Tide’s toxins trouble lungs ashore

BY BETH DALEY
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SARASOTA, Fla. — A massive red-brown algae bloom stretching from the mouth of Tampa Bay to Sanibel Island has been releasing into the air odorless toxins that waft onto beaches with every onshore wind. Red tide occurs nearly every year, but this year’s bloom is unusually persistent, parking itself in coastal waters and failing to dissipate.

Calls about the toxins have poured into hospitals, doctors’ offices, and poison control centers, and some doctors say the current algae bloom is producing more reports of health difficulties than any other red tide they can remember.

“It’s awful — you choke,” said Anne Ouellette, from Brewster, Mass., who was visiting Lido Beach in Sarasota last week with her husband, Lew. “As soon as we got here we started to cough.

Florida tourism officials have long downplayed the human respiratory effects of red tide, in part because exposure depends on shifting winds and the toxins affect some people differently than others. But some results from a five-year, $6.5 million federally funded series of studies by scientists and health officials being published next month show for the first time that the events may be causing significant health problems.

During a three-month 2001 red tide event examined in the study, Sarasota Memorial Hospital’s emergency room admissions for respiratory problems were 54 percent higher for people living along or visiting the coast than during the same time period the next year, when there was no red tide. There was no similar spike inland.

The study also documents that beachgoers with chronic respiratory problems have reduced lung capacity after even a short exposure to red tide, although it’s unclear how long the problems last.

“For years we’ve had anecdotal information this is happening, but you can’t decide public policy on anecdotes,” said Barbara Kirkpatrick, staff scientist at Mote Marine Laboratory in Sarasota and one of the lead researchers of the study, which will be published in a series of seven papers in Environmental Health Perspectives.

She wants state and local officials to develop a visible warning system to alert beach visitors to red tides.

Still, healthy people appear to be affected only temporarily; their watery eyes and scratchy throats can be cured by simply going inside an air-conditioned room or leaving the beach.

Florida’s version of red tide — actually more green-brown in appearance than red — is a different organism from the one blamed for the red tide that appears off the New England coast, which doesn’t produce an airborne toxin and is most dangerous to humans if they eat contaminated shellfish.

First documented in the 1800s, Florida’s red tide is caused by a naturally occurring single-celled organism, “Karena brevis,” and can stretch tens of miles wide and long.

The current bloom is patchy, but stretches about 30 miles north to south and about 20 miles from shore in some places, according to researchers at Mote. For reasons that are not entirely understood, the organism multiplies and accumulates in the Gulf of Mexico almost every year, reaching concentrations that discolor the water with the tiny plants’ pigments.

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The neurotoxin is released when the fragile cells die — and also perhaps when they are smashed in the surf. Red tide does not normally occur on Florida’s East Coast.

This year’s outbreak has killed thousands of fish, many of which could be seen last week speckling the shoreline along the Siesta Key and Lido beaches. At least 44 endangered manatees are believed to have died from exposure to the algae, according to wildlife officials. People who eat seafood contaminated by the neurotoxin can become ill. Still, swimming is allowed and most people report few adverse reactions.

Whether the blooms have been getting worse or are persisting longer is matters of debate among environmental researchers in this state, where tourism is a major industry. Some studies have suggested sewage and other runoff might be to blame. Florida wildlife officials say no evidence exists to show that the blooms are increasing in frequency or lasting longer. “We haven’t seen an increase in the duration or frequency of red tides,” said Cynthia Heil, a scientist with the Florida Fish and Wildlife Research Institute.

State officials also say it’s unclear whether this year’s bloom has caused more medical problems.

Symptoms associated with exposure to red tide’s neurotoxins can mimic the start of a cold, change with variable winds, and affect different people in different ways. Several doctors who deal with red tide complaints say they always see an uptick in emergency room visits and calls during red tide, but that sometimes it can be hard to sort out which complaints are truly related to red tide and which are separate respiratory events.

“Still, I’ve heard about more difficulties this year than any year in recent memory,” said Dr. Terrence Kane, a pulmonologist with Lung Associates of Sarasota who was one of the authors of the emergency room admission study. “There have been bad spells before, but they have been relatively short-lived.”

How best to warn the public about red tide’s respiratory effects is a delicate subject in southwest Florida, where so many people’s livelihoods rely on tourism. Although Florida public health officials have stepped up awareness campaigns in recent years with pamphlets and public service messages that warn people with respiratory problems to stay away from beaches during a red tide bloom, several first-time tourists to the area said they were unaware why they were coughing during a particularly gusty Wednesday night last week on Lido Beach.

Because Florida does not close beaches during red tide events, life-guards often educate beachgoers.

State public health officials say they and Kirkpatrick are developing a pilot program to place beach signs warning about the dangers.

“We do tell people to bring in inhalers if they are asthmatic,” said Tamara Pigott, beach and shoreline project manager for Lee County Visitor and Convention Bureau in Fort Myers. “For most people, it’s a nuisance. It’s not going to ruin their vacation.”

Kirkpatrick, along with Daniel Baden of the University of North Carolina-Wilmington, led investigators on the forthcoming study, said there are still many unknowns about red tide, such as how long symptoms can last and the potential for exposure to cause chronic and immune system problems.

“You feel the effects before we have the ability to measure them. It’s happening at very low levels,” said Baden. His group’s research, funded largely by the National Institute of Environmental Health Sciences with help from the Centers for Disease Control, is under review for another five years of funding. “We still need to learn more.”

Since January, a red tide has been off Florida’s southwest coast, lasting longer than usual.

The phenomenon can kill fish and manatees and can cause coughing and wheezing in humans.

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