Environment and Natural Resources Trust Fund

M.L. 2023 Draft Work Plan

General Information

ID Number: 2023-223

Staff Lead: Michael Varien

Date this document submitted to LCCMR: December 19, 2022

Project Title: Teaching Students about Watersheds through Outdoor Science

Project Budget: $290,000

Project Manager Information

Name: John Lenczewski

Organization: Minnesota Trout Unlimited

Office Telephone: (612) 670-1629

Email: jlenczewski@comcast.net

Web Address: http://mntu.org/

Project Reporting

Reporting Schedule: April 1 / October 1 of each year.

Project Completion: June 30, 2025

Final Report Due Date: August 14, 2025

Legal Information

Legal Citation:

Appropriation Language:

Appropriation End Date: June 30, 2025

Narrative

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.

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.

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

Activities and Milestones

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

Activity Budget: $260,000

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	Approximate Completion Date
Coordinate with schools, prepare lessons, conduct teacher trainings (July to September 2023; and annually)	September 30, 2023
Fall field studies along streams and lakes; groundwater lessons (September to November 2023; and annually)	November 30, 2024
Trout eggs to classroom aquariums for students to raise (December 2023; and annually)	December 31, 2024
Spring trout releases and aquatic field studies (March to June 2024; and annually)	May 31, 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	Approximate Completion Date
Organize/support after school fishing clubs (September 2023 to May 2024; and annually)	May 31, 2025
Conduct youth and family fishing clinics, advancing R3 Initiative; offer conservation opportunities (throughout year).	June 30, 2025
Train volunteer instructors and mentors; distribute calendar (February 2023 to September 2023; and annually)	June 30, 2025

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.
Website, social media posts/events, MNTU newsletter, and television coverage of field day events. The Environment and Natural Resources Trust Fund will be acknowledged through use of the trust fund logo or attribution language on the website, project print and electronic media, publications, signage, and other communications per the ENTRF Acknowledgment Guidelines.

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

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
Education Supervisor		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. Hired on a contract basis.			0%	1.84		$104,000
Environmental Education Specialist		Work with students and teachers to conduct hands on field days, classroom lessons and outdoor experiences (including fishing skills). Hired on a contract basis.			0%	1.7		$78,000
Environmental Educator		Assist with programming implementation, especially during field days and other outdoor events. Hired on a contract basis.			0%	0.66		$20,000
							Sub Total	**$224,000**
Contracts and Services								
DNR Fish Lab	Professional or Technical Service Contract	Conduct required fish disease testing before students can release classroom's fish into streams or lakes. Includes cost of shipping to lab.				0		$18,000
							Sub Total	**$18,000**
Equipment, Tools, and Supplies								
	Tools and Supplies	Aquarium related supplies needed each year. Includes "consumables" and periodic replacement of	Maintain operating condition of existing classroom aquarium setups.					$11,700

		equipment in existing classroom sets. ($90 per classroom X 130 classrooms over 2 years).						
	Equipment	Replacement chillers and filters	Chillers and filters are vital pieces of the aquarium sets and periodically 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.					$2,840
	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 staff. 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
		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	**$12,700**
							Grand Total	**$290,000**

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				
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

Optional Attachments

Support Letter or Other

Title	File
Background Check Certification Form	2c7c7820-fe7.pdf

Difference between Proposal and Work Plan

Describe changes from Proposal to Work Plan Stage

Reduced staffing costs.

Additional Acknowledgements and Conditions:

The following are acknowledgements and conditions beyond those already included in the above workplan:

Do you understand and acknowledge the ENRTF repayment requirements if the use of capital equipment changes?

N/A

Do you agree travel expenses must 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 agree to the Commissioner's Plan.

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.