

**LAKEWATCH Report for Biscayne Perrine-1 in Miami-Dade County
Estuary and Estuary Segment: Biscayne Bay South Central Inshore
Using Data Downloaded 2-12-2019**

Introduction for Estuary

This report summarizes data collected on systems that have been part of the LAKEWATCH program. Data are from the period of record for individual systems. The first part of this summary lists background data for each system, the second part lists the long-term data averages and ranges and the final part are trend plots for nutrients, chlorophyll and Secchi depth. Plots were only made for systems with five or more years of data.

The near shore Florida coastline is separated into estuary and estuary segments within the estuary. Deeper coastal waters are separated into coastal nutrient regions and coastal nutrient segments within the regions. Numeric nutrient criteria are established for all estuary segments, including criteria for total nitrogen, total phosphorus, and chlorophyll a. For open ocean coastal waters, numeric criteria are established for chlorophyll a, that is derived from satellite remote sensing techniques. For those locations without defined segments there are narrative nutrient criteria (e.g., Florida Keys Halo Zone).

The maps defining individual estuaries and coastal segments can be found at the following link: <https://www.flrules.org/Gateway/reference.asp?No=Ref-05420>

The individual nutrient criteria can be found at the following link: <https://www.flrules.org/gateway/RuleNo.asp?title=SURFACE%20WATER%20QUALITY%20STANDARDS&ID=62-302.532>

Base File Data for Estuaries: Definitions:

- **County:** Name of county adjacent to the system.
- **Name:** System name that LAKEWATCH uses for the station.
- **Water Body Type:** Four different types of systems; lakes, estuaries, river/streams and springs.
- **Period of Record (years):** Number of years a system has been in the LAKEWATCH program.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.

Table 1. Base File Data.

County	Miami-Dade
Name	Biscayne Perrine-1
Water Body Type	Estuary
Period of Record (years, range)	1 (2000 to 2000)
Latitude	25.5917
Longitude	-80.3000

Long-Term Data for Estuaries: Definitions

- **Total Phosphorus ($\mu\text{g/L}$):** The nutrient most often limiting growth of plant/algae in Florida's fresh and saltwater environments.
- **Total Nitrogen ($\mu\text{g/L}$):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
- **Chlorophyll-uncorrected ($\mu\text{g/L}$):** Chlorophyll concentrations are used to measure relative abundances of open water algal population.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity (how far one can see into the water) and are listed with English and metric units.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filter out.
- **Specific Conductance ($\mu\text{S/cm@25}^\circ\text{C}$), Salinity (ppt):** Measurement of the ability of water to conduct electricity and can be used to estimate the amount of dissolve materials in water.

Table 2. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance/salinity (collected quarterly).

Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	5 - 5	5 (1)
Total Nitrogen ($\mu\text{g/L}$)	346 - 346	346 (1)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	1 - 1	1 (1)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	-	()
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	()
Salinity (ppt)	-	()

**LAKEWATCH Report for Biscayne Perrine-2 in Miami-Dade County
Estuary and Estuary Segment: Biscayne Bay South Central Inshore
Using Data Downloaded 2-12-2019**

Introduction for Estuary

This report summarizes data collected on systems that have been part of the LAKEWATCH program. Data are from the period of record for individual systems. The first part of this summary lists background data for each system, the second part lists the long-term data averages and ranges and the final part are trend plots for nutrients, chlorophyll and Secchi depth. Plots were only made for systems with five or more years of data.

The near shore Florida coastline is separated into estuary and estuary segments within the estuary. Deeper coastal waters are separated into coastal nutrient regions and coastal nutrient segments within the regions. Numeric nutrient criteria are established for all estuary segments, including criteria for total nitrogen, total phosphorus, and chlorophyll a. For open ocean coastal waters, numeric criteria are established for chlorophyll a, that is derived from satellite remote sensing techniques. For those locations without defined segments there are narrative nutrient criteria (e.g., Florida Keys Halo Zone).

The maps defining individual estuaries and coastal segments can be found at the following link: <https://www.flrules.org/Gateway/reference.asp?No=Ref-05420>

The individual nutrient criteria can be found at the following link: <https://www.flrules.org/gateway/RuleNo.asp?title=SURFACE%20WATER%20QUALITY%20STANDARDS&ID=62-302.532>

Base File Data for Estuaries: Definitions:

- **County:** Name of county adjacent to the system.
- **Name:** System name that LAKEWATCH uses for the station.
- **Water Body Type:** Four different types of systems; lakes, estuaries, river/streams and springs.
- **Period of Record (years):** Number of years a system has been in the LAKEWATCH program.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.

Table 1. Base File Data.

County	Miami-Dade
Name	Biscayne Perrine-2
Water Body Type	Estuary
Period of Record (years, range)	1 (2000 to 2000)
Latitude	25.6000
Longitude	-80.3000

Long-Term Data for Estuaries: Definitions

- **Total Phosphorus ($\mu\text{g/L}$):** The nutrient most often limiting growth of plant/algae in Florida's fresh and saltwater environments.
- **Total Nitrogen ($\mu\text{g/L}$):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
- **Chlorophyll-uncorrected ($\mu\text{g/L}$):** Chlorophyll concentrations are used to measure relative abundances of open water algal population.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity (how far one can see into the water) and are listed with English and metric units.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filter out.
- **Specific Conductance ($\mu\text{S/cm@25}^\circ\text{C}$), Salinity (ppt):** Measurement of the ability of water to conduct electricity and can be used to estimate the amount of dissolve materials in water.

Table 2. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance/salinity (collected quarterly).

Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	7 - 7	7 (1)
Total Nitrogen ($\mu\text{g/L}$)	299 - 299	299 (1)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	1 - 1	1 (1)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	-	()
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	()
Salinity (ppt)	-	()

**LAKEWATCH Report for Biscayne Perrine-3 in Miami-Dade County
Estuary and Estuary Segment: Biscayne Bay North Central Inshore
Using Data Downloaded 2-12-2019**

Introduction for Estuary

This report summarizes data collected on systems that have been part of the LAKEWATCH program. Data are from the period of record for individual systems. The first part of this summary lists background data for each system, the second part lists the long-term data averages and ranges and the final part are trend plots for nutrients, chlorophyll and Secchi depth. Plots were only made for systems with five or more years of data.

The near shore Florida coastline is separated into estuary and estuary segments within the estuary. Deeper coastal waters are separated into coastal nutrient regions and coastal nutrient segments within the regions. Numeric nutrient criteria are established for all estuary segments, including criteria for total nitrogen, total phosphorus, and chlorophyll a. For open ocean coastal waters, numeric criteria are established for chlorophyll a, that is derived from satellite remote sensing techniques. For those locations without defined segments there are narrative nutrient criteria (e.g., Florida Keys Halo Zone).

The maps defining individual estuaries and coastal segments can be found at the following link: <https://www.flrules.org/Gateway/reference.asp?No=Ref-05420>

The individual nutrient criteria can be found at the following link: <https://www.flrules.org/gateway/RuleNo.asp?title=SURFACE%20WATER%20QUALITY%20STANDARDS&ID=62-302.532>

Base File Data for Estuaries: Definitions:

- **County:** Name of county adjacent to the system.
- **Name:** System name that LAKEWATCH uses for the station.
- **Water Body Type:** Four different types of systems; lakes, estuaries, river/streams and springs.
- **Period of Record (years):** Number of years a system has been in the LAKEWATCH program.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.

Table 1. Base File Data.

County	Miami-Dade
Name	Biscayne Perrine-3
Water Body Type	Estuary
Period of Record (years, range)	1 (2000 to 2000)
Latitude	25.6083
Longitude	-80.3000

Long-Term Data for Estuaries: Definitions

- **Total Phosphorus ($\mu\text{g/L}$):** The nutrient most often limiting growth of plant/algae in Florida's fresh and saltwater environments.
- **Total Nitrogen ($\mu\text{g/L}$):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
- **Chlorophyll-uncorrected ($\mu\text{g/L}$):** Chlorophyll concentrations are used to measure relative abundances of open water algal population.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity (how far one can see into the water) and are listed with English and metric units.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filter out.
- **Specific Conductance ($\mu\text{S/cm@25}^\circ\text{C}$), Salinity (ppt):** Measurement of the ability of water to conduct electricity and can be used to estimate the amount of dissolve materials in water.

Table 2. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance/salinity (collected quarterly).

Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	6 - 6	6 (1)
Total Nitrogen ($\mu\text{g/L}$)	309 - 309	309 (1)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	1 - 1	1 (1)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	-	()
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	()
Salinity (ppt)	-	()

LAKEWATCH Report for Biscayne-1 in Miami-Dade County
Estuary and Estuary Segment: Biscayne Bay North Central Inshore
Using Data Downloaded 2-12-2019

Introduction for Estuary

This report summarizes data collected on systems that have been part of the LAKEWATCH program. Data are from the period of record for individual systems. The first part of this summary lists background data for each system, the second part lists the long-term data averages and ranges and the final part are trend plots for nutrients, chlorophyll and Secchi depth. Plots were only made for systems with five or more years of data.

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The maps defining individual estuaries and coastal segments can be found at the following link:
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The individual nutrient criteria can be found at the following link:
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Base File Data for Estuaries: Definitions:

- **County:** Name of county adjacent to the system.
- **Name:** System name that LAKEWATCH uses for the station.
- **Water Body Type:** Four different types of systems; lakes, estuaries, river/streams and springs.
- **Period of Record (years):** Number of years a system has been in the LAKEWATCH program.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.

Table 1. Base File Data.

County	Miami-Dade
Name	Biscayne-1
Water Body Type	Estuary
Period of Record (years, range)	6 (2000 to 2005)
Latitude	25.6248
Longitude	-80.2830

Long-Term Data for Estuaries: Definitions

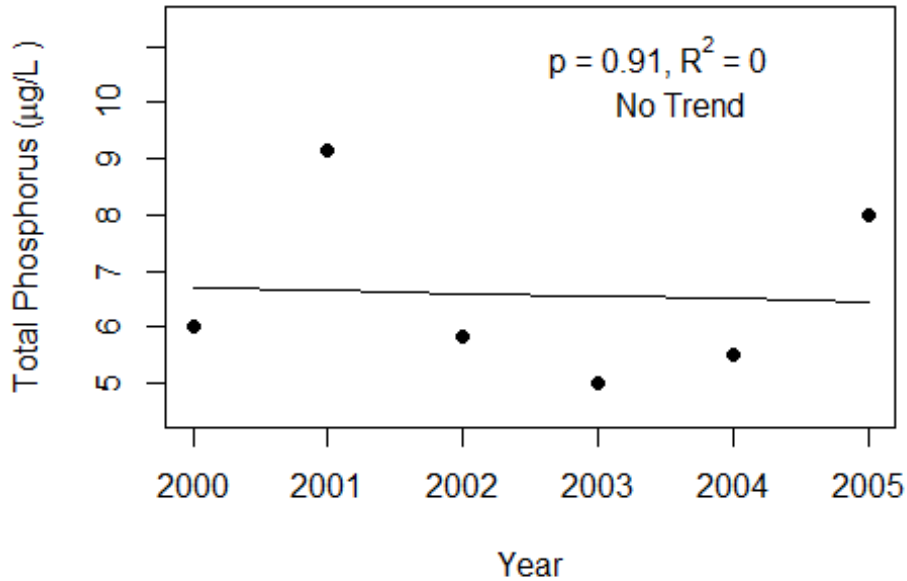
- **Total Phosphorus ($\mu\text{g/L}$):** The nutrient most often limiting growth of plant/algae in Florida's fresh and saltwater environments.
- **Total Nitrogen ($\mu\text{g/L}$):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
- **Chlorophyll-uncorrected ($\mu\text{g/L}$):** Chlorophyll concentrations are used to measure relative abundances of open water algal population.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity (how far one can see into the water) and are listed with English and metric units.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filter out.
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Table 2. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance/salinity (collected quarterly).

Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	5 - 8	6 (6)
Total Nitrogen ($\mu\text{g/L}$)	163 - 409	279 (6)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	1 - 1	1 (5)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	4 - 8	6 (4)
Specific Conductance ($\mu\text{S/cm@25 C}$)	18000 - 39494	29869 (4)
Salinity (ppt)	11.0 - 24.5	18.5 (4)

Figure 1 and Figure 2. Trend plots of annual average total phosphorus and annual average total nitrogen versus year. The R^2 value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the R^2 the stronger the relation) and the p value indicates if the relation is significant ($p < 0.05$ is significant). Trend status are reported on plots.

Biscayne-1 (Miami-Dade)



Biscayne-1 (Miami-Dade)

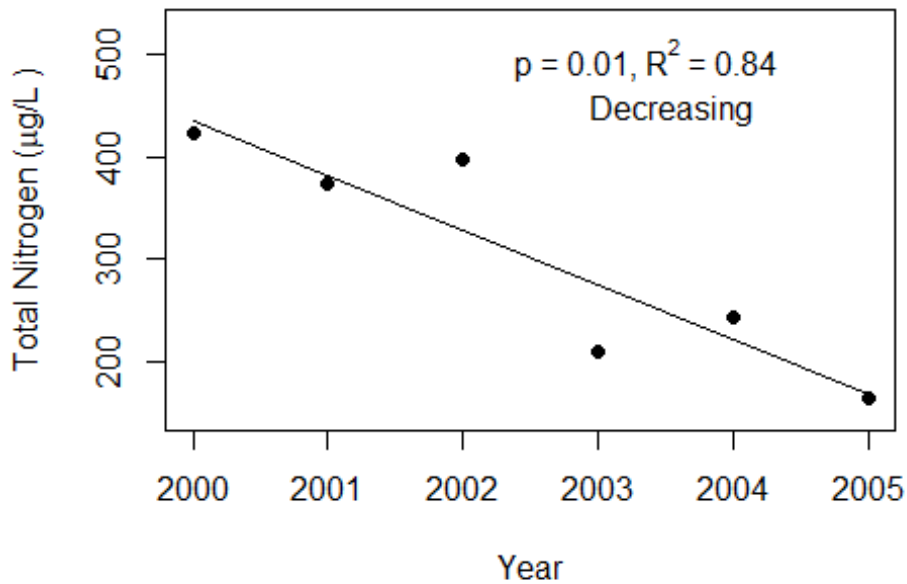
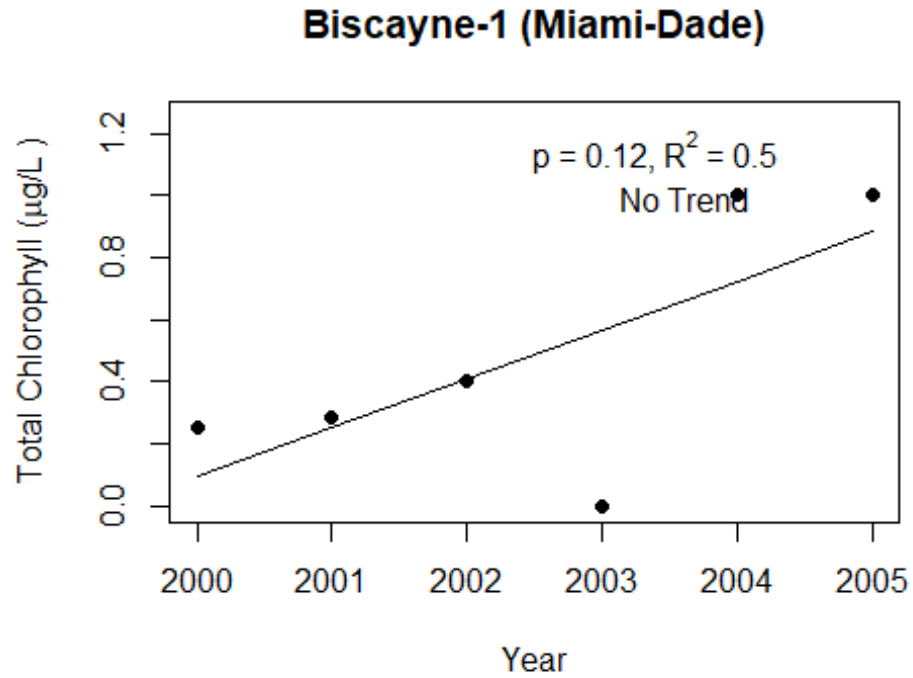


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The R^2 value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the R^2 the stronger the relations and the p value indicates if the relation is significant ($p < 0.05$ is significant)). Trend status are reported on plots.



**LAKEWATCH Report for Biscayne-2 in Miami-Dade County
Estuary and Estuary Segment: Biscayne Bay North Central Inshore
Using Data Downloaded 2-12-2019**

Introduction for Estuary

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- **Period of Record (years):** Number of years a system has been in the LAKEWATCH program.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.

Table 1. Base File Data.

County	Miami-Dade
Name	Biscayne-2
Water Body Type	Estuary
Period of Record (years, range)	6 (2000 to 2005)
Latitude	25.6159
Longitude	-80.2906

Long-Term Data for Estuaries: Definitions

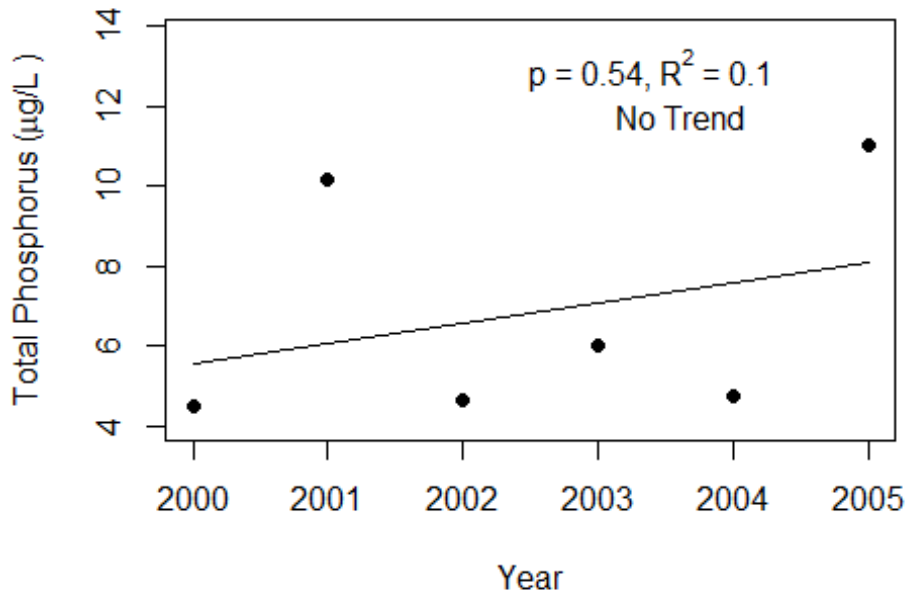
- **Total Phosphorus ($\mu\text{g/L}$):** The nutrient most often limiting growth of plant/algae in Florida's fresh and saltwater environments.
- **Total Nitrogen ($\mu\text{g/L}$):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
- **Chlorophyll-uncorrected ($\mu\text{g/L}$):** Chlorophyll concentrations are used to measure relative abundances of open water algal population.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity (how far one can see into the water) and are listed with English and metric units.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filter out.
- **Specific Conductance ($\mu\text{S/cm@25}^\circ\text{C}$), Salinity (ppt):** Measurement of the ability of water to conduct electricity and can be used to estimate the amount of dissolve materials in water.

Table 2. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance/salinity (collected quarterly).

Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	4 - 10	6 (6)
Total Nitrogen ($\mu\text{g/L}$)	184 - 347	273 (6)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	1 - 1	1 (3)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	4 - 8	6 (4)
Specific Conductance ($\mu\text{S/cm@25 C}$)	23000 - 41437	34281 (4)
Salinity (ppt)	14.2 - 25.8	21.3 (4)

Figure 1 and Figure 2. Trend plots of annual average total phosphorus and annual average total nitrogen versus year. The R^2 value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the R^2 the stronger the relation) and the p value indicates if the relation is significant ($p < 0.05$ is significant). Trend status are reported on plots.

Biscayne-2 (Miami-Dade)



Biscayne-2 (Miami-Dade)

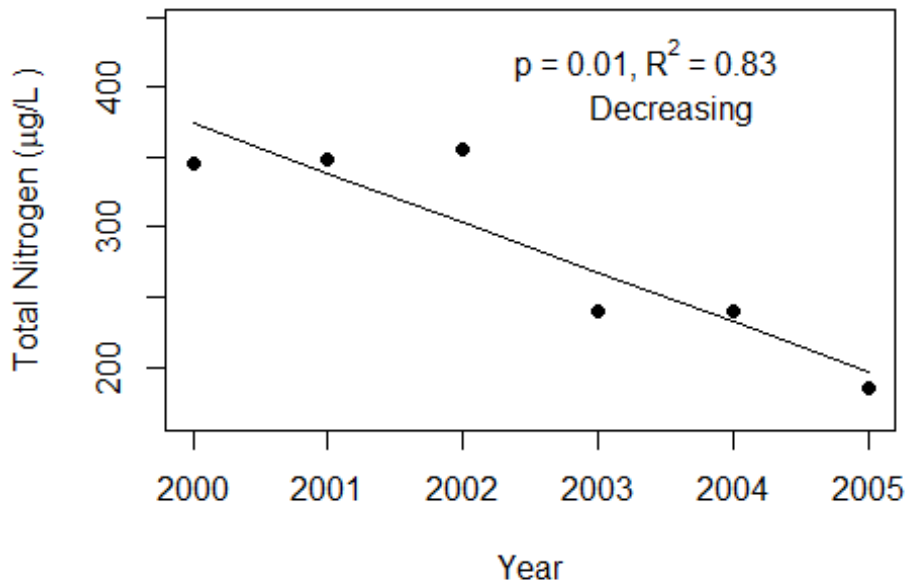
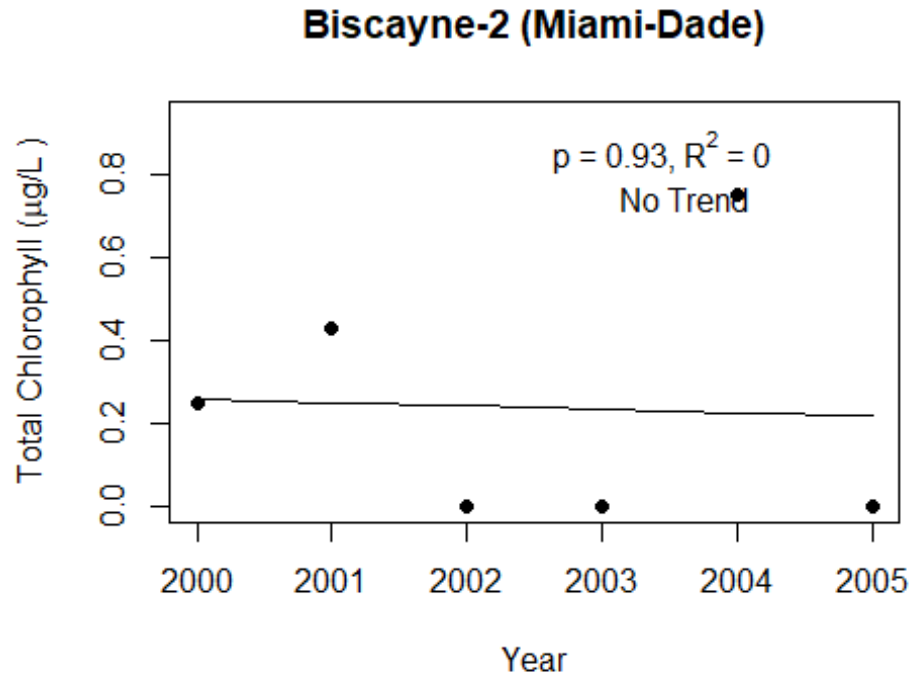


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The R^2 value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the R^2 the stronger the relations and the p value indicates if the relation is significant ($p < 0.05$ is significant)). Trend status are reported on plots.



LAKEWATCH Report for Biscayne-3 in Miami-Dade County
Estuary and Estuary Segment: Biscayne Bay North Central Inshore
Using Data Downloaded 2-12-2019

Introduction for Estuary

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Base File Data for Estuaries: Definitions:

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- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.

Table 1. Base File Data.

County	Miami-Dade
Name	Biscayne-3
Water Body Type	Estuary
Period of Record (years, range)	6 (2000 to 2005)
Latitude	25.6132
Longitude	-80.2968

Long-Term Data for Estuaries: Definitions

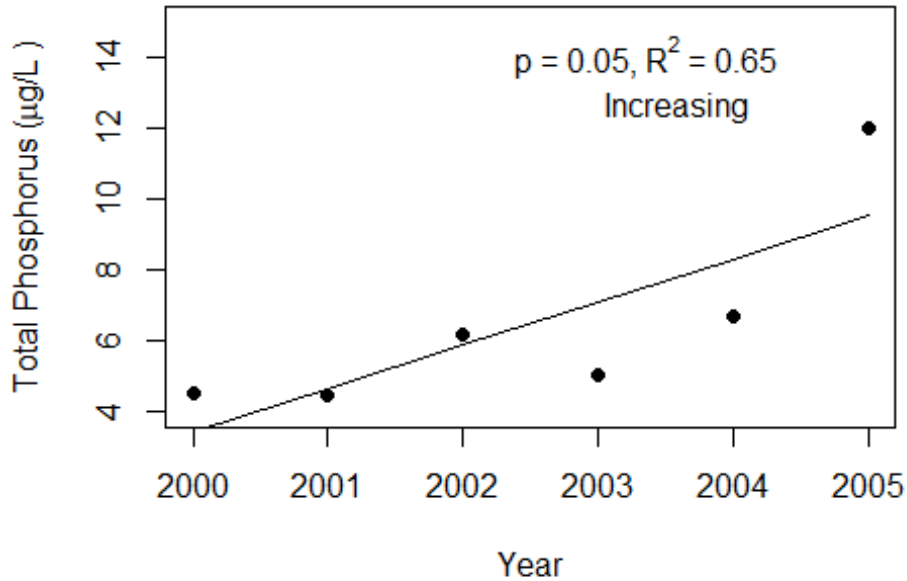
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- **Total Nitrogen ($\mu\text{g/L}$):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
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- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity (how far one can see into the water) and are listed with English and metric units.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filter out.
- **Specific Conductance ($\mu\text{S/cm@25}^\circ\text{C}$), Salinity (ppt):** Measurement of the ability of water to conduct electricity and can be used to estimate the amount of dissolve materials in water.

Table 2. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance/salinity (collected quarterly).

Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	4 - 11	6 (6)
Total Nitrogen ($\mu\text{g/L}$)	197 - 320	274 (6)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	1 - 1	1 (6)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	4 - 8	6 (4)
Specific Conductance ($\mu\text{S/cm@25 C}$)	16000 - 44054	32202 (4)
Salinity (ppt)	9.7 - 27.4	19.9 (4)

Figure 1 and Figure 2. Trend plots of annual average total phosphorus and annual average total nitrogen versus year. The R^2 value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the R^2 the stronger the relation) and the p value indicates if the relation is significant ($p < 0.05$ is significant). Trend status are reported on plots.

Biscayne-3 (Miami-Dade)



Biscayne-3 (Miami-Dade)

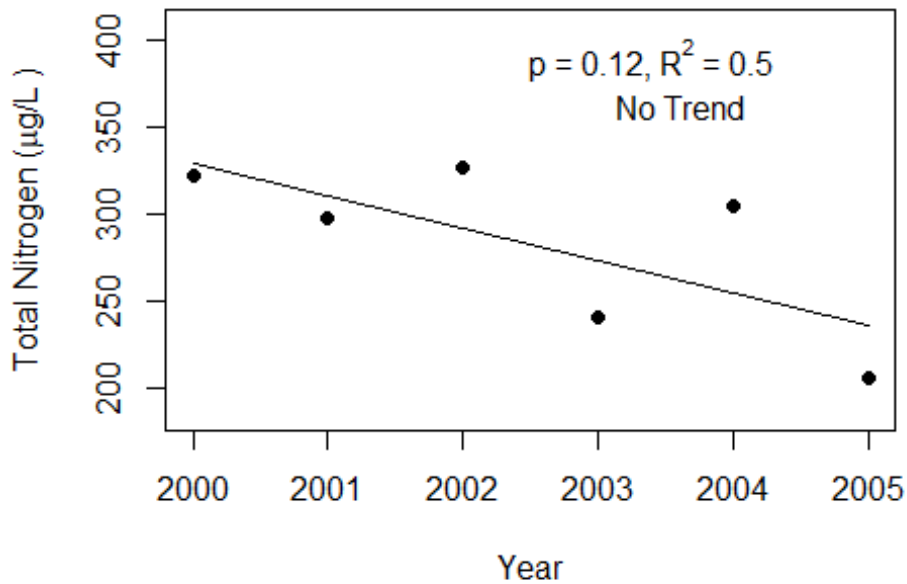
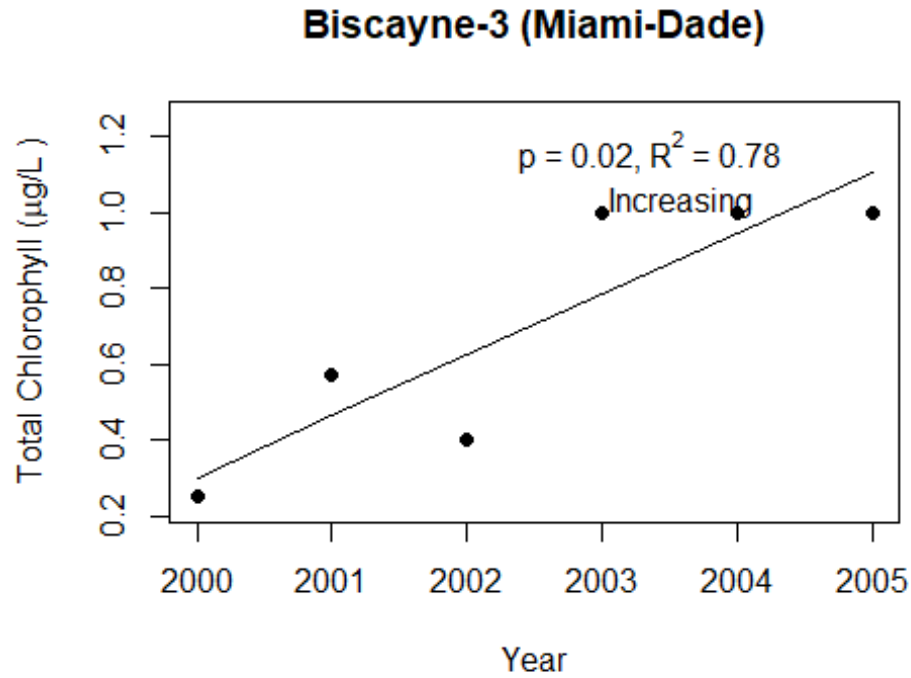


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The R^2 value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the R^2 the stronger the relations and the p value indicates if the relation is significant ($p < 0.05$ is significant)). Trend status are reported on plots.



**LAKEWATCH Report for Rickenbacker Causeway South-1 in Miami-Dade County
Estuary and Estuary Segment: Biscayne Bay North Central Inshore
Using Data Downloaded 2-12-2019**

Introduction for Estuary

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- **Period of Record (years):** Number of years a system has been in the LAKEWATCH program.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.

Table 1. Base File Data.

County	Miami-Dade
Name	Rickenbacker Causeway South-1
Water Body Type	Estuary
Period of Record (years, range)	1 (2000 to 2000)
Latitude	25.7466
Longitude	-80.2019

Long-Term Data for Estuaries: Definitions

- **Total Phosphorus ($\mu\text{g/L}$):** The nutrient most often limiting growth of plant/algae in Florida's fresh and saltwater environments.
- **Total Nitrogen ($\mu\text{g/L}$):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
- **Chlorophyll-uncorrected ($\mu\text{g/L}$):** Chlorophyll concentrations are used to measure relative abundances of open water algal population.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity (how far one can see into the water) and are listed with English and metric units.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filter out.
- **Specific Conductance ($\mu\text{S/cm@25}^\circ\text{C}$), Salinity (ppt):** Measurement of the ability of water to conduct electricity and can be used to estimate the amount of dissolve materials in water.

Table 2. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance/salinity (collected quarterly).

Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	5 - 5	5 (1)
Total Nitrogen ($\mu\text{g/L}$)	256 - 256	256 (1)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	-	()
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	-	()
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	()
Salinity (ppt)	-	()

**LAKEWATCH Report for Rickenbacker Causeway South-2 in Miami-Dade County
Estuary and Estuary Segment: Biscayne Bay North Central Inshore
Using Data Downloaded 2-12-2019**

Introduction for Estuary

This report summarizes data collected on systems that have been part of the LAKEWATCH program. Data are from the period of record for individual systems. The first part of this summary lists background data for each system, the second part lists the long-term data averages and ranges and the final part are trend plots for nutrients, chlorophyll and Secchi depth. Plots were only made for systems with five or more years of data.

The near shore Florida coastline is separated into estuary and estuary segments within the estuary. Deeper coastal waters are separated into coastal nutrient regions and coastal nutrient segments within the regions. Numeric nutrient criteria are established for all estuary segments, including criteria for total nitrogen, total phosphorus, and chlorophyll a. For open ocean coastal waters, numeric criteria are established for chlorophyll a, that is derived from satellite remote sensing techniques. For those locations without defined segments there are narrative nutrient criteria (e.g., Florida Keys Halo Zone).

The maps defining individual estuaries and coastal segments can be found at the following link:
<https://www.flrules.org/Gateway/reference.asp?No=Ref-05420>

The individual nutrient criteria can be found at the following link:
<https://www.flrules.org/gateway/RuleNo.asp?title=SURFACE%20WATER%20QUALITY%20STANDARDS&ID=62-302.532>

Base File Data for Estuaries: Definitions:

- **County:** Name of county adjacent to the system.
- **Name:** System name that LAKEWATCH uses for the station.
- **Water Body Type:** Four different types of systems; lakes, estuaries, river/streams and springs.
- **Period of Record (years):** Number of years a system has been in the LAKEWATCH program.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.

Table 1. Base File Data.

County	Miami-Dade
Name	Rickenbacker Causeway South-2
Water Body Type	Estuary
Period of Record (years, range)	1 (2000 to 2000)
Latitude	25.7450
Longitude	-80.1994

Long-Term Data for Estuaries: Definitions

- **Total Phosphorus ($\mu\text{g/L}$):** The nutrient most often limiting growth of plant/algae in Florida's fresh and saltwater environments.
- **Total Nitrogen ($\mu\text{g/L}$):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
- **Chlorophyll-uncorrected ($\mu\text{g/L}$):** Chlorophyll concentrations are used to measure relative abundances of open water algal population.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity (how far one can see into the water) and are listed with English and metric units.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filter out.
- **Specific Conductance ($\mu\text{S/cm@25}^\circ\text{C}$), Salinity (ppt):** Measurement of the ability of water to conduct electricity and can be used to estimate the amount of dissolve materials in water.

Table 2. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance/salinity (collected quarterly).

Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	4 - 4	4 (1)
Total Nitrogen ($\mu\text{g/L}$)	261 - 261	261 (1)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	-	()
Secchi (ft)	6.0 - 6.0	6.0 (1)
Secchi (m)	1.8 - 1.8	1.8 (1)
Color (Pt-Co Units)	-	()
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	()
Salinity (ppt)	-	()

**LAKEWATCH Report for Rickenbacker Causeway South-3 in Miami-Dade County
Estuary and Estuary Segment: Biscayne Bay North Central Inshore
Using Data Downloaded 2-12-2019**

Introduction for Estuary

This report summarizes data collected on systems that have been part of the LAKEWATCH program. Data are from the period of record for individual systems. The first part of this summary lists background data for each system, the second part lists the long-term data averages and ranges and the final part are trend plots for nutrients, chlorophyll and Secchi depth. Plots were only made for systems with five or more years of data.

The near shore Florida coastline is separated into estuary and estuary segments within the estuary. Deeper coastal waters are separated into coastal nutrient regions and coastal nutrient segments within the regions. Numeric nutrient criteria are established for all estuary segments, including criteria for total nitrogen, total phosphorus, and chlorophyll a. For open ocean coastal waters, numeric criteria are established for chlorophyll a, that is derived from satellite remote sensing techniques. For those locations without defined segments there are narrative nutrient criteria (e.g., Florida Keys Halo Zone).

The maps defining individual estuaries and coastal segments can be found at the following link: <https://www.flrules.org/Gateway/reference.asp?No=Ref-05420>

The individual nutrient criteria can be found at the following link: <https://www.flrules.org/gateway/RuleNo.asp?title=SURFACE%20WATER%20QUALITY%20STANDARDS&ID=62-302.532>

Base File Data for Estuaries: Definitions:

- **County:** Name of county adjacent to the system.
- **Name:** System name that LAKEWATCH uses for the station.
- **Water Body Type:** Four different types of systems; lakes, estuaries, river/streams and springs.
- **Period of Record (years):** Number of years a system has been in the LAKEWATCH program.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.

Table 1. Base File Data.

County	Miami-Dade
Name	Rickenbacker Causeway South-3
Water Body Type	Estuary
Period of Record (years, range)	1 (2000 to 2000)
Latitude	25.7448
Longitude	-80.1954

Long-Term Data for Estuaries: Definitions

- **Total Phosphorus ($\mu\text{g/L}$):** The nutrient most often limiting growth of plant/algae in Florida's fresh and saltwater environments.
- **Total Nitrogen ($\mu\text{g/L}$):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
- **Chlorophyll-uncorrected ($\mu\text{g/L}$):** Chlorophyll concentrations are used to measure relative abundances of open water algal population.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity (how far one can see into the water) and are listed with English and metric units.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filter out.
- **Specific Conductance ($\mu\text{S/cm@25}^\circ\text{C}$), Salinity (ppt):** Measurement of the ability of water to conduct electricity and can be used to estimate the amount of dissolve materials in water.

Table 2. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance/salinity (collected quarterly).

Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	5 - 5	5 (1)
Total Nitrogen ($\mu\text{g/L}$)	248 - 248	248 (1)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	-	()
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	-	()
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	()
Salinity (ppt)	-	()