West Branch – South Prong Alafia River

STREAM HABITAT ASSESSMENT, STREAM CONDITIONS INDEX, LINEAR VEGETATION SURVEY, RAPID PERIPHYTON SURVEY AND WATER QUALITY

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Methods

STUDY AREA ANALYISIS

The watershed containing the stream being assessed was analyzed using ESRI ArcGIS 10.2. Using this software with 2020 Hillsborough County aerial, 2014 Land Use/ Land Cover (LULC) and Watershed boundary (WBID) layers courtesy of the Florida Department of Environmental Protection. The Landscape Development Intensity Index (LDI) was calculated for the WBID containing the stream. From FDEP "The Landscape Development Intensity index (LDI) is an estimate of how much humans have altered an area of interest around a waterbody. Various land use types (low density residential, row crops, industrial and natural) are assigned coefficients of land use intensity based on estimates of the amount of human energy that is put into those land use types.

The LDI is calculated by multiplying each land use coefficient by the percentage of the area of interest occupied by that land use, and then summing the results. The Florida Department of Environmental Protection (DEP) uses the LDI as a tool to estimate potential land use impacts on streams, lakes, and wetlands. LDI values less than two (≤ 2) can be considered minimally disturbed." In the Florida framework, the maximum LDI index score is approximately 42.

HABITAT AND VEGETATION ASSESSMENT

For small streams that are not easily navigated by Jonboat for bathymetric mapping and vegetation analysis, Hillsborough County requested the implementation of the Florida Department of Environmental Protection methods for Stream and River Habitat Assessment (FT 3100) (http://www.dep.state.fl.us/water/sas/sop/sops.htm) using forms FD 9000-3, FD 9000-4 and FD 9000-5, Rapid Periphyton Survey (FS 7230) using form FD 9000-25 and Linear Stream Vegetation Survey (FS 7320) using form FD 9000-32. These methods were utilized on two sampling locations on each stream, typically near access points along roadways.

Stream and River Habitat Assessment per FT3100 receives a score calculated in Form FD 9000-5. This score results from the ranking of the primary habitat components (substrate diversity, substrate availability, water velocity and habitat smothering) and secondary habitat components (Artificial channelization, bank stability, riparian buffer zone width and riparian zone vegetation quality). The maximum score possible in this method is a 160.

Two metrics are utilized in the Linear Vegetation Survey. The Mean Coefficient of Conservatism (CoC) applies a score of 0-10 to each species based on its ecological tolerances and fidelity to pre-settlement conditions. Species with higher scores show a high fidelity to native, undisturbed habitats and are typically sensitive to alterations. Available CoC scores can be obtained from LT 7000 from the Florida Department of Environmental Protection at: http://www.dep.state.fl.us/water/sas/sop/sops.htm. The Percent Florida Exotic Pest Plant Council (% FLEPPC) metric calculates the percent invasive exotics as the number of occurrences of FLEPPC Category I or II in the 100 m reach divided by the total number of taxa occurrences in the 100 m reach. The FLEPPC list can be found at: http://www.fleppc.org/list/11list.html

STREAM CONDITION INDEX ASSESSMENT

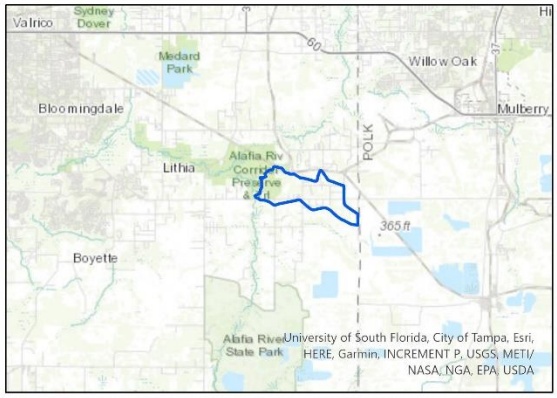
The Stream Condition Index (SCI) was sampled per DEP SOP FS7420 and calculated per DEP SOP LT7200. The SCI consists of collecting macroinvertebrates via 20 D-frame dipnet sweeps (0.5 m in length) in the most productive habitats in a 100 m reach of stream. The organisms are sub-sampled, and identified to the lowest practical taxonomic level. The SCI is composed of ten metrics, eight of which decrease in response to human disturbance, with two metrics (% very tolerant and % dominant) increasing in response to human disturbance. According to DEP SOP LT 7000, the SCI score ranges and categories are: (68-100) Exceptional; (35-67) Healthy; and (0-34) Impaired. Proposed biological health assessment criteria state that a site is considered to meet designated uses if the average of the two most recent SCI scores is 40 or higher and neither of those scores is less than 35.

WATER QUALITY ASSESSMENT

Physical water quality samples were taken using a Eureka Manta Sub-2 multiprobe pre and post calibrated daily. Measurements taken with this device include: depth, conductivity, pH, Dissolved Oxygen (mg/l and % Saturation) and salinity. Chemical water parameters were collected and preserved on ice by USF Water Institute staff and analyzed at the Environmental Protection Commission of Hillsborough County Laboratory. Analysis include; Chlorophyll (a, b, c, t and corrected), Alkalinity, Color, E. Coli, Enterococci, Ammonia, Nitrates/Nitrites, Total Phosphorous, Kjeldahl Nitrogen and Total Nitrogen.

Study Area

West Branch - South Prong Alafia River is located in south-eastern Hillsborough County. Its headwaters are located south of Lithia Pinecrest and Allen Road and the outfall of West Branch- South Prong Alafia River is in the South Prong of the Alafia River. The assessment of West Branch - South Prong Alafia River was conducted on February 5, 2020. At the time of the assessment, the water levels were low, normal for the end of the dry season. The West Branch - South Prong Alafia River WBID covers 3.32 square miles and is dominated by residential (25.2%), natural (24.6%) and agricultural (24.6%) land uses. The resulting calculated landscape development intensity index score was 4.9.



West Branch
South Prong Alafia River
WBID 1711

Mouth - South Prong Alafia River
Area - 2,273 Acres (3.32 Sq Miles)
Landscape Development
Intensity - 4.90
Stream Habitat Assessment - 81
Rapid Peiphyton Survey -
% ranked 4-6 - 0%
Linear Vegetation Survey - < 2 m^2
% FLPPC - 65.38%
Average CoC - 1.47
Stream Condition Index - 54

Figure 1 2020 West Branch - South Prong Alafia River Study Area Map

Figure 2 Overview photograph of the West Branch - South Prong Alafia River Sample Site

Habitat and Vegetation Assessment

The region of West Branch - South Prong Alafia River where the assessment was conducted is in a natural area along a roadway. The region was moderately shaded with a mean canopy cover measurement of 76.1%. West Branch - South Prong Alafia River averaged 0.1 meters in depth, approximately 2.55 meters wide with a flow of 0.34 m/s.

The primary habitat components of the FDEP Habitat Assessment focus on in-water habitat. The primary habitat components score in the optimal category for Water Velocity with a velocity of 0.34m/s. Substrate Diversity (Snags, Roots) scored in the marginal category. Habitat Smothering (many of the productive habitats were affected by sand smothering) and Substrate Availability (2.7% of stream are productive habitats) were scored as poor. Minor habitats included leaf mats/pack, sand and silt deposits. The total score for the primary habitat components was a 35 out of 80.

The secondary habitat components of the FDEP Habitat Assessment focus on the surrounding features of the stream. Artificial Channelization scored in the suboptimal range due to obvious alteration from the roadway. The two banks and surrounding land when viewed facing upstream were dramatically different between the left and right side. The secondary habitat components scored consistently higher on the left bank with scores in the optimal category for and Riparian Buffer Zone Width and Bank Stability as well as scores in the suboptimal category for Riparian Zone Vegetation Quality. The riparian buffer zone surrounding the left bank was greater than 18 meters and consisted of a mixture of native and invasive species indicative of disturbance. The right bank in contrast scored suboptimal for Bank Stability and poor for Riparian zone buffer width and vegetation quality. The vegetation in the stream itself was altered by non-native species with 4 non-native invasive species out of 11 total species. The secondary habitat components received a score of 46 out of 80. The resulting FDEP Habitat Assessment score was a 81.

Periphyton was not encountered during the 99 samples taken during the Rapid Periphyton Survey. The tree canopy in the assessment area averaged 76.1% limiting available sunlight for macrophytes and algae.

The FDEP Linear Vegetation Survey encountered less than 2 square meters of aquatic vegetation in the 100 meter study area. 11 herbaceous species were found in West Branch - South Prong Alafia River *Panicum maximum, Ludwigia peruviana, Commelina diffusa* and *Urochloa mutica* are non-native invasive species. Had the aquatic vegetation been more abundant, above the 2 square meter threshold, the % FLPPC metric would have been 65.38% and the Mean Coefficient of Conservatism metric would have been a 1.47. Both are below FDEP thresholds.

Table 1 Linear Vegetation Survey Results – West Branch - South Prong Alafia River

Taxa Name	C of C Score	Sample Site										Total Occurrences
		0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	
Ludwigia peruviana	0	1	1	1		1	1	1				6
Commelina diffusa	2.02	1	1		1				1		1	5
Panicum maximum	0		1	1	1	1						4
Hydrocotyle umbellata	1.92			1	1						1	3
Ludwigia repens	3.2		1						1			2
Urochloa mutica	0								1		1	2
Crinum americanum	9									1		1
Polygonum glabrum	4.5	1										1
Sambucus nigra	1.48					1						1
Typha	1	1										1

Figure 3 Fine Root Habitat along West Branch - South Prong Alafia River.

Stream Condition Index

The analysis of the SCI sample involves splitting the sample into 2 aliquots for analysis. The SCI metrics are then calculated on each separately. The final SCI score is an average of the two scores. The SCI score for West Branch - South Prong Alafia River was 54 out of a possible 100 points, corresponding with a "Healthy" designation, with the expected community of a healthy stream.

High scores were achieved for the % Tanytarsini and % Very Tolerant Individuals in both subsamples. Both subsamples contained few sensitive taxa and Long Lived Taxa. The full results of the SCI sampling are shown in Table 3 (Sample A) and Table 4 (Sample B) for West Branch - South Prong Alafia River.

Table 2 SCI metric summaries for West Branch - South Prong Alafia River

SCI Metric	Raw Totals	SCI scores	Adjusted SCI scores
Total Taxa	25.00	4.17	4.17
Total Ephemeroptera	1.00	2.00	2.00
Total Trichoptera	2.00	2.86	2.86
% Filter Feeders	23.81	5.37	5.37
Total Clingers	4.00	5.71	5.71
Total Long-lived Taxa	2.00	6.67	6.67
% Dominance	42.86	4.23	4.23
% Tanytarsini	15.65	8.27	8.27
Total Sensitive Taxa	2.00	2.86	2.86
% Very Tolerant Individuals	3.40	8.05	8.05

SCI Sum	50.18
Final SCI score	55.76

SCI Metric	Raw Totals	SCI scores	Adjusted SCI scores
Total Taxa	25.00	4.17	4.17
Total Ephemeroptera	2.00	4.00	4.00
Total Trichoptera	3.00	4.29	4.29
% Filter Feeders	21.23	4.78	4.78
Total Clingers	4.00	5.71	5.71
Total Long-lived Taxa	1.00	3.33	3.33
% Dominance	50.00	2.80	2.80
% Tanytarsini	12.33	7.62	7.62
Total Sensitive Taxa	2.00	2.86	2.86
% Very Tolerant Individuals	3.42	8.03	8.03

SCI Sum	47.58
Final SCI score	52.87

Table 3 SCI full results for Sample A

Stream Condition Index Results for West Branch Alafia SCIA

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Abundance	Collapsed	Taxa Presence	Ephemeroptera	Trichoptera	50% Filterer	100% Filterer	Clinger Taxa	Long-lived Taxa	Dominant Taxa	Tanytarsini	Sensitive Taxa	Very Tolerant	Specimen Notes
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	1	1	1	0	0	0	0	0	0		0	0	0	Damaged and/or
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Ancylidae	Ancylidae spp.	4	4	1	0	0	0	0	0	0		0	0	0	Damaged
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Physidae	*Physa acuta*	3	3	1	0	0	0	0	0	0		0	0	3	
Mollusca		Gastropoda	Caenogastropoda	Littorinimorpha	Hydrobiidae	Hydrobiidae spp.	1	1	1	0	0	0	0	0	0		0	0	0	Damaged
Mollusca		Bivalvia	Heterodonta	Veneroida	Corbiculidae	*Corbicula* spp.	2	2	1	0	0	0	2	0	1		0	0	0	
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda	Dogielinotidae	*Hyalella azteca* sp. complex	1	1	1	0	0	0	0	0	0		0	0	0	
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Decapoda	Cambaridae	Cambaridae spp.	1	1	1	0	0	0	0	0	1		0	0	0	female
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	*Labiobaetis propinquus*	1	1	1	1	0	0	0	0	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Coenagrionidae	Coenagrionidae spp.	3	3	1	0	0	0	0	0	0		0	0	0	Damaged and/or
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	2		0	0	0	0	0	0	0		0	0	0	Immature
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Cheumatopsyche* spp.	5	7	1	0	1	0	7	1	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydroptilidae	*Hydroptila* spp.	1	1	1	0	1	0	0	1	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	*Microcylloepus* spp.	18	18	1	0	0	0	0	0	0		0	0	0	15 larvae, 3 adults
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	2		0	0	0	0	0	0	0		0	0	0	2 pupae
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Tanytarsus* spp.	4	4	1	0	0	4	0	0	0		4	0	0	not buckleyi
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Tanytarsus buckleyi*	2	2	1	0	0	2	0	0	0		2	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Polypedilum scalaenum*	2	2	1	0	0	0	0	0	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Polypedilum flavum*	62	63	1	0	0	0	0	0	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Rheotanytarsus exiguus*	16	17	1	0	0	0	17	1	0		17	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Ablabesmyia mallochi*	3	3	1	0	0	0	0	0	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Polypedilum beckae*	1	1	1	0	0	0	0	0	0		0	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Thienemanniella xena*	1	1	1	0	0	0	0	0	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Rheocricotopus robacki*	5	5	1	0	0	0	0	0	0		0	1	0	Slide 7, CS 1, P 4 and 5
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Ceratopogonidae	*Atrichopogon* spp.	2	2	1	0	0	0	0	0	0		0	0	0	2 larvae
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	*Simulium* spp.	2	2	1	0	0	0	2	1	0		0	1	0	2 larvae
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	*Rhagovelia choreutes*	1	1	1	0	0	0	0	0	0		0	0	0	male
Arthropoda	Hexapoda	Insecta	Pterygota	Lepidoptera	Crambidae	*Neargyractis slossonalis*	1	1	1	0	0	0	1	0	0		0	0	1	

Table 4 SCI full results for Sample B

Stream Condition Index Results for West Branch Alafia SCIB

Phylum	Subphylum	Class	Subclass	Order	Family	Taxa	Abundance	Collapsed	Taxa Presence	Ephemeroptera	Trichoptera	50% Filterer	100% Filterer	Clinger Taxa	Long-lived Taxa	Dominant Taxa	Tanytarsini	Sensitive Taxa	Very Tolerant	Specimen Notes
Annelida		Clitellata	Oligochaeta	Tubificida	Naididae	Tubificinae spp.	3	3	1	0	0	0	0	0	0		0	0	0	Damaged and/or immature
Annelida		Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae	*Lumbriculus* cf. *variegatus*	1	1	1	0	0	0	0	0	0		0	0	1	
Mollusca		Gastropoda	Heterobranchia	Hygrophila	Ancylidae	Ancylidae spp.	1	1	1	0	0	0	0	0	0		0	0	0	Damaged
Mollusca		Gastropoda	Caenogastropoda	Littorinimorpha	Hydrobiidae	*Pyrgophorusplatyrachis*	1	1	1	0	0	0	0	0	0		0	0	1	
Mollusca		Bivalvia	Heterodonta	Veneroida	Corbiculidae	*Corbicula* spp.	1	1	1	0	0	0	1	0	1		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	*Labiobaetispropinquus*	1	1	1	1	0	0	0	0	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	Heptageniidae spp.	1	1	1	1	0	0	0	1	0		0	1	0	Damaged
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Gomphidae	Gomphidae spp.	1	1	1	0	0	0	0	0	0		0	0	0	Immature
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Leptoceridae	*Nectopsychecandida/exquisita*	1	1	1	0	1	0	0	0	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	3		0	0	0	0	0	0	0		0	0	0	Immature
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	*Cheumatopsyche* spp.	9	12	1	0	1	0	12	1	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydroptilidae	*Hydroptila* spp.	1	1	1	0	1	0	0	1	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	*Microcylloepus* spp.	18	18	1	0	0	0	0	0	0		0	0	0	12 larvae, 6 adults
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Gyrinidae	*Dineutus* spp.	1	1	1	0	0	0	0	0	0		0	0	0	1 larva
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Scirtidae	*Scirtes* spp.	1	1	1	0	0	0	0	0	0		0	0	0	1 larva
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	3		0	0	0	0	0	0	0		0	0	0	3 pupae
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Tanytarsus* spp.	5	5	1	0	0	5	0	0	0		5	0	0	not buckleyi
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Polypedilumscalaenum* group	1	1	1	0	0	0	0	0	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Polypedilumflavum*	71	73	1	0	0	0	0	0	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Polypedilumillinoense* group	1	1	1	0	0	0	0	0	0		0	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Rheotanytarsusexiguus* group	12	13	1	0	0	0	13	1	0		13	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Ablabesmyiamallochi*	2	2	1	0	0	0	0	0	0		0	0	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Polypedilumbeckae*	1	1	1	0	0	0	0	0	0		0	0	1	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	*Rheocricotopusrobacki*	3	3	1	0	0	0	0	0	0		0	1	0	
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Tipulidae	*Tipula* spp.	1	1	1	0	0	0	0	0	0		0	0	1	1 larva
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Veliidae	*Rhagoveliachoreutes*	1	1	1	0	0	0	0	0	0		0	0	0	male
Arthropoda	Chelicerat	Arachnida	Acari	Trombidiformes	Sperchonidae	*Sperchon* spp.	1	1	1	0	0	0	0	0	0		0	0	0	

Water Quality Assessment

Long-term water quality data is available for West Branch - South Prong Alafia River. The data that is available was collected by the Hillsborough County Environmental Protection Commission (2005- 2020), Florida Department of Environmental Protection (2012-2020) and Hillsborough County Public Works (2020). Values for the physical water parameters begin in 2005 and continue through 2020. Values for the laboratory water parameters begin in 2005 through 2020. The 2020 USF Water Institute Assessment fall within the range of the previous data collections. Table 5 provides a summary of the Physical/Chemical conditions recorded at the site.

Table 5 West Branch - South Prong Alafia River Physical Water Quality (Field)

West Branch - South Prong Alafia River								
Date	**Depth (m)**	**Temp (°C)**	**pH**	**DO (mg/L)**	**DO (% Sat)**	**Cond (UMHO/cm**	**Salinity (PPT)**	**Secchi Depth (m)**
1/30/20	0.1	16.4	7.21	9.06	92.1	244	0.11	0.1 VOB
Mean POR		21.7	7.20	7.52	85.6	260.6	0.12	

The chemical water quality analysis for West Branch - South Prong Alafia River is shown in Table 6 along with mean values for the period of record for available parameters. Period of record mean and the previous 3-year geometric mean values for Total Phosphorous values were below the nutrient region threshold developed by FDEP of 0.49 mg/L with a mean value of 0.459 mg/L (2005-2020). The three year geometric mean value for Total Phosphorous was 0.0.430 mg/L. Total Phosphorous values for the sample from this assessment were 0.234 mg/L. Total Nitrogen values were above the nutrient region threshold developed by FDEP of 1.65 mg/L with a mean value of 2.585 mg/L for the period of record (2005-2020). The three year geometric mean value for Total Nitrogen was 1.722 mg/L. The Total Nitrogen value from the assessment was above the threshold with a concentration of 1.980 mg/L. Chlorophyll-a corrected values fall below the site specific evaluation range of 3.2 µg/l to 20 µg/l for the period of record (2.09 µg/l 2005-2020), and below the site specific evaluation range for the most recent 3-years of samples (1.99 µg/l). For sites with Chlorophyll-a values in this range, the assessment shows a balance of flora.
Elevated biomass of the bacterial parameters was observed in the long term dataset with E. Coli having a geomean of 609 colonies/100 ml, 1,488/100 ml for Enterococci.

Table 6 West Branch - South Prong Alafia River Water Quality (Laboratory)

Parameter	West Branch - South Prong Alafia River	POR Mean	Units
Alkalinity	N/A		mg/LCaCO3
Nitrates/Nitrites	1.830	1.678	mg/L
E. Coli	2,360	609	#/100 ml
Enterococci	1,830	1,678	#/100 ml
Chlorophyll a	1.1	2.3	ug/L
Chlorophyll b	<1	0.75	ug/L
Chlorophyll c	<1	0.43	ug/L
Chlorophyll t	1.1		ug/L
Chlorophylla Corr	<1	2.1	ug/L
Chlorophyll-pheo	<1		ug/L
Ammonia	0.033		mg/L
Kjeldahl Nitrogen	0.152	0.669	mg/L
Total Nitrogen	1.980	2.585	mg/L
Total Phosphorus	0.234	0.459	mg/L
Color(345)F.45	30	30.5	Pt/Co

Conclusion

West Branch - South Prong Alafia River is located in a mix of residential, natural and agricultural areas. At the time of the habitat assessment, the water levels were low, corresponding to the middle of the dry season, however sufficient habitat for macroinvertebrates was observed. Due to these factors, the Habit Assessment resulted in a marginal score of 81. Less than 2 square meters of herbaceous aquatic vegetation was observed during the Linear Vegetation Survey. West Branch - South Prong Alafia River did meet standards for the rapid periphyton survey with 0% of samples being ranked between 4 and 6. The historical water quality record for West Branch - South Prong Alafia River showed acceptable concentrations of Total Phosphorous but elevated Total Nitrogen in the long term dataset and in the most recent 3-years of data. The results of the SCI sampling indicate that the stream is "healthy" based on the macroinvertebrate community. Table 7 summarizes the results of the nutrient sampling, floristic sampling, habitat assessment and SCI.

Table 7 Summary of Water Quality, Floristic Surveys and Habitat Assessments

Measure		West Branch - South Prong Alafia River	Mean POR	Threshold
Total Phosphorous (mg/l) (3-Year)		0.430	0.459	< 0.49
Total Nitrogen (mg/l) (3-Year)		1.722	2.585	< 1.65
RPS (% Rank 4-6)		0%		< 25%
LVS	**Avg C of C**	< 2m^2		≥ 2.5
	FLEPPC %	< 2m^2		< 25%
Chlorophyll (µg/l)		1.99	2.09	< 20 µg/l
Habitat Assessment		81		> 34
SCI		54		> 34