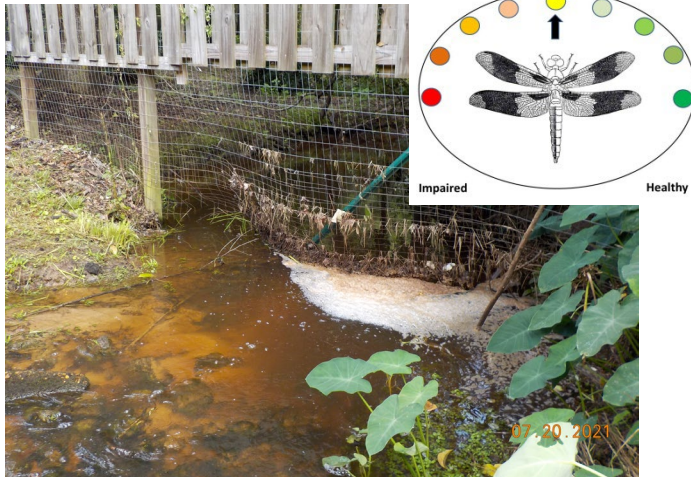


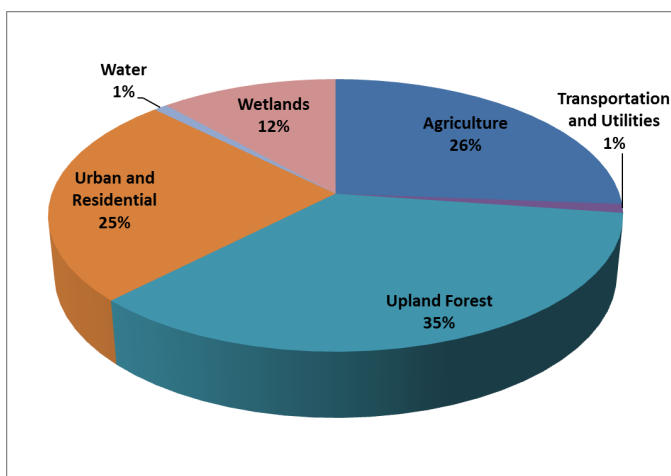
Waterbody: Apalachee Creek



Basin: Lake Lafayette

Apalachee Creek is a slightly tannic stream that flows north and drains into Lower Lake Lafayette.

As shown in the following pie chart, approximately 52% of land use in the 800-acre watershed is agriculture, transportation, utilities, urban and residential. Increases in stormwater runoff, and waterbody nutrient loads can often be attributed to these types of land uses.



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, adverse hydrologic alterations, undesirable removal of habitat or riparian buffer vegetation, and introduction of exotic plants and animals. 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.

Methods

Surface water samples were collected to determine the health of Apalachee Creek and met the requirements of the Florida Department of Environmental Protection (FDEP).

Results

Nutrients

According to FDEP requirements, Numeric Nutrient Criteria (NNC) (expressed as an annual geometric mean) cannot be exceeded more than once in a three-year period. Due to low water conditions, FDEP data requirements for the NNC could not be met for several years (Table 1). The 2009, 2013, 2014 and 2021 results showed that the NNC thresholds were not exceeded. For illustrative purposes, individual data points were plotted to determine any possible trends (Figures 1 and 2). With few exceptions, individual values did not exceed the instream criteria for total nitrogen or total phosphorus.

Escherichia coli (E. coli)

The *E. coli* water quality limit of > 410 in 10% of samples collected over a thirty-day period was exceeded during the 4th quarter of 2021 (670 cfu). The exceedance was probably the result of wildlife. Another cause could be residential development in the watershed (e.g., improperly functioning septic tanks).

Vegetation

Several species of exotic plants line the bank of Apalachee Creek including wild taro (*Colocasia* sp.)

and privet (*Ligustrum* sp.). In many cases, exotic plants will crowd out and replace native plants. This may stress native wildlife, which have evolved to depend on native plants for food and shelter. The native wildlife may move away or perish if the native vegetation is replaced by exotic plants.

[Click here for more information on common exotic and invasive plants in Leon County wetlands and waterbodies.](#)

Table 1. FDEP's total nitrogen and phosphorus criteria for streams applied to Apalachee Creek.

Apalachee Creek	Total Nitrogen Threshold 1.03 mg/L	Total Phosphorus Threshold 0.18 mg/L
2007- 2008	-	-
2009	0.32	0.11
2010-2012	-	-
2013	0.41	0.12
2014	0.30	0.10
2015-2020	-	-
2021	0.39	0.10

Other Parameters

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

Conclusions

Based on ongoing sampling, Apalachee Creek met the nutrient thresholds for the East Panhandle Region. Several species of exotic plants line the bank of Apalachee Creek which may affect native wildlife dependent on native plants for food and shelter. The *E. coli* water quality limit was exceeded during the 4th quarter of 2021. The exceedance was probably the result of wildlife or improperly functioning septic tanks.

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

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

Contact and resources for more information

www.LeonCountyWater.org

[Click here to access the results for all water quality stations sampled in 2021.](#)

[Click here for a map of the watershed – Sample Site 63](#)

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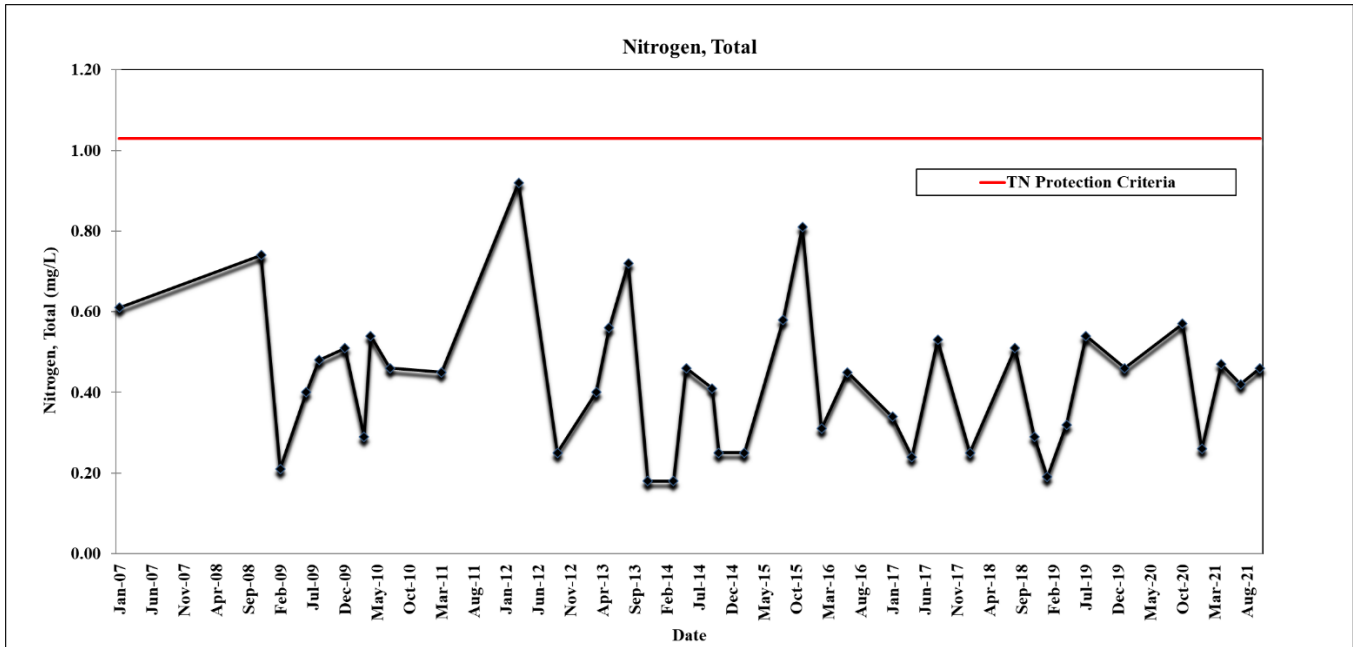


Figure 1. Total nitrogen results for Apalachee Creek.

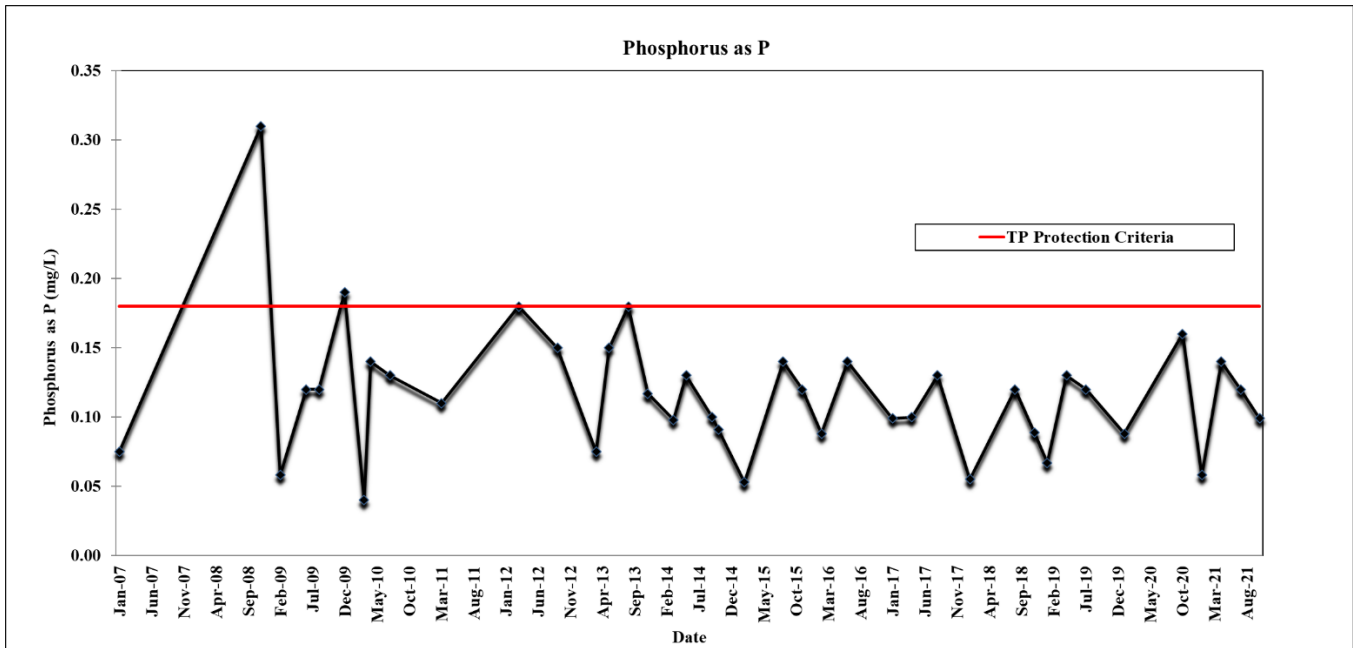


Figure 2. Total phosphorus results for Apalachee Creek.