

Red tide blooms

[By Kaimi Rose Lum](#)

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High concentrations of Alexandrium cells, which make up the algae known as red tide, were detected recently at monitoring stations in the vicinity of the so-called Outfall Pipe, leading some to say that the outfall may have an exacerbating effect on the red tide and others to maintain that they have yet to find the “smoking gun.”

“Certainly no one is saying or could say that the outfall is the cause of the Alexandrium bloom. It’s a naturally occurring phenomenon,” said Peter Borrelli, executive director of the Provincetown Center for Coastal Studies. “The issue is that the outfall can stimulate the bloom because it’s an additional source of nitrogen, and in fact there does seem to be an outfall effect.”

He added, “I think it’s the first time in which people have openly used the term [‘outfall effect’] relative to red tide.”

According to Borrelli, Alexandrium cell counts of as high as 5,000 cells per liter were recorded last month at outfall monitoring stations — stations set up by the Massachusetts Water Resources Authority (MWRA) throughout Massachusetts Bay to keep an eye on changes in water quality that may be occurring as a result of the outfall. The 9.5-mile-long outfall pipe, or tunnel, discharges treated sewage from the Deer Island Treatment Plant in Boston into the bay north of Stellwagen Bank.

The high counts (anything meeting or exceeding 5000 cells/liter) triggered what is known as an EPA (Environmental Protection

Agency) “exceedance,” a caution or warning level set by the EPA, which is one of the permitting agencies for the Deer Island Treatment Plant and outfall tunnel.

In an interview on Monday, Mike Mickelson, program manager for the outfall monitoring at the MWRA, confirmed that high cell counts had been detected near the outfall — as high as 6,000 cells per liter, even. But no conclusions with regard to an “outfall effect” may be drawn from that information, he said.

“We’re looking hard for that effect, and we haven’t seen the smoking gun yet,” Mickelson said. “We’ve seen some high levels and thought, ‘Huh, that’s interesting.’” But the scientists have to “get into it” and look at other factors, such as nutrient levels and the dynamics of water currents, which could contribute to the spike in Alexandrium cells, he said.

More locally, scientists with the Provincetown Center for Coastal Studies have detected concentrations of Alexandrium in Provincetown Harbor and in the eastern part of Cape Cod Bay in the last week. Stormy Mayo, a senior scientist at PCCS, reported that the counts were in the range of 100 to 150 cells per liter in the east and west ends of the harbor and about 400 cells per liter near the center of town.

Those levels are not high enough to trigger an alert from the state Division of Marine Fisheries, which keeps an eye out for dangerous concentrations of red tide in shellfish. If shellfish with a high red tide contamination level are eaten by humans, they can cause paralytic shellfish poisoning.

“There is no reason to say that it’s dangerous,” Mayo said of the slightly elevated Alexandrium counts in the east and west ends of the harbor. “But it’s a naturally occurring phenomenon and when it’s there there’s no reason to take a chance.”

He added for the record that “this has absolutely no influence on swimming.”

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