



## Sloman Branch

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



# Methods

## STUDY AREA ANALYSIS

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 ( $\leq 2$ ) 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/ulist.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

Sloman Branch is located in south-eastern Hillsborough County. Its headwaters are located in an unnamed swamp between Edison Road and Adams Farm Drive and the outfall of Sloman Branch is in Alafia River North Prong. The assessment of Sloman Branch was conducted on February 11, 2020. At the time of the assessment, the water levels were low, normal for the end of the dry season. The Sloman Branch WBID covers 2.07 square miles and is dominated by residential (44.8%), agricultural (23.8%) and natural (19.4%) land uses. The resulting calculated landscape development intensity index score was 4.61.

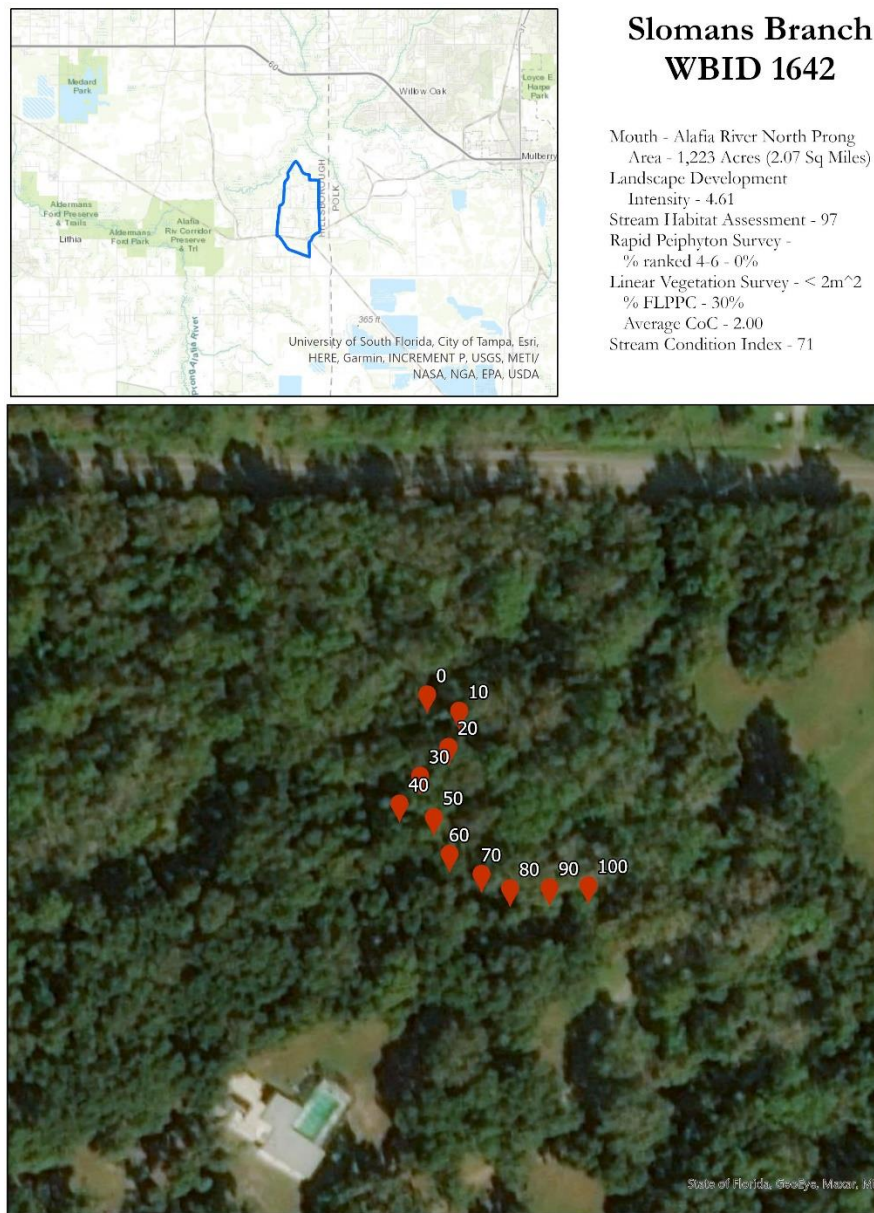


Figure 1 2020 Sloman Branch Study Area Map



*Figure 2 Overview photograph of the Sloman Branch Sample Site*



## Habitat and Vegetation Assessment

The region of Sloman Branch where the assessment was conducted is in a natural area with residential development nearby. The region was heavily shaded with a mean canopy cover measurement of 74.3%. Sloman Branch averaged 0.1 meters in depth, approximately 1.7 meters wide with a flow of 0.25 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 Water Velocity. Habitat Smothering (lacking stable pools and many of the productive habitats were affected by sand smothering) scored in the marginal category. Substrate Diversity (Presence of one major productive habitats (snags)) and Substrate Availability (4.6% of stream are productive habitats) were scored as poor. Minor habitats included roots, leaf mats/pack, sand and silt deposits. The total score for the primary habitat components was a 27 out of 80.

The secondary habitat components of the FDEP Habitat Assessment focus on the surrounding features of the stream. The secondary habitat components scored in the optimal category for Artificial Channelization, Riparian Buffer Zone Width, Bank Stability and Riparian Zone Vegetation Quality. The riparian buffer zone surrounding the stream was greater than 18 meters and consisted of a mixture of native and invasive species indicative of mild disturbance. The vegetation in the stream itself was dominated by native species with 1 non-native invasive species out of 5 total species. The secondary habitat components received a score of 70 out of 80. The resulting FDEP Habitat Assessment score was a 97.

Periphyton was not encountered during the 99 samples taken during the Rapid Periphyton Survey. The tree canopy in the assessment area averaged 74.3% limiting available sunlight for macrophytes and algae.

The FDEP Linear Vegetation Survey encountered less than 2 square meters of 5 herbaceous species in Sloman Branch. *Alternanthera philoxeroides*, is a non-native invasive species.

Table 1 Linear Vegetation Survey Results – Sloman Branch

[illegible]





*Figure 3 Sloman Branch was characterized by a narrow stream width occasionally covered in woody debris.*

## 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 Sloman Branch was 71 out of a possible 100 points, corresponding with a “Exceptional” designation, with the expected community of a healthy stream.

High scores were achieved for the % Filter Feeders, Total Clingers, % Dominance and % Very Tolerant Individuals in both subsamples. In addition Total Taxa metric scored high in Sample B. Sample A had low scores for the Total Trichoptera metric. Both subsamples contained 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 Sloman Branch.

*Table 2 SCI metric summaries for Sloman Branch for Sample A (top) and Sample B (bottom)*

SCI Metric	Raw Totals	SCI scores	Adjusted SCI scores
Total Taxa	28.00	5.42	5.42
Total Ephemeroptera	2.00	4.00	4.00
Total Trichoptera	1.00	1.43	1.43
% Filter Feeders	37.24	8.50	8.50
Total Clingers	6.00	8.57	8.57
Total Long-lived Taxa	2.00	6.67	6.67
% Dominance	26.90	7.42	7.42
% Tanytarsini	4.14	4.81	4.81
Total Sensitive Taxa	4.00	5.71	5.71
% Very Tolerant Individuals	0.69	10.44	10.00

SCI Sum	62.53
Final SCI score	69.48

SCI Metric	Raw Totals	SCI scores	Adjusted SCI scores
Total Taxa	33.00	7.50	7.50
Total Ephemeroptera	1.00	2.00	2.00
Total Trichoptera	4.00	5.71	5.71
% Filter Feeders	40.14	9.17	9.17
Total Clingers	6.00	8.57	8.57
Total Long-lived Taxa	2.00	6.67	6.67
% Dominance	22.54	8.29	8.29
% Tanytarsini	4.23	4.86	4.86
Total Sensitive Taxa	4.00	5.71	5.71
% Very Tolerant Individuals	5.63	7.02	7.02

SCI Sum	65.51
Final SCI score	72.79

Table 3 SCI full results for Sample A

Stream Condition Index Results for Siomans Branch 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		Citellata	Oligochaeta	Tubificida	Naidiidae	Tubificinae spp.	1	1	1	0	0	0	0	0	0	0	0	0	0	0 Damaged and/or immature
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Isopoda	Asellidae	<i>Lirceus</i> spp.	5	5	1	0	0	0	0	0	0	0	0	0	0	0 Reference collection - 1 broken in 1/2
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda	Dogielinotidae	<i>Hyalella azteca</i> sp. complex	7	7	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Decapoda	Palaemonidae	<i>Palaemon pugio</i>	3	3	1	0	0	0	0	0	0	1	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	<i>Labiaobaetis propinquus</i>	2	2	1	1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Heptageniidae	Heptageniidae spp.	3	3	1	1	0	0	0	0	1	0	0	1	0	0 Damaged and/or immature
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Gomphidae	Gomphidae spp.	1	1	0	0	0	0	0	0	0	0	0	0	0	0 Immature
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Gomphidae	<i>Phanogomphus minutus</i>	2	3	1	0	0	0	0	0	0	1	0	0	0	0 Reference collection
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Calopterygidae	<i>Calopteryx</i> spp.	1	1	0	0	0	0	0	0	0	0	0	0	0	0 Damaged
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Calopterygidae	<i>Calopteryx dimidiata</i>	1	2	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	2	2	0	0	0	0	0	0	0	0	0	0	0	0 Immature
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> spp.	25	27	1	0	1	0	0	27	1	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Stenelmis</i> spp.	1	1	1	0	0	0	0	0	1	0	0	0	0	0 1larva
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	<i>Microcylopus</i> spp.	39	39	1	0	0	0	0	0	0	0	0	0	0	0 30larvae, 9adults
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Scirtidae	<i>Scirtes</i> spp.	1	1	1	0	0	0	0	0	0	0	0	0	0	0 1larva
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Chironomidae spp.	1	1	0	0	0	0	0	0	0	0	0	0	0	0 1pupa
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Tanytarsinae spp.	3	1	1	0	0	0	0	0	0	0	0	0	0	0 damaged
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tanytarsus</i> spp.	3	3	0	0	0	3	0	0	0	0	0	3	0	0 not buckleyi
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedium flavum</i>	8	2	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheotanytarsus eugenis</i> group	2	2	1	0	0	0	0	2	1	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Tribelos fuscicornis</i>	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Paralauterborniella nigrohalteralis</i>	1	1	1	0	0	0	0	0	1	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Pentaneura inconspicua</i>	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Paracladopelma</i> spp.	2	2	1	0	0	0	0	0	0	0	0	0	0	0 Slide 2, CS2, P5
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Polypedium beckae</i>	1	1	1	0	0	0	0	0	0	0	0	0	0	0 1
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Paratanytarsus</i> spp.	1	1	1	0	0	1	0	0	0	0	1	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Parametricnismus</i> spp.	1	1	1	0	0	0	0	0	0	0	0	0	0	0 Slide 2, CS1, P2
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Rheocricotopus robacki</i>	3	3	1	0	0	0	0	0	0	0	0	1	0	0 Slide 2, CS1, P1
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	<i>Cricotopus</i> or <i>Orthocladus</i>	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Ceratopogonidae	<i>Atrichopogon</i> spp.	2	2	1	0	0	0	0	0	0	0	0	0	0	0 2larvae
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	<i>Simulium</i> spp.	21	21	1	0	0	0	0	21	1	0	0	1	0	0 21larvae
Arthropoda	Hexapoda	Insecta	Pterygota	Heteroptera	Velidae	<i>Rhagovelia choreutes</i>	1	1	1	0	0	0	0	0	0	0	0	0	0	0 Female

Table 4 SCI full results for Sample B

Stream Condition Index Results for Stomans Branch 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
Mollusca		Gastropoda	Heterobranchia	Hydrophila	Ancylidae	Ancylidae spp.	2	2	1	0	0	0	0	0	0	0	0	0	0	0 Damaged, no shell
Mollusca		Gastropoda	Heterobranchia	Hydrophila	Physidae	Physidae spp.	1		0	0	0	0	0	0	0	0	0	0	0	0 Damaged, no shell
Mollusca		Gastropoda	Heterobranchia	Hydrophila	Physidae	Physa acuta	1	2	1	0	0	0	0	0	0	0	0	0	0	2
Mollusca		Gastropoda	Caenogastropoda	Littorinimorpha	Hydrobiidae	Amnicola dalli	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Mollusca		Gastropoda	Caenogastropoda		Thiaridae	Melanoidest uberculata	2	2	1	0	0	0	0	0	0	0	0	0	0	2
Mollusca		Bivalvia	Heterodontata	Veneroida	Corbiculidae	Corbicula spp.	8	8	1	0	0	0	8	0	1	0	0	0	0	0
Mollusca		Bivalvia	Heterodontata	Veneroida	Sphaeriidae	Sphaeriidae spp.	1	1	1	0	0	0	1	0	0	0	0	0	0	Damaged and
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Isopoda	Asellidae	Lirceus	7	7	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda	Dogielinotidae	Hyalella azteca sp. complex	3	3	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Decapoda	Palaemonidae	Palaemon spp.	1		0	0	0	0	0	0	0	0	0	0	0	Damaged
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Decapoda	Palaemonidae	Palaemon pugio	3	4	1	0	0	0	0	0	0	1	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Ephemeroptera	Baetidae	Labioabaetis propinquus	2	2	1	1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Gomphidae	Gomphidae spp.	1	1	1	0	0	0	0	0	0	0	0	0	0	0 Immature
Arthropoda	Hexapoda	Insecta	Pterygota	Odonata	Calopterygidae	Calopterygidae spp.	1	1	1	0	0	0	0	0	0	0	0	0	0	0 Immature
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Leptoceridae	Nectopsyche candida/exigua	2	2	1	0	1	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Hydropsychidae spp.	5		0	0	0	0	0	0	0	0	0	0	0	0 Immature
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydropsychidae	Cheumatopsyche spp.	27	32	1	0	1	0	32	1	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Hydroptilidae	Hydroptila spp.	1	1	1	0	1	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Trichoptera	Philopotamidae	Chimarra spp.	1	1	1	0	1	0	1	1	0	0	0	0	1	0
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Dubiraphia spp.	1	1	1	0	0	0	0	0	0	0	0	0	0	0 11arva
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Stenelmis spp.	1	1	1	0	0	0	0	0	1	0	0	0	0	0 11arva
Arthropoda	Hexapoda	Insecta	Pterygota	Coleoptera	Elmidae	Microcylloepus spp.	28	28	1	0	0	0	0	0	0	0	0	0	0	0 25larvae, 3adults
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Tanytarsus spp.	1	1	1	0	0	1	0	0	0	0	0	1	0	0 not buckleyi
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Tanytarsus buckleyi	2	2	1	0	0	2	0	0	0	0	2	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Polypedium scalanum group	2	2	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Polypedium flavum	8	8	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Polypedium illinoense group	2	2	1	0	0	0	0	0	0	0	0	0	0	2
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Rheotanytarsus exiguus group	2	2	1	0	0	0	0	0	0	0	2	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Polypedium beckae	2	2	1	0	0	0	0	0	0	0	0	0	0	2
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Thienemanniella xena	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Paratanytarsus dissimilis	1	1	1	0	0	0	0	0	0	0	1	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Parametocnemus spp.	1	1	1	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Rheocricotopus spp.	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Chironomidae	Cricotopus or Orthocladus	2	2	1	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Ceratopogonidae	Atrichopogon spp.	7	7	1	0	0	0	0	0	0	0	0	0	0	0 7larvae
Arthropoda	Hexapoda	Insecta	Pterygota	Diptera	Simuliidae	Simulium spp.	10	10	1	0	0	0	0	10	1	0	0	0	1	0 10 larvae



## Water Quality Assessment

Long-term water quality data is available for Sloman Branch. The data that is available was collected by the Florida Department of Environmental Protection 2017- 2019. 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 Sloman Branch Physical Water Quality (Field)*

Sloman Branch								
Date	Depth (m)	Temp (°C)	pH	DO (mg/L)	DO (% Sat)	Cond (UMHO/cm)	Salinity (PPT)	Secchi Depth (m)
2/13/20	0.1	21.4	7.73	7.69	86.0	190	0.09	0.75
Mean POR		22.3	7.05	7.06	81.1	209.4	0.1	0.25

The chemical water quality analysis for Sloman Branch 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 above the nutrient region threshold developed by FDEP of 0.49 mg/L with a mean value of 0.655 mg/L (2017-2020). The three year geometric mean value for Total Phosphorous was 0.655 mg/L. Total Phosphorous values for the sample from this assessment were 0.510 mg/L. Total Nitrogen values were above the nutrient region threshold developed by FDEP of 1.65 mg/L with a mean value of 2.522 mg/L for the period of record (2017-2020). The three year geometric mean value for Total Nitrogen was 2.522 mg/L. The Total Nitrogen value from the assessment was above the threshold with a concentration of 2.210 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 (2.95 µg/l 2017-2020), and below the site specific evaluation range for the most recent 3-years of samples (2.95 µg/l) . For sites with Chlorophyll-a values in this range, the assessment is conclusive of conditions not reflecting a imbalance in flora.

Elevated biomass of the bacterial parameters was observed in the long term dataset with E. Coli having a geomean of 635 colonies/100 ml, 1,749/100 ml for Enterococci.

*Table 6 Sloman Branch Water Quality (Laboratory)*

<b>Parameter</b>	<b>Sloman Branch</b>	<b>POR Mean</b>	<b>Units</b>
Alkalinity	31.8		mg/LCaCO <sub>3</sub>
Color(345)F.45	50		Pt/Co
E. Coli	687	635.4	#/100 ml
Enterococci	244	1,749	#/100 ml
Chlorophyll a	1.8	2.6	ug/L
Chlorophyll b	< 1	1.3	ug/L
Chlorophyll c	1.1	0.7	ug/L
Chlorophyll t	2.9		ug/L
Chlorophylla Corr	2.1	2.9	ug/L
Chlorophyll-pheo	< 1		ug/L
Ammonia	0.033	0.023	mg/L
Kjeldahl Nitrogen	0.570	0.839	mg/L
Total Nitrogen	2.210	2.522	mg/L
Nitrates/Nitrites	1.640	1.459	mg/L
Total Phosphorus	0.510	0.655	mg/L

## Conclusion

Sloman Branch at Nichols Rd is located in a predominantly natural area within a rural residential area. 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 97. Less than two square meters of herbaceous aquatic vegetation was observed the Linear Vegetation Survey. Sloman Branch did meet standards for the rapid periphyton survey with 0% of samples being ranked between 4 and 6. The historical water quality record for Sloman Branch showed elevated concentrations of Total Phosphorous and Total Nitrogen in the long term dataset. The results of the SCI sampling indicate that the stream is “exceptional” 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		Sloman Branch	3-Year Mean	Threshold
Total Phosphorous (mg/l)		0.510	0.655	< 0.49
Total Nitrogen (mg/l)		2.210	2.522	< 1.65
RPS (% Rank 4-6)		0%		< 25%
LVS	Avg C of C	< 2m <sup>2</sup>		≥ 2.5
	FLEPPC %	< 2m <sup>2</sup>		< 25%
Chlorophyll a (µg/l)		2.1	2.95	< 20 µg/l
Habitat Assessment		97		> 34
SCI		71		> 34