

LAKEWATCH Report for Sanibel River-1 in Lee County
Watershed Region: Peninsular
Using Data Downloaded 2-12-2019

Introduction for River/Stream

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 geometric means and ranges and the final part are the trend plots for nutrients, chlorophyll and Secchi depth. Plots were only made for systems with five or more years of data.

For decades Florida has had a narrative nutrient water quality criterion in place to protect Florida’s waters against nutrient over-enrichment. In 2009, the Florida Department of Environmental Protection (FDEP) initiated rulemaking and, by 2011, adopted what would be the first set of statewide numeric nutrient standards for Florida’s waters. By 2015, almost all the remaining waters in Florida have numeric nutrient standards (see for FDEP Regulation Nutrient Criteria’s for: Streams, spring vents:

<https://www.flrules.org/gateway/RuleNo.asp?title=SURFACE%20WATER%20QUALITY%20STANDARDS&ID=62-302.531>).



Figure 1. Map showing nutrient thresholds areas for streams set forth by FDEP.

Table 1. The nutrient thresholds for streams are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold ¹	Total Nitrogen Nutrient Threshold ¹
Panhandle West	60 µg/L	670 µg/L
Panhandle East	180 µg/L	1030 µg/L
North Central	300 µ/L	1870 µg/L
Peninsular	120 µg/L	1540 µg/L
West Central	490 µg/L	1650 µg/L
South Florida	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.

¹These values are annual geometric mean concentrations not to be exceeded more than once in any three calendar year periods.

Base File Data for River/Streams: Definitions

- **County:** Name of county in which the system resides.
- **Name:** Stream name that LAKEWATCH uses for the 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 2. Base File Data.

County	Lee
Name	Sanibel River-1
Water Body Type	River/Stream
Period of Record (years, range)	13 (1993 to 2005)
Latitude	26.4388
Longitude	-82.0880

Long-Term Data for River/Streams: Definitions

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

Table 3. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance (collected quarterly).

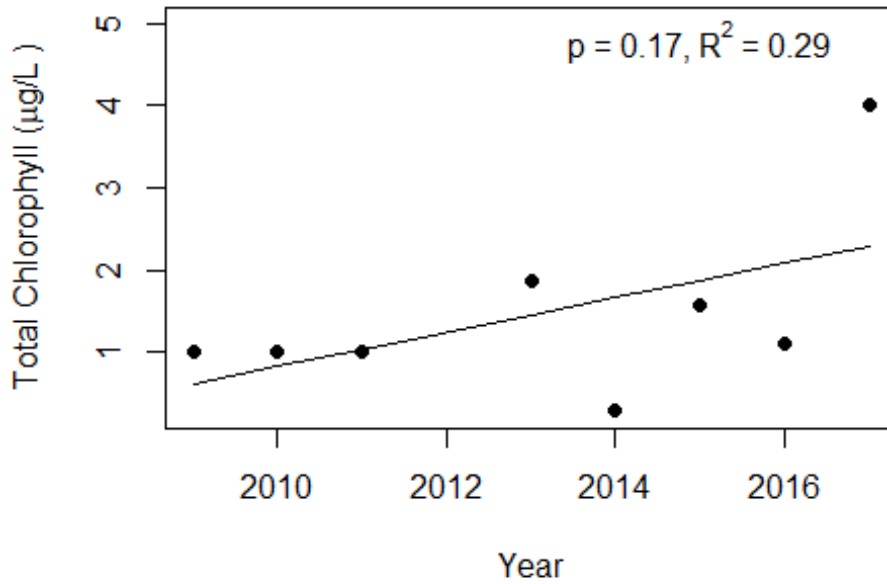
Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	23 - 88	40 (13)
Total Nitrogen ($\mu\text{g/L}$)	1156 - 1875	1415 (13)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	4 - 40	11 (13)
Secchi (ft)	1.8 - 4.5	3.3 (12)
Secchi (m)	0.5 - 1.4	1.0 (12)
Color (Pt-Co Units)	85 - 161	125 (5)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

Figure 2 and Figure 3. 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 the plots.



Figure 4 and Figure 5. 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.

Blues Creek-1 (Alachua)



Blues Creek-1 (Alachua)



LAKEWATCH Report for Sanibel River-2 in Lee County
Watershed Region: Peninsular
Using Data Downloaded 2-12-2019

Introduction for River/Stream

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Figure 1. Map showing nutrient thresholds areas for streams set forth by FDEP.

Table 1. The nutrient thresholds for streams are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold ¹	Total Nitrogen Nutrient Threshold ¹
Panhandle West	60 µg/L	670 µg/L
Panhandle East	180 µg/L	1030 µg/L
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Peninsular	120 µg/L	1540 µg/L
West Central	490 µg/L	1650 µg/L
South Florida	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.

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Base File Data for River/Streams: Definitions

- **County:** Name of county in which the system resides.
- **Name:** Stream name that LAKEWATCH uses for the 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 2. Base File Data.

County	Lee
Name	Sanibel River-2
Water Body Type	River/Stream
Period of Record (years, range)	13 (1993 to 2005)
Latitude	26.4376
Longitude	-82.1079

Long-Term Data for River/Streams: Definitions

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

Table 3. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance (collected quarterly).

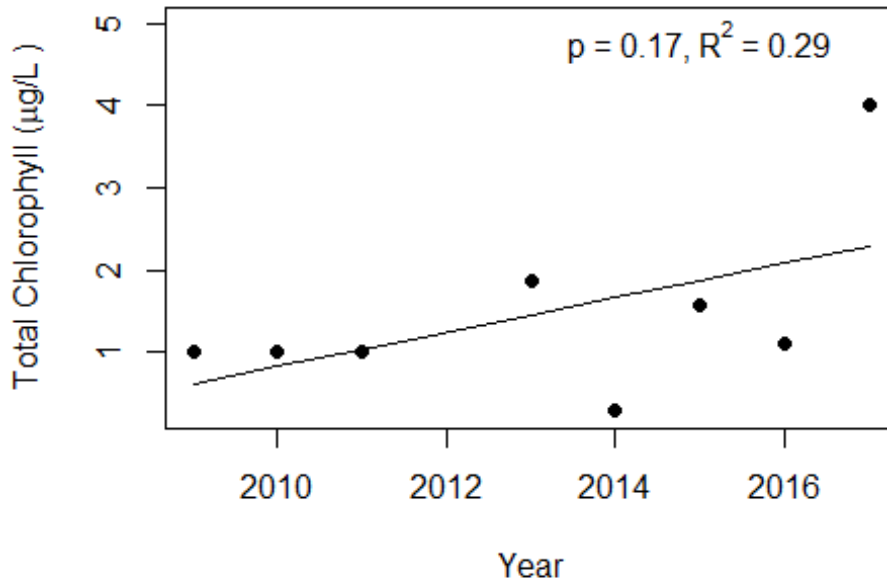
Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	26 - 79	54 (13)
Total Nitrogen ($\mu\text{g/L}$)	1291 - 2197	1652 (13)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	6 - 29	15 (13)
Secchi (ft)	1.4 - 4.7	2.7 (12)
Secchi (m)	0.4 - 1.4	0.8 (12)
Color (Pt-Co Units)	106 - 188	141 (5)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

Figure 2 and Figure 3. 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 the plots.

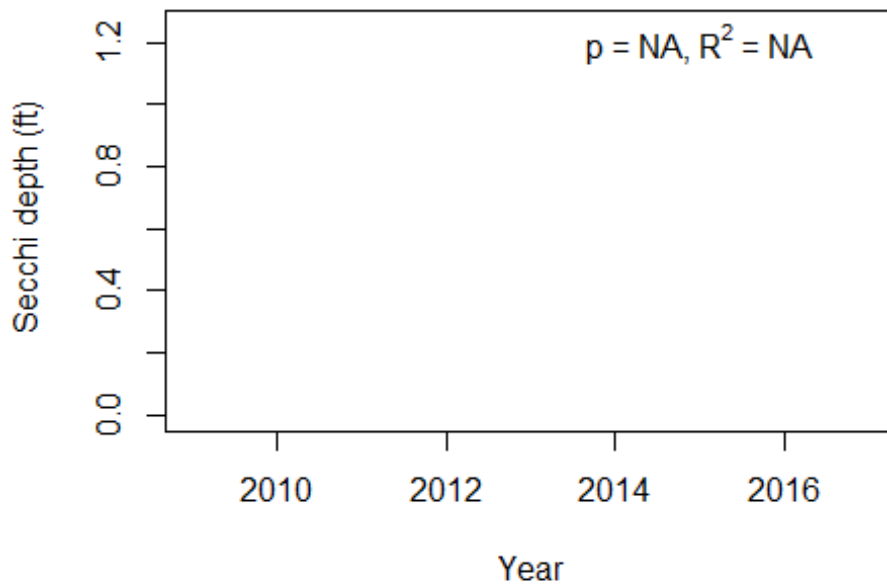


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Blues Creek-1 (Alachua)



Blues Creek-1 (Alachua)



LAKEWATCH Report for Sanibel River-3 in Lee County
Watershed Region: Peninsular
Using Data Downloaded 2-12-2019

Introduction for River/Stream

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Figure 1. Map showing nutrient thresholds areas for streams set forth by FDEP.

Table 1. The nutrient thresholds for streams are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold ¹	Total Nitrogen Nutrient Threshold ¹
Panhandle West	60 µg/L	670 µg/L
Panhandle East	180 µg/L	1030 µg/L
North Central	300 µ/L	1870 µg/L
Peninsular	120 µg/L	1540 µg/L
West Central	490 µg/L	1650 µg/L
South Florida	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.

¹These values are annual geometric mean concentrations not to be exceeded more than once in any three calendar year periods.

Base File Data for River/Streams: Definitions

- **County:** Name of county in which the system resides.
- **Name:** Stream name that LAKEWATCH uses for the 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 2. Base File Data.

County	Lee
Name	Sanibel River-3
Water Body Type	River/Stream
Period of Record (years, range)	13 (1993 to 2005)
Latitude	26.4275
Longitude	-82.0803

Long-Term Data for River/Streams: Definitions

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

Table 3. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance (collected quarterly).

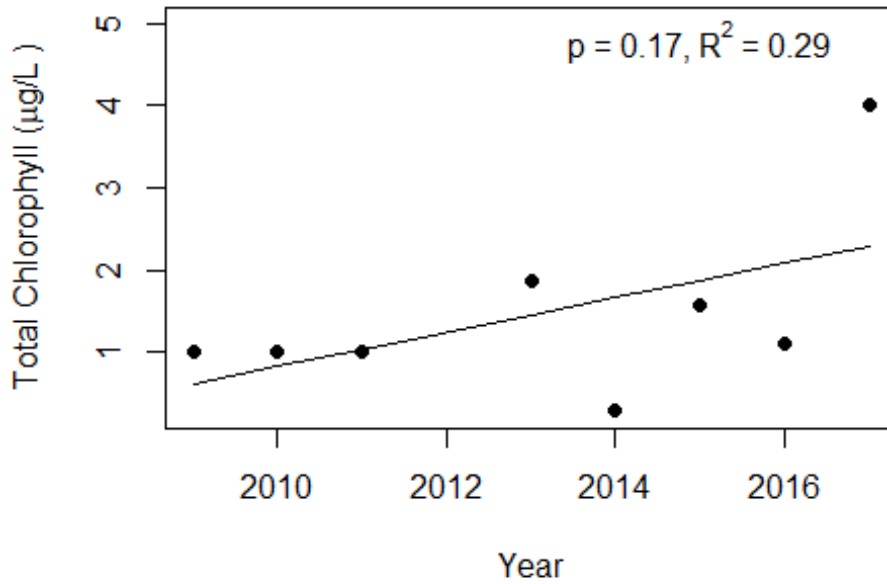
Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	31 - 82	63 (13)
Total Nitrogen ($\mu\text{g/L}$)	1192 - 2340	1618 (13)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	4 - 46	17 (13)
Secchi (ft)	1.5 - 2.8	2.3 (8)
Secchi (m)	0.5 - 0.8	0.7 (8)
Color (Pt-Co Units)	138 - 206	174 (5)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

Figure 2 and Figure 3. 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 the plots.



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Blues Creek-1 (Alachua)



Blues Creek-1 (Alachua)



LAKEWATCH Report for Sanibel River-4 in Lee County
Watershed Region: Peninsular
Using Data Downloaded 2-12-2019

Introduction for River/Stream

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Figure 1. Map showing nutrient thresholds areas for streams set forth by FDEP.

Table 1. The nutrient thresholds for streams are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold ¹	Total Nitrogen Nutrient Threshold ¹
Panhandle West	60 µg/L	670 µg/L
Panhandle East	180 µg/L	1030 µg/L
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Peninsular	120 µg/L	1540 µg/L
West Central	490 µg/L	1650 µg/L
South Florida	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.

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Base File Data for River/Streams: Definitions

- **County:** Name of county in which the system resides.
- **Name:** Stream name that LAKEWATCH uses for the 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 2. Base File Data.

County	Lee
Name	Sanibel River-4
Water Body Type	River/Stream
Period of Record (years, range)	13 (1993 to 2005)
Latitude	26.4415
Longitude	-82.0465

Long-Term Data for River/Streams: Definitions

- **Total Phosphorus ($\mu\text{g/L}$):** The nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ($\mu\text{g/L}$):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
- **Chlorophyll-uncorrected ($\mu\text{g/L}$):** Chlorophyll concentrations are used to measure relative abundances of open water algal population.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filter out.
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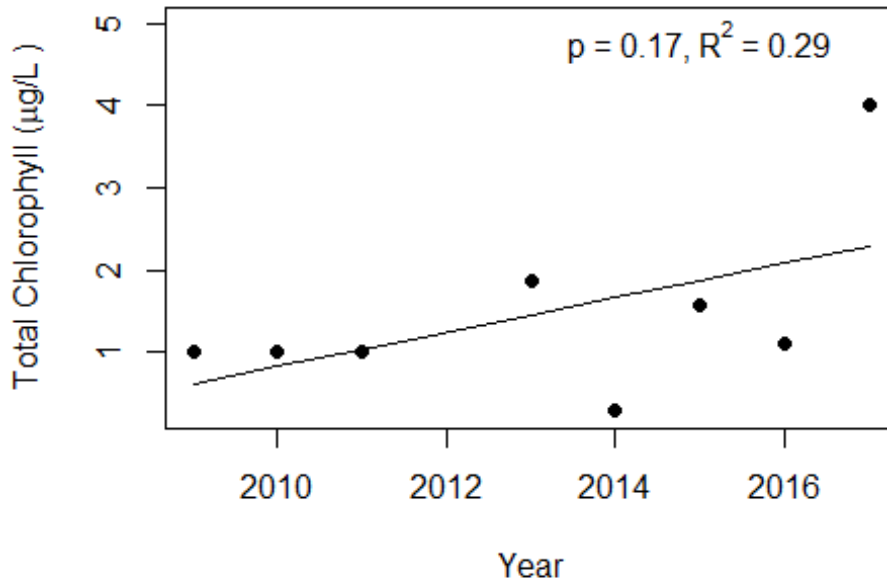
Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	88 - 424	192 (13)
Total Nitrogen ($\mu\text{g/L}$)	1262 - 3764	1900 (13)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	11 - 120	50 (13)
Secchi (ft)	1.5 - 3.0	2.0 (12)
Secchi (m)	0.5 - 0.9	0.6 (12)
Color (Pt-Co Units)	92 - 115	103 (5)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

Figure 2 and Figure 3. 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 the plots.

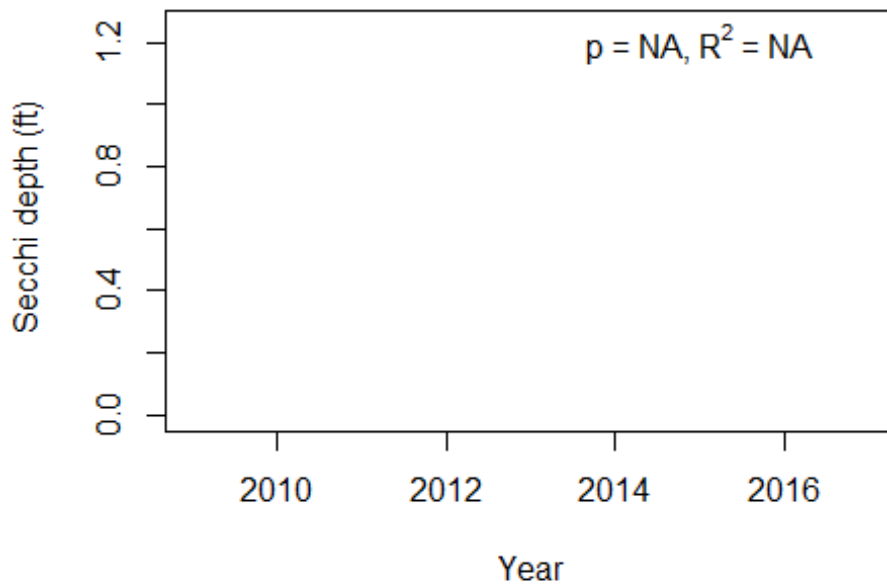


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Blues Creek-1 (Alachua)



Blues Creek-1 (Alachua)



LAKEWATCH Report for Sanibel River-5 in Lee County
Watershed Region: Peninsular
Using Data Downloaded 2-12-2019

Introduction for River/Stream

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Figure 1. Map showing nutrient thresholds areas for streams set forth by FDEP.

Table 1. The nutrient thresholds for streams are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold ¹	Total Nitrogen Nutrient Threshold ¹
Panhandle West	60 µg/L	670 µg/L
Panhandle East	180 µg/L	1030 µg/L
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Peninsular	120 µg/L	1540 µg/L
West Central	490 µg/L	1650 µg/L
South Florida	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.

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Base File Data for River/Streams: Definitions

- **County:** Name of county in which the system resides.
- **Name:** Stream name that LAKEWATCH uses for the 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 2. Base File Data.

County	Lee
Name	Sanibel River-5
Water Body Type	River/Stream
Period of Record (years, range)	13 (1993 to 2005)
Latitude	26.4427
Longitude	-82.0401

Long-Term Data for River/Streams: Definitions

- **Total Phosphorus ($\mu\text{g/L}$):** The nutrient most often limiting growth of plant/algae.
- **Total Nitrogen ($\mu\text{g/L}$):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
- **Chlorophyll-uncorrected ($\mu\text{g/L}$):** Chlorophyll concentrations are used to measure relative abundances of open water algal population.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filter out.
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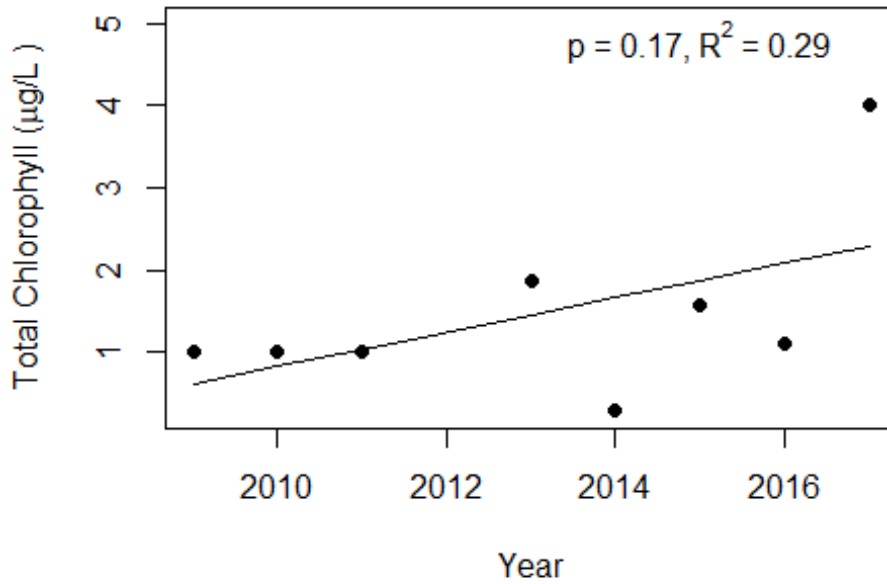
Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	98 - 832	277 (13)
Total Nitrogen ($\mu\text{g/L}$)	1167 - 3636	1677 (13)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	7 - 539	43 (13)
Secchi (ft)	0.8 - 2.9	1.9 (8)
Secchi (m)	0.2 - 0.9	0.6 (8)
Color (Pt-Co Units)	98 - 147	120 (5)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

Figure 2 and Figure 3. 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 the plots.



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Blues Creek-1 (Alachua)



Blues Creek-1 (Alachua)



LAKEWATCH Report for Sanibel River-6 in Lee County
Watershed Region: Peninsular
Using Data Downloaded 2-12-2019

Introduction for River/Stream

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Nutrient Watershed Region	Total Phosphorus Nutrient Threshold ¹	Total Nitrogen Nutrient Threshold ¹
Panhandle West	60 µg/L	670 µg/L
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South Florida	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.

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Base File Data for River/Streams: Definitions

- **County:** Name of county in which the system resides.
- **Name:** Stream name that LAKEWATCH uses for the 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 2. Base File Data.

County	Lee
Name	Sanibel River-6
Water Body Type	River/Stream
Period of Record (years, range)	10 (1993 to 2005)
Latitude	26.4360
Longitude	-82.0976

Long-Term Data for River/Streams: Definitions

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

Table 3. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance (collected quarterly).

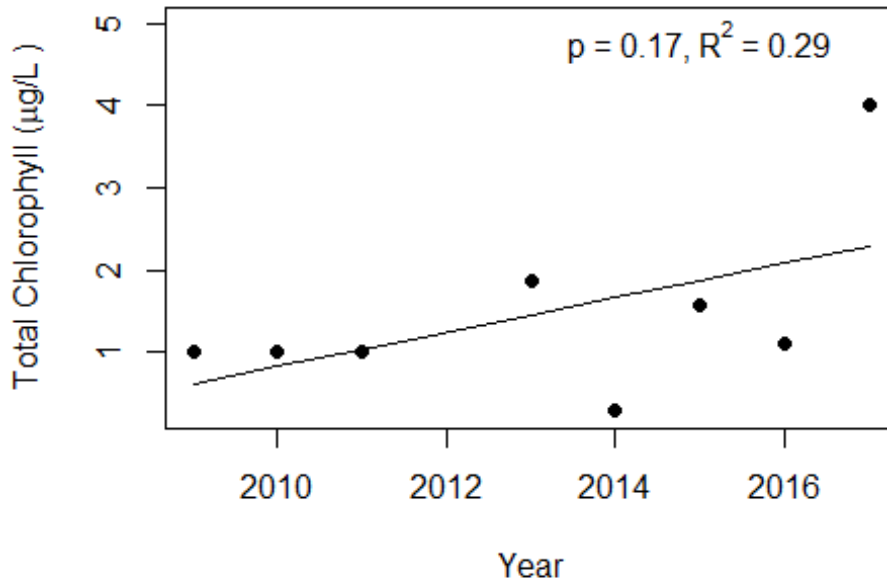
Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	23 - 549	51 (6)
Total Nitrogen ($\mu\text{g/L}$)	1171 - 4480	1638 (6)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	4 - 19	11 (6)
Secchi (ft)	1.5 - 2.3	1.8 (4)
Secchi (m)	0.5 - 0.7	0.6 (4)
Color (Pt-Co Units)	115 - 166	135 (4)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

Figure 2 and Figure 3. 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 the plots.

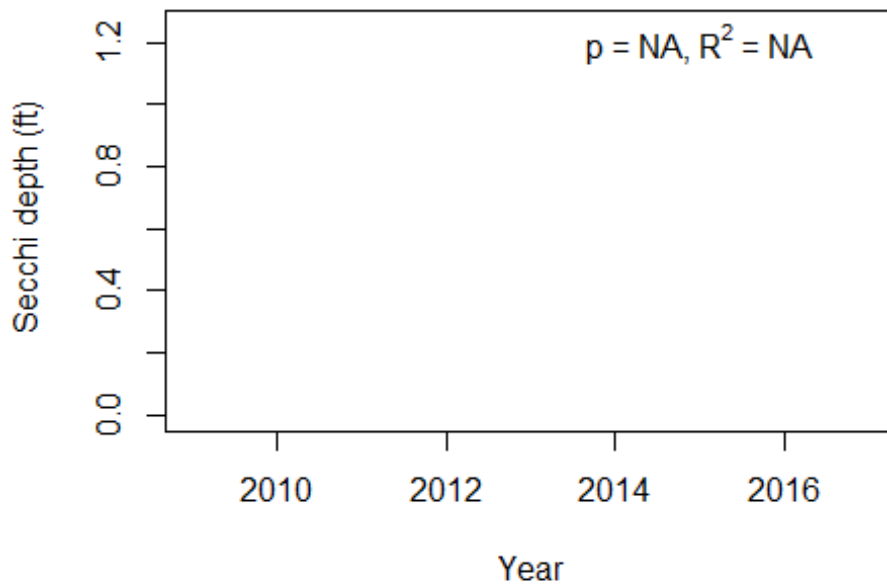


Figure 4 and Figure 5. Trend plots of annual average chlorophyll and annual average Secchi versus year. The R^2 value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the R^2 the stronger the relations and the p value indicates if the relation is significant ($p < 0.05$ is significant). Trend status are reported on plots.

Blues Creek-1 (Alachua)



Blues Creek-1 (Alachua)



LAKEWATCH Report for Sanibel River-7 in Lee County
Watershed Region: Peninsular
Using Data Downloaded 2-12-2019

Introduction for River/Stream

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 geometric means and ranges and the final part are the trend plots for nutrients, chlorophyll and Secchi depth. Plots were only made for systems with five or more years of data.

For decades Florida has had a narrative nutrient water quality criterion in place to protect Florida’s waters against nutrient over-enrichment. In 2009, the Florida Department of Environmental Protection (FDEP) initiated rulemaking and, by 2011, adopted what would be the first set of statewide numeric nutrient standards for Florida’s waters. By 2015, almost all the remaining waters in Florida have numeric nutrient standards (see for FDEP Regulation Nutrient Criteria’s for: Streams, spring vents:

<https://www.flrules.org/gateway/RuleNo.asp?title=SURFACE%20WATER%20QUALITY%20STANDARDS&ID=62-302.531>).



Figure 1. Map showing nutrient thresholds areas for streams set forth by FDEP.

Table 1. The nutrient thresholds for streams are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold ¹	Total Nitrogen Nutrient Threshold ¹
Panhandle West	60 µg/L	670 µg/L
Panhandle East	180 µg/L	1030 µg/L
North Central	300 µ/L	1870 µg/L
Peninsular	120 µg/L	1540 µg/L
West Central	490 µg/L	1650 µg/L
South Florida	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.

¹These values are annual geometric mean concentrations not to be exceeded more than once in any three calendar year periods.

Base File Data for River/Streams: Definitions

- **County:** Name of county in which the system resides.
- **Name:** Stream name that LAKEWATCH uses for the 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 2. Base File Data.

County	Lee
Name	Sanibel River-7
Water Body Type	River/Stream
Period of Record (years, range)	5 (2001 to 2005)
Latitude	26.4375
Longitude	-82.0582

Long-Term Data for River/Streams: Definitions

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

Table 3. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance (collected quarterly).

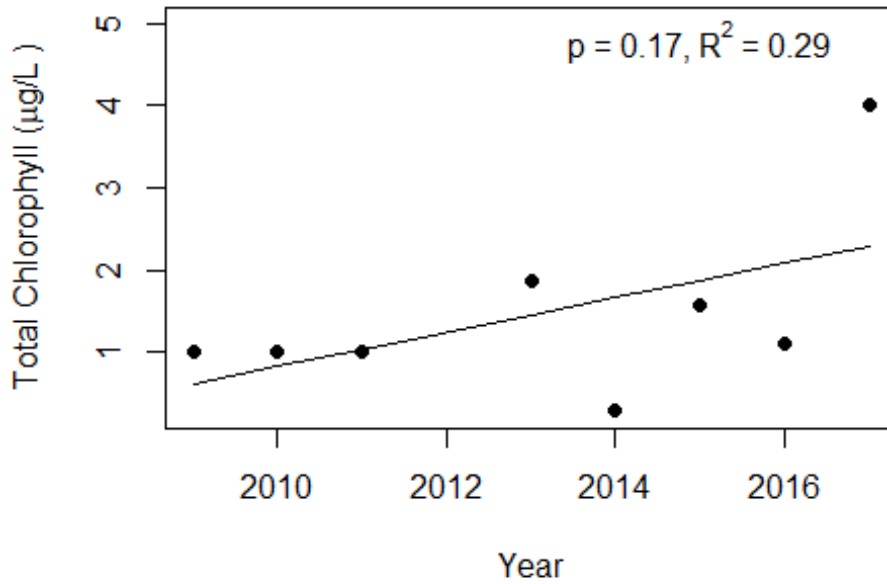
Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	75 - 96	84 (5)
Total Nitrogen ($\mu\text{g/L}$)	1343 - 1772	1522 (5)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	23 - 54	30 (5)
Secchi (ft)	1.5 - 2.5	2.1 (5)
Secchi (m)	0.5 - 0.8	0.6 (5)
Color (Pt-Co Units)	107 - 122	115 (4)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

Figure 2 and Figure 3. 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 the plots.



Figure 4 and Figure 5. 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.

Blues Creek-1 (Alachua)



Blues Creek-1 (Alachua)



LAKEWATCH Report for Sanibel River-8 in Lee County
Watershed Region: Peninsular
Using Data Downloaded 2-12-2019

Introduction for River/Stream

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 geometric means and ranges and the final part are the trend plots for nutrients, chlorophyll and Secchi depth. Plots were only made for systems with five or more years of data.

For decades Florida has had a narrative nutrient water quality criterion in place to protect Florida’s waters against nutrient over-enrichment. In 2009, the Florida Department of Environmental Protection (FDEP) initiated rulemaking and, by 2011, adopted what would be the first set of statewide numeric nutrient standards for Florida’s waters. By 2015, almost all the remaining waters in Florida have numeric nutrient standards (see for FDEP Regulation Nutrient Criteria’s for: Streams, spring vents: <https://www.flrules.org/gateway/RuleNo.asp?title=SURFACE%20WATER%20QUALITY%20STANDARDS&ID=62-302.531>).

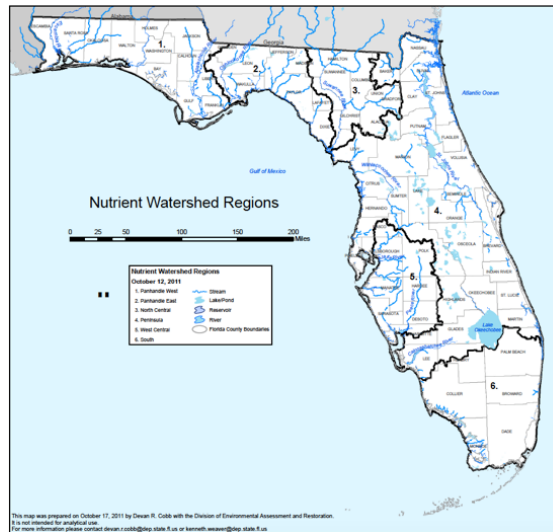


Figure 1. Map showing nutrient thresholds areas for streams set forth by FDEP.

Table 1. The nutrient thresholds for streams are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold ¹	Total Nitrogen Nutrient Threshold ¹
Panhandle West	60 µg/L	670 µg/L
Panhandle East	180 µg/L	1030 µg/L
North Central	300 µ/L	1870 µg/L
Peninsular	120 µg/L	1540 µg/L
West Central	490 µg/L	1650 µg/L
South Florida	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.

¹These values are annual geometric mean concentrations not to be exceeded more than once in any three calendar year periods.

Base File Data for River/Streams: Definitions

- **County:** Name of county in which the system resides.
- **Name:** Stream name that LAKEWATCH uses for the 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 2. Base File Data.

County	Lee
Name	Sanibel River-8
Water Body Type	River/Stream
Period of Record (years, range)	5 (2001 to 2005)
Latitude	26.4276
Longitude	-82.0803

Long-Term Data for River/Streams: Definitions

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

Table 3. Long-term trophic state data collected monthly by LAKEWATCH volunteers and color and specific conductance (collected quarterly).

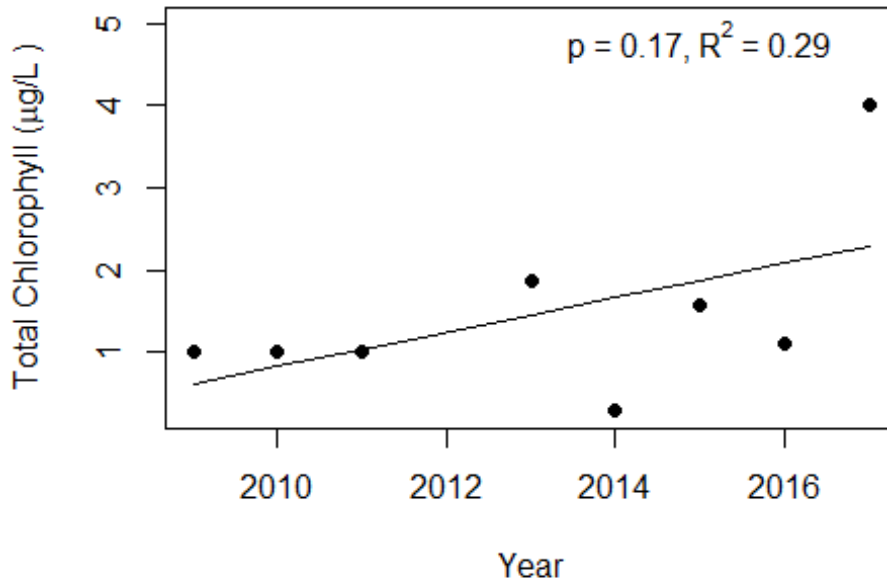
Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	26 - 83	45 (5)
Total Nitrogen ($\mu\text{g/L}$)	1155 - 1898	1475 (5)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	7 - 36	12 (5)
Secchi (ft)	2.0 - 4.1	3.0 (4)
Secchi (m)	0.6 - 1.2	0.9 (4)
Color (Pt-Co Units)	85 - 143	116 (4)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

Figure 2 and Figure 3. 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 the plots.



Figure 4 and Figure 5. 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.

Blues Creek-1 (Alachua)



Blues Creek-1 (Alachua)

