

# LAKEWATCH Report for Magnesia Springs in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria's for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Magnesia Springs
Latitude	29.5832
Longitude	-82.1497
Water Body Type	Spring
Period of Record (year)	2002 to 2002
Nutrient Watershed Region	Peninsula

## LAKEWATCH Report for Magnesia Springs in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	102 - 102	102 (1)
Total Nitrogen (µg/L)	657 - 657	657 (1)
Chlorophyll- uncorrected (µg/L)	24.7 - 24.7	24.7 (1)
Secchi (ft)	3.2 - 3.2	3.2 (1)
Secchi (m)	1.0 - 1.0	1.0 (1)
Color (Pt-Co Units)	-	()
Specific Conductance (µS/cm@25 C)	-	()

## LAKEWATCH Report for Magnesia Springs in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)				
Intercept (a)				
Slope (b)				
Coefficient of Determination (R <sup>2</sup> )				
Probability of Significance (p)				
Potential Trend				

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Magnesia Springs in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

# LAKEWATCH Report for Blues Creek-1 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria's for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Blues Creek-1
Latitude	29.7179
Longitude	-82.4184
Water Body Type	Stream
Period of Record (year)	2009 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Blues Creek-1 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	285 - 797	471 (7)
Total Nitrogen (µg/L)	460 - 1890	1037 (7)
Chlorophyll- uncorrected (µg/L)	0.3 - 1.9	1.2 (7)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	7 - 393	147 (7)
Specific Conductance (µS/cm@25 C)	89 - 280	191 (7)

## LAKEWATCH Report for Blues Creek-1 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

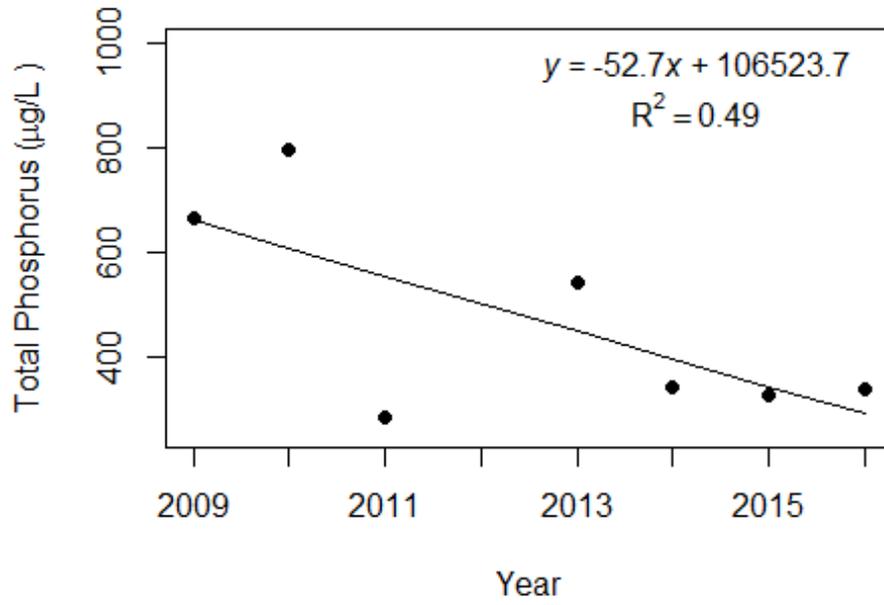
The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

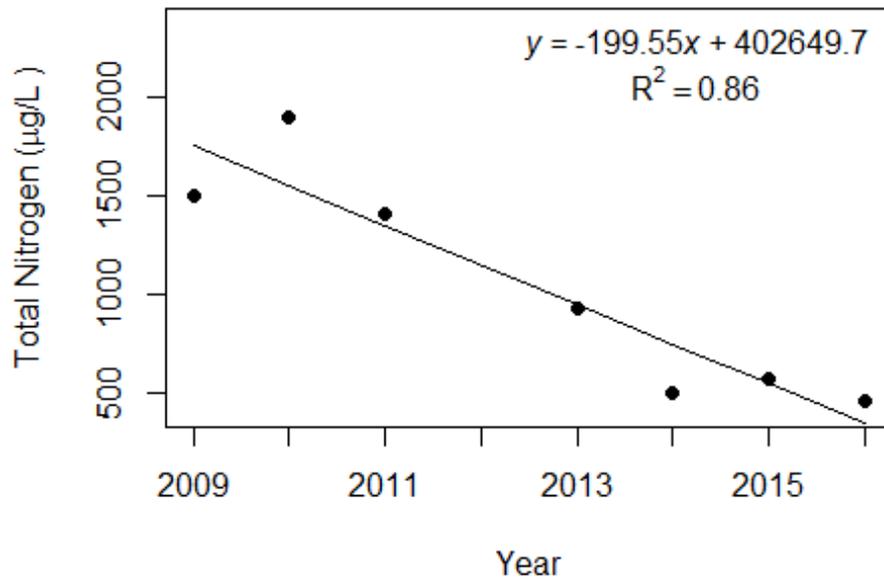
Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)	7	7	7	
Intercept (a)	106524	402650	-174	
Slope (b)	-52.70	-199.55	0.09	
Coefficient of Determination (R <sup>2</sup> )	0.49	0.87	0.17	
Probability of Significance (p)	0.08	0.00	0.36	
Potential Trend	No Trend	Decreasing	No Trend	

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Blues Creek-1 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

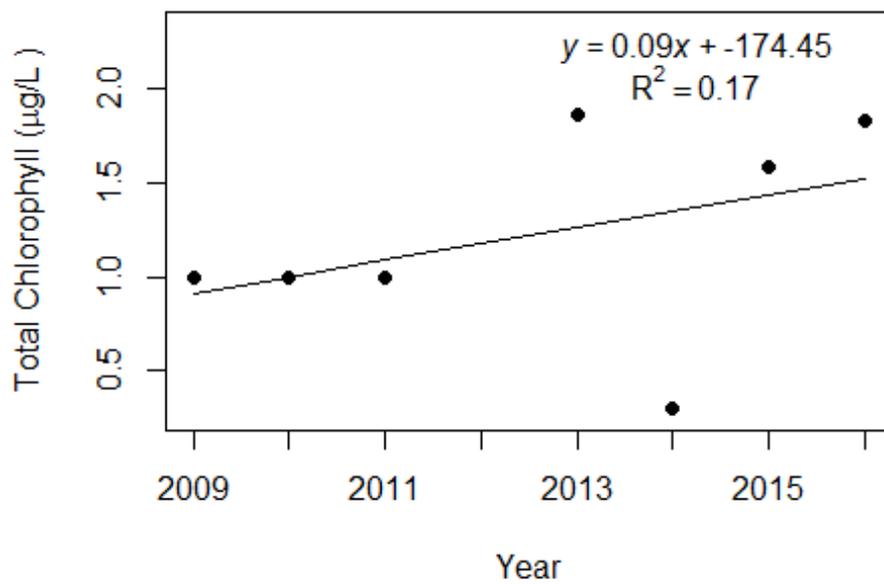
### Blues Creek-1 (Alachua)



### Blues Creek-1 (Alachua)



### Blues Creek-1 (Alachua)



# LAKEWATCH Report for Blues Creek-2 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria's for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Blues Creek-2
Latitude	29.7203
Longitude	-82.4221
Water Body Type	Stream
Period of Record (year)	2009 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Blues Creek-2 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	308 - 908	584 (7)
Total Nitrogen (µg/L)	1140 - 1940	1492 (7)
Chlorophyll- uncorrected (µg/L)	0.5 - 1.0	0.8 (7)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	203 - 418	292 (7)
Specific Conductance (µS/cm@25 C)	93 - 160	132 (7)

## LAKEWATCH Report for Blues Creek-2 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

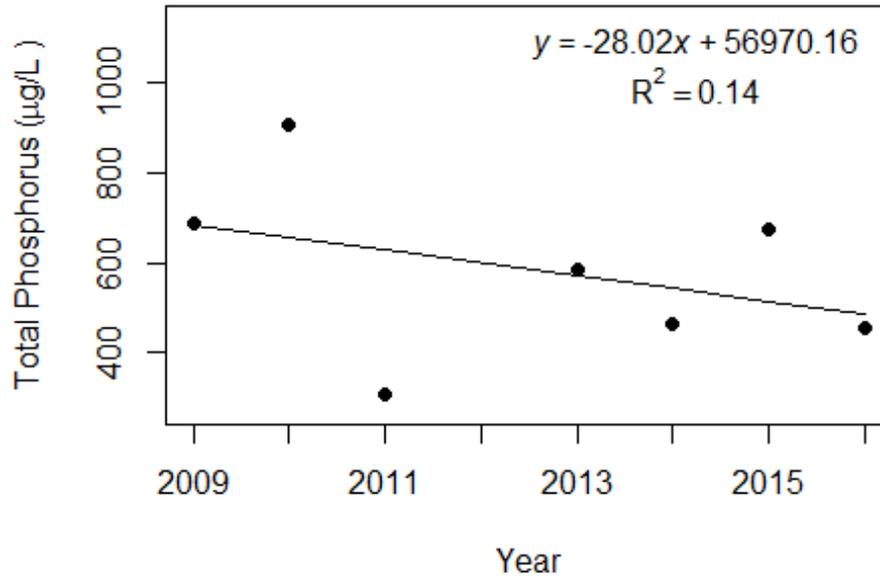
The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

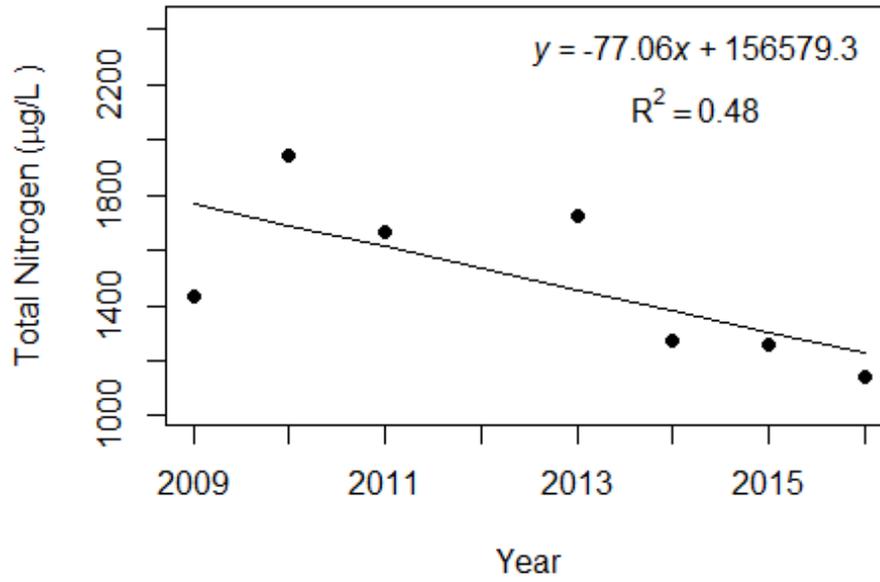
Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)	7	7	7	
Intercept (a)	56970	156579	74	
Slope (b)	-28.02	-77.06	-0.04	
Coefficient of Determination (R <sup>2</sup> )	0.14	0.48	0.21	
Probability of Significance (p)	0.41	0.09	0.31	
Potential Trend	No Trend	No Trend	No Trend	

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Blues Creek-2 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

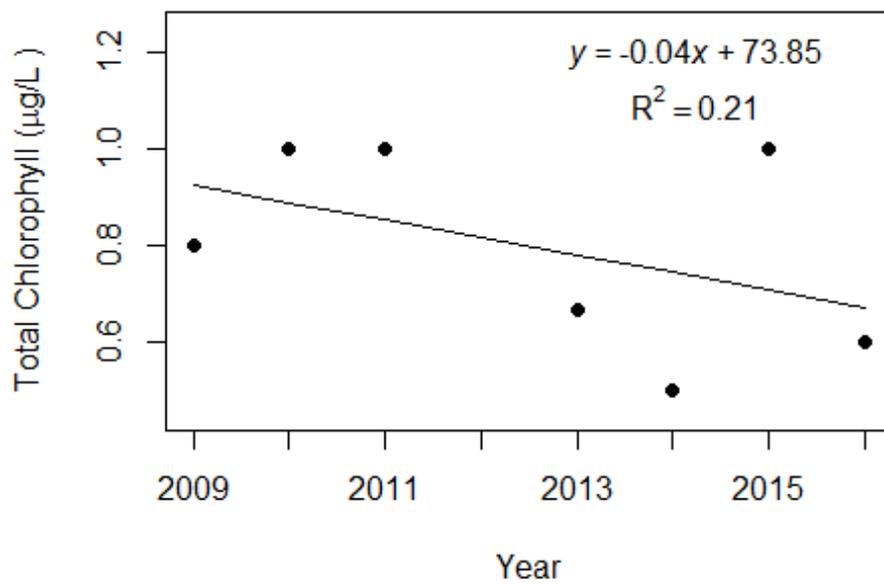
### Blues Creek-2 (Alachua)



### Blues Creek-2 (Alachua)



### Blues Creek-2 (Alachua)



# LAKEWATCH Report for Blues Creek-3 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria's for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Blues Creek-3
Latitude	29.7269
Longitude	-82.4219
Water Body Type	Stream
Period of Record (year)	2009 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Blues Creek-3 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	252 - 632	452 (7)
Total Nitrogen (µg/L)	287 - 1652	980 (7)
Chlorophyll- uncorrected (µg/L)	0.5 - 1.9	1.1 (7)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	12 - 333	160 (7)
Specific Conductance (µS/cm@25 C)	138 - 247	185 (7)

## LAKEWATCH Report for Blues Creek-3 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

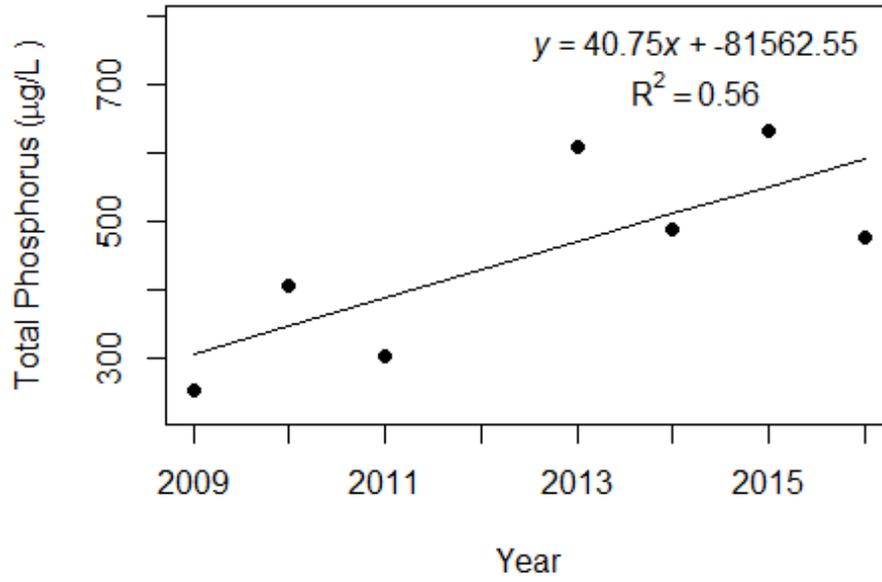
The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
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- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
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- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

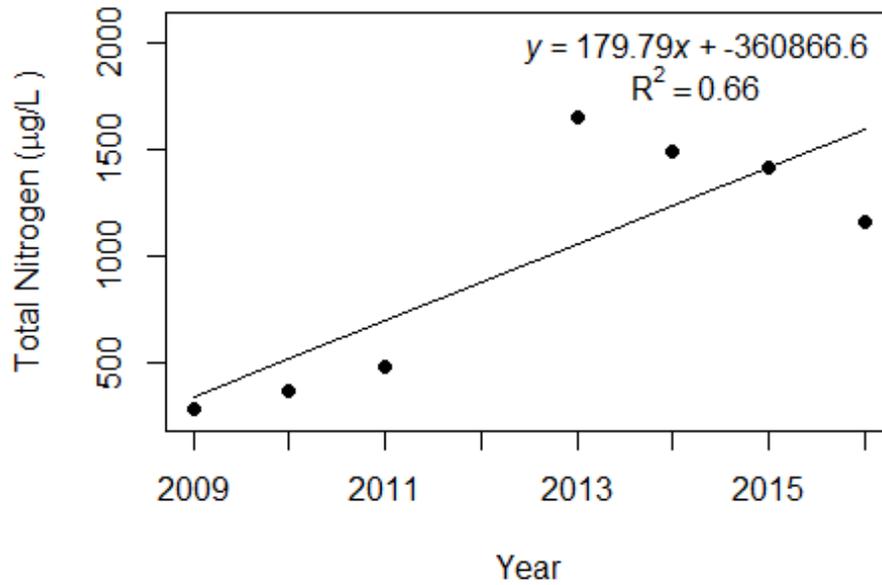
Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)	7	7	7	
Intercept (a)	-81563	-360867	58	
Slope (b)	40.75	179.79	-0.03	
Coefficient of Determination (R <sup>2</sup> )	0.56	0.66	0.03	
Probability of Significance (p)	0.05	0.03	0.72	
Potential Trend	No Trend	Increasing	No Trend	

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Blues Creek-3 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

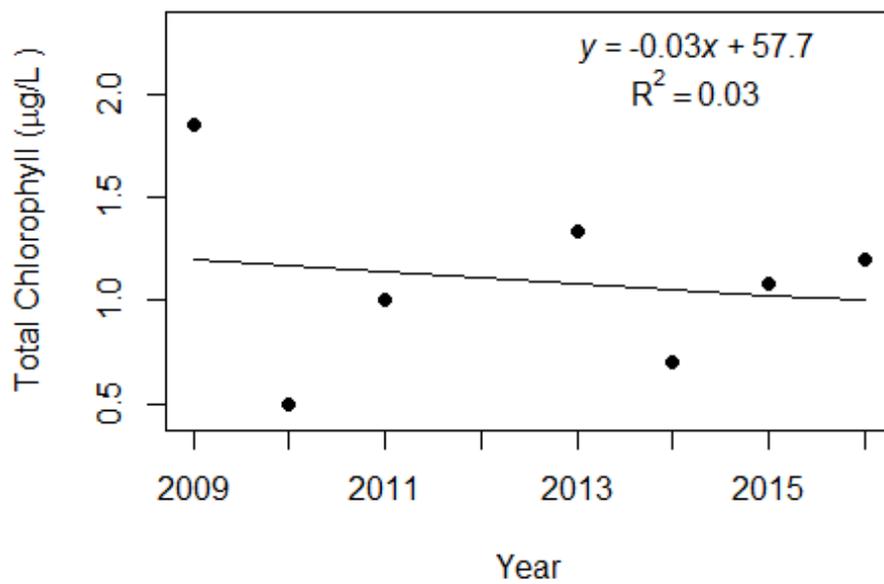
### Blues Creek-3 (Alachua)



### Blues Creek-3 (Alachua)



### Blues Creek-3 (Alachua)



# LAKEWATCH Report for Cellon Creek-1 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria’s for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

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- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Cellon Creek-1
Latitude	29.7746
Longitude	-82.4731
Water Body Type	Stream
Period of Record (year)	2008 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Cellon Creek-1 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
Panhandle West	60 µg/L	670 µg/L
Panhandle East	180 µg/L	1030 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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### Long-Term Data Summary 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 (µg/L):** The nutrient most often limiting growth of plant/algae in Florida's fresh and saltwater environments.
- **Total Nitrogen (µg/L):** Another nutrient needed for aquatic plant/algae growth but only limiting when nitrogen to phosphorus ratios are generally less than 10.
- **Chlorophyll-uncorrected (µg/L):** Chlorophyll concentrations are used to measure relative abundances of open water algal population.
- **Secchi (ft), Secchi (m):** Secchi measurements are estimates of water clarity (how far one can see into the water) and are listed with English and metric units.
- **Color (Pt-Co Units):** LAKEWATCH measures true color, which is the color of the water after particles have been filter out.
- **Specific Conductance (µS/cm@25°C):** Measurement of the ability of water to conduct electricity and can be used to estimate the amount of dissolve materials in water.

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	709 - 1253	899 (9)
Total Nitrogen (µg/L)	1247 - 1940	1644 (9)
Chlorophyll- uncorrected (µg/L)	2.8 - 72.3	22.8 (9)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	65 - 159	115 (9)
Specific Conductance (µS/cm@25 C)	158 - 328	260 (9)

## LAKEWATCH Report for Cellon Creek-1 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

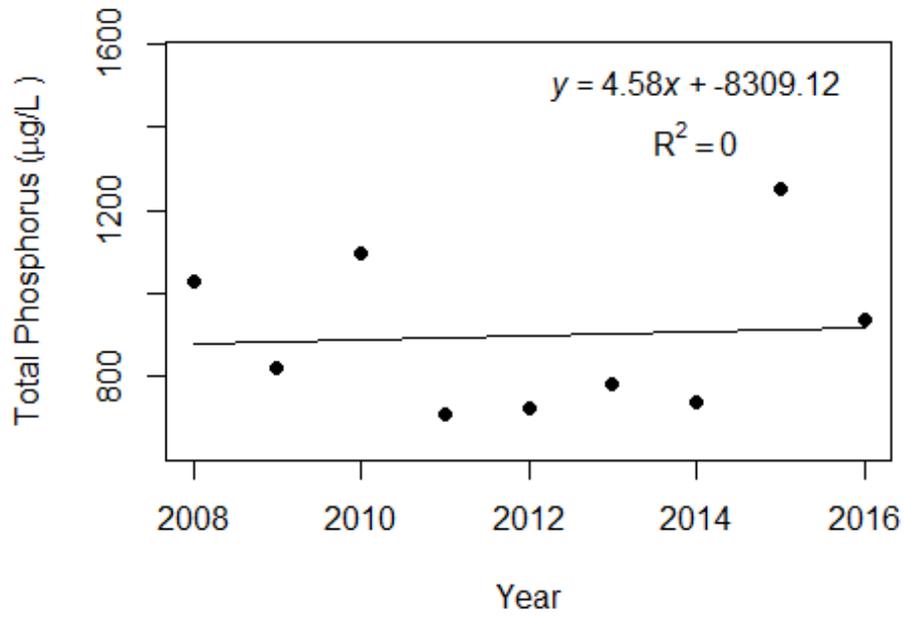
The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

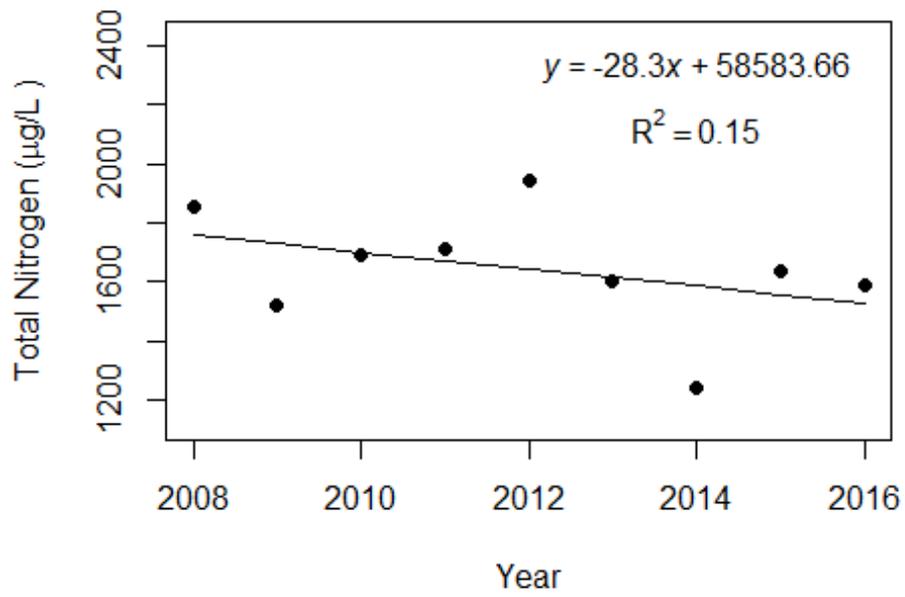
Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)	9	9	9	
Intercept (a)	-8309	58584	8422	
Slope (b)	4.58	-28.30	-4.17	
Coefficient of Determination (R <sup>2</sup> )	0.00	0.15	0.25	
Probability of Significance (p)	0.87	0.30	0.17	
Potential Trend	No Trend	No Trend	No Trend	

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Cellon Creek-1 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

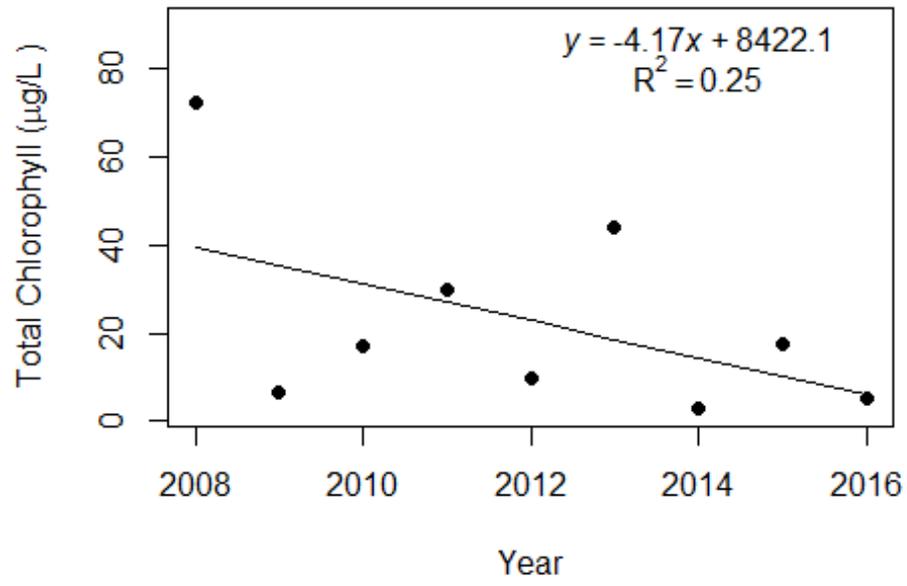
### Cellon Creek-1 (Alachua)



### Cellon Creek-1 (Alachua)



### Cellon Creek-1 (Alachua)



# LAKEWATCH Report for Cellon Creek-2 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria’s for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Cellon Creek-2
Latitude	29.7691
Longitude	-82.4549
Water Body Type	Stream
Period of Record (year)	2008 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Cellon Creek-2 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	718 - 1616	1091 (9)
Total Nitrogen (µg/L)	1160 - 1793	1456 (9)
Chlorophyll- uncorrected (µg/L)	2.0 - 29.0	10.7 (9)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	66 - 128	93 (9)
Specific Conductance (µS/cm@25 C)	188 - 342	289 (9)

## LAKEWATCH Report for Cellon Creek-2 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

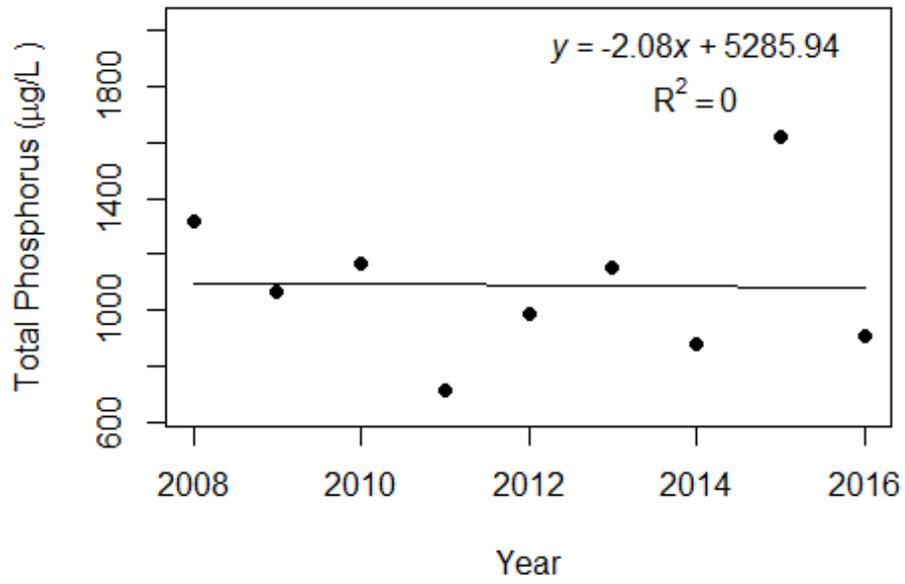
The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

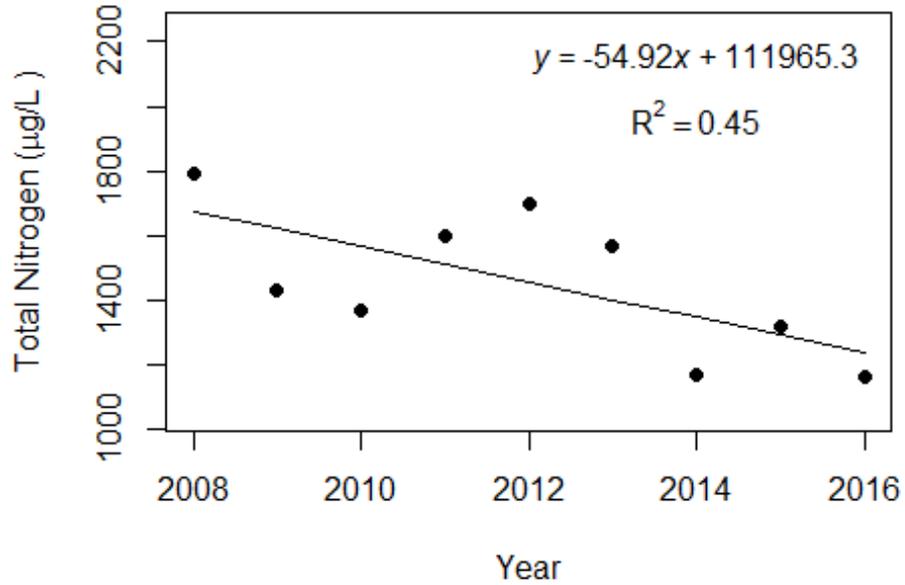
Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)	9	9	9	
Intercept (a)	5286	111965	1568	
Slope (b)	-2.09	-54.93	-0.77	
Coefficient of Determination (R <sup>2</sup> )	0.00	0.45	0.05	
Probability of Significance (p)	0.96	0.05	0.54	
Potential Trend	No Trend	Decreasing	No Trend	

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Cellon Creek-2 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

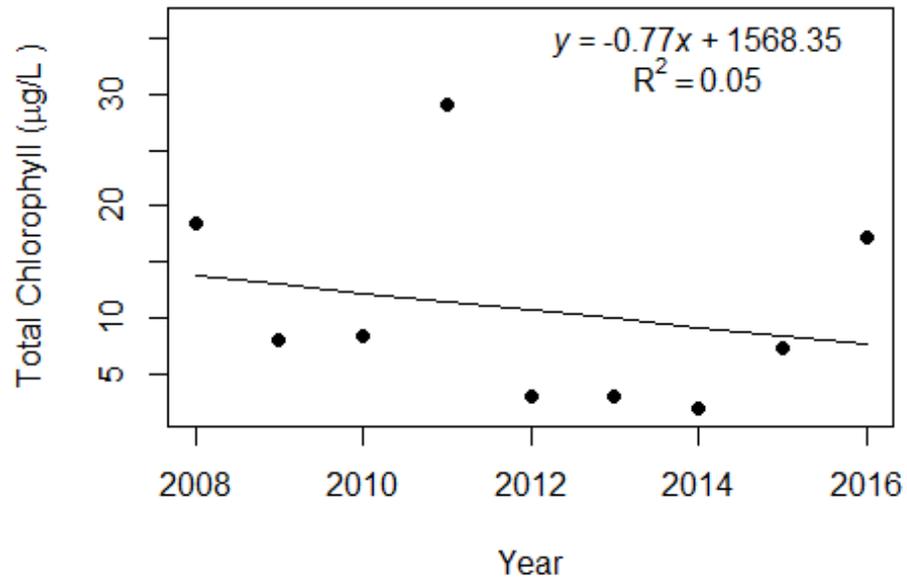
### Cellon Creek-2 (Alachua)



### Cellon Creek-2 (Alachua)



### Cellon Creek-2 (Alachua)



# LAKEWATCH Report for Cellon Creek-3 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria's for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).

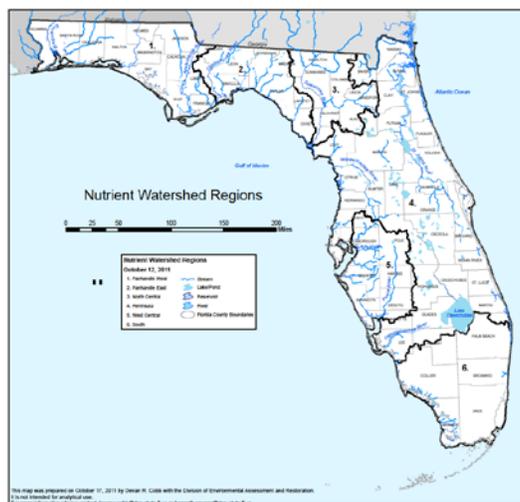


Figure 1. Map showing nutrient thresholds areas for streams set forth by FDEP.

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Cellon Creek-3
Latitude	29.7686
Longitude	-82.4461
Water Body Type	Stream
Period of Record (year)	2008 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Cellon Creek-3 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	796 - 1655	1110 (9)
Total Nitrogen (µg/L)	1258 - 2790	1906 (9)
Chlorophyll- uncorrected (µg/L)	0.7 - 13.8	3.9 (9)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	29 - 142	72 (8)
Specific Conductance (µS/cm@25 C)	280 - 447	367 (8)

## LAKEWATCH Report for Cellon Creek-3 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

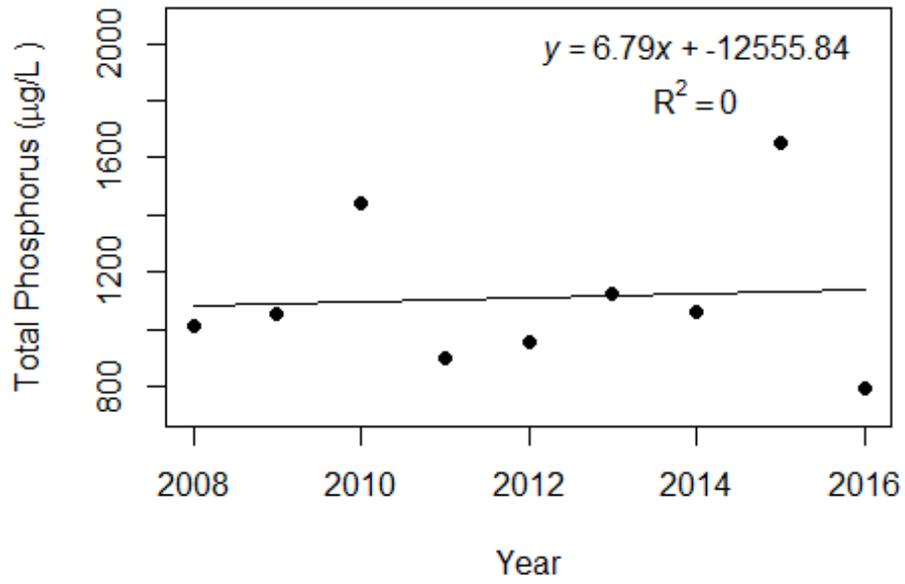
The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

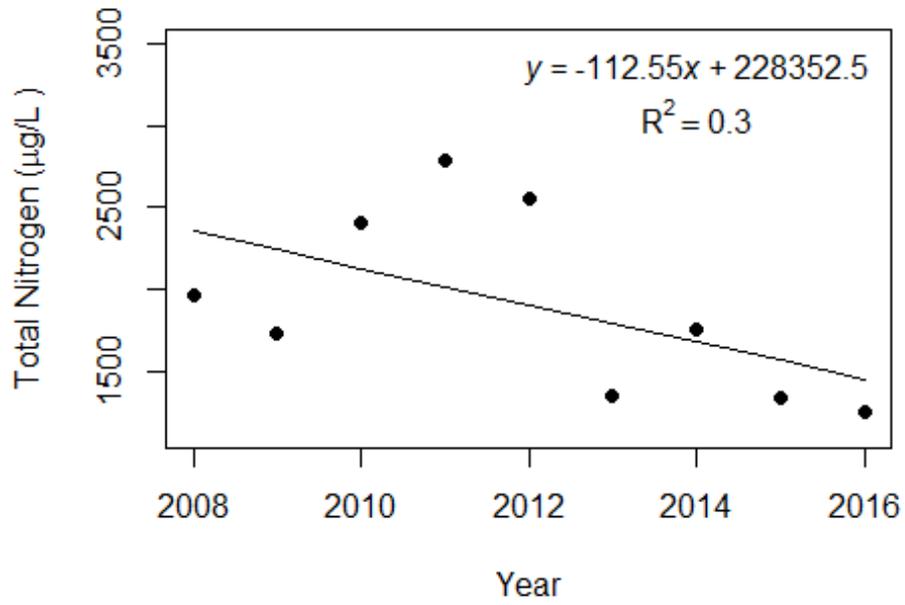
Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)	9	9	9	
Intercept (a)	-12556	228352	-1475	
Slope (b)	6.79	-112.55	0.74	
Coefficient of Determination (R <sup>2</sup> )	0.00	0.30	0.25	
Probability of Significance (p)	0.86	0.13	0.17	
Potential Trend	No Trend	No Trend	No Trend	

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Cellon Creek-3 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

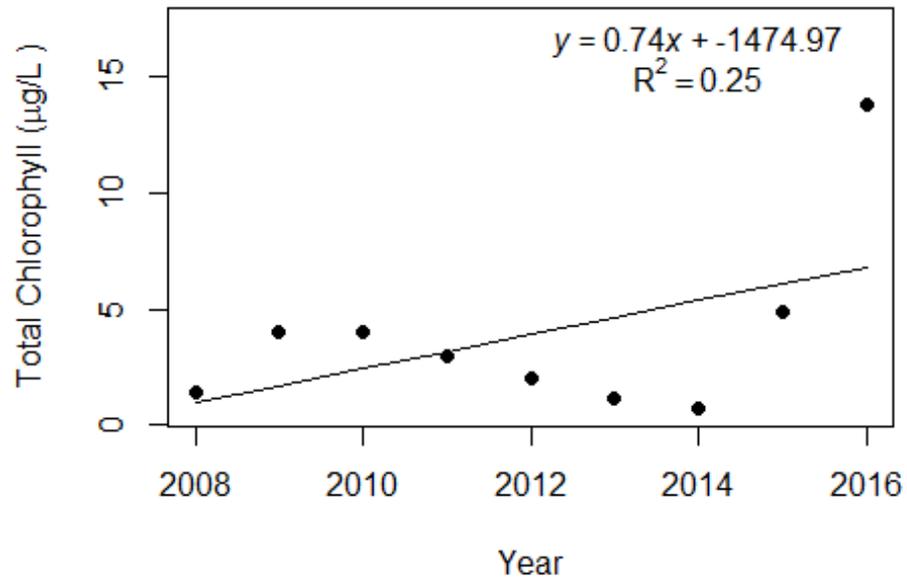
### Cellon Creek-3 (Alachua)



### Cellon Creek-3 (Alachua)



### Cellon Creek-3 (Alachua)



# LAKEWATCH Report for Cellon Creek-4 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria’s for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Cellon Creek-4
Latitude	29.7703
Longitude	-82.4297
Water Body Type	Stream
Period of Record (year)	2008 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Cellon Creek-4 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	680 - 1711	1029 (9)
Total Nitrogen (µg/L)	1926 - 6150	2950 (9)
Chlorophyll- uncorrected (µg/L)	0.7 - 2.0	1.1 (9)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	21 - 111	58 (7)
Specific Conductance (µS/cm@25 C)	311 - 473	404 (7)

## LAKEWATCH Report for Cellon Creek-4 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

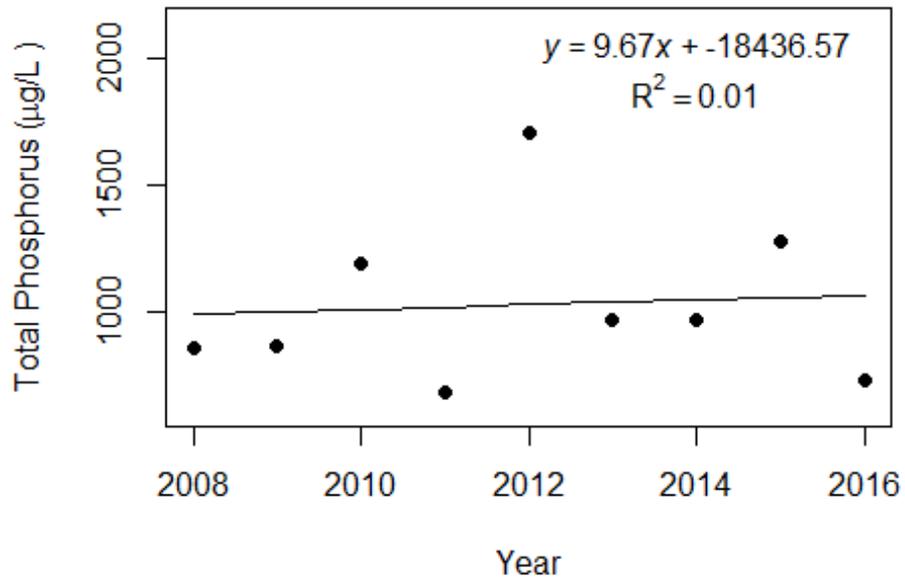
The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

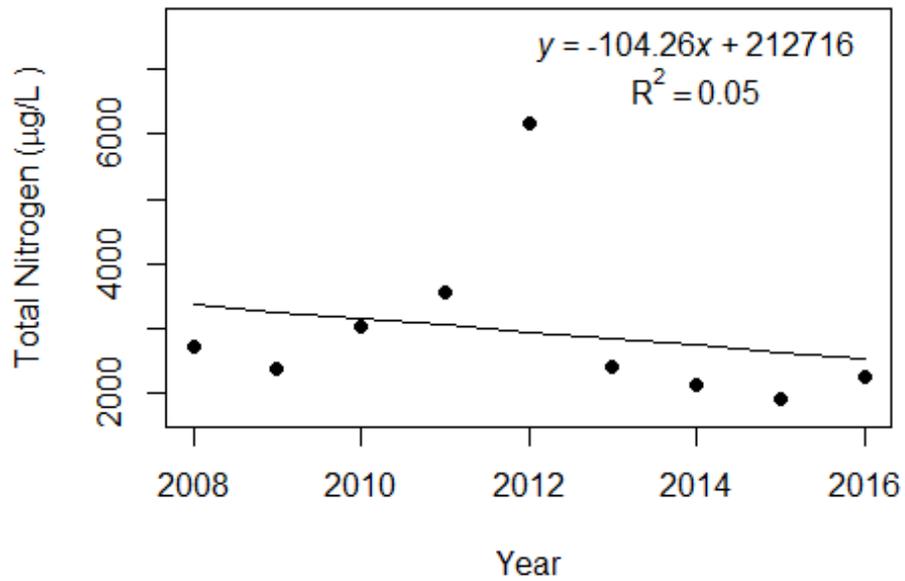
Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)	9	9	9	
Intercept (a)	-18437	212716	211	
Slope (b)	9.67	-104.26	-0.10	
Coefficient of Determination (R <sup>2</sup> )	0.01	0.05	0.53	
Probability of Significance (p)	0.83	0.57	0.03	
Potential Trend	No Trend	No Trend	Decreasing	

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Cellon Creek-4 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

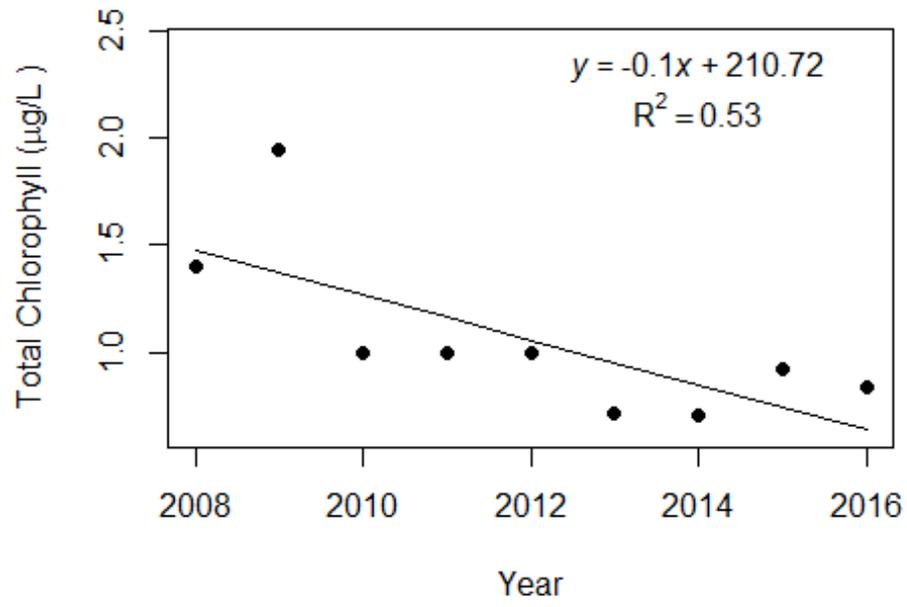
### Cellon Creek-4 (Alachua)



### Cellon Creek-4 (Alachua)



### Cellon Creek-4 (Alachua)



# LAKEWATCH Report for Paroners Branch-1 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria’s for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Paroners Branch-1
Latitude	29.9091
Longitude	-82.5635
Water Body Type	Stream
Period of Record (year)	2015 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Paroners Branch-1 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	191 - 209	200 (2)
Total Nitrogen (µg/L)	899 - 1187	1043 (2)
Chlorophyll- uncorrected (µg/L)	1.9 - 2.0	1.9 (2)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	221 - 295	258 (2)
Specific Conductance (µS/cm@25 C)	137 - 213	175 (2)

## LAKEWATCH Report for Paroners Branch-1 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)				
Intercept (a)				
Slope (b)				
Coefficient of Determination (R <sup>2</sup> )				
Probability of Significance (p)				
Potential Trend				

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Paroners Branch-1 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

# LAKEWATCH Report for Paroners Branch-2 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria’s for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Paroners Branch-2
Latitude	29.9099
Longitude	-82.5593
Water Body Type	Stream
Period of Record (year)	2015 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Paroners Branch-2 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	719 - 789	754 (2)
Total Nitrogen (µg/L)	713 - 923	818 (2)
Chlorophyll- uncorrected (µg/L)	5.7 - 23.3	14.5 (2)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	53 - 71	62 (2)
Specific Conductance (µS/cm@25 C)	188 - 189	188 (2)

## LAKEWATCH Report for Paroners Branch-2 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)				
Intercept (a)				
Slope (b)				
Coefficient of Determination (R <sup>2</sup> )				
Probability of Significance (p)				
Potential Trend				

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Paroners Branch-2 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

# LAKEWATCH Report for Paroners Branch-3 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria's for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Paroners Branch-3
Latitude	29.9071
Longitude	-82.5351
Water Body Type	Stream
Period of Record (year)	2015 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Paroners Branch-3 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	792 - 810	801 (2)
Total Nitrogen (µg/L)	1060 - 1490	1275 (2)
Chlorophyll- uncorrected (µg/L)	5.0 - 6.7	5.9 (2)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	44 - 45	45 (2)
Specific Conductance (µS/cm@25 C)	190 - 192	191 (2)

## LAKEWATCH Report for Paroners Branch-3 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)				
Intercept (a)				
Slope (b)				
Coefficient of Determination (R <sup>2</sup> )				
Probability of Significance (p)				
Potential Trend				

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Paroners Branch-3 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

# LAKEWATCH Report for Santa Fe River Rise-1 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria's for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Santa Fe River Rise-1
Latitude	29.874
Longitude	-82.5915
Water Body Type	Stream
Period of Record (year)	2015 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Santa Fe River Rise-1 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	124 - 135	129 (2)
Total Nitrogen (µg/L)	806 - 930	868 (2)
Chlorophyll- uncorrected (µg/L)	0.0 - 0.4	0.2 (2)
Secchi (ft)	3.7 - 4.0	3.8 (2)
Secchi (m)	1.1 - 1.2	1.2 (2)
Color (Pt-Co Units)	154 - 231	192 (2)
Specific Conductance (µS/cm@25 C)	114 - 264	189 (2)

## LAKEWATCH Report for Santa Fe River Rise-1 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)				
Intercept (a)				
Slope (b)				
Coefficient of Determination (R <sup>2</sup> )				
Probability of Significance (p)				
Potential Trend				

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Santa Fe River Rise-1 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

# LAKEWATCH Report for Santa Fe River Sink-1 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria's for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Santa Fe River Sink-1
Latitude	29.9146
Longitude	-82.5796
Water Body Type	Stream
Period of Record (year)	2015 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Santa Fe River Sink-1 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	137 - 201	169 (2)
Total Nitrogen (µg/L)	1107 - 1116	1111 (2)
Chlorophyll- uncorrected (µg/L)	0.3 - 1.4	0.9 (2)
Secchi (ft)	2.7 - 2.7	2.7 (2)
Secchi (m)	0.8 - 0.8	0.8 (2)
Color (Pt-Co Units)	236 - 310	273 (2)
Specific Conductance (µS/cm@25 C)	114 - 161	137 (2)

## LAKEWATCH Report for Santa Fe River Sink-1 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)				
Intercept (a)				
Slope (b)				
Coefficient of Determination (R <sup>2</sup> )				
Probability of Significance (p)				
Potential Trend				

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Santa Fe River Sink-1 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

# LAKEWATCH Report for Santa Fe River Sink-2 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria's for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Santa Fe River Sink-2
Latitude	29.9122
Longitude	-82.573
Water Body Type	Stream
Period of Record (year)	2015 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Santa Fe River Sink-2 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	143 - 206	175 (2)
Total Nitrogen (µg/L)	1061 - 1150	1106 (2)
Chlorophyll- uncorrected (µg/L)	0.3 - 1.9	1.1 (2)
Secchi (ft)	2.5 - 3.2	2.8 (2)
Secchi (m)	0.8 - 1.0	0.9 (2)
Color (Pt-Co Units)	233 - 326	279 (2)
Specific Conductance (µS/cm@25 C)	116 - 161	139 (2)

## LAKEWATCH Report for Santa Fe River Sink-2 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)				
Intercept (a)				
Slope (b)				
Coefficient of Determination (R <sup>2</sup> )				
Probability of Significance (p)				
Potential Trend				

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Santa Fe River Sink-2 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

# LAKEWATCH Report for Turkey Creek-1 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria's for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Turkey Creek-1
Latitude	29.7586
Longitude	-82.4226
Water Body Type	Stream
Period of Record (year)	2014 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Turkey Creek-1 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	296 - 366	325 (3)
Total Nitrogen (µg/L)	1009 - 1221	1116 (3)
Chlorophyll- uncorrected (µg/L)	1.9 - 6.0	3.3 (3)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	70 - 171	114 (3)
Specific Conductance (µS/cm@25 C)	199 - 261	234 (3)

## LAKEWATCH Report for Turkey Creek-1 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)				
Intercept (a)				
Slope (b)				
Coefficient of Determination (R <sup>2</sup> )				
Probability of Significance (p)				
Potential Trend				

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Turkey Creek-1 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.

# LAKEWATCH Report for Turkey Creek-2 in Alachua County Using Data Downloaded 10/17/2016

## Introduction Streams

For many 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 of the remaining waters in Florida have numeric nutrient standards (see for Florida Department of Environmental Regulation Nutrient Criteria's for: Streams, spring vents: <http://www.dep.state.fl.us/water/wqssp/nutrients/index.htm>).



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

## Base File Data: Definitions

The long-term data summary will include the following parameters listed with a definition after each one:

- **County:** Name of county in which the stream resides.
- **Name:** Stream name that LAKEWATCH uses for the system.
- **Latitude and Longitude:** Coordinates identifying the exact location of station 1 for each system.
- **Water Body Type:** Four different types of systems; lakes, estuaries, streams and springs.
- **Period of Record (year):** Years a stream has been in the LAKEWATCH program.

County	Alachua
Name	Turkey Creek-2
Latitude	29.7544
Longitude	-82.4397
Water Body Type	Stream
Period of Record (year)	2014 to 2016
Nutrient Watershed Region	North Central

## LAKEWATCH Report for Turkey Creek-2 in Alachua County Using Data Downloaded 10/17/2016

The nutrient thresholds for streams set forth by FDEP are listed in table below along with the map showing zones.

Nutrient Watershed Region	Total Phosphorus Nutrient Threshold <sup>1</sup>	Total Nitrogen Nutrient Threshold <sup>1</sup>
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.

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

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

### Long-Term Data Summary Streams: Data

Parameter	Minimum and Maximum Annual Means	Mean of Annual Means (Sampling years)
Total Phosphorus (µg/L)	324 - 403	370 (3)
Total Nitrogen (µg/L)	928 - 1175	1037 (3)
Chlorophyll- uncorrected (µg/L)	1.3 - 5.0	2.6 (3)
Secchi (ft)	-	()
Secchi (m)	-	()
Color (Pt-Co Units)	78 - 173	119 (3)
Specific Conductance (µS/cm@25 C)	199 - 285	240 (3)

## LAKEWATCH Report for Turkey Creek-2 in Alachua County Using Data Downloaded 10/17/2016

### Trend Analyses Streams

The following data are for linear regression statistics derived by plotting annual average total phosphorus, total nitrogen, chlorophyll, and Secchi data by year of data collection. Linear regression analysis is a common statistical approach used to determine if significant trends are occurring over time. These analyses define statistics based on the best fit line drawn through the data after plotting them with year on the horizontal line (x-axis) and the data value on the vertical line (y-axis). Figure 2 shows example plots with linear regression statistic of lakes that show significant total phosphorus increases, decreases and no change over time. The statistics that are listed include the following:

- **Number of years (n):** This is simply the number of years of data that were used to calculate annual means.
- **Intercept (a):** This is the value on the y-axis that the fitted line would have cross if the x-axis where zero.
- **Slope (b):** This is the rate at which the fitted line increases (positive number) or decreases (negative number).
- **Coefficient of determination (R<sup>2</sup>):** This value is an indication of how much variance above and below the fitted line there is in the data. This value ranges from 0 to 1. A high value means a tight fit and a low value means a loose fit.
- **Probability of Significance (p):** For most statistical analyses a p-value of less than 0.05 means the statistic is significant and analyses with p-values greater than 0.05 are not significant.

Statistic	Total Phosphorus	Total Nitrogen	Chlorophyll	Secchi
Number of Years (n)				
Intercept (a)				
Slope (b)				
Coefficient of Determination (R <sup>2</sup> )				
Probability of Significance (p)				
Potential Trend				

The following graphs on the next two pages are trend analyses examining regression between year and annual means of total phosphorus, total nitrogen, chlorophyll, and Secchi depth for Turkey Creek-2 in Alachua County. If there are no plots then there is less than five years of data, which is not enough for the analysis.