

***Sustaining and Growing Our Work with the Next Generation***  
**Trout Unlimited's Headwaters Youth Education Initiative:**  
***The Source of Tomorrow's TU***

**A One-TU Report of Youth Education and Outreach Activities**

*v. 14, content current as of February 1, 2013*



## **Trout Unlimited's Headwaters Youth Education Initiative: *The Source of Tomorrow's TU***



Once TU has protected, reconnected, or restored a waterway, it is crucial to both sustain and continue to grow the work that has been done. To sustain our work, we must engage local communities, especially the youth, to help them understand what we have done, and why. To continue to grow our efforts, we need to collaborate with communities, especially the youth, to identify what still needs to be done. To that end, watershed-based environmental education and home-waters oriented fishing education are crucial to TU's mission.

TU has been working with youth almost since the very beginning. Many chapters had an early, interest in youth, and some piloted creative education programs. In recent years, most chapters have engaged in some youth outreach activity. The first Youth Education Coordinator was hired in 2001. Ten years later, in early 2011, the Headwaters staff asked field staff and chapter volunteers to detail their youth education and outreach work, focusing on the accomplishments of 2010. This report paints an overall picture of TU's youth education work and showcases examples of that work ongoing across the country received as examples. We hope this report will serve as inspiration and resource for folks considering starting or expanding youth programs.

Tens of thousands of youth participate in TU education and outreach programs each year. TU volunteers, volunteer leaders, and staff all work in sharing TU's mission and vision with youth. In 2012, TU also has four staff devoted full-time to youth education and outreach.

## Core Values

TU's Headwaters Youth Education Initiative is based around five core values, as defined in 2012 by a working group of the National Leadership Council of TU, made up entirely of grassroots members of TU. This committee of volunteers identified the following as the core values of TU's youth education and outreach work:

- ✓ **Our Next Generation**  
Sharing the values of Trout Unlimited with the conservationists of tomorrow.
- ✓ **Our Native & Wild Trout**  
Educating youth in the science of fish and their ecosystems.
- ✓ **Our Coldwater Resources**  
Protecting, restoring, and being stewards of lakes, rivers, and streams.
- ✓ **Our Angling Heritage**  
Engaging in the activity, ethics, and community of fishing.
- ✓ **Our Responsibility**  
Maintaining safe, accessible, and enjoyable opportunities for young people.

Any TU youth education or outreach event, whether led by volunteers or staff of TU, addresses at least two, and often more than two, of these core values.



(photo by Dave Graybill)

# Goals

The goal of TU's Headwaters Youth Education Initiative is to create a "stream of engagement," a seamless continuum of activities for youth, starting around age eight and extending into their college years. Some activities are great for any age, while others are specifically tailored to certain age groups. TU chapters can be and are involved in every program, at every level. The chart below can help you determine which programs might be best for the group of youth that you work with, and what next steps are available for them.

## List of Programs

	Stream Explorers Membership	Trout and Salmon in Schools	Meaningful Watershed Education Experiences	Fishing Education (First Cast)	Working With Scout Troops	Youth Conservation Camps	TU's 5 Rivers College Program	Public Outreach Events
early elementary	●	●		●	●			●
late elementary	●	●	●	●	●			●
middle school	●	●	●	●	●	●		●
high school age	●	●	●	●	●	●		●
college age			●	●		●	●	●
teachers	●	●	●	●				●

To learn more about each program, see the descriptions in the Overview of Program section, after the Table of Contents.

## A Stream of Engagement – Program Progression

TU offers a comprehensive package of opportunities, a stream of engagement. Youth can enter the stream at any age, and the progression builds upon itself to create (in the words of the Tri-State youth camp) responsible and skilled anglers, and informed and committed conservationists. These youth might become TU members or they might not. But there is a good chance that, as members of their communities they will remember the lessons they learned and uphold the values of TU and the work that we do. Youth outreach work might bring us more members, and it will definitely generate community members who are responsible citizens and who understand and support TU whether they're members or not.

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# Overview of Programs

## Stream Explorers Membership – page 07

TU's organizational vision statement asserts that we work for our children, so that the next generation can enjoy healthy fisheries in their home waters. We must educate the youth now, so that they can sustain and grow tomorrow all the work we do today. One way to do this is to involve them as we do our regular members—engaging them in regular communications, local chapter activities, statewide council projects, and national initiatives. We want to connect with them early and launch them on a seamless series of TU activities.

## Trout and Salmon in Schools – page 11



Trout (or Salmon) in the Classroom (TIC or SIC) offers students from kindergarten to twelfth grade a chance to raise salmonids in a classroom setting and then release them into a nearby stream or river. In the Adopt-a-Trout (AaT) program, students help tag fish and then spend the year following the salmonids' migratory progress via telemetry data. Because TIC, SIC and AaT bring nature into the classroom, they allow students to develop a personal bond with the fish and a concrete connection between caring for the fish and caring for the water.

## Meaningful Watershed Education Experiences – page 19

TU offers youth from late elementary through high school age on-stream learning experiences that are explicitly about the stream ecosystem itself. Meaningful Watershed Education Experiences include various types of field days and outdoor experiences. Many youth live near streams that they know almost nothing about. A Meaningful Watershed Education Experience can change that. TU's goal is to connect youth with their local waters, having them understand the wonder and beauty of their local fisheries as well as what it takes to maintain healthy waters and fish populations for generations to come.

## Fishing Education Programs, including First Cast – page 25

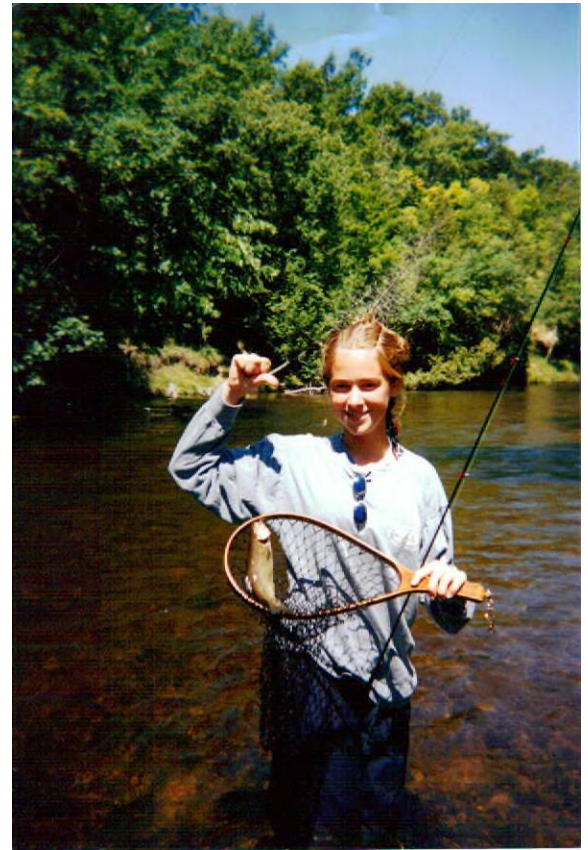
Though any fishing experience can be meaningful for youth, TU often focuses on fly fishing. First Cast is TU's program to introduce youth ages 10 to 18 to coldwater conservation through fly fishing. TU's experience shows that teaching kids to fly fish is an effective way for them to begin their engagement in coldwater stewardship. These kinds of programs are commonly incorporated in the youth camps and make a great add-on for TIC/SIC.

## **Working with Scout Troops – page 30**

Boy and Girl Scouts are often looking for environmental service-learning and outdoor recreation opportunities. Stream clean-ups, tree-plantings, and casting and fly-tying instruction are just some ways that TU can partner with scouts. The Fly Fishing Merit Badge for Boy Scouts presents another opportunity for chapters to teach local scout troops. Scout troops are a great place to recruit youth for summer camps.

## **Youth Conservation Camps and Academies – page 32**

Across the country, TU offers summer camps for teens and pre-teens. Most are week-long residential experiences in beautiful remote settings. The camps draw upon the expertise of professional resource managers, scientists, fly tiers, fishing guides, and TU volunteers. Many include conservation instruction, including a habitat restoration project, as well as the opportunity to fish and tie flies. During the camp, the young anglers come to understand the need to stay active in efforts to protect our coldwater fisheries resources.



## **TU's 5 Rivers College Program – page 34**

Young adults in college are often eager for the chance to make a difference and engage in the world around them through experiential learning. Fishing clubs and ecology clubs are great partners for TU conservation projects; these clubs are a natural next step for youth from TU's summer camps—sometimes it's the camp youth who start the clubs at their schools!. College students looking for alternative spring break plans might be a great streamside work crew. And TU can bring its expertise into college classrooms as guest speakers in ecology, natural resources, and geology classes.

## **Public Outreach Events – page 37**

TU can be a good neighbor and community member by organizing or actively participating in events organized by partner groups. Families and kids of all ages attend fairs, festivals, markets, expos and more. Furthermore, each event that draws in the public is a new opportunity to for TU to share its mission and vision with people who may not have heard it before. TU often conducts and participates in public outreach events that include sponsoring booths and/or sponsoring activities at gatherings organized by partner organizations.



# Stream Explorers

## *Connecting to Youth through Membership*

### Stream Explorers Membership for Youth

TU currently offers a \$12/year Stream Explorers membership to anyone 18 and under. Benefits include:

- membership card
- TU wall calendar
- Stream Explorers sticker and TU decal
- *Stream Explorers* magazine quarterly (for youth 12 and under)
- *TROUT* magazine quarterly (for youth 13 and over)
- [www.streamexplorers.org](http://www.streamexplorers.org)
- potential opportunities for involvement with a local TU chapter

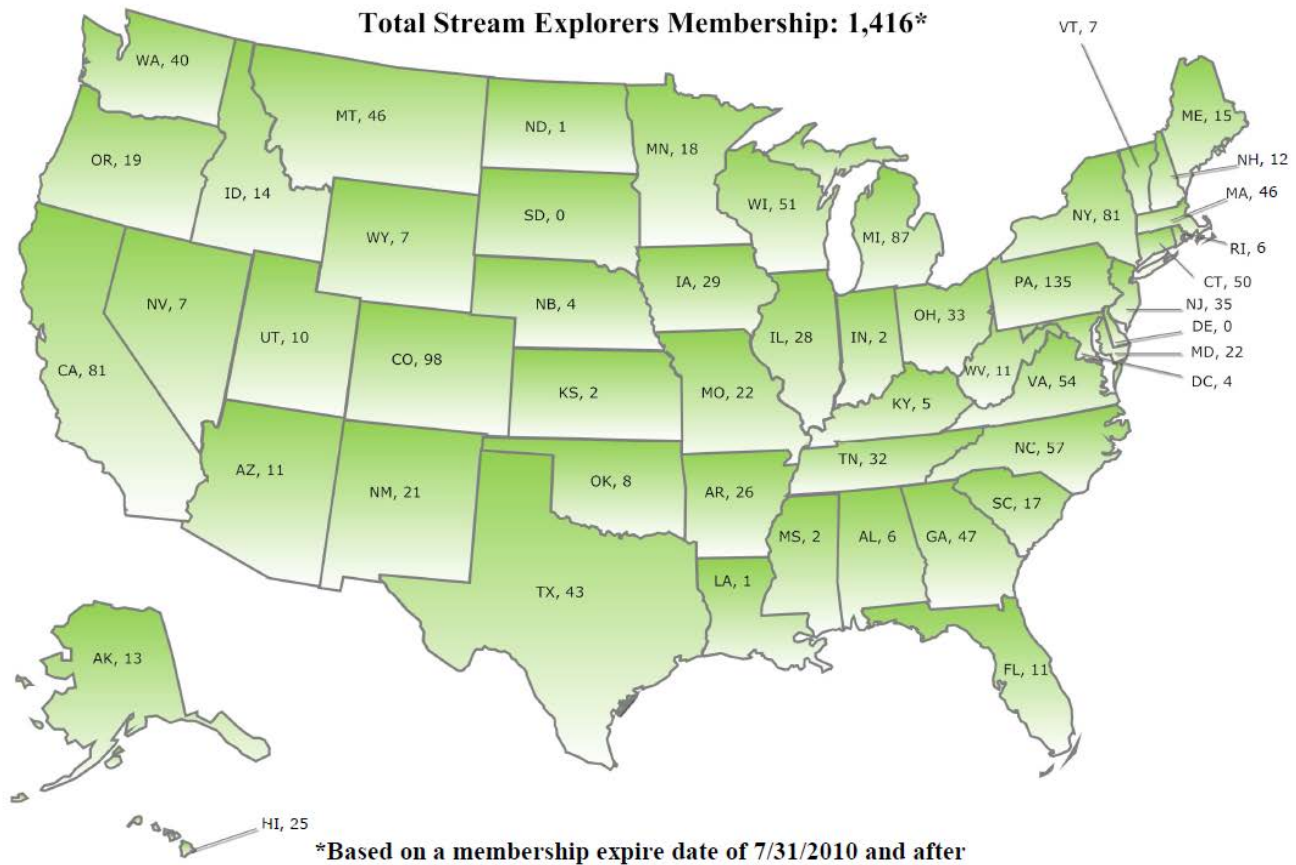
This simplified membership avoids many of the fundraising mailings and renewal notices of adult membership. The program focuses on which benefits youth most appreciate and enjoy.

TU's organizational vision statement asserts that we do the work we do for our children, so that the next generation can enjoy healthy fisheries in their home waters. We must educate the youth now, so that they can appreciate, sustain, and grow tomorrow all the work we do today. One way to do this is to involve them as we do our regular members-- engaging them in regular communications, local chapter activities, statewide council projects, and national initiatives.



In 2011, more than 1400 individuals from every state are enrolled at TU as Stream Explorers. Most are youth, ages 6 – 18. A few Stream Explorers members are classroom teachers who want a subscription to *Stream Explorers* magazine and use the publication as a classroom teaching tool.

## TU Stream Explorers as of Feb. 2011



### Becoming Stream Explorers

Youth 18 and under can learn about and become Stream Explorers in a number of ways:

- **Stream Explorers Brochure** – TU has developed an eye-catching tri-fold Stream Explorers brochure to recruit new members at fairs, festivals, and expos.
- **Automatic Camper Membership** – All youth who attend our Youth Conservation Camps and Academies are automatically given one year's complementary membership.
- **Bulk Membership Purchasing** – Chapters and Councils are able to buy Stream Explorers memberships in bulk—12 memberships for \$100, at \$8.50 a membership—which they can award all at once or one at a time.



## Learning about TU

Stream Explorers members learn about TU's mission and work, as well as opportunities to get involved, through:

- **Stream Explorers Magazine** – *Stream Explorers* magazine is a quarterly publication sent to all Stream Explorers under the age of 13. Each issue includes a main article, a center activity, a try-it activity, and a feature of youth involvement in conservation. Ten issues have been developed, with diverse themes:

Year	Volume	Issue	Theme
2009	1	1	trout anatomy and senses
2009	1	2	stream food webs
2009	1	3	what's a watershed
2009	1	4	human impacts on trout
2010	2	1	steelhead journey downstream
2010	2	2	steelhead journey upstream
2010	2	3	Pacific salmon
2010	2	4	Bristol Bay in Alaska
2011	3	1	salter brook trout in Massachusetts
2011	3	2	trout and trees in Idaho's Boise River Watershed
2011	3	3	reptiles, amphibians, and trout in the Driftless
2011	3	4	<i>trout in the southwest desert</i>

Back issues of *Stream Explorers* are available in PDF format at [www.streamexplorers.org/magazine](http://www.streamexplorers.org/magazine) and in small quantities through the Youth Education Department. Many chapters teach from and/or distribute *Stream Explorers* at their youth events.

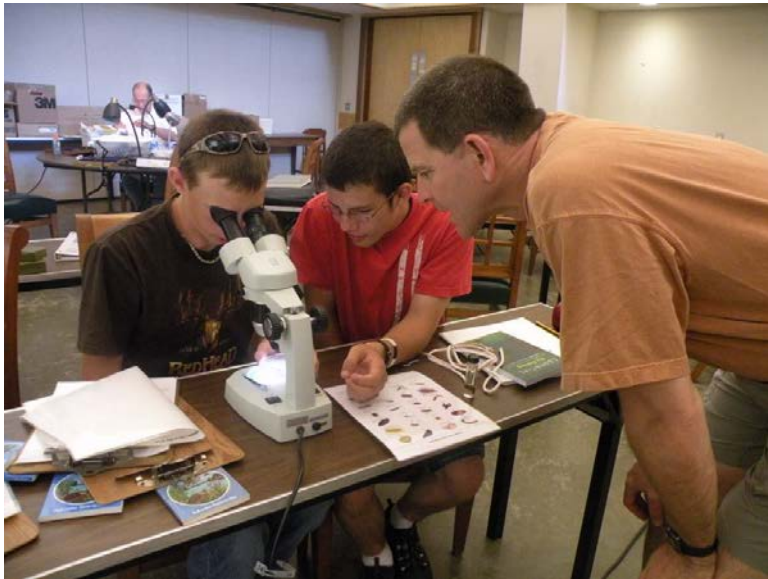
- **Stream Explorers Website** – Kids can learn basic facts about trout, streams, and fly fishing at TU's youth website, [www.streamexplorers.org](http://www.streamexplorers.org). This website also holds a full archive of *Stream Explorers* magazine. Some issues of *Stream Explorers* have a game to download from this site or a form to post a submission to a contest printed in the magazine.
- **Outreach from Chapters** – Chapter and Council leaders can use the Leaders-Only Section on [www.tu.org](http://www.tu.org) to see which TU youth are in their area and to create mailing lists to target Stream Explorers members. In this way, TU leaders can specifically invite youth to both youth events and certain all-chapter events that may hold interest for youth and families.

# Trout and Salmon in Schools

## *Trout in the Classroom, Salmon in the Classroom, and Adopt-a-Trout*

### TU's Classroom Programs

A flagship program of Trout Unlimited's Youth Education efforts, Trout (or Salmon) in the Classroom (TIC or SIC) offers students of all ages a chance to raise salmonids in a classroom setting and then release them into a nearby stream or river. Any teacher in any classroom can make TIC or SIC relevant to his or her classroom curriculum. In kindergarten, the focus can be on caring, growth, understanding life cycles, and the seasons. A high school program might explore water chemistry, the nitrogen cycle, natural resource management, and watershed geology and ecology. For this reason, TU does not provide one standard curriculum—instead we offer an ever-growing online lesson plan library arranged by subject, as well as a participant-driven listserv. Teachers across the country share their tried-and-true activity ideas.



In states where TU is not permitted to release trout into any bodies of water, an alternate program has emerged: Adopt-a-Trout (AaT). In the AaT program, students help tag fish and then spend the year following the salmonids' migratory progress via telemetry data. If possible, students help on conservation projects that improve the streams in which their "adopted" trout swim.

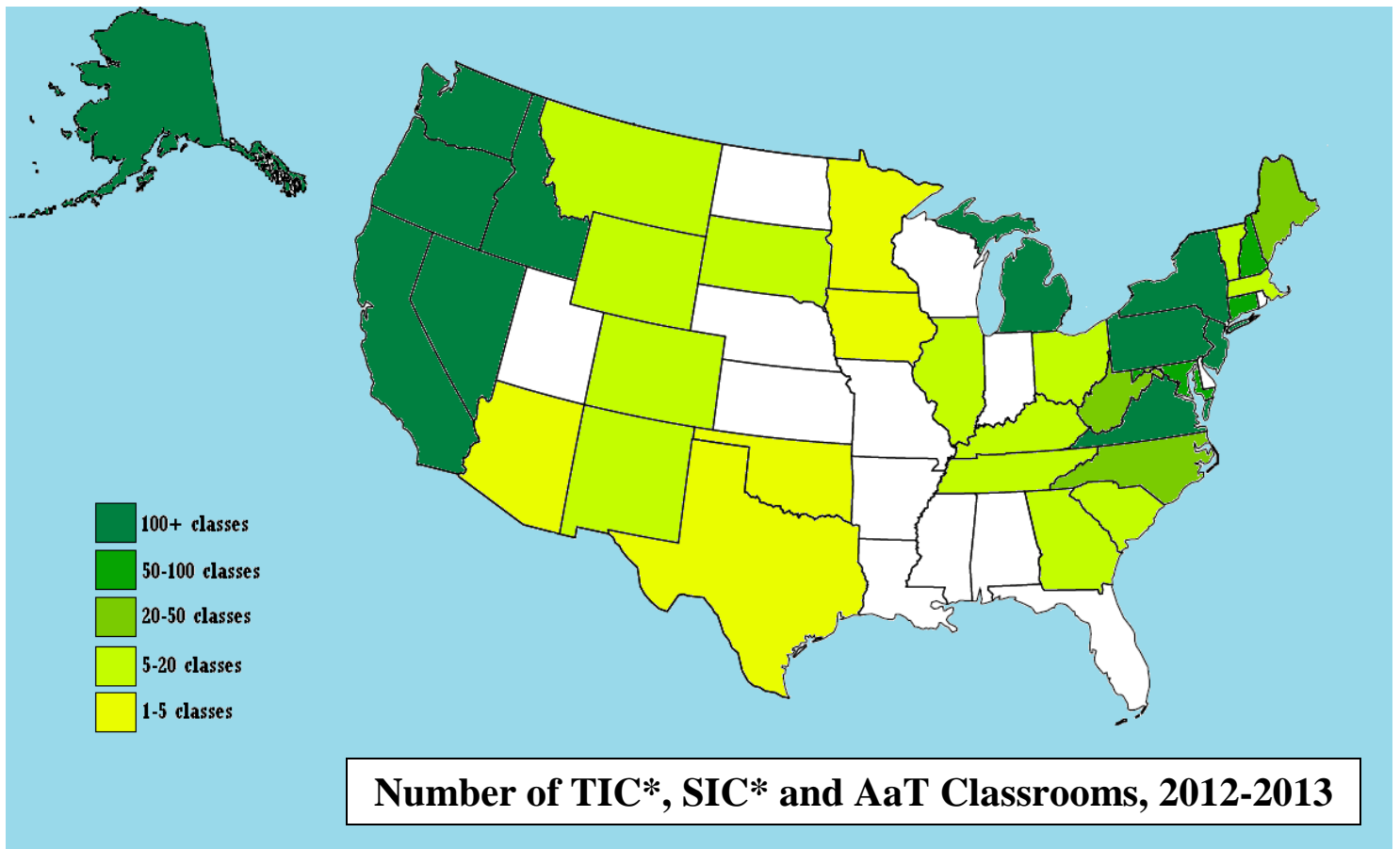
Because TIC, SIC and AaT bring nature into the classroom, they allow students to develop a personal bond and sense of the conservation ethic that are at the core of TU's

mission. In TIC and SIC, caring for and about the fish fosters a conservation ethic in the students, and the act of walking to a stream bank and directly releasing the fingerlings into the water makes a concrete connection between caring for the fish and caring for the water. In AaT, closely following trout migration all year leads to a similar connection with the fish and the river system.

TIC and SIC have been around for decades. TU started getting significantly involved in the mid-1990s, in New Jersey and New York. Many states' TU TIC programs began growing shortly thereafter, and TU's TIC and SIC efforts had reached 35 states by 2010.

TU staff and volunteers in 35 states are involved in more than 1,000 TIC and SIC projects, which is a large fraction of the 4,000+ TIC and SIC projects in the United States.

TIC and SIC are a great spawning activity to direct interested youth to attend a TU youth camp or other youth outreach activity.



\*TIC and SIC programs represented include ones not administered by TU

### **Some Programs Are Run by TU Staff**

TU's biggest TIC program is in New York, where TU staff persons support teachers and chapters. In New York, the TIC Coordinator supports the bulk of the necessary paperwork, visits classrooms, organizes annual teacher conferences, hosts trout-release field days for NYC students, and answers program queries. All this is done with the extensive support of the NYC Department of Environmental Protection and the New York State Department of Environmental Conservation.

### **Some Programs Are Run by TU Volunteers**

The North Bay Chapter in California is a big supporter of TIC. They say, "In cooperation with our Department of Fish and Game we assist teachers in developing a classroom curriculum for learning about salmonids, their life cycles, survival needs, habitats where they are found, and factors which affect their success. We are able to provide aquariums and fertilized trout eggs for each class. The students watch the development and hatching of the eggs, the growth of the young fish, and finally release the fish into local waters."

All TIC and SIC programs have a similar progression from eggs to fry, and from classroom lessons to field application. But many chapters add their own twists, appropriate for their particular streams and communities. Notably, SIC is more popular in the west, though there are a few Atlantic salmon programs in the Northeast.

### Creative Program Extensions

- **Fly Casting Instruction** – The Cornplanter Chapter in Pennsylvania works with younger TIC students to introduce them to fly casting with yarn rods.
- **One School, Multiple Tanks** – New York’s Columbia-Greene Chapter of TU supports multiple tanks at each of their TIC schools, so that the teachers there can partly rely on each other for support and inter-class collaborations.
- **Trout Buddies** – One school in New York has a partnership between a 5<sup>th</sup> grade class and a 1<sup>st</sup> grade. Once a week, the 1<sup>st</sup> graders visit their 5<sup>th</sup> grade trout buddies to learn a new concept about trout. During this time, the 5<sup>th</sup> graders become the experts and teachers, each working with his or her 1<sup>st</sup> grade buddy until he or she completes the project of the day and understands the topic at hand.

### TIC/SIC Promotion

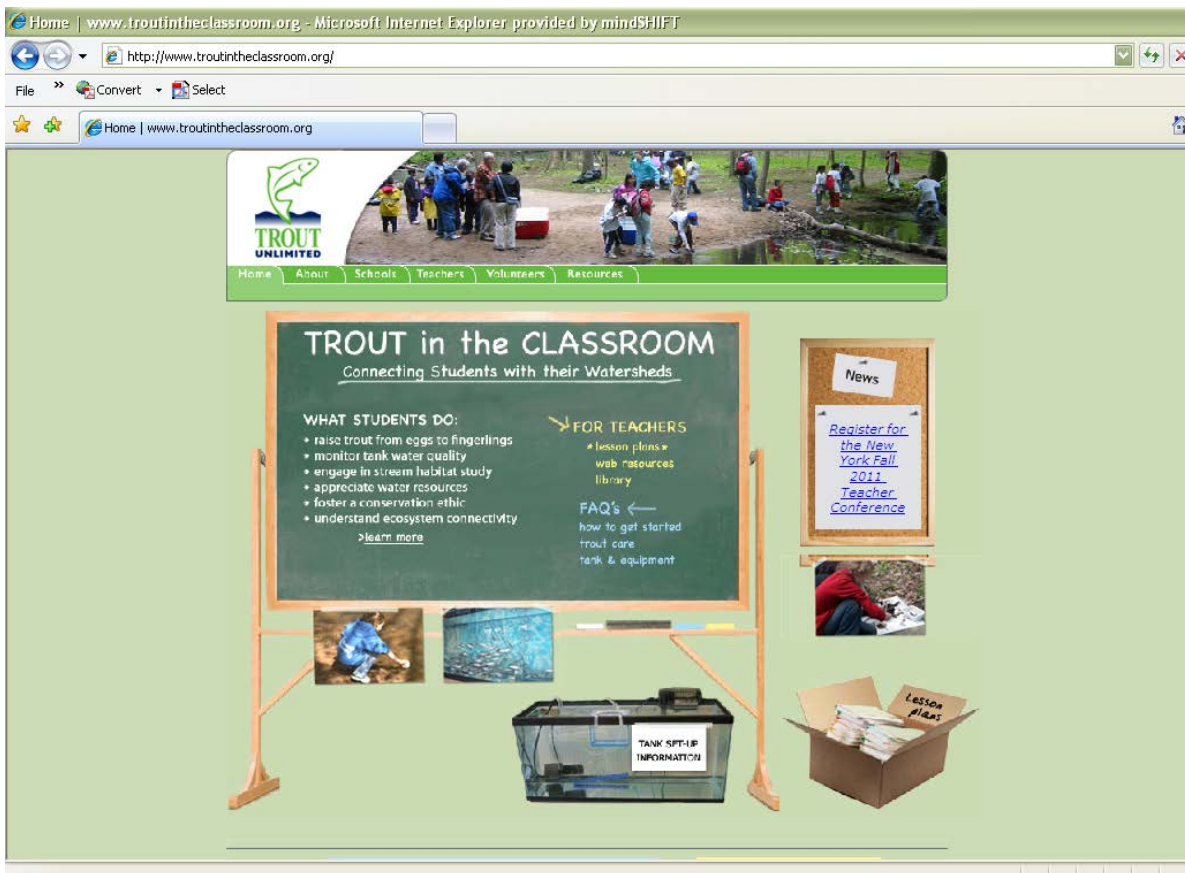
- **In Video** – In 2010, the North Bay Chapter in California produced a short video of their program, talking with chapter members and partners, as well as highlighting the kids’ experiences outside. This video was featured as part of an EPA presentation about the importance of getting kids outside.
- **At Expos** – The Gary Borger Chapter in Illinois has devised an easy way to display trout fingerlings at fairs and expos. Volunteers describe keeping a small tank with a few fish. It is kept cold by rotating ice packs and aerated through a battery-operated bubbler. Young trout always draw a lot of attention and are great for advertising a TIC program and other youth outreach activities.
- **At Museums, Aquariums, and Zoos** – Trout can be raised in non-formal classrooms, as well. The Winchester Chapter of TU supports a trout tank in the Discovery Museum in Winchester, Virginia, which reaches a broad audience of school children and families.



## TIC/SIC National Network

TU TIC and SIC coordinators and volunteers, as well as state agency and non-profit partners all participate in a national TIC/SIC network. A TU staff person coordinates this network and helps provide the following services to any teacher, volunteer, or partner involved in TIC or SIC.

- **Phone and E-mail Support** – TU’s National TIC/SIC Coordinator is available to any teacher, volunteer, or partner who might have questions about program resources or implementation.
- **TIC Website** – TU maintains [www.troutintheclassroom.org](http://www.troutintheclassroom.org), a website that includes basic program information, resources, links, tips, and a FAQ section.



- **Activity Ideas** – The Online Lesson Plan Library includes lesson plans and activity ideas for trout- and watershed-related learning experiences in science, mathematics, social studies, fine arts, language arts, physical education, and field study.
- **TIC/SIC Listserv** – TU maintains a listserv that is available to any teacher, volunteer, or coordinator involved in TIC or SIC, both inside and outside of TU. Participants exchange questions, innovations, and resources.



- **Partnership with That Fish Place** – TU maintains a partnership with That Fish Place, an aquarium supply company located in Lancaster, Pennsylvania, that provides excellent customer service, various TIC equipment kits, and a discount for all TIC and SIC teachers.
- **Promotional Materials** – TU has designed a general TIC brochure which is customizable and available to all TU Chapters and Councils.
- **TIC Gear** – TU has provided access low-cost TIC t-shirts, hats, and polo shirts.

- **Salmonid Quilt** – TU staff coordinate a national quilt square exchange project, where participating schools design, create, and exchange quilt squares and letters with the other participating schools across the country.



- **Fin Pals**  
**Coordination** – TU helps connect classrooms looking for pen pals or video conference pals across the country.
- **Stream Explorers magazine** – Available as a PDF file or class sets of a paper copy, *Stream Explorers* magazine is a great teaching resource. Its issues cover a wide range of topics that are of interest to any student learning about salmonids or watersheds. More information and files for download are available at [www.streamexplorers.org/magazine](http://www.streamexplorers.org/magazine).
- **Stream Explorers Website** – This is a website for kids with basic information about salmonids, streams, and fishing. The entire archive of *Stream Explorers* magazine is also available here in PDF format. See [www.streamexplorers.org](http://www.streamexplorers.org)

## **Adopt-a-Trout**

In states where TU is not permitted to release trout into any bodies of water, an alternate program has emerged: Adopt-a-Trout (AaT). In the AaT program, students help tag fish and then spend the year following the salmonids' migratory progress via telemetry data. If possible, students help with conservation projects that improve the streams in which their "adopted" trout swim.

In Wyoming in the 2010-2011 school year, TU staff helped students in two towns adopt 32 trout. Each classroom adopts one trout to follow throughout the year.

### **Features of Adopt-a-Trout**

- **Is for All Ages** – in Cody and Dubois, Wyoming, 4<sup>th</sup>—8<sup>th</sup> graders are involved.
- **Encourages a Multi-Disciplinary Approach** – trout and salmon migration can be related to and explored through science, mathematics, language arts, social studies, and fine arts. Topics of study can include trout life cycles, ecosystem dynamics, aquatic health, threats to trout, and conservation practices.
- **Is STEM Learning** – Science, Technology, Engineering, and Mathematics learning is in great need of creative, relevant programs such as AaT. In addition to the Science, Math, and Engineering inherent in the study of ecosystems and conservation practices, with AaT kids also learn how to use telemetry equipment, GPS equipment and mapping tools.
- **Provides Year-Long Study** – students help tag fish in the fall, follow their movements all year, and get outside to do stream work in the spring.
- **Relies on Partnerships** – in Wyoming, AaT absolutely relies on local TU chapter members, Wyoming Game and Fish staff, and TU staff. Each movement study is organized in tandem with the Wyoming Game and Fish Department to identify a need for research. The program also requires participation from the school district and local community.
- **Scientifically Relevant** – the AaT tagged fish are all part of populations that scientists and government agencies are studying. The students are learning from the same data as the professionals.
- **Place-Based Education** – The AaT program is a place-based curriculum that uses on the ground research to provide information for school children to learn about their local watershed and fishery. In Wyoming, the research has led to the identification and prioritization of conservation projects to improve the local fisheries.

## Creative Program Extensions for TIC, SIC, and AaT

- **Kick-off Event** – As an example, the various Wyoming AaT partners organize an event where the kids get to see the tags implanted in the fish on the local water, learn fly casting, hear about aquatic invasive species, see the differing bugs that inhabit the trout water, and practice fish identification.
- **Classroom Visits** – Though teachers facilitate many of the related lessons, they also invite guest speakers to the classroom to teach about their specific areas of expertise. Agency personnel, TU volunteers, and TU staff are all great guest speakers.
- **Concluding Event** – In Dubois, Wyoming, school kids participated in a stream restoration program within the city park to improve habitat for wild rainbow and brown trout. Newspapers and the local news channels documented the project. Parents and city officials were encouraged to participate in the on-the-ground projects.
- **Conservation Work** – Students can help with conservation work such as stream clean-ups, tree plantings, other bank stabilization projects, and riparian improvement work. In following the movements of the trout, the students must also consider the human impacts on trout habitat and behavior.
- **Fly Fishing** – Learning fly fishing skills and having the opportunity to cast a line to water is a great way for kids to really connect with their streams and fishery.



## Teaching Teachers

Classroom teachers are always looking for opportunities to enrich their own content and skills knowledge, to help them better teach in the classroom. TU has many formal opportunities to reach out to classroom teachers:

- **TIC/SIC Teacher Conferences** – New York’s TIC Coordinator organizes three TIC teacher conferences annually, which offer teachers a combination of workshops led by agency partners and experienced teachers that can enrich a TIC classroom. The Maryland Council offers a similar TIC preparation workshop day for all its TIC teachers.



- **Summer Professional Development for Teachers** – Many state agencies and watershed groups offer summertime professional development courses for classroom teachers. TU staff in West Virginia and New York have attended these events as guest speakers, providing a workshop with activity ideas that teachers could bring back to their classrooms and field work with students.

- **College Courses for Teachers** – The Virginia Council of TU worked with Mary Baldwin College to offer a course centered on Trout in the Classroom to both in-service and pre-service teachers. The course met for one week during the summer, included a significant online component, and offered resources to help teachers implement the TIC program in their classrooms during the school year.
- **Science Teacher Conferences** – TU and partner teachers can present at conferences of various professional organizations, including the National Science Teachers Association (NSTA) and affiliate state organizations. In 2010, one New York TIC teacher presented TIC in a workshop at the Science Teachers Association of New York State (STANYS) annual conference.
- **Outdoor and Environmental Educator Conferences** – TU staff Rochelle Gandour and Lilli Genovesi attended the North American Association for Environmental Education Annual Conference in 2010 and presented a workshop there about the applications of TIC.

# Meaningful Watershed Education Experiences

## *Field Days and Service-Learning with School-Age Youth*

TU offers youth on-stream learning experiences that are explicitly about the stream ecosystem itself. Meaningful watershed education experiences include field days and outdoor experiences of various types, sometimes supported by indoor lectures, activities, and/or data synthesis.

Many youth live near or use water from streams that they know almost nothing about. A meaningful watershed education experience can change the way a young person looks at his or her local water. TU's goal is to connect youth with their local waters, to have them understand the wonder and beauty of their local fisheries, as well as what it takes to maintain healthy waters and salmonid populations for generations to come.

Meaningful watershed education experiences occur on stream banks and in riparian zones across the country. Some youth visit the river that flows through their town, while others visit a faraway stream that may feed a drinking water reservoir or major waterway.



A TU staff person writes of a field day on a local river:

“The North Platte River flows through Saratoga, Wyoming, defining this rural town of 1700 residents. While some students are very familiar with the River, for many, this experiment represented a new learning opportunity. The day was unseasonably warm and the students took full advantage becoming ‘immersed’ in their work. Even the most hesitant students were encouraged to let Giant Stones crawl across their hands. The *Sustain* component of TU's message was encouraged by asking the students, ‘How important is the river to you?’, ‘What kinds of fish and animals depend on the river's pure water?’ ‘What can

you do to make sure the river's water remains pure?’”



There are a variety of ways to engage youth in conservation work along our nation's coldwater streams.

## Riparian Buffer Projects



Youth can do meaningful work in riparian buffers, where their enthusiasm turns a simple project into a fascinating learning experience, and their sheer numbers make the work quick and easy.

- **Clearing Non-Native Vegetation** – The Upper Deschutes Home Rivers Initiative has worked with middle and high school students to pull non-native weeds from the banks of their local Crooked River.
- **Tree-Planting** – TU’s Potomac Headwaters Education Coordinator in West Virginia is focused solely on facilitating kids’ Meaningful Watershed Education Experiences. To that end, 800 students to planted 3,000 trees at six different sites in the Chesapeake Bay Watershed in 2010.
- **Tree Cuttings** – Recently, TU staff and the Ted Trueblood Chapter in Idaho have embarked on an experimental project with a troop of cub scouts. The scouts helped make black cottonwood cuttings and plant them in soil with rooting hormone. The chapter members, with help from the scouts, will tend the cuttings all summer, so that they are ready to be planted in the fall. A project such as this one keeps the youth involved across the course of a year, in all aspects of a project, from start to finish.
- **Bank Stabilization with Fascines** – In partnership with Wolfree, a local environmental education nonprofit, the Upper Deschutes Home Rivers Initiative has worked with youth to stabilize streambanks with willow fascines. These mats eventually sprouted and willow roots further stabilized the streambank.

## Stream Health Assessment

Children and teens often love the chance to be scientists, do tests, make measurements, and draw conclusions about the state of a stream. Taking the time to learn actual stream measurement protocols—so that students can collect and report viable, acceptable citizen science data—can improve the experience by making the exercises relevant and useful.

- **Macroinvertebrate Collection** – From Wyoming TU staff: “the 4th, 5th, & 6th graders from Saratoga Elementary School, in Saratoga, Wyoming, enjoyed a day in the North Platte River collecting macro invertebrates to help assess water quality. The Teton Science School staff led the exercise by providing background information to the students the day prior, regarding what species of macroinvertebrates indicate water quality. The preponderance of both stoneflies and mayflies indicated water quality in the North Platte River is ‘pure.’ Aquatic insects were collected by the students using D-nets and seines. The insects were then keyed to genus, separated and counted.”

- **Water-Testing** – While they’re out on the stream, West Virginia TU staff have the students test the water quality, to assess stream health. They’ve developed checklist worksheets for Appalachian waters that help students easily compare the state of their stream with the parameters found in an “ideal” Appalachian brook trout stream.



- **Geomorphological Features** – West Virginia students also assess the geomorphology of the stream they’re studying, to identify the stream type as well as possible impairment in stream bed or channel.
- **Riparian Buffer Quality** – TU staff have a checklist worksheet for assessing the state of the riparian buffer, as well. Students will often do this assessment as part of a larger, ongoing project in which they make recommendations for vegetative plantings and then carry out the planting projects.

## **Salmonid Population Assessment**

In the Mountain West and a few other states, students can have access to pit tag data, and can watch the movement of salmonids over the course of a year. The Adopt-a-Trout program in Wyoming takes this a step further and facilitates multiple field days on the waters where the tagged fish swim.

But when it comes right down to it, there is nothing more fun for a group of teenagers than electroshocking. With the proper training and safety precautions, as well as an emphasis on the useful data derived from population assessment, this becomes an unforgettable experience that changes the way youth look at the water.

Population projects are most rewarding when the youth can see real change over time, in policy, infrastructure, or in the salmonid population itself. One great example comes from Montana, where TU and the U.S. Forest Service have worked with high school students over the last five years to do fish salvage in an irrigation ditch off of Six-Mile Creek. The students used backpack electroshocking methods in the irrigation ditch to collect trapped fish and bring them back to the creek. The population and survival rate data collected through this project were sufficient enough to result in the installation of screen to prevent future fish passage into the ditch.

## **Advocacy and Organizing**

Sometimes, youth are the best messengers of conservation ideals and the best community organizers. Through their social networks, teens can help effect change in policies and behaviors in their communities. They might start school clubs, they might petition decision-makers, or they might organize neighborhood groups.

One example is found in Alaska, where TU staff members are “partnering with Renewable Resources to work on environmental action projects related to Pebble Mine with the Alaska Youth Environmental Action Project.” There are thirty direct teen participants who are tasked with reaching out to other youth and their communities about environmental issues. In this way, a much broader audience is reached.

## **Individual Youth Projects**

Some individual teens have a specific interest in helping a favorite stream or community waterway. Eagle Scout projects, Gold Award Projects, high school community service requirements, and sometimes just personal interest all draw youth to work with and for their local waterways. TU staff person Nichol De Mol, who manages the Rogue River Home Rivers Initiative, is working with a 10<sup>th</sup> grader who contacted her to offer to help with the project. The teen is “currently interviewing fishermen and fishing business owners that he knows in the City of Rockford about their views of problems in the watershed and potential restoration activities. He will be assisting [her] in the next field season with field work.”



## Reaching Out to Various Audiences

Meaningful Watershed Education Experiences can reach youth in almost any setting, with almost any type of group as an audience. You can recruit from each level to go on to the next level. Sometimes the best way to make sure a message hits home is to engage parents and community adults at the same time the children are learning.

- **Elementary Schools** – Many of the nation’s TIC classes have field days that are about much more than releasing trout. Field day organizers and chapter volunteers set up stations through which the students rotate. Activities include trout release, macroinvertebrate collection and identification, fly casting, watershed modeling, art projects, poetry-writing, stream cleanup, hiking, and many more.
- **Middle Schools** – TU’s Eastern Abandoned Mine Program staff in Pennsylvania worked together with the Allegheny Mountain Chapter to provide hands-on lessons about water chemistry, habitat, and abandoned mine drainage to the eighth graders of Dubois Middle School, on their Environmental Education Day.
- **High Schools** – Pennsylvania’s Clearfield High School watershed club heard about abandoned mine drainage, coal mining, water chemistry, stream ecology, and macroinvertebrates through lecture and hands-on activities that the local TU staff provided in partnership with the Clearfield County Conservation District.
- **Summer Day Camps** – Summer-long day camps are often looking for one-day or weekly activities for their campers, a role that could naturally be filled by the projects run by TU staff and volunteers.





- **Summer Overnight Camps** – In addition to offering a number of sleep-away camps across the country, TU also partners with existing camps to provide experiences to the campers as guest educators.
- **Scout Troops** – Both Boy and Girl scout troops of all ages are often looking for service learning opportunities. Scout troops across the country have helped with tree-plantings, stream clean-ups, stream access projects, and more.
- **Family Events** – In partnership with the community’s Spring Nature Festival, the Overmountain Chapter in Tennessee organizes stream lectures and clean-ups for families
- **Faith Communities** – Staff in the Boise River watershed in Idaho have provided opportunities for local churches looking for “service instead of a service” on some summer Sunday mornings.
- **Whole Communities** – TU staff in the Boise River watershed involve school children, scouts, and families in massive tree-planting and stream-stabilizing operations. Multiple events occur at the same site, including class field trips and family work days. Together with help from members from the Ted Trueblood chapter, the staff have hosted over 1500 people planting trees up and down the watershed.

### **Engaging a Variety of Partners and Stakeholders**

All this work is possible through the support of multiple stakeholders, including classroom teachers, landowners, federal agencies, nonprofit partners, scoutmasters, troop leaders, camp directors, after-school teachers, and others. Sometimes, TU provides the field location and conservation expertise, and a partner education group can facilitate the day’s schedule and events.

# Fishing Education

## *First Cast and More: Tying, Casting, and Reading the Stream*

Though any fishing experience can be meaningful for youth, TU often focuses on fly fishing. First Cast is TU's program to introduce youth to coldwater conservation through fly fishing. TU's experience shows that teaching kids to fly fish is an effective way for them to begin their engagement in coldwater stewardship. In order to be a successful fly angler, a person must develop an in-depth understanding of the aquatic habitat. This leads to a feeling of "ownership" of the resource and a concern for its future. The First Cast program is a flexible curriculum which breaks down the skills of fly fishing into specific lessons that are then tied to conservation topics. First Cast programs can be taught in a wide range of venues, including single-day clinics, after schools clubs or residential youth camps. No matter what the format, First Cast participants finish the program with a introduction to fly fishing and coldwater conservation and are on their way to becoming the next generation of coldwater stewards.

Fly fishing and spin fishing are about bringing all sorts of skills together.

- Casting
- Fly-tying
- Reading the water
- Setting the hook
- Practicing effective catch and release
- Macroinvertebrate identification
- Fly selection
- Fishing etiquette
- Rules and regulations
- Knot tying
- Fish identification



## Various Event Formats

There are many ways to teach youth how to fish; many settings and class formats are appropriate.

- **Year-long Series of Sessions** -- First Cast can be taught as a year-long experience, such as the opportunity that the Forbes Trail Chapter in Pennsylvania offers area youth. They say, "Our annual First Cast Fly Fishing & Conservation Youth Group program was established in 2005 to encourage awareness of coldwater conservation and other related environmental issues, as well as to teach area youth the enjoyment of fly fishing. Boys and girls between the ages of 12 and 16 are welcome regardless of experience level. We have been successful teaching youth with special needs such as Downs Syndrome, and those with learning

disabilities (such as ADHD). Twice-monthly meetings begin in January, break for summer vacation, and end in November with a Steelhead fishing trip to a Lake Erie tributary. Local experts teach topics such as stream ecology, trout behavior, casting, fishing techniques and knot tying. We team with FFF to have a certified fly casting instructor present the casting classes and they are standing room only with dads and granddads. Every meeting students learn to tie a different fly pattern. Each month in the spring there is a field trip to a local stream. First, students collect and analyze macroinvertebrates (aquatic insects) in a healthy stream since this is a major food source of trout. Then they fish local streams and participate in stream improvement projects. Each participant receives a Trout Unlimited youth membership and has access to fly-tying and fly fishing equipment for the duration of the program. A small donation of \$20 is requested to help offset the costs of fly-tying materials.”

- **Weekly for a Season** -- The Bitterroot Chapter of TU in Montana annually offers a “fly fishing/tying class (Bitterroot Buggers) to boys and girls 8 - 14 years old. The average attendance is 35 kids. Kids tie one fly each weekly session and also attend a short session on other topics such as fish identification, casting, entomology, water quality, etc. The class culminates in an outdoor pond session of fishing, awards, and a BBQ.”

- **Monthly Meetings** – Magic Valley Fly Fishers in Idaho sponsors a youth club that has monthly meetings, where the TU volunteers take the kids fishing, or teach them fly-tying or stream ecology.

- **PE Classes** – Wyoming’s East Yellowstone Chapter assisted the Cody Middle School Physical Education program. The PE curriculum included six weeks of fishing and casting, so the TU members were at the school three times a week to help during that unit.



- **After-School Program** -- The Gold Rush Chapter in Georgia has worked with Lumpkin County Middle School to provide a First Cast experience to preteen boys and girls in an after-school program, who would otherwise have nothing to do in the afternoon. Their curriculum includes introduction to fly fishing, rigging equipment, fly tying, and casting.
- **School Club** – In Pennsylvania, the Complanter Chapter sponsors the Beaty Middle School Fly Fishing Club that meets once a month.
- **Boys and Girls Clubs** – The Rocky Mountain Flycasters in Colorado, has an area Boys and Girls Club brings kids to the waters where the volunteers teach First Cast.

- **Adventure Club** – Headwaters Chapter in Minnesota facilitates fly fishing instruction in an after-school adventure club.
- **Local Summer Camps** – During the summer, chapters can provide First Cast instruction at area day camps or partner to with whole-summer programs to provide some activities. The Mollyocket Chapter in Maine teaches tying and casting once a week at the ten-week-long Bryant Pond 4-H summer camp.
- **Family Clinics** – The Ann Arbor TU Chapter in Michigan runs both women’s classes and family classes, so that an adult/child family pair can take the fly fishing class together.
- **Single-Day Event** – Sometimes, fishing instruction is just a part of a single kids fishing day. Pennsylvania’s Arrowhead TU Chapter offers a similar single-day event for 3<sup>rd</sup>-5<sup>th</sup> graders, and their focus leans towards spin fishing, wildlife, and outdoor safety.
- **Statewide Kids Fish Free Days** – The Clinch River Chapter, for example, provides boat rides, in-river guides, fly-tying instruction, refreshments, and prizes at all no charge, on Tennessee’s Kids Fish Free Day.
- **Fishing Derby** – Donegal Trout Unlimited in Pennsylvania organizes and runs at Big Brothers/Big Sisters fishing derby.
- **In Partnership** – Georgia’s Foothills Chapter of TU provided a fishing opportunity (and prizes!) at the Nancytown Trout Rodeo, in partnership with the U.S. Forest Service.
- **Field Days** – Pennsylvania’s Tiadaghton Chapter members providing casting instruction and demos at the Tioga County Field Day.
- **Fish Hatcheries** – The Collegiate Peaks Anglers Chapter in Colorado provided First Cast instruction to a class of 5<sup>th</sup> graders at the Leadville National Fish Hatchery, making a robust, full-day field trip for them.
- **On Ponds** -- Washington’s Tacoma Chapter offers nearly 1,000 kids each year the opportunity to fish, through various programs they run and participate in on ponds and streams around the area.
- **Special Olympics** – Donegal Trout Unlimited runs a Special Olympics fishing event in conjunction with Pennsylvania Fish and Boat Commission, at which participants learn proper care of fish and the ecosystem.



## Various Audiences

Everyone deserves the opportunity to learn how to fish:

- **Teenagers** – High schoolers, too, are interested in fly fishing, as the Nor’East Chapter knows from working with Lynn Technical High School in Massachusetts.
- **Pre-teens** – The Northwoods Chapter in Wisconsin organizes an annual Youth Flyfishing Conclave for teens and pre-teens.
- **Urban Youth** – The Maryland Chapter of TU has a “program with Baltimore City Recreation and Parks providing kids with a fishing outfit, complete with rod, reel, line, and tackle. MDTU volunteers assist the children to assemble their tackle, tie on a hook and sinker, bait the hook, and fish for trout. In addition, the children also get a booklet which illustrates simple techniques for catching fish, introduces sportsmanlike conduct and helps explain the benefits of protecting water quality. The children’s fishing trip finishes with lunch provided by the Recreation and Parks staff.



- **Girls Only** – Sometimes it’s important to specifically reach out to girls only, which creates a different learning environment for the youth. The Forbes Trail Chapter in Pennsylvania, for example, works with their local Y’s girls-only fly fishing program.
- **Youth with Special Needs** – Nebraska Trout Unlimited hosted a fishing clinic specifically for youth with special needs, most of whom were developmentally disabled in some way. These youth and their siblings learned how to spin cast, as well as trying knot tying, fish identification, insect identification, and water safety.

- **Troubled Youth** – Members of the Art Bradford-Northern Tier Chapter in Pennsylvania act as instructors in a “Streets to Stream” program for troubled youth between the ages of 11 and 16. The series of four lessons is organized through the parole officer of the youth.
- **At-Risk Youth** – In Illinois, the Lee Wulff Chapter of TU partners with local businesses and organizations to provide a 4-week fly fishing program for local children who would not otherwise have the opportunity. The program, called “Fishin’ So Fly,” included certified therapeutic recreation staff to help oversee the activities. The whole experience ended with a field trip to the Driftless Area in southwest Wisconsin.
- **Church Youth Groups** – Arkansas White River Chapter has formed a youth group in cooperation with a youth pastor from a local church. At their periodic meetings and outings, this group has built access steps, cleared brush, placed monofilament receptacles, done stream water testing, tied flies, learned fly-casting, and gone on a three-day outing.
- **Families affected by Cancer** – In Massachusetts, Great Bay TU participates in Amy’s Treat River Day by offering fly fishing instruction to the cancer patients at the Seacoast Cancer Center and their children.
- **Veterans** – Georgia’s Foothills Chapter of TU partnered with the Fly Fishing for Veterans group to provide instruction on the Chattahoochee River to veterans and their children.
- **Moms** – Wyoming’s Upper Green River Chapter considers its Ladies Fly Fishing Clinic to be connected to its youth outreach work, as they specifically target moms who might, in turn, take their children fishing.
- **Communications to Parents** – The North Rhode Island Chapter offers a program that starts with fly-tying inside and ends up with cleanup and casting outside. While the weather is still icy, this group meets in the town’s public library, common for TU chapter youth events; many chapters reported being able to use free space in their local public libraries. Another key component of the North Rhode Island program is the photo documentation and electronic newsletter that goes home weekly to parents. The chapter finds it important to keep parents in the loop with what their kids are learning.
- **Kids Fishing Brochure** – “A Kid’s Guide to Fly Fishing in New Mexico” is a brochure created by a partnership of New Mexico Game and Fish, the Truchas Chapter of TU, and New Mexico Trout. It includes basic information about trout anatomy, knots, fishing etiquette, favorite flies, and available waters across the state. They are making this publication available at fairs and expos, fly shops, and fishing days.
- **In Partnership** – Often, it is beneficial to partner with other groups, as they can bring new audiences to TU’s conservation messages. Pennsylvania’s Neshannock Chapter partners with the Grove City Sportsman Club for one of their events.

# Engaging Scout Troops

## *Fly Fishing Merit Badge and Beyond*

Boy Scouts and Girl Scouts are often looking for both environmental service-learning and outdoor recreation opportunities. Stream clean-ups, tree-plantings, and casting instruction are just some of the ways that TU can partner with scouts. Scouts are also great campers at TU's summer camps and academies.

An examination of the mission statements of both Girl Scouts and Boy Scouts quickly reveals their compatibility with TU's mission statement:

“Girl Scouting builds girls of courage, confidence and character, who make the world a better place.”

“The mission of the Boy Scouts of America is to prepare young people to make ethical and moral choices over their lifetimes”

TU's focus on clean, healthy streams and robust fisheries, speaks both to the Girl Scouts who “make the world a better place” and to the Boy Scouts who are learning to “make ethical and moral choices over their lifetimes.” Conservation is part of making the world a better place and understanding environmental stewardship influences how choices are made over lifetimes. Scouts have much to learn from TU, and vice versa. Engaging with local scout troops offers Trout Unlimited members the unique opportunity to share their fly fishing and conservation knowledge with our nation's youth, creating future conservationists and protectors of our fishing resources.

## **Fly Fishing Merit Badge for Boy Scouts**



As an item of special note, the Fly Fishing Merit Badge was designed in partnership between TU and the Boy Scouts of America (BSA) in 2002. TU and BSA have a memorandum of understanding that states that our local chapters will be a primary source of angling expertise for tens of thousands of young Scouts who want to learn how to fly fish for trout and other species. Acting as teachers, mentors, and friends, TU members can help influence the ethics and practices of young fly fishermen around the country.

TU members are often a wonderful resource for local boy scouts looking for a mentor in completing the Fly Fishing Merit Badge. TU can help the scouts in a number of ways, by offering merit badge activities in different settings. One efficient and popular method is a weekly or weekend workshop for a whole troop. For example, the Fly Drifters of Utah are one chapter that focuses on helping area boy scouts fulfill the requirements for the fly fishing merit badge. To that end, the volunteers offer a weekend “Fantasy Youth Fly Fishing Camp which will include fly fishing, fly tying, and casting classes along with conservation.” The event will be open to parents as well as youth, and undertaken in partnership with their local Federation of Fly Fishers chapter.



It is important that TU members teach scouts correctly. To that end, the Upper Chattahoochee Chapter in Georgia, along with all the other Georgia chapters, work closely with the Georgia Council to develop a Teach-the-Teachers workshop around the BSA Fly Fishing Merit Badge. This program, once developed, will help all chapters around the country with facilitating merit badge events. Not only will Teach-the-Teachers teach volunteers what to teach, but the curriculum will also cover teaching our volunteers *how* to teach various fly-fishing skills. This initiative should increase the capacity of all our chapters to assist boy scouts in earning the Fly Fishing Merit Badge.

Furthermore, the teaching skills gained in these Teach-the-Teacher workshops will also be useful when teaching fly fishing to Girl Scouts, physical education classes, summer campers, and families. Girl Scouts go fishing, too, as proven by the Oak Brook Chapter in Illinois, who has sponsored both Boy Scout and Girl Scout fly fishing programs.

### **Meaningful Watershed Education Experiences**

Both Girl and Boy Scout troops are often looking for service learning opportunities. A local stream project, especially one that involves tree-planting or litter pick-up could be just the ticket! For example, TU staff and Upper Deschutes Chapter volunteers have worked with local girl scouts to plant riparian vegetation in a restoration project on the Crooked River. Scout troops may be interested in a regular commitment to helping with on-stream projects. The Upper Bear River Chapter regularly invites Cub Scout packs and Boy Scout troops to assist with various chapter projects, and they regularly participate.

Scout troops can be just the right groups for new and pilot projects, as they are often very motivated groups. Recently, TU staff and Ted Trueblood chapter members in Idaho have embarked on an experimental project with a troop of cub scouts. The scouts helped make black cottonwood cuttings and plant them in soil with rooting hormone. The Ted Trueblood chapter members, with help from the scouts, will tend the cuttings all summer, so that they are ready to be planted in the fall.

And TU can help teens take leadership roles in conservation projects, as well. California's Sac-Sierra Chapter of TU has sponsored 4 Eagle Scout projects in recent years, helping boys take a leadership role in conservation and restoration projects along area streams. As part of their Eagle Scout projects, the boys must learn the technical and leadership skills not only to execute aspects of the project themselves, but also to engage, teach, and lead members of their troops to help, as well. Girl Scout Gold Award projects can be very similar in nature.



# Youth Conservation Camps & Academies

## *Summer Adventures for Teens and Pre-Teens*

TU Councils across the country offer summer camp experiences for teens and pre-teens. Most are week-long, residential experiences in beautiful remote settings, and a few are day camps closer into town. The camps include a comprehensive curriculum and draw upon the expertise of professional resource managers, scientists, fly tiers, fishing guides, and TU volunteers. Many include hands-on experience with a habitat restoration project and the opportunity to fish a variety of local waters. During the camp, the young anglers learn much more than fishing skills—they gain an appreciation for the need to protect our coldwater fisheries and other natural resources.

To immerse teens in fishing and conservation is the way for them to truly learn it. Studies show that sustained, long-term experiences with fishing and conservation are more likely than one-day events to result in lifetime anglers and conservationists. During the summer, youth are looking for adventures, and these summer camps are exciting and a rich learning experience.

TU's Conservation Camps and Academies are run throughout each summer. Each Council site usually facilitates one week of camp with one group of teenagers.

The founding TU Youth Camp is located in Pennsylvania. In 1995, the Cumberland Valley chapter started the Rivers Conservation and Fly Fishing Youth Camp. Their award-winning camp has served as a model for the growing number of camps held around the country by other TU chapters.

The age of the campers depends on the camp; nationally the kids range from 10 to 18 years old. Each camp hosts somewhere between 8 and 32 campers. Youth come from TU and non-TU families alike.

### **Camp Locations 2011**

- Arkansas
- Colorado (2)
- Georgia
- Idaho
- Illinois (in MI)
- Maine
- Michigan (2)
- Montana
- New Hampshire
- New Jersey
- New York
- North Carolina
- Oregon
- Pennsylvania (2)
- Tennessee
- Washington
- Tri-State (DC, MD, VA, WV)



## Camp activities include:

- **Fly Fishing Skills** – casting, fly-tying, reading the water, water safety, outdoor safety, fishing etiquette
- **Fly Fishing** – in streams and on ponds and lakes, in the morning, daytime, and evening
- **Conservation Projects** – invasive vegetation pulling, tree-planting, stream channel modification, stream bank repair, culvert assessment, fish tagging, population assessment
- **Ecosystem Exploration** – macroinvertebrate collection and identification, stream geomorphology study, snorkeling, population assessment, electroshocking, riparian study
- **Guest Speakers** – career development, invasive species, rules and regulations, climate change, fish identification, fishing technique, fly-tying skills, conservation work, advocacy
- **Team-Building** – group projects, whether conservation- or fishing-oriented.
- **Personal Development** – photography, journaling, visual art, creative writing, and more



## Camp Partnerships

Some chapters partner with other groups to create a broader camp experience.

- **Overnight** – Minnesota's Twin Cities Chapter of TU partners with Pheasants Forever to provide The Ultimate Nature Experience (T.U.N.E.). This weeklong camp combined the expertise of TU and other conservation groups into one weeklong summer adventure.
- **Day Camp** – The Spring Creek Chapter in Pennsylvania co-sponsors a 2 week day camp through their local parks and recreation department, for 5<sup>th</sup> to 8<sup>th</sup> graders.

Some TU chapters and councils rely on local partners to recruit campers, including local Big Brothers/Big Sisters groups, local 4-H clubs, and other after-school programs.

## Family Camp

Another option for a camp format is to have a family camp, the way the Clackamas River Chapter of TU runs their camp in Oregon. One parents attends with every camper, and sometimes, whole families will attend camp together. Adults and youth can learn together!

# 5 Rivers College Outreach Program

## *Engaging College Youth through Service-Learning and Recreation*

Part of Trout Unlimited's expanding Youth Education efforts, 5 Rivers promotes TU's mission on college and university campuses around the country. Tomorrow's conservation leaders are currently enrolled and on their way to becoming the scientists, policy makers, volunteers and anglers who will become tomorrow's Trout Unlimited.

Young adults in college are often eager for the chance to make a difference and engage in the world around them through experiential learning. Fishing clubs and ecology clubs are great partners for TU conservation projects, and sometimes those clubs are even started or led by camp



alumni who are already familiar with TU and its mission. College students looking for alternative spring break plans might be a great streamside work crew. And TU can bring its expertise into college classrooms as guest speakers in ecology, natural resources, and geology classes.

In every case, campus groups can organize around TU's mission and provide students an opportunity to not only learn fly casting and fly tying but to also participate in off-campus volunteer activities on the members' home waters. Students have the chance to join a sponsoring TU Chapter in their region and participate in youth outreach programs such as Trout in the Classroom, First Cast, and kids' fishing days.

In this moment of their lives, young people are making choices about careers, values, and ethics. TU can help college students figure out who they might want to become, and encourage them to sustain TU's work into the future. There are many ways in which young adults can engage with TU.

## **Key Components of TU's 5 Rivers College Outreach Program**

- To organize campus groups around TU's mission and provide students opportunities to learn fly casting and fly tying and to participate in off-campus volunteer activities.
- Students involved in 5 Rivers across the country will be networked together on-line to foster shared angling and conservation opportunities.
- 5 Rivers groups are chartered under the university club system and involve a faculty sponsor and support from either local TU chapter or the state TU council.
- 5 Rivers groups will form the core of a national meeting of college-age conservationists. The meeting will focus on the future of TU and how the organization should evolve to maintain next generation's interest.
- 5 Rivers students will be potential interns for TU field staff and also be able to participate in TU's Trout in the Classroom and Youth Conservation Camps.

## **Participating Campuses in 2011**

Appalachian State University  
Clemson University  
Duke University  
Ferris State University  
Furman University  
James Madison University

St. Mary's College  
University of Virginia  
Virginia Military Institute  
Washington and Lee University  
Western Carolina University  
Winona State University

## **Other Ways to Engage College Students**

### **Youth Corps**

During summers, alternative spring breaks, or semester-long service projects, college students can come to TU projects for service learning. They spend anywhere from one day to a whole season working on our conservation and restoration efforts. Often, these students are members of a conservation organization. For example, through the U.S. Forest Service, TU staff in Idaho recruited a Youth Conservation Corps team to spend three days at project sites. They helped fence and water new trees, to improve the trees' chances for survival. The Student Conservation Association and AmeriCorps have similar teams that may be great partners for TU work.

### **Service Learning for Class**

TU staff in Montana regularly host undergraduate and graduate at various work sites, to help with various aspects of projects. For example, at Little McCormick Stream, students were taught stream restoration concepts and then assisted in vegetative monitoring and assessing percent cover of the newly restored riparian and wetland areas. Students then spread seed, brush, and duff over the restoration site.

## **Independent Study for College**

A University of Montana student is currently processing the collected data and has written a maintenance and monitoring plan for a re-vegetated site as part of his senior project. TU staff also supervise a graduate student undertaking thesis work around fish population.

The Deschutes River Outreach Project has partnered with Oregon State University to offer 4 college credits to students who complete its 30-hour stewardship certification.

## **Guest Lecturing**

Some TU staff persons annually guest lecture in ecology and restoration classes at universities.

## **Alternative Breaks**

TU staff in California organize week-long field trips for students. For instance, the staff “guided a weeklong California Department of Fish and Game-sponsored backcountry trip into the Golden Trout Wilderness with ten college students from around the state. The trip focused on the value of Wilderness areas, golden trout restoration work, monitoring, and fly fishing.” Also, staff have guided “trips into the Meiss Meadows area for college students from Sacramento State University over the summer, focused on the importance of headwaters areas to good water and habitat.”

## **On-the-Ground Project Help**

College students can be available through classes or clubs. Each April, North Carolina’s Stone Mountain Chapter does stream work for one day with a group of Appalachian State students.

## **In Partnership with Other Groups**

On some Montana creeks, TU has partnered with Wildland Restoration Volunteers and Sierra Club members to work with young adults collecting willow cuttings and shrub seeds, and seeding streambanks and floodplains.

## **Help with Youth Education**

The East Jersey Chapter of TU partners with a local college to organize a half-day event for children “which includes the capture and identification of insects, water chemistry experiments, botany, non-point source pollution, fly tying and fly casting demonstration and instruction.”

## **Scholarship Opportunities**

The Behnke Scholarship Fund from Colorado Council of TU gives a grant to one student per year who is pursuing fish biology degree at Colorado State University.

# Public Outreach to Families and Communities

## *Participation in Expos, Festivals, Fairs, and River Days*

TU often staffs booths and/or sponsors activities at events organized by partner organizations, both non-profit and at fly-fishing shows.

TU can be a good neighbor and community member by enriching events organized by partner groups. Furthermore, each event that draws in the public is a new opportunity for TU to share its mission and vision with people who may not have heard it before. TU can reach both youth and those who educate youth, including parents, grandparents, teachers, scout masters, troop leaders, camp counselors, and others.

Tens of thousands of youth who attend fairs, festivals, and expos each year hear TU's messages about the joy of fishing and the importance of conservation.

### At Various Venues

- **Sporting Expos** – The Wyoming Council of TU, the Casper/Grey Reef Chapter, and TU staff participate each year in the Wyoming Hunting and Fishing Heritage Expo in Casper. Over the course of three days, they had 8,000 kids bussed in from schools around the state that attended their two booths. One booth highlighted TU's volunteer activities in Wyoming, and the other was an educational stream trailer on fish habitat.
- **Outdoor Recreation Festivals** – Even in an urban area, fly-fishing demonstrations and conservation booths are of great interest. The New York City Chapter held a casting clinic as part of the Adventures NYC festival in Manhattan's Central Park, so that outdoor enthusiasts of all kinds could learn about flyfishing and TU's mission.
- **Family Fun Days** – The Long Island TU Chapter in New York staffs a table each year at the Cold Spring Harbor Fish Hatchery family fun day, a local hatchery that raises brook trout. There, they share TU's mission and help with the fishing instruction of the day.
- **Agency Seminars** – The Northwest Connecticut Chapter always takes the opportunity at their state Department of Environmental Protection's Outdoor Seminar to share both chapter news and membership applications.
- **Earth Day Festivals** – The Clackamas River Chapter in Oregon participated in a celebrating water event during Earth month. They had a booth about TU's conservation mission and the protect-reconnect-restore concept. This daylong event emphasized clean water habitats and reached school children, ages 6 – 12.
- **Farmers' Markets** – Some chapters find that regular attendance at events helps with their community presence. The Upper Delaware Chapter in New York, for example, regularly

attends their local farmers' market. There, they tie flies and carve trout, and engage in conversation with passers-by about TU's conservation work. Youth will often stop by the booth to see what is going on.

## With Various Demos and Exhibits

Almost every chapter and council takes these opportunities to share their local conservation work and advertise TU membership benefits. But other displays, activities, and demos are what draw the crowds in to hear about TU's mission in the first place.

- **Casting Demos and Instruction** – At local expos, the Snake River Cutthroat Chapter of Idaho hosts a booth and also sponsors a fly-casting area outside. Any young adult who shows interest in TU's work and mission is also encouraged to try their hand at casting a fly rod.



- **Fly-Tying** – New York's Upper Delaware Chapter ties flies and carves trout at their local farmers' market. Once folks are hooked on the craft, members engage with the public in conversation about TU's conservation work.
- **Art Projects for Kids** – At the Kokanee Outdoor Days event, Idaho TU members staffed booths that included activities such as *gyotaku*, Japanese-style fish printing, and kokanee coloring books, in addition to more traditional fly-casting and fly-tying activities.
- **Trout Tank** – The Gary Borger Chapter in Illinois has devised an easy way to display trout fingerlings at fairs and expos. Volunteers describe keeping a small tank with a few fish. It is kept cold by rotating ice packs and aerated through a battery-operated bubbler. Young trout always draw a lot of attention and are great for advertising a TIC program and other youth outreach activities.
- **Macroinvertebrate Pool** – The Mianus Chapter in Connecticut had a special exhibit at the Go-Green Festival in Wilton, CT. They set up a wading pool for aquatic insects and encouraged children to dredge the pool to see what they could find. The volunteers also set up a tank with 12" trout on display.

Sometimes TU Chapters and Councils even organize their own community festivals, in partnership with local agencies, chambers of commerce, other non-profits, community groups, neighborhood associations, etc.