**
Printing and Publication								
							Sub Total	**-**
Other Expenses								
							Sub Total	**-**
							Grand Total	**$188,000**

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				
			State Sub Total	**-**
Non-State				
			Non State Sub Total	**-**
			Funds Total	**-**

Attachments

Required Attachments

Visual Component

File: 9a222a71-527.pdf

Alternate Text for Visual Component

Photos and an outline of the project with the need and key activities. Photos are of students river mucking, water quality sampling, planting trees, and stenciling storm drains....

Financial Capacity

File: d1f517a7-677.pdf

Board Resolution or Letter

Title	File
Resolution	568d42d8-9d6.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?

No

FROM SCIENCE TO STEWARDSHIP

INSPIRING THE NEXT GENERATION OF ENVIRONMENTAL STEWARDS

ABOUT THE PROJECT

The overall goal of this project is to **protect and enhance Minnesota's natural resources in the St. Croix Watershed** by training and equipping students with the knowledge to become the next generation of environmental stewards. At least **500 middle school and high school students will gain hands on experience monitoring the health of local rivers and streams.** They will then use what they have learned to conduct **stewardship projects in their communities.**

LCCMR REQUEST

$188,000 over three years to equip 500 6th-12th grade students with the knowledge to become the next generation of environmental stewards.

THE NEED

The average American child is said to spend about 4 to 7 minutes a day playing outside and over 7 hours a day in front of a screen. (childmind.org) It is no secret that children are becoming increasingly "nature deprived", choosing technology and screen time over time outdoors. If youth are not experiencing the outdoors, their connection with nature is lost. The future of Minnesota's natural resources is at risk if we do not act now to build the next generation of environmental stewards.

BUILDS UPON MOMENTUM

This project builds upon the momentum of existing K-12 environmental education programs in the St. Croix River watershed and will use models like the Red River Valley's RiverWatch program to monitor river heath.

The Conservancy's "Rivers Are Alive" mucking program is a favorite among teachers and students. This project will greatly expand the RAA program into a year-round student-led monitoring program with a stewardship-in-action component..

Students will apply their monitoring results and lessons learned about resource protection, and develop and implement their own stewardship projects in their communities.

SUPPORTS LCCMR PRIORITIES

- Provide outdoor experiences, committed to building a long-lasting and action-based conservation ethic in a community.
- Deliver and implement existing curriculum, especially integration of environmental education into school curriculum.

ACTIVITIES

- **Program Development** - Adapt and integrate existing water quality science programs, into standards aligned curriculum for middle and high school students in the St. Croix watershed
- **Science in the Field** - Water quality monitoring and macroinvertebrate sampling, identification, and assessment using protocols approved by MN Pollution Control Agency. Information will be tracked through a database to determine trends and year-to-year changes in conditions.
- **Stewardship in Action** - Students will use monitoring results to identify, plan, and implement stewardship projects throughout the community that will result in multiple benefits for water quality, habitat, and community resiliency.

FOR MORE INFORMATION

Contact Monica Zachay, Director of Programs, Wild Rivers Conservancy
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WILD RIVERS CONSERVANCY