



# Aquarium Resource Guide



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# Overview

Pennsylvania Trout in the Classroom (PATIC) is an interdisciplinary program that focuses on connecting students with Pennsylvania's coldwater resources. The program offers students and teachers the opportunity to observe the lifecycle of trout firsthand while raising them in the classroom from eggs to fingerlings. The PATIC program offers educational connections not only related to the trout life cycle, but also a wealth of additional topics related to PA's Coldwater resources. These topics include, but are not limited to:

- Aquatic Ecology
- Management Practices concerning Conservation and Preservation
- Current and Historical Ecological Threats
- Enhancement Opportunities and Strategies
- Recreational Opportunities

Each PATIC aquarium is unique in that each teacher tailors the program to fit their needs. The program has applications covering environment and ecology, science, mathematics, social studies, language and fine arts, and physical education.

PATIC Story –

## STATEWIDE

Prior to and through 2007, PATIC was an informal program, depending on individual teachers and program partners (e.g. sportsmen groups, local Trout Unlimited chapters). At that time, there were approximately 20-40 teachers implementing TIC on their own. Trout eggs were obtained from local hatcheries either state/private. At that time, formal TIC registration, end of year reports, teacher/program partner workshops, designated release sites for the trout, curriculum connections and a TIC network for teachers/partners did not exist.

Beginning in 2008, PA Fish and Boat Commission (PFBC) partnered with PA Council of Trout Unlimited (PATU) to coordinate and implement TIC statewide. In January of 2008, PFBC hired a Trout In the Classroom Coordinator to coordinate, implement and manage the TIC program statewide. Working directly with TIC teachers, program partners and PA Council of Trout Unlimited's Program Director. Through this unique partnership each organization provides the following key resources to make TIC possible statewide.

- PFBC provides:
  - A TIC Coordinator to coordinate TIC efforts with PATU statewide.
    - Through this position and staff support from several PFBC bureaus, PFBC manages, maintains and provides:
      - Trout eggs, trout food and shipments of the trout eggs and food at no cost to teachers/program partners
      - TIC classroom registrations, end of year reports
      - Designation of agent letters ensuring trout are released into "Stocked Trout Waterways"

- Coordination, training, troubleshooting/curriculum assistance and support for TIC teachers
- Content to PATU staff to upload on PATIC webpage.
- PA Trout Unlimited provides:
  - Coordination, assistance and support for TIC program partners
  - PATIC webpage using content from PFBC and PATU staff
  - PATIC grant program for current TIC participants
  - PATIC t-shirt program to support the TIC grant program
  - Assistance at TIC trainings and egg/food packing days

### VITAL LOCAL SUPPORT

In addition to the statewide support from PFBC and PATU, vital, on-the-ground, TIC implementation relies upon dedicated teachers who choose to bring the program into their classrooms and their, equally dedicated, program partners (*e.g. TU, Conservancies, Conservation Districts, Sportsmen Associations, Watershed Associations, private organizations etc*). These partners provide assistance with aquarium set-up, troubleshooting, release days/other field experiences, connections to local watershed impacts/projects and in some cases assistance with funding.

### THEN AND NOW

Since 2008, the PATIC program has grown from 90 participants to over 400. The program continues to grow organically due to dedicated teachers and local program partners.

### TROUT USED FOR PATIC

PFBC provides Rainbow Trout to all registered TIC participants. Below is a short story of types of trout provided historically to PATIC participants, the story the decision in 2019 to switch from Brook Trout to Rainbow Trout in an effort conserve and protect PA's native Brook Trout populations.

In the beginning, PATIC participants would go to a local hatchery and choose the type of trout eggs they wanted to raise in their classrooms. In 2008, with the program gaining more popularity and interest, PFBC began providing trout eggs from one state hatchery to streamline the PATIC program's source of eggs, shipment process, fish health and direct where the trout were allowed to be released (*e.g. Stocked Trout Waters*). The trout of choice, in 2008, was the Brook Trout.

Over the next few years, PFBC continued to provide Brook Trout (*Salvelinus fontinalis*) as the "TIC Trout"; however, in 2016-2019 biologists began to receive increased angler reports of gill lice being found on Brook Trout, not only in stocked waters, but also in native trout waters. This type of gill lice is "host specific" to the Char family, as a result, PFBC made a proactive decision to decrease Brook Trout stockings statewide.

This approach is part of an ongoing management strategy to minimize conflicts between hatchery Brook Trout and PA's Native Brook Trout populations. Implementation of this approach began within the PFBC hatchery system, then rolled out to PFBC's Cooperative Nursery Program and is now keying into the TIC program.

# *Acknowledgments*

*Pennsylvania Trout In the Classroom program is provided to teachers through a partnership between Pennsylvania Trout Unlimited and Pennsylvania Fish and Boat Commission.*

The PATIC Aquarium Resource Guide is a compilation of classroom incubator techniques and ideas shared among schools throughout the United States.

Portions of the following publications were adapted or directly referenced throughout this resource guide.

- New Jersey Department of Environmental Protection, Division of Fish & Wildlife And NJ Chapters of Trout Unlimited, 2005 ---**New Jersey Activity Guide and Reference for Teachers** (*Activity guide modified from New York State Trout in the Classroom*)
- Smith, Less; Nevada Department of Wildlife, fourth edition January 2006 --- **Nevada Department of Wildlife Trout In the Classroom Curriculum Resource Guide**
- Virginia Trout Unlimited, 2008 --- **Trout In the Classroom, “How to Raise Virginia trout”**

Pennsylvania Fish and Boat Commission biologists, hatchery managers and members of Pennsylvania Trout Unlimited also provided key information for this resource guide. The guide is subject to change as the Pennsylvania Trout In the Classroom program continues to grow, new technologies and techniques become available.

*Our gratitude goes to the dedicated Pennsylvania teachers and volunteers who are implementing TIC across the state and who continue to share their knowledge and expertise.*

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