

# Community Report Card

*Examining the quality of life in Sarasota County through data and indicators*



The above illustration represents the Natural, Built, Economic, and Social environments. They are represented as a streetscape to highlight that despite being identified as separate environments, they interact to make up the whole of Sarasota County.

## the natural environment

*Everything that was a part of Sarasota County before humans came along*

## 2007-2008 Community Report Card: Examining the quality of life in Sarasota County

Throughout the next year SCOPE's *Community Report Card* will use data about our community to share information about our quality of life. We hope to do this by asking and answering questions about our community and encouraging you to do the same.

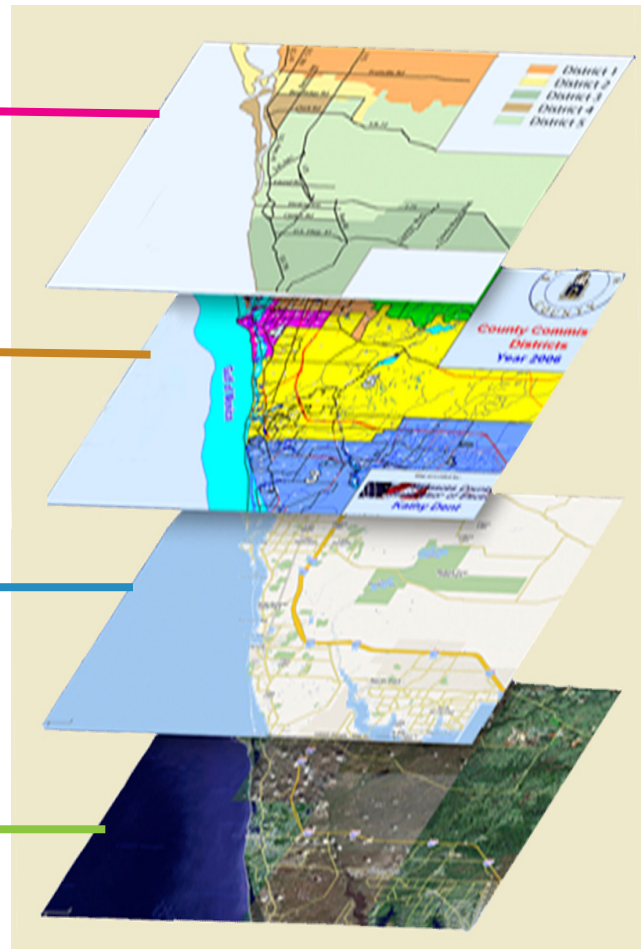
We've split the next year into four sections, or environments: the natural, built, economic, and social. We will focus on each environment for three months and release a different indicator (data set that reveals information about our community) each month. Each indicator will use data to tell a story about a different aspect of life in Sarasota County.

**social** How we support human growth. Our community, families, systems of governance and decision-making.

**economic** Exchange, money, and the ways we create wealth or add value to our world.

**built** The buildings and infrastructure humans construct on the natural environment.

**natural** Everything that was part of Sarasota County before humans came along.



Graphic from the Florida House Institute for Sustainable Development

Through learning about these data and what they tell us we can put together a picture of the quality of life in our community. Throughout the coming year we will host community gatherings to talk about what we have learned, what it means for Sarasota County, and the chapters ahead of us. If you enjoy reading the *Community Report Card* and know someone else who you think would as well, please forward this to them! If you would like to get involved, we encourage you to attend these sessions. You can find more information on our website ([www.scopexcel.org](http://www.scopexcel.org)) as these events get closer. If you have immediate questions, comments or reactions to what you have just read, please visit our blog at [www.scope-crc.blogspot.com](http://www.scope-crc.blogspot.com).

## Question:

***“Are our bays healthy?”***

**W**e drink it. We bathe in it. Tourists come to Sarasota County from all over the world to fish and swim in it. Many of us love to watch the sun disappear behind it. By now, you’ve probably guessed we’re talking about our water. This indicator specifically addresses our local bays.

A thriving ecosystem is part of a healthy community. Since water is vitally important to our coastal community’s health, economy, and overall quality of life, it bears asking: “How is the water quality of Sarasota County’s bays?”

Sarasota County’s water system includes rainwater, watersheds, aquifers, and the bays which are a defining characteristic of our community. Since all water eventually drains into our bays, each part of our water system is related. Pollutants released into the ground miles inland can impact our coastal waters, and the health of our waters impacts the plants and animals that live in them. To understand the overall health of our water systems, we can look at the health of the plants and animals affected by bay pollutants.

## Indicator:

# ***Water Quality*** ***of our local bays***

**This indicator measures** the water quality of local bays by looking at seagrass and oysters. Healthy and plentiful seagrass and oysters indicate good water quality and a sound ecosystem. If seagrass is absent or patchy, then pollutants (mainly nitrogen) have entered the bay. Pollutants stimulate algae, which blocks the sunlight seagrass needs to grow. Algae also uses the oxygen in the water, which hinders developing oyster larvae. Oysters are living water filtration systems that are especially sensitive to pollution. If heavy rains bring polluted water into the bays, oysters die in large numbers, and the bay waters lose a mechanism for filtering water. Finally, this indicator includes a map showing which land areas produce the different amounts of nitrogen that ends up in our bay.

## SEAGRASS

**The numbers tell us** that total acreage is increasing. After declining 30% from 1950 to 1988, seagrass is on the rebound. Between 1988 and 2006, 1,204 new acres were found in the four northern bays. The average yearly increase has been 2.7%, with a 6.6% increase from 2003 to 2006. Seagrass growth is also becoming more continuous (vs. patchy), which is desired because it allows organisms to freely move through the seagrass. 3,178 acres (32% of the current acreage) have been converted from patchy to continuous between 1988 and 2003.

Sarasota Bay proper, the largest of Sarasota County's five bays, has an average yearly increase of 2.9%. with the four other bays in the same watershed also showing progress. They have average increases of 5% (Little Sarasota bay), 1.1% (Roberts bay), 3.6% (Blackburn bay). Lemon

Bay, in the Charlotte County watershed, has increased about 5% from 1998-2006.

### How is this measured?

Experts from the Southwest Florida Water Management District (SWFWMD) examine aerial photographs of the bay to determine which areas are covered by seagrass and whether the coverage is continuous or patchy.

### How do we compare?

As of 2006, the Tampa Bay estuary system has been gaining seagrasses at a rate of 2% – 3% each year. Tampa Bay has had a 4.7% increase (1,300 acres) since seagrass was last measured in 2004. Like the Sarasota County Bays, Tampa Bay currently has the most seagrass it has had since 1950.

## OYSTERS

**The numbers tell us** that our oysters are dying at relatively high rates. In Roberts Bay in Venice, oysters have been monitored since 2003. In this time, the percent of live oysters has dropped at 7 of 8 monitoring stations. Overall the oyster data indicate that we are polluting our bays at a rate that is harmful to the animals that live in them.

In 2006, Sarasota County Environmental Services collected countywide oyster data for the first time. Data was collected from 25 monitoring stations throughout the four northern bays (Sarasota, Little Sarasota, Roberts and Blackburn). At 6 stations the oysters were found to be relatively healthy (more than 70% alive). 14 stations had between 50% and 70% live oysters,

and the remaining 5 stations had fewer than 50% live oysters.

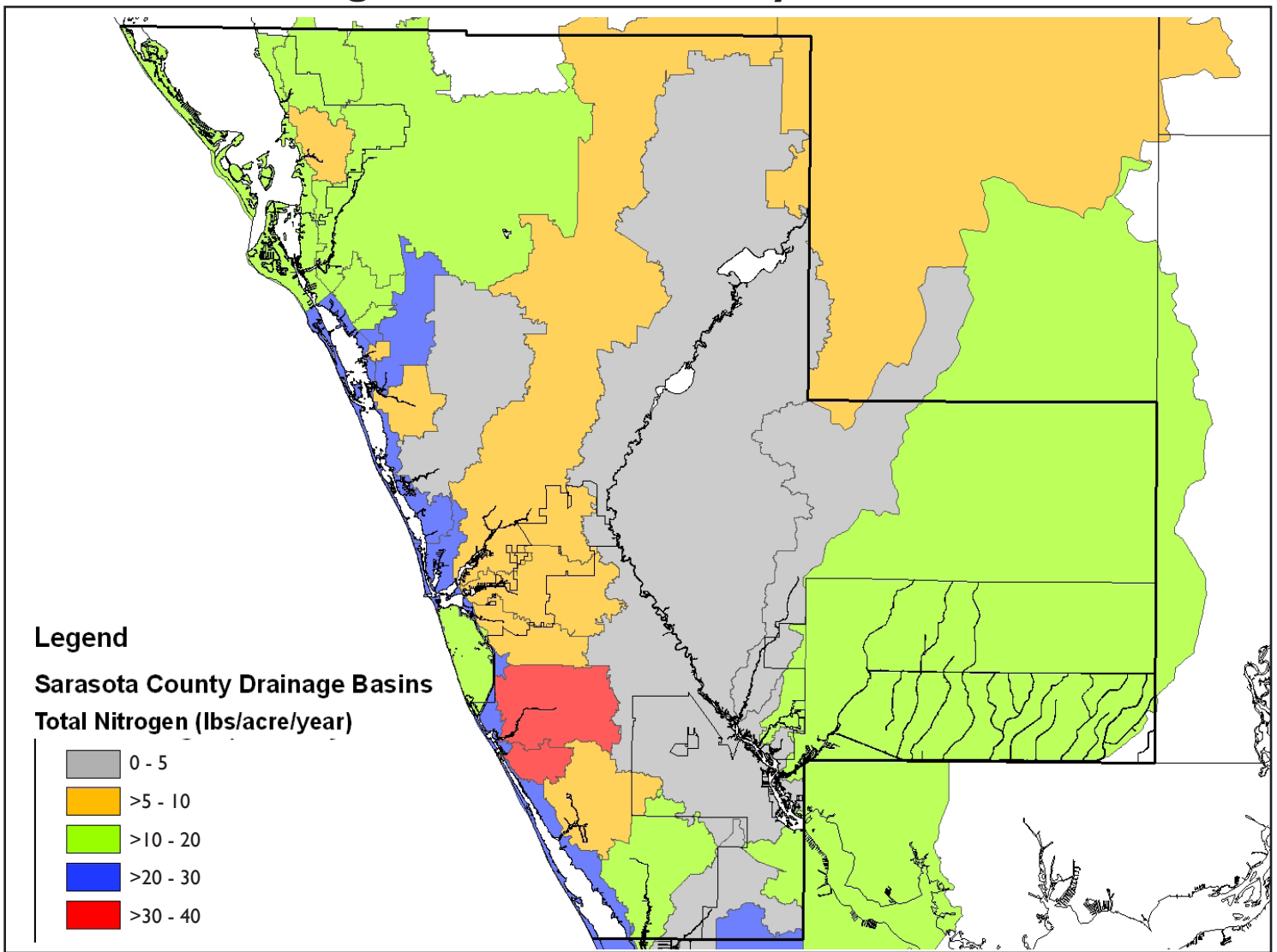
### How is this measured?

During the fall and spring, 3-foot-by-3-foot sections of the bay floor are randomly selected. The oysters in that square are counted and marked as live, dead, adult, or young.

### How do we compare?

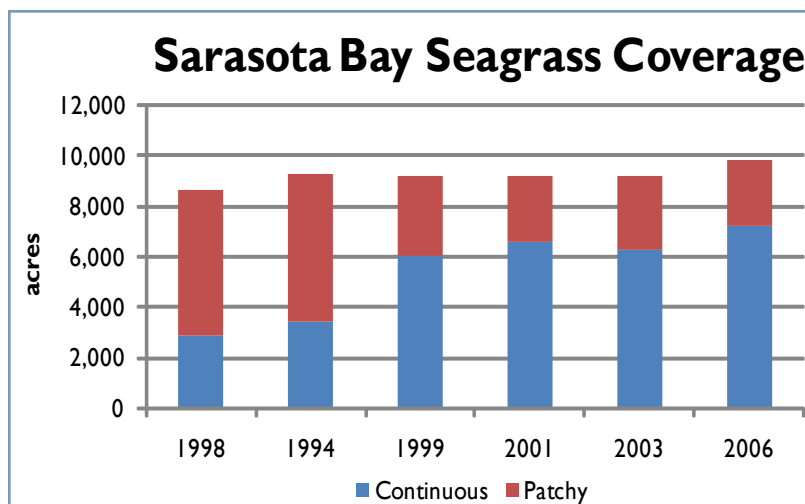
Tampa Bay Estuary Program is currently developing a program to monitor oysters. They do know that wild oyster populations are declining. They are seeking to map historic oyster reefs and compare them with current ones and to evaluate the effectiveness of artificial reefs

## Nitrogen in Sarasota County Watersheds



Nitrogen is a pollutant that comes from wastewater treatment facilities, septic tanks and stormwater runoff. The map shows nitrogen loads - estimates the amount of nitrogen released (based on land use) in Sarasota County's watersheds, or drainage basins. Many of the coastal basins are in the higher ranges because these areas are more densely occupied and were developed prior to stormwater treatment standards required by current regulations.

Map courtesy of Sarasota County GIS Department.



Data for chart courtesy of SWFMD.



This map is produced from Sarasota County GIS, and is representative information only.

The County does not warrant, guarantee, or assume any responsibility for geographic information completeness and/or accuracy.

This map should not be used as guide to navigation.

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## Linkages

### Natural Environment:

The health of our bays directly impacts the health of the animals that live in them. By polluting our bays, we run the risk of reducing or eliminating the population of many of the 1,400 different species of plants and animals that live in our bay waters.

### Built Environment:

Water quality is intimately linked to land use and development. The more impermeable surfaces (concrete, pavement) we use, the more rainwater ends up in our bays because it cannot be absorbed by the ground. This runoff flows over pavement and picks up pollutants (fertilizer, animal droppings, etc.) before emptying into our bays.

### Economic Environment:

Tourism is Sarasota County's biggest industry, and one of the attractions of Sarasota County is our waterfront. Visitors (and locals alike) use our bays for pleasure cruises, fishing and recreational boating. To continue to draw people to our waterfront we must continue to protect our bays and make them destinations.

### Social Environment:

Our bays are a well used and accessible social gathering place. Just about everyone in Sarasota County has spent some time on our bays, whether watching the 4th of July speedboat races, the boats come in at the Venice jetty, or the Van Wezel's Friday Fest on the Bay.

## Why is this important?

We have five bays in Sarasota County. The four northern bays (Sarasota, Little Sarasota, Roberts and Blackburn) share a watershed, which means that runoff draining into these bays travels through the same land before emptying into the bay. Because of this, the health of one affects the health of them all. Lemon Bay, the fifth bay, is part of the Charlotte County watershed, and its levels of pollution are dependent on not only what we do in Sarasota County, but also on the actions of our neighbors to the south.

The steady increases in seagrass coverage indicate that bay water quality is improving. However, the decrease in live oysters shows that while we may be improving, we are a long way from "perfect water quality." This conclusion is strengthened by looking at the nitrogen load map - we are still putting pollutants in our bays, and much of the pollution is coming in the form of excess nitrogen.

*There is twice as much nitrogen in our bays as there was 100 years ago.*

Excess nitrogen causes algal blooms that reduce the amount of light available to seagrass, and too much nitrogen depletes the amount of oxygen available for marine life. The nitrogen load in our bays is twice what it was 100 years ago. In the past 20 years we have made meaningful strides toward lowering nitrogen by reducing the amount entering our bays through wastewater and air pollution. However, we still add pollution in the form of surface runoff. If we want to seriously reduce the nitrogen in our bays, we must reduce the pollutants that rainwater travels through on its way to the water.

## TERMS TO KNOW:

**Runoff:** The part of precipitation (rainfall) that appears in water bodies after traveling across land. This water picks up whatever pollutants may be in its way (such as fertilizer, automobile residue, and pet droppings) before emptying into a lake, stream, or bay.

## What else would we like to know?

Measuring seagrass coverage and number of oysters are both ways to measure the amount of toxins in our bay ecosystem. Another way to measure toxins is by looking at top predators. Top predators (sharks, seabirds, and carnivorous fish, for example) eat other marine life, so the toxins and pollutants in their food (and, by extension, the bay) shows up in their bodies. Scientists at Mote Marine have begun this research and need continued support.

A longer time span of oyster data and a larger sampling population would also tell us more about our water quality. Fortunately, Sarasota County is planning to continue to study oyster health. A 2002 study found that oysters not only filter excess algae in the water, but also help to permanently remove nitrogen. If oysters have the potential to be an effective filtration and removal system, it would be useful to know more about how many of them there are in our bays and how well they are filtering out pollutants.

## What can I do?

Here are some things we do to help keep our bays healthy:

- Make your yard Bay-friendly! Properly placed plants that are native to Florida require less water, fertilizer, and pesticides. For more information visit [www.fnps.org](http://www.fnps.org).
- Take action to restore and protect the bay. Call the Sarasota Bay Estuary Program at 941-955-8085 or visit them at [www.sarasotabay.org](http://www.sarasotabay.org).
- If you spend time on the water, consider taking part in a volunteer seagrass monitoring program. You can participate if you boat, kayak, snorkel, or wade in our bays. Call John Perry at 941-861-0984.
  - If you've got a leaky automobile, fix it! Fluids from cars are part of the polluted runoff that washes into the bay after heavy rains.
- Share this report with a friend! Awareness is the 1st step in understanding our personal impact on water quality.

## Reservations and Caveats

The SWFWMD aerial photographs are affected by the amount of rain in the previous year. If it rains less, the bay waters are clearer when the photographs are taken, causing data analysts to be able to identify more seagrass. While analysts make their best effort to correctly identify seagrass coverage from aerial photos, shadows, floating debris, and algae can be mistaken for seagrass. Finally, random oyster sampling, while a valid method, is still a sample and may not be completely representative of the total oyster count.

### TERMS TO KNOW

**Watershed:** The land area that drains into a body of water. Runoff from rainfall that drains into a watershed flows through the same land before it empties into the same body of water. Another name for a watershed is drainage basin.

**Data Sources:** South West Florida Water Management District, Sarasota County Fishable & Swimable Index, Sarasota County Environmental Services **References:** Sarasota Bay Estuary Program, Chesapeake Bay Journal **Illustrations** by Mark Villarreal

## What else would we like to measure?

We could only choose one indicator for the month that spotlighted “water quality” of the natural environment. Choosing an indicator became easier when we looked at the data that were available, since many of the things we wanted to include were not being measured. We do feel that these other things are important enough to share with you, and we highlight them in brief below:

**Fertilizer use as a predictor of pollution:** This would study the link between how much fertilizer our community uses and how many of the pollutants from it eventually ends up in our bays, rivers, and lakes. The amount of pollutants in our bodies of water is measured. Measuring the amount of fertilizer bought would require self-reporting, which would be very difficult.

**Amount of waste and ‘green’ waste produced:** This would study how much waste that Sarasota County residents produced. Waste is currently measured by the Florida Department of Environmental Protection. However, the amount of ‘green’ waste produced would be more difficult to measure.

## What is SCOPE ?

*“To engage our community in planning for excellence through a process of open dialogue and impartial research, to establish priorities, propose solutions, and monitor change to enhance the quality of life in Sarasota County.”*

SCOPE is a nonprofit organization that focuses on building community connections. Our goal is to engage a diverse group of people in conversations to look at what we want our future to be instead of problemsolving

### Why connect with your community?

Connected communities have:

- Lower rates of school dropout
- An increased ownership of the decision-making process
- Lower crime rates
- Fewer colds and heart attacks

the past. In addition to publishing a community indicators report (the *Community Report Card* you are reading), SCOPE conducts studies on topics such as Affordable Housing (2002), Mental Health (2003), and Family Violence (2004). Our two current studies are *Aging: The Possibilities* and *Race and Cultural Relations*.

If you were forwarded this message & would like to receive the Community Report Card in your inbox, please email [kirwin@scopexcel.org](mailto:kirwin@scopexcel.org). If you want to get connected with SCOPE and our community, please visit [www.scopexcel.org](http://www.scopexcel.org) or call (941) 365-8751

## Indicator Releases

Introduction  
August

Accessibility  
September

Water Quality  
October

Connectivity  
November

Disaster  
Preparation  
December

Transportation  
January

Land Use  
February

Jobs &  
Industry  
March

Workforce  
Housing  
April

Wealth &  
Income  
May

Health  
June

Education  
July

Civic  
Engagement  
August