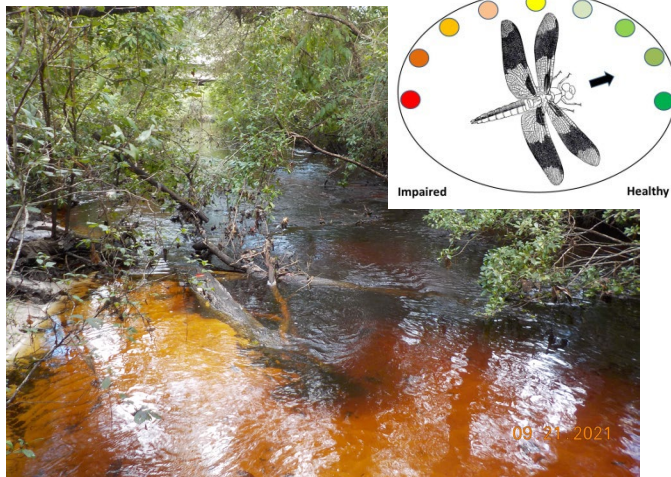


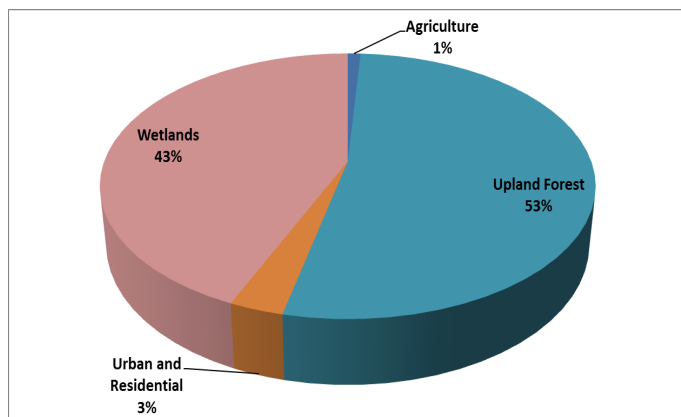
## Waterbody: Harvey Creek



## Basin: Ochlockonee River

Harvey Creek is a tannic, slightly acidic, phosphorus-limited stream that flows into Lake Talquin and is located in western Leon County.

While the following pie chart shows that the majority of the 5,679-acre watershed is relatively undeveloped, agriculture, urban and residential land uses make up approximately 4% of the watershed upstream of the sampling station. Increases in storm-water 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 in-

creased 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.

### Methods

Surface water sampling was conducted to determine the health of Harvey Creek and met the collection and analysis requirements of the Florida Department of Environmental Protection (FDEP).

### Results

#### *Escherichia coli*

*E. coli* levels exceeded the Class III water quality standard daily limit of > 410, 10% threshold value of samples collected over a 30-day period in December 2016 (770/100 mL). The standard has not been exceeded since that time. Since the watershed is relatively undeveloped, the exceedance could be attributed to wildlife in the area, though FDEP, through their own sampling, have determined that anthropogenic sources were identified using genetic marker and tracer data. To better track potential sources of *E. coli*, Leon County added additional water quality stations to the watershed in 2021 (Figure 1). The standard has not been exceeded at the newly established stations.

#### *Nutrients*

The nutrient thresholds and results are found in Tables 1 & 2. According to FDEP requirements, Numeric Nutrient Criteria (expressed as an annual geometric mean) cannot be exceeded more than once in a three-year period. The State criteria were not exceeded for either parameter.

**Table 1.** FDEP's total nitrogen criteria for streams applied to Harvey Creek.

Harvey Creek	Instream Protection Criteria			
	TN (1.03 mg/L)			
Year		HAR1	HAR2	HAR3
2006	0.11	-	-	-
2007	0.17	-	-	-
2008	0.15	-	-	-
2009	0.15	-	-	-
2010	0.33	-	-	-
2011	0.43	-	-	-
2012	0.39	-	-	-
2013	0.21	-	-	-
2014	0.35	-	-	-
2015	0.22	-	-	-
2016	0.29	-	-	-
2017	0.33	-	-	-
2018	0.40	-	-	-
2019	0.20	-	-	-
2020	0.29	-	-	-
2021	0.24	0.34	0.20	0.20

**Table 2.** FDEP's total phosphorus criteria for streams applied to Harvey Creek.

Harvey Creek	Instream Protection Criteria			
	TP (0.18 mg/L)			
Year		HAR1	HAR2	HAR3
2006	0.00	-	-	-
2007	0.00	-	-	-
2008	0.00	-	-	-
2009	0.00	-	-	-
2010	0.00	-	-	-
2011	0.01	-	-	-
2012	0.00	-	-	-
2013	0.00	-	-	-
2014	0.00	-	-	-
2015	0.01	-	-	-
2016	0.01	-	-	-
2017	0.01	-	-	-
2018	0.01	-	-	-
2019	0.01	-	-	-
2020	0.01	-	-	-
2021	0.01	0.00	0.00	0.00

#### *Habitat Assessment and Stream Condition Index (SCI)*

The habitat assessment and SCI sampling are not performed every year, so the following results are from 2019.

The results of the Habitat Assessment score for Harvey Creek characterize the overall stream habitat in the Optimal category. Habitat availability, although sub-optimal, presented high quality leaf packs, roots, and snags (Table 3). Channel characteristics were very natural with the expected pools, bends, and stable streambanks. In keeping with the habitat assessment and the water quality that exhibited a high dissolved oxygen concentration, low conductivity and low turbidity, the Stream Condition Index score was Exceptional (Table 4).

The macroinvertebrate community present at the monitoring site was rich (56 taxa) and displayed numerous sensitive (per FDEP) taxa (18). In contrast, only three FDEP very tolerant taxa were noted. No single group or taxon numerically dominated the community. Tanytarsini chironomids of the *Rheotanytarsus exiguus* grp. were the most abundant single taxon. Both long-lived and sensitive taxa were well represented in the SCI sample with 14.3% of taxa being long-lived (eight taxa) and 32.1% being sensitive (18 taxa). Included in the sensitive taxa are three taxa of ephemeroptera (mayflies), three taxa of plecoptera (stoneflies), and two taxa of trichoptera (caddisflies).

For more information about the SCI and Habitat Assessment, click [Here](#).

#### **Conclusions**

Based on ongoing sampling, Harvey Creek met the nutrient thresholds for the Big Bend Bioregion. Additional water quality sampling showed no further water quality exceedances in *E. coli*.

The results of the Habitat Assessment characterize the stream habitat in the Optimal category. In keeping with the habitat assessment, the Stream Condition Index score was Exceptional.

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

**Table 3.** Harvey Creek Habitat Assessment Score.

Harvey Creek	Score	Category
Substrate Diversity	14	Suboptimal
Substrate Availability	11	Suboptimal
Water Velocity	19	Optimal
Habitat Smothering	19	Optimal
Artificial Channelization	20	Optimal
Bank Stability	8, 8	Suboptimal, Suboptimal
Riparian Zone Width	10, 10	Optimal, Optimal
Riparian Vegetation Quality	10, 10	Optimal, Optimal
<b>Final Habitat Assessment Score</b>	<b>139</b>	
<b>Interpretation</b>	<b>Optimal</b>	

**Table 4.** Harvey Creek Stream Condition Index Score.

Harvey Creek	Rep 1	Rep 2
<b>Stream Condition Index Metrics Scores</b>		
Total Taxa	6.07	8.93
Ephemeroptera Taxa	1.25	3.75
Trichoptera Taxa	2.22	5.56
% Filter Feeder	6.38	7.44
Long-lived Score	10	6
Clinger Taxa	8	9
% Dominance	8.20	7.21
% Tanytarsini Taxa	10	10
Sensitive Taxa	6.67	10
% Tolerant Taxa	5.17	7.39
SCI Vial Score	71.06	83.63
<b>Stream Condition Index Score</b>	<b>77.35</b>	
<b>Score Interpretation</b>	<b>Exceptional</b>	

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

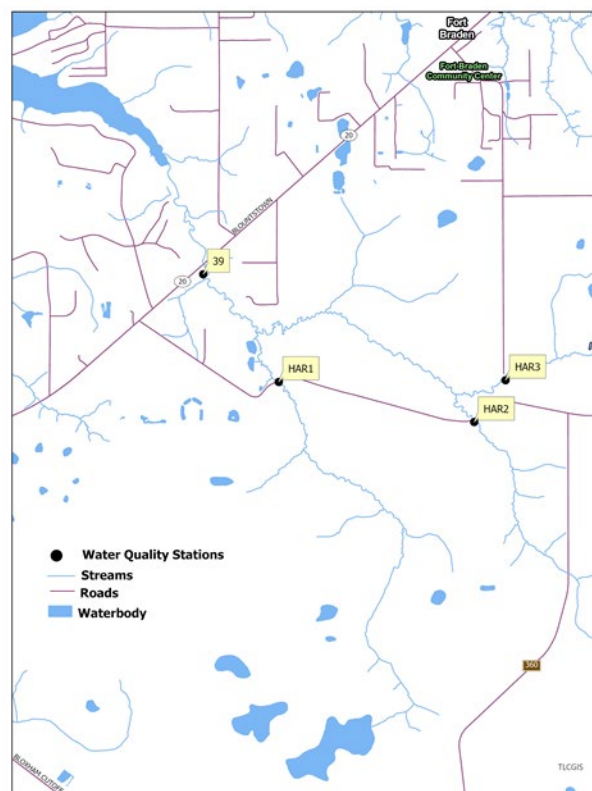
[www.LeonCountyWater.org](http://www.LeonCountyWater.org)

[Click here to access the results for all water quality stations sampled in 2021.](#)

[Click here for a map of the watershed – Sample Sites 39, HAR1, HAR2, and HAR3.](#)

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

[Richardsonjo@leoncountyfl.gov](mailto:Richardsonjo@leoncountyfl.gov)



**Figure 1.** Locations of water quality station 39 and the newly established HAR1, HAR2, and HAR3 on Harvey Creek.