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## SPECIES PROFILE



Here in the *Topsail Times*, we will challenge your research skills each month with a species profile. In each issue, we will publish an image of a Hudson River animal, and ask you to supply the species, common name, habitat, diet, geographic range, and life cycle of this animal. Clearwater's Fish Key is a great tool to use for this exercise! The next edition will have the answer, and a description of the animal written by one of our educators. See if your description matches ours, and if we have left out any interesting facts you might have found!

**This month's bonus question:** What do they call this species in the Chesapeake Bay? Find out and compare your answers in the next *Topsail Times*!

-Eli Schloss

CLEARWATER'S

# TOPSAIL TIMES

*Informing the Next Generation  
of Environmental Leaders*



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## STUDENTS HELP PREPARE *CLEARWATER* TO SAIL

Imagine what it would be like to see the great Hudson River Sloop *Clearwater* out of the water, surrounded by ice and snow, with her hull, the rigging and main cabin taken apart. This month, 15 lucky fourth and fifth graders joined our winter crew to do maintenance on the sloop. This was *Clearwater's* fourth Junior Winter Apprentice Program, where students spend time working with the shipwrights who are rebuilding *Clearwater* and learn about the inner workings of a big wooden ship. Here is what the students did:

- They helped the winter crew **service blocks**. This is a fun process of taking apart, cleaning and reassembling EVERY pulley onboard the ship, then they get to test out some pulleys to see how this simple machine makes a sailor's work easier.
- They made baggywrinkles. *Baggywrinkle* is a funny sailor name for the soft fuzzy things that protect our sails from rubbing against metal rigging. To make them, students will learn some knots and carefully tie pieces of a strong fiber called manila into furry balls that look like hamsters which will spend years up in the rigging as we sail the Hudson River.
- They also cleaned bilge weights. *Bilge weights* are the heavy metal or stone pieces that weigh down a ship and keep her stable as she sails through the water. *Clearwater* is a well-built ship that holds LOTS of cargo or passengers but needs extra weights way down in the bottom of the boat to keep her well balanced.

We are very excited to have invited this year's Junior Winter Apprentices to our brand new winter Home Port in Kingston, NY where they helped get *Clearwater* ready for her busy sailing season!

-Maija Niemistö



Above: The sloop *Clearwater* is spending the winter out of the water, on top of a barge on the Rondout Creek in Kingston.



Above: Making baggywrinkles!

Below and left: 2013 Junior Winter Apprentices servicing blocks.



Send us your pictures and stories about *Clearwater* and the Hudson River!

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# Running the Hudson River Gauntlet

Many cultures throughout history- including the Romans and some Native American tribes- would sometimes force captives to “run the gauntlet”. This usually meant walking past a line of warriors who were free to strike the captive with a stick or club as a way to test their courage. During the spring spawning season in the Hudson River, many fish swim through their own kind of gauntlet, where the warriors are predators, power plants, pollution and fishing fleets. Why go through the danger of swimming all the way upriver simply to lay eggs? This strategy, called diadromy, is used by many kinds of fish, including eels (they are born in the ocean and spend their adult lives in the Hudson). For fish like American shad, river herring, Atlantic sturgeon and striped bass, returning to the place where they were born can be worth the risks. For one, the Hudson is stocked with the food that their newly hatched larvae will eat: plankton. For another, the Hudson offers favorable conditions for juvenile fish to thrive before their return trip to the ocean.

The return of the fish each spring means there is a lot of food available for many kinds of animals such as herons, eagles, cormorants, otters, mink and other wildlife. At one time, this resource was a bounty for people too, but times have changed. Once the featured menu item at many riverside festivals, American shad numbers have declined sharply over the past decade. Shad have been a popular sports fish and once supported a thriving business, but now all shad fishing has been shut down. Atlantic sturgeon, known as Albany beef during the time of the Dutch settlers, have seen their numbers shrink to less than a thousand spawning adults in the Hudson. While striped bass numbers remain strong, health advisories warn against eating them because they are contaminated with PCBs, a toxic chemical. PCBs are now being cleaned up in the Hudson and we hope the fish will be safe to eat in the near future.

The return to the Hudson has become more like running a gauntlet for fish. It's not enough to avoid predators. There are the cooling water intakes of power plants like Indian Point, sucking in huge volumes of water and killing hundreds of millions of fish, fish larvae, and eggs. There are the offshore fishing fleets, whose nets capture shad before they even get a chance to enter the river. And the once excellent Hudson River spawning habitat has shrunk, lost to navigational dredging that deepened the channels but filled in the shallows. Add in a few invasive species, like zebra mussels that compete for plankton as well as some sewage from overwhelmed wastewater plants, polluted storm water runoff, obsolete dams blocking fish passage on the tributaries, and the stress of rising water temperatures and you have a recipe for a fisheries crisis.

What can be done? The first line of defense involves getting the information we need so we can truly understand what is happening in the ocean and the river. Supporting the scientific research is important so we can help protect the fish. This research involves tagging fish with trackers, monitoring herring runs, putting observers on fishing boats, and sampling fish as they return to spawn in the spring. It includes citizen science projects, like the Hudson River Estuary Program's eel monitoring project that involves students catching and measuring “glass eels” in the Hudson's tributaries.

We all want fish to thrive in the Hudson. The trip they have to make each spring is already dangerous enough. We need to make it easier not harder, for them to succeed if we want the Hudson to be a great place for fish in the future.

—Dave Conover

## What can kids do to help the fish in the Hudson? Lots!

- If your family eats fish, tell your parents to look for seafood that has been sustainably fished. You can look for the ‘certified sustainable seafood’ label at the grocery store!
- Don't litter! If you live in a river town, trash dropped on the ground can make its way into the Hudson River and the ocean, where it can cause real problems for fish.
- Learn about the fish in the Hudson River, and share what you learn with your friends and family. Knowing more about the animals who live in the Hudson can help people make smart choices to take care of them.
- Get involved in your community to help protect your local watershed!

Top right: River herring

Bottom right: Dave with a striped bass

Below: Look for this label to know that you're buying the right kind of fish!



## Glossary

<b>BILGE</b>	-the space between the sole boards and the hull
<b>HULL</b>	-the main body of the vessel from the rail down to the keel
<b>LARVA</b>	-a distinct phase of development that many animals (such as insects and amphibians) pass through on their way to adulthood
<b>PLANKTON</b>	-any organism that lives in the water column and cannot swim against a current
<b>PULLEY</b>	-a wheel on an axle that supports the movement of a cable or belt. As simple machines, pulleys are used to lift loads and apply forces.
<b>RIGGING</b>	-the gear on a boat constructed to carry out the vessel's operations. On a sailboat, this refers to almost everything above the deck.
<b>SPAWNING</b>	-to deposit eggs in order to reproduce