

Waterbody: St. Marks River



Basin: St. Marks River

The predominantly nitrogen-limited St. Marks River, declared an Outstanding Florida Water by FDEP, originates in the hardwood and cypress swamps of the Red Hills area and flows approximately 35 miles south before emptying into Apalachee Bay. At Natural Bridge Road, the river disappears underground and reappears approximately a mile downstream. It should be noted that there are interactions between the St. Marks River and Lake Lafayette during elevated water conditions. Significant storms, such as Tropical Storm Fay, create interactions between different systems that include Bird Sink, Patty Sink, and Lloyd Creek (Jefferson County).

Background

Healthy, well-balanced river 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 was collected to determine the health of the St. Marks River and met the requirements of the Florida Department of Environmental Protection (FDEP).

Results

Nutrients

The nutrient thresholds and results are found in Table 1. 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. The State criteria were not exceeded for either parameter at the Natural Bridge station.

Table 1. FDEP's total nitrogen and phosphorus criteria for rivers applied to the St. Marks River at Natural Bridge Road.

St. Marks River	Total Nitrogen Threshold 1.03 mg/L	Total Phosphorus Threshold 0.18 mg/L
2006	0.39	0.03
2007	0.34	0.14
2008	0.27	0.04
2009	0.27	0.05
2010	0.58	0.05
2011	0.40	0.05
2012	0.43	0.05
2013	0.38	0.05
2014	0.49	0.05
2015	0.46	0.07

The station located at State Road 27 was frequently dry or too low to sample and is not included in the aforementioned table since the State's data requirements could not be met. The data that was collected (14 samples taken during the period of 2007-2015) suggests that while the geometric mean of total nitrogen (0.69 mg/L) and total phosphorus (0.06 mg/L) were higher than the downstream site, Class III NNC were never exceeded.

Other Parameters

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

Conclusions

Based on ongoing sampling, the St. Marks River met the nutrient thresholds for the East Panhandle region. 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.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 54 and St. Marks at 27.](#)

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