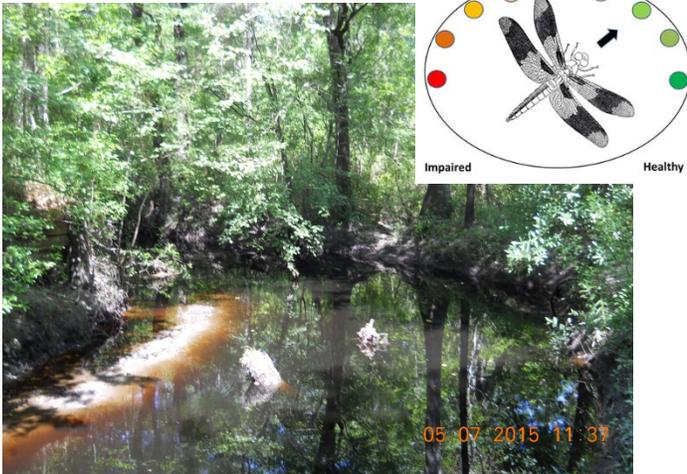


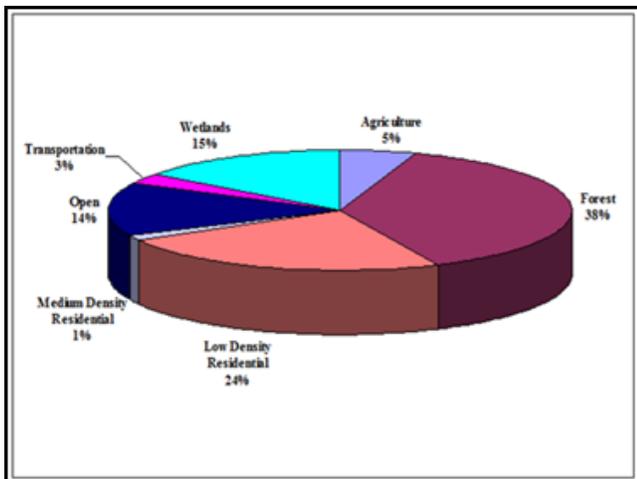
Waterbody: Northeast Black Creek



Basin: Bird Sink

Northeast Black Creek is a tannic, acidic, predominantly nitrogen-limited stream located in northeastern Leon County. The stream forms near Centerville Road and the Chemonie Plantation subdivision and flows southeast through the Miccosukee Land Cooperative before crossing under Capitola Road. The creek then turns northeast to join Still Creek and then flows into Bird Sink.

As shown in the following pie chart, approximately 33% of the 11,868 acre watershed is comprised of residential, agriculture, and transportation land uses. 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 Northeast Black Creek and met the requirements of the Florida Department of Environmental Protection (FDEP).

Results

Nutrients

According to FDEP requirements, four temporally independent samples per year are required to be collected to fulfill data requirements for the Numeric Nutrient Criteria (NNC) thresholds. Unfortunately, due to stagnant streamflow conditions not suitable for sampling, collecting the amount of data required by FDEP has been difficult (Tables 1 and 2). The nutrient thresholds and results are found in Table 1. The NNC have never been exceeded during the period of record.

Table 1. FDEP’s total phosphorus criteria for streams applied to Northeast Black Creek. Due to conditions not suitable for sampling, the state numeric nutrient criteria data requirements could not always be calculated for stations during the period of record.

East Black Creek	Instream Protection Criteria TP (0.18 mg/L)					
	Year	BC1	BC2	BC2M	BC3	BC4
2006	-	-	-	-	-	-
2007	0.18	-	-	-	-	-
2008		-	-	-	-	-
2009	0.08	-	-	0.07	0.06	
2010	0.08	-	-	-	-	
2011-2012	-	-	-	-	-	
2013	0.08	-	0.09	0.07	0.07	
2014	-	-	-	-	-	
2015	-	-	-	0.06	-	

Table 2. FDEP’s total nitrogen criteria for streams applied to Northeast Black Creek. Due to conditions not suitable for sampling, the state numeric nutrient criteria data requirements could not always be calculated for stations during the period of record.

East Black Creek	Instream Protection Criteria TN (1.03 mg/L)					
	Year	BC1	BC2	BC2M	BC3	BC4
2006	0.36	-	-	-	-	-
2007	-	-	-	-	-	-
2008	-	-	-	-	-	-
2009	0.27	-	-	0.69	0.72	
2010	0.41	-	-	-	-	
2011-2012	-	-	-	-	-	
2013	0.40	-	0.71	0.61	0.47	
2014	-	-	-	-	-	
2015	-	-	-	0.66	-	

Dissolved Oxygen

As Figure 1 shows, Northeast Black Creek stations occasionally did not meet the Class III criteria for dissolved oxygen (DO). 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)

The Station BC1 fecal coliform value (570/100 mL) exceeded the Class III criterion of fecal coliforms not exceeding the 400/100 mL Most Probable Number (MPN) during the April 2014 sampling event. The recently adopted *E. coli* water quality limit of > 126 in 10% of samples collected over a 30 day period was exceeded in the 3rd quarter at Station BC4 (300/100 mL) and in the 4th quarter at Station BC3 (640/100 mL) in 2015. Residential development in the watershed could result in elevated nutrient levels and incidence of fecal coliforms (due to improperly functioning septic tanks). Other causes could be wild animals and/or agriculture.

Other Parameters

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

Conclusions

Based on ongoing sampling, Northeast Black Creek met the nutrient thresholds for the East Panhandle Region. Northeast Black Creek stations occasionally did not meet the Class III criteria for DO. This is the result of normally low DO in low gradient, wetland fed systems like this stream. The recently adopted *E. coli* water quality limit was exceeded in the 3rd quarter at Station BC4 and in the 4th quarter at Station BC3 in 2015. Residential development in the watershed could result in elevated nutrient levels and incidence of coliforms (due to improperly functioning septic tanks) in the naturally shallow stream. Other causes could be wild animals and/or agriculture. Other water quality parameters appear to be normal for the area and no other 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.LeonCountyFL.gov/WaterResources

[Click here to access the results for all water quality stations sampled in 2015.](#)

[Click here for map of watershed – Sample station BC1, BC2M, BC3 and BC4.](#)

Johnny Richardson, Water Resource Scientist
(850) 606-1500

Richardsonjo@leoncountyfl.gov

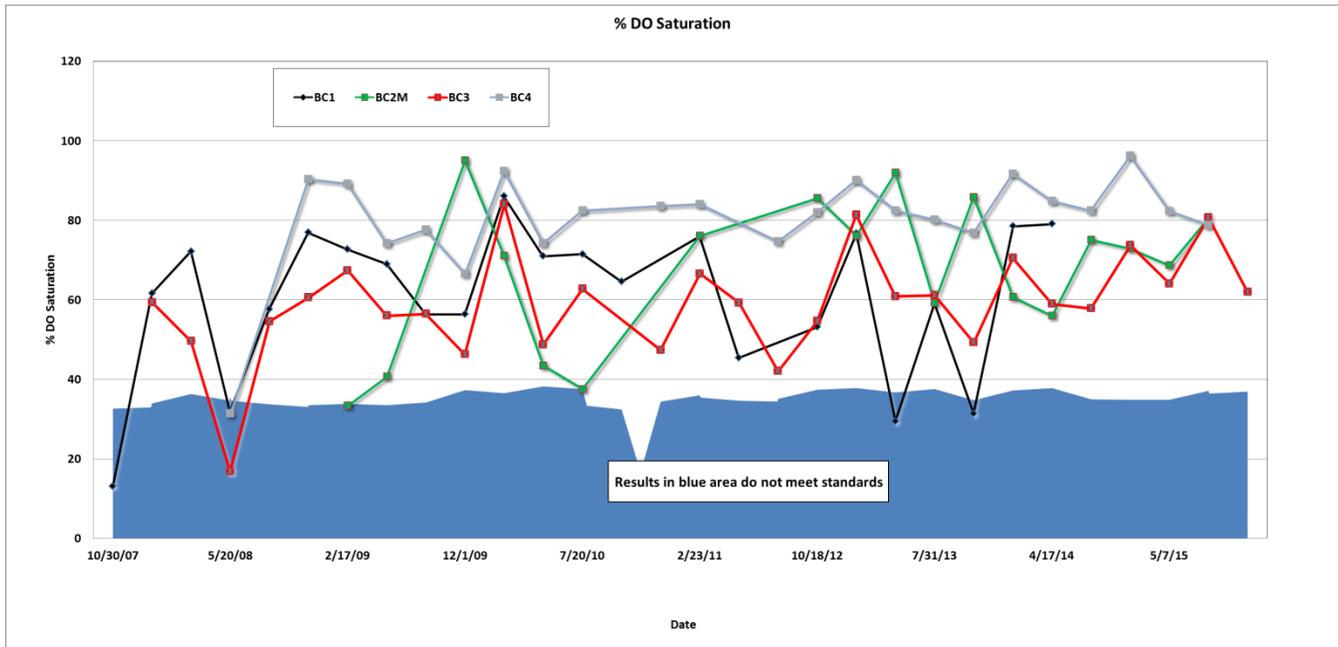


Figure 1. Dissolved Oxygen Percent Saturation results for Northeast Black Creek.