

CHEC

Punta Gorda Canal

Water Quality

Sampling Program



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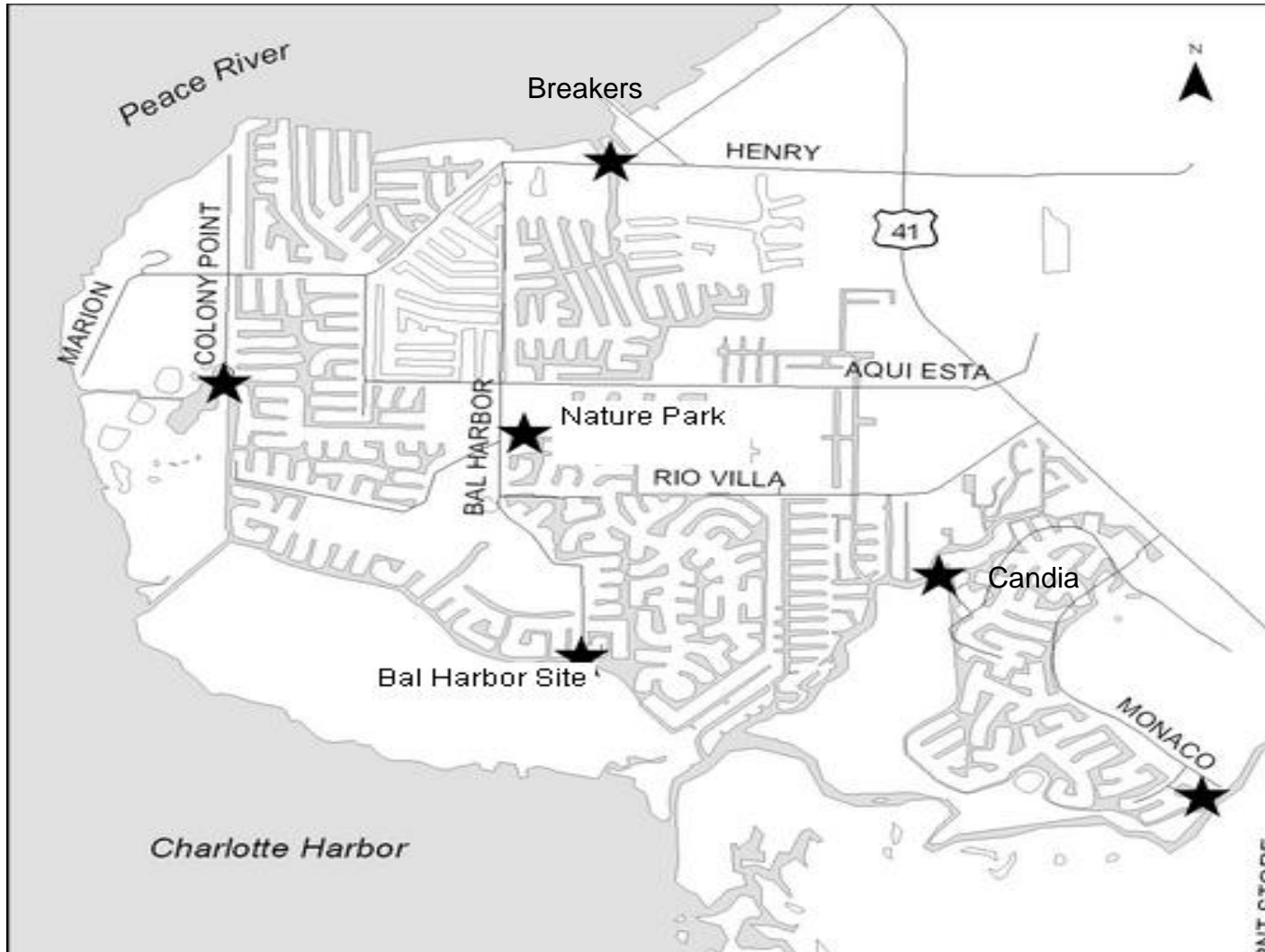
Charlotte Harbor Environmental Center Canal Water Sampling Program

- Initiated 2009
- Six Canal locations are sampled
- Monthly sampling by volunteers
- Lake Watch Analysis:
Nitrogen, Phosphorus, Chlorophyll, Color
- Field Testing:
pH, DO, Salinity, Temperature, Secchi
Meteorological parameters

Processes Affecting Water Quality

- Tides
- Wind
- Circulation
- Salinity
- Temperature
- Sunlight
- Rain and Runoff
- Turbidity

Station Locations



2014 Volunteers

Punta Gorda Isles

<u>Location:</u>	<u>Volunteers</u>
Bal Harbor	Larry & Patti Linn
Nature Park	Tom Beck & Marlene Hofer
Breakers	Ron & Gena Davis
Colony Point	Nancy & John Dauster

Burnt Store Isles

<u>Location:</u>	<u>Volunteers</u>
Candia	Doug Rhees
Monaco	Harry Heiges

Common Sense Ideas for Water Quality

- Dispose of garbage properly
- Don't treat the water as a toilet, pets, pump outs
- Repair poor septic fields
- Control fertilizers and pesticides
- Control up stream agricultural runoff
- Obey fishing seasons and limits
- Eliminate gas and oil pollution from motors
- Don't "prop" scar the bottom
- Educate those who are ignorant
- Volunteer for clean-ups and re-population efforts

Lake Watch Testing

Total Chlorophyll

Total Phosphorus

Total Nitrogen

Water clarity

Trophic Ranges

- *Eutrophic*
- *Hypereutrophic*
 - *Oligotrophic*
 - *Mesotrophic*

- Eutrophic state is defined as having a high level of biological productivity, second only to the hypereutrophic category. (The prefix "eu" means good or sufficient.) A eutrophic water body is capable of producing and supporting an abundance of living organisms (plants, fish, and wildlife).
- Hypereutrophic state is defined as having the highest level of biological productivity. The prefix "hyper" means over abundant. Hypereutrophic water bodies are among the most biologically productive in the world.
- Mesotrophic state is defined as having a moderate level of biological productivity. (The prefix "meso" means mid-range.) A mesotrophic water body is capable of producing and supporting moderate populations of living organisms (plants, fish, and wildlife). Mesotrophic water bodies generally have: moderate nutrient concentrations; moderate growth of algae, aquatic macrophytes or both
- Oligotrophic state is defined as having the lowest level of biological productivity. The prefix "oligo" means scant or lacking. A oligotrophic water body is capable of producing and supporting relatively small populations of living organisms (plant, fish and wildlife).

How LAKEWATCH Determines Waterbody's Classification

It's possible that one or more of the four water chemistry parameters to fall into different trophic ranges. (For example, a waterbody may have water clarity in the *oligotrophic* range, and its total nitrogen levels may be in the *eutrophic* range.) When one or more of the four LAKEWATCH parameters falls into different trophic ranges, LAKEWATCH uses the total chlorophyll averages to determine the overall trophic state. Since the total chlorophyll measurement indicates how much algae is actually being produced in a waterbody, it's the most direct indicator of biological productivity. The other three parameters are more limited in that they only provide information about the *potentia/for* biological productivity.

Analysis Note Notes:

- Keep in mind that Florida's coastal areas are naturally diverse with a wide range of water chemistry conditions due to differences in physiography, geology, soils, hydrology, vegetation, and climate across the state.
- Don't be alarmed if a sampling location is at one end of the spectrum (High Range or Low Range). The existence of an extremely high or low value merely indicates there are factors you might want to take a closer look at in order to identify the cause. If you have a concern, we encourage you to talk with the LAKEWATCH staff about it.

Colony Point

- **Colony Point** has been sampled in the Florida LAKEWATCH program for a total of **46** months. To determine the trophic state classification for **Colony Point** we calculated averages from **February 3, 2009** to **December 3, 2013** for each of the four LAKEWATCH water chemistry parameters (total chlorophyll, total phosphorus, total nitrogen, and water clarity) and compared those averages with the four Trophic State ranges*. The results are as follows:
 - total chlorophyll for Colony Point is 7 µg/L which falls in the **eutrophic** range.
 - total phosphorus for Colony Point is 169 µg/L which falls in the **hypereutrophic** range.
 - total nitrogen for Colony Point is 691 µg/L which falls in the **eutrophic** range.
 - water clarity for Colony Point is 3.6 feet which falls in the **eutrophic** range.

Breakers

Breakers has been sampled in the Florida LAKEWATCH program for a total of **50** months. To determine the trophic state classification for **Breakers** we calculated averages from **February 3, 2009** to **December 3, 2013** for each of the four LAKEWATCH water chemistry parameters (total chlorophyll, total phosphorus, total nitrogen, and water clarity) and compared those averages with the four Trophic State ranges*. The results are as follows:

total chlorophyll for Breakers is 8 µg/L which falls in the **eutrophic** range.

total phosphorus for Breakers is 214 µg/L which falls in the **hypereutrophic** range.

total nitrogen for Breakers is 825 µg/L which falls in the **eutrophic** range.

water clarity for Breakers is 2.9 feet which falls in the **hypereutrophic** range.

Candia

- **Candia** has been sampled in the Florida LAKEWATCH program for a total of **53** months. To determine the trophic state classification for **Candia** we calculated averages from **February 3, 2009** to **December 3, 2013** for each of the four LAKEWATCH water chemistry parameters (total chlorophyll, total phosphorus, total nitrogen, and water clarity) and compared those averages with the four Trophic State ranges*. The results are as follows:
- total chlorophyll for Candia is 7 $\mu\text{g/L}$ which falls in the **eutrophic** range.
- total phosphorus for Candia is 92 $\mu\text{g/L}$ which falls in the **eutrophic** range.
- total nitrogen for Candia is 742 $\mu\text{g/L}$ which falls in the **eutrophic** range.
- water clarity for Candia is 4.0 feet which falls in the **eutrophic** range.

Bal Harbor

- **Bal Harbor** has been sampled in the Florida LAKEWATCH program for a total of **51** months. To determine the trophic state classification for **Bal Harbor** we calculated averages from **February 3, 2009** to **December 3, 2013** for each of the four LAKEWATCH water chemistry parameters (total chlorophyll, total phosphorus, total nitrogen, and water clarity) and compared those averages with the four Trophic State ranges*. The results are as follows:
 - total chlorophyll for Bal Harbor is 7 µg/L which falls in the **eutrophic** range.
 - total phosphorus for Bal Harbor is 152 µg/L which falls in the **hypereutrophic** range.
 - total nitrogen for Bal Harbor is 613 µg/L which falls in the **eutrophic** range.
 - water clarity for Bal Harbor was not calculated.

Nature Park

- **Nature Park** has been sampled in the Florida LAKEWATCH program for a total of **54** months. To determine the trophic state classification for **Nature Park** we calculated averages from **February 3, 2009** to **December 3, 2013** for each of the four LAKEWATCH water chemistry parameters (total chlorophyll, total phosphorus, total nitrogen, and water clarity) and compared those averages with the four Trophic State ranges*. The results are as follows:
 - total chlorophyll for Nature Park is 8 µg/L which falls in the **eutrophic** range.
 - total phosphorus for Nature Park is 125 µg/L which falls in the **hypereutrophic** range.
 - total nitrogen for Nature Park is 667 µg/L which falls in the **eutrophic** range.
 - water clarity for Nature Park is 5.4 feet which falls in the **eutrophic** range.

Monaco

- **Monaco** has been sampled in the Florida LAKEWATCH program for a total of **53** months. To determine the trophic state classification for **Monaco** we calculated averages from **February 3, 2009** to **December 3, 2013** for each of the four LAKEWATCH water chemistry parameters (total chlorophyll, total phosphorus, total nitrogen, and water clarity) and compared those averages with the four Trophic State ranges*. The results are as follows:
 - total chlorophyll for Monaco is 16 $\mu\text{g/L}$ which falls in the **eutrophic** range.
 - total phosphorus for Monaco is 118 $\mu\text{g/L}$ which falls in the **hypereutrophic** range.
 - total nitrogen for Monaco is 897 $\mu\text{g/L}$ which falls in the **eutrophic** range.
 - water clarity for Monaco is 2.7 feet which falls in the **hypereutrophic** range.

Punta Gorda Canal Monitoring Program

Funding from:

- Charlotte Harbor Fund
- City of Punta Gorda

Supported by:

Lake Watch

&

The Canal Advisory Committees:

Punta Gorda Isles and Burnt Store Isles

