

Tall Timbers Creek EcoSummary



Tall Timbers Creek is a tannic stream located in northwestern Leon County. The stream flows south under County Road 12 through the Tall Timbers Research Station and Land Conservancy, eventually entering Lake Iamonia on the north shore of the lake.

Figure 1 shows the majority of the 80-acre watershed upstream of the sample station is relatively undeveloped, with agriculture, urban and residential uses making up approximately 9% of the watershed land uses. These types of land uses are often attributed to increases in stormwater runoff and higher nutrient loads.

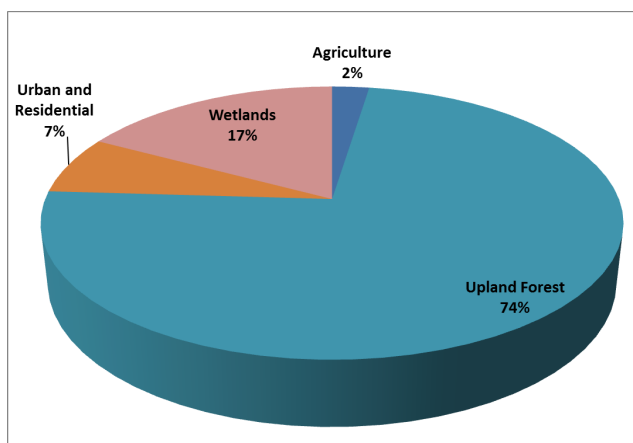


Figure 1. Tall Timbers Creek watershed land use.

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.

Methods

Surface water samples are collected quarterly (as field conditions allow). This information is used to determine the health of Tall Timbers Creek 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.

Nutrients

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

Dissolved Oxygen (DO)

As **Figure 2** shows, Tall Timbers Creek seldom met the Class III criteria for DO. Low gradient, tannic streams typically have low DO levels which can be further exacerbated by low water conditions.

Table 1. NNC Thresholds and Sample Results for Tall Timbers Creek.

Tall Timbers Creek	TN Threshold 1.03 mg/L	TP Threshold 0.18 mg/L
2006-2007*	-	-
2008	0.22	0.03
2009	0.17	0.04
2010	0.23	0.04
2011-2012*	-	-
2013	0.11	0.03
2014	0.21	0.02
2015	0.24	0.06
2016	0.13	0.02
2017	0.13	0.03
2018	0.22	0.04
2019	0.28	0.04
2020*	-	-
2021	0.14	0.03
2022	0.18	0.02

* Due to low water conditions, staff could not collect the appropriate number of samples and could not determine the NNC.

Escherichia coli (*E. coli*)

The *E. coli* water quality limit of > 410 in 10% of samples collected over a 30-day period was exceeded for the 2nd (650/100 mL) quarter of 2017. The September 2018 result, while relatively high (310/100 mL), did not exceed the

criteria. Since the watershed is relatively undeveloped, elevated *E. coli* levels are probably the result of wildlife in the area.

Other Parameters

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

Conclusions

Based on ongoing sampling, Tall Timbers Creek met the nutrient thresholds for the Panhandle East Region. While DO results did not meet Class III water quality standards, low gradient tannic streams normally have lower DO values which, in this case, were further exacerbated by the typically low flow conditions. 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 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

[Click here to access the results for all water quality stations sampled in 2022.](#)

[Click here for a map of the watershed – Sample Site 66.](#)

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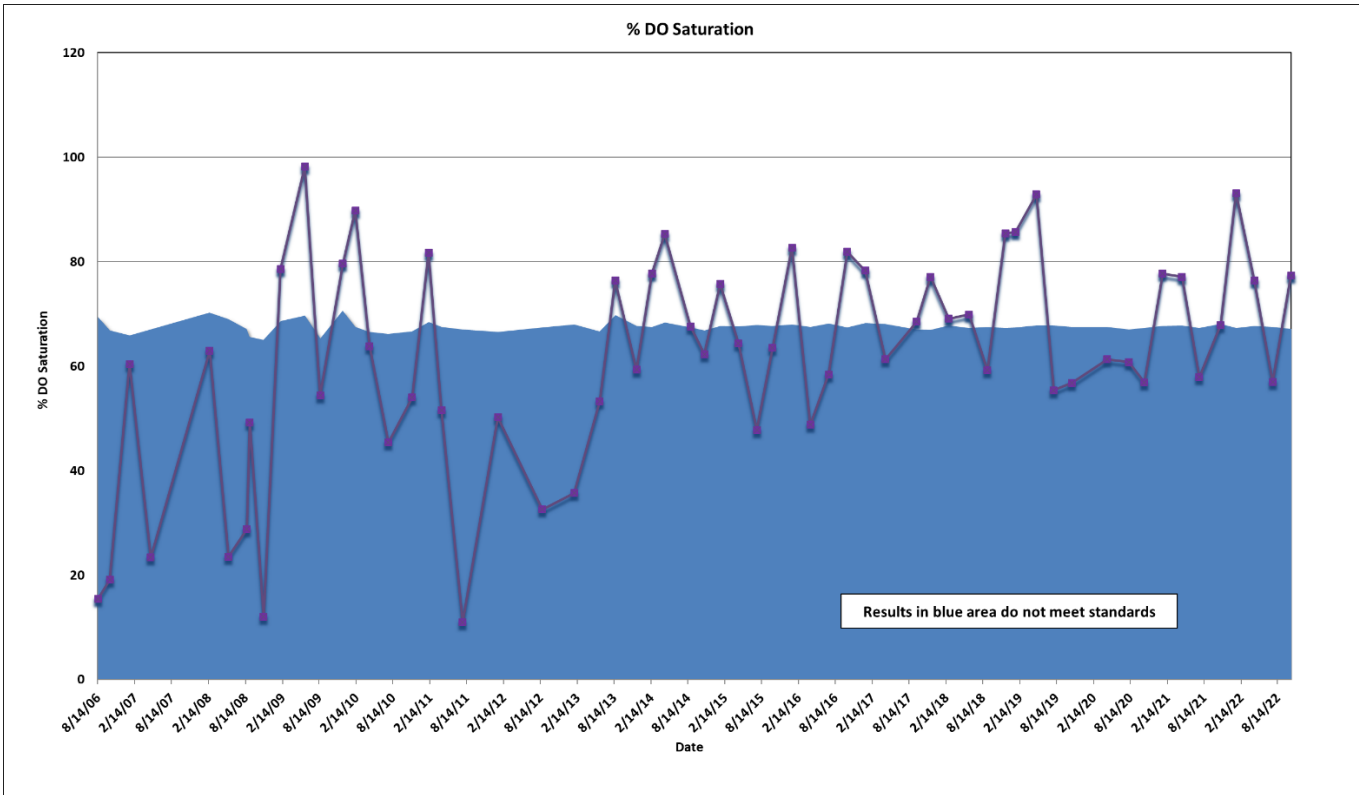


Figure 2. Dissolved Oxygen Percent Saturation results for Tall Timbers Creek.