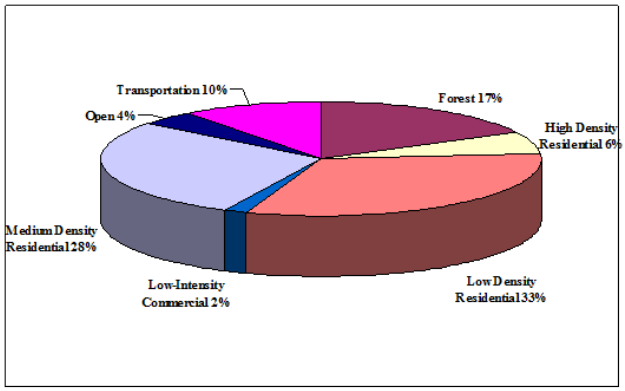
Waterbody: Jackson Heights Creek

Basin: Lake Jackson

Jackson Heights Creek is a heavily altered stream located off of Hwy 27 in northern Leon County. The stream receives runoff from the Parkhill and Greenwood Hills subdivisions, and then continues north through Lake Jackson Heights and Harbinwood subdivisions before finally entering Lake Jackson. This watershed, with residential development dating from the 1950's, displays impacts from channelized flow and aging septic tanks. Sampling was intermittent from February 2007 through October 2008, due to low flow conditions and stormwater facility construction in the channel. The stormwater facility was constructed to mitigate development impacts and to benefit both the creek and Lake Jackson.

As shown in the following pie chart, residential, commercial, and transportation land uses make up approximately 79% of the 445 acre watershed. 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. 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.

In late 2006, the U.S. Environmental Protection Agency (USEPA) set a TMDL target for total phosphorus of 0.15 mg/L, a 35% reduction of the previous existing concentration of 0.23 mg/L.

Methods

Surface water samples were collected to determine the health of Jackson Heights Creek and met the requirements of the Florida Department of Environmental Protection (FDEP). Due to low water conditions, several stations were dry or "puddled" during the sampling period. When viewing tables and figures, the absence of data means there was not enough data collected to fulfill data requirements.

Results

Nutrients

The nutrient thresholds and results are found in Table 1. According to FDEP requirements, Numeric Nutrient Criteria (expressed as an annual geometric mean) cannot be exceeded more than once in a

three year period. Thresholds were never exceeded during the period of record.

Table1. FDEP's total nitrogen and phosphorus criteria for streams applied to Jackson Heights Creek. Due to low water levels, the numeric nutrient criteria data requirements could not be calculated for years 2011, 2012 and 2015.

Jackson Heights Creek	Total Nitrogen Threshold 1.03 mg/L	Total Phosphorus Threshold 0.18 mg/L
2009	0.38	0.09
2010	0.56	0.12
2011- 2012	-	-
2013	0.30	0.08
2014	0.32	0.09
2015	-	-

As mentioned previously, USEPA set a TMDL target for total phosphorus of 0.15 mg/L, a 35% reduction of the previous existing concentration of 0.23 mg/L. During the 2006-2015 sampling period, total phosphorus concentrations ranged from 0.036 mg/L to 0.29 mg/L (Figure 1), with an average of 0.12 mg/L. It appears that the stormwater facility constructed upstream has resulted in lower phosphorus levels in Jackson Heights Creek leading to lower levels in the receiving water, Lake Jackson.

Dissolved Oxygen (DO)

While past results showed Jackson Heights not meeting FDEP's DO criteria, the criteria has been met since 2012 (Figure 2).

Fecal Coliforms and Escherichia coli (E. coli)

Jackson Heights Creek has a history of fecal coliform levels exceeding Class III water quality standard (400/100 mL in at least 10% of the samples). Recently, *E. coli* standards supplanted fecal coliform standards in Florida as an indicator of bacterial contamination. The recently adopted *E. coli* water quality limit of > 126 in 10% of samples collected over a 30 day period was exceeded (280/100 mL) for the first quarter of 2015.

Other Parameters

Several species of exotic plants line the bank of Jackson Heights Creek, primarily wild taro (*Colocasia* sp.). In many cases, exotic plants will crowd out and replace native plants. This may stress native wildlife, which have evolved to depend on native plants for food and shelter. The native wildlife may move away or perish if the native vegetation is replaced by exotic plants.

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

Conclusions

Based on ongoing sampling, Jackson Heights Creek met the nutrient thresholds for the East Panhandle Region and it appears that phosphorus levels are lower due to the recently constructed upstream stormwater facility. The recently adopted *E. coli* water quality limit was exceeded (280/100 mL) for the first quarter of 2015.

Several species of exotic plants line the bank of Jackson Heights Creek which may affect native wildlife dependent on native plants for food and shelter. Other water quality parameters appear to be normal for the area and no other impairments were noted.
Click here for more information on common exotic and invasive plants in Leon County wetlands and waterbodies.

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 31.]

Johnny Richardson, Water Resource Scientist
(850) 606-1500
Richardsonjo@leoncountyfl.gov

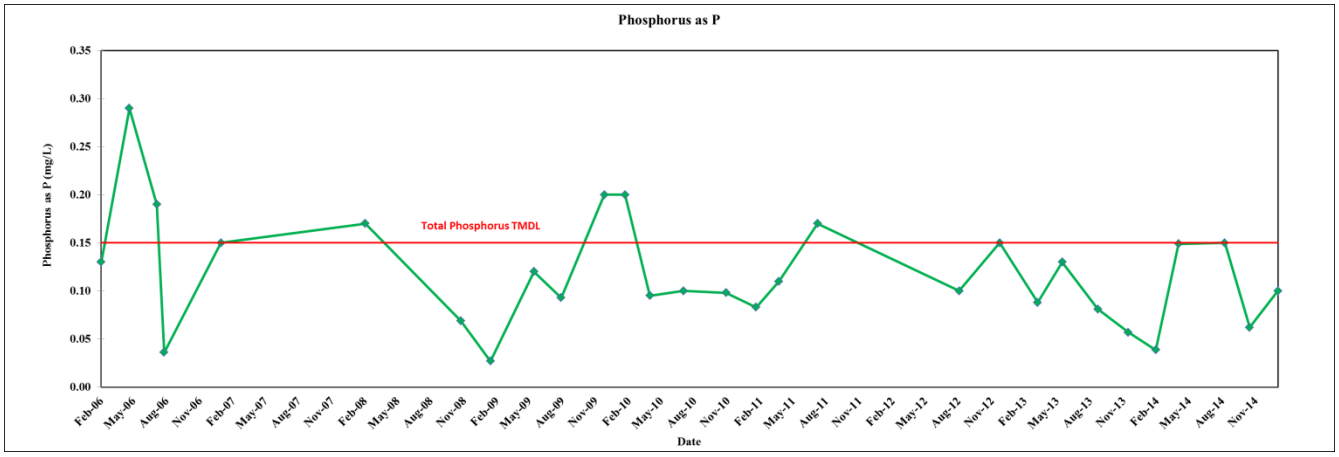


Figure 1. Total phosphorus results for Jackson Heights Creek.

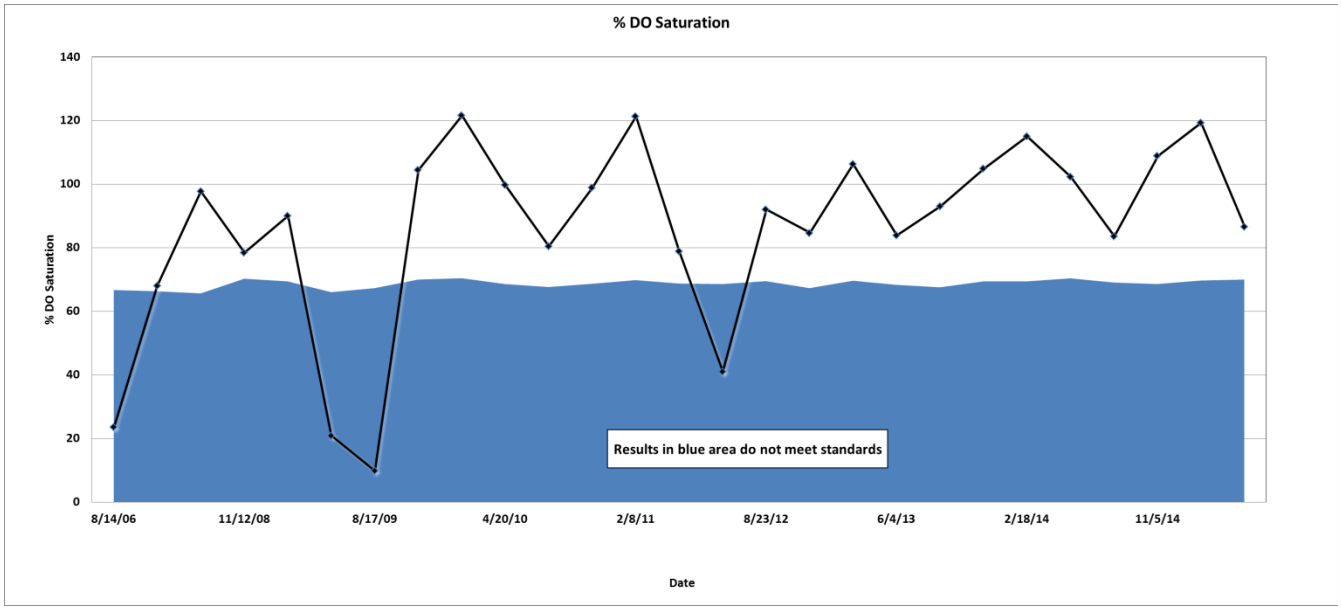


Figure 2. Dissolved Oxygen Percent Saturation results for Jackson Heights Creek.