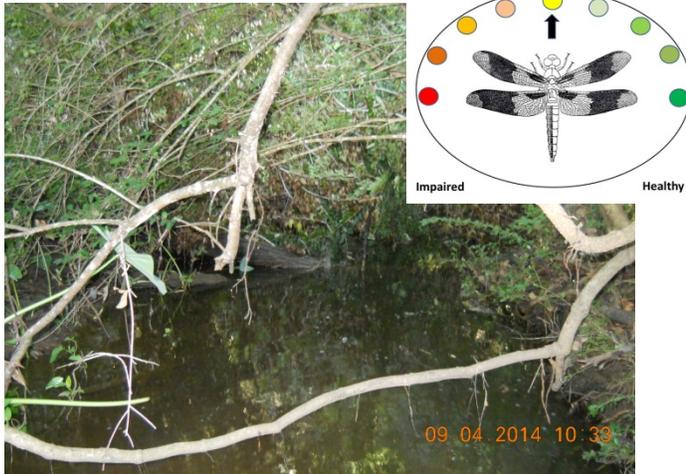


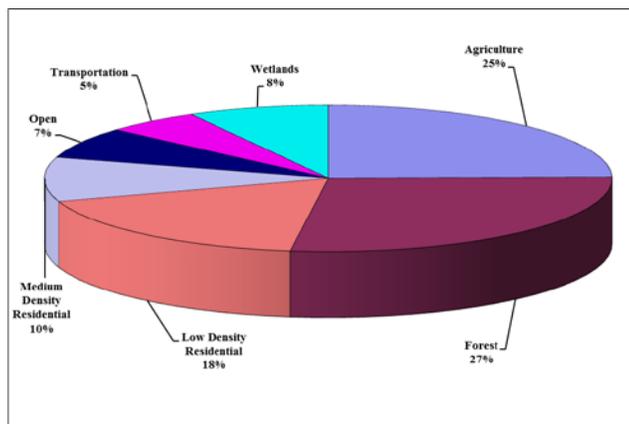
Waterbody: Apalachee Creek



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 58% of land use in the 1,052 acre watershed is agricultural, residential, or transportation. 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 2007, 2008, 2010 through 2012 and 2015 (Table 1). The 2009, 2013 and 2014 results showed that the NNC thresholds were not exceeded.

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	-	-

The total nitrogen level (0.81 mg/L) during the November 5th 2015 sampling event was elevated when compared to the average value (0.46 mg/L) found in this creek. Prior to sampling, the area received 2.83 inches of rain (11/2/15) that possibly led to nitrogen rich runoff flowing into the creek.

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.](#)

Other Parameters

Recently, *E. coli* standards supplanted fecal coliform standards in Florida as an indicator of bacterial contamination. The *Escherichia coli* (*E. coli*) results (132/100 mL) during the November 2015 sampling event exceeded the State criteria of > 126/100 mL in 10% of the samples. Biological oxygen demand values (4.9 mg/L) and total dissolved solids (82 mg/L) were also elevated during the same sampling event. As mentioned before, runoff caused by the rain event probably contributed to the elevated analyte levels found in the creek. Other water quality parameters appear to be normal for the area and no other 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* results during the November 2015

sampling event exceeded the State criteria. Biological oxygen demand values and total dissolved solids were also elevated during the same sampling event. Runoff caused by the rain event probably contributed to the elevated levels found in the creek. 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.LeonCountyFL.gov/WaterResources

[Click here to access the results for all water quality stations sampled in 2015.](#)

[Click here for map of watershed – Sample site 63](#)

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