



Environment and Natural Resources Trust Fund

2023 Request for Proposal

General Information

Proposal ID: 2023-223

Proposal Title: Teaching Students about Watersheds through Outdoor Science

Project Manager Information

Name: John Lenczewski

Organization: Minnesota Trout Unlimited

Office Telephone: (612) 670-1629

Email: jlenczewski@comcast.net

Project Basic Information

Project Summary: Hands-on learning outdoors will focus on water quality, groundwater, aquatic life and students' role as watershed stewards. Angling and volunteer opportunities for students and families will foster a conservation ethic.

Funds Requested: \$298,000

Proposed Project Completion: June 30, 2025

LCCMR Funding Category: Environmental Education (C)

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.

Youth are increasingly disconnected from the natural environment, and water resources in particular. This lack of connection follows students into adulthood and impacts their ability to make well-informed decisions about their environment and local waters. Underserved communities have even greater challenges connecting students with the outdoors, even in cities with many lakes, rivers, and streams.

This presents an opportunity to expand our hands-on learning program and help reverse these trends. We accomplish this by using tangible education tools and taking students outdoors for hands-on learning activities that connect them to aquatic ecosystems. Our current students learn their role in healthy, sustainable, aquatic systems and develop a sense of stewardship they carry forward into adulthood. We reach students in classrooms, during field days and via outdoor recreation that encourages lifelong, tangible connections to Minnesota's outdoors. We have the opportunity to expand the number of students and communities served, especially underserved communities, and provide the means for youth to learn about their local watersheds. Everyone lives near a waterbody worth protecting. Every student deserves to learn how they can help improve their local waters.

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.

We take students outdoors for hands-on learning activities that connect them to aquatic ecosystems first-hand. We utilize our existing Minnesota-specific program that places aquariums in classrooms so students can follow the development of trout from egg to juvenile. This serves as a springboard for field studies along streams and lakes and as a focal point for reinforcing learning about water, watersheds and ecology. Lessons on groundwater, climate change and invasive species are included. Minnesota-specific adaptations to existing curriculum include grade level standards and STEM initiatives. Students will use technology and applied sciences outside as they gather first-hand knowledge of healthy ecosystems. Students will increase their science skills and knowledge concerning water quality, groundwater, watersheds, climate change, invasive species and healthy aquatic habitats. Classroom aquariums and outdoor lessons encourage students to use critical thinking skills and foster deeper knowledge in multiple areas, including science, math, language arts and art. Youth-oriented videos reinforce learning and facilitate distance learning. To strengthen connections to aquatic systems we will offer expanded fishing skills clinics for students and families, after school fishing clubs, and outdoor events. Opportunities for age-appropriate volunteer work on conservation projects will be offered to foster a sense of action-based stewardship.

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?

Instilling students and their families with knowledge of how their actions impact water quality and aquatic life, and providing them with tangible connections to aquatic resources helps ensure the ongoing preservation and protection of Minnesota resources. The program will impart this knowledge, and generate interest in healthy watersheds, the outdoors and outdoor recreation. Those who participate in fishing clinics or try hands-on volunteer work are likely to develop a strong conservation ethic and act to protect, conserve and enhance our environment. This program will reach more than 5,000 students and their families each year.

Activities and Milestones

Activity 1: Watershed Field Days & Classroom Activities: Field Days, Trout in the Classroom and Classroom Visits

Activity Budget: \$268,000

Activity Description:

Lead fall and spring field days where students connect with the natural world through hands-on studies and activities along local streams and lakes. Train teachers and provide classroom lessons which complement the field days. Manage set up and operation of 50+ classroom aquariums where students in grades 4 to 12 raise trout from eggs to fingerlings. In year two add 15 additional classrooms, focusing on underserved students and schools. Increase teacher support using MNTU educators and volunteers so teachers can consistently engage students in a variety of learning opportunities. Watershed curricula endorsed by the National Science Teachers Association, such as Project WET and Project WILD Aquatic, will be used. Minnesota adaptations address state grade level standards and include STEM initiatives. Provide students with opportunities to develop outdoor skills and learn about water resources careers. Engage students in age-appropriate habitat enhancement opportunities on local conservation projects addressing climate change and invasive species, and spark a sense of stewardship in them.

Videos and other distance learning tools will be created for students and public use. Video goals include enhancing students' science skills and knowledge concerning water quality, groundwater, watersheds, aquatic life, invasive species, climate change impacts and healthy aquatic ecosystems.

Activity Milestones:

Description	Completion Date
Fall field studies along streams and lakes: macroinvertebrates; stream surveys; groundwater lessons (annually)	November 30, 2024
Trout eggs to classroom aquariums for students to raise through spring (annually)	December 31, 2024
Spring trout releases and aquatic field studies (annually)	May 31, 2025
Conduct teacher training, classroom lessons and video lessons	June 30, 2025

Activity 2: Provide Outdoor Recreation Education, Creating Lifelong Interest in Students & Families in Outdoor Activities and Protecting Water and the Environment

Activity Budget: \$30,000

Activity Description:

This program component will create lifelong interest in outdoor activities by engaging youth and their families through a series of fishing clinics, outings, and opportunities to participate in hands-on conservation projects. These will occur outside normal school day to encourage parent/family participation. Developing tangible connections to aquatic resources in this way fosters a deeper appreciation for the health of our waters and motivates people to become active stewards of them. We will conduct evening, weekend and summer events, including targeting students involved in the larger school-based program. We will utilize the methodologies identified in Minnesota's Angler Recruitment, Retention and Reactivation (R3) Initiative. Clinics and outings will teach diverse fishing methods, for whatever species inhabit local lakes and streams, in all settings - urban, suburban, and rural. We will partner with schools, parks systems, youth organizations and the MNDNR to reduce barriers to participation. On-line print and video resources will allow for distance learning for those who cannot attend specific events. Fishing clubs will allow students interested in fish, fishing, natural resources, and conservation to gain more in-depth and hands-on experiences. Much of the fishing clinic costs will be covered by non-ENRTF funding sources.

Activity Milestones:

Description	Completion Date
Organize/support after school fishing clubs utilizing R3 research and methodology (September to May annually)	May 31, 2025
Conduct youth and family fishing clinics, advancing R3 Initiative; offer conservation opportunities (throughout year).	June 30, 2025
Train volunteer fishing instructors and mentors; distribute calendar of opportunities (February to September annually)	June 30, 2025

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?

The program as described will be fully implemented within the two year grant period. The resources and materials from the grant, including aquarium supplies and teacher materials, will continue to be used by MNTU and its partners in education programming after the end of the grant period to reach more students and families. MNTU has secured some non-state education funding and continues to actively seek additional funding to expand and sustain this environmental education. Many teachers will likely use the training and knowledge we provide them to continue similar environmental education programs in their schools for years afterwards.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Connecting Students with Watersheds through Hands-On Learning	M.L. 2015, Chp. 76, Sec. 2, Subd. 05b	\$400,000
Connecting Students with Water Stewardship through Hands-on Learning	M.L. 2018, Chp. 214, Art. 4, Sec. 2, Subd. 05d	\$400,000

Project Manager and Organization Qualifications

Project Manager Name: John Lenczewski

Job Title: Executive Director

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

The project manager has managed Minnesota Trout Unlimited's successful outdoor education programs for the past six years. The number of students and classrooms reached during this time has grown and far exceeded program goals. The program was started in 2015 with 10 schools and has grown to 60 schools around the state. Teacher interest in participation by their students and schools is strong and growing.

Our small, but dedicated team of environmental educators works directly with thousands of students, teachers, and families each year. We conduct aquatic insect investigations for water quality studies on local bodies of water and engage students in a variety of fun hands-on lessons about watersheds, fish identification and adaptations. Each spring we coordinate dozens of field days around the state during which hundreds of students release the trout they raised in classroom aquariums. Each summer we have conducted fishing skills clinics and outings for youth and families in partnership city and county parks departments.

We continue to build partnerships with like-minded organizations, recruit volunteers, conduct teacher trainings, and lead youth programming both outdoors and in classrooms.

The program manager has organized numerous volunteer workdays on conservation projects, including several with significant youth and family participation. A large base of seasoned volunteers will help with similar efforts organized for this program.

Organization: Minnesota Trout Unlimited

Organization Description:

Minnesota Trout Unlimited is a nonprofit conservation organization working to protect, restore and sustain coldwater

fisheries and watersheds throughout Minnesota. Our members volunteers on conservation projects improving in-stream habitat and riparian forests and grasslands. We know that how people use the land within a watershed will determine its water quality and ability to support healthy fisheries and vibrant communities. Our holistic approach to public outreach and education focuses on this watershed health-water quality connection. Showing students first-hand the aquatic life in their local waters and teaching them how watersheds work to support clean water and aquatic life is part of our long-term strategy to increase public knowledge of how to improve water quality.

Teaching students how lifestyle choices can improve (or harm) watersheds, water quality, and fisheries is important to ensuring well informed adults. Introducing youth and adults to outdoor recreation develops tangible connections with local waters. Opportunities to participate in local hands-on conservation work will foster a conservation ethic in students and families. Increasing understanding of what it takes to keep a watershed healthy, providing skills needed to enjoy them, and providing opportunities to help monitor and improve local waters will lead to strong conservation advocates and leaders.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
MNTU Program Manager		Manage Program and Reporting			32%	0.12		\$14,000
TU National Director of Youth Education		Oversee budget, invoicing and reimbursement processes			32%	0.06		\$8,000
							Sub Total	\$22,000
Contracts and Services								
Education Supervisor	Professional or Technical Service Contract	Supervise and train educators and teachers. Plan and supervise field days and other aspects of the program. Work with DNR on fish release sites, acceptable egg sources, disease testing, etc. Purchase and manage distribution of equipment and supplies to classrooms.				1.84		\$109,000
Environmental Education Specialist	Professional or Technical Service Contract	Work with students and teachers to conduct hands on field days, classroom lessons and outdoor experiences (including fishing skills).				1.7		\$81,000
Environmental Educator	Professional or Technical Service Contract	Assist with programming implementation, especially during field days and other outdoor events.				0.66		\$20,000
							Sub Total	\$210,000
Equipment, Tools, and Supplies								
	Tools and Supplies	Aquarium related supplies needed each year. Includes "consumables" and periodic replacement of equipment in existing classroom sets. (\$90 per classroom X 130 classrooms over 2 years).	Maintain operating condition of existing classroom aquarium setups.					\$11,700
	Equipment	Replacement chillers and filters	Chillers and filters are vital pieces of the aquarium sets and periodically					\$2,840

			need replacement. Some schools may not be able to afford this cost to remain in the program. Assumes a total of 4 chillers and filters (\$710 for both) will need replacement over 2 year period.					
	Tools and Supplies	Materials and supplies for conducting field days, outdoor activities, teacher trainings, classroom lessons, and programs.	Essential items to effectively implement and enhance the impact of outdoor lessons and activities.					\$2,360
							Sub Total	\$16,900
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	Mileage reimbursement for travel by education team, including staff and independent contractors. Assumes the educators conducting field days and activities around the state will travel a combined 15,000 miles/year.	Essential travel to the sites of field days, outdoor activities, schools and trainings.					\$16,800
							Sub Total	\$16,800
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
	Printing	Copying, printing and laminating (\$800/year)	For teacher manuals, handouts, training materials, lesson/activity materials.					\$1,600
							Sub Total	\$1,600

Other Expenses								
		Trout eggs and delivery related supplies, including shipping of food.	Supply and distribute eggs for classroom aquariums around the state. Shipping food to schools.					\$1,600
		Fish disease testing, including shipping	Conduct required fish disease testing before students can release classroom's fish into streams or lakes.					\$18,000
		Event expenses, including rental of park pavilions, porta potties for remote sites, etc.	Facilitate getting students in natural settings where restroom and eating facilities must be rented and brought in.					\$1,500
		Bus transportation costs (Assumes schools will request 24 trips over 2 years at \$400/trip)	Reimburse schools that educate underserved students for travel to locations where field days are held.					\$9,600
							Sub Total	\$30,700
							Grand Total	\$298,000

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				
In-Kind	Volunteers	Volunteers will contribute approximately 300 hours per year to help implement the program.	Potential	\$7,200
Cash	Donations by private individuals	For additional staffing, travel or other program costs for which we are not seeking ENRTF funds.	Secured	\$2,000
In-Kind	MNTU unrestricted funds	Printing and wide distribution of periodic newspapers with significant space dedicated to ongoing lessons targeting youth.	Secured	\$4,800
Cash	Private foundation funding	For additional staffing, travel or other program costs for which we are not seeking ENRTF funds.	Potential	\$60,000
			Non State Sub Total	\$74,000
			Funds Total	\$74,000

Attachments

Required Attachments

Visual Component

File: [bacbe1fa-e36.pdf](#)

Alternate Text for Visual Component

This collection highlights the activities that students around the state participate in during Minnesota Trout Unlimited education programs. From discovering macro-invertebrates to wading in waters to fishing adventures, students from all walks of life have the chance to experience Minnesota's natural world while learning how to be better stewards...

Financial Capacity

File: [70298883-795.pdf](#)

Board Resolution or Letter

Title	File
Letter regarding approval to submit proposal	fc2fcaeb-ec3.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?

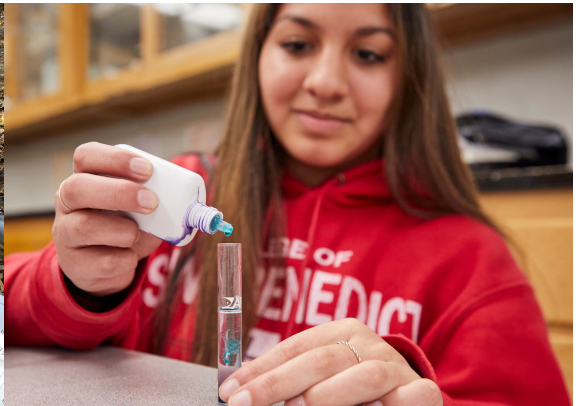
N/A

Does your project include original, hypothesis-driven research?

No

Does the organization have a fiscal agent for this project?

Yes, Trout Unlimited, Inc.



MINNESOTA
TROUT UNLIMITED

TROUT IN THE CLASSROOM

TROUT LIFE CYCLE

- Let us chill
- Don't overfeed us
- Keep our water clean
- If you do it, write it down

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