

# CLEARWATER'S TOPSAIL TIMES

Informing the Next Generation  
of Environmental Leaders



October 2012  
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The *Topsail Times* is designed and edited by Catherine Stankowski, and written by Clearwater's Education Staff

## FIVE THINGS YOU CAN DO TO HELP THE HUDSON THIS FALL

School's back in session and it's time to get learning and have some fun. Maybe you sailed on *Clearwater* or the *Mystic Whaler* this year, or had a field trip to the Hudson's shore with our Tideline program. The trip is over and there are lots of things you can do to help the Hudson. Check out these top five:

1. **Plant a tree.** Trees provide shade, help store water, and are home to many animals. Trees help cool the land and prevent erosion.
2. **Use less plastic.** You may remember that the Hudson is connected to the ocean. Whatever gets dumped on the land, can get washed into the river and eventually into the ocean. Plastic waste is a nuisance. It pollutes the water and can harm wildlife. Make sure to recycle and always bring a cloth bag to the store so there is less demand for plastic bags.
3. **Save water.** Drinking water is a precious resource. Remember to turn off the faucet when brushing, and ask your parents about getting a low-flow toilet and showerhead. A fun project can be to create a rain barrel that captures rainwater that can be used later for gardens, houseplants, and lawns.
4. **Save energy.** We want to do all we can to slow down global warming. Find ways to help be more energy efficient. Turn off that energy eating television, computer or video game and get outside for a bike ride, hike, swim, or canoe trip. A cooler Hudson River will thank you!
5. **Stay connected with Clearwater!** Check out our Education Blog updates, and ask your parents to check our facebook page for more information on the Winter Open Boat Days and other events throughout the year!

-Dave Conover

## SPECIES PROFILE

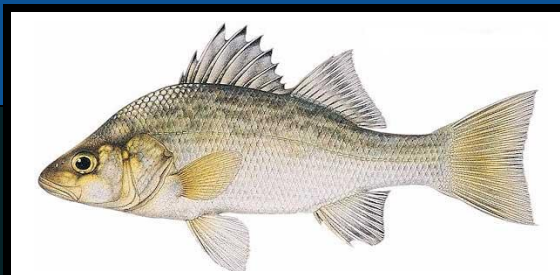
Here in the *Topsail Times* we will challenge your research skills with a species profile. In each issue, we will publish an image of an Hudson River animal, and ask you, the reader to supply the species, common name, habitat, diet, geographic range, and life cycle of this animal. The following edition will have the answer and a description of the animal by one of our educators. See if your description matches and if we have left out any interesting facts you might have found.

Use a dichotomous key (like *Clearwater's Key to Common Hudson River Fishes*) and other resource materials to identify each species. Good luck!

-Eli Schloss

Right, this issue's  
identification challenge!

Hint: Note the spiny dorsal fin



Sea chanties are work songs that were sung by sailors onboard tall ships as they worked. Singing together helped them to keep the same rhythm while hauling on lines- and singing together helps us to do the same thing to this day onboard the sloop! Why do you think it's important for everyone to keep the same rhythm while working?



*The Poughkeepsie Whaler*  
- Jean McAvoy

Can you feel the sea breeze?  
Can you see the great tail?  
This ship has been roaming in search of the whale.  
And tho we've returned to this arm of the sea  
The smell of the ocean's still clingin' to me.

Well then I'm bound for Poughkeepsie  
Well then I'm headed for home  
Well then I'm bound for Poughkeepsie  
Well then I'm headed for home

Well hello Father Hudson it's good to be home  
I've headed upriver to seek out my own  
And with luck by tomorrow my loved ones I'll see  
Where the reach of the ocean is too far from me.

Well then I'm bound for Poughkeepsie  
Well then I'm headed for home  
Well then I'm bound for Poughkeepsie  
Well then I'm headed for home.

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

Hudson River Sloop Clearwater, Inc. Attn: Topsail Times  
724 Wolcott Ave., Beacon NY 12508 tel: 845-265-8080

## DEEP THOUGHTS: SOUNDING DEVICES PAST AND PRESENT

In a river like the Hudson that ranges in depth from a few feet to a whopping 216 feet at its deepest point, captains have always needed to know how deep the water is and what kind of bottom the waterway has so that their boats don't get damaged or stuck. Historic sounding devices could only collect limited amounts of information about water conditions. But modern sounding devices, like the HRECOS sonde onboard *Clearwater*, can do much more than that.

**Old School Sounds:** "Sonde" is a French word for "sounding line", the original device sailors used to test depth and sample the bottom of water bodies. A sounding line (or "lead line" as it's called on *Clearwater*) was made of a heavy object tied to a long rope. This rope would have 'marks' tied at specific distances, so it was easier to measure. Sailors would measure depth by seeing how much rope it took to get the lead to the bottom. They would take a sample of the bottom material by adding tallow (animal fat) to the lead piece and hoping some rocks, sand, or shells stuck to it. All this helped sailors find out where it was safe to sail!

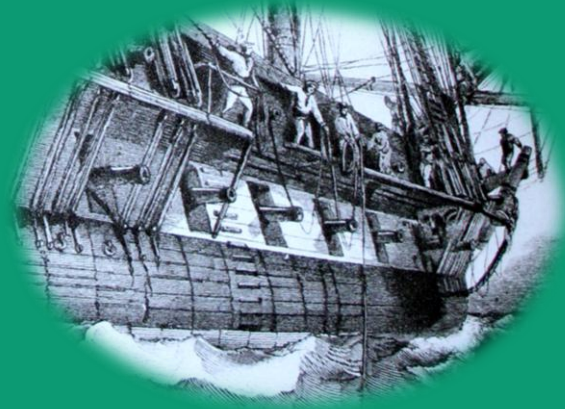
**Modern Sounds:** *Clearwater* is equipped with two different sounding devices. One of our sounding devices uses echolocation, like bats do. Our sonar depth sounder tells us how deep the water is by broadcasting sound waves and measuring the reflected sound waves from the bottom of the river. Our other sounding device is the HRECOS sonde, and it tells us the temperature, turbidity, salinity, and dissolved oxygen levels in the water, and tracks the boat using GPS.

**HRECOS and Hurricanes!** In 2011, Hurricane Irene threatened to do damage to New York State. Though it was eventually downgraded to "Tropical Storm Irene", it still did plenty of damage. There were high winds and lots (and lots) of rain, and the flooding and erosion were substantial. The significant amount of erosion meant there was a lot more sediment in the water, making the water much murkier. This HRECOS "story" uses air and water quality monitoring stations (run by HRECOS and USGS) and satellite photos from NASA to follow the impact of Irene.

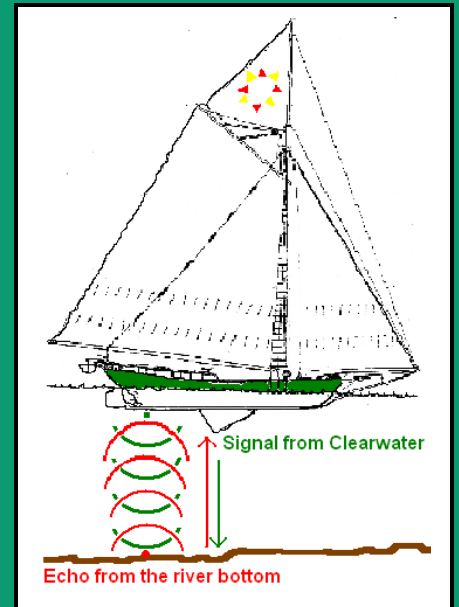
**Check it out!** Go to the HRECOS homepage at [www.hrecos.org](http://www.hrecos.org) and click on "HRECOS Stories"! What was Irene's effect on the salinity of the river? How about the depth and tides? What does that data say about turbidity\*?

\* = Murkiness is actually studied by scientists AND is one of the parameters that the *Clearwater* sonde measures!! Turbidity affects how deep light penetrates into the water, and affects how plants grow and fish see!

-Tom O'Dowd & Catherine Stankowski



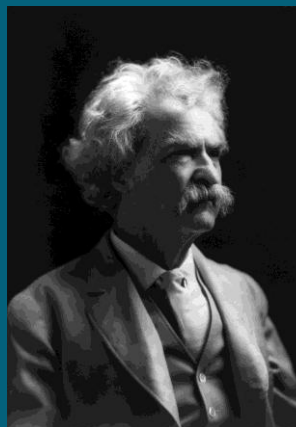
Above, sailors aboard a 19<sup>th</sup> century frigate use sounding lines to determine the water's depth.



Above, *Clearwater's* depth sounder uses sound waves to measure how deep the water is.

### GLOSSARY

<b>EROSION</b>	the gradual wearing away of soil by water or wind
<b>FATHOM</b>	a unit of measurement equal to 6 feet, usually used in marine measurement
<b>SALINITY</b>	the concentration of salt in the water
<b>SONAR</b>	<b>SO</b> und <b>NA</b> avigation <b>R</b> anging- a method of using echolocation to locate objects under water
<b>TURBIDITY</b>	the cloudiness of the water due to plankton, sediment and other floating particles



### FUN FACT:

Samuel Clemens, the famous author of *The Adventures of Tom Sawyer* and *The Adventures of Huckleberry Finn* is better known by his pen-name, Mark Twain.

'Twain' is an old word meaning 'two', and Clemens chose the name after having worked on Mississippi river boats. The safe depth for boats on that river was two fathoms, and the sailors using the sounding line to measure the water's depth would call out 'By the mark twain!' meaning that the water was at the two fathom mark on the sounding line, and that the ship could proceed safely.