Sweetwater Creek

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 2016 Hillsborough County aerial, 2011 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

Sweetwater Creek is located in central Hillsborough County. Its headwaters are located in Bay Lake and the outfall of Sweetwater Creek is in Old Tampa Bay. The assessment of Sweetwater Creek was conducted on January 2, 2018. At the time of the assessment, the water levels were average for the dry season. The Landscape Development Intensity Index for the Sweetwater Creek WBID 1516 was 6.82. The land use was 52% Residential, 13% Natural, 11 % Commercial, and 11% Industrial.

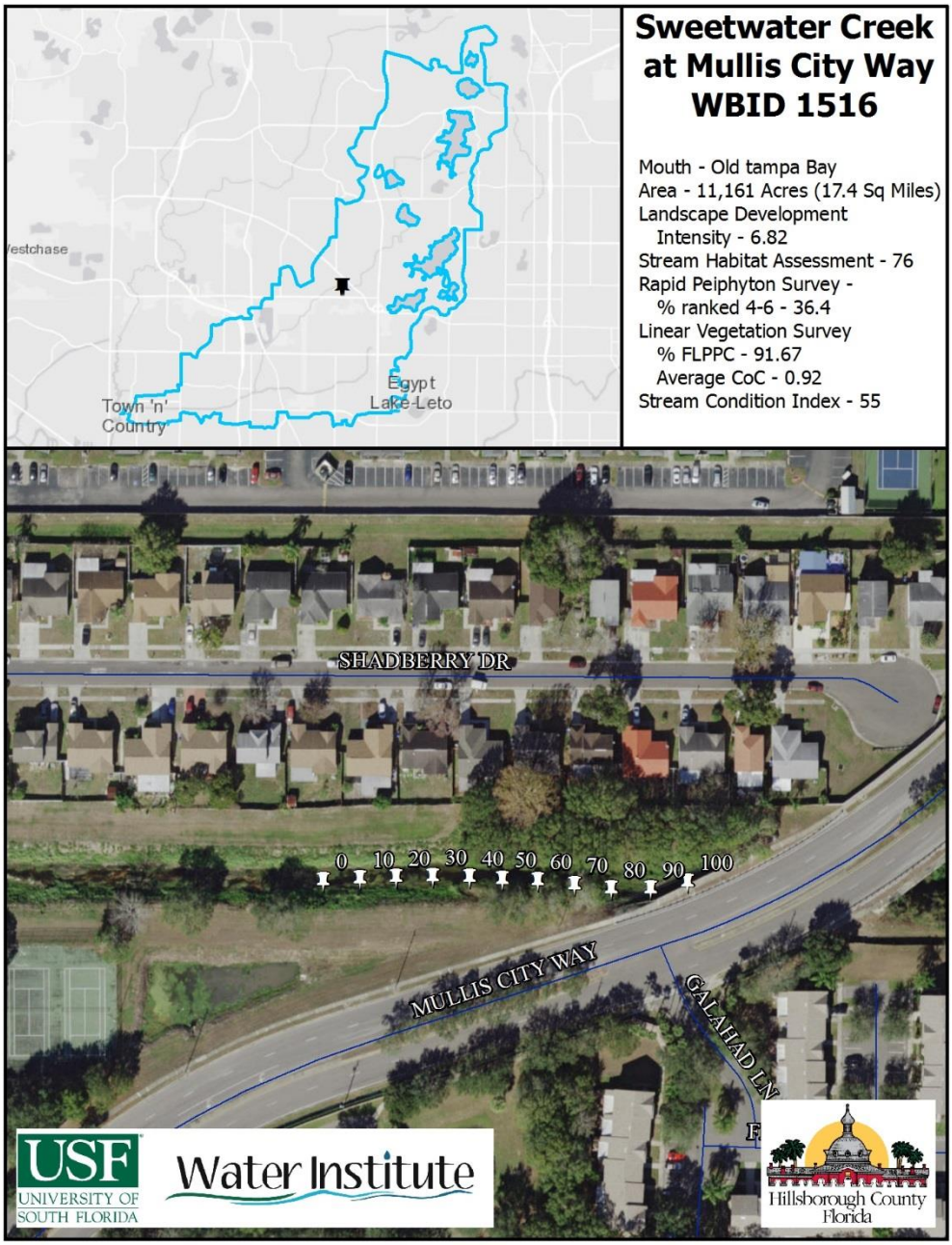

Figure 1 2018 Sweetwater Creek Study Area Map

Habitat and Vegetation Assessment

Figure 2 Overview photograph of Sweetwater Creek Sample Site

The region of Sweetwater Creek where the assessment was conducted is in a dominant residential area. The region was primarily open with a mean canopy cover measurement of 15.8%. Sweetwater Creek averaged 0.25 meters in depth, approximately 3.95 meters wide with a flow of 0.21 m/s.

The primary habitat components of the FDEP Habitat Assessment focus on in-water habitat. The primary habitat components score in the suboptimal category for substrate availability, Water Velocity and Habitat Smothering. Marginal scores were recorded for Substrate Diversity with only two major productive habitat present. 28.1% of the surface area of the assessment region occupied by major productive habitat (15.4% Rocks and 12.7% Aquatic Macrophytes). Minor habitats included leaf packs, sand and silt. The total score for the primary habitat components was a 48 out of 80.

The secondary habitat components of the FDEP Habitat Assessment focus on the surrounding features of the stream. Sweetwater Creek has been intensively straightened and channelized in the past and is currently maintained by mowing. The secondary habitat components scored in the suboptimal category for Bank Stability with both banks passing 2 of 3 requirements in the assessment region with few raw eroded areas. Marginal scores were achieved for Artificial Channelization due to the time that has elapsed since the channelization of Sweetwater Creek occurred. The main flow channel has developed some sinuosity inside the constructed banks. Riparian Buffer Width and Riparian Zone Vegetation Quality both scored in the poor category. The riparian buffer zone surrounding the stream was less than 6 meters on both banks and consisted of mostly non-native vegetation. The vegetation in the stream itself was dominated by non-native invasive species likely from an upstream source. The secondary habitat components received a score of 28 out of 80. The resulting FDEP Habitat Assessment score was a 76.

The FDEP Rapid Periphyton Survey encountered periphyton during the assessment in part due to the open canopy in the study area. Periphyton samples ranked 4-6 (6mm - >10cm) accounted for 36.4% of samples. *Lyngbya spp.* was the dominant species encountered during the assessment. This indicates an imbalance of the streams flora.

The FDEP Linear Vegetation Survey showed the aquatic vegetation was dominated by non-native invasive species with *Hydrilla*, *Hygrophila* and *Limnophila* being present in all 10 regions and *Hygrophila* being dominant in all 10 regions where it covered as much as 50% of the stream. The mean Coefficient of Conservatism for the assessment was 0.62and the Percent FLEPPC metric was 91.67%. This indicates an imbalance of the streams flora.

Table 1 Linear Vegetation Survey Results – Sweetwater Creek

Taxa Name	C of C Score	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total Occurrences
Hygrophila polysperma	0	D	D	D	D	D	D	D	D	D	D	10
Limnophila sessiliflora	0	1	1	1	1	1	1	1	1	1	1	10
Commelina diffusa	2.02	1	1	1	1	1	1		1	1	1	9
Hydrilla verticillata	0	1	1	1		1	1	1	1	1	1	9
Urochloa mutica	0				1	1	1					3
Eleocharis baldwinii	2.82							1	1			2
Sphagneticola trilobata	0					1	1					2
Colocasia esculenta	0					1						1
Ludwigia leptocarpa	3						1					1
Rumex verticillatus	3.17							1				1
Observations/station		4	4	4	4	7	7	5	5	4	4	48
Total Observations	48											
Mean CoC	0.62											
% FLEPPC	92%											

Figure 3 Picture of the aquatic vegetation on Sweetwater Creek

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 Sweetwater Creek was 55 out of a possible 100 points, corresponding with a "Healthy" designation, with the expected community of a healthy stream.

Both subsamples received high scores for % Dominance and % Tanytarsini metrics. Both subsamples also contained a single long-lived taxa. Neither subsample contained any sensitive taxa.

Table 2 SCI metric summaries for Sweetwater Creek Subsample A (Top) and Subsample B (Bottom)

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	21.48	4.83	4.83
Total Clingers	4.00	5.71	5.71
Total Long-lived Taxa	1.00	3.33	3.33
% Dominance	14.08	9.98	9.98
% Tanytarsini	16.20	8.37	8.37
Total Sensitive Taxa	0.00	0.00	0.00
% Very Tolerant Individuals	9.15	5.96	5.96
SCI Sum	47.21		
Final SCI score	52.45		

SCI Metric	Raw Totals	SCI scores	Adjusted SCI scores
Total Taxa	29.00	5.83	5.83
Total Ephemeroptera	2.00	4.00	4.00
Total Trichoptera	3.00	4.29	4.29
% Filter Feeders	19.75	4.43	4.43
Total Clingers	4.00	5.71	5.71
Total Long-lived Taxa	1.00	3.33	3.33
% Dominance	17.83	9.23	9.23
% Tanytarsini	17.20	8.53	8.53
Total Sensitive Taxa	0.00	0.00	0.00
% Very Tolerant Individuals	8.28	6.18	6.18
SCI Sum	51.54		
Final SCI score	57.27		

The full results of the SCI sampling are shown in Table 3 (Sample A) and Table 4 (Sample B) for Sweetwater Creek.

Sweetwater Creek SCIA
Stream Condition Index (SCI)
Samples Collected 01/02/2018
Project #: 6063170278

Stream Condition Index Results for Sweetwater Creek SCIA

Phylum	Class	Order	Family	Taxa	Abundance	Collapsed Abundance	Taxa Presence	Ephemeroptera Taxa	Trichoptera Taxa	50% Filterer	100% Filterer	Clinger Taxa	Long-lived Taxa	Dominant Taxa	Tanytarsini	Sensitive Taxa	Very Tolerant Individuals
Platyhelminthes				Platyhelminthes spp.	1	1	1	0	0	0	0	0	0		0	0	0
Annelida	Clitellata	Tubificida	Naididae	Tubificinae spp.	1	1	1	0	0	0	0	0	0		0	0	0
Mollusca	Gastropoda		Pleuroceridae	*Pleurocera floridensis*	2	2	1	0	0	0	0	0	0		0	0	0
Mollusca	Gastropoda	Hygrophila	Ancylidae	Ancylidae spp.	7		0	0	0	0	0	0	0		0	0	0
Mollusca	Gastropoda	Hygrophila	Ancylidae	*Hebetancylus excentricus*	2	9	1	0	0	0	0	0	0		0	0	9
Mollusca	Gastropoda	Hygrophila	Physidae	*Physella cubensis*	1	1	1	0	0	0	0	0	0		0	0	1
Mollusca	Gastropoda	Littorinimorpha	Hydrobiidae	Hydrobiidae spp.	18	18	1	0	0	0	0	0	0		0	0	0
Arthropoda	Malacostraca	Amphipoda	Dogielinotidae	*Hyalella azteca* sp. complex	6	6	1	0	0	0	0	0	0		0	0	0
Arthropoda	Malacostraca	Decapoda	Palaemonidae	*Palaemonetes* spp.	1	1	1	0	0	0	0	0	1		0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetidae spp.	8		0		0	0	0	0	0		0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	*Baetis intercalaris*	8	16	1	1	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Odonata	Coenagrionidae	Coenagrionidae spp.	13		0	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Odonata	Coenagrionidae	*Enallagma* spp.	1	14	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsychidae spp.	1		0	0		0	0		0		0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	*Cheumatopsyche* spp.	8	9	1	0	1	0	9	1	0		0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae	*Hydroptila* spp.	3	3	1	0	1	0	0	1	0		0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	*Stenelmis* spp.	1	1	1	0	0	0	0	1	0		0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	*Microcylloepus* spp.	2	2	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Coleoptera	Haliplidae	*Peltodytes* spp.	1	1	1	0	0	0	0	0	0		0	0	1
Arthropoda	Insecta	Diptera	Chironomidae	*Cladotanytarsus* spp.	1	1	1	0	0	0.5	0	0	0		1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Tanytarsus buckleyi*	2	2	1	0	0	1	0	0	0		2	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum flavum*	20	20	1	0	0	0	0	0	0	20	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum illinoense* group	2	2	1	0	0	0	0	0	0		0	0	2
Arthropoda	Insecta	Diptera	Chironomidae	*Rheotanytarsus exiguus* group	20	20	1	0	0	0	20	1	0		20	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Pentaneura inconspicua*	3	3	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Corynoneura* spp.	2	2	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Cricotopus* or *Orthocladius*	5	5	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae	Ceratopogonidae spp.	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Lepidoptera		Lepidoptera spp.	1	1	1	0	0	0	0	0	0		0	0	0

Table 3 SCI full results for Sample A

Sweetwater Creek SCIB
Stream Condition Index (SCI)
Samples Collected 01/02/2018
Project #: 6063170278

Stream Condition Index Results for Sweetwater Creek SCIB

Phylum	Class	Order	Family	Taxa	Abundance	Collapsed Abundance	Taxa Presence	Ephemeroptera Taxa	Trichoptera Taxa	50% Filterer	100% Filterer	Clinger Taxa	Long-lived Taxa	Dominant Taxa	Tanytarsini	Sensitive Taxa	Very Tolerant Individuals
Annelida	Clitellata	Tubificida	Naididae	Tubificinae spp.	2	2	1	0	0	0	0	0	0		0	0	0
Annelida	Clitellata	Tubificida	Naididae	*Pristina aequiseta*	1	1	1	0	0	0	0	0	0		0	0	0
Mollusca	Gastropoda		Pleuroceridae	*Pleurocera floridensis*	3	3	1	0	0	0	0	0	0		0	0	0
Mollusca	Gastropoda	Hygrophila	Ancylidae	Ancylidae spp.	7	7	1	0	0	0	0	0	0		0	0	0
Mollusca	Gastropoda	Littorinimorpha	Hydrobiidae	Hydrobiidae spp.	11	11	1	0	0	0	0	0	0		0	0	0
Mollusca	Bivalvia	Veneroida	Corbiculidae	*Corbicula* spp.	1	1	1	0	0	0	1	0	1		0	0	0
Mollusca	Bivalvia	Veneroida	Sphaeriidae	Sphaeriidae spp.	1	1	1	0	0	0	1	0	0		0	0	0
Arthropoda	Malacostraca	Amphipoda	Dogielinotidae	*Hyalella azteca* sp. complex	18	18	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetidae spp.	6		0		0	0	0	0	0		0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	*Pseudocentroptiloides usa*	1	2	1	1	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	*Baetis intercalaris*	5	10	1	1	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Odonata	Coenagrionidae	Coenagrionidae spp.	6		0	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Odonata	Coenagrionidae	*Argia* spp.	2	8	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsychidae spp.	2		0	0		0	0		0		0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	*Cheumatopsyche* spp.	2	4	1	0	1	0	4	1	0		0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae	*Oxyethira* spp.	2	2	1	0	1	0	0	0	0		0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae	*Hydroptila* spp.	2	2	1	0	1	0	0	1	0		0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	*Stenelmis* spp.	1	1	1	0	0	0	0	1	0		0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	*Microcylloepus* spp.	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Cladotanytarsus* spp.	2	2	1	0	0	1	0	0	0		2	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Tanytarsus* spp.	1	1	1	0	0	0.5	0	0	0		1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Tanytarsus buckleyi*	4	4	1	0	0	2	0	0	0		4	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum flavum*	28	28	1	0	0	0	0	0	0	28	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum illinoense* group	2	2	1	0	0	0	0	0	0		0	0	2
Arthropoda	Insecta	Diptera	Chironomidae	*Rheotanytarsus exiguus* group	20	20	1	0	0	0	20	1	0		20	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Dicrotendipes* spp.	3	3	1	0	0	1.5	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Corynoneura* spp.	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Larsia* spp.	7	7	1	0	0	0	0	0	0		0	0	7
Arthropoda	Insecta	Diptera	Chironomidae	*Cricotopus* or *Orthocladius*	7	7	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae	Ceratopogonidae spp.	3	3	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Lepidoptera		Lepidoptera spp.	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Lepidoptera	Crambidae	*Parapoynx* spp.	4	4	1	0	0	0	0	0	0		0	0	4

Table 4 SCI full results for Sample B

Water Quality Assessment

Long-term water quality data is available for Sweetwater Creek. The data that is available was collected by the Hillsborough County Environmental Protection Commission, Hillsborough County Stormwater, Florida LAKEWATCH and the Florida Department of Environmental Protection. Values for the physical water parameters begin in 1974 and continue through present. Values for the laboratory water parameters begin in 1981 through present. The 2018 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 Sweetwater Creek Physical Water Quality (Field)

Sweetwater Creek								
Date	**Depth (m)**	**Temp (°C)**	**pH**	**DO (mg/L)**	**DO (% Sat)**	**Cond (UMHO/cm**	**Salinity (PPT)**	**Secchi Depth (m)**
1/31/18	0.35	15.13	6.21	7.11	69.6	296	0.14	0.6
Mean POR		22.50	6.94	3.37	34.7	289	0.19	

The chemical water quality analysis for Sweetwater Creek is shown in Table 6 along with mean values for the period of record for available parameters. Period of record mean and the sample for this assessment for Total Phosphorous values were below the nutrient region threshold developed by FDEP of 0.49 mg/L with a mean value of 0.095 mg/L (1981 - Present). Total Phosphorous values for the sample from this assessment were 0.060 mg/L. The geomean for the past 3 years of data was 0.043 mg/L (2015 – 0.043 mg/L, 2016 – 0.045 mg/L and 2017 – 0.043 mg/L). No samples during the three year period exceeded the 0.49 mg/L.

Total Nitrogen values were below the nutrient region threshold developed by FDEP of 1.65 mg/L with a mean value of 0.839 mg/L (1981 - Present).). The Total Nitrogen value from the assessment was well below the threshold with a concentration of 0.831 mg/L. The geomean for the past 3 years of data was 0.740 mg/L (2015 – 0.734 mg/L, 2016 – 819 mg/L and 2017 – 0.662 mg/L). No samples during the three year period exceeded the 1.65 mg/L threshold.

Chlorophyll-a corrected values fall within the site specific evaluation range of 3.2 µg/l to 20 µg/l for the most recent sample and for the period of record (1981 - Present). with a geomean value of 6.03 µg/l. For sites with Chlorophyll-a values in this range, the assessment is inconclusive of conditions reflecting an imbalance in flora. Low biomass of the bacterial parameters were observed in both the sample for this assessment and the long term dataset.

Table 6 Sweetwater Creek Water Quality (Laboratory)

Parameter	Sweetwater Creek	POR Mean	Units
Alkalinity	52.0	52.9	mg/LCaCO3
Nitrates/Nitrites	0.077	0.050	mg/L
E. Coli	173	N/A	#/100 ml
Enterococci	620	676	#/100 ml
Chlorophyll a	9.1	6.09	ug/L
Chlorophyll b	5.1	1.18	ug/L
Chlorophyll c	0.7	1.06	ug/L
Chlorophyll t	10.1	N/A	ug/L
Chlorophylla Corr	7.6	6.03	ug/L
Chlorophyll-pheo	3.2	N/A	ug/L
Ammonia	0.047	0.054	mg/L
Kjeldahl Nitrogen	0.754	0.732	mg/L
Total Nitrogen	0.831	0.839	mg/L
Total Phosphorus	0.060	0.095	mg/L
Color(345)F.45	57.3	38.03	Pt/Co

Conclusion

Sweetwater Creek is located with a predominantly residential, commercial and industrial area surrounding it in an urban landscape. The stream itself showed previous alterations to the stream flow, buffer and banks in the region assessed. At the time of the habitat assessment, the water levels were low, corresponding to the end of the dry season, however sufficient habitat for macroinvertebrates was observed. Due to these factors, the Habit Assessment resulted in a Marginal score of 76. Disruption to the vegetation community was observed in the results of the Linear Vegetation Survey with Sweetwater Creek not meeting either metric for Average Coefficient of Conservatism or the Percent FLEPPC. Sweetwater Creek did not meet standards for the rapid periphyton survey with 36.4% of samples being ranked between 4 and 6. The historical water quality record for Sweetwater Creek showed acceptable concentrations of Total Phosphorous and Total Nitrogen. 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		Sweetwater Creek	Mean POR	Threshold
Total Phosphorous (mg/l)		0.06	0.095	< 0.49
Total Nitrogen (mg/l)		0.832	0.839	< 1.65
RPS (% Rank 4-6)		36%		< 25%
LVS	**Avg C of C**	0.62		≥ 2.5
	FLEPPC %	92.00%		< 25%
Chlorophyll-a (µg/l)		7.6	6.03	< 20 µg/l
Habitat Assessment		76		> 34
SCI		55		> 34