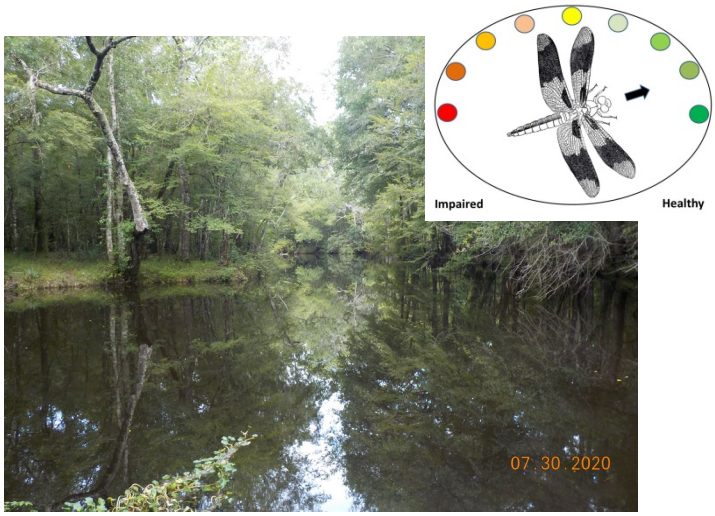
Waterbody: St. Marks River



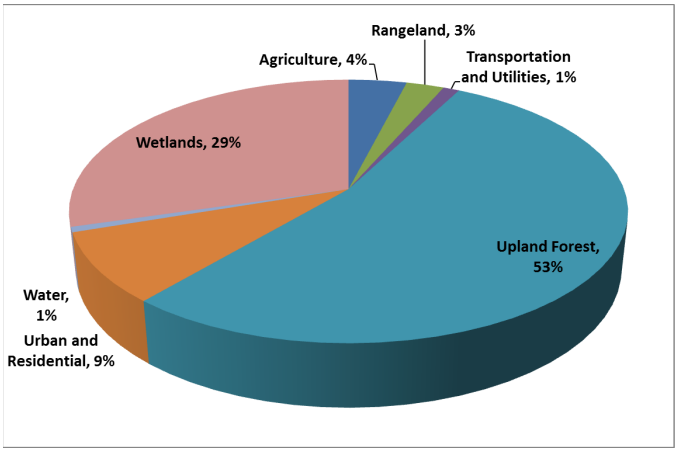
Basin: St. Marks River

The predominantly nitrogen-limited St. Marks River, declared an Outstanding Florida Water by the Florida Department of Environmental Protection (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).

As shown in the following pie chart, approximately 17% of land use in the 60,015-acre St. Marks Basin is agriculture, rangeland, transportation, utilities or 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 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 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.

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. Even though staff was not able to collect the required number of samples, some conclusions can be made. Based on the

samples taken during the study period, most total phosphorus and total nitrogen values did not exceed the total phosphorus and nitrogen thresholds (Figures 1 and 2).

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
2016	0.39	0.03
2017	0.58	0.04
2018	0.63	0.05
2019	0.35	0.05
2020	0.43	0.06

Fish Consumption Advisory

The Florida Department of Health has issued consumption limits for certain fish in the St. Marks River due to elevated levels of mercury.

Click here for more information about fish consumption advisories in Leon County.

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.LeonCountyWater.org

Click here to access the results for all water quality stations sampled in 2020.

Click here for a map of the watershed – Sample Site 54 and St. Marks at 27.

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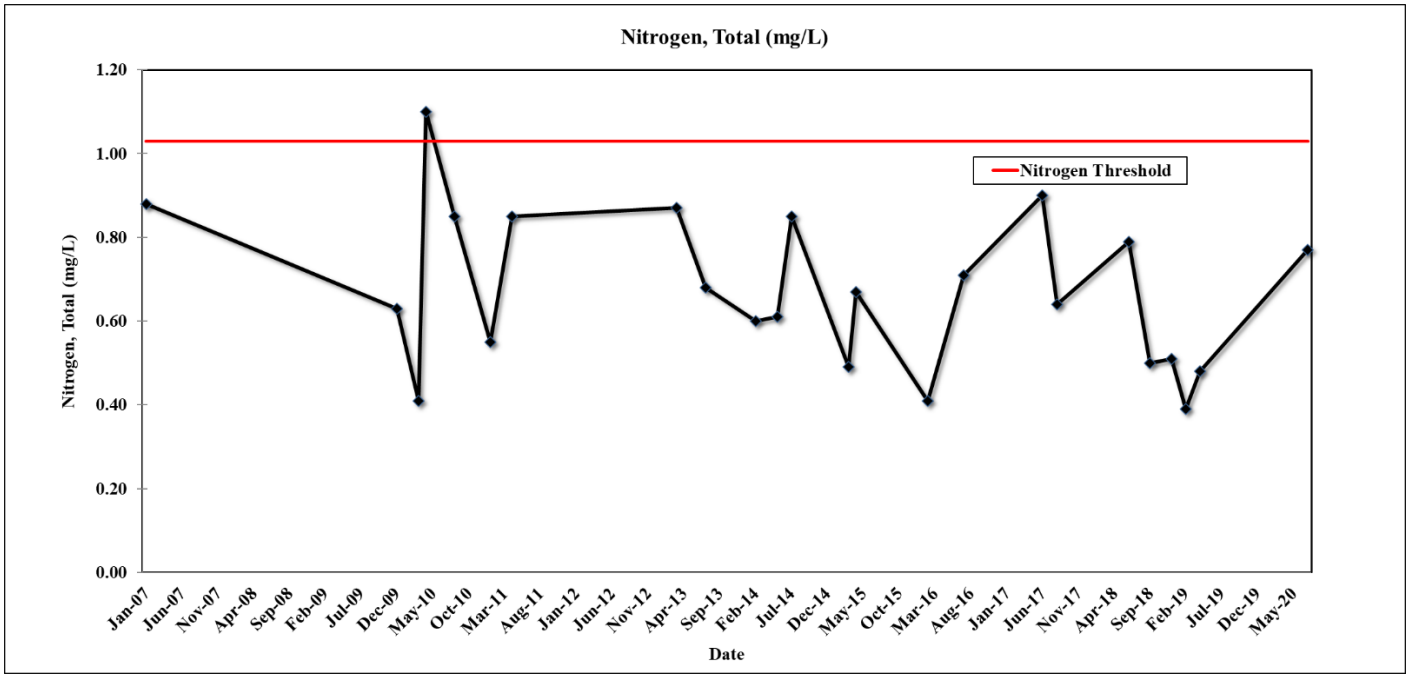

Figure 1. Total nitrogen results for St. Marks River at 27.

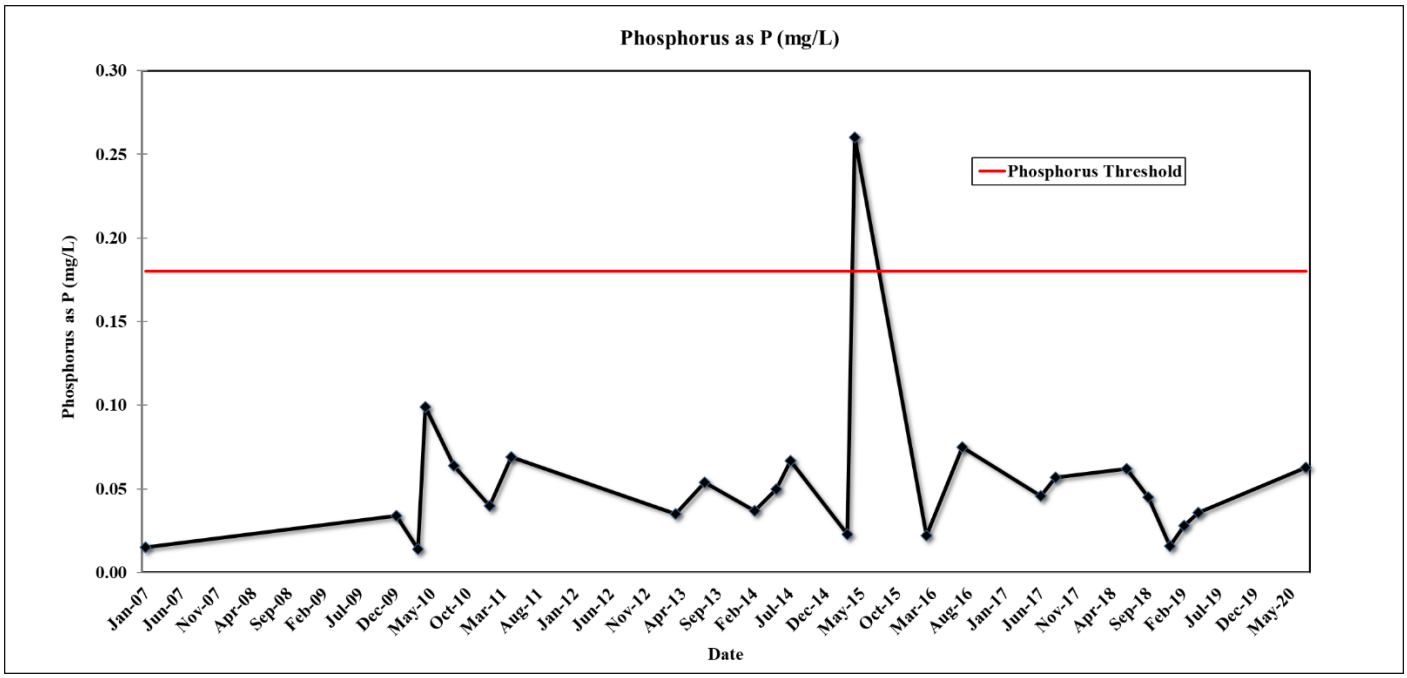

Figure 2. Total phosphorus results for St. Marks River at 27.