

**LAKEWATCH Report for Money Bayou-1 in Gulf County  
Estuary and Estuary Segment: St. Joseph Bay St. Joseph Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Gulf
Name	Money Bayou-1
GNIS Number	287060
Water Body Type	Estuary
Period of Record (years, range)	6 (2016 to 2021)
Latitude	29.6946
Longitude	-85.2818

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	21 - 146	62 (6)
Total Nitrogen ( $\mu\text{g/L}$ )	800 - 1365	1080 (6)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	1 - 34	15 (6)
Secchi (ft)	-	(0)
Secchi (m)	-	(0)
Color (Pt-Co Units)	60 - 532	127 (6)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	255 - 22407	5488 (6)
Salinity (ppt)	2 - 14	7 (5)

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.

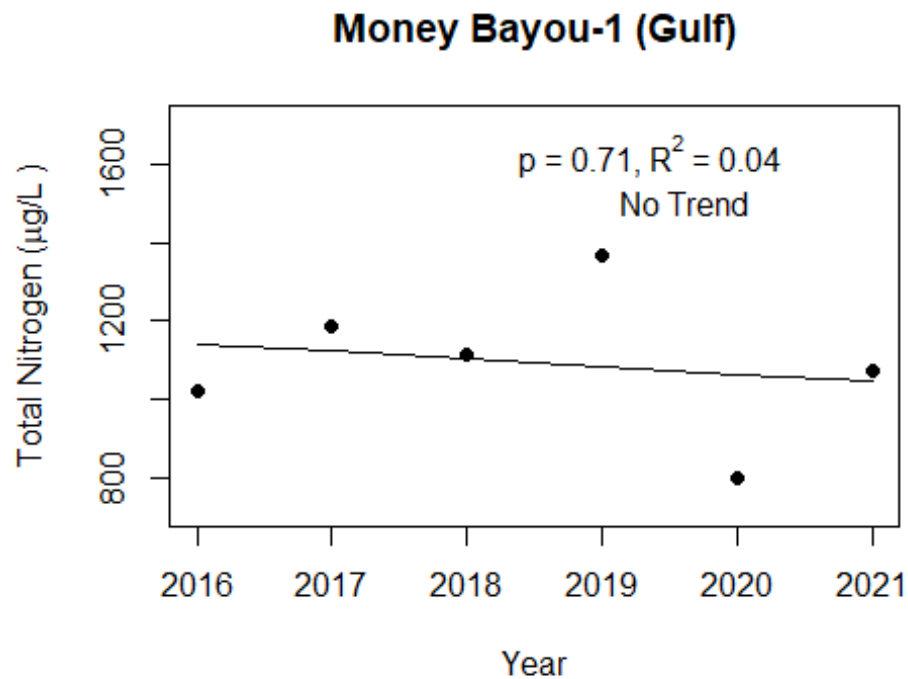
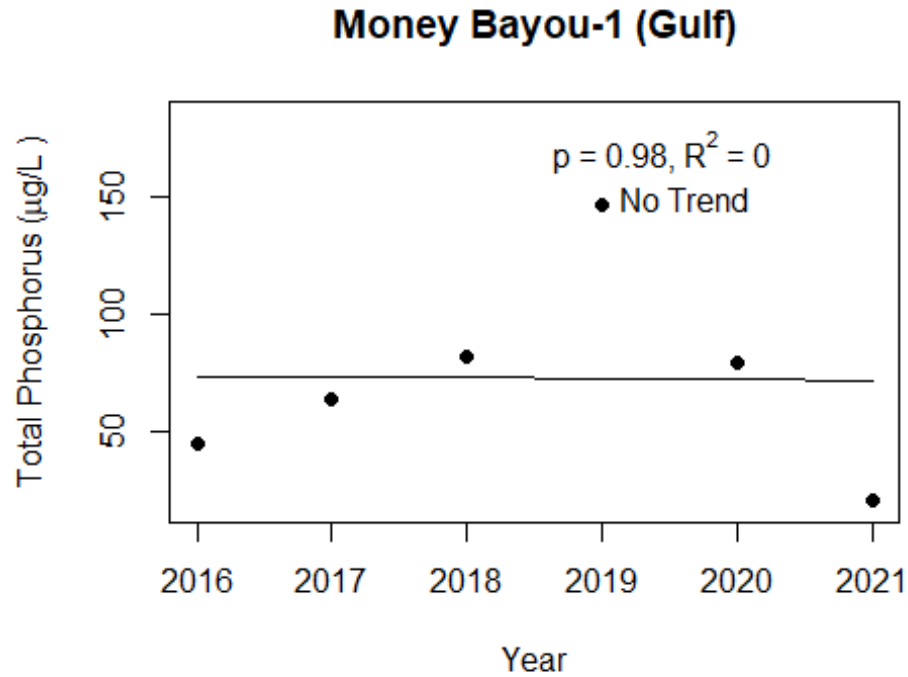
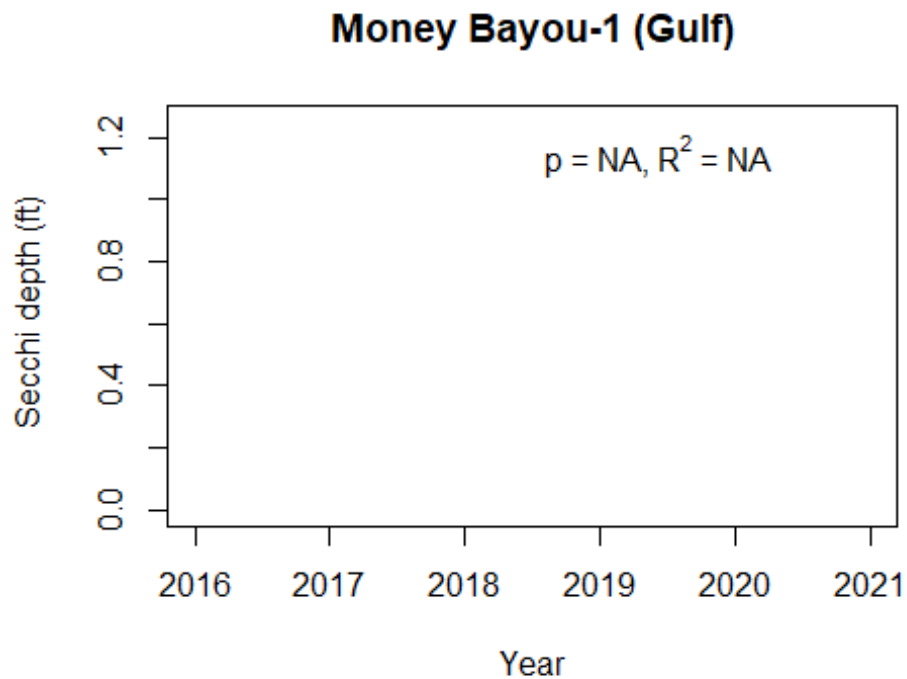
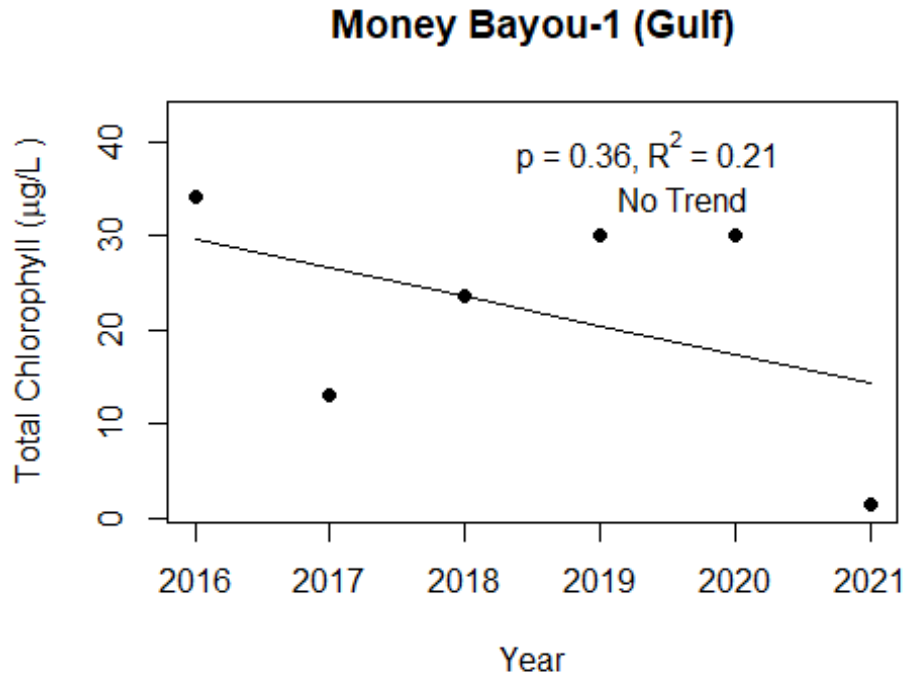


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The  $R^2$  value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the  $R^2$  the stronger the relations and the p value indicates if the relation is significant ( $p < 0.05$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



**LAKEWATCH Report for Money Bayou-2 in Gulf County  
Estuary and Estuary Segment: St. Joseph Bay St. Joseph Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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).

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**Table 1. Base File Data.**

County	Gulf
Name	Money Bayou-2
GNIS Number	287060
Water Body Type	Estuary
Period of Record (years, range)	2 (2020 to 2021)
Latitude	29.6975
Longitude	-85.2804

## Long-Term Data for Estuaries: Definitions

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- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	60 - 68	64 (2)
Total Nitrogen ( $\mu\text{g/L}$ )	940 - 1072	1004 (2)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	5 - 29	12 (2)
Secchi (ft)	-	(0)
Secchi (m)	-	(0)
Color (Pt-Co Units)	79 - 255	142 (2)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	355 - 11986	2063 (2)
Salinity (ppt)	7 - 7	7 (1)

**LAKEWATCH Report for Simmons Bayou-1 in Gulf County  
Estuary and Estuary Segment: St. Joseph Bay St. Joseph Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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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).

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

**Table 1. Base File Data.**

County	Gulf
Name	Simmons Bayou-1
GNIS Number	
Water Body Type	Estuary
Period of Record (years, range)	6 (2016 to 2021)
Latitude	29.7538
Longitude	-85.3028

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved materials in water.

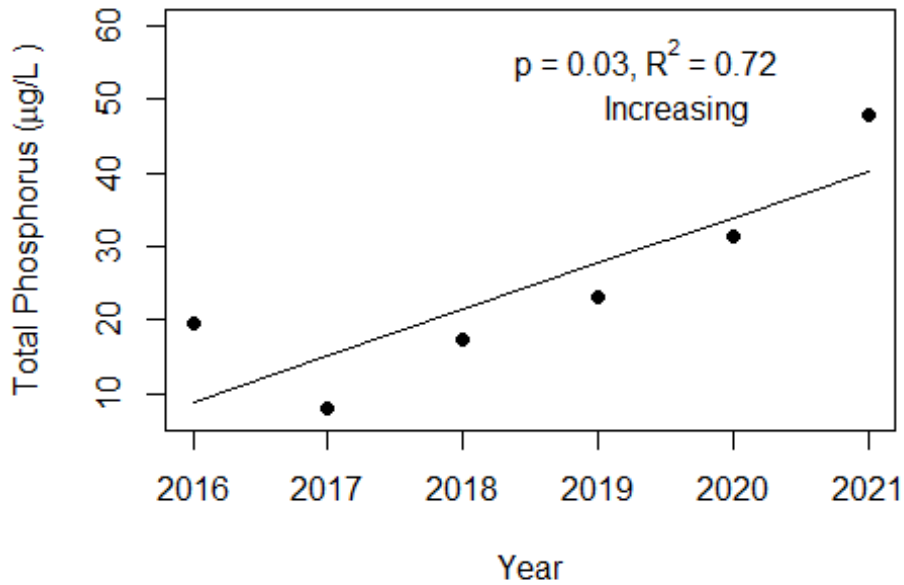
**Table 2. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance/salinity (collected quarterly).**

Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ( $\mu\text{g/L}$ )	8 - 48	21 (6)
Total Nitrogen ( $\mu\text{g/L}$ )	420 - 1078	638 (6)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	2 - 17	6 (6)
Secchi (ft)	-	(0)
Secchi (m)	-	(0)
Color (Pt-Co Units)	10 - 140	40 (6)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	3958 - 14000	8577 (6)
Salinity (ppt)	6 - 17	8 (6)



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.

### Simmons Bayou-1 (Gulf)



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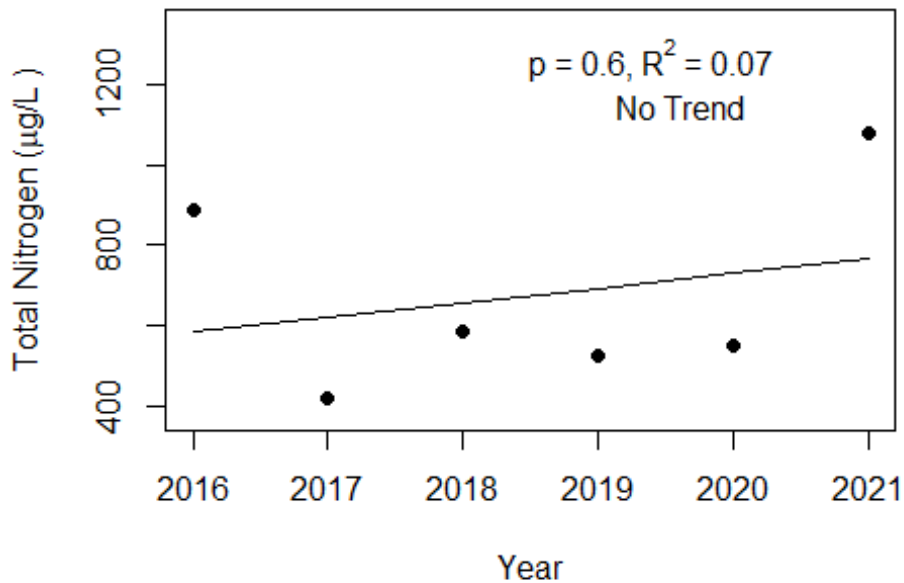
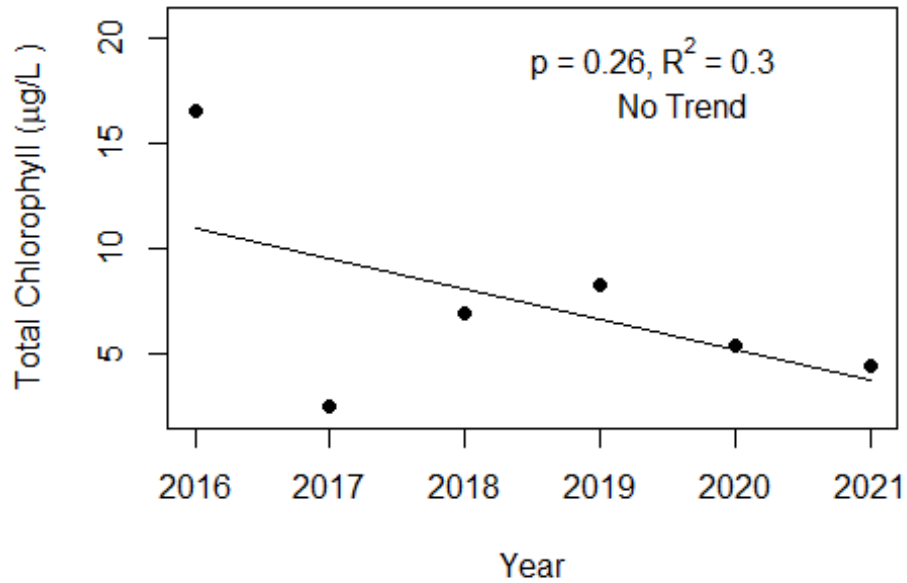
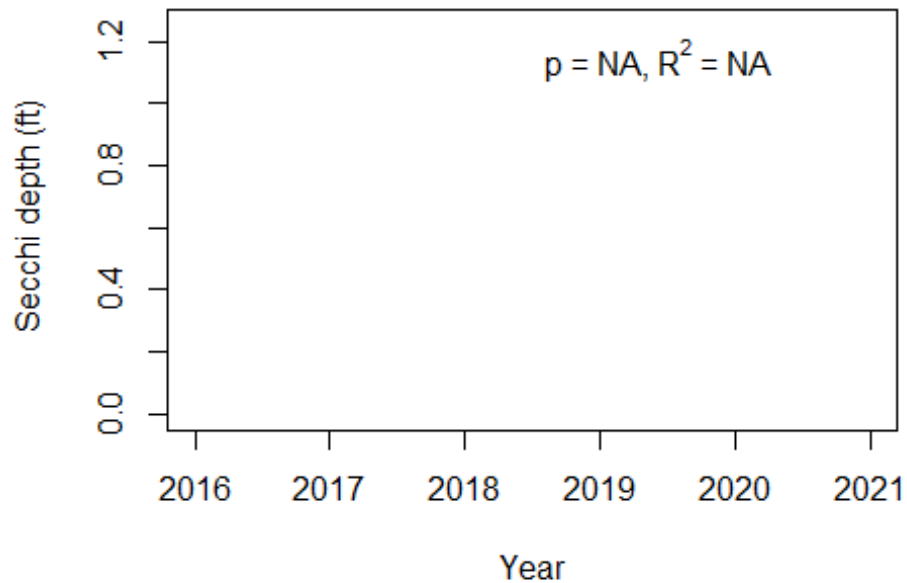


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The  $R^2$  value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the  $R^2$  the stronger the relations and the p value indicates if the relation is significant ( $p < 0.05$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

### Simmons Bayou-1 (Gulf)



### Simmons Bayou-1 (Gulf)



**LAKEWATCH Report for St. Joseph Bay-1 in Gulf County  
Estuary and Estuary Segment: St. Joseph Bay St. Joseph Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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**Table 1. Base File Data.**

County	Gulf
Name	St. Joseph Bay-1
GNIS Number	308428
Water Body Type	Estuary
Period of Record (years, range)	12 (2001 to 2021)
Latitude	29.6932
Longitude	-85.3205

## Long-Term Data for Estuaries: Definitions

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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 ( $\mu\text{g/L}$ )	7 - 24	13 (12)
Total Nitrogen ( $\mu\text{g/L}$ )	230 - 512	342 (12)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	1 - 4	1 (11)
Secchi (ft)	2.8 - 3	2.9 (2)
Secchi (m)	0.9 - 0.9	0.9 (2)
Color (Pt-Co Units)	5 - 14	8 (10)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	31401 - 49000	40818 (10)
Salinity (ppt)	19 - 31	25 (10)

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.

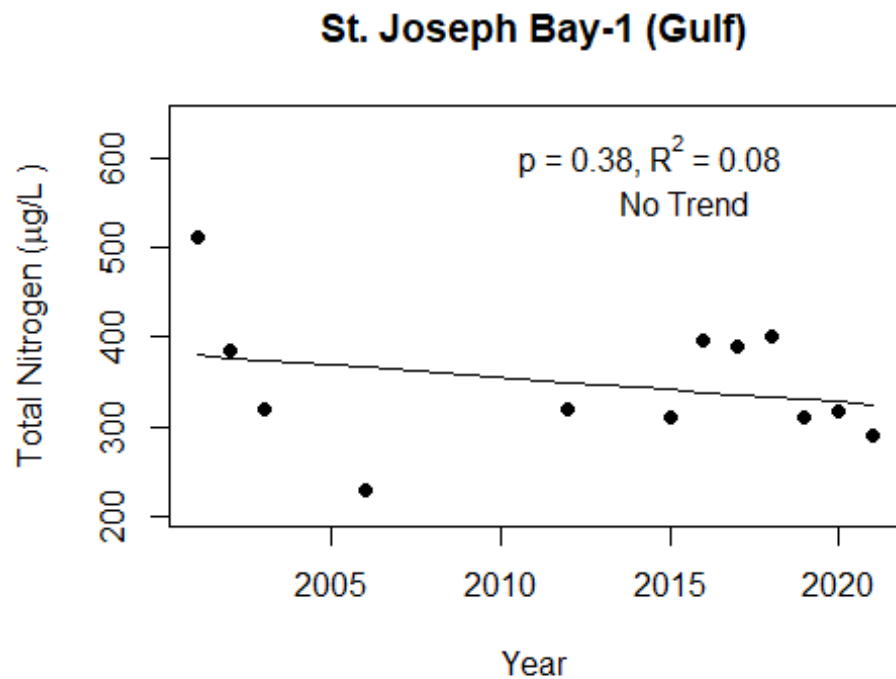
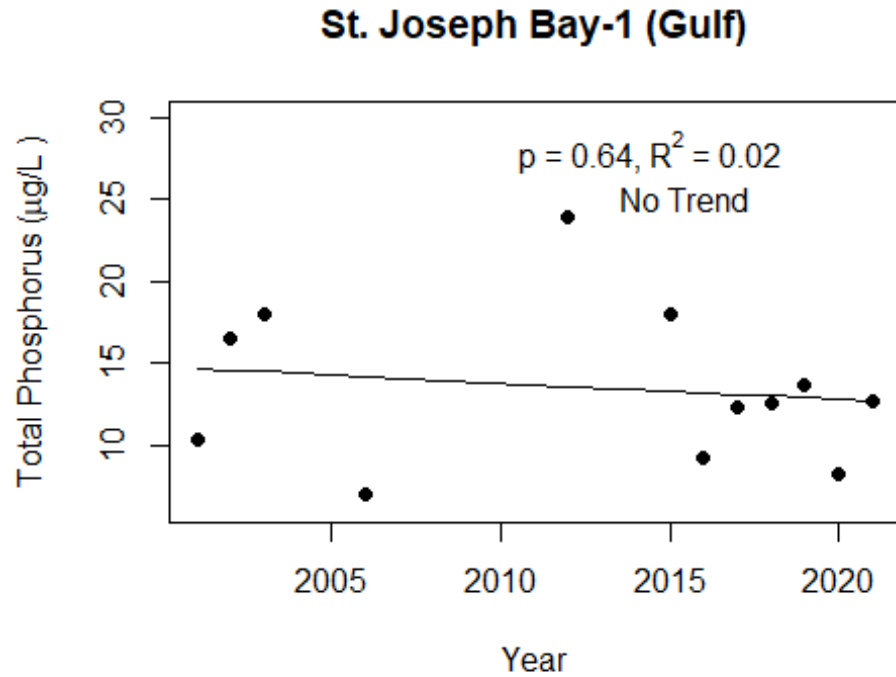
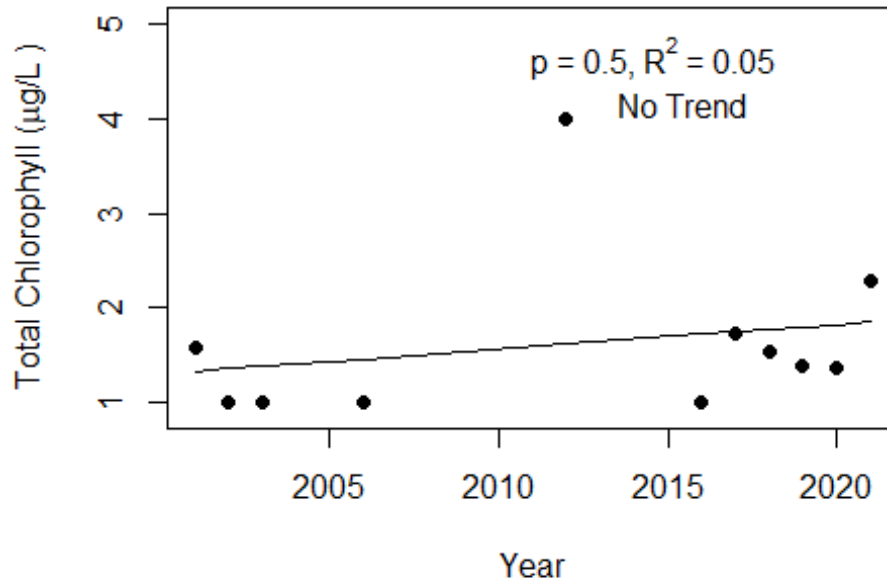
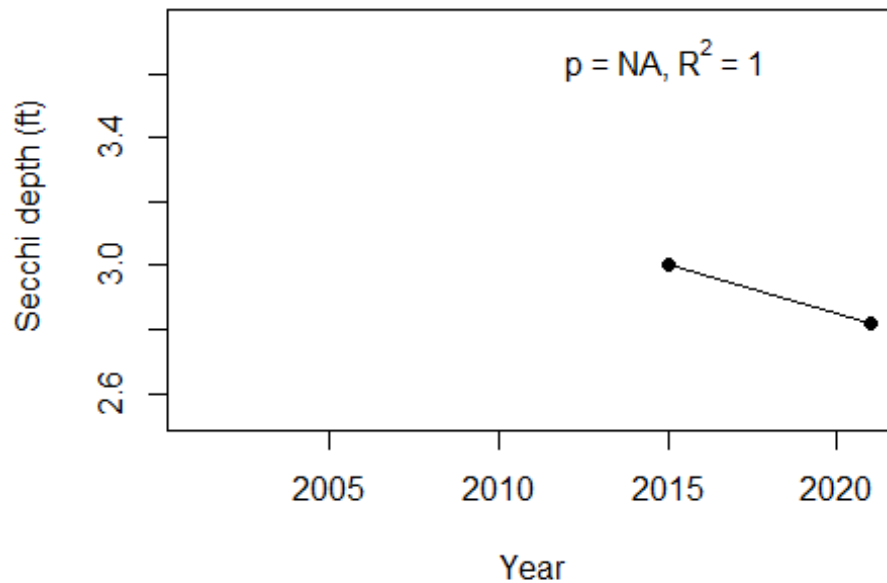


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The  $R^2$  value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the  $R^2$  the stronger the relations and the p value indicates if the relation is significant ( $p < 0.05$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

### St. Joseph Bay-1 (Gulf)



### St. Joseph Bay-1 (Gulf)



**LAKEWATCH Report for St. Joseph Bay-2 in Gulf County  
Estuary and Estuary Segment: St. Joseph Bay St. Joseph Bay  
Using Data Downloaded 1/31/2022**

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**Table 1. Base File Data.**

County	Gulf
Name	St. Joseph Bay-2
GNIS Number	308428
Water Body Type	Estuary
Period of Record (years, range)	21 (2001 to 2021)
Latitude	29.719
Longitude	-85.3327

## Long-Term Data for Estuaries: Definitions

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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 ( $\mu\text{g/L}$ )	7 - 18	12 (21)
Total Nitrogen ( $\mu\text{g/L}$ )	130 - 350	245 (21)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	0 - 3	2 (21)
Secchi (ft)	5 - 11.3	8.6 (10)
Secchi (m)	1.5 - 3.4	2.6 (10)
Color (Pt-Co Units)	2 - 11	6 (19)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	25690 - 46979	38173 (19)
Salinity (ppt)	16 - 29	24 (19)



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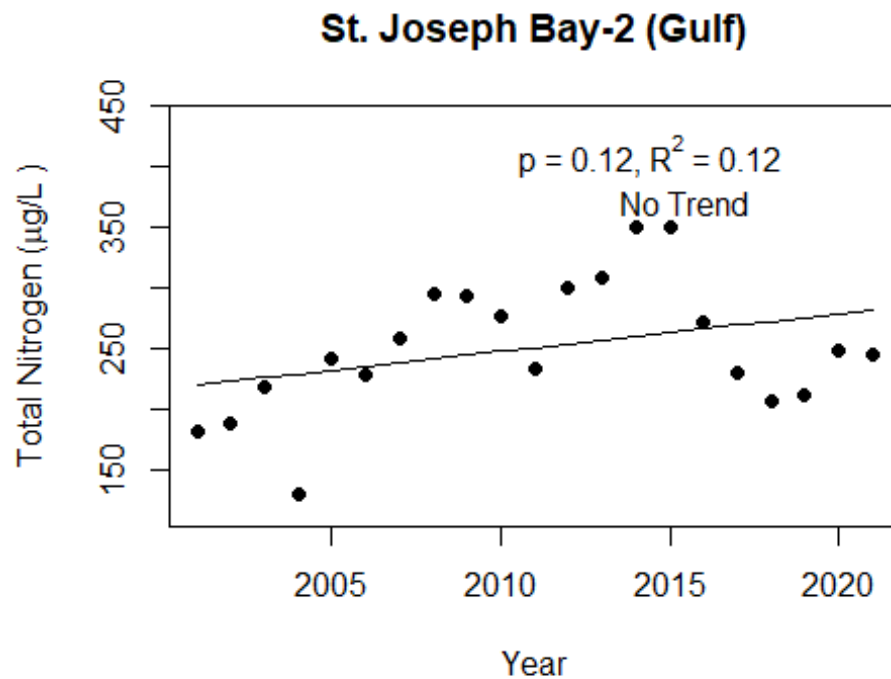
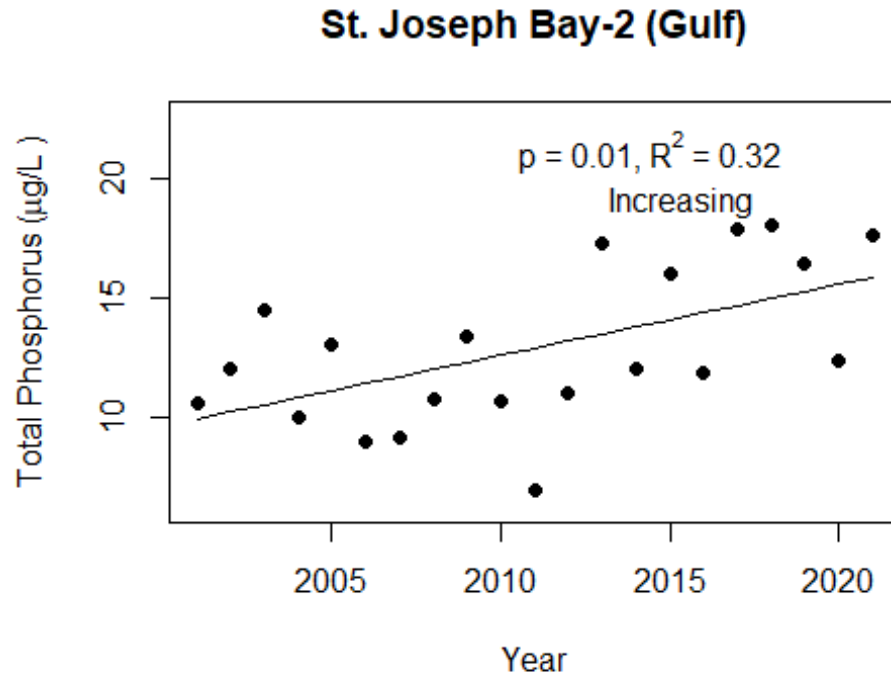
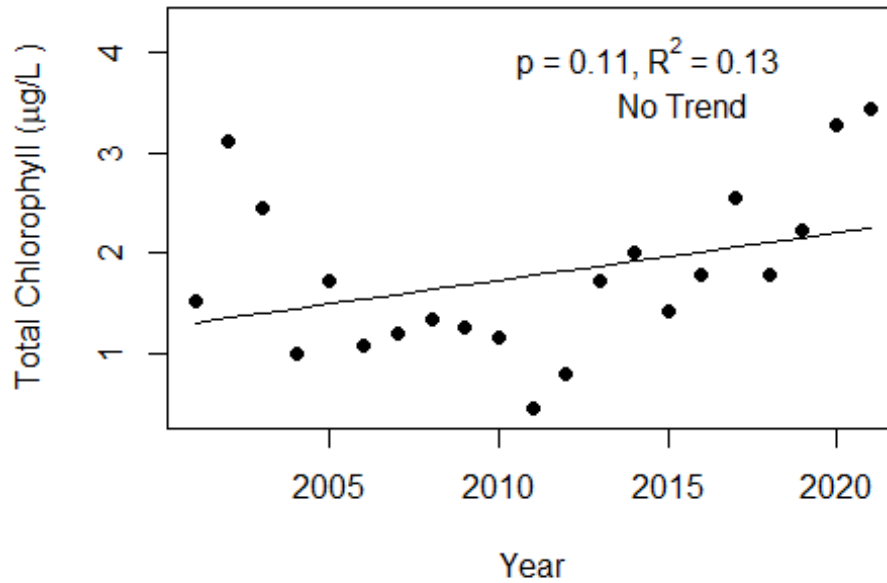
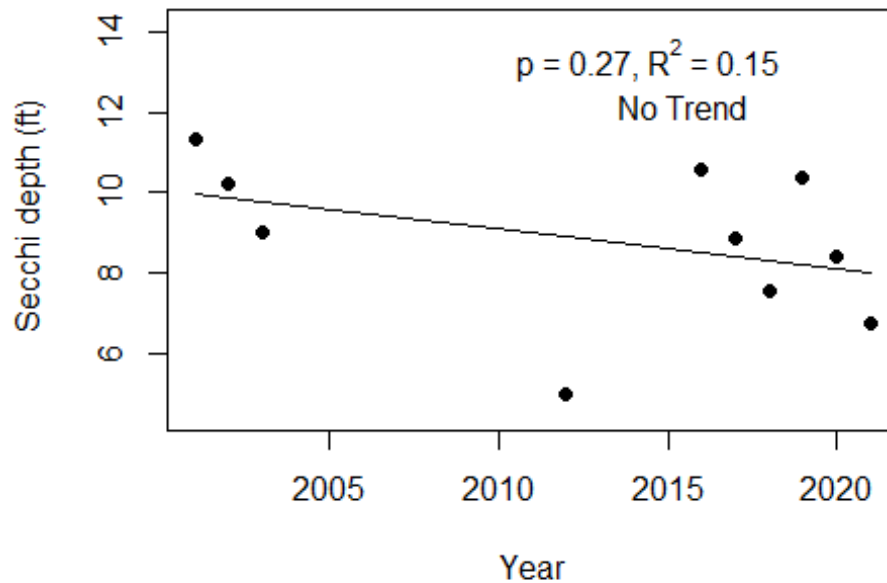


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### St. Joseph Bay-2 (Gulf)



### St. Joseph Bay-2 (Gulf)



**LAKEWATCH Report for St. Joseph Bay-3 in Gulf County  
Estuary and Estuary Segment: St. Joseph Bay St. Joseph Bay  
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- **Name:** System name that LAKEWATCH uses for the station.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Gulf
Name	St. Joseph Bay-3
GNIS Number	308428
Water Body Type	Estuary
Period of Record (years, range)	21 (2001 to 2021)
Latitude	29.6994
Longitude	-85.3632

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	9 - 20	14 (21)
Total Nitrogen ( $\mu\text{g/L}$ )	170 - 316	248 (21)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	0 - 3	2 (21)
Secchi (ft)	5 - 10.8	7.3 (11)
Secchi (m)	1.5 - 3.3	2.2 (11)
Color (Pt-Co Units)	3 - 10	6 (19)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	24495 - 47476	39918 (19)
Salinity (ppt)	15 - 30	25 (19)

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.

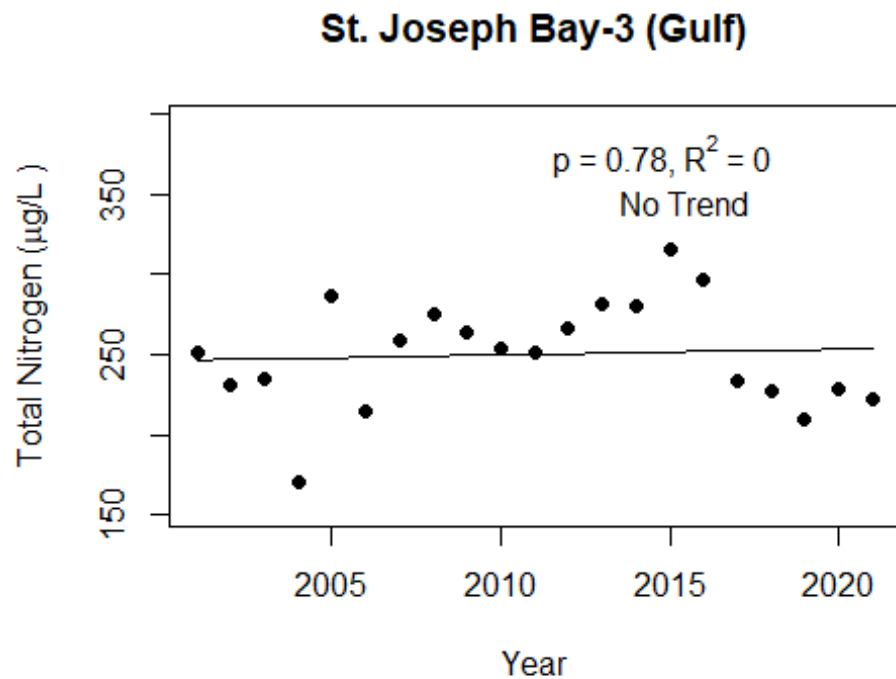
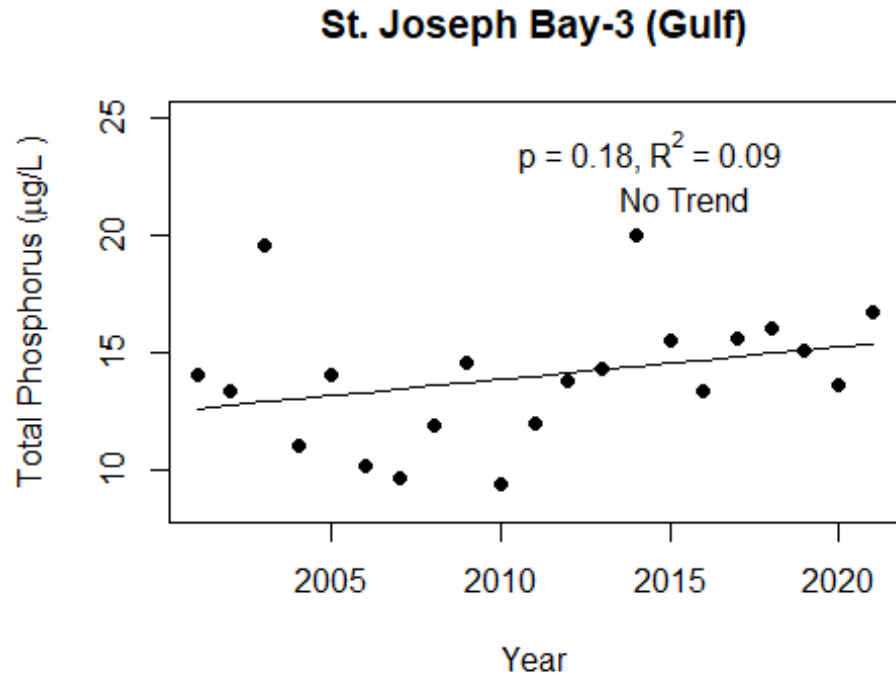
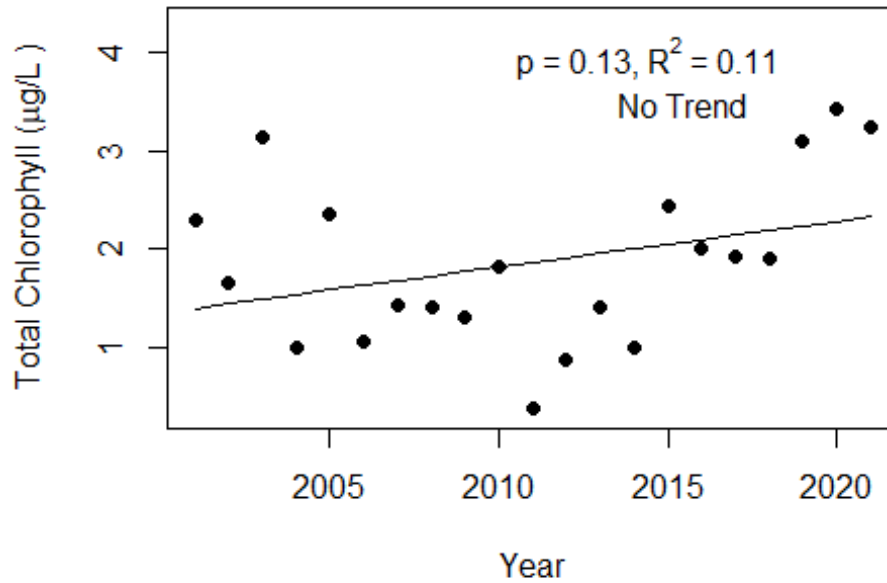
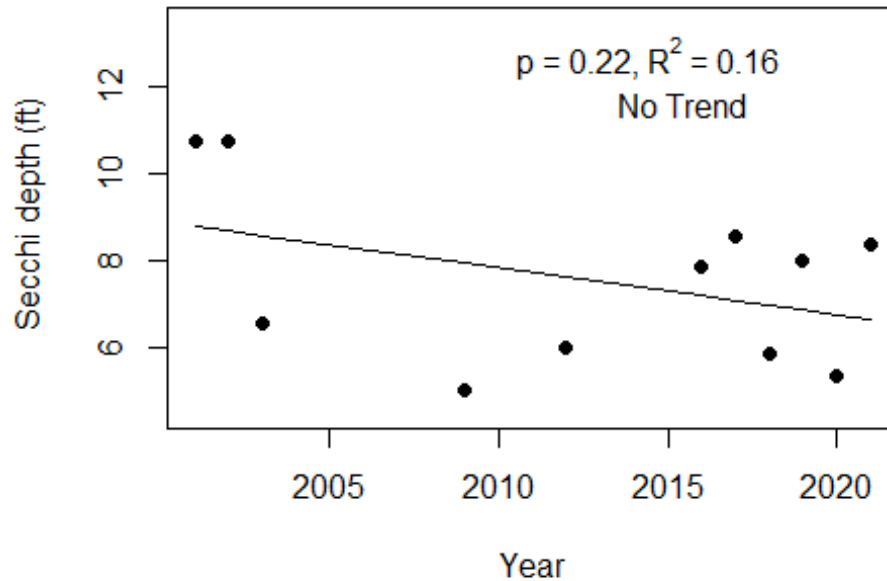


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The  $R^2$  value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the  $R^2$  the stronger the relations and the p value indicates if the relation is significant ( $p < 0.05$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

### St. Joseph Bay-3 (Gulf)



### St. Joseph Bay-3 (Gulf)



**LAKEWATCH Report for St. Joseph Bay-4 in Gulf County  
Estuary and Estuary Segment: St. Joseph Bay St. Joseph Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Gulf
Name	St. Joseph Bay-4
GNIS Number	308428
Water Body Type	Estuary
Period of Record (years, range)	20 (2001 to 2021)
Latitude	29.7698
Longitude	-85.4021

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	10 - 22	13 (20)
Total Nitrogen ( $\mu\text{g/L}$ )	169 - 292	222 (20)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	1 - 4	2 (18)
Secchi (ft)	4 - 8	6.1 (7)
Secchi (m)	1.2 - 2.4	1.9 (7)
Color (Pt-Co Units)	2 - 10	5 (18)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	27982 - 48980	39163 (18)
Salinity (ppt)	17 - 31	24 (18)



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.

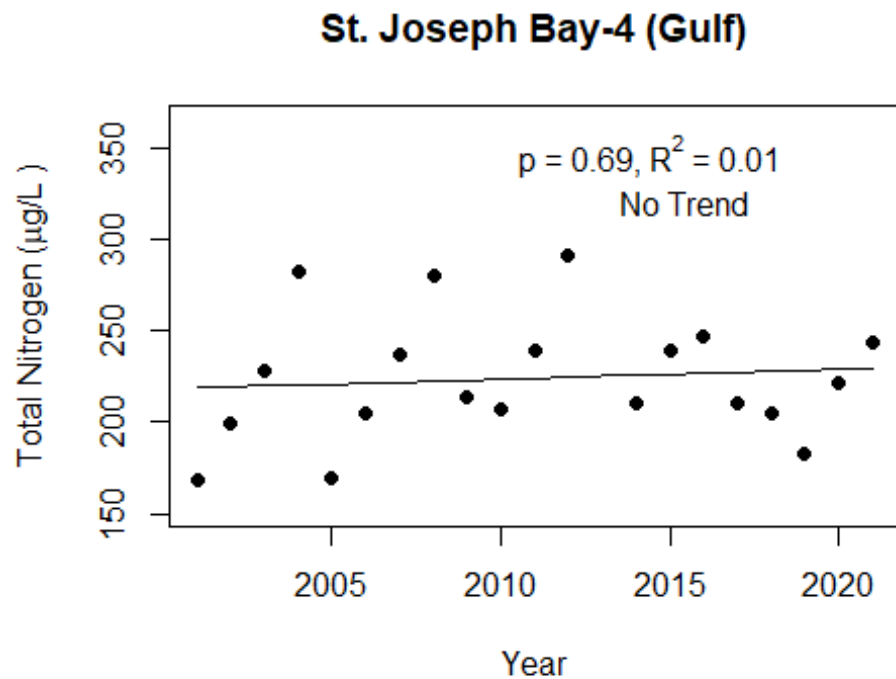
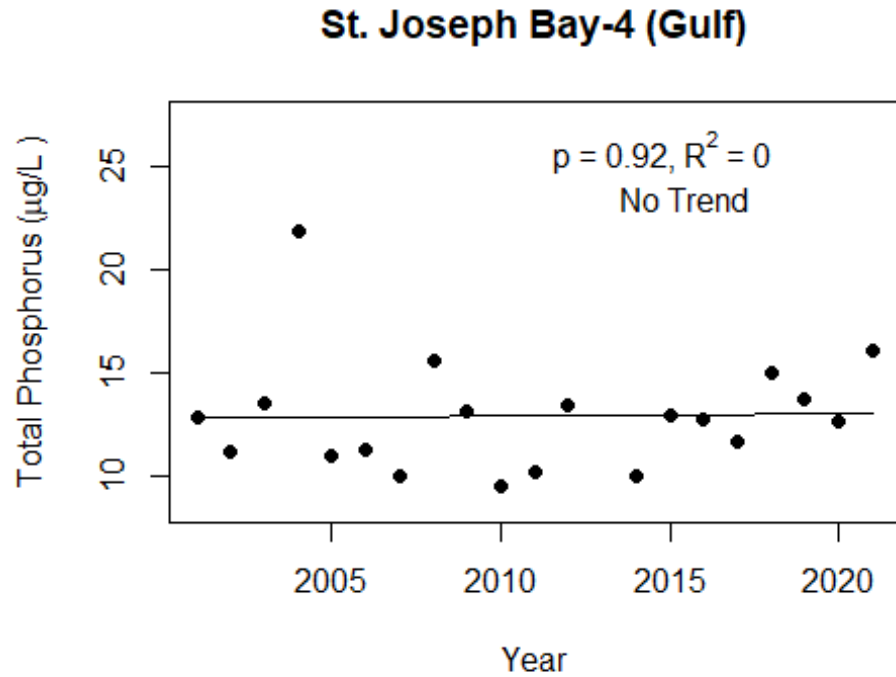
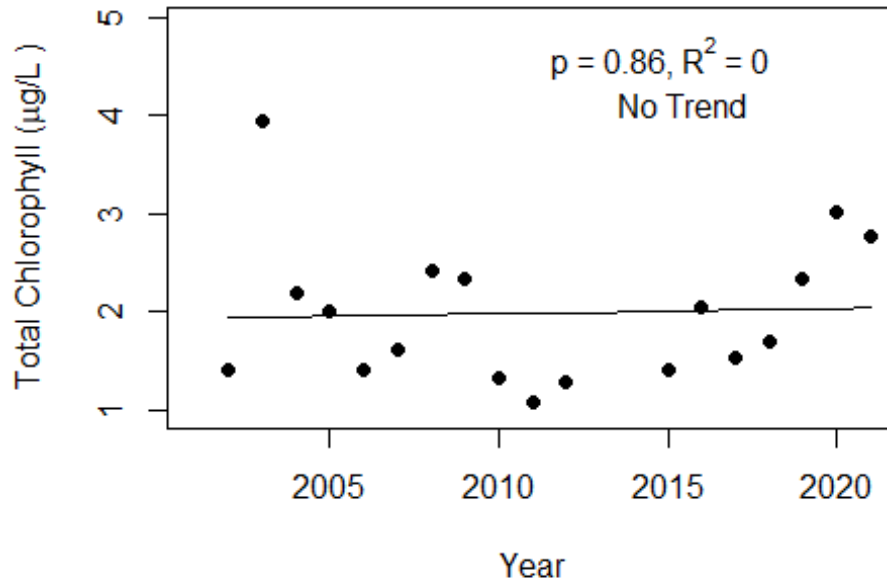
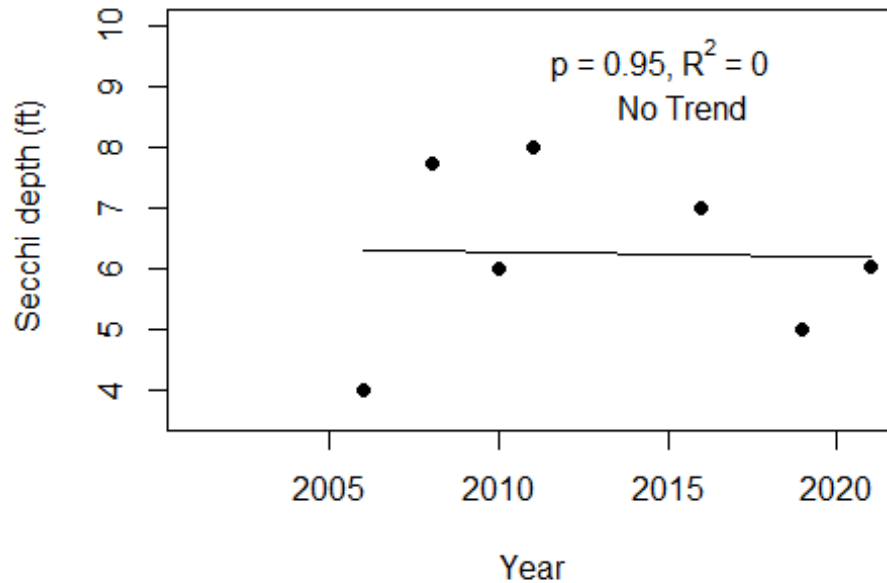


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The  $R^2$  value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the  $R^2$  the stronger the relations and the p value indicates if the relation is significant ( $p < 0.05$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

### St. Joseph Bay-4 (Gulf)



### St. Joseph Bay-4 (Gulf)



**LAKEWATCH Report for St. Joseph Bay-5 in Gulf County  
Estuary and Estuary Segment: St. Joseph Bay St. Joseph Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Gulf
Name	St. Joseph Bay-5
GNIS Number	308428
Water Body Type	Estuary
Period of Record (years, range)	19 (2001 to 2021)
Latitude	29.7585
Longitude	-85.3844

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	8 - 18	12 (19)
Total Nitrogen ( $\mu\text{g/L}$ )	146 - 300	203 (19)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	1 - 4	2 (19)
Secchi (ft)	3.3 - 7	5.4 (8)
Secchi (m)	1 - 2.1	1.6 (8)
Color (Pt-Co Units)	3 - 8	5 (19)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	25324 - 45225	38359 (19)
Salinity (ppt)	16 - 28	24 (19)

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.

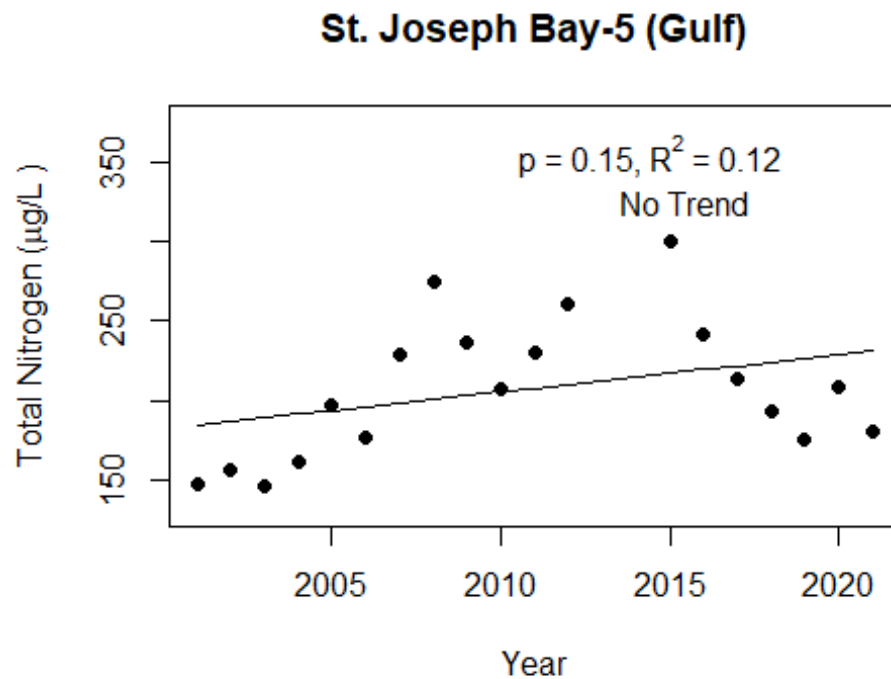
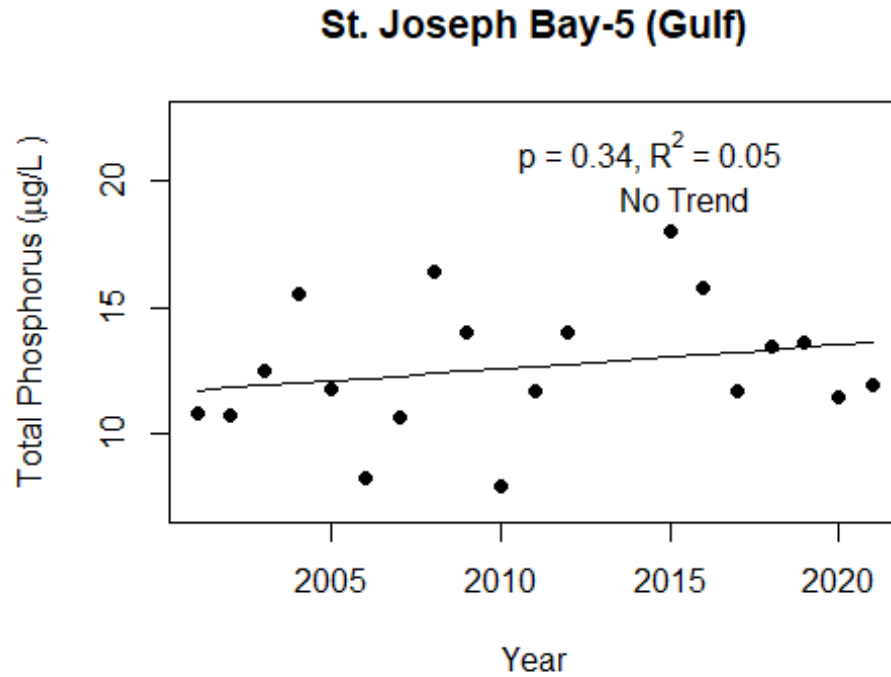
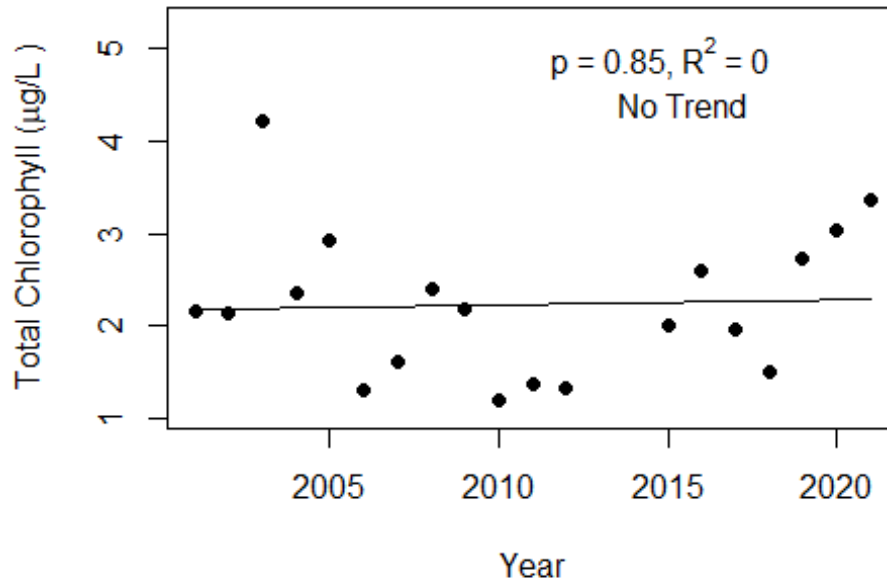
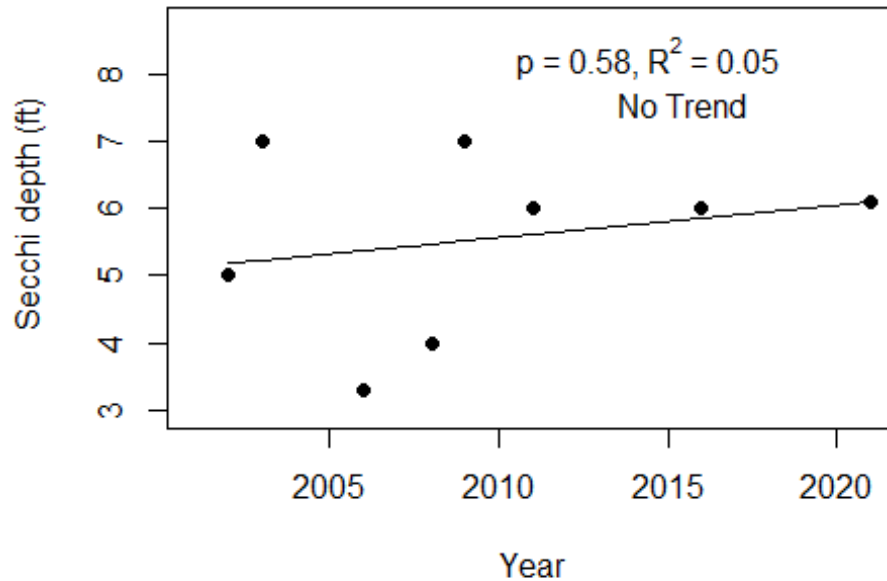


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The  $R^2$  value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the  $R^2$  the stronger the relations and the p value indicates if the relation is significant ( $p < 0.05$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

### St. Joseph Bay-5 (Gulf)



### St. Joseph Bay-5 (Gulf)



**LAKEWATCH Report for St. Joseph Bay-6 in Gulf County  
Estuary and Estuary Segment: St. Joseph Bay St. Joseph Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Gulf
Name	St. Joseph Bay-6
GNIS Number	308428
Water Body Type	Estuary
Period of Record (years, range)	21 (2001 to 2021)
Latitude	29.7984
Longitude	-85.3047

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	10 - 19	14 (21)
Total Nitrogen ( $\mu\text{g/L}$ )	153 - 348	232 (21)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	1 - 5	3 (21)
Secchi (ft)	3.5 - 8	4.6 (10)
Secchi (m)	1.1 - 2.4	1.4 (10)
Color (Pt-Co Units)	4 - 20	8 (21)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	11997 - 48000	35075 (21)
Salinity (ppt)	16 - 30	23 (21)



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.

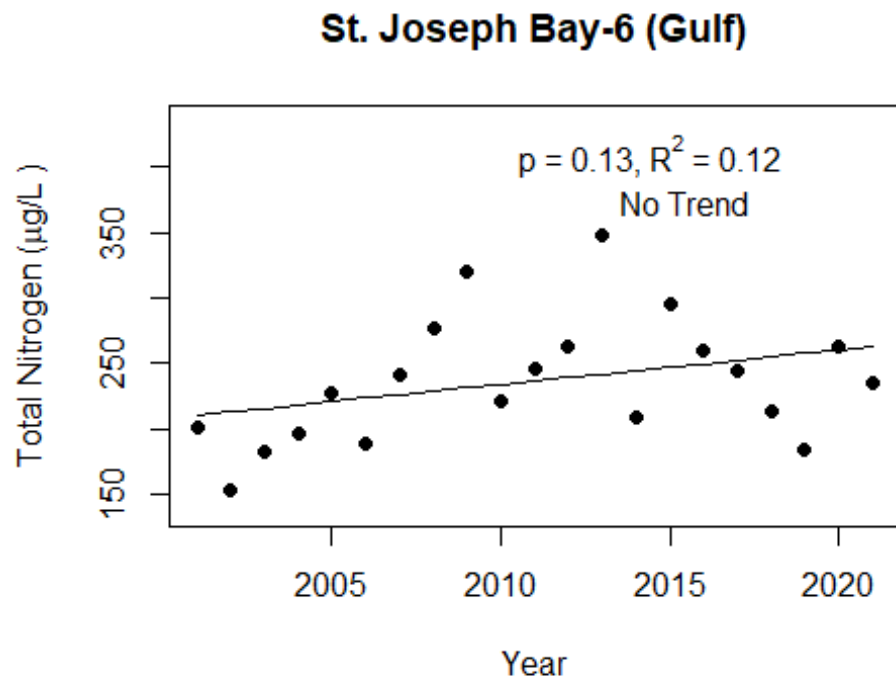
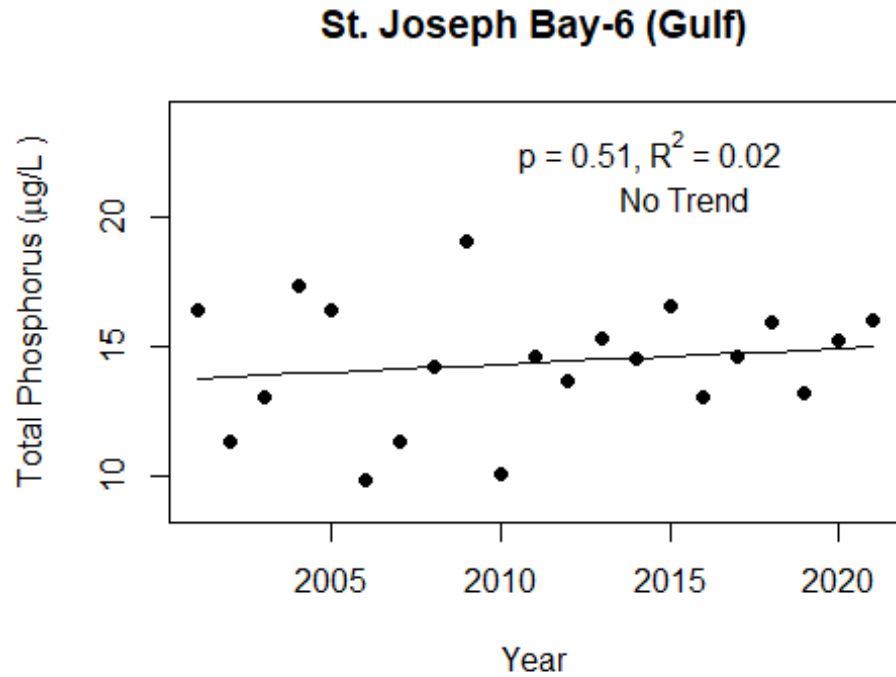
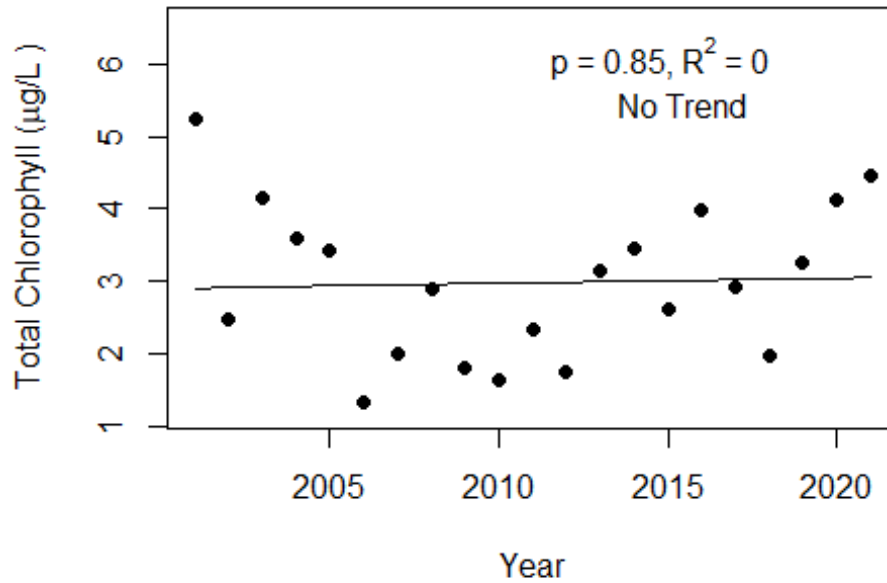
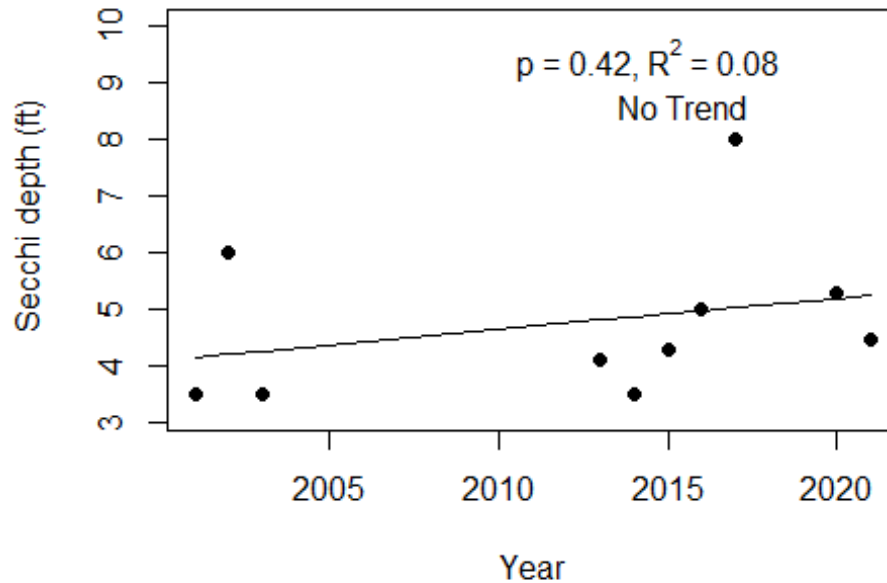


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The  $R^2$  value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the  $R^2$  the stronger the relations and the p value indicates if the relation is significant ( $p < 0.05$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

### St. Joseph Bay-6 (Gulf)



### St. Joseph Bay-6 (Gulf)



**LAKEWATCH Report for St. Joseph Bay-7 in Gulf County  
Estuary and Estuary Segment: St. Joseph Bay St. Joseph Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Gulf
Name	St. Joseph Bay-7
GNIS Number	308428
Water Body Type	Estuary
Period of Record (years, range)	21 (2001 to 2021)
Latitude	29.7436
Longitude	-85.3274

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 - 18	13 (21)
Total Nitrogen ( $\mu\text{g/L}$ )	160 - 296	219 (21)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	1 - 7	2 (21)
Secchi (ft)	5.5 - 10.8	8.7 (19)
Secchi (m)	1.7 - 3.3	2.7 (19)
Color (Pt-Co Units)	2 - 8	6 (19)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	26981 - 47727	39113 (18)
Salinity (ppt)	17 - 30	24 (18)

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.

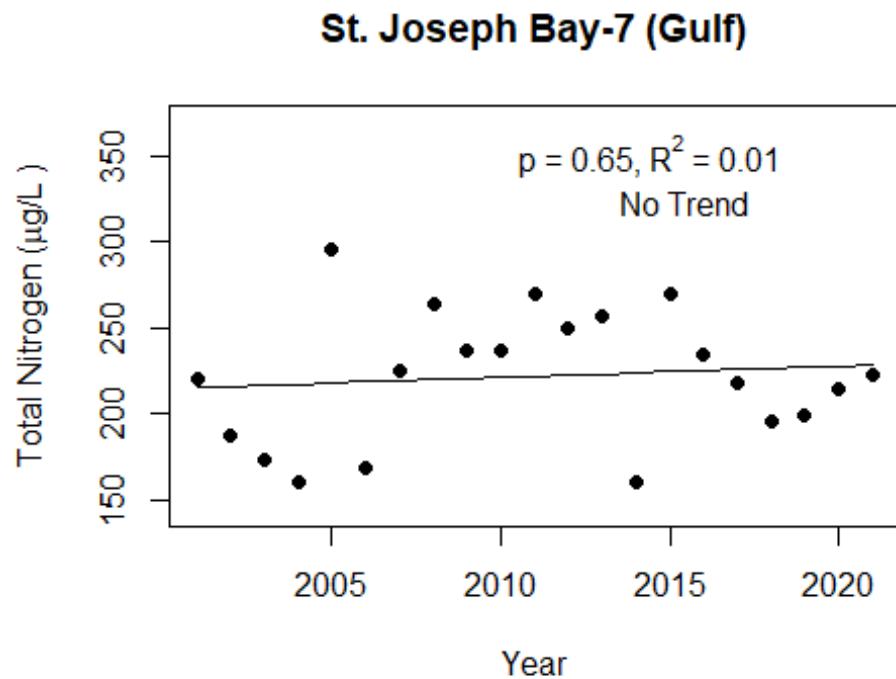
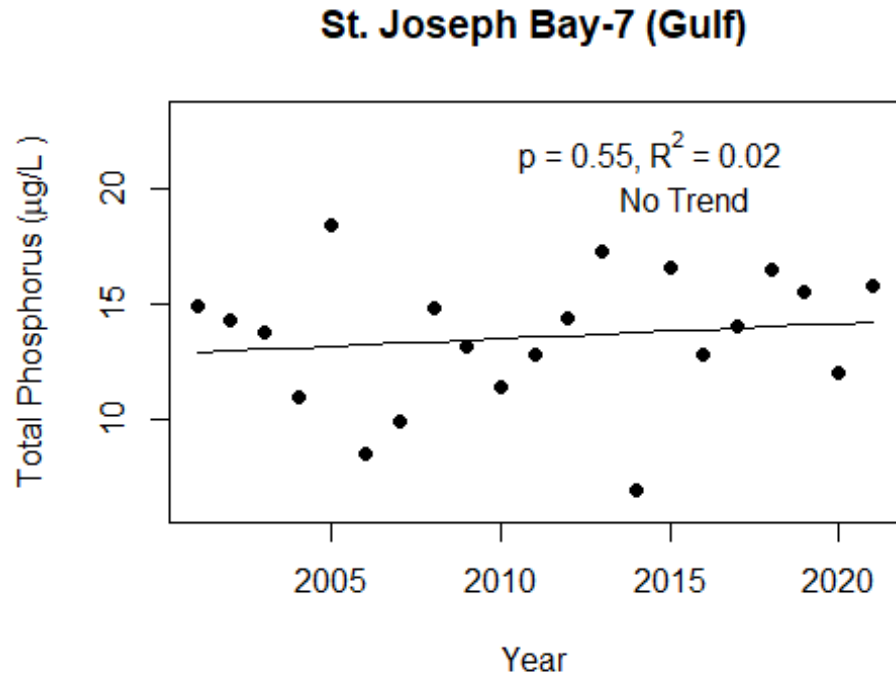
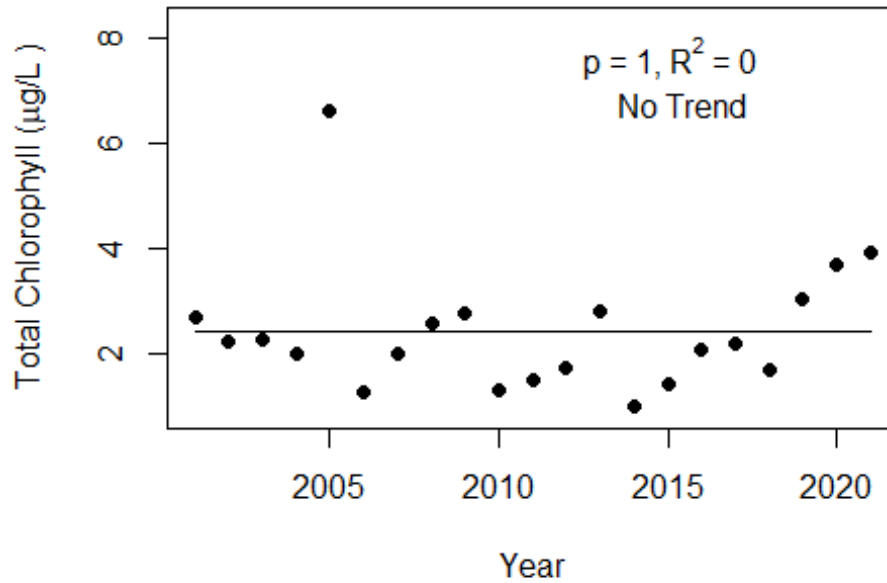
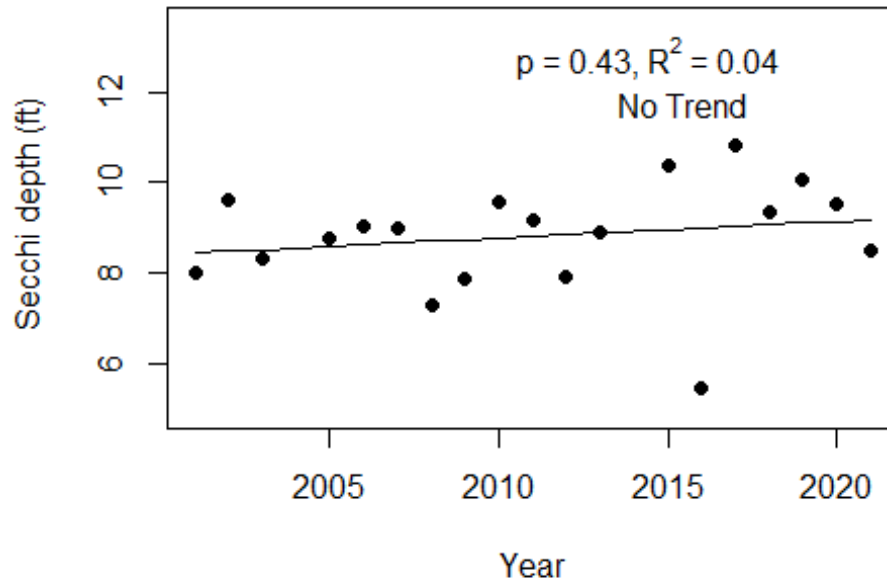


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The  $R^2$  value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the  $R^2$  the stronger the relations and the p value indicates if the relation is significant ( $p < 0.05$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

### St. Joseph Bay-7 (Gulf)



### St. Joseph Bay-7 (Gulf)



**LAKEWATCH Report for St. Joseph Bay-8 in Gulf County  
Estuary and Estuary Segment: St. Joseph Bay St. Joseph Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Gulf
Name	St. Joseph Bay-8
GNIS Number	308428
Water Body Type	Estuary
Period of Record (years, range)	11 (2007 to 2021)
Latitude	29.8285
Longitude	-85.3287

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	10 - 18	15 (11)
Total Nitrogen ( $\mu\text{g/L}$ )	223 - 292	257 (11)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	1 - 4	2 (11)
Secchi (ft)	6.6 - 11.2	9.1 (11)
Secchi (m)	2 - 3.4	2.8 (11)
Color (Pt-Co Units)	4 - 22	10 (11)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	19065 - 43689	28821 (11)
Salinity (ppt)	12 - 27	18 (11)



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.

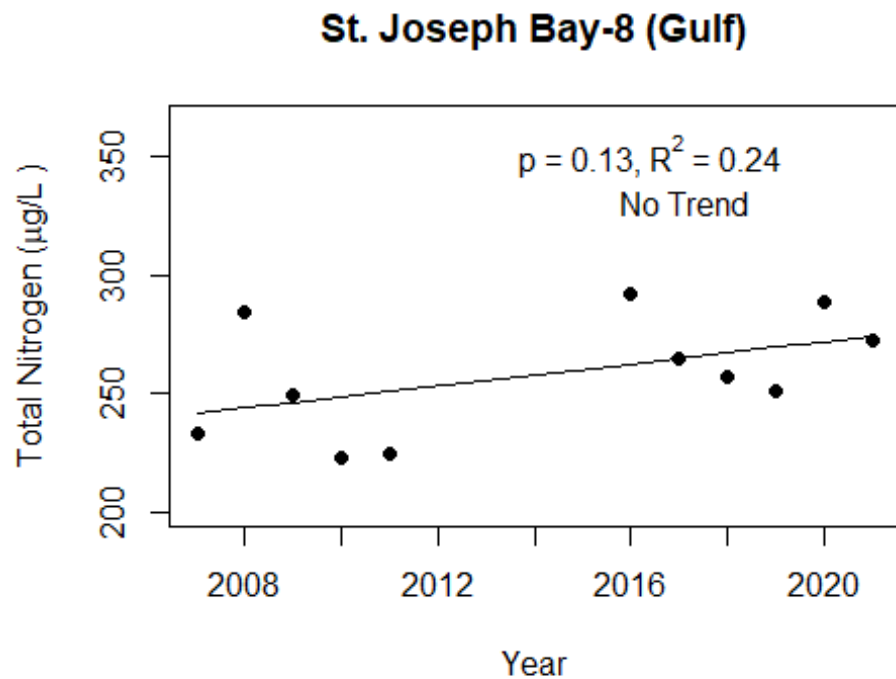
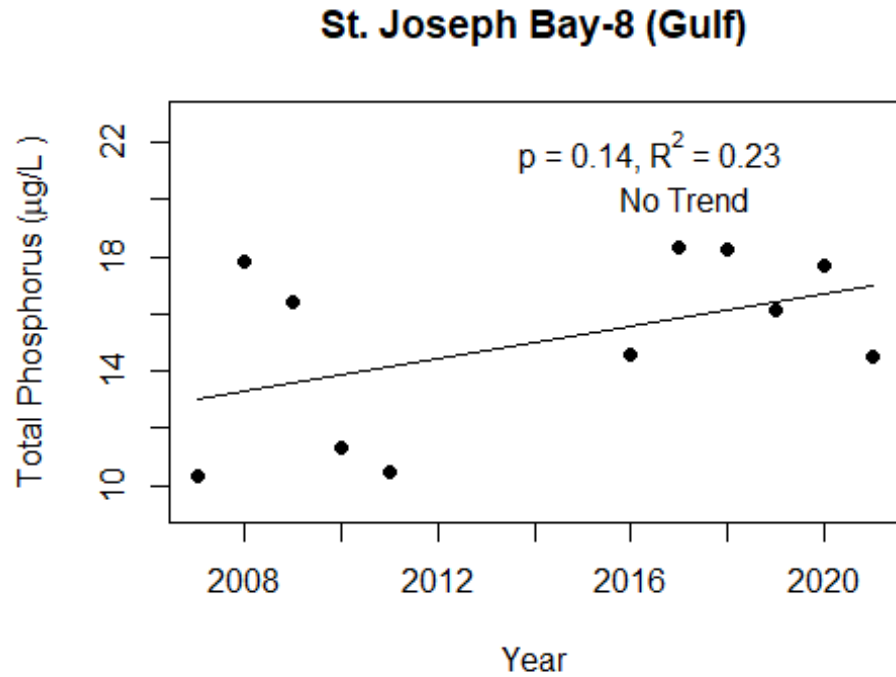
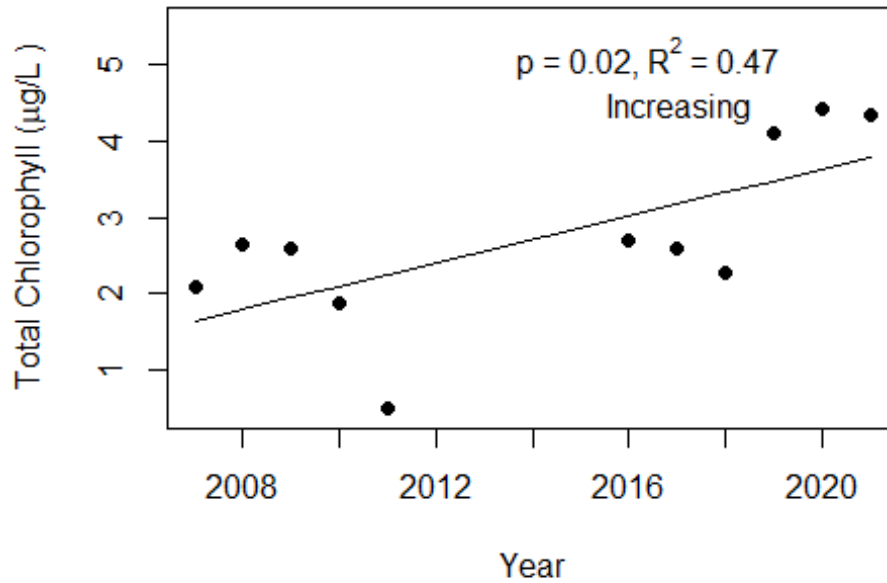
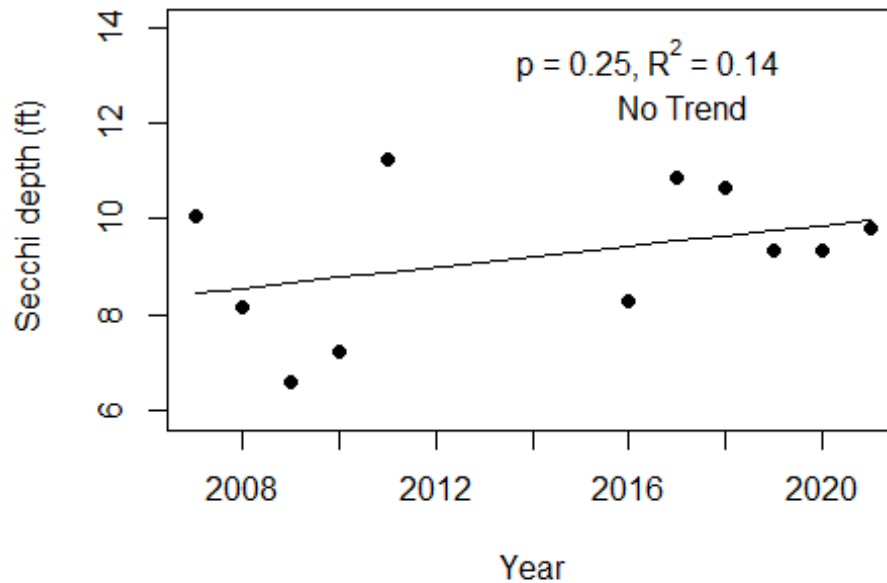


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The  $R^2$  value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the  $R^2$  the stronger the relations and the p value indicates if the relation is significant ( $p < 0.05$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

### St. Joseph Bay-8 (Gulf)



### St. Joseph Bay-8 (Gulf)



**LAKEWATCH Report for St. Joseph Bay-9 in Gulf County  
Estuary and Estuary Segment: St. Joseph Bay St. Joseph Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Gulf
Name	St. Joseph Bay-9
GNIS Number	308428
Water Body Type	Estuary
Period of Record (years, range)	10 (2012 to 2021)
Latitude	29.7357
Longitude	-85.3849

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	9 - 17	13 (10)
Total Nitrogen ( $\mu\text{g/L}$ )	182 - 316	236 (10)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	1 - 3	2 (10)
Secchi (ft)	4.3 - 8	5.4 (4)
Secchi (m)	1.3 - 2.4	1.6 (4)
Color (Pt-Co Units)	4 - 9	6 (9)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	36701 - 47664	42468 (9)
Salinity (ppt)	23 - 30	26 (9)

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.

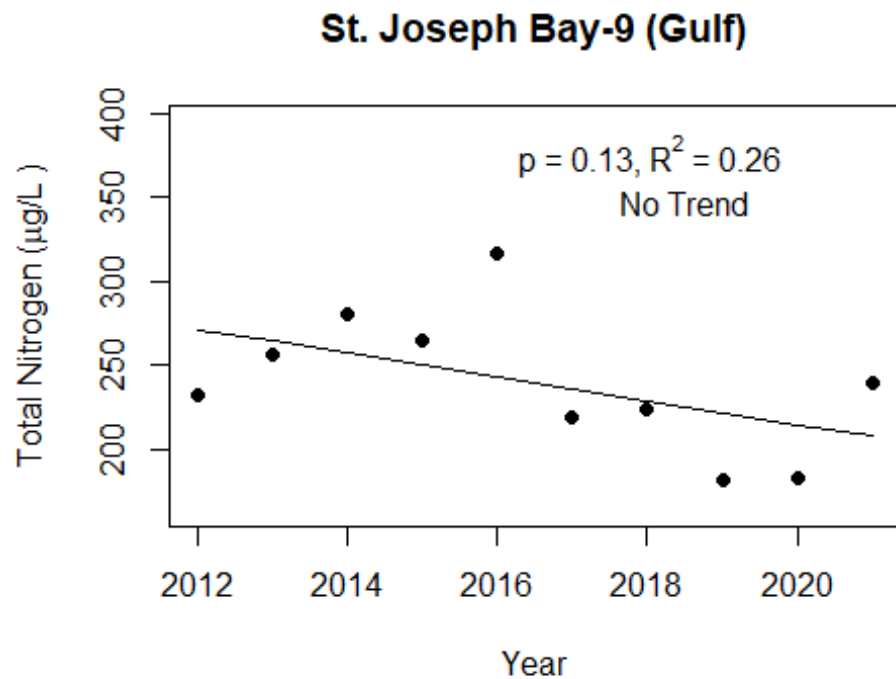
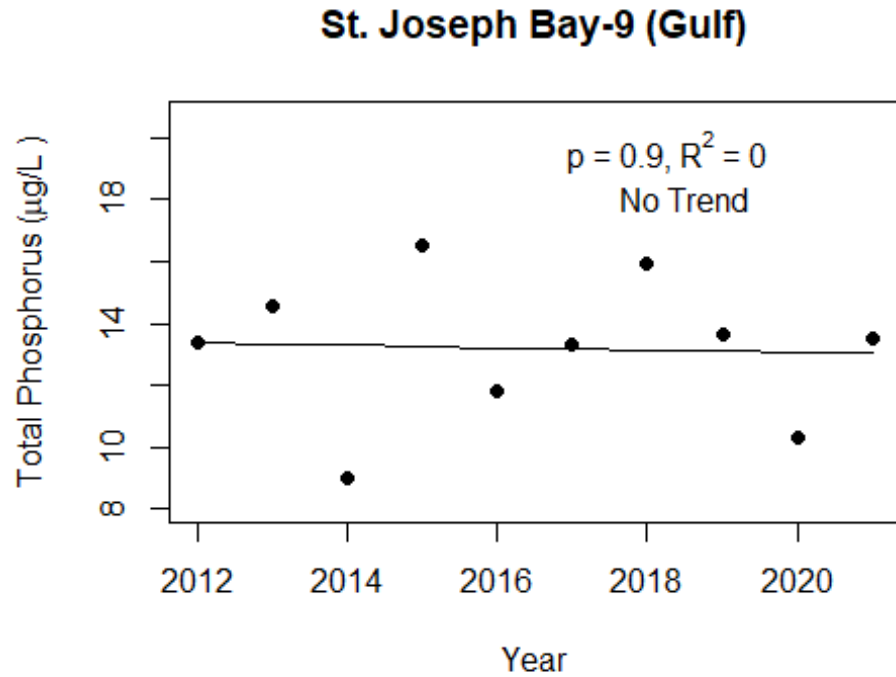
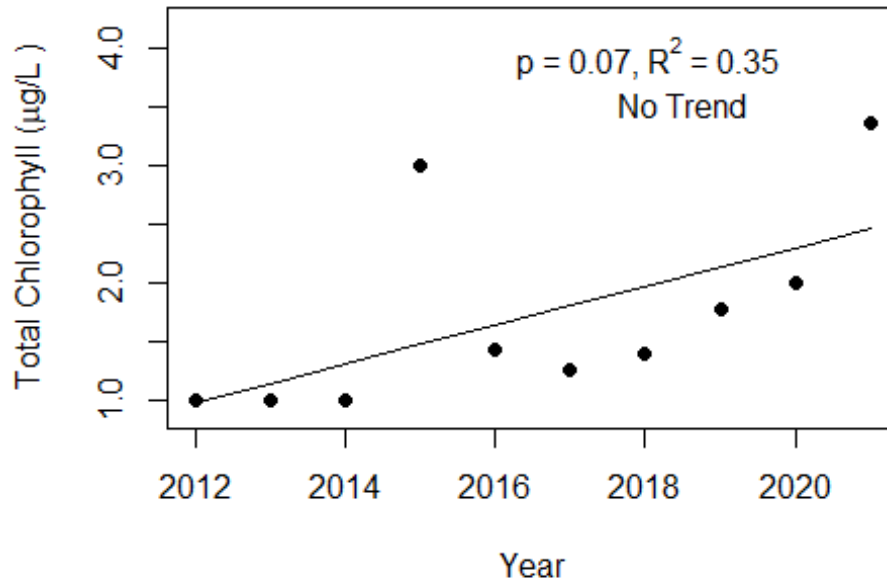
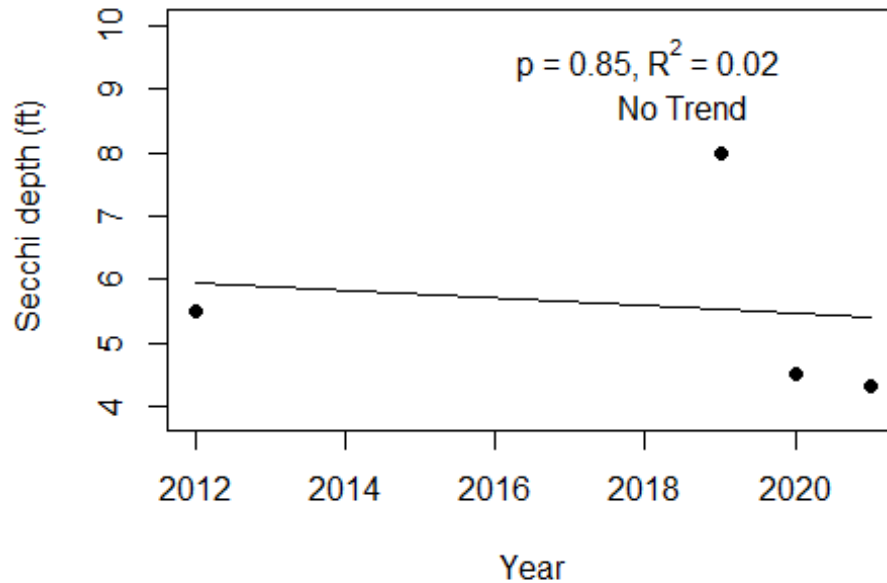


Figure 3 and Figure 4. Trend plots of annual average chlorophyll and annual average Secchi versus year. The  $R^2$  value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the  $R^2$  the stronger the relations and the p value indicates if the relation is significant ( $p < 0.05$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

### St. Joseph Bay-9 (Gulf)



### St. Joseph Bay-9 (Gulf)



**LAKEWATCH Report for Hernando Beach-1 in Hernando County**  
**Estuary and Estuary Segment: Weeki Wachee River Wekki Wachee River Offshore**  
**Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Hernando
Name	Hernando Beach-1
GNIS Number	
Water Body Type	Estuary
Period of Record (years, range)	3 (2019 to 2021)
Latitude	28.4929
Longitude	-82.6584

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	9 - 14	11 (3)
Total Nitrogen ( $\mu\text{g/L}$ )	443 - 505	482 (3)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	1 - 2	2 (3)
Secchi (ft)	5 - 5	5 (1)
Secchi (m)	1.5 - 1.5	1.5 (1)
Color (Pt-Co Units)	11 - 11	11 (2)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	23924 - 29496	26564 (2)
Salinity (ppt)	15 - 18	16 (2)



**LAKEWATCH Report for Hernando Beach-2 in Hernando County**  
**Estuary and Estuary Segment: Weeki Wachee River Wekki Wachee River Offshore**  
**Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Hernando
Name	Hernando Beach-2
GNIS Number	
Water Body Type	Estuary
Period of Record (years, range)	3 (2019 to 2021)
Latitude	28.5183
Longitude	-82.7089

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 - 8	6 (3)
Total Nitrogen ( $\mu\text{g/L}$ )	305 - 441	364 (3)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	1 - 1	1 (2)
Secchi (ft)	4.5 - 7.5	5.8 (2)
Secchi (m)	1.4 - 2.3	1.8 (2)
Color (Pt-Co Units)	8 - 9	8 (2)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	32884 - 33466	33174 (2)
Salinity (ppt)	20 - 21	21 (2)

**LAKEWATCH Report for Hernando Beach-3 in Hernando County**  
**Estuary and Estuary Segment: Weeki Wachee River Wekki Wachee River Offshore**  
**Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Hernando
Name	Hernando Beach-3
GNIS Number	
Water Body Type	Estuary
Period of Record (years, range)	3 (2019 to 2021)
Latitude	28.494
Longitude	-82.6511

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	13 - 15	14 (3)
Total Nitrogen ( $\mu\text{g/L}$ )	456 - 540	498 (3)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	3 - 4	3 (3)
Secchi (ft)	4.1 - 4.9	4.5 (3)
Secchi (m)	1.3 - 1.5	1.4 (3)
Color (Pt-Co Units)	12 - 13	13 (2)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	26495 - 28983	27711 (2)
Salinity (ppt)	16 - 18	17 (2)

**LAKEWATCH Report for Hernando Beach-4 in Hernando County**  
**Estuary and Estuary Segment: Weeki Wachee River Wekki Wachee River Offshore**  
**Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Hernando
Name	Hernando Beach-4
GNIS Number	
Water Body Type	Estuary
Period of Record (years, range)	3 (2019 to 2021)
Latitude	28.4998
Longitude	-82.6503

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	22 - 35	28 (3)
Total Nitrogen ( $\mu\text{g/L}$ )	659 - 718	697 (3)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	3 - 12	7 (3)
Secchi (ft)	3.2 - 4.9	3.8 (3)
Secchi (m)	1 - 1.5	1.1 (3)
Color (Pt-Co Units)	12 - 16	14 (2)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	26718 - 28496	27593 (2)
Salinity (ppt)	17 - 18	17 (2)

**LAKEWATCH Report for Hernando Beach-5 in Hernando County**  
**Estuary and Estuary Segment: Weeki Wachee River Wekki Wachee River Offshore**  
**Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Hernando
Name	Hernando Beach-5
GNIS Number	
Water Body Type	Estuary
Period of Record (years, range)	3 (2019 to 2021)
Latitude	28.4971
Longitude	-82.653

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	10 - 13	11 (3)
Total Nitrogen ( $\mu\text{g/L}$ )	409 - 533	482 (3)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	2 - 3	3 (3)
Secchi (ft)	3 - 5.6	4.1 (3)
Secchi (m)	0.9 - 1.7	1.2 (3)
Color (Pt-Co Units)	12 - 15	13 (2)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	25972 - 29000	27444 (2)
Salinity (ppt)	16 - 18	17 (2)



**LAKEWATCH Report for Hernando Beach-6 in Hernando County**  
**Estuary and Estuary Segment: Weeki Wachee River Wekki Wachee River Offshore**  
**Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Hernando
Name	Hernando Beach-6
GNIS Number	
Water Body Type	Estuary
Period of Record (years, range)	3 (2019 to 2021)
Latitude	28.4911
Longitude	-82.6514

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	10 - 11	11 (3)
Total Nitrogen ( $\mu\text{g/L}$ )	457 - 522	498 (3)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	2 - 2	2 (3)
Secchi (ft)	7.1 - 8.5	7.7 (3)
Secchi (m)	2.2 - 2.6	2.3 (3)
Color (Pt-Co Units)	11 - 14	12 (2)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	23724 - 27982	25766 (2)
Salinity (ppt)	15 - 17	16 (2)

**LAKEWATCH Report for Little Cockroach Bay-1 in Hillsborough County  
Estuary and Estuary Segment: Tampa Bay Middle Tampa Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Hillsborough
Name	Little Cockroach Bay-1
GNIS Number	285642
Water Body Type	Estuary
Period of Record (years, range)	1 (2001 to 2001)
Latitude	27.7159
Longitude	-82.4902

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	99 - 99	99 (1)
Total Nitrogen ( $\mu\text{g/L}$ )	540 - 540	540 (1)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	5 - 5	5 (1)
Secchi (ft)	4 - 4	4 (1)
Secchi (m)	1.2 - 1.2	1.2 (1)
Color (Pt-Co Units)	9 - 9	9 (1)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	51000 - 51000	51000 (1)
Salinity (ppt)	32 - 32	32 (1)

**LAKEWATCH Report for Little Cockroach Bay-2 in Hillsborough County  
Estuary and Estuary Segment: Tampa Bay Middle Tampa Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Hillsborough
Name	Little Cockroach Bay-2
GNIS Number	285642
Water Body Type	Estuary
Period of Record (years, range)	1 (2001 to 2001)
Latitude	27.7116
Longitude	-82.5033

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	143 - 143	143 (1)
Total Nitrogen ( $\mu\text{g/L}$ )	690 - 690	690 (1)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	9 - 9	9 (1)
Secchi (ft)	4 - 4	4 (1)
Secchi (m)	1.2 - 1.2	1.2 (1)
Color (Pt-Co Units)	13 - 13	13 (1)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	52000 - 52000	52000 (1)
Salinity (ppt)	32 - 32	32 (1)

**LAKEWATCH Report for Little Cockroach Bay-3 in Hillsborough County  
Estuary and Estuary Segment: Tampa Bay Middle Tampa Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Hillsborough
Name	Little Cockroach Bay-3
GNIS Number	285642
Water Body Type	Estuary
Period of Record (years, range)	1 (2001 to 2001)
Latitude	27.7082
Longitude	-82.5079

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	127 - 127	127 (1)
Total Nitrogen ( $\mu\text{g/L}$ )	710 - 710	710 (1)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	12 - 12	12 (1)
Secchi (ft)	3.3 - 3.3	3.3 (1)
Secchi (m)	1 - 1	1 (1)
Color (Pt-Co Units)	15 - 15	15 (1)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	53000 - 53000	53000 (1)
Salinity (ppt)	33 - 33	33 (1)



**LAKEWATCH Report for Little Cockroach Bay-4 in Hillsborough County  
Estuary and Estuary Segment: Tampa Bay Middle Tampa Bay  
Using Data Downloaded 1/31/2022**

**Introduction for Estuaries**

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.
- **GNIS Number:** Number created by USGS's Geographic Names Information System.
- **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	Hillsborough
Name	Little Cockroach Bay-4
GNIS Number	285642
Water Body Type	Estuary
Period of Record (years, range)	1 (2001 to 2001)
Latitude	27.7102
Longitude	-82.4885

## Long-Term Data for Estuaries: Definitions

The following long-term data are the primary trophic state parameters collected by LAKEWATCH volunteers and classification variables color and specific conductance (LAKEWATCH recently began analyzing samples quarterly for color and specific conductance):

- **Total Phosphorus ( $\mu\text{g/L}$ ):** Nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ( $\mu\text{g/L}$ ):** Nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10 (by mass).
- **Chlorophyll-uncorrected ( $\mu\text{g/L}$ ):** Chlorophyll concentrations are used to measure relative abundances of open water algae.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filtered 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 dissolved 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 ( $\mu\text{g/L}$ )	142 - 142	142 (1)
Total Nitrogen ( $\mu\text{g/L}$ )	650 - 650	650 (1)
Chlorophyll- uncorrected ( $\mu\text{g/L}$ )	9 - 9	9 (1)
Secchi (ft)	3.8 - 3.8	3.8 (1)
Secchi (m)	1.2 - 1.2	1.2 (1)
Color (Pt-Co Units)	13 - 13	13 (1)
Specific Conductance ( $\mu\text{S/cm@25 C}$ )	50000 - 50000	50000 (1)
Salinity (ppt)	31 - 31	31 (1)

