



PENNSYLVANIA TROUT IN THE CLASSROOM



How do your trout get to your classroom?

The following stages describe what happens “behind the scenes” to provide TIC participants with eggs each year.

STAGE 1:

Benner Spring State Fish Hatchery

Located in State College, Pennsylvania, Benner Spring State Fish Hatchery is the source of Pennsylvania’s TIC trout. Benner Spring State Hatchery is one of 15 Pennsylvania Fish and Boat Commission (PFBC) owned and managed hatcheries.

STAGE 2:

Collect brood brook trout

At spawning age (2-3 years old), male and female brook trout are collected by hatchery staff.

STAGE 3:

Brood brook trout in holding tank

Adult trout are placed in a holding tank for easy access during the spawning process.

STAGE 4:

Taking eggs

A fish culturist massages the eggs out of a mature female brook trout. This process does not hurt the fish.

STAGE 5:

Egg fertilization

After eggs are taken from the female, sperm is massaged out of the male brook trout onto the eggs. The culturist allows the sperm and eggs to sit for 5 minutes, providing time for fertilization.

STAGE 6:

Rinse eggs (green egg stage)

Fertilized eggs are rinsed in .9% saline solution to remove excess sperm and other organic products (feces, mucus). The excess organic material will soak up the iodine solution used later. Newly fertilized eggs are called green eggs.

STAGE 7:

Drain water from eggs

Water is drained from the fertilized eggs in preparation for the next stage.

STAGE 8:

Egg treatment (egg hardening)

A rinse of water (one gallon) and active iodine iodophor (1%) is prepared to remove harmful bacteria from fertilized eggs. Eggs remain in the rinse for 10 minutes. The rinse helps prevent death and/or spread of disease. Eggs harden after 2 hours.

STAGE 9:

Incubate eggs (egg development)

Hardened (impenetrable eggs) are placed in secure, dark incubation chambers. Embryos develop without disturbance for 29 days. At this stage, prolonged bright light can kill the eggs.

STAGE 10:

Pack trout food

During the last week of incubation, Trout Unlimited (TU) volunteers and PFBC staff measure and package trout food. The trout food is a combination of vitamins, minerals, and proteins to ensure healthy growth.

STAGE 11:

Add water & eggs to bag

Eggs are shipped as eyed eggs (eyes are visible in each egg). Eyed eggs are sorted by hand or by a sorting machine. A sorting machine uses technology to “grade” eggs, discarding those that are not fertilized. Healthy eggs are placed into a plastic bag containing water.

STAGE 12:

Add oxygen to bag

Oxygen is pumped into each shipping bag to increase dissolved oxygen levels for travel. Added oxygen ensures the health of each egg.

STAGE 13:

Close & secure bag

Bags are secured with castrator bands and duct tape to prevent any oxygen loss.

STAGE 14:

Place ice pack, food & eggs

Eggs are packaged in insulated shipping boxes with trout food and ice packs. The ice pack keeps the water cool, a necessity for brook trout.

STAGE 15:

Take eggs to shipping center

Labels are placed on shipping boxes. Egg boxes are taken to the shipping center. Eggs are shipped to each classroom the same day.

STAGE 16:

Trout eggs arrive!

Each classroom has all of the elements to raise trout and observe their life cycle. Upon arrival, TIC students, teachers and volunteers transfer them safely to their aquarium and begin the adventure of TIC!