



# Environment and Natural Resources Trust Fund

## 2021 Request for Proposal

### General Information

**Proposal ID:** 2021-341

**Proposal Title:** Fostering Water Stewardship Through Hands-On Learning

### Project Manager Information

**Name:** John Lenczewski

**Organization:** Minnesota Trout Unlimited

**Office Telephone:** (612) 670-1629

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### 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:** \$654,000

**Proposed Project Completion:** 2024-06-30

**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.**

This is an expansion of our successful program getting students engaged outdoors through hands-on learning and connecting them with water, aquatic life, groundwater and watersheds. 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 aquatic ecosystems. Excited teachers and students have spread the word and both participation and demand have soared. We propose to expand the number of students and communities served, while developing innovating ways to extend the impact and deepen students' and families' connection to natural systems through recreation and volunteering.

Youth are increasingly becoming disconnected from the natural environment. This lack of connection follows students into adulthood and impacts their ability to make well-informed decisions about their environment. Our program reverses this trend by using tangible education tools and taking students outdoors for hands-on learning activities that connect them to aquatic ecosystems. We will increase the self-sufficiency of current teachers to lead field days by creating quality videos and manuals, which in turn will allow our staff to add new classrooms and offer more recreational and conservation experiences.

### **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 take students outdoors for hands-on learning activities that connect them to aquatic ecosystems first-hand. We utilize a national curriculum 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 are included. Minnesota-specific adaptations to existing curriculum include state specific grade level standards and STEM initiatives.

Students will use of 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, and healthy, sustainable, 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. A series of youth-oriented videos will 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 rendezvous 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 knowledge of how their actions can impact water quality and aquatic life, and providing students with tangible connections to aquatic resources is critical to students developing the ability to make well-informed decisions concerning how to protect, conserve, and preserve our environment. The program will instill 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 Minnesota's environment. This program will reach approximately 5,000 students per year.

## Activities and Milestones

### Activity 1: Field Days and Classroom Activities: Trainings, Field Days, Trout in the Classroom, Classroom Visits, Regional Rendezvous and Spring Expo

**Activity Budget:** \$494,000

**Activity Description:**

Placing aquariums with trout eggs in 10 additional classrooms (grades 4-12) each year. Lead field days where students connect with the natural world through hands-on studies and activities along streams and lakes. Train teachers and provide classroom lessons which complement the field days. Increase support (via MNTU educators and volunteers) to enable teachers to 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 specific grade level standards and include STEM initiatives.

Hold regional rendezvous each year in at least three statewide locations (representative educators and students from over 40 schools attending) where students showcase projects, participate in outdoor skills learning, and learn about water resources careers. Students will also participate in age-appropriate habitat enhancement opportunities to spark a sense of stewardship.

Videos and other distance learning tools will be created for both program participants and public use. Video goals include enhancing students' science skills and knowledge concerning water quality, groundwater, watersheds, aquatic life and healthy aquatic habitats.

**Activity Milestones:**

Description	Completion Date
Teacher training, classroom lessons, video lessons - 55 (YR 1) to 75 (YR 3) classrooms	2023-05-31
Fall field studies along streams and lakes: macroinvertebrates; stream surveys; groundwater lessons (annually)	2023-11-30
Trout eggs to classroom aquariums for students to raise through spring (annually)	2023-12-31
Regional outdoor rendezvous and Spring Student Expo (annually)	2024-05-31
Spring fish releases and aquatic field studies (annually)	2024-05-31

### Activity 2: Outdoor recreation to create lifelong interest in students and families in outdoor activities and in protecting water and the environment.

**Activity Budget:** \$160,000

**Activity Description:**

This program component will create lifelong interest in outdoor activities by engaging youth and their families through a series of fishing clinics and outings, and opportunities to participate in hands-on conservation projects, offered outside normal school day. 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 for participants, 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, including bait and spin fishing, fly fishing, and ice fishing on lakes and streams. Indoor programming will include fly tying, and fishing equipment rigging. We will partner with schools, parks systems, scouting organizations and the MNDNR to extend access to the public and

reduce barriers to participation. On-line print and video resources will allow for “distance learning” for those who cannot attend specific events. Trout Clubs will allow students interested in fish, fishing, natural resources, and conservation to gain more in-depth and hands-on experiences. We will maintain an inventory of fishing equipment.

**Activity Milestones:**

Description	Completion Date
Post distance learning materials (including videos) to remove barriers to anglers recruitment and retention	2022-09-30
Winter lake days - introduce youth to ice fishing, lake ecology (December to March annually)	2024-03-31
Organize/support after school fishing clubs utilizing R3 research and methodology (September to May annually)	2024-05-31
Conduct youth and family fishing clinics, advancing R3 Initiative; offer conservation opportunities (April to September)	2024-06-30
Train volunteer fishing instructors and mentors; distribute calendar of opportunities (February to September annually)	2024-06-30

## 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?**

The program will be fully implemented within the three year grant period. Resources developed as part of the grant (videos, teacher manuals, etc.) will remain available after the end of the grant period. Separate educational efforts by MNTU or others in future years would require separate funding.

## Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Connecting Students with Water Stewardship through Hands-on Learning	M.L. 2018, Chp. 214, Art. 4, Sec. 2, Subd. 05d	\$400,000
Connecting Students with Watersheds through Hands-On Learning	M.L. 2015, Chp. 76, Sec. 2, Subd. 05b	\$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 very successful outdoor education programs for the past five years. During this time the number of students and schools participating in the outdoor education program has grown substantially, far exceeding program goals.

**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. Minnesota Trout Unlimited is a nonprofit conservation organization working to protect, restore and sustain coldwater fisheries and watersheds throughout Minnesota. One major means by which we advance watershed protection and restoration is through increasing the knowledge of students and adults about how watersheds work, and how lifestyle choices can improve (or harm) watersheds, water quality and the fisheries they support. We also introduce youth and adults to outdoor recreation (especially fishing) to help them develop tangible connections with aquatic systems and the fish they support. We also welcome students and the public to join our thousands of members around the state in hands-on conservation work. We believe that 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 them will lead to strong conservation advocates and leaders.

## Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
<b>Personnel</b>								
MNTU program manager		Manage program and reporting			24%	0.21		\$20,100
TU National Director of Youth Education		Oversee budget, invoicing and reimbursement processes			32%	0.15		\$12,000
							<b>Sub Total</b>	<b>\$32,100</b>
<b>Contracts and Services</b>								
Education Supervisor	Professional or Technical Service Contract	Supervise and train team of 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.				2.76		\$161,280
Environmental Education Specialist	Professional or Technical Service Contract	Work with teachers and students to conduct hand-on field days, classroom visits and lessons and outdoor experiences (including fishing skills).				2.55		\$116,160
Environmental Educator #1 and #2	Professional or Technical Service Contract	Two individuals to help implement programming, especially during field days and other outdoor events.				2.1		\$72,960
Fishing Skills Interns #1 and #2	Professional or Technical Service Contract	Two interns will conduct fishing skills clinics and classes for students, families and adults, primarily during May to August time period.				1.05		\$34,560
Environmental Education Consultant	Professional or Technical Service Contract	Provide high level expertise and support to Supervisor and education team on program structure and major events.				0.06		\$9,000
Videographer(s)	Professional or Technical	Produce educational videos to support greater number of schools, out state schools, and distance learning. Contract rate based upon per minute of				0		\$20,000

	Service Contract	finished video (total of 20 minutes of professionally produced final video).						
							<b>Sub Total</b>	<b>\$413,960</b>
<b>Equipment, Tools, and Supplies</b>								
	Equipment	Full set of aquarium equipment for new classrooms. (10 new set per year)	To enable students to raise fish from eggs in classroom aquariums as a jumping off point for lessons on biology, ecology, water quality, watershed health, etc.					\$39,000
	Tools and Supplies	Aquarium related supplies needed each year. Includes "consumables" and periodic replacement of minor equipment in existing classroom sets. (\$150 per classroom X 195 classrooms over 3 years).	Maintain operation and operating condition of existing classroom aquarium set ups.					\$29,250
	Equipment	Replacement chillers and filters	Chillers and filters are vital pieces of the aquarium sets and periodically need replacement. Assumes a total of 18 chillers and filters (\$710 for both) will need replacement over 3 year period.					\$12,780
	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.					\$3,830
							<b>Sub Total</b>	<b>\$84,860</b>
<b>Capital Expenditures</b>								
							<b>Sub Total</b>	-
<b>Acquisitions and Stewardship</b>								
							<b>Sub Total</b>	-
<b>Travel In Minnesota</b>								

	Miles/ Meals/ Lodging	Mileage reimbursement for travel by education team, including staff and independent contractors. Assumes the six educators conducting field days and activities around the state will travel a combined 28,000 miles/year.	Essential travel to the sites of field days, outdoor activities, schools and trainings.					\$48,300
							<b>Sub Total</b>	<b>\$48,300</b>
<b>Travel Outside Minnesota</b>								
							<b>Sub Total</b>	-
<b>Printing and Publication</b>								
	Printing	Copying, printing and laminating (\$800/year)	For teacher manuals, handouts, training materials, lesson/activity materials.					\$2,400
							<b>Sub Total</b>	<b>\$2,400</b>
<b>Other Expenses</b>								
		Trout eggs and related supplies, including shipping	Supply and distribute eggs for classroom aquariums. Ship fish to DNR for required disease testing.					\$1,800
		Fish disease testing, including shipping	Conduct required fish disease testing before students can release classroom's fish into streams or lakes.					\$26,640
		Food for trainings and field events (6 events/yr)	Basic food for volunteers and partners at teacher and volunteer trainings, Regional Rendezvous, student spring expo, etc. (Six events per year x \$400 each)					\$7,200
		Event expenses, including rental of park pavillions, porta potties for remoter sites, etc.	Facilitate getting students in natural settings where restroom and eating facilities must be rented and brought in.					\$4,500
		Bus transportation costs (Assumes schools will request 68 trips over 3 years at \$400/trip)	Reimburse schools for one of the required field trips to natural places where field days are held.					\$27,200
		Storage space rental for program equipment and supplies.	Store large volume of program equipment and supplies when not actively being used. (36 months x \$140/mo)					\$5,040

							<b>Sub Total</b>	<b>\$72,380</b>
							<b>Grand Total</b>	<b>\$654,000</b>

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
<b>State</b>				
			<b>State Sub Total</b>	-
<b>Non-State</b>				
In-Kind	Volunteers	Volunteers will contribute approximately 250 hours per year to help implement the program.	Potential	\$18,000
			<b>Non State Sub Total</b>	<b>\$18,000</b>
			<b>Funds Total</b>	<b>\$18,000</b>

## Attachments

### Required Attachments

#### *Visual Component*

File: [00ef92c2-8b5.pdf](#)

#### *Alternate Text for Visual Component*

Students doing hands-on science learning in streams.

#### *Financial Capacity*

File: [75c7f198-9be.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?**

Yes, Trout Unlimited, Inc.



# Fostering Water Stewardship Through Hands-On Learning



