



# EarthWatch Rhode Island



**Topic: Salmon in the Classroom**

**Date: February 29, 2008**

**Location: Cranston Area Career & Technical Center**

Students in 30 Rhode Island middle and high schools will raise Atlantic Salmon in their classrooms and release them into the Pawcatuck River this spring. The program - *Salmon in the Classroom* – compliments DEM’s salmon restoration efforts and introduces youngsters to aquaculture and inspires them to become stewards of their environment by learning about local waterways and water quality issues.

The Atlantic Salmon is an anadromous fish - one that spawns in fresh water but spends much of its life at sea. Atlantic Salmon was one of the many anadromous fish abundant in Pawcatuck River prior to the Industrial Revolution. However, over-fishing, construction of dams impassable to migrating fish and municipal industrial pollution virtually eliminated Atlantic Salmon from the river in the early 1700’s.

Since the collapse of the textile industry in the 1950’s, less waste and more stringent pollution discharge regulations have dramatically improved water quality in the Pawcatuck. And, removal of some dams and the installation of fish ladders have restored fish runs. The Pawcatuck River can once again support Atlantic Salmon.

Since 1969, DEM has been stocking the Pawcatuck with fry, parr, smolts, and adults in an effort to restore Atlantic Salmon to the watershed. While there have been returns of adults to the freshwater streams, there has been little evidence of a self-sustaining population. DEM’s Aquatic Resource Education Program (ARE) began *Salmon in the Classroom* to boost restoration efforts.

## The Life Cycle of the Atlantic Salmon

Starting out as small eggs, they hatch and begin their journey. They spend a couple of years in the streams and rivers growing from small alevin to parr to juvenile smolts. At the mouth of the streams and rivers, the smolts school together and prepare for their trip into the ocean. During this time, their bodies change to adapt to the seawater. The young adult salmon then head out to sea and spend several years swimming in the ocean. When fully mature, they will swim back to their original stream or river where they re-adapt to the freshwater. They swim back up the stream to reach their spawning grounds, sometimes swimming up rugged rapids and even leaping over waterfalls. Once back to their natal stream, they breed and lay their eggs. After spawning they generally die within a week, fertilizing the stream and creating a nutrient-rich environment for the new infant salmon that are about to hatch.



Introduced to Rhode Island by the Connecticut River Salmon Association, *Salmon in the Classroom* has been an effective and exciting learning tool for Rhode Island schools. It is a multi-disciplinary program that combines classroom learning with hands-on field trips to the Pawcatuck River Watershed. DEM trains the teachers and lends each school the equipment necessary to construct an incubator system for the salmon eggs.

Teachers have begun introducing their students to the program and the students are preparing the incubation tanks for the egg arrival this week. Each class hatches the eggs and raises them to the fry stage. While the eggs are hatching and developing into fry, teachers present classroom lessons from salmon biology and ecology to the history of Rhode Island's Industrial Revolution.

In April, students will assess the area of the Pawcatuck where their salmon fry will be stocked, performing a series of chemical and biological monitoring techniques. In May, the students will stock the fry into the Pawcatuck River or one of its many tributaries.



Students from Cranston Area Career and Tech explain the hatching process to Channel 10's R.J. Hiem

The program began five years ago and to date over 10,000 Rhode Island students have been involved in *Salmon in the Classroom*. The program is funded by a Federal Aid Project F-42-E grant derived from the Wallop-Breaux Act – Sport Fish Restoration Fund.

#### **Interviews:**

- Kimberly Sullivan, Aquatic Resource Education Coordinator, DEM Division of Fish and Wildlife provided an overview of the *Salmon in the Classroom* program.
- Len Baker, Aquaculture Teacher, Cranston Area Career and Tech talked about his experience teaching the *Salmon in the Classroom* program.
- Students provided information on what they have learned about Atlantic Salmon and the watershed.