

CLEARWATER'S

TOPSAIL TIMES

Informing the Next Generation
of Environmental Leaders



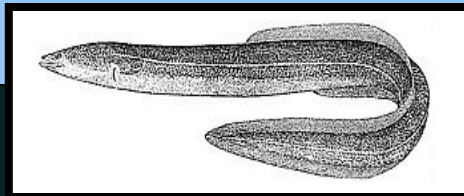
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The *Topsail Times* is designed and edited by Catherine Stankowski, and written by Clearwater's Education Staff

SPECIES PROFILE



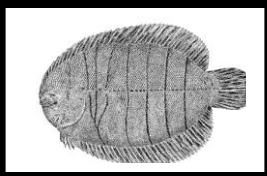
Above, this month's identification challenge!

Did you figure it out? Last month's species was the American Sole (*Trinectes maculatus*), better known by its common name: the Hogchoker. This flatfish lives in the brackish areas of the estuary. It lives on the bottom, or benthos, preferably in the soft sand or mudflats. In its habitat, it sifts through the sands where it finds worms and other invertebrates to eat. The species' entire range is from Massachusetts to Florida and the Gulf of Mexico to Panama.

Its life cycle begins as an egg in late spring, which is fertilized while freely floating in the water column. Once the egg hatches, the planktonic larvae drift upright with eyes on both sides of its body and small pectoral fins. At around 34 days, its left eye begins to migrate around the top of its head! That's not the only change: the pectoral fins are absent in the adult hogchoker, and it begins to swim as a flatfish with both eyes on the right side of its head, and finds its home in the bottom of the river.

It is well camouflaged as an adult- Not only on the "up-side", which is mottled and can change to blend in with the sand and mud, but it is also lightly colored on the underside to blend in with the surface of the water when viewed from the river bottom looking up. This is called counter-shading. Good luck with this month's identification challenge!

-Eli Schloss



Left, the noble Hogchoker, last month's identification challenge!

To expand your knowledge of the Hudson River and Clearwater, fill in the answers to these 10 clues with one letter for each line or circle. When you have completed this word puzzle, the answer to "Where does the river meet the sea?" will appear vertically in the circles!

1.	-----	○	-----
2.		○	-----
3.		○	--
4.	-----	○	-----
5.		○	-----
6.		○	-----
7.		○	-----
8.		○	-----
9.		○	-----
10.	"-----	○	!"

WHERE THE RIVER MEETS THE SEA

CLUES :

1. Where does the Hudson River begin?
Hint: The headwaters
2. This river is named after what sea captain and explorer?
3. What mysterious Hudson River fish begins and ends its life in the Sargasso Sea?
4. What is the name of the famous banjo player who founded *Clearwater*?
5. What is the biggest sail aboard *Clearwater*?
6. What is the name of *Clearwater's* sister ship? -Hint: The Schooner
7. What endangered Hudson River fish can grow to 14-feet long?
8. Into which ocean does the Hudson River flow?
9. What do we use to steer the sloop *Clearwater*?
10. What command does the mate or captain give students to pull up the sails?

-Maija Niemistö



FISH LOG

Left, students get ready to help deploy the net so we can go fishing

We use our otter trawl net to go fishing almost every time we sail. Don't worry: We return everything we catch to the river once we've had a chance to show students! We keep track of everything we catch, because that information is important in understanding the status of fish populations in the Hudson River. We started the 2012 sailing season on April 23rd. Here's what we caught onboard in April!

Anchovy	2
Blue Crab	3
Herring	1
Hogchoker	5
Killifish	44
Rock Crab	1
Sea Horse	1
Shrimp	52
Silverside	4
Spotted Hake	59
Spot-tailed Shiner	10
Sunfish	1
Tomcod	121
Unidentified Juvenile	35
White Perch	4

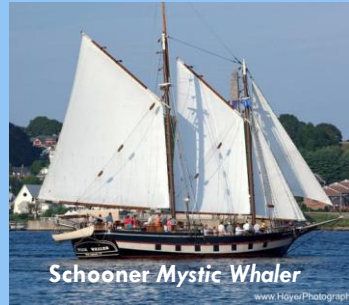
A TALE OF TWO TALL SHIPS

For almost 20 years, the schooner *Mystic Whaler* has joined the sloop *Clearwater* in the Hudson River's springtime waters. Some of you reading this newsletter will have the chance to sail with the captain and crew of the *Mystic Whaler*, and some of you will sail on *Clearwater*. Either way, you're in for an unforgettable experience sailing on a tall ship!

The *Mystic Whaler* is a schooner, which means that it is a fore-and-aft rigged sailing vessel with more than one mast. *Clearwater* is a sloop, which is a fore-and-aft rigged sailing vessel with one mast. The *Mystic Whaler*, when not sailing in the Hudson River, sails the Long Island Sound, and into the Atlantic Ocean to get to the Chesapeake Bay. *Clearwater* has only been out of the Hudson twice: When the ship was launched in Maine, and to lobby for the passage of the Clean Water Act in Washington D.C. in the early 1970s.

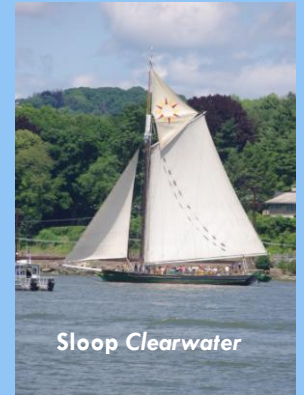
Apart from the number of masts, can you see any differences between the boats by looking at the pictures and reading their specifications? Why do you think these boats were designed differently? Can you think of any advantages their different designs might give them? Be sure to check your answers with the captain or a crew member when you come onboard!
-Catherine Stankowski

Schooner *Mystic Whaler*
Launched: 1967
Rig: Gaff-rigged schooner
Length (w. bowsprit): 110'
Length on deck: 83'
Draft (minimum): 7'6"
Beam: 25'
Rig height: 90'
Hull type: Steel



Schooner *Mystic Whaler*
Photo above: Hoyer Photography

Sloop *Clearwater*
Launched: 1969
Rig: Gaff topsail sloop
Length (with bowsprit): 106'
Length on deck: 76'6"
Draft (minimum): 6'6"
Beam: 24'
Rig height: 108'
Hull type: Wood



Sloop *Clearwater*

TRACING THE WAKE USING THE HRECOS SONDE

Once again, it's time to solve a puzzle using the HRECOS sonde onboard the *Sloop Clearwater*! On 4/30/12, *Clearwater* sailed out of the 79th Street Boat Basin in New York City- twice! We typically do three-hour sails every weekday during the spring sailing season. You can see the path(s) *Clearwater* took on 4/30 on this map.

The map on the right shows us evidence of the two different methods of operating the sloop—sailing and motoring. When the boat is motoring, the captain can drive it in a relatively straight line, even if he is driving against the wind or the current. Can you find the places where the captain was motoring?

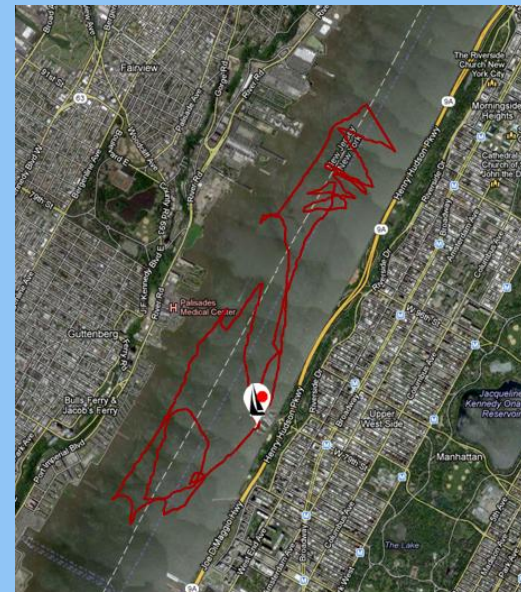
When the boat is sailing, the captain must move the boat using the wind, whatever direction it comes from. This requires a technique called 'tacking', which means changing the angle between the boat and the wind. When a boat is tacking, it ends up making a zig-zag formation across the water. Each 'zig' and each 'zag' is called a tack. Look at the map again. Can you find the places where the captain was tacking?

The incredible thing is that students were "at the helm" (operating the tiller) for each one of those tacks! Every student that comes aboard gets to meet the captain and, on sunny calm days like 4/30, every student gets to steer using the tiller.

What happens to the boat during a tack? The captain yells "ready about!" and the students at the tiller push it from one side of the boat to the other. Everyone else prepares for the jib and mainsail to swing from one side of the boat to the other. The jib bangs around on the jib horse and the mainsail swings over everybody's head, snapping into place out over the water.

Are you excited to go sailing? Keep checking out HRECOS and tell us what you find!

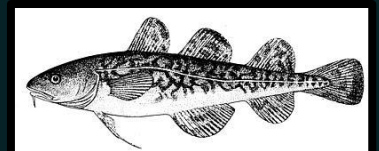
-Tom O'Dowd



BONUS QUESTION!

Looking at the Fish Log on page 1, why have we been catching so many tomcod (*Microgadus tomcod*)?

Do some research and generate a hypothesis!



Hint: The tomcod we have been catching have all been juveniles.

GLOSSARY

- BEAM** the width of a ship at its widest point
- BRACKISH** a mixture of salt and fresh water
- DRAFT** the minimum depth of water a ship or boat can safely navigate
- JIB** the sail located forward of the mast; a staysail
- MAINSAIL** the sail, usually the largest, that attaches to the main mast
- RIG** the gear on a boat constructed to carry out the vessel's operations: on a sailboat this refers to almost everything aloft

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

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