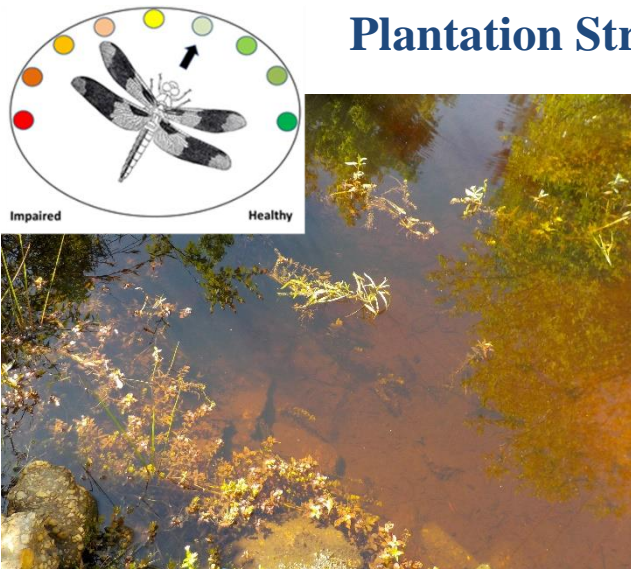


# Plantation Stream EcoSummary



Plantation Stream discharges from the Centerville watershed, essentially bounded by Proctor Road and Pisgah Church Road at Centerville Road, continuing west under Thomasville Road, before discharging into Lake Iamonia. The Centerville Conservation Community and Baker Place Subdivisions are located within the watershed. Most of the waterbodies within the watershed are former farm ponds that were used for dairy and other agricultural practices.

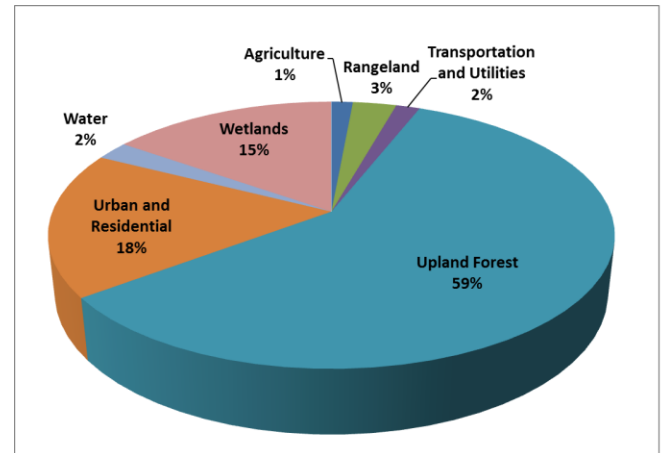
Approximately 24% of the 3,996-acre watershed is comprised of agriculture, rangeland, transportation, utilities, and urban and residential uses (as shown in **Figure 1**). These types of land uses are often attributed to increases in stormwater runoff and higher nutrient loads.

## Background

Healthy, well-balanced stream communities may be maintained with some level of human activity, but excessive human disturbance may result in waterbody degradation.

Human stressors may include increased inputs of nutrients, sediments, and/or other contaminants from watershed runoff. Stressors can also include adverse hydrologic alterations, undesirable removal of habitat or riparian buffer vegetation,

and introduction of exotic plants and animals. State water quality standards are designed to protect designated uses of the waters of the state (e.g., recreation, aquatic life, fish consumption), and exceedances of these standards are associated with interference of the designated use.



**Figure 1.** Plantation Stream watershed land use.

## Methods

Surface water samples are collected quarterly (as field conditions allow). This information is used to determine the health of Plantation Stream and meets the requirements of the Florida Department of Environmental Protection (FDEP).

## Results

The State of Florida uses Numeric Nutrient Criteria (NNC) to evaluate nutrients in waterbodies. NNC thresholds are set based on waterbody-specific characteristics and are used to determine if a waterbody meets water quality standards. The results of the four quarterly samples from a single year are used to calculate the annual geometric mean. According to FDEP requirements, the NNC threshold cannot be exceeded more than once in a three-year period.

Due to low water conditions and beaver activity, four temporally independent samples per year have not been collected from this station since 2011.

### *Nutrients*

The nutrient thresholds and results are found in **Table 1**. The NNC has never been exceeded during the period of record.

For illustrative purposes, individual data points were plotted to determine any possible trends (**Figures 2 and 3**). With few exceptions, individual values did not exceed the instream criteria for total phosphorus or nitrogen.

**Table 1.** NNC Thresholds and Sample Results for Plantation Stream.

<b>Plantation Stream</b>	<b>TN Threshold 1.03 mg/L</b>	<b>TP Threshold 0.18 mg/L</b>
2006- 2007	-	-
2008	0.73	0.09
2009	0.21	0.07
2010	0.61	0.07
2011-2023	-	-

### *Dissolved Oxygen (DO)*

As **Figure 4** shows, Plantation Stream has seldom met the Class III criteria for DO. This is the result of normally lower dissolved oxygen in low gradient, low flow systems like this stream. Another contributing source of naturally lower oxygenated water to this stream is input from a nearby wetland.

### *Escherichia coli (E. coli)*

The *E. coli* water quality limit > 410 in 10% of samples collected over a thirty-day period was exceeded during the 3<sup>rd</sup> quarter of 2016 (830/100 mL). The elevated *E. coli* levels could have

possibly been the result of wildlife or faulty septic tanks in the area. The *E. coli* level has not exceeded water quality standards since.

### *Other Parameters*

Other water quality parameters appear to be normal for the area and no impairments were noted.

### **Conclusions**

Based on the samples collected, Plantation Stream appeared to meet the nutrient thresholds for the Big Bend Bioregion. While DO results did not always meet Class III water quality standards, low gradient low flow streams normally have lower DO values which, in this case, were further exacerbated by input from the adjacent wetland. Other water quality parameters appear to be normal for the area and no impairments were noted.

Thank you for your interest in maintaining the quality of Leon County’s water resources. Please feel free to contact us if you have any questions.

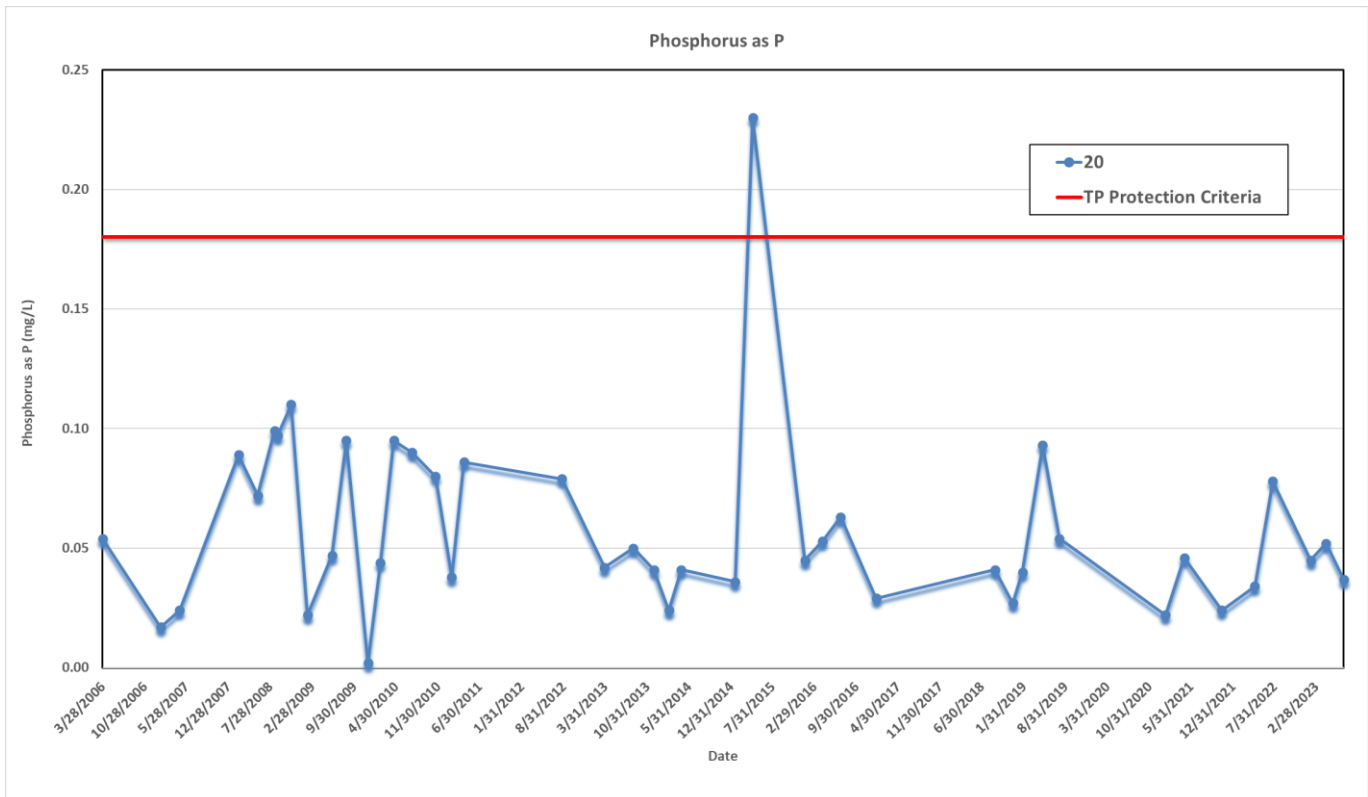
### **Contact and Resources for More Information**

[www.LeonCountyWater.org](http://www.LeonCountyWater.org)

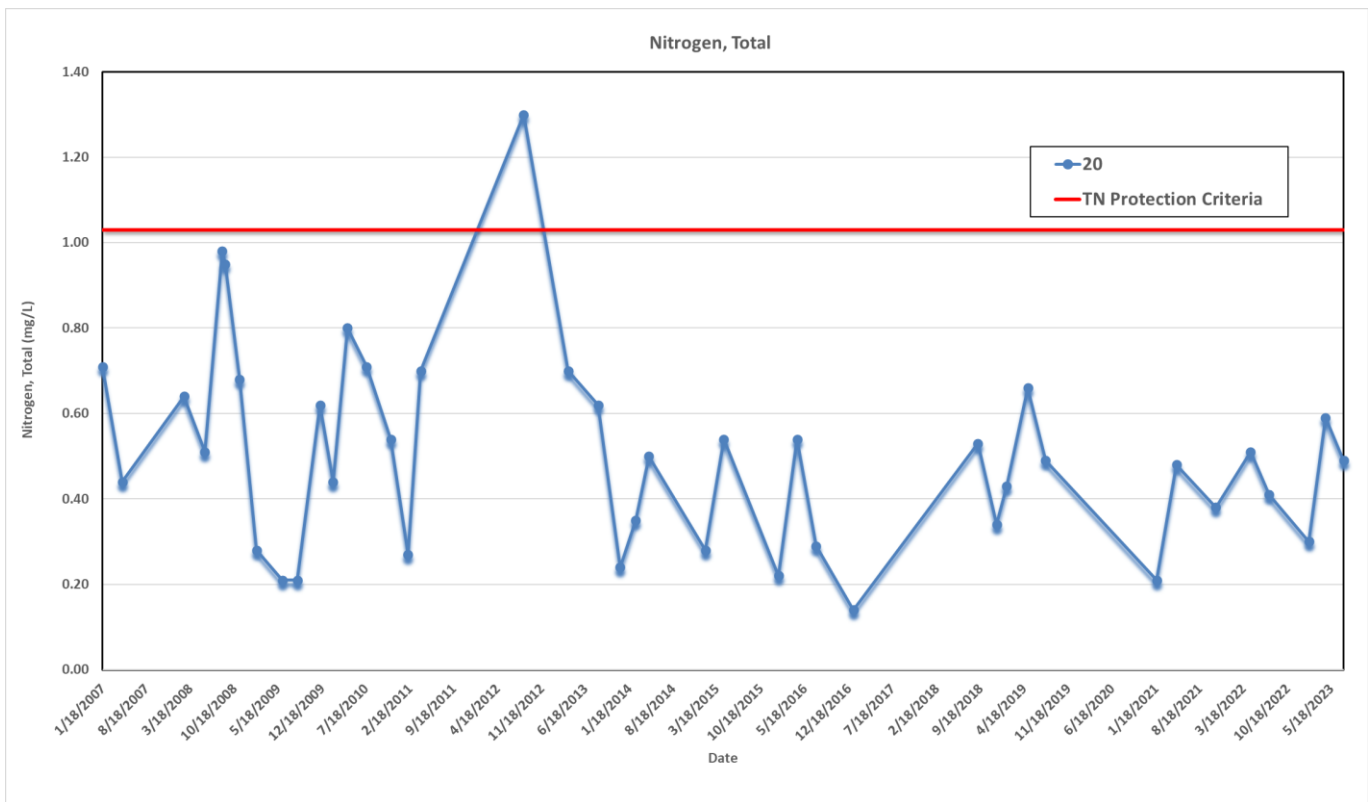
[Click here to access the results for all water quality stations sampled in 2023.](#)

[Click here for a map of the watershed – Sample Site 20.](#)

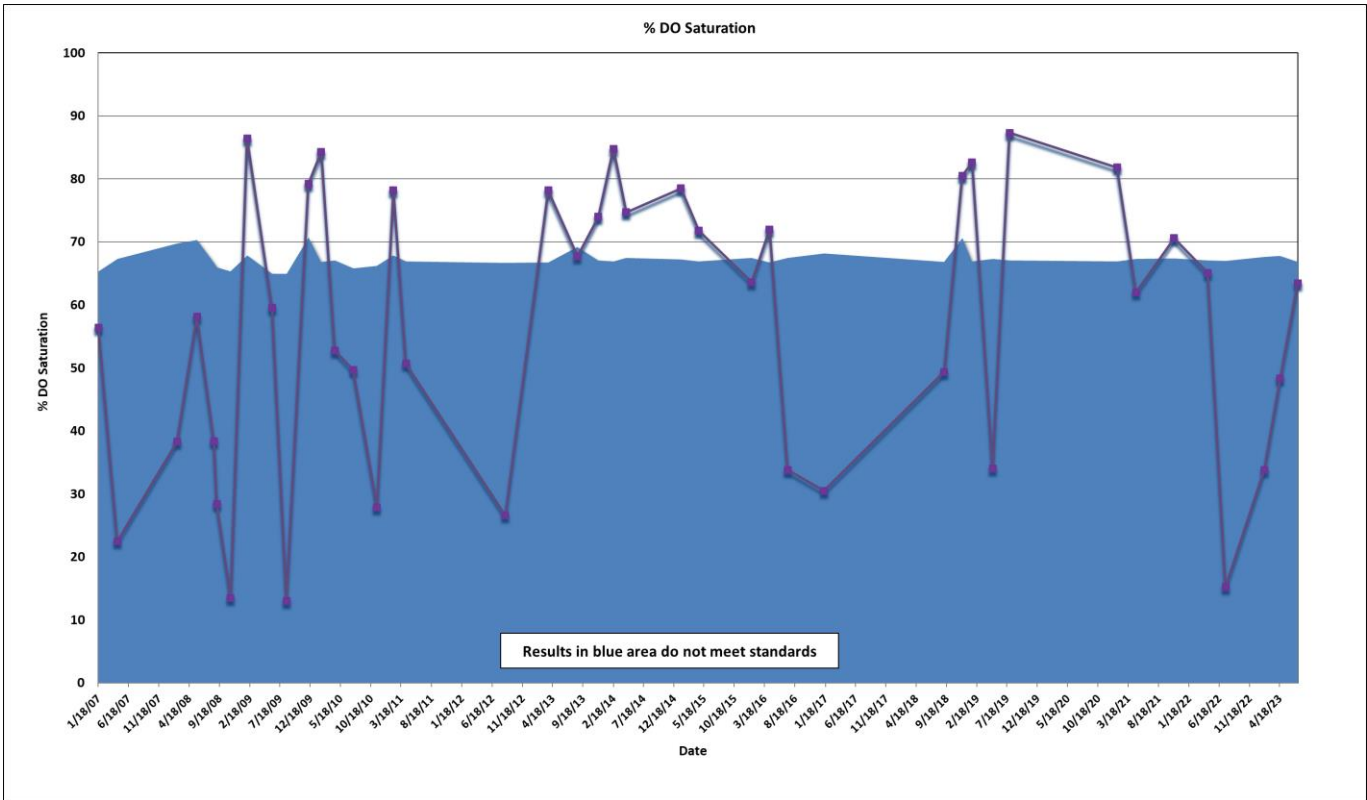
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**Figure 1.** Total Phosphorus results for Plantation Stream.



**Figure 2.** Total Nitrogen results for Plantation Stream.



**Figure 3.** Dissolved Oxygen Percent Saturation results for Plantation Stream.