

LAKEWATCH Report for St. John's River-1 in Seminole County
Watershed Region: Peninsular
Using Data Downloaded 12/9/22

Introduction for River/Streams

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 µg/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 period.

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.
- **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 2. Base File Data.

County	Seminole
Name	St. John's River-1
GNIS Number	308105
Water Body Type	River/Stream
Period of Record (years, range)	3 (2001 to 2003)
Latitude	28.7112
Longitude	-81.0423

Long-Term Data for River/Streams: 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 ($\mu\text{g/L}$):** 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 dissolved 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 ($\mu\text{g/L}$)	68 - 114	83 (3)
Total Nitrogen ($\mu\text{g/L}$)	1267 - 1542	1379 (3)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	9 - 16	12 (3)
Secchi (ft)	1.3 - 2.2	1.6 (3)
Secchi (m)	0.4 -0.7	0.5 (3)
Color (Pt-Co Units)	45 - 158	86 (3)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

LAKEWATCH Report for St. John's River-2 in Seminole County
Watershed Region: Peninsular
Using Data Downloaded 12/9/22

Introduction for River/Streams

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.**

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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

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

Table 2. Base File Data.

County	Seminole
Name	St. John's River-2
GNIS Number	308105
Water Body Type	River/Stream
Period of Record (years, range)	3 (2001 to 2003)
Latitude	28.7126
Longitude	-81.0344

Long-Term Data for River/Streams: Definitions

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- **Total Nitrogen ($\mu\text{g/L}$):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
- **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 dissolved 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 ($\mu\text{g/L}$)	62 - 111	81 (3)
Total Nitrogen ($\mu\text{g/L}$)	1287 - 1516	1381 (3)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	7 - 16	11 (3)
Secchi (ft)	1.4 - 2.2	1.7 (3)
Secchi (m)	0.4 -0.7	0.5 (3)
Color (Pt-Co Units)	47 - 161	87 (3)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

LAKEWATCH Report for St. John's River-3 in Seminole County
Watershed Region: Peninsular
Using Data Downloaded 12/9/22

Introduction for River/Streams

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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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Table 2. Base File Data.

County	Seminole
Name	St. John's River-3
GNIS Number	308105
Water Body Type	River/Stream
Period of Record (years, range)	3 (2001 to 2003)
Latitude	28.7140
Longitude	-81.0341

Long-Term Data for River/Streams: Definitions

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- **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 dissolved 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 ($\mu\text{g/L}$)	67 - 110	83 (3)
Total Nitrogen ($\mu\text{g/L}$)	1301 - 1548	1420 (3)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	7 - 19	12 (3)
Secchi (ft)	1.5 - 2.4	1.7 (3)
Secchi (m)	0.4 -0.7	0.5 (3)
Color (Pt-Co Units)	47 - 157	90 (3)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

LAKEWATCH Report for Wekiva River Lower-1 in Seminole County
Watershed Region: Peninsular
Using Data Downloaded 12/9/22

Introduction for River/Streams

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.**

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Base File Data for River/Streams: Definitions

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Table 2. Base File Data.

County	Seminole
Name	Wekiva River Lower-1
GNIS Number	293000
Water Body Type	River/Stream
Period of Record (years, range)	2 (2001 to 2015)
Latitude	28.8316
Longitude	-81.4101

Long-Term Data for River/Streams: 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):

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- **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 dissolved 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 ($\mu\text{g/L}$)	94 - 99	97 (2)
Total Nitrogen ($\mu\text{g/L}$)	640 - 972	789 (2)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	4 - 5	4 (2)
Secchi (ft)	2.6 - 2.6	2.6 (1)
Secchi (m)	0.8 -0.8	0.8 (1)
Color (Pt-Co Units)	16 - 136	47 (2)
Specific Conductance ($\mu\text{S/cm@25 C}$)	794 - 794	794 (1)

LAKEWATCH Report for Wekiva River Lower-2 in Seminole County
Watershed Region: Peninsular
Using Data Downloaded 12/9/22

Introduction for River/Streams

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Table 2. Base File Data.

County	Seminole
Name	Wekiva River Lower-2
GNIS Number	293000
Water Body Type	River/Stream
Period of Record (years, range)	2 (2001 to 2015)
Latitude	28.8316
Longitude	-81.4100

Long-Term Data for River/Streams: 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):

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- **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 dissolved 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 ($\mu\text{g/L}$)	96 - 103	99 (2)
Total Nitrogen ($\mu\text{g/L}$)	710 - 925	810 (2)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	3 - 6	4 (2)
Secchi (ft)	2.6 - 2.6	2.6 (1)
Secchi (m)	0.8 -0.8	0.8 (1)
Color (Pt-Co Units)	16 - 16	16 (1)
Specific Conductance ($\mu\text{S/cm@25 C}$)	769 - 769	769 (1)

LAKEWATCH Report for Wekiva River Lower-3 in Seminole County
Watershed Region: Peninsular
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Introduction for River/Streams

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County	Seminole
Name	Wekiva River Lower-3
GNIS Number	293000
Water Body Type	River/Stream
Period of Record (years, range)	2 (2001 to 2015)
Latitude	28.8319
Longitude	-81.4097

Long-Term Data for River/Streams: Definitions

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Parameter	Minimum and Maximum Annual Geometric Means	Grand Geometric Mean (Sampling years)
Total Phosphorus ($\mu\text{g/L}$)	101 - 101	101 (2)
Total Nitrogen ($\mu\text{g/L}$)	780 - 969	869 (2)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	4 - 9	6 (2)
Secchi (ft)	2.6 - 3.5	3.0 (2)
Secchi (m)	0.8 - 1.1	0.9 (2)
Color (Pt-Co Units)	14 - 14	14 (1)
Specific Conductance ($\mu\text{S/cm@25 C}$)	792 - 792	792 (1)

LAKEWATCH Report for Wekiva River-1 in Seminole County
Watershed Region: Peninsular
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Table 2. Base File Data.

County	Seminole
Name	Wekiva River-1
GNIS Number	293000
Water Body Type	River/Stream
Period of Record (years, range)	3 (2002 to 2005)
Latitude	28.7158
Longitude	-81.4404

Long-Term Data for River/Streams: 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 ($\mu\text{g/L}$):** 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 dissolved 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 ($\mu\text{g/L}$)	93 - 110	101 (3)
Total Nitrogen ($\mu\text{g/L}$)	1063 - 1293	1196 (3)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	1 - 1	1 (3)
Secchi (ft)	2.1 - 4.0	2.9 (2)
Secchi (m)	0.6 - 1.2	0.9 (2)
Color (Pt-Co Units)	25 - 52	35 (3)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

LAKEWATCH Report for Wekiva River-2 in Seminole County
Watershed Region: Peninsular
Using Data Downloaded 12/9/22

Introduction for River/Streams

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 µg/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 period.

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.
- **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 2. Base File Data.

County	Seminole
Name	Wekiva River-2
GNIS Number	293000
Water Body Type	River/Stream
Period of Record (years, range)	3 (2002 to 2005)
Latitude	28.7223
Longitude	-81.4347

Long-Term Data for River/Streams: 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 ($\mu\text{g/L}$):** 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 dissolved 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 ($\mu\text{g/L}$)	90 - 112	100 (3)
Total Nitrogen ($\mu\text{g/L}$)	1055 - 1295	1196 (3)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	1 - 1	1 (3)
Secchi (ft)	1.9 - 1.9	1.9 (1)
Secchi (m)	0.6 -0.6	0.6 (1)
Color (Pt-Co Units)	27 - 50	34 (3)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)

LAKEWATCH Report for Wekiva River-3 in Seminole County
Watershed Region: Peninsular
Using Data Downloaded 12/9/22

Introduction for River/Streams

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>).



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

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.
- **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 2. Base File Data.

County	Seminole
Name	Wekiva River-3
GNIS Number	293000
Water Body Type	River/Stream
Period of Record (years, range)	3 (2002 to 2005)
Latitude	28.7268
Longitude	-81.4312

Long-Term Data for River/Streams: 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 ($\mu\text{g/L}$):** 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 dissolved 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 ($\mu\text{g/L}$)	94 - 112	101 (3)
Total Nitrogen ($\mu\text{g/L}$)	1076 - 1342	1241 (3)
Chlorophyll- uncorrected ($\mu\text{g/L}$)	1 - 2	1 (3)
Secchi (ft)	1.7 - 1.7	1.7 (1)
Secchi (m)	0.5 -0.5	0.5 (1)
Color (Pt-Co Units)	26 - 55	38 (3)
Specific Conductance ($\mu\text{S/cm@25 C}$)	-	(0)