

From Environment News Service:

New Center Will Forecast Florida Red Tides

ST. PETERSBURG, Florida, November 14, 2007 (ENS) - A Florida red tide can cause skin irritation and burning eyes among swimmers, and people who are not even in the water cough and sneeze when winds blow its toxic aerosol onshore. The microscopic organism responsible for red tides, *Karenia brevis*, produces a powerful toxin that kills by paralyzing fish, birds, dolphins and manatees.

Now scientists are making a concerted effort to predict when and where red tides will occur.

The University of South Florida, USF, and the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute Tuesday announced the establishment of the Center for Prediction of Red Tides at the university's College of Marine Science in St. Petersburg.

The center will develop, test and implement models to forecast Florida red tide conditions and assist the state's red tide monitoring program.

A five-year, \$1.25 million contract from the institute will help finance the center. USF is matching the state's contribution with a \$400,000 computer cluster along with staff support for the center.

"For the first time, the Center for Prediction of Red Tides will pull together biological, chemical and physical scientific expertise and couple it with advanced computing power to model factors contributing to red tide formation across all appropriate spatial scales," said Gil McRae, director of the Fish and Wildlife Research Institute.

Peter Betzer, dean of USF's College of Marine Science, said, "The same CPR red tide prediction tools can be applied to fisheries management, navigation, search and rescue, and other ocean matters of urban societal concern."

The factors contributing to red tide formation and persistence in Florida are complex. Oceanic currents, nutrients, weather and interactions among numerous marine algae species contribute to bloom conditions.

Nutrients flowing from the Mississippi River may stimulate red tide to grow on the continental shelf off the west coast of Florida some 400 miles away across the Gulf of Mexico, according to a new research model developed by scientists with NOAA, the National Oceanic and Atmospheric Administration.

Working with scientists at Mote Marine Laboratory in Sarasota, Florida, they are now beginning to test their idea with the use of underwater vehicles carrying instruments called "BreveBusters."

They are checking for the presence of *Karenia brevis*, the Florida red tide organism, a marine plankton.

And they have found that even relatively small increases in nitrogen can trigger the red tides offshore.

"We found that the concentrations of nutrients needed to start the Florida red tides is much lower than previously suspected," said NOAA oceanographer and lead author of the paper, Richard Stumpf, Ph.D.

"The hypothesis means that offshore areas should be examined for both small increases in nutrients and modest concentrations of the algae at the start of the bloom season," he said.

The peer-reviewed hypothesis is being published in a special issue on Florida red tide in the journal "Continental Shelf Research."

Since 2004, NOAA has been providing operational forecasts of harmful algal bloom impacts in the eastern Gulf of Mexico. Stumpf's findings are expected to be useful for predictions and for monitoring of these blooms, including variations in intensity between years and regions.

The new Center for Prediction of Red Tides will combine information from multiple sources - red tide monitoring data; water circulation, temperature, salinity and other information; satellite imagery; and models to develop forecasting capabilities for red tide conditions and impacts.

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