

## **Biscayne Bay Water Watch by Lisa Krimsky and Ana Zangroniz**

Bullets:

- Biscayne Bay is an ecologically and economically significant sub-tropical estuary located just off of Miami-Dade County's coast.
- For over a decade, Biscayne Bay has been suffering from multiple and distinct algal bloom events, indicating that the ecosystem might be reaching a "tipping point" with respect to its capacity for resiliency. Algal blooms are the result of an excess of nutrients present in the system.
- Biscayne Bay Water Watch (BBWW), a citizen science water quality monitoring program was created by the UF/IFAS Sea Grant Extension Program in Miami-Dade County. BBWW has two overarching goals: 1. garner attention to the health of Biscayne Bay and promote awareness about the importance of water quality on our local environment and economy, 2. Fill the gaps left behind at water monitoring sites eliminated by the state of Florida and Miami-Dade County due to budget reduction.
- Currently, BBWW employs 8 volunteers that monitor 13 sites monthly throughout Biscayne Bay.
- Possible solutions: in addition to individual behavioral changes that reduce stress to the Bay (such as responsible boating practices, limiting water use at home, not fertilizing lawns during the wet season, etc.) residents can write to their local elected officials and ask for the creation of legislation and/or policies that will better conserve and protect the Bay.

### **Background**

Biscayne Bay is a subtropical estuary that extends approximately 55 miles along the entire east coast of Miami-Dade County. Compared to other Florida waters, Biscayne Bay is characterized by very low concentrations of nutrients and pollutants and has excellent water clarity. These conditions support extensive seagrass habitat, hardbottom communities, soft and hard corals, economically-vital fisheries populations and a variety of endangered and threatened species.

The ecosystem in Biscayne Bay contributes about 10 percent to the Miami-Dade economy each year. Activities related to Biscayne Bay generate \$12.7 billion in economic output, \$6.3 billion in incomes 138,000 jobs, and \$627 million in tax revenue to the local economy annually.

Over the past decade several algal blooms have threatened the quality, health and beauty of the Bay, impacting its marine life and over 10,000 acres of bay bottom habitat. These events suggest that the Bay may be experiencing a reduction in resiliency to withstand such events which can be caused by both natural and human factors – this can lead to significant consequences for the Biscayne Bay ecosystem, economic consequences for the local fishing and tourism, in addition to reducing the beauty, usability, and enjoyment that the Bay provides for South Florida residents.

### **Historic water monitoring efforts reduced**

As of 2015, the South Florida Water Management District (SFWMD), and the Miami Dade County Division of Environmental Resource Management (DERM) were forced to revise their monitoring program (Biscayne Bay Water Quality Monitoring Network) and eliminate 47% of their sampling locations in Biscayne Bay due to budget constraints and reduced funding.

## **Response**

The Biscayne Bay Water Watch (BBWW) is a community-based volunteer water quality monitoring program developed and managed by the UF/IFAS Sea Grant Extension Program in Miami-Dade County. The goal of BBWW is to garner attention to the health of Biscayne Bay and promote awareness about the importance of water quality on our local environment and economy. Additionally, BBWW was organized in an effort to supplement the water quality monitoring efforts by DERM and SFWMD and to fill in any gaps that exist in County's current water quality network. Volunteers consist of partner organizations and private citizens. Volunteers sample their "adopted" sites monthly, and are trained in the collection of samples for temperature, salinity, pH, dissolved oxygen, nutrients, and chlorophyll. The data collected will help to: identify emergent or existing algal blooms, identify changes and trends in water quality over time, and be reviewed to help assess the health and status of Biscayne Bay. Currently, BBWW employs eight (8) volunteers monitoring 13 sites in north, central, and south Biscayne Bay.