

# Southhold LOCAL

Peconic River is turning brown with dense ‘mahogany tide,’ algal bloom blamed in last year’s massive fish kills



Left: Bunker teeming in the Peconic River Wednesday morning. Right: Water in Meetinghouse Creek yesterday afternoon. *Photos: Courtney Blasl & Denise Civiletti*

**Peconic River is turning brown with dense ‘mahogany tide,’ algal bloom blamed in last year’s massive fish kills**

by [Katie Blasl](#) May 11, 2016,

The algae blamed by scientists for last year’s massive [fish kills](#) is blooming again this spring in the Peconic River— big time.

Marine researchers have been tracking a dense bloom of the algae *Prorocentrum minimum* in the Peconic since the middle of last month, according to Dr. Christopher Gobler of Stony Brook University's School of Marine and Atmospheric Sciences.

The bloom is causing what is known as a mahogany tide, or red tide, and is associated with low oxygen conditions. Marine scientists say it was responsible for the sudden drop in dissolved oxygen levels in the Peconic Estuary last May, essentially [suffocating hundreds of thousands of fish](#).

This year, the algal bloom is turning the waters of the Peconic River and its tributaries a muddy, reddish-brown. It should not, however, be confused with brown tide, which is caused by a different algae and has not been found in any water samples in the Peconic River this year, according to Gobler. The brown tide algae, which decimated the Peconic Bay scallop fishery in the 1980s, has not been found in the Peconic Estuary since 1995.



The Peconic River has turned a muddy reddish brown color over the past several days. This is the water at a dock in Meetinghouse Creek Tuesday evening. *Photo: Denise Civiletti*

The density of this year's mahogany tide algae is so far "virtually the same" as last year's, with more than 125,000 *Prorocentrum* cells per milliliter of seawater measured in a recent sample, Gobler said. Last year's levels were the highest ever recorded in the region.

"There are many fish in the river, so another large kill is a real possibility," Gobler said.

Bunker, also known as menhaden, were reported in the Peconic River in [unusually large numbers](#) this spring about a full month earlier than usual. Due to an unusually warm winter, Gobler speculates some of the fish that survived last year's historic kill may have never left the estuary. The Long Island Coastal Conservation Research Alliance reported that "fish began to die in modest numbers" during the week of April 25, as the *Prorocentrum minimum* algae bloom intensified. Because bay waters are still relatively cool and oxygen levels are relatively high, conditions could worsen in the coming weeks, the group said.



The Peconic River teeming with bunker fish last month. *Photo: Brian Nigro*

Water temperatures are still fairly cool in the Peconic – in the past week, they hovered between 52 and 59 degrees Fahrenheit. But as water temperatures get warmer this month, the amount of dissolved oxygen in the water will decrease. Coupled with a dense algal bloom like the one currently underway, dissolved oxygen levels will fall even lower as the algae sucks up the oxygen from the water.

"[Last year's] scenario is beginning to replay," Gobler said yesterday.

The algal bloom in 2015 began in early May and peaked in the final week of May, when water temperatures climbed from 65 to 74 degrees Fahrenheit. This coincided with a spike in nitrogen levels in the water, following several days of rain that washed nitrogen-loaded runoff — largely from fertilizers — into the river. Algal blooms are fueled by nitrogen, so the mahogany tide grew in intensity and breadth.

This week, there was also a spike in nitrogen levels in the Peconic River, peaking at .31 milligrams per liter yesterday. So far, that's less than last year's peak in nitrogen levels. On May

28, 2015, nitrogen levels reached about .45 milligrams per liter, just below the United States Environmental Protection Agency's threshold for "poor ecological conditions," which is set at .50 milligrams per liter.

Regardless, the levels of mahogany tide found in water samples this week have reached similar levels to last year's peak. "Last year's numbers were virtually the same," Gobler said.



Low levels of oxygen in the Peconic River last summer killed an estimated 300,000 bunker fish, according to a study released by the DEC. *File photo.*

### Long Island's nitrogen crisis

Nitrogen pollution in Long Island's waterways has reached critical levels in recent years. Algal blooms have become annual events in many waterbodies, not only causing die-offs of fish and marine life but also producing harmful toxins that are dangerous to humans, pets and livestock.

Most of that pollution is caused by residential septic systems, which do not remove nitrogen from wastewater before it enters the water table. About 69 percent of nitrogen affecting Suffolk County's groundwater and waterbodies comes from on-site septic systems, according to Suffolk County's Water Resources Management Plan.

That's because an astounding 360,000 homes in Suffolk County use on-site septic systems that do not filter out nitrogen – more unsewered homes than the entire state of New Jersey.

Almost 75 percent of Suffolk County is unsewered, which means those homes and businesses must use antiquated, on-site septic systems. The county is in the process of testing more

advanced on-site wastewater treatment systems, but currently there are not any advanced treatment systems yet approved by the county for residential use.



The Riverhead Sewage Treatment Plant is currently undergoing a \$22 million upgrade that will reduce the amount of nitrogen it discharges. *Photo: Peter Blasl*

Residences and businesses that are located within sewer districts, on the other hand, have their wastewater sent to a local sewage treatment plant, which puts wastewater through an aggressive treatment process that strips it of most of its harmful nutrients, including nitrogen.

Riverhead Town's sewage treatment plant, which discharges treated liquid wastewater to the Peconic River, is currently finishing up a \$22 million upgrade intended to further reduce nitrogen levels of its wastewater. Before the upgrade, the plant was permitted to discharge up to 27 milligrams of nitrogen per liter of wastewater. The plant's new permit standards limit nitrogen levels to 4 milligrams per liter.

"Our last sample result [on April 27] was 3.16 milligrams of nitrogen per liter," Riverhead sewer district superintendent Michael Reichel said today. "The week before that it was 2.3 milligrams per liter."

And that's only with half of the upgraded treatment plant functioning, he added. The second half is still under construction and will be completed this summer, Reichel said.

The upgrade was originally planned to be completed by April 30, but equipment delivery delays required the district to get state approval to extend the construction contract until August. The plant did not need or seek an extension of interim discharge limits which the state made more lenient during the construction period for the winter, when cold waters prevent harmful algal blooms. It is operating under regular standards that, with the upgrade, are more stringent than ever before.

The upgrade, which is being funded by a combination of grants, has been ongoing since August 2014. The plant [exceeded its interim limits](#) in December, when the plant was operating on half

of its old facility during construction, prompting the county health department to issue a health advisory. That was the only incidence of an exceedance, Reichel said.



Keith Davis of Riverhead fishing for bunker for use as shark bait off the downtown dock last May. *File photo: Denise Civiletti*

‘Too many fish’

Though Riverhead Town Supervisor Sean Walter agrees that nitrogen loading and algal blooms contributed to last year’s fish kills, he believes the main cause of the issue was the abundance of bunker fish in the estuary last spring.

“There were so many fish last year that the healthiest estuary couldn’t support them,” Walter said. He said he doesn’t believe the estuary is “all that impaired.”

“I believe we have two separate problems,” he said. “The algae – I get it. But also the high number of fish.”

Walter believes another massive fish kill can be avoided by reducing the number of fish currently in the estuary. Last week, his request to allow greater numbers of bunker fish to be harvested in the Peconic Estuary this year [was approved](#) by the Atlantic States Marine Fisheries Commission, which regulates how many fish can be caught each year.

But commercial fishermen say that bunker fishing is not currently profitable enough to make it worth their while. “The market will only pay 10 cents per pound,” Walter said, “and they say they need 14 cents per pound” to make it worth it.

Walter said he is currently talking with the New York State Department of Environmental Conservation and the Town of Southampton to split the four-cent difference, hoping the state will pay two cents per pound and the towns of Riverhead and Southampton will each pay one cent per pound.



Mahogany tide is causing the Peconic River to turn brown. *Photo: Peter Blasl*



Water from Meetinghouse Creek in a plastic cup yesterday. *Photo: Denise Civiletti*

