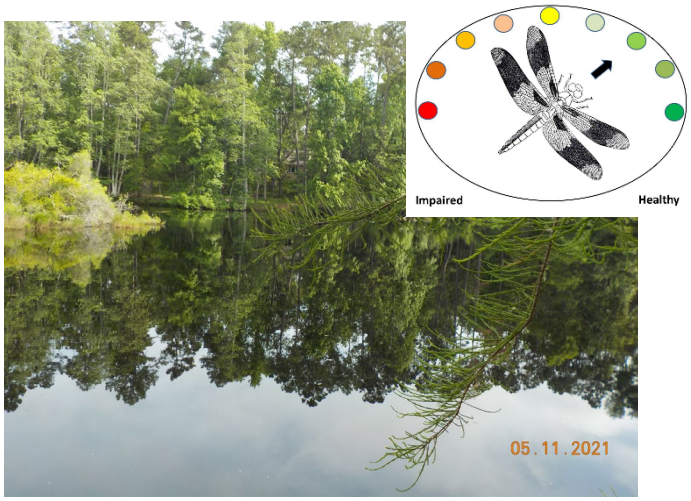
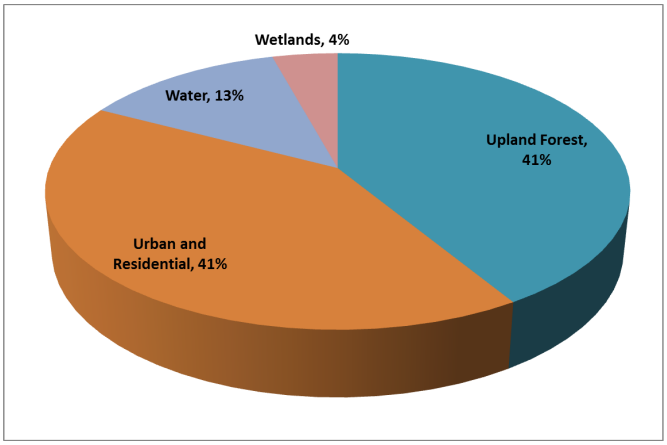
Waterbody: Lake Weeks



Basin: St. Marks River

Lake Weeks is a small, shallow, 11-acre, tannic lake located in southeastern Leon County.

As shown in the following pie chart, approximately 41% of land use in the Lake Weeks 150 acre watershed is 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 lake 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 Lake Weeks and met the requirements of the Florida Department of Environmental Protection (FDEP).

Results

Sinkholes

In late February 2015, Lake Weeks developed two sinkholes that quickly drained the lake to levels that prevented sampling (< 1.2 feet by March 2nd) for the first two quarters of 2015. Lake levels rose to high enough levels that staff was able to resume sampling in the third quarter of 2015.

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. Due to an apparent erroneous reading, the total phosphorus result could not be calculated for 2013. Low water levels prevented staff from collecting the required number of samples so the NNC could not be calculated for 2015.

Low water levels in 2012, along with a relatively constant source of nutrients, substantially concentrated the nutrients in the lake, exceeding the Numeric Nutrient Criteria in 2012. As the area returned to a more normal rainfall pattern, chlorophyll-*a* and nutrient levels dropped to levels that met the state criteria for 2014. As in 2012, low water levels in 2015 concentrated nutrients in the lake, resulting in elevated nutrient (1.4 mg/L total nitrogen, 0.08 mg/L

total phosphorus) and chlorophyll-a (106 µg/L) levels during the September 2015 sampling event. By November 2015, while still elevated, levels had dropped (total nitrogen 1.2 mg/L, total phosphorus 0.05 mg/L and chlorophyll-a 10.4 µg/L). Nutrient values met the Numeric Nutrient Criteria in 2016 - 2020.

Table 1. FDEP's chlorophyll-*a*, total nitrogen and phosphorus criteria for lakes applied to Lake Weeks. Results in bold signify exceedances of the State criteria.

Colored Lake	Chlorophyll-a 20.0 µg/L	Total Nitrogen Threshold 1.27-2.23 mg/L	Total Phosphorus Threshold 0.05-0.16 mg/L
2004	3.3	0.33	0.01
2005	1.7	0.42	0.01
2006	3.5	0.58	0.03
2007	4.9	1.00	0.02
2008	13.9	0.80	0.04
2009	2.6	0.32	0.01
2010	5.3	0.59	0.01
2011	14.2	0.79	0.03
2012	**47.5**	**1.49**	**0.07**
2013	19.7	0.87	-
2014	3.9	0.71	0.01
2015	-	-	-
2016	16.2	0.72	0.02
2017	6.0	0.60	0.01
2018	7.0	0.55	0.01
2019	8.0	0.44	0.02
2020	7.9	0.61	0.02
2021	1.9	0.49	0.02

Other Parameters

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

Conclusions

Based on ongoing sampling, Lake Weeks met the nutrient thresholds for the Big Bend Bioregion. 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 2021.

Click here for a map of the watershed – Sample Site LW1.

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