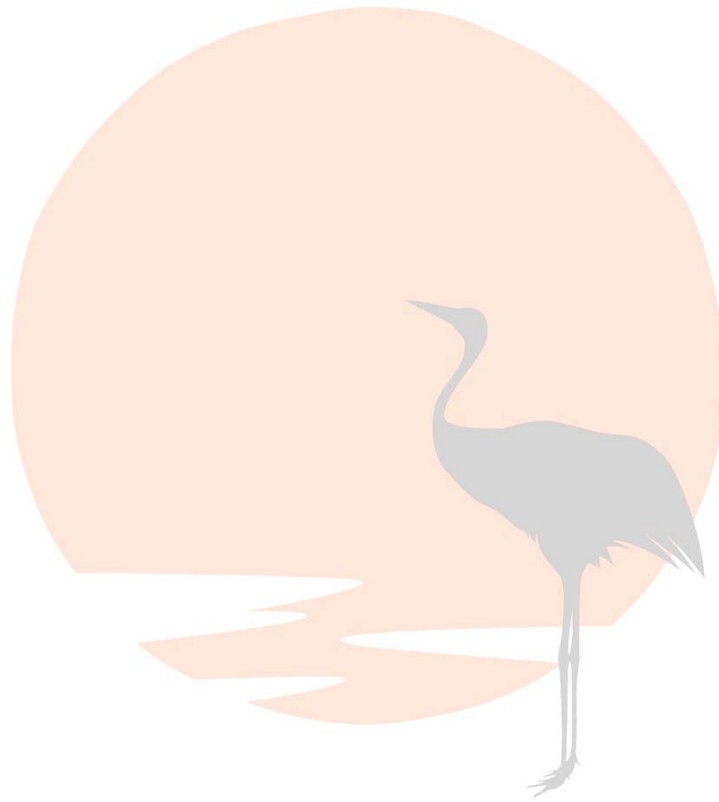


Appendix D

Report Card



August 2010



2 0 0 9



WHAT CAN YOU DO TO PROTECT THE LEMON BAY NORTH WATERSHED?

- Start a Neighborhood Environmental Stewardship Team (NEST) in your neighborhood to improve the health of the watershed.
- Don't fertilize June 1 - September 30 (rainy season) to reduce nutrients (nitrogen).
- Create a living shoreline along your property by planting mangroves instead of hardening the shoreline with seawalls.
- Install a rain garden in your yard to capture stormwater.

The data and information used in the Lemon Bay Report Card were provided by the following monitoring programs:

- Sarasota Environmental Aquatics Team
- Sarasota County Monitoring Program
- SWFWMD Seagrass Monitoring

2 0 0 9



REPORT CARD

LEMON BAY WATERSHED

2009 WATERSHED SCORE = GOOD

range: good, fair, poor *

Water Quality Index Indicators **Below the red line is good**

2009 IMPROVEMENTS

- Lower average rainfall led to lower pollutants entering the bay. As a result, chlorophyll and water clarity were exceptionally good.
- Aerial survey results showed an increase in seagrass coverage.
- Scallop abundance has increased over the previous years.
- Sarasota County began design on sediment abatement projects within the Lemon Bay watershed.
- Sarasota County has begun a water quality improvement project designed to enhance water quality entering Alligator creek upstream of U.S. Highway 41.
- 11 Neighborhood Environmental Stewardship Teams (NEST) were established to improve the watershed.

WETLANDS

About 50% of the pre-development wetland area remains in the Lemon Bay watershed.

SHORELINE

The Sarasota County 2007-2008 mangrove survey indicated:

- Over half (57 percent) of the parcels surveyed had mangroves present along more than 30 percent of the parcel's shoreline.
- Of those parcels containing mangroves, 67 percent were untrimmed, showing compliance with trimming limits is high.
- 99 percent of trimming performed was within limits established by law.

FAST FACTS

The Lemon Bay Watershed is approximately 74 square miles in area. 68 percent of the watershed is in Sarasota County and the rest is in Charlotte County. Seven drainage basins drain into Lemon Bay. Five of these are either entirely or mainly in Sarasota County and two basins are primarily or entirely in Charlotte County.

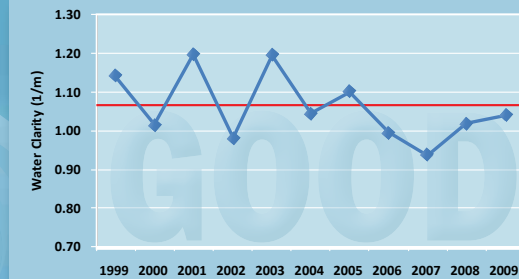
- Alligator Creek
- Ainger Creek
- Forked Creek
- Gottfried Creek
- Woodmere Creek
- Oyster Creek (Charlotte County)
- Buck Creek (Charlotte County)

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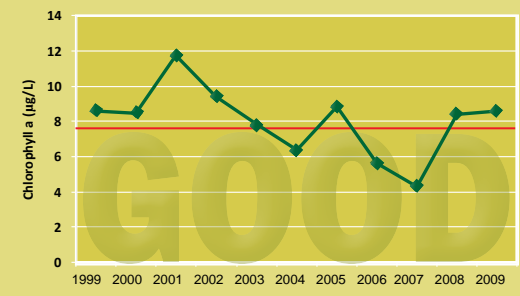
OTHER WATERSHED HEALTH INDICATORS

- Half of the watershed is still undeveloped.
- There is a conditionally approved shellfish harvesting area on the western section of Lemon Bay, north of Stump Pass.
- A Florida Department of Environmental Protection assessment showed water quality impairments for nutrients in upper Lemon Bay.

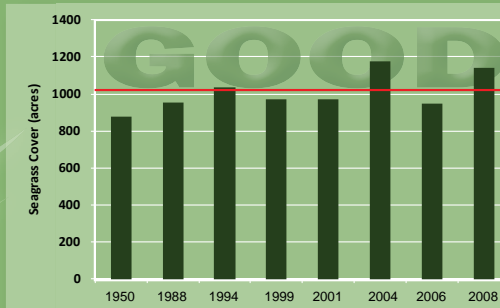
WATER CLARITY
 – a measure of the amount of light that reaches the bottom; depends upon the amount of chlorophyll, turbidity, water color, and suspended sediments. Affects seagrass growth and reproduction.



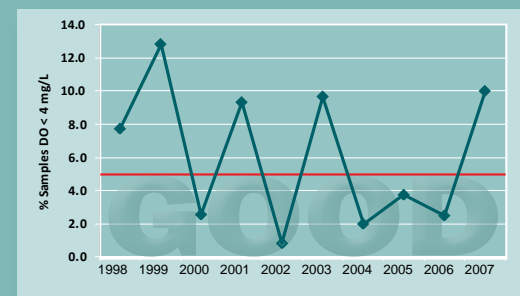
CHLOROPHYLL
 – a measure of algae in the water; influenced by levels of nutrient loading and water circulation. Affects water clarity.



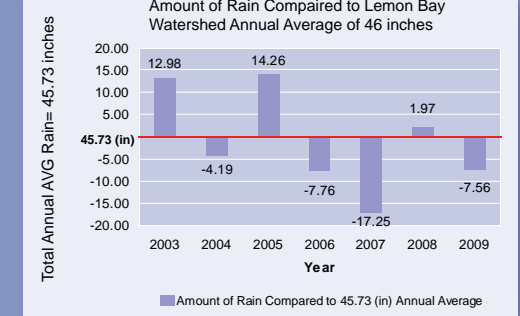
SEAGRASS
 – a critical habitat for many organisms such as shrimp, crabs and juvenile fish. This is a good indicator of bay ecological health; influenced by water clarity.



NITROGEN LOADING
 – an estimate of the amount of nitrogen flowing off the watershed to the bay; influenced by rainfall, runoff from fertilizer, pet waste, and other sources. Affects water quality, especially chlorophyll.



DISSOLVED OXYGEN
 – a measure of the amount of oxygen in the water; influenced by the amount of existing algae and decomposing organic matter, like leaves. Affects habitats for fish and bottom-dwelling organisms such as like clams.



RAINWATER
 – driver for water quality. More rain brings more stormwater runoff, which carries pollutants and nutrients to the bay. Here is the deviation from the average annual rainfall of 46 inches in the Lemon Bay Watershed.

* Rainfall values obtained from data collected by Sarasota County automated data collection sites within the watershed.

CHART LEGEND:

Red lines on the charts show our goal for each watershed health indicator.

- For seagrass and oysters, above the red line is good.
- For water clarity, chlorophyll, nitrogen loading, and dissolved oxygen, below the red line is good.

REMAINING CHALLENGES

Healthy, productive tidal creeks, such as Alligator and Gottfried creeks, may naturally experience low dissolved oxygen conditions.

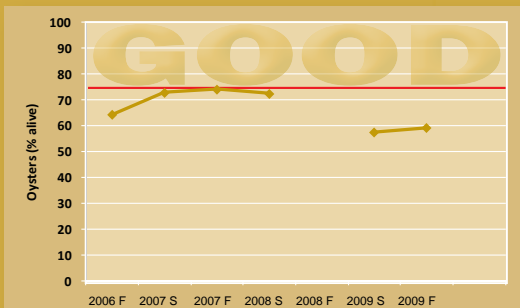
There are four basins in the Lemon Bay watershed, Alligator, Woodmere, Forked and Gottfried creeks, that have been deemed impaired and TMDLs proposed by Environmental Protection Agency (EPA); and the Florida Department of Environmental Protection. Sarasota County is researching the validity of these assessments and they are currently under technical review.

HOW DO WE CALCULATE THESE SCORES?

* range: good, fair, poor

The methods and data used to calculate these scores can be found in Chapter 9 of the Lemon Bay Watershed Management Plan at scgov.net, search Lemon Bay.

Bay Quality Index Indicators **Above the red line is good**



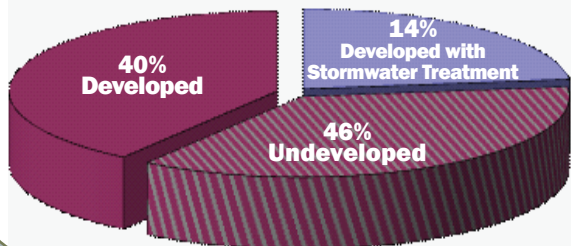
OYSTERS
 – an important bay resource and indicator of bay ecological health; influenced by good water quality and physical setting.

Lemon Bay is a state-designated “Outstanding Florida Water,” and contains extensive seagrass and shellfish habitat.

Sponsored by a grant from the
 Manasota Basin Board of the
**Southwest Florida
 Water Management District**
 WATERMATTERS.ORG • 1-800-423-1476



Lemon Bay percentage of Land Developed, Undeveloped and Developed with stormwater BMPs



Watershed Improvement

Of the 54% of the watershed that is developed only about one quarter of that is treated with modern stormwater “best management practices”. A good portion of the watershed does not have adequate stormwater treatment to hold back and clean before stormwater pollutants are carried into our creeks and Lemon Bay.

Our goal is to increase the amount of land that has stormwater runoff treated by doing projects and partnering with residents of the watershed.

Studies have shown that having grass or vegetated swales instead of curb and gutter systems can help lower the amount of pollutants entering our creeks and bays. Many of the existing neighborhoods in the Lemon Bay watershed have vegetated swales.

You can help by maintaining your vegetated swales and not installing pipes and covering them over. You can also help by turning your swale into a rain garden, starting a NEST in your neighborhood, retrofitting your property with other LID techniques, capturing stormwater on your property with cisterns or rain barrels, and reducing your irrigation and fertilization.



4th Street Fire Station cistern



Storm drain markers



Cistern collecting rainwater for watering plants



Low flow water fixture



Rain garden (foreground)
Cistern (background)

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Low Impact Development

Low Impact Development (LID) is a stormwater management approach that aims to replicate the natural hydrologic functioning of the pre-development landscape. LID can allow rainwater to filter into the ground and reduces the amount of stormwater leaving properties. LID practices, such as cisterns or rain barrels, rain gardens or bioswales, green roofs, and pervious paving, can be distributed throughout your property and integrated as a treatment train (i.e., in series) to get the most benefit.

How you can help:

Install LID in your yard to minimize the amount of stormwater and pollutants leaving your property.

Water Conservation

Water conservation starts both inside and outside your home. By using water wisely you can reduce the amount of water that is wasted in your daily activities. Reducing water use eases demand on our drinking water supplies and saves electricity needed to produce, treat and transport the water to your home.

How you can help:

- Check for water leaks inside and outside your home or business.
- Install low-flow faucet aerators, shower heads and toilets.
- Purchase high-efficiency Energy Star appliances (example: washer and dryer).

For more information on using water wisely call 941-861-5000 and ask for the NEST or Sustainability programs.

Rain Gardens

Any natural or constructed low area in your yard where rain water gathers and the soil remains moist could be converted into a rain garden filled with water loving flowers and plants. The rain garden and plants reduce pollution and stormwater run-off by intercepting some of the water running off your property and allowing it to percolate into the ground.

How you can help:

- Consider installing a rain garden as your personal way of reducing stormwater pollution.
- By directing rain from roof run-off or natural flow into this area and you can create a lush verdant oasis right in your own yard.

Florida-Friendly Landscaping™

A Florida-Friendly Landscape is not only beautiful, it is also environmentally friendly. It stabilizes soil, prevents erosion, filters pollutants, and reduces harmful run-off. All of these contribute to preserving Florida’s unique natural resources. From the fertilizers you apply to the water you use, your gardening choices can have an impact on land, water, and wildlife.

How you can help:

What you do in your landscape matters. Learn how you can create a Florida-Friendly Yard and how to obtain Florida-Friendly Yard Recognition. Call 941-861-5000 and ask for the Florida Friendly-Landscaping Program.

REPORT CARD

LEMON BAY WATERSHED



How we measure up



Habitat

Mangroves provide many benefits to people and the environment:

- Roots and trunks resist and prevent shoreline erosion
- Food and habitat is provided for the marine food chain, including fish we like to consume
- Stormwater is filtered as it runs off the land helping to maintain the quality of our coastal waters
- Homes are protected from severe wind damage

Our goal is to increase mangroves along shorelines so they can provide even greater benefits to a larger area of our coastline.



Mangrove habitat has remained relatively stable in Lemon Bay. Maintaining existing mangrove areas is important and encouraging mangroves to grow is a less expensive and more effective way of preventing both erosion and property damage from tropical storms.



Fresh Water Wetlands provide many valuable services for the watershed, including flood control, recreation, water quality improvement, and habitat for plants and animals. Approximately 50% of the pre-development freshwater wetlands remain in the Lemon Bay watershed. Continued wetland protection through minimizing impacts and restoring wetland function where possible will help ensure the future health of the watershed.

Tree Canopy is important for the watershed because it intercepts rainfall and helps reduce stormwater runoff.

22% of the Lemon Bay watershed remains covered by tree canopy. Much of that canopy exists in undeveloped areas in the eastern portion of the watershed. Our goal is to work to preserve natural areas and increase tree canopy, where appropriate, to help reduce stormwater runoff and bank erosion as well as to provide habitat.



Tidal Creeks are unique ecosystems that provide habitat for marine and plant life and function as a link between the watershed and the bay by delivering freshwater and nutrients. The Tidal Creek Condition Index (TCCI) is an ecologically-based tool that measures the biological health of county tidal creeks.



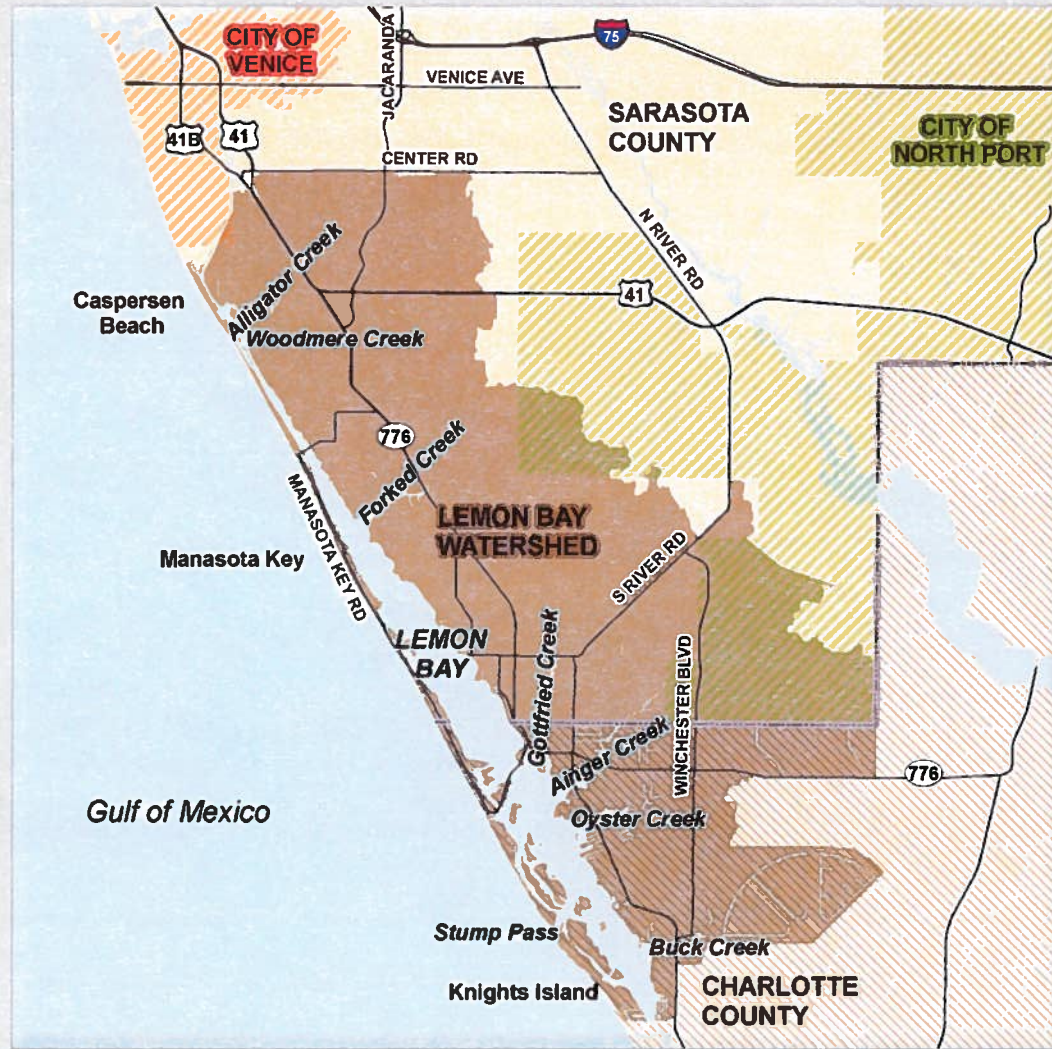
The Lemon Bay Watershed is comprised of five tidal creeks that drain the associated basins: Alligator Creek (10.71 sq. miles), Woodmere Creek (2.30 sq. miles), Forked Creek (9.12 sq. miles), Gottfried Creek (11.3 sq. miles), and Ainger Creek (10.37 sq miles). On our TCCI measurement scale of 1-3, the Lemon Bay Watershed score is a 2 which is categorized as FAIR.

Water Use (conservation)

How much water do we use in our homes and on our landscaping? Our county goal is to use no more than 86-gallons of water per person, per day. In 2009, Sarasota County met that goal by only using 83-gallons of water per person, per day. What about reusing our treated waste water? Our goal is to use 75% of treated waste water for irrigation, however, during 2009 we used only 66%. Sarasota County began selling rain barrels to the public in 2009 to help reduce potable water use outdoors. 91 rain barrels were sold county-wide with six rain barrels in the Lemon Bay watershed.



2 0 1 0



WHAT CAN YOU DO TO PROTECT THE LEMON BAY NORTH WATERSHED?

- Call 861-5000 to start a Neighborhood Environmental Stewardship Team (NEST) in your neighborhood to improve the health of the watershed.
- Don't fertilize June 1 - September 30 (rainy season) to reduce nutrients (nitrogen).
- Create a living shoreline along your property by planting mangroves instead of hardening the shoreline with seawalls.
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2 0 1 0



REPORT CARD

LEMON BAY WATERSHED





2010 WATERSHED SCORE = GOOD

range: good, fair, poor *

Water Quality Index Indicators

2010 IMPROVEMENTS

- Aerial survey results showed an increase in seagrass coverage.
- Sarasota County began design on sediment abatement projects within the Lemon Bay watershed.
- Sarasota County has begun a water quality improvement project designed to enhance water quality entering Alligator creek upstream of U.S. Highway 41.
- Ten Neighborhood Environmental Stewardship Teams (NEST) were established to improve the watershed.

WETLANDS

About 50% of the pre-development wetland area remains in the Lemon Bay watershed.

FAST FACTS

The Lemon Bay Watershed is approximately 74 square miles in area. 68 percent of the watershed is in Sarasota County and the rest is in Charlotte County. Seven drainage basins drain into Lemon Bay. Five of these are either entirely or mainly in Sarasota County and two basins are primarily or entirely in Charlotte County.

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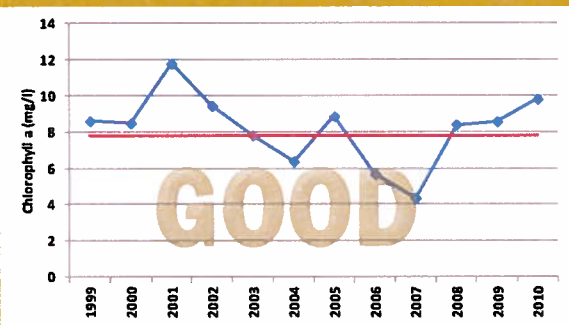
In 1986 Lemon Bay was designated an Aquatic Preserve. The data used for this report card does not include data from Oyster Creek or Buck Creek basins.

OTHER WATERSHED HEALTH INDICATORS

- Half of the watershed is still undeveloped.
- There is a conditionally approved shellfish harvesting area on the western section of Lemon Bay, north of Stump Pass.
- 11 scallops were found in the bay.
- A Florida Department of Environmental Protection assessment showed water quality impairments for nutrients in upper Lemon Bay.
- Red tide cell counts below detection.

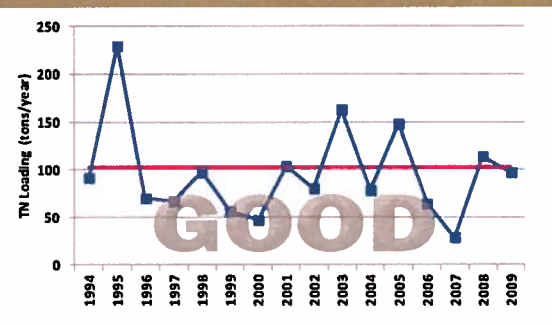
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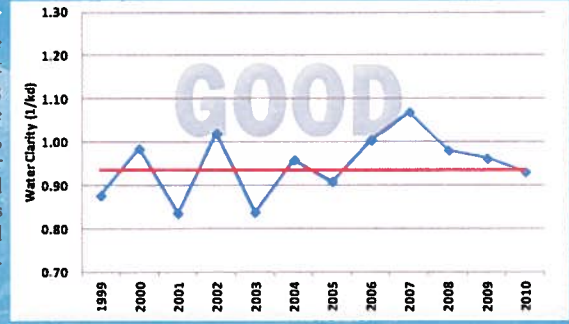
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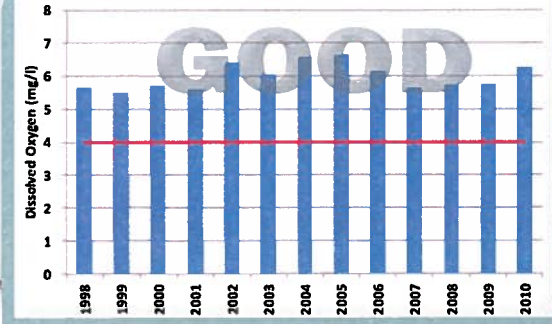
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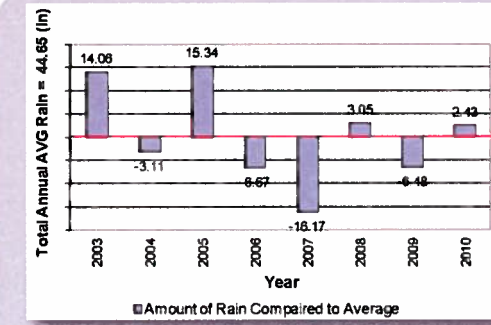
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CHART LEGEND:

Red lines on the charts show our goal for each watershed health indicator.

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Bay Quality Index Indicators

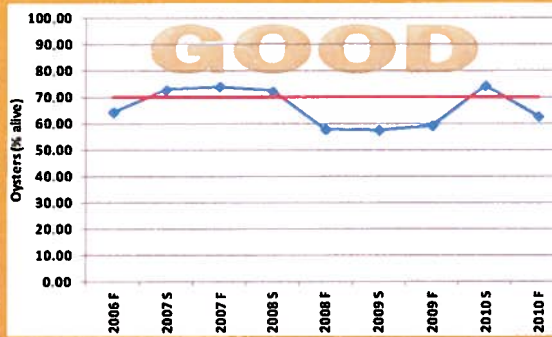
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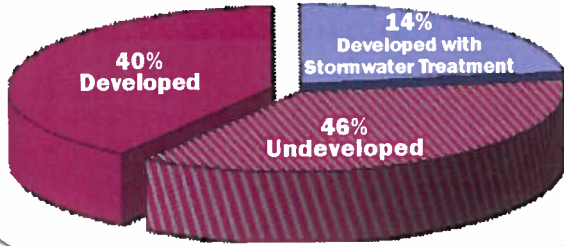
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Lemon Bay percentage of Land Developed, Undeveloped and Developed with stormwater BMPs



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