

Florida Red Tide, Education Through Community Collaboration

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Problem:

A lack of community knowledge concerning health impacts of Florida Red Tide blooms increases human exposures during near shore Florida Red Tide events. As a result, Florida's Red Tide harmful algae blooms cause significant increases in acute respiratory illness, as well as, skin and eye irritation.



**A wave of Red Tide approaches Little Gasparilla Island on the Gulf Coast of Florida.
Photo by Paul Schmidt, 1999.**

Recent studies, conducted by harmful algae bloom (HAB) researchers, indicate statistically significant increases in acute respiratory symptoms when humans are exposed to the aerosolized toxin (brevetoxin) produced by the organism that causes Florida Red Tide blooms, *Karenia brevis*. Researchers have also linked residence in beach communities during Florida Red Tide events with significant increases in numbers of patients diagnosed with pneumonia at a local hospital (Fleming, et al., 2007). Because of these identified human health impacts, informing and educating the public took on a real importance for the Sarasota County Health Department.



North Jetty Beach
Venice, Florida

The recent increased occurrence of Florida Red Tide in the Sarasota area has been blamed for causing negative economic impacts on the local tourism industry. Dead fish washing up on the beaches and the toxin's affect on beach goers were having negative impacts on the local tourism industry. When Sarasota CHD began to warn the public about potential health impacts, (through alerts in the local media and the posting of warning signs on the beach), it only heightened the stress levels of a tourism industry who was already dealing with negative economic impacts. Lodging cancellations increased and economic pressures mounted to find alternative solutions to inform the public without scaring them away from the local business community.

Sneezing? Coughing? Watery Eyes?

Your symptoms may be related to Florida Red Tide. People with asthma or respiratory problems should avoid red tide areas especially when winds are blowing on shore.



To speak to a health professional anytime,
call the Florida Red Tide Health Hotline

1-888-232-8635 toll free

Breathe Easy During a Red Tide

This informational material was funded by the Florida Department of Health.

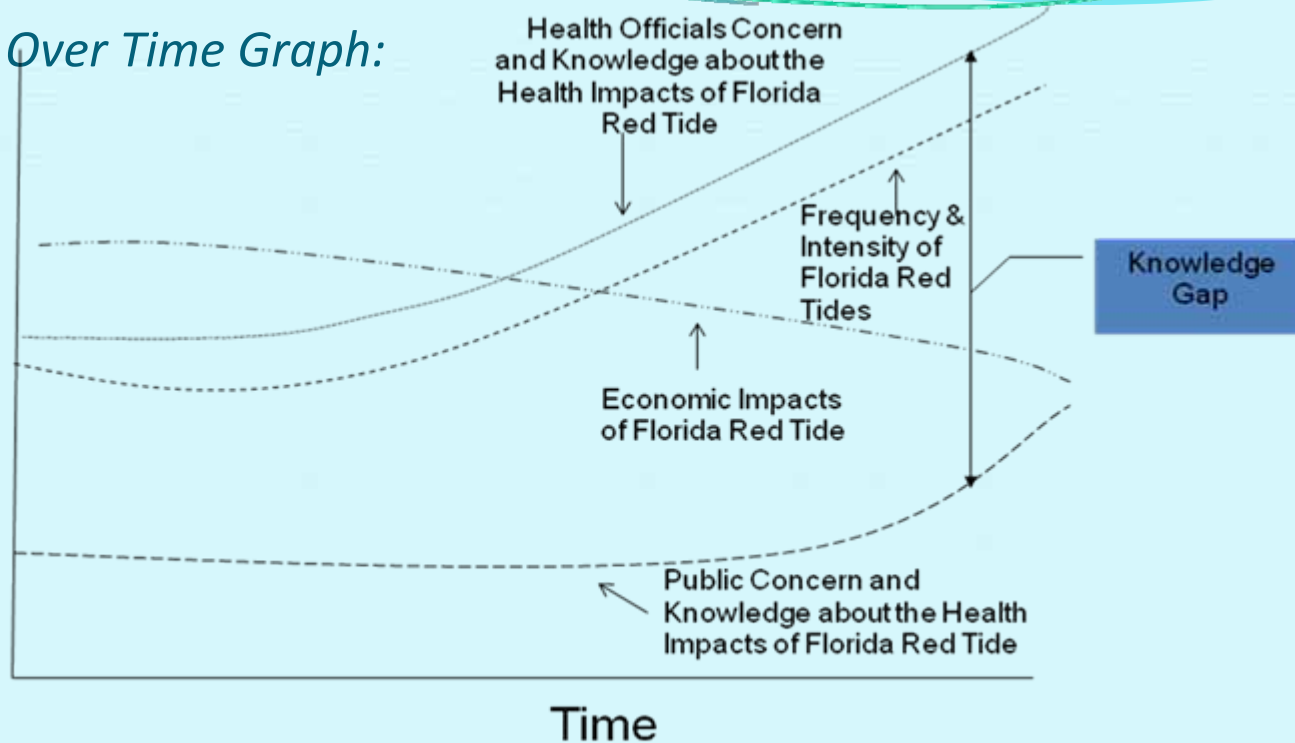


Beach Information Sign

Posted on beaches when Red Tide is present. Developed by Solutions to Avoid Red Tide (START) a grass-roots citizens organization, with funding from Florida DOH.

Learn more at: <http://www.start1.com/>

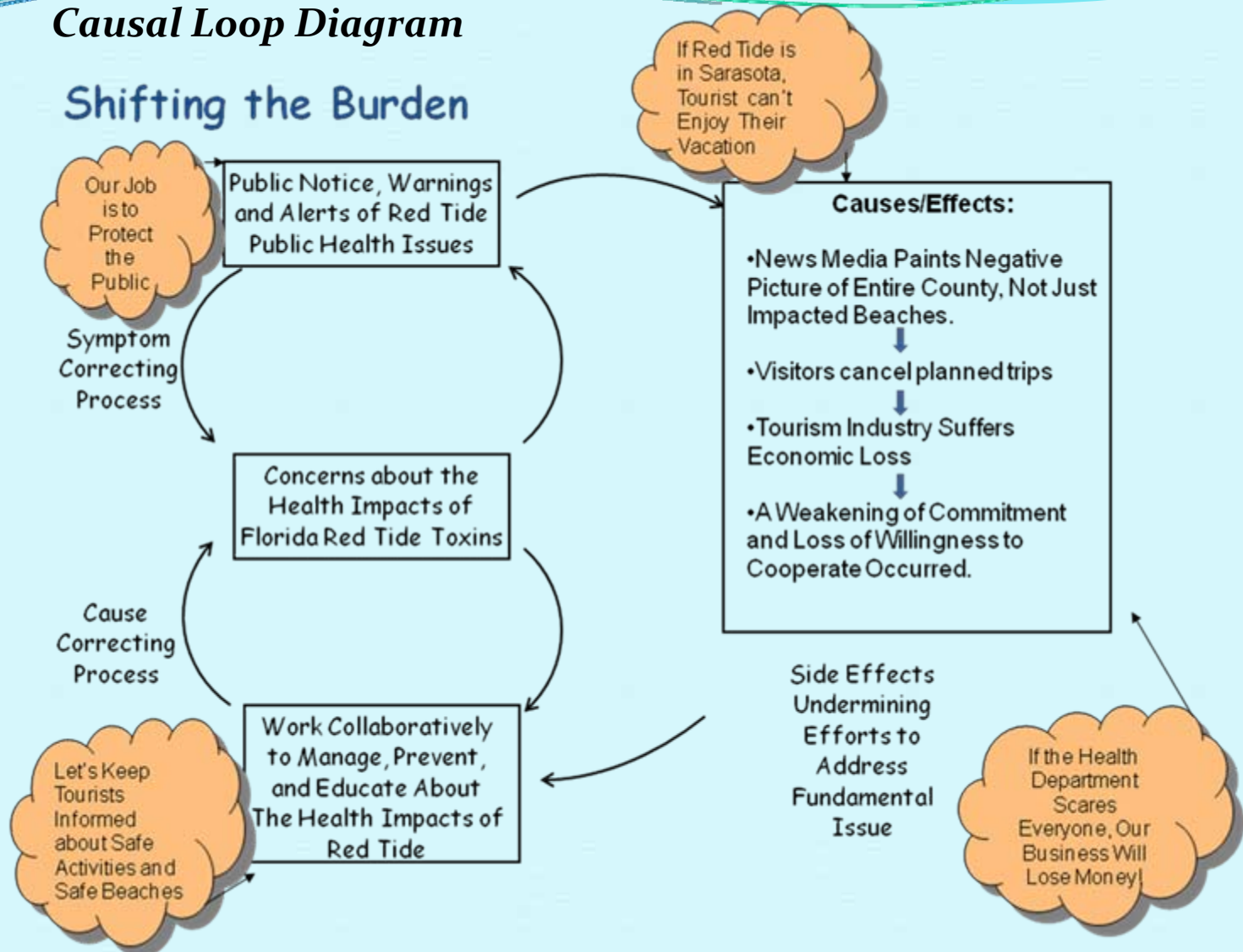
Behavior Over Time Graph:



- Efforts were made in Sarasota County, Florida, to inform the public during Florida Red Tide blooms using press releases and posting of signs at affected beaches. While successful, this effort also resulted in complaints and political pressure from the tourism industry which experienced cancellations and a drop in tourism revenue. Since tourism is Sarasota County's largest industry, the question of how to inform the public, without adding to existing economic impacts, became an important challenge.

Causal Loop Diagram

Shifting the Burden



This diagram shows how the initial attempt to simply notify the public actually shifted the burden to the tourism industry until collaborative solutions were developed.

Problem Statement

Lack of knowledge and understanding about the health impacts of Red Tide increases the occurrence of acute respiratory illness in residents and visitors of Sarasota County during near shore Florida Red Tide blooms.

Long-Term Outcomes

90% of all residents and visitors in Sarasota County will avoid exposure to Florida Red Tide toxins during blooms. The number of residents seeking treatment for acute respiratory illness during Florida Red Tide blooms will be reduced by 50%. Tourism will benefit, due to visitor confidence in availability of Florida Red Tide data.

Goal

All residents and visitors in Sarasota County will have:
1. Knowledge and understanding of the health risks associated with Florida Red Tide.
2. Access to reliable information on the status of current Florida Red Tide blooms in Sarasota County.

Rationales

Technology exists to monitor inshore Florida Red Tide blooms and provide near real-time information to residents and visitors in Sarasota County. If individuals have accurate real-time information, they can make informed decisions about which beaches to avoid and/or types of activities to avoid in impacted areas.

Assumptions

Because Florida Red Tide is unlikely to impact all of Sarasota's 34 miles of beaches, visitors and residents can still enjoy beach activities if they know where to go.

Resources

Part time assistance from 3 EH Division staff (2 Environmental Specialists & 1 Environmental Administrator).

Participation from multiple community partners. (Key participants include Mote Marine Research Center, Sarasota Visitors Bureau, and Solution to Avoid Red Tide, START).

Funding for educational material and real-time notice systems. Amount and source is undetermined at this time.

Activity Groups Outputs

Facilitation

Data Collection

Outreach/Education

Evaluation

Intermediate-Term Outcomes

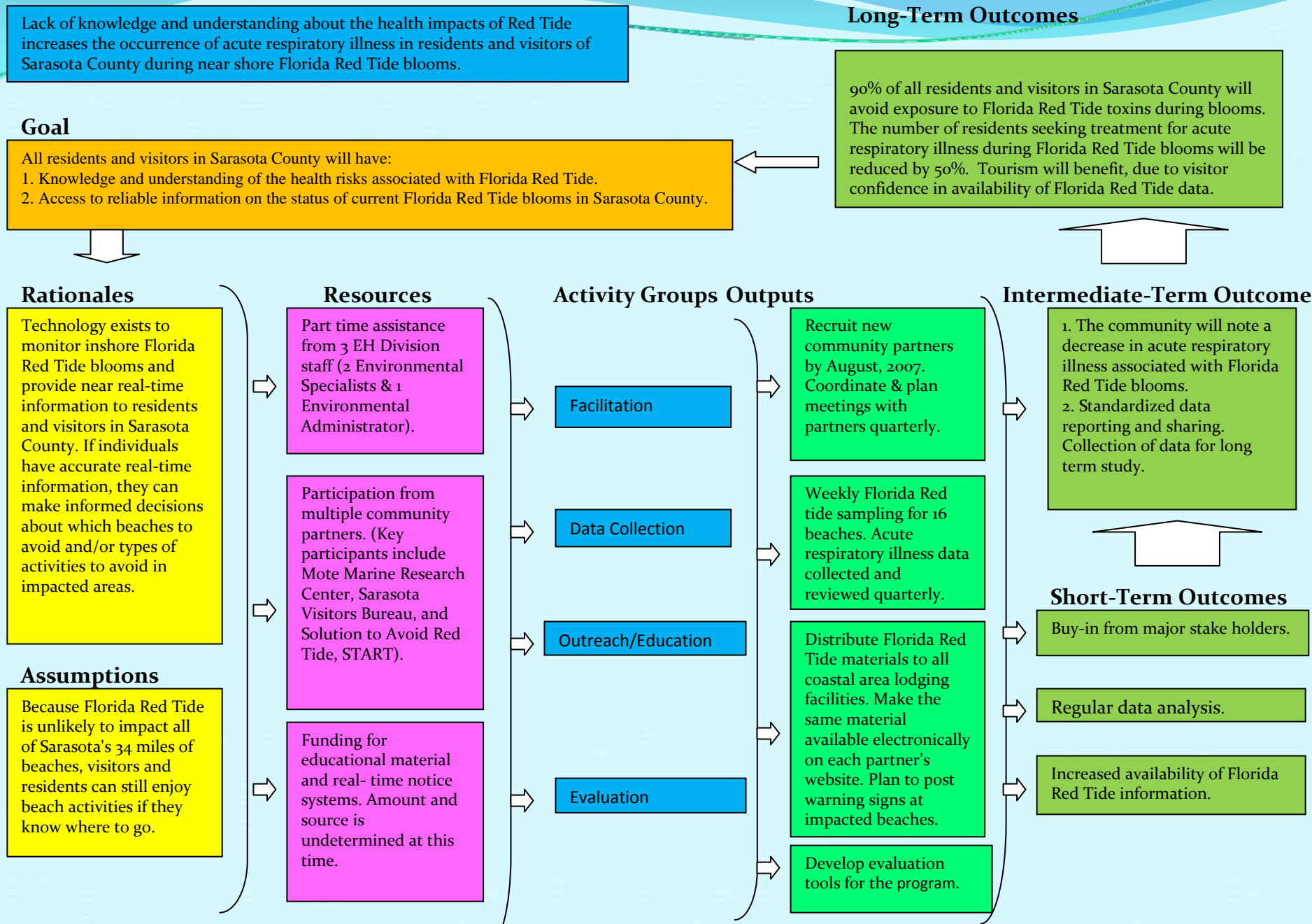
1. The community will note a decrease in acute respiratory illness associated with Florida Red Tide blooms.
2. Standardized data reporting and sharing. Collection of data for long term study.

Short-Term Outcomes

Buy-in from major stake holders.

Regular data analysis.

Increased availability of Florida Red Tide information.



PROJECT OBJECTIVES/DESCRIPTION/ DELIVERABLES:

Program Goal

To ensure that all residents and visitors in Sarasota County will have the basic knowledge and understanding of the health risks associated with Florida Red Tide and to assure access to reliable information on the status of current Florida Red Tide blooms in Sarasota County.

Health Problem

Aerosolized toxins from Florida Red Tide harmful algae blooms cause significant increases in acute respiratory illness, as well as, nose and eye irritation during Florida Red Tide blooms.

Outcome Objective

The number of residents and visitors seeking treatment for acute respiratory illness during Florida Red Tide blooms will be reduced 50% by January 2009.

Determinant

The density of Florida Red Tide organisms present in inshore water samples and the number of people exposed.

Impact Objective

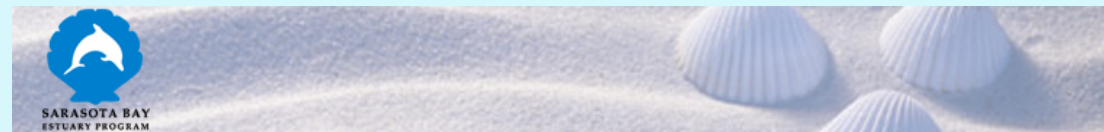
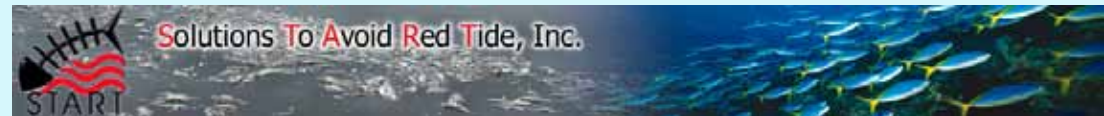
By January, 2009, 80% of all residents and visitors in Sarasota County will have both the knowledge and understanding to avoid exposure to Florida Red Tide toxins during near shore blooms.



Map of Sarasota County Beaches

Results:

Community collaborations have been established with multiple partners to include: Mote Marine Laboratory, Sarasota Bay Estuary Program, Health Gulf Coalition, Sierra Club, Florida Fish and Wildlife Institute, START, and local governments. Partners meet regularly through the Protocol for Assessing Community Excellence in Environmental Health (PACE EH) project team. Mote Marine has developed an on-line daily beach conditions reporting system that has been extremely successful in Sarasota County. This system is now being replicated in 3 adjacent counties. Residents and visitors are able to log-on or call-in to obtain real time beach conditions that are updated twice daily. Reported conditions include; water color, wind direction, surf conditions, presence of dead fish, reports of respiratory irritation, beach flag type, and if red drift algae is present. This site can be viewed at <http://coolgate.mote.org/beachconditions/>



Results

A meeting was held with the local tourism industry where topics of discussion included the language for beach signs, procedures for posting and removing beach signs, press releases, and visitor education through on-line links. A web page was established by the Sarasota CHD to provide up-to-date beach testing data for residents and visitors who want to check the latest specific beach testing results. The site also includes Florida Red Tide education materials and links to our community partners for more in depth information. This site can be accessed at www.ourgulfenvironment.net and has logged over 48,000 hits from 39 countries, and 6 continents over the last 15 months.

Several successful community education sessions were held to discuss Florida Red Tide and other harmful algae blooms, as well as, dissemination of information on reducing nutrient loads to our local watersheds.



Nokomis Beach, Florida

Next Steps

Development of a collaborative process to collect and share data from acute care facilities, as well as, community partners who sample for Florida Red Tide cell counts. This includes the establishment of working agreements with the Sarasota CHD Epidemiology Division for access to acute respiratory illness data and with community partners who routinely monitor Florida Red Tide cell counts in local waters. The project collaborative also needs to develop an agreed upon reporting format for combined data once it is reviewed, as well as, a frequency for reporting. Finally, the collaborative group needs to develop an evaluation process for the existing Florida Red Tide education program. This would include obtaining community buy-in on evaluation and assessment needs, selecting evaluation tools, and formats for evaluation results.



Sign on lifeguard stand.



Collecting water samples

CONCLUSIONS:

Working with community partners in this collaboration has been extremely rewarding. Not only has progress been made towards the projects goals, but the community partners have taken on many significant roles to help reduce the health impacts of Florida Red Tide.

While this collaboration project is still developing methods to measure the success of our efforts, we believe that the increased availability of Florida Red Tide information has made a positive impact towards decreasing acute respiratory illness associated with Red Tide Blooms. This project has also helped to increase the community's knowledge and understanding of Florida Red Tide and its associated links to human health.



Venice Beach, Venice Florida

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