

## **M.L. 2015 Project Abstract**

For the Period Ending June 30, 2018

**PROJECT TITLE:** Connecting Students with Watersheds through Hands-on Learning

**PROJECT MANAGER:** John P. Lenczewski, Executive Director

**AFFILIATION:** Minnesota Trout Unlimited

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**FUNDING SOURCE:** Environment and Natural Resources Trust Fund

**LEGAL CITATION:** M.L. 2015, Chp. 76, Sec. 2, Subd. 05b

**APPROPRIATION AMOUNT: \$400,000**

**AMOUNT SPENT: \$257,456**

**AMOUNT REMAINING: \$142,544**

### **Overall Project Outcome and Results**

Youth are increasingly becoming disconnected from the natural environment we live in. This lack of connection follows students into adulthood and impacts their ability to make well informed decisions about their environment. Most environmental education programming fails to adequately reinforce ongoing lessons through real-life applications outdoors. To remedy this, the program used field days to reconnect students with water, aquatic life, groundwater systems, and watersheds by getting them outdoors and providing hands-on learning experiences. Students were also exposed to outdoor recreation to encourage lifelong, tangible connections to aquatic ecosystems.

The program also utilized the Trout in the Classroom curriculum, which placed aquariums in classrooms so students could actively follow the development of trout from egg to juvenile. During this process, monitoring and scientific discovery took place and it was used as a spring board for fieldtrips to streams and as a focal point for reinforcing learning about watersheds, water quality and ecology. Fall field days preceded the fish rearing component of Trout in the Classroom and raised fish were released by students as part of spring field days. More than 2,000 students from 49 classrooms participated in these hands-on field days outdoors. This year-long program combined field studies and classroom visits, allowing students to apply the principles learned outdoors with realistic applications. Another 5,000 students in these schools participated in other aspects of the program.

More than 2,000 students were encouraged to develop lifelong, tangible connections to aquatic ecosystems through school day introductions to fishing skills and fishing. Students and families were offered fishing clinics and mentorship opportunities outside of school.

Minnesota will benefit from students' increased awareness of their role in sustaining healthy aquatic ecosystems, especially as they carry a sense of stewardship forward into adulthood.

### **Project Results Use and Dissemination**

Press advisories were issued for most field days and for three student summits. Many field days, and all summits, received good television coverage. Many newspapers also reported on the program. Minnesota Trout Unlimited highlighted this education program each year at the Great Waters Fly Fishing

Expo in St. Paul, and featured an article on its accomplishments in each issue of its statewide newspaper (5,000 to 8,000 copies were distributed three times each year).



# Environment and Natural Resources Trust Fund (ENRTF)

## M.L. 2015 Work Plan Final Report

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**Date of Report:** November 19, 2018

**Final Report**

**Date of Work Plan Approval:** June 11, 2015

**Project Completion Date:** June 30, 2018

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**PROJECT TITLE:** Connecting Students with Watersheds through Hands-on Learning

**Project Manager:** John P. Lenczewski

**Organization:** Minnesota Trout Unlimited

**Mailing Address:** P.O. Box 845

**City/State/Zip Code:** Chanhassen, MN 55317

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**Location:** Statewide, with initial emphasis in Twin Cities metropolitan area and southeast MN.

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**Total ENRTF Project Budget:**

**ENRTF Appropriation:** \$400,000

**Amount Spent:** \$ 257,456

**Balance:** \$ 142,544

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**Legal Citation:** M.L. 2015, Chp. 76, Sec. 2, Subd. 05b

**Appropriation Language:**

\$400,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Minnesota Trout Unlimited to provide hands-on learning focused on water quality, groundwater, aquatic life, and watershed health stewardship. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

## **I. PROJECT TITLE: Connecting Students with Watersheds through Hands-on Learning**

### **II. PROJECT STATEMENT:**

Minnesota Trout Unlimited will get students outdoors by providing hands-on learning experiences which connect students with water, aquatic life, groundwater systems, and watersheds. Students will learn their role in healthy, sustainable, freshwater habitats and develop a sense of stewardship which they can carry forward into adulthood. Students will also be exposed to outdoor recreation to encourage lifelong, tangible connections to aquatic ecosystems. Our goal is to get an average of approximately 500 students per year outdoors for hands-on learning experiences.

Youth are increasingly becoming disconnected from the natural environment we live in. This lack of connection follows students into adulthood and impacts their ability to make well informed decisions about their environment. In addition, most schools have some environmental education programming and one-time outings, but fail to adequately reinforce ongoing lessons through real-life applications outdoors. As a tangible resource, we will utilize the Trout in the Classroom ("TIC") curriculum, which places aquariums in classrooms so students can actively follow the development of trout from egg to juvenile. One or more classroom may be located in a nature center in order to reach more students. During this process, monitoring and scientific discovery takes place. This in-class exploration will be used as a spring board for fieldtrips to streams and as a focal point for reinforcing learning about watersheds, water quality and ecology. Lessons on groundwater and its importance will be central. No new curriculum is being developed. The TIC curriculum is a proven national curriculum and only minor Minnesota specific adaptations will be made to meet state standards and STEM initiatives. Additional resources from Project WET and Project Wild Aquatic will also be used in programming.

The goal is to improve students' science skills and knowledge concerning water quality, groundwater issues, watersheds, native aquatic life and healthy, sustainable, freshwater habitats. Students will engage in interactive science-based natural resource education through the use of technology and applied sciences as they gather first-hand knowledge of healthy ecosystems. Students' knowledge of a subject increases when they use critical thinking skills first hand. The TIC curriculum and complimentary lessons will encourage students to use these higher level thinking skills to foster deeper knowledge in multiple areas including: science, math, language arts and art.

This year-long program combines habitat site visits, field studies and classroom visits, allowing students to apply the principles learned outdoors with realistic applications. Incorporating technology using social media i.e. Facebook, YouTube, Twitter and creating blogs/classroom websites are an effective way to reach more students and share information on projects. Learning will come full circle as students are given opportunities to explore outdoor recreation, conservation work and careers relating to fresh water habitats as they share their experiences with others. Geographic focus initially will be on schools in southeast Minnesota and the south and east Metro area, with expansions to northeast and north central Minnesota in subsequent years.

### **III. OVERALL PROJECT STATUS UPDATES:**

#### **Amendment Request (11/18/2016):**

We are seeking two minor amendments. The first is an amendment to the budget for equipment, shifting \$211 from aquarium equipment expenses (Line 21) to trailer related expenses (Line 27). The second amendment is to allow one (or more) classroom(s) to be located in a nature center utilized by several schools, rather than exclusively in schools. More students can be reached this way. Dodge Nature Center needs some assistance with equipment costs to maintain a large aquarium at its center classroom, and it will involve students in hands-on learning outdoors. This second change would not change budget amounts, but only add references to the nature center classroom. We request that both amendments apply retroactively.

The only change on the budget spreadsheet is reducing Line 21 by \$211 (Lines 21 B, D, Q and R) and increasing Line 27 by \$211 (Lines 27 B, D, Q and R).

**Amendment Approved by LCCMR 11/21/2016**

**Project Status as of February 15, 2016:**

A full time education coordinator was hired in July 2015. In late July and early August ten schools were selected to participate in the program during the 2015-16 school year. A day long teacher training was held for all participating teachers in September. All teachers received a resource manual covering lesson plans, equipment checklist, facts and questions. Aquarium equipment was purchased and set up throughout the fall of 2015. Each classroom went on an outdoor field trip in October 2015, which included hands on learning covering watersheds and groundwater, collecting and identify macro-invertebrates, and lessons on fish biology and habitat. Trout eggs were delivered to each classroom in December 2015. Eggs hatched in January 2016 and fish development is being studied as the fish are raised in the classrooms. A spring summit date and location has been set and planning continues. The education coordinator has been visiting the classrooms since November to assist with lessons and equipment issues.

**Amendment Request (10/05/2015):**

We are seeking approval to amend the description of one budget category to specifically allow the rental of portable toilets, rather than being forced to use buses with on-board toilets, which are more expensive. Classroom fieldtrips require that bathrooms be available for students and teachers, but such facilities are rare near outdoor sites. We had hoped to utilize buses with toilets on board (where the site lacks bathrooms nearby), but we are finding that they cost considerably more than buses without toilets on board. We can reduce overall transportation costs and increase flexibility to visit better sites by instead using buses without toilets and renting portable toilets to cover this need. Consequently, we would like approval to use buses without bathrooms on board and use the cost savings to rent portable toilets for the field study sites, which will be used by several different busloads of students. The costs within this budget category would not change, but references to the portable toilets (used in lieu of on-board toilets) would need to be added.

Budget amounts would not change, but the budget narrative on page 9 would change, to include a specific reference to the rental of portable toilets. The only change on the budget spreadsheet is adding a specific reference to the rental of portable toilets in the first column in row 34.

**Amendment Approved by the LCCMR 10-12-16, effective 10-5-2015**

**Amendment Request (08/31/2015):**

We are seeking approval to amend our budget detail to acquire a slightly different mix of classroom technology tools for fieldwork and fieldtrip equipment, but within the same overall budget of \$12,875 noted in the budget narrative on page 8. We propose to reduce the number of GPS units to 13 or fewer and use the dollars for other very useful technology, including water testing kits. We also propose to reduce number of camera units to 13 or fewer and use the dollars for microscopes, microscope adaptors, and other very useful technology, including water testing kits.

The budget narrative on page 8 would not change, since we propose only to change the composition of the classroom tools/equipment while staying within the current budget. It does require amending budget spreadsheet rows 23 and 24, and adding a new row 29 for the water testing kits. The budget total by activity will change slightly. The Activity 2 budget increases by \$1,500, while the budgets for Activities 3, 4 and 5 each decrease by \$500.

**Amendment Approved by the LCCMR 9-1-2015**

**Project Status as of July 31, 2016:**

The first year of classroom activities wrapped up in June 2016. Ten schools participated in this outdoor education program during the 2015-16 school year, and approximately 2,600 students participated in some aspect. Students raised trout in their classrooms from egg to juvenile, using them as a focal point for myriad lessons on watershed and aquatic ecology. A student Summit was held on April at Metropolitan State University in St Paul, MN. Approximately 400 students, presenters and volunteers attended the daylong Summit. Students shared what they learned through classroom projects, and participated in science programs, presentations by natural resource professionals, and outdoor recreation activities. Fall and spring field trips included hands-on studies utilizing technology tools and lessons by DNR professionals and others. Field trips culminated with the release of fish raised in the classrooms into a natural stream environment. Approximately 400 students participating in the fish release day field trips in May 2016. Students were also introduced to outdoor recreation as part of the Summit, release days, and through after school and summer fishing clinic opportunities.

**Project Status as of February 15, 2017:**

Schools were selected for the second year of the program (2016-2017 school year) in late spring 2016. We have 17 schools participating, which will engage approximately 2,600 students in aspects of the program, as well as one Twin Cities metropolitan area nature center, which will work with several thousand additional students. A two day teacher training was held in August 2016. All teachers received a resource manual covering lesson plans, equipment checklist, facts and questions. Outdoor field days were held for all classrooms in September and October 2016. Students' hands on learning included learning about watersheds and groundwater, collecting and identify macro-invertebrates, and lessons on fish biology and habitat. Trout eggs were delivered to each classroom in December 2016. Eggs hatched in January 2017 and fish development is being studied as the fish are raised in the classrooms.

**Project Status as of July 15, 2017:**

The second year of the program wrapped up in June 2017. Seventeen schools participated and over 2,500 students were involved in the classroom activities. More than 1,600 students participated in hands-on learning outdoors through class field days learning about watersheds and groundwater, collecting and identify macro-invertebrates, and lessons on fish biology, habitat and fishing. Students helped released over 2,400 trout into area lakes and streams which they had raised in their classrooms. The second year Summit Day was held at Inver Hills Community College on March 17, 2017. The 572 students in attendance learned from 32 different professionals and outdoor educators. We helped students and their families make further connections through our after-school and summer programs introducing them to fishing. We held 19 additional fishing themed events in the past year, introducing 984 students and adults to fishing and water education.

**Project Status as of February 15, 2018:**

Schools were selected for the third year of the program (2017-2018 school year) in late spring 2017. We have 22 schools participating, which will engage approximately 2,600 students in aspects of the program, as well as two Twin Cities metropolitan area nature center, which will work with several thousand additional students. We also support efforts in another 8 outstate schools using volunteers. A two day teacher training was held in August 2017. All teachers received a resource manual covering lesson plans, equipment checklist, facts and questions. Outdoor field days were held for all classrooms between September and November 2017. Students' hands on learning included learning about watersheds and groundwater, collecting and identify macro-invertebrates, lessons on fish biology and habitat, and some introduction to recreation. In December a disease issue at a state hatchery required a mad scramble to find trout eggs for kids to raise in their classroom. We were able to obtain eggs from outside the state and the eggs were delivered to each classroom in December 2017. Eggs hatched in January 2018 and fish development is being studied as the fish are raised in the classrooms. We also partnered with other groups on five events which introduced approximately 3,100 kids and adults to fishing, casting and water.

**Overall Project Outcomes and Results:**

Youth are increasingly becoming disconnected from the natural environment we live in. This lack of connection follows students into adulthood and impacts their ability to make well informed decisions about their environment. Most environmental education programming fails to adequately reinforce ongoing lessons through real-life applications outdoors. To remedy this, the program used field days to reconnect students with water, aquatic life, groundwater systems, and watersheds by getting them outdoors and providing hands-on learning experiences. Students were also exposed to outdoor recreation to encourage lifelong, tangible connections to aquatic ecosystems.

The program also utilized the Trout in the Classroom curriculum, which placed aquariums in classrooms so students could actively follow the development of trout from egg to juvenile. During this process, monitoring and scientific discovery took place and it was used as a spring board for fieldtrips to streams and as a focal point for reinforcing learning about watersheds, water quality and ecology. Fall field days preceded the fish rearing component of Trout in the Classroom and raised fish were released by students as part of spring field days. More than 2,000 students from 49 classrooms participated in these hands-on field days outdoors. This year-long program combined field studies and classroom visits, allowing students to apply the principles learned outdoors with realistic applications. Another 5,000 students in these schools participated in other aspects of the program.

More than 2,000 students were encouraged to develop lifelong, tangible connections to aquatic ecosystems through school day introductions to fishing skills and fishing. Students and families were offered fishing clinics and mentorship opportunities outside of school.

Minnesota will benefit from students’ increased awareness of their role in sustaining healthy aquatic ecosystems, especially as they carry a sense of stewardship forward into adulthood.

**IV. PROJECT ACTIVITIES AND OUTCOMES:**

**ACTIVITY 1: Select participating schools and set up Trout in the Classroom equipment:**

The selection process for first year participating schools will take place in late summer and September. We will organize a group of educators to develop selection criteria and help select participating schools. The schools selected will take part in a training day in September. Each teacher will be provided with a resource manual/guide book which the project coordinator will create and assemble. Partners will be invited to take part in the training. The date will be set in early fall prior to the first field trips with the students. Instruction on equipment set-up will also be provided during the training. Ordering of classroom equipment will occur upon written agreement of the participating schools. MOU’s will be signed with participating schools at the start of each school year. One or more classroom may be located in a nature center in order to reach more students.

**Summary Budget Information for Activity 1:**

**ENRTF Budget: \$ 92,400**  
**Amount Spent: \$ 78,556**  
**Balance: \$ 13,844**

Outcome	Completion Date
1. Sign agreements with 9 schools to participate in program during the 2015-2016 school year.	July to September 2015
2. Organize equipment and resources, meet with partners, train participating educators, assemble Trout in the Classroom (“TIC”) guide book for educators adapting to meet state learning standards and STEM initiatives, assist with set up of TIC equipment in 9 schools.	July to October 2015
3. Sign agreements with 14 schools to participate in program during the 2016-2017 school year.	July to September 2016

4. Organize equipment and resources, meet with partners, train participating educators, assemble Trout in the Classroom (“TIC”) guide book for educators adapting to meet state learning standards and STEM initiatives, assist with set up of TIC equipment in 14 schools.	July to October 2016
5. Provide assistance to schools in outstate areas as needed, utilizing consultant(s).	Sept 2016 to June 2017
6. Sign agreements with 18 schools to participate in program during the 2016-2017 school year.	July to September 2017
7. Organize equipment and resources, meet with partners, train participating educators, assemble Trout in the Classroom (“TIC”) guide book for educators adapting to meet state learning standards and STEM initiatives, assist with set up of TIC equipment in 18 schools.	July to October 2017
8. Provide assistance to schools in outstate areas as needed, utilizing consultant(s).	Sept 2017 to June 2018

**Project Status as of February 15, 2016:**

A full time education coordinator was hired in July 2015. Applications were sent out to over 80 different schools. In late July and early August ten schools were selected to participate in the program during the 2015-16 school year. Throughout late summer equipment needs were assessed and vendors researched. In late September a day long teacher training was held for all participating teachers covering everything from watershed activities, equipment set-up, trout biology, classroom integration and trout care. Each teacher also received a resource manual covering additional lesson plans, equipment checklist, facts and questions. Aquarium equipment was purchased and set up throughout the fall of 2015. Permits and trout eggs were obtained through the DNR. Eggs were delivered to each classroom in December 2015. Trout eggs hatched in January 2016 and are currently being raised and studied by students.

**Project Status as of July 31, 2016:**

Ten schools participated in the outdoor education program during the 2015-16 school year, and approximately 2,600 students participated in some way. In April 2016 we again sent applications to numerous school districts and received applications through mid-June. Six new schools have been accepted into the outdoor education program for the 2016-17 school year. At least 14 schools will participate during the 2016-17. Based upon input from teachers and an aquarium specialist, new aquariums will be larger in order to reduce water quality fluctuations.

**Project Status as of February 15, 2017:**

Applications were again sent out to dozens of schools. We expanded the program in year two to seventeen schools as well as one nature center. The schools were selected for the second year of the program (2016-2017 school year) in late spring 2016. The seventeen participating schools will engage approximately 2,600 students in aspects of the program, and one Twin Cities metropolitan area nature center will work with several thousand additional students. A two day teacher training was held in August 2016. All teachers received a resource manual covering lesson plans, equipment checklist, facts and questions. The trainings covered watershed activities, equipment set-up, trout biology, classroom integration and trout care. Additional aquarium equipment was purchased and all classrooms were set up throughout fall 2016. Permits and trout eggs were obtained through the DNR. Eggs were delivered to each classroom in December 2016. Trout eggs hatched in January 2017.

**Project Status as of July 15, 2017:**

Seventeen schools participated in the outdoor education program during the 2016-17 school year, and over 2,500 students were involved in program activities. We have accepted seven new schools into the program for the 2017-18 school year, bringing our total to 22 schools. We are adding a second nature center, Belwin, to

reach the several thousand St Paul students it serves who are not in the 22 schools classrooms. We will also work with several additional schools in outstate areas next year.

**Project Status as of February 15, 2018:**

Applications were again sent out to dozens of schools. We expanded the program in year three to twenty-two schools as well as two nature centers. The schools were selected for the third year of the program (2017-2018 school year) in late spring 2017. The twenty-two participating schools will engage approximately 2,600 students in aspects of the program, and two Twin Cities metropolitan area nature centers will work with several thousand additional students. A two day teacher training was held in August 2017. All teachers received a resource manual covering lesson plans, equipment checklist, facts and questions. The trainings covered watershed activities, equipment set-up, trout biology, classroom integration and trout care. Additional aquarium equipment was purchased and all classrooms were set up throughout fall 2017. Permits and trout eggs were obtained through the DNR. In December a disease issue at a state hatchery required a mad scramble to find trout eggs for kids to raise in their classroom. We were able to obtain eggs from outside the state and the eggs were delivered to each classroom in December 2017. Trout eggs hatched in January 2018.

**Final Report Summary:**

Over the three years we increased the number of participating classrooms from 10 to 17 to 22, as well as adding two nature centers. We also provided key support to more schools in greater Minnesota where TU volunteers helped teachers with day to day issues. Teacher trainings were held in August or September each year where teachers received training in watershed activities, equipment set-up, trout biology, classroom integration and trout care. Teachers received a resource manual covering lesson plans, equipment checklist, facts and answers to frequently asked questions. Each fall we helped participating classrooms set up the aquarium equipment and ensured equipment was operating properly before trout eggs arrived in December. We also managed DNR permits for each classroom and coordinated egg deliveries to schools. The third year was a real challenge due to a disease outbreak which forced us to obtain eggs from a certified disease-free source outside Minnesota. Students were able to watch the eggs hatch into “young-of-year” trout each January.

**ACTIVITY 2: Field Experiences-Habitat Tours/Release Days:**

Project coordinator will create, organize and coordinate trips & activities during the field experiences, including lining up on-site speakers. During these visits, students will learn about healthy aquatic habitats and clean water through hands on surveys of macro invertebrates, dissolved oxygen levels, temperature, and turbidity levels. Students will hear talks from hydrologists and other professionals about the effects of groundwater contamination upon aquatic life.

Planning will take place with partners prior to each school year regarding appropriate field trip sites and fish release locations. Summer survey/reconnaissance work will be done to assess the sites, which may include habitat improvement areas and groundwater recharge and release areas. Fish release areas will be coordinated with the Minnesota DNR. Opportunities for hands on conservation work may be offered depending on the age of students.

**Summary Budget Information for Activity 2:**

**ENRTF Budget: \$ 126,228**  
**Amount Spent: \$ 66,338**  
**Balance: \$ 59,890**

Outcome	Completion Date
1. Fall trip: macroinvertebrate and stream surveys using technology; groundwater site visit where possible.	Sept - Nov 2015
2. Spring release of trout, outdoor recreation and hands-on activities.	May 2016
3. Fall trip: macroinvertebrate and stream surveys using technology; groundwater site visit where possible.	Sept - Nov 2016

4. Spring release of trout, outdoor recreation and hands-on activities.	May 2017
5. Fall trip: macroinvertebrate and stream surveys using technology; groundwater site visit where possible.	Sept - Nov 2017
6. Spring release of trout, outdoor recreation and hands-on activities.	May 2018

**Project Status as of February 15, 2016:**

Throughout the month of October our education coordinator organized and conducted hands-on field trips for all ten schools. Each field day was held at an area where students would have the opportunity to see fish habitat, study invasive species, learn about watersheds and groundwater, collect and identify macro-invertebrates, and participate in lessons on fish biology and habitat. DNR personnel and local volunteers assisted with the field days. Our coordinator had numerous meetings with DNR Fisheries managers to coordinate appropriate field study sites and to plan fish release sites.

**Project Status as of July 31, 2016:**

Our education coordinator organized and conducted hands-on field trips for the ten participating schools through May 2016. Spring field trips included macro-invertebrate studies utilizing technology tools, lessons by DNR professionals, release of fish raised in the classrooms into a natural stream environment and introduction to angling. Approximately 400 students participating in these hands-on activities, including releasing more than 1,600 trout raised in their classrooms into the Vermillion River, under the direction of DNR Fisheries staff. Release sites were researched and coordinated with DNR Fisheries managers to facilitate student field studies.

**Project Status as of February 15, 2017:**

Our education coordinator organized and conducted hands-on field trips for each of the participating schools in September and October 2016. He also assisted with lessons at the nature center. Fall field days included hands on learning about watersheds, fish habitat, macro-invertebrates, and related lessons by DNR professionals. Approximately 800 students participated in these outdoor hands on learning activities.

**Project Status as of July 15, 2017:**

Each of the schools got students back in the field this past spring as part of our fish release days. Approximately 430 students, as well as numerous parents, help release over 2,400 trout into lakes and streams. These release days included macro-invertebrate studies utilizing technology tools, lessons by DNR professionals, release of fish (which students had raised in their classrooms) into natural stream environments, and introductions to angling.

**Project Status as of February 15, 2018:**

Our education coordinator organized and conducted hands-on field days for classrooms between September and November 2017. Students’ hands on learning included learning about watersheds and groundwater, collecting and identify macro-invertebrates, lessons on fish biology and habitat, and some introduction to recreation. More than 800 students participated in these outdoor hands on learning activities.

**Final Report Summary:**

During each of the three school years our education coordinator organized and conducted hands-on field days for participating classrooms during the fall (September to November) and in the spring (April to early June). A total of 49 classrooms and approximately 2,000 students engaged in hands-on learning outdoors, exceeding our target of 41 classrooms and 1,500 students. In addition, the two nature centers who utilized our equipment and TIC curriculum as a spring board also got hundreds to thousands more outdoors. Our fall field days included hands-on learning about watersheds, groundwater, aquatic habitat, aspects of water quality, macro-invertebrates, fish biology, and related science learning. Spring release days including students releasing fish which they had raised in the classrooms into natural stream environments, as well as additional hands-on learning activities, including macro-invertebrate studies utilizing technology tools, lessons by DNR fisheries professionals, and introductions to angling. By providing hands-on field experiences in the natural environment, we have begun to reconnect students with water, aquatic life, groundwater systems, and watersheds. The

learning which took place about their role in healthy, sustainable aquatic habitats should foster a sense of stewardship which we hope students will carry forward into adulthood.

**ACTIVITY 3: Classroom visits/programming:**

Classroom visits will include follow-up from fall field trips and programming focused on ground water and fresh water ecosystems using existing curriculum materials, including from TIC, Project WET and Project WILD. The coordinator will work with teachers to present a series of materials relevant to the teacher’s curriculum and standards. STEM Initiatives will be included in the instruction. In addition to presenting lessons, the coordinator assist teachers and students with their living laboratory in the classroom and go over instructions on how to monitor the fish in their tanks. Eggs will be brought to the classroom during the visit and additional visits may be required depending upon the teacher and classroom. Topics that the coordinator will teach will include watersheds, groundwater, invasive species and pollution. These lessons will reinforce the connection between healthy habitats and healthy aquatic wildlife.

**Summary Budget Information for Activity 3:**

**ENRTF Budget: \$ 57,950**  
**Amount Spent: \$ 47,566**  
**Balance: \$ 10,384**

<b>Outcome</b>	<b>Completion Date</b>
<b>1.</b> Trout eggs brought to 9 or more classrooms for rearing.	TBD: Nov to Dec 2015
<b>2.</b> Winter programming covering groundwater, watersheds, invasive species, water contaminants and habitat lessons. (Use of existing materials gathered and assembled as a unit for the teachers.)	Jan to Mar 2016
<b>3.</b> Trout eggs brought to 14 or more classrooms for rearing.	TBD: Nov to Dec 2016
<b>4.</b> Winter programming covering groundwater, watersheds, invasive species, water contaminants and habitat lessons. (Use of existing materials gathered and assembled as a unit for the teachers.)	Jan to Mar 2017
<b>5.</b> Trout eggs brought to 18 or more classrooms for rearing.	TBD: Nov to Dec 2017
<b>6.</b> Winter programming covering groundwater, watersheds, invasive species, water contaminants and habitat lessons. (Use of existing materials gathered and assembled as a unit for the teachers.)	Jan to Mar 2018

**Project Status as of February 15, 2016:**

Since November our education coordinator has been visiting each school to assist teachers with lessons and with equipment issues, and to deliver additional supplies. Trout eggs were delivered to each classroom in December 2015 and visits were made to talk about egg development and fish biology using an electronic microscope so students could see the embryos develop in the egg. Eggs hatched in January 2016 and visits have been made to assist with water chemistry and fish care as well as teaching classroom lessons on watersheds and groundwater using a groundwater model provided by the DNR.

**Project Status as of July 31, 2016:**

Each classroom was visited several times by our education coordinator, who assisted teachers with lessons, conducted lessons on groundwater and helped students and teachers address the challenges of raising fish. The challenges which students encountered in the classrooms provided learning opportunities for understanding the needs of aquatic organisms.

**Project Status as of February 15, 2017:**

Since October 2016 our education coordinator has been regularly visiting the schools and nature center to assist teachers with lessons and with equipment issues, and to deliver additional supplies. Trout eggs were delivered to each classroom in December 2016 and visits were made to talk about egg development and fish biology. Students were shown how to use an electronic microscope to observe embryos developing in the eggs. Eggs hatched in January 2017. Visits are being made to assist with water chemistry lessons and fish care as well as teaching classroom lessons on watersheds and groundwater using a groundwater model.

**Project Status as of July 15, 2017:**

From January to June our education coordinator has been regularly visiting each classroom to assist with programming, including giving lessons on groundwater, fish ecology and fish habitat. With the help of many volunteers we added fly-tying, casting lessons and fishing into our school visits. We also got many students active outdoors this winter by offering classes the opportunity to try ice fishing. Students learned about winter lake ecology and how to locate fish. We partnered with other NGO's and local festivals to provide an ice fishing experience to over 600 additional youth and families.

**Project Status as of February 15, 2018:**

Since October 2017 our education coordinator has been regularly visiting the schools and nature centers to assist teachers with lessons and equipment issues, and to deliver additional supplies. Trout eggs were delivered to each classroom in December 2017 and visits were made to talk about egg development and fish biology. Students were shown how to use an electronic microscope to observe embryos developing in the eggs. Eggs hatched in January 2018. Visits are being made to assist with water chemistry and fish care lessons, as well as classroom lessons on watersheds and groundwater using a groundwater model.

**Final Report Summary:**

Beginning each October our education coordinator regularly visited the schools and nature centers to assist teachers with lessons and equipment issues, and to deliver additional supplies. Trout eggs were delivered to each classroom in each December and visits were made to provide lessons on egg development and fish biology. Students were shown how to use electronic microscopes to observe embryos developing in the eggs. Trout eggs hatched in January each year. From January to June we regularly visited each classroom to assist with water chemistry and fish care lessons, and help students address the challenges of raising fish. The challenges which students encountered provided learning opportunities for understanding the needs of aquatic organisms. Our coordinator also assisted with classroom lessons on fish ecology, fish habitat, watersheds and groundwater, including using a groundwater model provided by the MNDNR. With the help of many TU volunteers we added a recreational connection to watersheds into school visits via lessons on fly-tying, casting, and fishing. In the third year we even added lessons on winter lake ecology.

**ACTIVITY 4: Annual Trout in the Classroom ("TIC") Summit:**

Classes will travel to central location(s) to showcase their projects, meet other students, participate in outdoor skills, and learn about water resources careers from professionals (average of approximately 500 youth annually). Youth will meet and share ideas while networking about the learning going on in their classrooms (technology and social media will be a part of this). Natural resource professionals will host presentations highlighting their work and what it takes to get involved with their profession. Other speakers will engage students in recreational opportunities focused around the resource. Minnesota TU representatives and partners will be a part of the summit(s). The summit will be held each of the first three years of this program and we will be pursuing other funding to continue this event and the program in future years.

**Summary Budget Information for Activity 4:**

**ENRTF Budget: \$ 78,906**  
**Amount Spent: \$ 32,418**  
**Balance: \$ 46,488**

Outcome	Completion Date
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1. Project coordinator lines up speakers, recreation professionals, media coverage and partners/volunteers.	Jan to Mar 2016
2. Student share/showcase their experiences at multi-school summit or regional summits (approximately 350 youth).	April 2016
3. Project coordinator lines up speakers, recreation professionals, media coverage and partners/volunteers.	Jan to Mar 2017
4. Student share/showcase their experiences at multi-school summit or regional summits (approximately 500 youth).	April 2017
5. Project coordinator lines up speakers, recreation professionals, media coverage and partners/volunteers.	Jan to Mar 2018
6. Student share/showcase their experiences at multi-school summit or regional summits (approximately 650 youth).	April 2018

**Project Status as of February 15, 2016:**

The education coordinator has succeeded in finding a suitable venue for holding the summit at no cost to the program. He continues to line up speakers and professionals to assist with this large undertaking. The summit is set for April 15, 2016.

**Project Status as of July 31, 2016:**

The student Summit was held on April 15, 2016 at Metropolitan State University in St Paul, MN. Approximately 400 students, presenters and volunteers attended the daylong Summit. Students set up posters and held poster sessions in the Great Hall to share some aspect of what they learned about aquatic ecosystems during the year. The area was used throughout the day by all students, who had opportunities to learn what lessons other classes and students were taking away for the program. Programs included science lessons, presentations by natural resource professionals, a keynote by a renowned 18 year old professional angler and speaker, and active casting activities which gave all students an opportunity to learn how to connect with the environment through outdoor recreation. Special guest DNR Commissioner Tom Landwehr inspired students to get outdoors and to consider careers in natural resources.

**Project Status as of February 15, 2017:**

The April 2016 Summit was a great success. However, the addition of seven more schools this year meant that we had to find a new location for the 2017 Summit. We managed to secure the use of Inver Hills Community College during one of the few windows when all the schools could participate. The Summit will be held on March 17, 2017. We estimate that approximately 600 students will attend this year and that we will have nearly 30 presenters, including several natural resource professionals.

**Project Status as of July 15, 2017:**

The second year Summit Day was held at Inver Hills Community College on March 17, 2017. Inver Hills Community College donated the use of their facilities, and has agreed to do the same for our third annual Summit Day in March 2018. This spring 572 students attended seminars by 32 presenters in a variety of professions and outdoor education backgrounds. They providing engaging lessons for everyone and feedback was outstanding. Younger students enjoyed seeing a big school and participating in several learning activities, while older students got a feel for college and learned of career opportunities in natural resources fields.

**Project Status as of February 15, 2018:**

We again managed to secure the use of Inver Hills Community College during one of the few windows when all the schools could participate. The Summit will be held on March 9, 2018. We estimate that approximately 600 students will attend this year and that we will have approximately 25 presenters, including several natural resource professionals.

**Final Report Summary:**

A student Summit was held each spring where students showcased class projects, participated in outdoor recreational skills learning, and learned about water resources careers from professionals. More than 1,400 students attended the summits, despite challenges finding large enough facilities and coordinating a single summit date each spring as the number of schools grew. More than two dozen presenters, from a variety of natural resource professions and outdoor education backgrounds, assisted each year. The summits were held at community colleges where and students had opportunities to get a feel for a college setting while learning about career opportunities in natural resources fields.

**ACTIVITY 5: After school & summer education/outreach and conservation opportunities:**

Project coordinator, MNTU volunteers and other partners will offer a series of fishing clinics, camps, rod building classes, geo-caching, nature photography and opportunities for students and families to be engaged with hands-on conservation events as volunteers. The coordinator will work to expand an existing Trout Unlimited outdoor education camp (called T.U.N.E.). The coordinator will also work with the Minnesota DNR to create a GPS/Water challenge which will engage youth and their families in a series of outdoor activities relating to water recreation. The goal is to get youth and their families engaging in the outdoors throughout the summer months.

**Summary Budget Information for Activity 5:**

**ENRTF Budget: \$ 44,516**  
**Amount Spent: \$ 32,578**  
**Balance: \$ 11,938**

<b>Outcome</b>	<b>Completion Date</b>
<b>1.</b> Create calendar of events/opportunities with MNTU volunteers and partners; engage other classes/schools using social media and YouTube	May to June 2016
<b>2.</b> Conduct summer education/outreach activities; assist with summer TUNE camp	June to August 2016
<b>3.</b> Create calendar of events/opportunities with MNTU volunteers and partners; engage other classes/schools using social media and YouTube	May to June 2017
<b>4.</b> Conduct summer education/outreach activities; assist with summer TUNE camp	June to August 2017
<b>5.</b> Create calendar of events/opportunities with MNTU volunteers and partners; engage other classes/schools using social media and YouTube	May to June 2018
<b>6.</b> Conduct summer education/outreach activities; assist with summer TUNE camp	June 2018

**Project Status as of February 15, 2016:**

Our education coordinator has been working to organize materials and volunteers for outdoor education programming aimed at students and their families. Things are on track for after school and/or weekend programming to begin this spring. MNTU has been working to provide an opportunity for students, parents and teachers in the program to attend fly-fishing programs and lessons as part of an Expo which MNTU is organizing.

**Project Status as of July 31, 2016:**

A number of students and teachers took advantage of free admission to attend a three day fishing Expo run by MNTU in March 2016. Students received casting lessons from expert instructors and lots of encouragement from MNTU volunteers and our education coordinator. We held after school fly-fishing clinics in April and May, where students learned equipment, casting, knot tying, fly tying and fish biology. We are working hard to secure fishing equipment and more volunteer instructors/mentors to expand opportunities for students and families. MNTU secured a grant and donations to provided needed equipment. Fishing clinics at metro area lakes are scheduled this summer. Our education coordinator has partnered with several other organizations to provide watershed education and assistance, including Metro Children's Waterfest, National Parks, YMCA, TUNE Camp and Get Outdoors Days. Through these outreach opportunities and our own events, we have been able to encourage approximately 2,500 individuals to connect with aquatic ecosystems through outdoor recreation.

**Project Status as of February 15, 2017:**

This fall we held six separate events for students and families. Utilizing local volunteers and partners we held fishing, fly tying, casting, and watershed activities which approximately 2,000 individuals took part in. This winter we also began introducing students to ice fishing as another way of connecting with water.

**Project Status as of July 15, 2017:**

Between January and June 2017 our education coordinator worked with many of the partner organizations noted above on 19 events, which reached approximately 1,000 youth and their families. These events included programs on casting, introduction to fishing and fly-fishing, as well as introducing students to utility of assessing water quality by looking at macro invertebrates. At the DNR's invitation we also provided educational opportunities for students in conjunction with the Governors Fishing Opener in May. Our coordinator will continue partnering with other NGO's to provide family friendly fishing opportunities in both Minneapolis and St. Paul on a regular basis this summer. MNTU again organized a three-day fishing Expo in March 2017, this year held at Hamline University. MNTU offers free admission to all students and youth, and a number of students and parents again took advantage of this. Students received casting lessons from expert instructors and lots of encouragement from MNTU volunteers and our education coordinator.

**Project Status as of February 15, 2018:**

This fall we held five major events for students and families, many smaller events and helped a couple schools launch fishing clubs to keep kids active outdoors. With partners and dedicated volunteers we held fishing, fly tying, casting, and watershed activities which approximately 3,100 individuals took part in. In December we began introducing students to ice fishing and winter lake ecology as another way of connecting students with water and the outdoors.

**Final Report Summary:**

Each year our project coordinator worked with MNTU volunteers and several partners to offer a series of clinics, classes and fishing outings to students and families. Students were also provided opportunities to sample castings and/or fishing during field days and at the summit to encourage them to give fishing a try outside of school. This was the first exposure to outdoor recreation for many students and we are hopeful that it was a solid step to encouraging lifelong, tangible connections to aquatic ecosystems. We worked with partners to provide numerous opportunities each year throughout the spring, summer and fall for students and families to get engaged in the outdoors. Over the course of this 3 year grant we organized or assisted partners on more than 50 such events, which reached more than 9,000 youth and adults. MNTU also organized a three-day fishing Expo each March and offered all students free admission and casting lessons. And in 2017 and 2018 we provided students and parents with the opportunity and equipment to participate in a free season long fishing mentorship program.

**V. DISSEMINATION:**

**Description:** We will conduct summer education/outreach events for students and their families to participate, including students whose classrooms did not have an opportunity to participate in years one, two and three. We will expand the impact of the program by engaging other classes and schools through the use of social media, YouTube, and website capacities. The goal is to reach as many students and teachers as possible and to share the experiences and knowledge gained from the program. By using the Trout Unlimited websites ([www.mntu.org](http://www.mntu.org) and [www.twincitiestu.org](http://www.twincitiestu.org)) as our starting point, we will work with schools to create links to their school websites or create a blog/Facebook page for each class involved. A youth column in Minnesota Trout Unlimited's quarterly newspaper will be added to share the experiences with both members and nonmembers around the state. The student summits will be great opportunities for students to share and network with other classes engaged in the similar experiences. We hope to set a framework for other states around the region and country, as we offer a unique example of education outreach at its best. We will pursue other grants and donations to grow the program and reach additional schools and communities around the state.

**Project Status as of February 15, 2016:**

We have succeeded in getting very favorable media coverage of the program and are exploring linking school sites to Trout Unlimited's websites. Some of the media coverage can be found at these links:

On December 16, 2015 KSTP-TV Channel 5 reported on the watershed education program Minnesota Trout Unlimited is piloting in 10 schools: <http://kstp.com/article/stories/s3994059.shtml>

Winona Post article: <https://www.winonapost.com/Article/ArticleID/46941/Trout-project-makes-a-splash>

The StarTribune did an article on a watershed education video MNTU is making about the outdoor education program:

<http://www.startribune.com/lakeville-south-students-will-raise-trout-star-in-educational-video/338629582/>

**Project Status as of July 31, 2016:**

We continue to get good media coverage of the program on local news programs and in newspapers as well as MNTU's newsletter, DNR publications, local stations and social media. The Summit was well covered, as were several of the fish release days. MNTU secured an outside grant to develop, and currently is in the process of creating, a watershed education video which uses this education program as a centerpiece.

**Project Status as of February 15, 2017:**

The fall 2016 field days and some of the youth and family fishing related events have received good attention. We are continuing to pursue opportunities for additional coverage of the classroom activities, the Summit day and upcoming release days. MNTU used outside funding to produce videos highlighting the education program. We hope to use these for instruction in other classes.

**Project Status as of July 15, 2017:**

Some of the recent media coverage of the program includes:

**MPR coverage on 2/27/17:**

<https://www.mprnews.org/story/2017/02/27/lake-elmo-elementary-fifth-grade-trout-fishery-watershed>

**Sun Sailor coverage of Greensboro Habitat Project: 6/15/17:**

<http://sailor.mnsun.com/2017/06/15/greensboro-condominiums-project-aimed-at-saving-water/>

**KSTP coverage on Feb 26th, 2017:**

<http://kstp.com/news/minnesota-schools-conservation-program-raise-trout-lake-elmo-elementary-minnesota-trout-unlimited/4411555/>

**KSTP coverage on May 11th, 2016:**

<http://kstp.com/article/stories/s4135707.shtml>

**KSTP coverage on May 9th 2016:**

<http://kstp.com/news/five-things-know-rain-terror-tom-smith/.../AP>

**WCCO coverage on May 9th, 2017:**

<http://minnesota.cbslocal.com/2017/05/09/students-release-trout/>

**Stillwater Gazette coverage on 10/19/16:**

<http://stillwatergazette.com/2016/10/10/column-unicorn-ranches-national-parks-and-waterslides/>

<http://eastmetrowater.areavoices.com/2016/10/19/unicorn-ranches-national-parks-and-waterslides/>

**Star Tribune coverage on 10/31/15:**

<http://www.startribune.com/lakeville-south-students-will-raise-trout-star-in-educational-video/338629582/>

We also started a YouTube channel to highlight some of the projects our classrooms are working on.

<https://www.youtube.com/channel/UCOI3WCNEGxFn0s563JzesQA>

Our education coordinator was invited to speak at the MNDNR's R3 Summit to share how the program and MNTU are working to get more youth and their parents involved in the outdoors through fishing. We also received some national attention when the program was highlighted at the International Trout Congress last fall.

In addition to MNTU chapters stepping up casting clinics this summer, we have partnered with others this summer to increase offerings of casting and fishing classes targeted at youth and their families. Partners include MnAqua, Pheasants Forever, TIPS Outdoors and the Park and Recreation boards of both Minneapolis and St Paul. In this way we have been able to work with additional schools not involved with our full program to provide outings. Through these efforts we have introduced nearly 5,000 youth and families to fishing and our local waters.

**Project Status as of February 15, 2018:**

Some of the recent media coverage of the program includes:

**MPR coverage on 2/27/17:**

<https://www.mprnews.org/story/2017/02/27/lake-elmo-elementary-fifth-grade-trout-fishery-watershed>

**Sun Sailor coverage of Greensboro Habitat Project: 6/15/17:**

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**Stillwater Gazette coverage on 10/19/16:**

<http://stillwatergazette.com/2016/10/10/column-unicorn-ranches-national-parks-and-waterslides/>

<http://eastmetrowater.areavoices.com/2016/10/19/unicorn-ranches-national-parks-and-waterslides/>

**Star Tribune coverage on 10/31/15:**

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<https://www.youtube.com/channel/UCOI3WCNEGxFn0s563JzesQA>

In addition to MNTU chapters stepping up casting clinics this summer, we have partnered with others this fall to increase offerings of casting and fishing classes targeted at youth and their families. Partners include MnAqua, Pheasants Forever, TIPS Outdoors and the Park and Recreation boards of both Minneapolis and St Paul.

**Final Report Summary:**

Each year we, and our partners, conducted numerous summer fishing clinics, classes and fishing outings which included lessons from the watershed education program and mentions of the "TIC" program. The annual fishing Expo organized by MNTU each March highlighted this education program and offered related classes and clinics for youth. We also brought in a large, interactive macro invertebrate display which everyone entering the Expo saw and which youth gravitated to. There everyone heard of this education program and many attendees inquired about getting their school involved in the future. MNTU also featured an article on this education program in each issue of its statewide newsletter and 5,000 to 8,000 copies were distributed 3 times each year. Our creative communications person issued press advisories for each summit and most field days. Every summit received good TV coverage, as did many of the spring field days. Some of the media coverage links are provided above and others via the MNTU and TCTU websites.

**VI. PROJECT BUDGET SUMMARY:**

**A. ENRTF Budget Overview:**

<b>Budget Category</b>	<b>\$ Amount</b>	<b>Overview Explanation</b>
Personnel:	\$179,114	Full time education coordinator (average of approximately \$59,704 annually; 78.1 % salary/21.9% fringe; total for 3 years = \$179,114). Note: work of MNTU part time project manager and TU director of youth education (collectively \$10,632 or more per year) was donated by MNTU and TU.
Professional/Technical/Service Contracts:	\$5,214	Contracted part time educator and required disease testing services.
Equipment/Tools/Supplies:	\$47,807	Classroom aquarium equipment; essential equipment for the project coordinator; set of classroom technology tools for fieldwork and fieldtrip equipment; trailer with shelving for storage and transport of equipment to classrooms and field sites; materials for teacher manuals and lesson handouts. Equipment will continue to be used by the schools and/or Trout

		Unlimited for similar educational activities after the 3 year period ends.
Printing:	\$0	Printing for teacher manuals and class worksheets, handouts, summit banners, etc.
Travel Expenses in MN:	\$13,165	Travel expenses of project coordinator to and from schools, field sites, DNR facilities, etc.; limited travel of project manager to key meetings. Expenses paid per Commissioners Plan.
Other:	\$12,155	Bus transportation for classrooms to and from outdoor field days and spring summit, and rental of portable toilet(s) at remote outdoor sites. \$86,100 was budgeted, but schools contributed far greater cost share than originally anticipated.
<b>TOTAL ENRTF BUDGET:</b>		<b>\$257,456</b>

**Explanation of Use of Classified Staff:** N/A

**Explanation of Capital Expenditures Greater Than \$5,000:** N/A

**Number of Full-time Equivalents (FTE) Directly Funded with this ENRTF Appropriation:** 3.0

**Number of Full-time Equivalents (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation:** *[Project management provided by MNTU and TU director of youth education were donated by MNTU and TU]*

**B. Other Funds:**

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
<b>Non-state</b>			
Participating schools	\$13,721	\$30,000*	Bus transportation (*based on conservative estimate of 100 trips covered by schools).
MNTU and TU	\$0	\$31,896*	Project management, plus member donated assistance at field days, etc. (*conservative estimate).
<b>State</b>			
	\$	\$	
<b>TOTAL OTHER FUNDS:</b>	<b>\$</b>	<b>\$61,896*</b>	<i>(*Estimate only)</i>

**VII. PROJECT STRATEGY:**

**A. Project Partners:**

1. Minnesota Trout Unlimited and its chapters received funding and contributed cash and in-kind assistance.
2. Schools and school districts provided extensive in-kind assistance and transportation cost sharing to invest the schools in activities, and stretch the project budget to enable us to include more schools.
3. MNDNR (Non-game Education, Fisheries, and Parks & Trails) provided extensive in-kind support.

4. Minnesota Groundwater Association provided in-kind support.

**B. Project Impact and Long-term Strategy:**

Program activities should enhance achievement in grades 5-12 via combining outdoor “classrooms” with technology through STEM activities so students may better master state standards across a spectrum of subjects, develop skills necessary for making informed decisions about the water resources, create connections to the natural world, and think critically about their personal roles in the environment. It is hard to protect something which citizens do not know and care about. This program has begun to teach the next generation to appreciate the watersheds in which they live, become active in the outdoors and become stewards of land and water. Recreational activities were included to encourage connections to the outdoors beyond the classroom. Afterschool and summer programs for youth and families should cement lifelong involvement in outdoor recreation and conservation. YouTube and other media will continue to extend the reach and impact of the programs over time. Instilling a sense of stewardship in tomorrow’s leaders, which is the program’s ultimate goal, is vital to the long term health and protection of Minnesota’s natural resources. This program reached more than 7,000 students and their communities through classroom activities, outreach and social media.

This three year effort built an educational and organizational support base among Minnesota youths for understanding and supporting natural resource stewardship and management of our cold-water streams and their fisheries resources.

**C. Funding History:**

<b>Funding Source and Use of Funds</b>	<b>Funding Timeframe</b>	<b>\$ Amount</b>
Local TU chapters have organized and assisted with running the proven Trout In the Classroom projects in several MN schools, providing approximately \$6,000 to \$8,000 for equipment and disease testing.	2009 to 2014	\$6,000 or more

**VIII. FEE TITLE ACQUISITION/CONSERVATION EASEMENT/RESTORATION REQUIREMENTS:** N/A

**IX. VISUAL COMPONENT or MAP(S):** See attached photograph.

**X. RESEARCH ADDENDUM:** N/A

**XI. REPORTING REQUIREMENTS:**

**Periodic work plan status update reports will be submitted no later than February 15, 2016; July 15, 2016; February 15, 2017; July 15, 2017, and February 15, 2018. A final report and associated products will be submitted after June 30, 2018.**



<p>Travel expenses of project coordinator to and from schools, field sites, DNR facilities, etc. Limited travel of project manager to key meetings with coordinator, schools, events, &amp; DNR.</p> <p>Mileage expense estimated at IRS rate of 0.56/mile  Yr1 – 9,000 miles at 0.56 = \$5,040  Yr2 – 11,000 miles at 0.56 = \$6,160  Yr1 – 13,000 miles at 0.56 = \$7,280  Subtotal = approximately \$18,480</p> <p>Meal expenses of coordinator when visiting more distant schools, etc. Estimated at \$500/year x 3 years.  Subtotal = approximately \$1,500</p> <p>Travel expenses Total = approximately \$19,980</p>	\$4,500	\$2,417	\$2,083	\$4,500	\$3,745	\$755	\$4,500	\$2,835	\$1,665	\$1,980	\$705	\$1,275	\$4,500	\$3,463	\$1,037	\$19,980	\$6,815
<p><b>Other</b></p> <p>Bus transportation of students:  Bus transportation for classrooms to and from outdoor field days and spring summit, and rental of portable toilet(s) at outdoor sites. Estimated at approximately \$700 per trip. 3 trips per year per classroom = \$2,100 year per classroom.  Yr 1 - \$2,100 x 9 = \$18,900  Yr 2 - \$2,100 x 14 = \$29,400  Yr 3 - \$2,100 x 18 = \$37,800  Total = approximately \$86,100</p> <p>However, we expect each participating school to provide some cost sharing which will be at least approximately \$335/classroom on average.  Transportation expense ENRTF subtotal = approximately \$72,379</p>	\$0	\$0	\$0	\$48,253	\$9,772	\$38,481	\$0	\$0	\$0	\$24,126	\$2,383	\$21,743	\$0	\$0	\$0	\$72,379	\$60,224
<b>COLUMN TOTAL</b>	<b>\$92,400</b>	<b>\$78,556</b>	<b>\$13,844</b>	<b>\$126,228</b>	<b>\$66,338</b>	<b>\$59,890</b>	<b>\$57,950</b>	<b>\$47,566</b>	<b>\$10,384</b>	<b>\$78,906</b>	<b>\$32,418</b>	<b>\$46,488</b>	<b>\$44,516</b>	<b>\$32,578</b>	<b>\$11,938</b>	<b>\$400,000</b>	<b>\$142,545</b>