

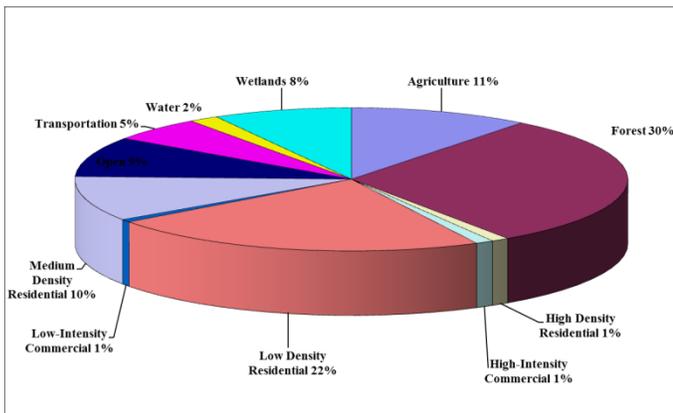
Waterbody: Unnamed Stream at Chaires Crossroad



Basin: Lake Lafayette

The Unnamed Stream at Chaires Crossroad is a highly altered stream/ditch draining Alford Arm and Lower Lake Lafayette and is located in eastern Leon County.

As shown in the following pie chart, approximately 51% of land use in the 32,021 acre watershed is agricultural, residential, commercial, or transportation. Increases in stormwater runoff and waterbody nutrient loads can often be attributed to these types of land uses.



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, 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 the Chaires Crossroad stream and meet the requirements of the Florida Department of Environmental Protection (FDEP).

Results

Nutrients

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 low water conditions, four temporally independent samples per year has only been achieved once (2009) during the period of record (2007-2015). Even though staff was not able to collect the required amount of samples in 2015, the geometric mean of the three samples collected showed that both total phosphorus (0.05 mg/L) and total nitrogen (0.84 mg/L) would have met the NNC.

Chlorophyll-a

Chlorophyll-*a* levels were elevated (26.8 µg/L) during the June 2015 sampling event. February and August results (4.3 µg/L and 8.5 µg/L respectively), were relatively low, signifying that the June result was an unusual event, probably the result of recent rainfall flushing out Lower Lake Lafayette's algal laden water.

Dissolved Oxygen

As Figure 1 shows, the unnamed creek seldom met the Class III criteria for dissolved oxygen. This is not surprising since low gradient, low flow streams often have low dissolved oxygen levels.

Other Parameters

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

Conclusions

Even though staff were not able to collect the required amount of samples in 2015, the geometric mean of the three samples collected showed that both total phosphorus and total nitrogen would have met the NNC. Chlorophyll-*a* levels were elevated during the June 2015 sampling event. February and August 2015 results were relatively low, signifying that the June result was an unusual event, probably the result of recent rainfall flushing out Lower Lake Lafayette's algal laden water. Dissolved oxygen levels have seldom met the Class III criteria. This is not surprising since low gradient, low flow streams often have low dissolved oxygen levels.

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 57.](#)

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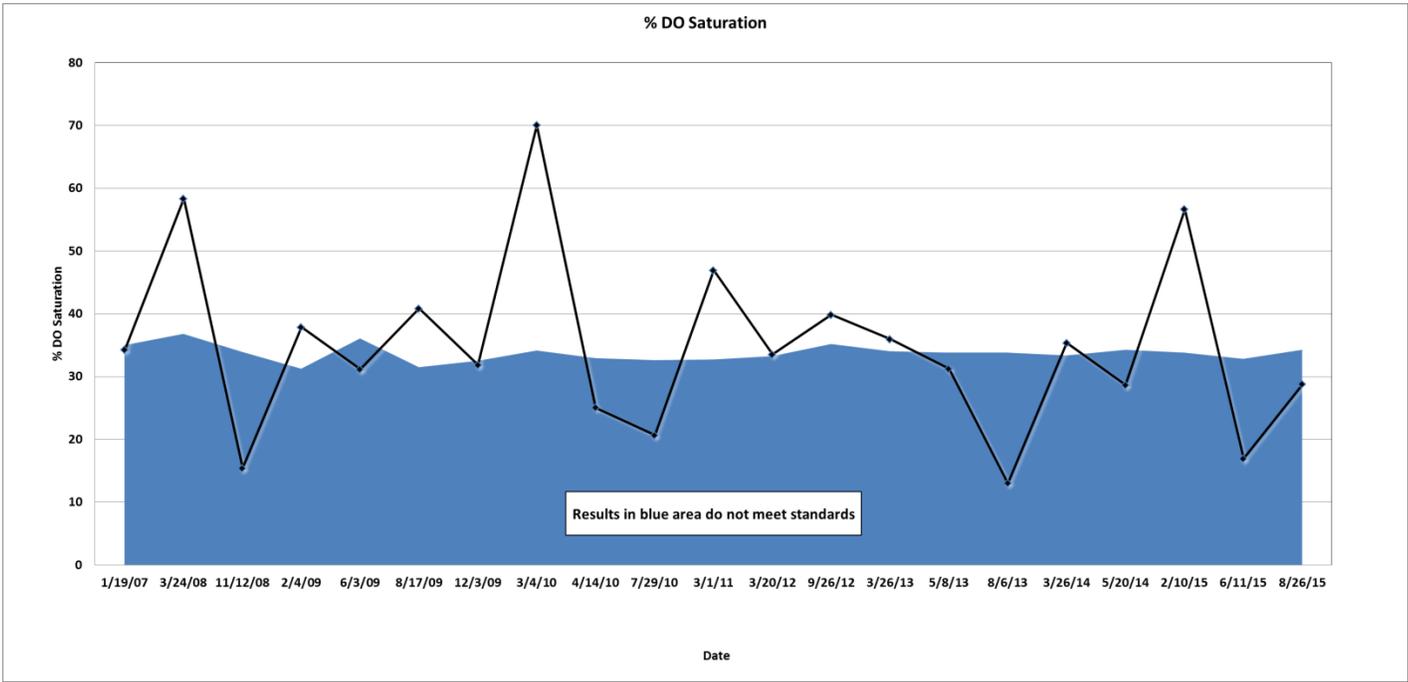


Figure 1. Dissolved Oxygen Percent Saturation results for Unnamed Stream at Chaires Crossroad.