

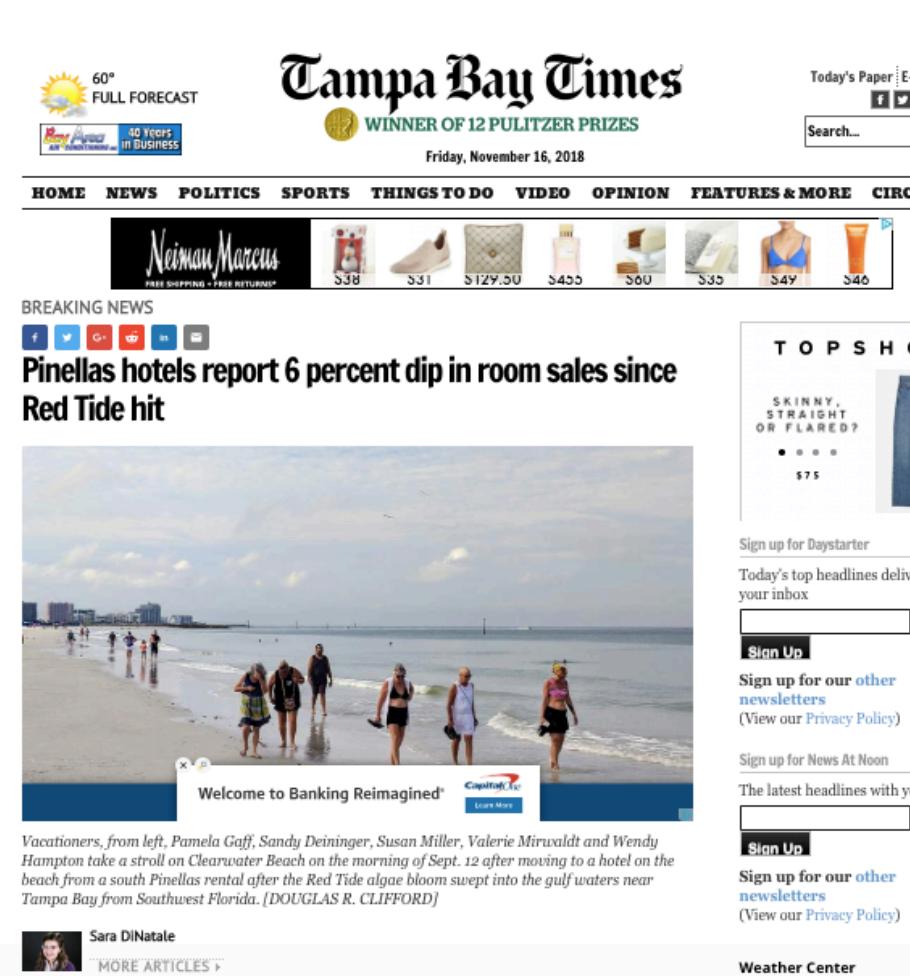
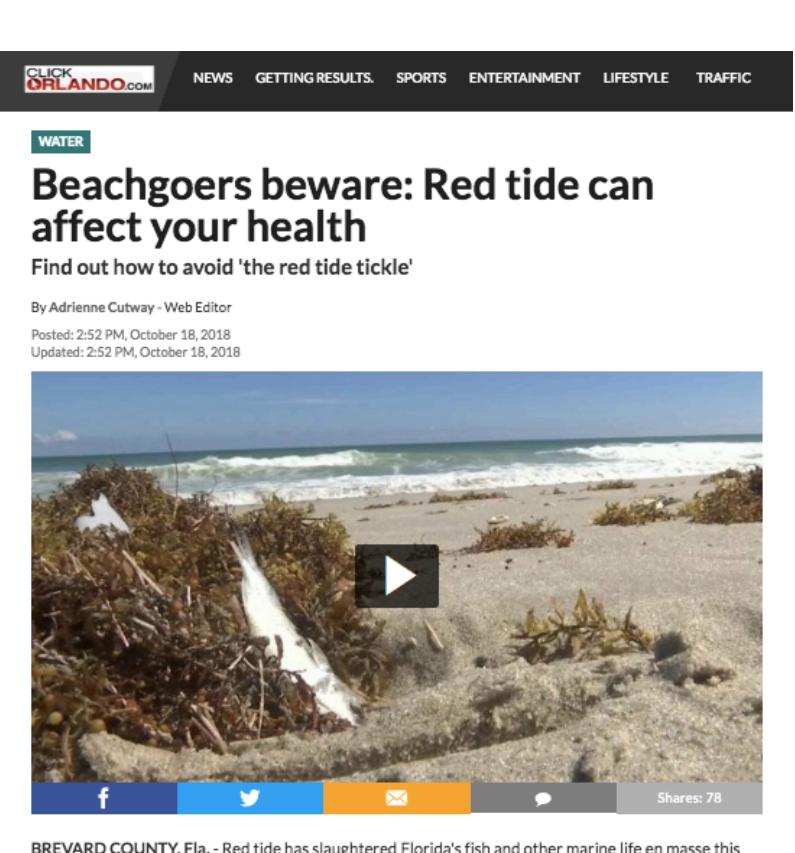
THE SIXTH SENSE

Autonomous Geo Mapping Water Quality Vessel

Like fish we have six sensors, in our case they are all modular. The sensors record data along a route chosen by you the user. Once the trip is completed these values are uploaded to the Sixth Sense Web App and can be viewed to see where water quality can be improved!

ALGAE BLOOMS & WATER QUALITY DECLINE

The driving force behind The Sixth Sense is to create a healthier and safer world



Health Effects
Symptoms from breathing in red tide toxins include coughing, sneezing and teary eyes. People with existing asthma and respiratory infections can develop serious illness due to the red tide. Externally the red tide can cause skin irritation and burning eyes. Blooms can also release toxins that contaminate drinking water which causes headaches, fever, nausea, vomiting and, in serious cases, severe liver damage.

Economic Impact
With beaches and lakes being off limits the tourism industry, including waterfront hotels, takes a big hit due to the dangerous quality of the water. The fishing industry suffers as well, fish die off by the hundreds and the ones still alive can be contaminated. Livestock is also affected when the cows drink from contaminated ponds and in turn are poisoned. This trickles down to the restaurant industry not being able to source the freshest proteins locally which most thrive off of.

Environmental Influence

Harmful Algae Blooms generate atmospheric pollutants which can travel hundreds to thousands of miles in aerosol like particles. They also deplete oxygen from the atmosphere and increase CO₂. This kills fish and other animals. After being consumed these toxins move up the food chain and hurt larger animals like sea lions, turtles, dolphins, birds, manatees, and fish.



PLUG N PLAY SENSORS

Our system allows you to implement just about any sensor you choose for your specific use. Just by connecting a couple of wires and writing a few lines of code.



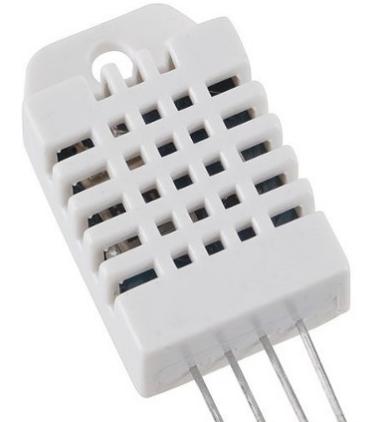
Nitrogen Gas MQ135

Nitrogen is a driving force in large algae blooms due to high concentration in fertilizers and run off



Luminosity TCS34725

Photosynthesis is most important when it comes to algae growth. Lux measures light intensity which signals when there is optimum light for photosynthesis.



Air Temperature & Humidity DHT22

Algae favors wet climates with high temperatures.



Water Temperature DS18B20

Warmer water temperatures prevent water from mixing allowing algae to grow thicker and faster. Due to absorption of sunlight water heats up and promotes more blooms.



Turbidity SEN0189

Turbidity is the clearness in the water. If the water is murky and filled with particles sunlight cannot penetrate. With clear waters sunlight shines through causing max absorption.



PH Level SEN0161

PH is how acidic or basic water is. For optimum algae growth the water's PH should be between 6 and 8. Once an algal bloom is in full force water becomes acidic and PH declines.

USER INTERFACE FOR WAYPOINTS & RESULTS

Water Quality Vessel Home Map Data Show Data About Us Our GitHub

Map Satellite

Wall of Wind The Women's Park Pinecrest Academy (North Campus) Our Lady of Divine Providence Bank of America Atm Nuevitas Lawn Mowers Wall of Wind

Export Points Delete Points

Before Trip

Log into the Sixth Sense Web App and simply navigate the map to your desired body of water. Click on the points you would like the vessel to travel. Made a mistake? No worries just click on "Delete Points" to remove any unwanted markers. Then proceed to click on "Export Points" which download these GPS Coordinates to your USB which then plugs into the boats' Raspberry Pi.

After Trip

Once your trip is complete disconnect the USB from the Raspberry Pi and plug back into your PC. Download the .json file and proceed back to the Sixth Sense Web App. Click on the "Show Data" tab and press "Upload Data". Choose the downloaded file and the markers will auto populate with the appropriate colors. Green being good, Yellow being moderate, and Red being bad. Underneath each chart will represent each individual sensors data throughout the trip.



THE CREATORS

