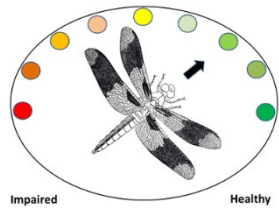


Lost Creek EcoSummary



Lost Creek is a tannic, acidic, phosphorus-limited stream located in southwestern Leon County. The stream eventually enters the Floridan aquifer via the Lost Creek swallet. Dye trace studies have linked this sink to the Leon Sinks - Wakulla Cave System.

Most of the 30,499-acre Lost Creek basin is relatively undeveloped with rangeland, transportation and utilities making up 2% of land use (as shown in **Figure 1**).

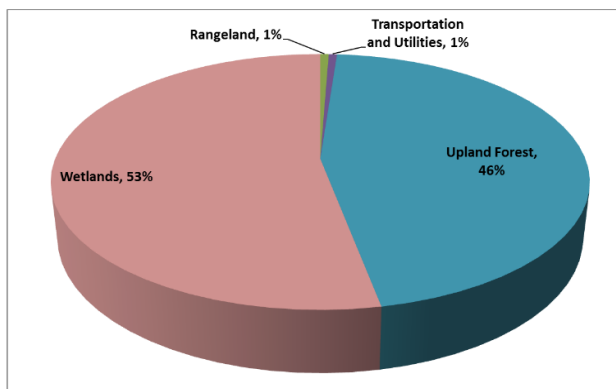


Figure 1. Lost Creek watershed land use.

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 Lost 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.

Due to low water conditions, four temporally independent samples per year could not be collected. When viewing tables and figures, the absence of data means there was not enough data collected to fulfill data requirements.

The Lost Creek water quality station was moved from Bloxham Cutoff to U.S. Forest Road 309 in 2011.

Nutrients

The nutrient thresholds and results are found in **Table 1**.

Total Nitrogen levels exceeded state criteria in 2007 and 2014 while phosphorus levels met the criteria for all measured years. For illustrative purposes, individual data points were plotted to determine any possible trends (**Figures 2 and 3**). As mentioned in previous reports, most of the nitrogen analyzed continues to consist mostly of organic nitrogen (**Figure 4**). Organic nitrogen consists of dissolved organic nitrogen (organic molecules and compounds, viruses, and small bacteria) and particulate organic nitrogen (dead organic matter and living organisms). Because organic nitrogen is “locked up” in organic material, it is not considered immediately available for biological activity.

Dissolved Oxygen

Lost Creek percent Dissolved Oxygen (DO) saturation values were occasionally below the 34 percent limit during certain events (**Figure 5**). Staff believes that this is a natural condition for this location, since the creek is a low gradient blackwater stream that drains wetlands.

Fecal Coliforms and Escherichia coli (E. coli)

While the former fecal coliform standard was exceeded several times at Lost Creek, the current *E. coli* standard has never been exceeded since the analysis was implemented in 2015.

Other Parameters

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

Table 1. NNC Thresholds and Sample Results for Lost Creek. Results in bold signify exceedances of the State criteria.

Lost Creek	Total Nitrogen Threshold 1.03 mg/L	Total Phosphorus Threshold 0.18 mg/L
2007	1.10	0.03
2008	1.01	0.00
2009	0.78	0.00
2010	0.85	0.02
2011	0.88	0.03
2012	-	-
2013	0.65	0.01
2014	1.16	0.02
2015	0.90	0.01
2016-2017	-	-
2018	0.83	0.01
2019-2022	-	-

Conclusions

With the exception of Total Nitrogen in 2007 and 2014, Lost Creek met the nutrient thresholds for the Big Bend Bioregion. No water quality impairments were noted in 2022.

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 LC at FR309.](#)

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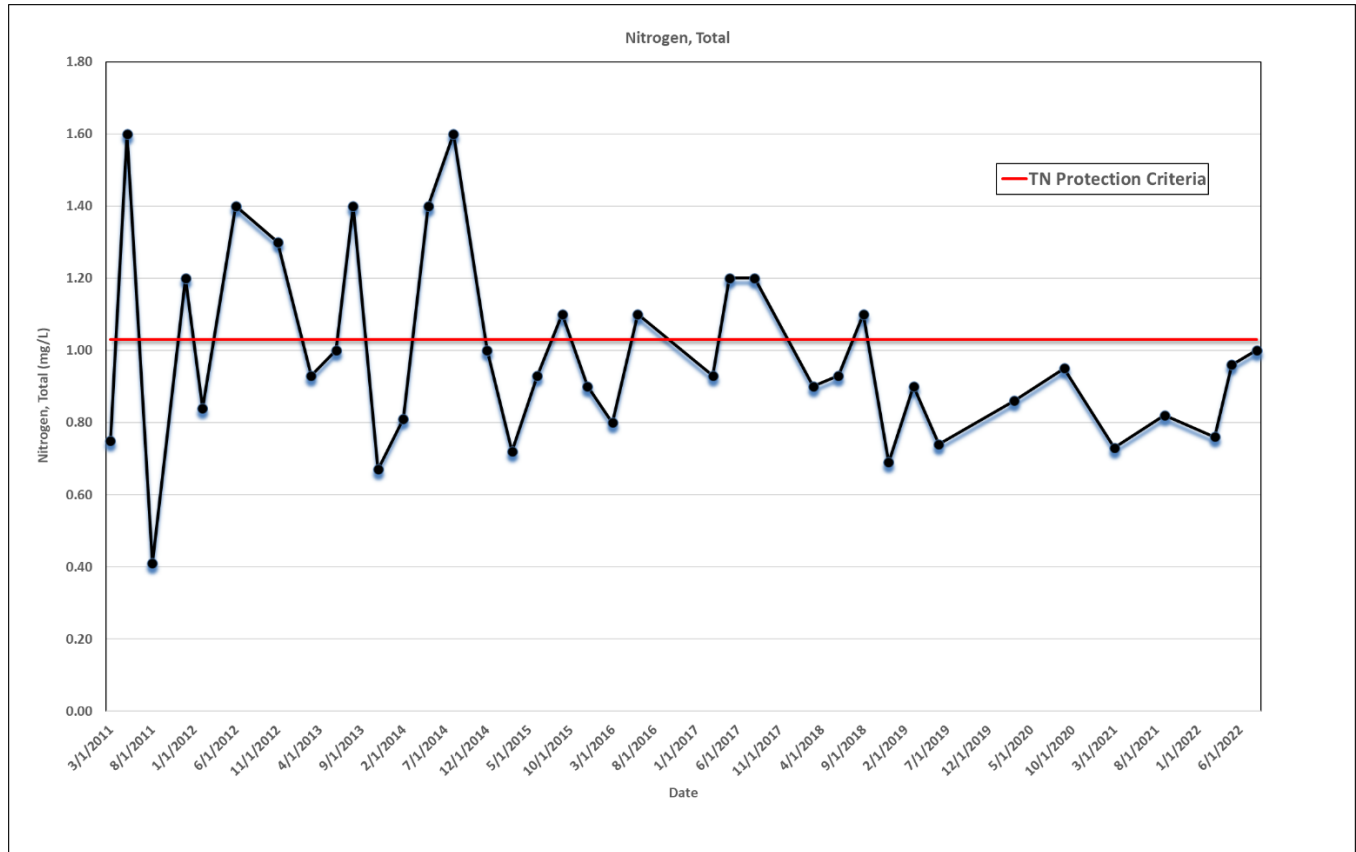


Figure 2. Total Nitrogen results for Lost Creek.

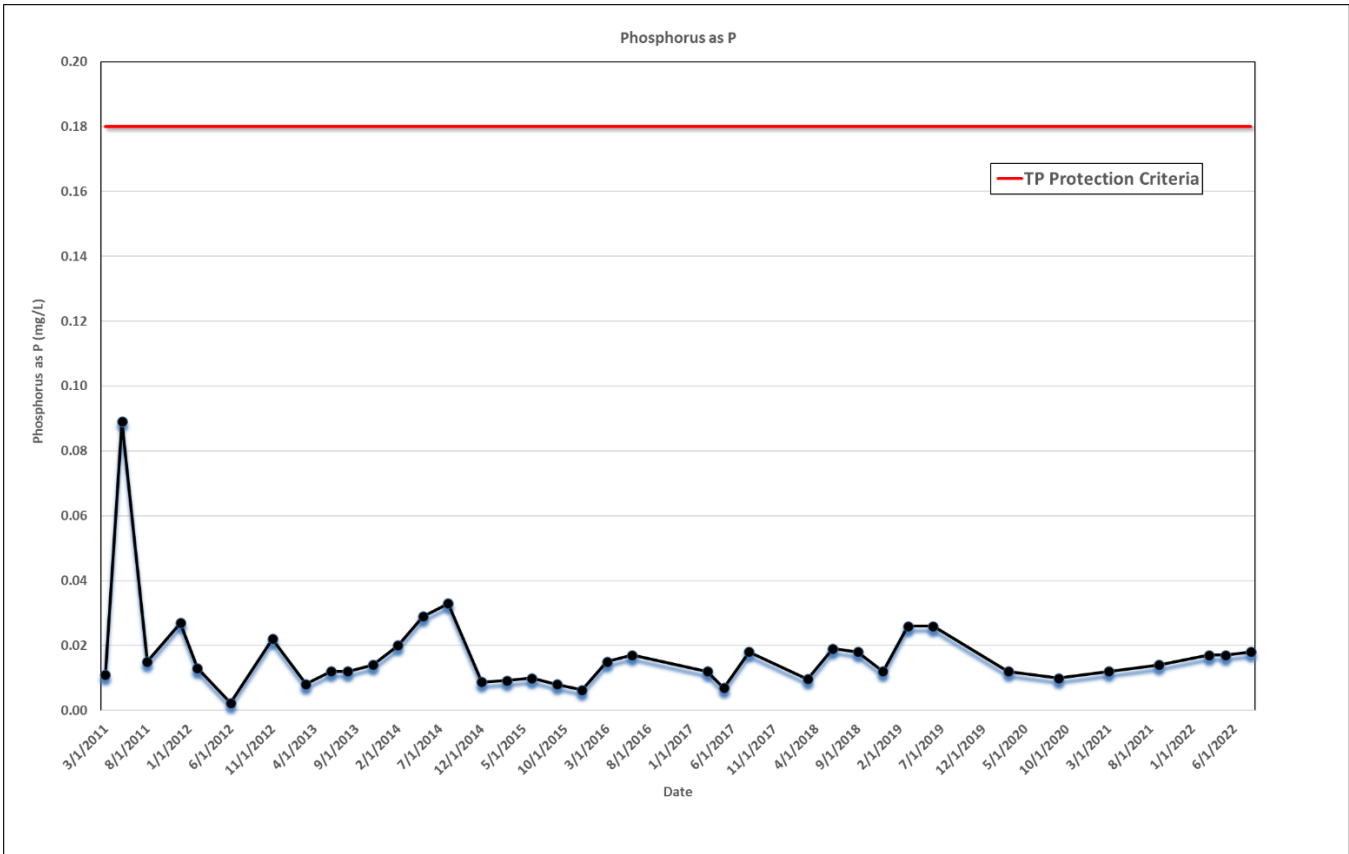


Figure 3. Total Phosphorus results for Lost Creek.

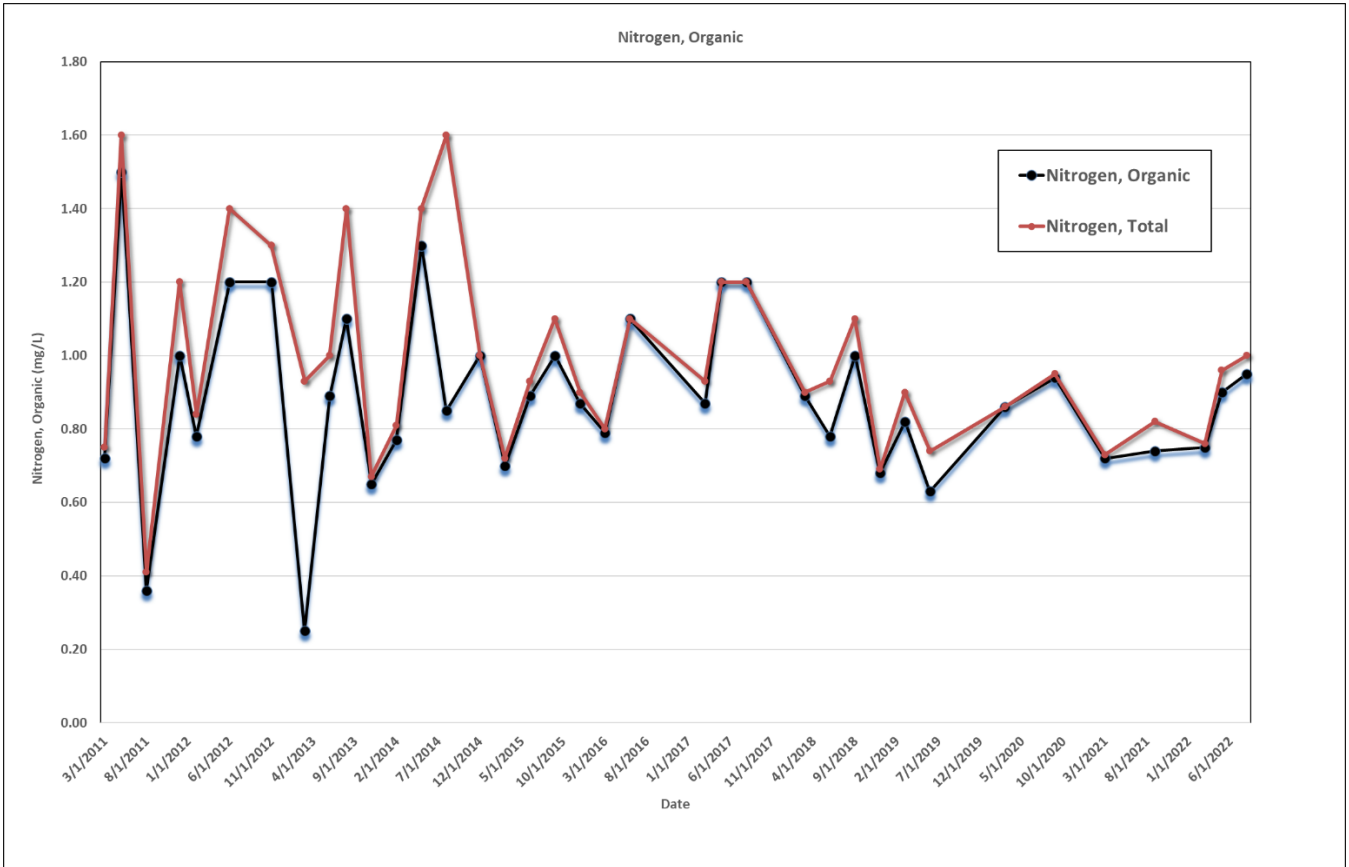


Figure 4. Total vs. Organic Nitrogen results for Lost Creek.

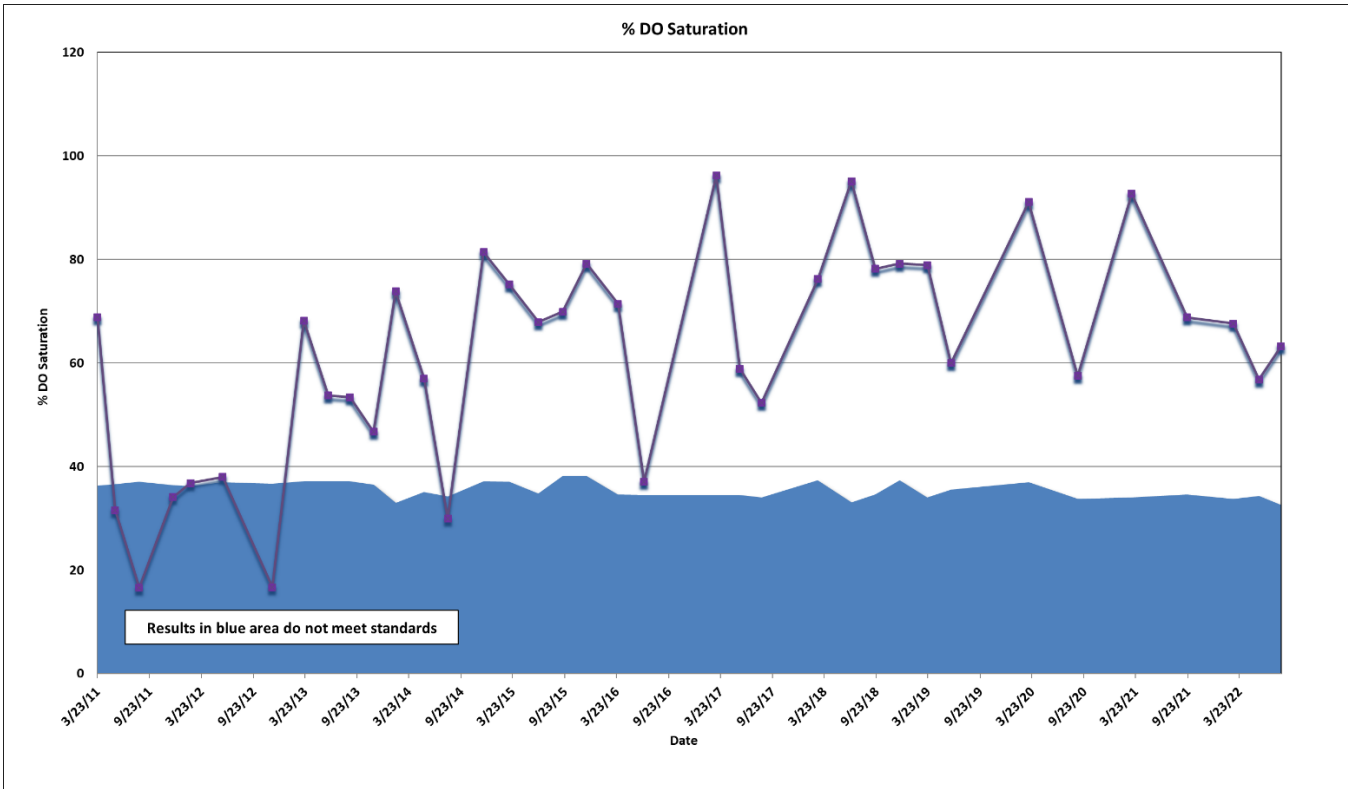


Figure 5. Dissolved Oxygen Percent Saturation results for Lost Creek.