

New study shows direct link between the amount of nitrogen entering a system and the duration of red tide

A new study recently accepted for publication may allow us to predict certain aspects about the duration of red tide based on the amount of nitrogen flowing into a system from sources like the Caloosahatchee River. This new study goes one step further than previous studies that have established relationships between the intensification of red tide events and Caloosahatchee River nitrogen loads, which can be traced back to nitrogen loads coming into Lake Okeechobee, as well as links between the red tide event in middle Tampa Bay in 2021 and nitrogen loads associated with the releases from Piney Point. However, this is the first study that quantifies those relationships. In other words, the study determined that 77% of the variability in the duration of red tide events can be attributed to variation in the amount of nitrogen discharged out of the Caloosahatchee River just before, and then just after, the initiation of any red tide event. The study also provides a relationship into which you can plug different nitrogen load reduction scenarios - albeit it needs to be refined further to do this appropriately - to determine what the impacts might be of various water quality projects.



Mouth of the Caloosahatchee River, Credit: South Florida Water Management District

Read the Director's Note

Overall bay health improving although spring algae blooms still persist

In case you missed it, the results are in! The 2023 Sarasota Bay Ecosystem Health Report Card, which measures the health of Sarasota's five bay segments: Palma Sola Bay, Big Sarasota Bay, Roberts Bay, Little Sarasota Bay, and Blackburn Bay, shows that over the past year, the health of our estuary continues to improve. This is a significant water quality improvement compared to the bay's health during 2013 – 2019. This recovery appears to stem from reduced nitrogen loads to our waterways and persists despite the effects of Piney Point in 2021 and Hurricane Ian in 2022.

Year	Palma Sola	Upper Bay	Roberts	Little Sarasota	Blackburn
2006	3.67	3.50	3.50	3.75	3.75
2007	3.00	3.25	4.00	3.75	3.75
2008	3.67	3.00	3.00	3.25	3.25
2009	3.67	3.25	3.25	3.50	3.00
2010	3.67	3.50	3.00	2.75	2.75
2011	4.00	3.50	3.00	2.75	2.50
2012	3.00	3.25	3.25	3.00	3.00
2013	3.67	3.00	2.50	2.00	2.00
2014	4.00	3.50	2.50	2.25	2.25
2015	3.67	2.75	2.00	2.00	2.00
2016	3.67	2.75	1.75	1.75	2.25
2017	3.67	2.75	2.00	2.00	2.00
2018	4.00	2.25	2.00	1.25	1.75
2019	4.00	2.75	3.25	1.50	1.50
2020	4.00	3.00	3.00	2.25	2.00
2021	3.75	3.75	3.75	2.75	3.00
2022	4.00	3.25	2.75	2.25	2.75
2023	3.75	3.50	3.50	3.00	3.25

Sarasota Bay Ecosystem Health Report Card. Higher scores indicate a healthier system.

Explore the report card

Why are there blooms in the bay right now?

As many folks out on the water have noticed, Sarasota Bay is still susceptible to algae and cyanobacteria blooms, especially when conditions are ripe for growth. The mats of *Dapis/Lyngbya* that are now starting to surface are potentially a result of a couple factors:

- Water clear enough for light to reach the bottom of the bay - Sarasota Bay has been quite clear these last few months to years.
- Increasing water temperatures – the bay is now warmer than it was even just a month ago.
- A large nutrient load approximately two months earlier than the bloom onset - These cyanobacteria blooms are visible to most people when they come up to the surface, but that's not where they start their growth phase. Over the last few months, the Sarasota area has experienced quite a bit of rainfall from the 2023 to 2024 El Niño event. Runoff from rainfall is a major source of nutrient loads to Sarasota Bay. The months of December, January, and February had above-average rainfall, while November 2023 and March 2024 had below-average rainfall. These data suggest that there was over two inches more rainfall than the average from December 2023 to February 2024. Does this mean that the above-average rainfall two to three months ago is why we're seeing macroalgae blooms in

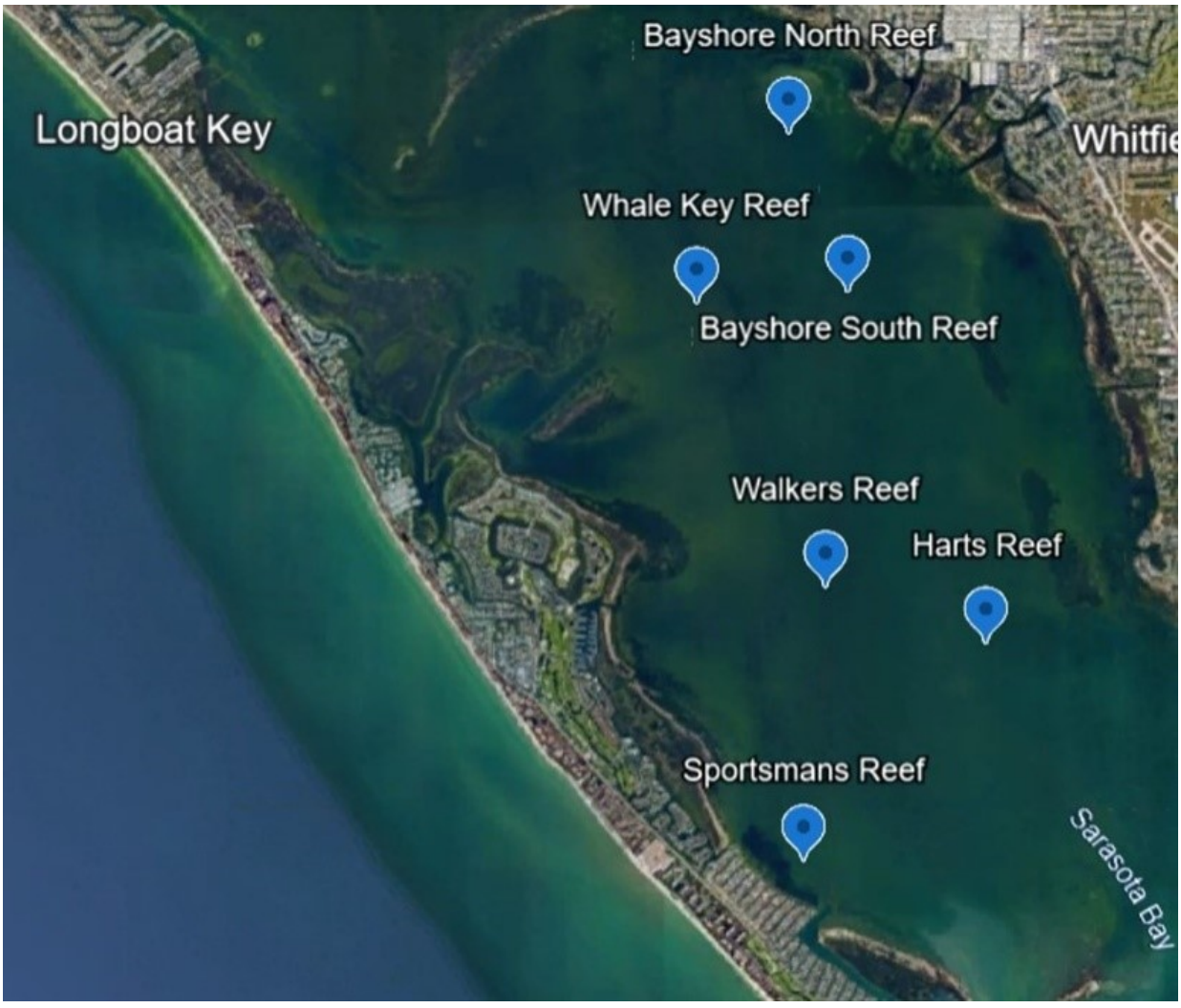
Sarasota Bay? Maybe. Or maybe not.

However, increased macroalgae is also being recorded by researchers in Charlotte Harbor's Coral Creek, and SBEP's fishing guide contacts say that something similar is happening along the Manatee County shoreline of Tampa Bay. So it's not likely related to a localized influence, like a sewage overflow.

Read the Director's Note

New Artificial Reefs Deployed to Provide Habitat for Recreationally and Commercially Important Fish in Sarasota Bay

This past April, SBEP added 24 artificial reef modules to six existing reefs in Sarasota Bay: Bayshore North Reef, Whale Key Reef, and Bayshore South Reef, Walkers Reef, Harts Reef, and Sportsmans Reef. The modules, called deep cover, are designed to attract young reef fish like gray snapper, sheepshead, and gag grouper, during their first two years of life. The deep cover module mimics natural ledges and can hold large numbers of fish, offering safety from predators and humans. The reefs will increase fish survival rates by protecting juvenile fish until they are large enough to move offshore and become part of the adult fishery.



A year-long monitoring effort completed by SBEP, Florida Fish and Wildlife Conservation Commission (FWC), Reef Innovations, and Aptim Environmental & Infrastructure studied the utilization of artificial reefs in Sarasota Bay and concluded that deep cover modules were serving as habitat for recreationally and commercially important fish species. During monitoring efforts, a

diver observed 12 gag groupers in or around a single deep cover module.

“People like Sarasota Bay to be healthy enough to catch fish, this helps them catch fish,” said Dave Tomasko, Executive Director of the Sarasota Bay Estuary Program.

SBEP purchased the new reefs thanks to funding from the Bipartisan Infrastructure Law and a donation from the Sarasota Sportsmens Association.





Read more and watch coverage on **WFLA**, **Your Observer**, **WTSP**, and **Fox13**.

Eyes on Seagrass Citizen Science Program Wraps up Spring Survey

The first survey effort for the 2024 **Eyes on Seagrass** Program wrapped up earlier this month. Roughly 60 volunteers snorkeled at sites across Sarasota Bay to survey macroalgae (aka seaweed) and seagrass. Macroalgae data from this program, along with data on three other indicators, are used to determine the scores in the Sarasota Bay Ecosystem Health Report Card. The Eyes on Seagrass program was originally started in Charlotte Harbor and expanded to cover Sarasota Bay in 2021 in response to a data gap in macroalgae monitoring. We could not do this important monitoring work without the help of all the volunteers. Thank you to our returning volunteers, many of whom have taken time to survey twice a year, every year since the program began, and thank you to our new volunteers for tackling a more technically challenging initiative!







Learn More About Eyes on Seagrass

Welcome Dylan!

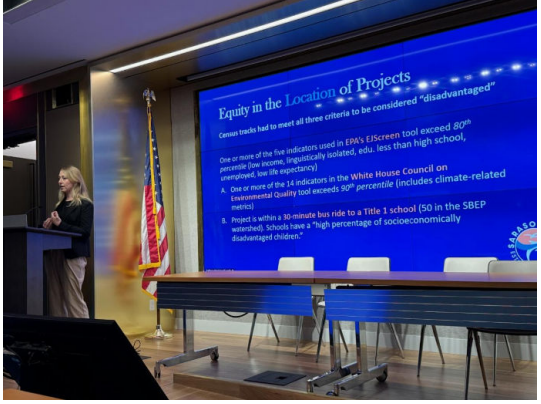


SBEP extends a most excited welcome to Dylan Niner, our new habitat restoration intern! Dylan is part of the Environmental Discovery Awards Program through the Cross College Alliance. He will be helping collate information around 30+ years of habitat restoration and create tools and interactive media to showcase several projects to the public. Dylan is a New College student with a background in marine biology, data science, horticultural and native plant restoration, and communication. His unique skillset and interdisciplinary background offer a well-rounded, holistic approach to his work. He is a self-starter and a great addition to the SBEP team! We are very excited to work with him!

SBEP at National Estuary Program Workshop in Washington D.C.



SBEP's Public Outreach Manager, Megan Barry, and Operations Manager, Heather Moody, attended the 2024 National Estuary Program Training Workshop hosted by the Environmental Protection Agency. The three-day conference, held in Washington DC, aimed at expanding staff understanding of key topics, including climate resilience and implementation of equity strategies. Attendees also discussed administrative and program priorities, lessons learned, best practices, and management needs. Megan presented on SBEP's recent successes regarding community engagement with Sarasota's arts and culture community, nonprofit partners, and Title I schools.



Megan Barry presenting at the conference



Megan and Heather running into a familiar face :) Darcy Young, Director of the Narragansett Bay Estuary Program, formerly SBEP staff

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Volunteers Needed: Bowlees Creek Cleanup

Saturday, June 15 from 8:00 AM - 2:00 PM at Bahia Mar West Marina



Join Suncoast Aqua Ventures, SBEP, and partners for a cleanup of Bowlees Creek followed by a cookout at the marina! Kayaks, paddle boards and small jon boats will be needed.

Register for Bowlees Creek Cleanup

Participants needed for Red Tide Study

PARTICIPANTS NEEDED FOR STUDIES INVESTIGATING FACTORS RELATED TO RED TIDE EXPOSURE AND POLICY SUPPORT IN SARASOTA COUNTY, FL



Red tide bloom in open ocean (NOAA, 2021).

Researchers from the Florida Agricultural & Mechanical University (FAMU) School of the Environment are looking for adult volunteers to participate in research studies through an online survey.

Conducted under the direction of Willis Lyons, M.S. and Michael Abazinge, Ph.D.

Who do we need?

Participants who are 18 years or older

Speak English

Sarasota County Resident

Participants who complete the survey will be entered in a drawing for the chance to receive a $200 Visa Gift Card!

SCAN ME FOR SURVEY

CONTACT FOR MORE INFORMATION:

Phone: 850-599-3350

Email: willis1.lyons@famu.edu; michael.abazinge@famu.edu

This flyer was made possible by the National Oceanic and Atmospheric Administration, Office of Education Partnership Program with Minority Serving Institutions award (NA21SEC48004). Its contents are solely the responsibility of the award recipient and do not necessarily represent the official views of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration.

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Join SBEP's Citizens Advisory Committee

Community input is integral to our mission. The SBEP Citizens

Advisory Committee (CAC) is a group of local individuals who gather six times per year to provide SBEP with input and to help us share information with the public. Our CAC members have a wide array of professional and personal attributes, but they are all tied by their dedication to the health of Sarasota Bay. Interested in joining? Click the button below to learn more or email megan@sarasotabay.org for a prospective member application.

Learn more about the Citizens Advisory Committee

Lights, Camera, Action!

SBEP in the News

Communication is vital to the protection and restoration of the bay. Check out the latest clips and articles featuring SBEP efforts.



Local efforts to combat red tide

"One possible solution, what Tomasko describes as “the magic jet ski,” which is an ongoing project that the Estuary Program is working on with a group in Arizona.'That would be producing ozone that goes into the discharge pipe of the jet ski. That suddenly gets you the volume and the mobility that we think could be a breakthrough,' Tomasko says."



Harmful algae blooms are occurring on the coast of Sarasota Bay

"Sarasota Bay Estuary Program Executive Director David Tomasko said that while it's uncertain whether the algae levels are increasing, they are worse than last year. 'What we seem to have now is a combination of three things,' said Tomasko. 'The water temperature is getting warmer because it’s spring, there’s enough light to penetrate the bay’s surface, and the third thing is there has to be prior nutrient load.'"

Read More SBEP in the News

Jobs & Funding Opportunities

- **Conservation Foundation of the Gulf Coast: Director of Land Protection - Sarasota**
- **Manatee County Natural Resources: Environmental Program Manager - Bradenton**
- **Manatee County Utilities: Water Conservation Outreach and Events Specialist - Bradenton**
- **Mote Marine Laboratory & Aquarium: multiple positions - Sarasota**
- **Tampa Bay Regional Planning Council: Planner/Senior Planner - Tampa**

- **Florida Aquarium: multiple positions - Tampa**

Bite Sized Bay News



Manatee County votes to expand nature preserve along Tampa Bay. What happens next?

"Manatee County leaders voted Tuesday to approve a land purchase that will significantly expand Emerson Point Preserve on Tampa Bay." **Read more**



Plymouth Harbor unveils $1.65 million bird rookery preservation project

"The peninsula, about 3 acres in size, is home to a bird rookery where a variety of birds come to nest and create a small ecosystem in Plymouth Harbor. The project was a resident-led effort." **Read more**



Mayors propose to regulate mangroves

"The mayors of the three Anna Maria Island cities and Longboat Key are considering making a joint application to the Florida Department of Environmental Protection (FDEP) to obtain local control over mangrove regulations." **Read more**

Community & Partner Events

Check out upcoming green events from over 100 local organizations on the **Green Living Toolkit Community Events Calendar!**



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info@sarasotabay.org | (941) 955-8085
111 S. Orange Avenue, Suite 200W
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