

beds. Large, dense beds of algae have been identified and photographed approximately 2,000 feet offshore. The algae is most dense in the area where the water is approximately 11 feet deep. Due to the size and density of these algae beds, we anticipate further deposits of red drift algae on our beaches.

2) Technical advice - A technical Algae Management Task Force is working with the City to identify specific areas of focus in evaluating the causes, health effects and management of red drift algae. J.N. "Ding" Darling National Wildlife Refuge, the Sanibel-Captiva Conservation Foundation, PURRE, The Sanibel Sea School, Lee County Department of Natural Resources and Sanibel-Captiva Audubon Society are serving on the Task Force. In addition, the City is in contact with public health officials at the County and the State.

3) Consideration of growth & regeneration of red drift algae - The City is working with Lee County to evaluate the exact causes of the growth and regeneration of the red drift algae.

Requests for Qualifications have gone out to professionals in this field in order to secure the necessary scientific funding to break the cycle of growth and regeneration.

4) Evaluation of algae clean-up methods - The City is field evaluating two water-based methods of removing algae currently being used in Hawaii. The City is simultaneously evaluating land-based methods of removing algae from the beaches. The focus of the evaluations is environmental impacts, efficiency and cost.

City Council has directed staff to have a plan prepared to remove algae from the beaches prior to next season. City staff is currently evaluating various beach-cleaning techniques and identifying potential funding sources.

Regular updates regarding beach conditions and the Red Drift Algae Management Program are posted to the City website at [www.mysanibel.com](http://www.mysanibel.com) and [www.sanibelh2omatters.com](http://www.sanibelh2omatters.com).

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**SPECIAL  
EDITION**

## Sanibel Water Quality Update



April 10, 2007

Dear Citizens:

High levels of nutrients, sediment and algae in area waters have impacted our marine life, our beaches, and our economy. This update includes the most recent actions and includes background information.

We have been working to eliminate the source of nutrients fueling the algae and evaluating all mechanisms available to remove algae deposits, preferably prior to landfall. Enclosed is a status report on algae management and our progress on the larger issue.

Sincerely,

*Sanibel City Council*

### BACKGROUND

Sanibel's beaches stretch for 11 miles along the Gulf of Mexico and for 3½ miles on the San Carlos Bay side of the island. Sanibel's beaches are renowned worldwide for their natural state and as a location to enjoy and appreciate rare and endangered wildlife. The citizens of Sanibel have invested significant resources in restoring the natural dune system and native vegetation at the beaches.

During the hurricane seasons of 2004 and 2005, water managers with the U.S. Army Corps of Engineers (USACE) and

the South Florida Water Management District (SFWMD) diverted a tremendous amount of fresh polluted water from Lake Okeechobee into the Caloosahatchee River. The deadly impacts of the releases began to appear in the form of toxic blue green algae, red drift algae, dying seagrasses, sickened oyster and commercial clam beds, as well as increased instances of fish kills.

Sanibel beaches are habitat to various threatened and endangered species of wildlife; Federal, State and local laws protect Sanibel's beaches. These protections include the Federal Endangered Species Act

and state legislation as well as prohibition in Sanibel's Comprehensive Plan, the "Sanibel Plan", against the environmental damages resulting from raking the beaches.

Some of the key challenges in managing the algae include 1) the heavy weight of the water-logged material (800-1,000 pounds per cubic yard); 2) the migratory nature of the algae, washing ashore at different locations on a regular basis; 3) the continual redeposit of red drift algae after removal, and 4) the consideration of removal from beaches in an environmentally sensitive manner.

In February, due to an unprecedented amount of red drift algae, the City of Sanibel authorized emergency hand raking of the beaches prior to the 2007 nesting season. In 15 days, over 6,600 bags of dried algae were removed from the public beach parks and private properties.

### 2007 TOP PRIORITIES FOR IMPROVING SANIBEL WATER QUALITY

The City has identified four specific priorities that can have a positive impact on Sanibel's water quality. Contact information for each of the officials who can make these priorities a reality is included.

### ADD WATER QUALITY TREATMENT TO THE C-43 RESERVOIR UNDER CONSTRUCTION

The South Florida Water Management District (an entity of the State of Florida) is

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working with the Army Corps of Engineers to build a reservoir, currently under construction near LaBelle, to store excess Lake Okeechobee water. As designed, the reservoir will only store volumes of water but not treat the polluted water to reduce the amount of damaging nutrients nitrogen and phosphorus and other pollutants released into the Caloosahatchee River waters surrounding Sanibel.

Extreme discharges of nutrients contribute substantially to the damaging algae blooms that Sanibel is experiencing. A Stormwater Treatment Area (STA) is essential for the C-43 reservoir project so that water quality improvements are made prior to any releases from the reservoir into the Caloosahatchee and the waters surrounding Sanibel. Lands necessary for the STA adjacent to the C-43 Reservoir need to be acquired as soon as possible to prevent conflicting land uses from blocking the project. Such action will also provide equity with those funding measures already initiated for similar storage reservoirs along the east coast of Florida that are, like C-43, part of the overall Comprehensive Everglades Restoration Project (CERP). All of the other reservoirs to be built throughout the State have a water quality component except for the Caloosahatchee reservoir.

**Action Needed:** The City of Sanibel's position is that sufficient land for the C-43 STA Treatment acreage needs to be purchased as soon as possible. The primary contacts to achieve this are Florida Governor Charles Crist [charlie.crist@myflorida.com](mailto:charlie.crist@myflorida.com); Lieutenant Governor Jeff Kottkamp [jeff.kottkamp@myflorida.com](mailto:jeff.kottkamp@myflorida.com); Director of Florida Department of Environmental Protection (FDEP) Water Resource Management, Janet Llewellyn [janet.llewellyn@dep.state.fl.us](mailto:janet.llewellyn@dep.state.fl.us), and SFWMD Regional West Coast Director, Philip Flood, Jr. [pflood@sfwmd.gov](mailto:pflood@sfwmd.gov).

## ACQUIRE LANDS TO STORE EXCESS WATER RELEASES

The mission of the Army Corps of Engineers Comprehensive Everglades Restoration Project (CERP) is to restore the Everglade's flow. As designed, the CERP has inadequate storage capacity to prevent excess releases of water towards Sanibel, due primarily to rapid land development along the Kissimmee River Basin.

About one and a half million acre feet of storage are needed to substantially reduce the likelihood of harmful "emergency" releases to the Caloosahatchee River.

The SFWMD agreed in 2006 to provide 450,000 acre feet for emergency storage. This is the first time the USACE and SFWMD agreed to provide emergency storage. This has been an important first step to solving storage needs. However, the focus now must turn to funding added storage and treatment lands to the North, before excess polluted waters flow into Lake Okeechobee.

**Action Needed:** Provide funds to acquire and make useful lands North of Lake Okeechobee. Contact Florida Governor Crist [charlie.crist@myflorida.com](mailto:charlie.crist@myflorida.com); SFWMD Regional West Coast Director, Philip Flood, Jr. [pflood@sfwmd.gov](mailto:pflood@sfwmd.gov), and Deborah Hurst, Assistant to Colonel Paul Grosskruger at the Army Corps of Engineers [Deborah.C.Hurst@saj02.usace.army.mil](mailto:Deborah.C.Hurst@saj02.usace.army.mil).

## REMOVE THE EXCESS NUTRIENTS, PARTICULARLY NITROGEN, FROM THE WATERS

In addition to the massive releases of nutrient-laden freshwater from Lake Okeechobee, excess nutrients, particularly nitrogen, are entering our local waters through a variety of sources including septic system leaching and runoff, agricultural runoff, treated wastewater plant discharges and fertilizer runoff. Increasingly, degraded water quality and nutrient loading appear to be linked to current coastal issues including, but not limited to, red drift algae blooms.

**Action Needed:** Contact Florida Governor Crist, [charlie.crist@myflorida.com](mailto:charlie.crist@myflorida.com); Lieutenant Governor Kottkamp [jeff.kottkamp@myflorida.com](mailto:jeff.kottkamp@myflorida.com); as well as our Florida legislators, State Senator Burt Saunders [saunders.burt.web@flsenate.gov](mailto:saunders.burt.web@flsenate.gov); State Representative Gary Aubuchon [gary.aubuchon@myfloridahouse.gov](mailto:gary.aubuchon@myfloridahouse.gov) and the Director of the FDEP Water Resource Management, Janet Llewellyn [janet.llewellyn@dep.state.fl.us](mailto:janet.llewellyn@dep.state.fl.us) and strongly urge them to enact, implement and enforce the establishment of Total Maximum Daily

Loads (TMDLs) for Lake Okeechobee, the Caloosahatchee River and estuary, and Charlotte Harbor and enact and implement stricter regulatory standards with respect to septic system leaching and runoff, agricultural runoff, sewage plant discharges and fertilizer use.

## PRESS YOUR MEMBERS OF CONGRESS TO FULLY FUND THE "MOD-WATERS" PROJECT

The "Mod Waters" project purpose is to provide sufficient water to Everglades National Park. The Water Resources Development Act (WRDA), which authorized the Comprehensive Everglades Restoration Plan (CERP), provides that "Mod Waters" must be completed before several CERP projects that restore water flows to the Everglades can move forward.

The failure to fund this project constitutes a serious threat to the future of the Everglades and the ability to restore historic flows to the south, without which excessive water releases will continue to be made west to the Caloosahatchee River and sent towards Sanibel.

**Action Needed:** Sanibel seasonal residents, property owners and visitors should e-mail their home state Congressional members urging Congress to appropriate the funds needed for "Mod Waters" as the critical next step in preserving America's treasure--the Everglades. Find your Representative at <http://www.house.gov/> and your Senators at <http://www.senate.gov/>.

## STRATEGIES FOR REDUCING NUTRIENT RUN-OFF FROM SANIBEL

### SANITARY SEWER SYSTEM

The citizens of Sanibel have invested over \$64 million dollars into developing a centralized sanitary sewer collection and treatment facility. The treatment facility has been upgraded and meets all standards. We are currently completing the final stages of installing the collection system.

The City of Sanibel is also investigating the release of nitrogen and phosphorus from its own Wastewater Treatment Facility. Though not required by the Department of Environmental Protection, the City is evaluating various filter mediums to identify the best technology available to reduce nitrogen and phosphorus releases from our Wastewater plant to the lowest possible level. We have established the goal of lowering nitrogen levels below 3 parts per million (ppm). The State of Florida DEP permit allows up to 12 ppm. The City's goal for phosphorus is to achieve levels below .5 ppm.

We continue to work with our neighboring communities because collaborating is essential to ensuring the clear water we all need.

## CITY APPROVES ENVIRONMENTALLY FRIENDLY REGULATIONS FOR FERTILIZER USE ON ISLAND

On March 6th, the Sanibel City Council approved a City Ordinance regulating the use of fertilizers containing nitrogen and/or phosphorus. This is not a ban on fertilizers. This ordinance provides guidelines to minimize negative impacts on our waters.

### New Regulations Geared to Protect Water Quality

Red drift algae is fed by increased nutrients. Fertilizer runoff is a known source of nutrients that can be controlled. More environmentally friendly fertilizer can improve our water quality.

Soil tests conducted on Sanibel indicate ample levels of slow release phosphorus in the soil. Nitrogen is more likely to be used by plants and less likely to wash away in stormwater runoff.

### Ordinance Specifics

- Total Phosphorus content in fertilizer is limited to 2% or less.
- Total Nitrogen is limited to 20% or less and at least 70% of the total nitrogen must be slow release nitrogen.
- Application rate of up to one pound of nitrogen per 1000 square feet per application.
- Up to 4 pounds of nitrogen per one thousand square feet can be applied in any calendar year.

■ Fertilizer can be applied up to six times during any one calendar year to a single area.

■ Fertilizer will be applied only to turf/landscaping, not impervious surfaces (i.e., driveways, roads, other hard surfaces).

■ A fertilizer-free buffer zone is required within 25' of any pond, stream, water course, lake or canal, or wetland.

■ When using a broadcast (rotary) spreader, a spreader deflector shield is required.

■ During the "rainy season" (July 1 through September 30), products containing only micronutrients, such as magnesium and iron will be allowed. Fertilizers containing any level of nitrogen or phosphorus are not to be applied during those months.

### Notice to Retail Consumers

Retail businesses are required to post a City-developed notice near the Fertilizer notifying customers of the new limits on use.

### Enforcement of this ordinance begins September 5th, 2007 to allow a transition period to:

- 1) Develop ½ hour course to be given to current Vegetation Competency Certificate Holders.
- 2) For Commercial Fertilizer Applicators, Institutional Applicators and other users to become familiar with the provisions of the Ordinance.
- 3) Provide retailers sufficient time to order compliant products.

### New Requirements for Commercial and Institutional Applicators

■ Requires Commercial and Institutional Applicators to first obtain a Vegetation Certificate of Competency with a Commercial Fertilizer endorsement through the City.

### Once a Commercial Fertilizer endorsement is acquired, Commercial/Institutional applicators must:

- Maintain nitrogen records and soil test results.
- Permit City to obtain a fertilizer sample to analyze nitrogen/phosphorus content.
- Provide the City-developed Surface and Groundwater Protection brochure to

customers.

- Remain on-site.

### Exemptions

- Established turf and/or landscape plants for first 60 days.
- Damaged turf and/or landscape plants for 60 days.
- Areas where soil tests confirm that phosphorus levels are below 10 ppm.
- Vegetable gardens not within 25' of a water body/wetland.
- Yard waste compost, mulches, or other similar materials that are mainly organic in nature and are applied to improve the physical condition of the soil.
- Reclaimed water used for irrigation, not within 25' of a water body/wetland.
- Golf Courses shall follow the FDEP document "Best Management Practices for the Enhancement of Environmental Quality on Florida Golf Courses." (January 2007) as updated.

### Enforcement

The new ordinance took effect on March 6th. No citations will be given through September 4th, to allow a 180-day transition period. Starting September 5th, the City can elect one of several different options for enforcement including:

- 1) Violation of this ordinance shall be considered a 2nd degree misdemeanor with a fine up to \$500 or imprisonment up to 60 days in jail, or both.
- 2) Code Enforcement proceedings pursuant to applicable City code provisions and Chapter 162, Florida Statutes.

The final approved Ordinance 07-003 is posted on the City's website at <http://www.mysanibel.com> and on the City's water quality website at <http://www.sanibel2omatters.com>. For further information, contact the City of Sanibel Natural Resources Department at (239) 472-3700.

## ALGAE MANAGEMENT

The City is taking several initiatives to curb the red drift algae problem. We are currently evaluating water-based removal and land-based techniques to manage the red drift algae through:

- 1) Utilizing underwater video surveillance to identify the exact locations, size and density of off-shore red algae