Lake Hanna Outlet

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

Lake Hanna Outlet is located in northern Hillsborough County. Its headwaters are located on the south end of Lake Hanna and the outfall of Lake Hanna Outlet is in Cypress Creek. The assessment of Lake Hanna Outlet was conducted on December 21, 2017. At the time of the assessment, the water levels were sufficient for macroinvertebrate habitat. The Lake Hanna Outlet WBID is dominated by residential (46.2%) and natural lands (26%) land use with the remainder split predominately between agricultural and open land (urban) land uses. The resulting Landscape Development Intensity Index was 4.7.

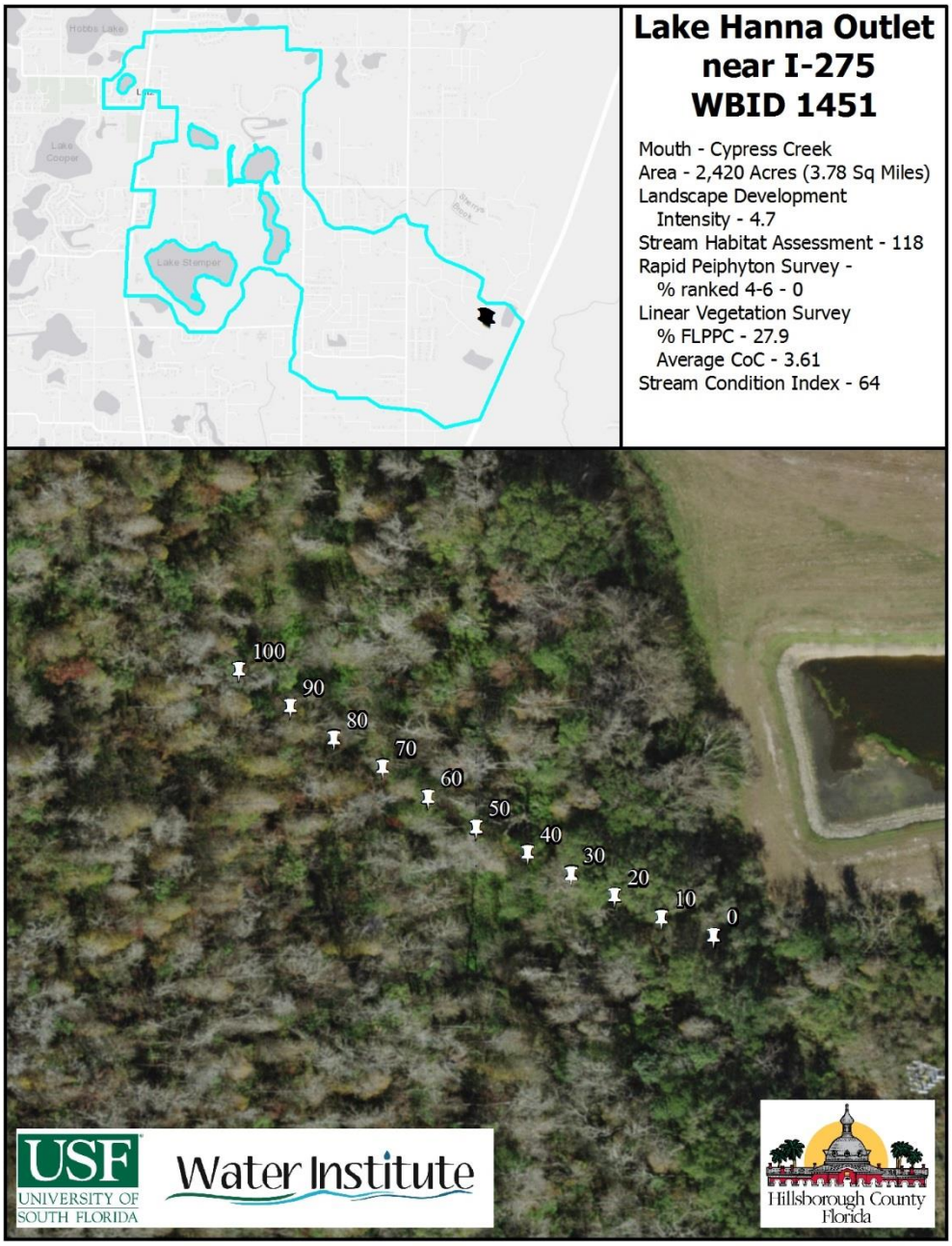

Figure 1 2017 Lake Hanna Outlet Study Area Map

Habitat and Vegetation Assessment

Figure 2 Overview photograph of Lake Hanna Outlet near I-275 Sample Site

At the time of the assessment, Lake Hanna Outfall water levels were receding from the prior summer seasonal rains. Using the FDEP Stream Habitat Assessment, Lake Hanna Outlet scored a 118 at the 100 meter region selected for assessment. The Stream Habitat assessment is split into Primary and Secondary Habitat Components. The primary habitat components scored in the optimal category for Substrate Diversity, containing greater than 2 square meters of each snag, root, leaf and aquatic vegetation. Some of these habitats were affected by a smothering by fine silt and sand. Suboptimal scores were recorded for Water Velocity, averaging 0.17 m/sec. Marginal scores were achieved for Substrate Availability with the region containing only 6.5% major productive habitat. Habitat Smothering received Poor scores due to the amount of siltation and sedimentation found on the productive habitats and general instability in the available pools. The total score for the Primary Habitat Components was a 40 out of a possible 80 points.

The Secondary Habitat Components scored in the Optimal category for Artificial Channelization, Bank Stability, Riparian Buffer Width and Riparian Zone Vegetation Quality. The region did not show signs of alteration, passed all three requirements for bank stability, had

greater than 18 meters of vegetative buffer on each bank and the riparian vegetative buffer contained the expected communities of plants. The majority of the non-native, invasive species have been transported from Lake Hanna.

Periphyton was not observed during the Rapid Periphyton Survey sampling. In the region assessed, Lake Hanna Outlet averaged 75.5% canopy coverage. The secchi depth value collected during the assessment was 0.4 meters visible on bottom.

The Linear Vegetation Survey documented 61 total occurrences of aquatic vegetation in the 100 meter region. 17 of these occurrences were non-native species categorized as FLEPPC type I and II. *Eichhornia crassipes, Hymenachne amplexicaulis* and *Alternanthera philoxeroides* were found in the region with *Eichhornia crassipes being dominant or co-dominant in* 3 sections and *Hymenachne amplexicaulis* being dominant or codominant 1 section. The mean coefficient of conservatism for the LVS was 3.61 with the percentage of FLEPPC plants being 27.9%.

Plant Species	Sample Site										Obsevations/ Species	CoC
	0-10m	10-20m	20-30m	30-40m	40-50m	50-60m	60-70m	70-80m	80-90m	90-100m		
Eichhornia crassipes	1	d	c	c	1	1	1	1	1	1	10	0
Blechnum serrulatum		1	1		1	1	1	1	1		7	5.5
Cicuta maculata	1	1	1	1	1						5	4.54
Hydrocotyle umbellata	1			1	1		1		1		5	1.92
Saururus cernuus		1	c	1	1			1			5	6.5
Hymenachne amplexicaulis	1	1		c	1						4	0
Osmunda cinnamomea						1	1	1	1		4	6.44
Symphyotrichum elliottii		1	1	1						1	4	6.76
Alternanthera philoxeroides	1	1		1							3	0
Mikania scandens						1	1		1		3	1.95
Polygonum hydropiperoides				1	1	1					3	2.5
Orontium aquaticum	1	1									2	8.39
Pontederia cordata	1			1							2	5.38
Itea virginica	1										1	7.09
Micranthemum umbrosum				1							1	5.66
Peltandra virginica								1			1	7.5
Sagittaria lancifolia		1									1	3

Total Occurrences	61
Mean CoC	3.61
% FLEPPC	27.90

Table 1 Linear Vegetation Survey Results – Lake Hanna Outlet near I-275

Figure 3 USF Water Institute intern Stephanie Lawlor assisting with the assessment of Lake Hanna Outlet.

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 Lake Hanna Outlet was 64 out of a possible 100 points, corresponding with an "Exceptional" designation, with the expected community of a healthy stream.

Sensitive species were found in both subsamples with one of the sensitive species (*Macromia spp.*) also being a long lived taxa. Both subsamples were dominated by the clinger and 100% filter feeder *Rheotanytarsus exiguous* group.

Table 2 SCI metric summaries for Lake Hanna Outlet 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	3.00	6.00	6.00
Total Trichoptera	3.00	4.29	4.29
% Filter Feeders	45.89	10.51	10.00
Total Clingers	5.00	7.14	7.14
Total Long-lived Taxa	1.00	3.33	3.33
% Dominance	40.51	4.70	4.70
% Tanytarsini	49.37	11.53	10.00
Total Sensitive Taxa	2.00	2.86	2.86
% Very Tolerant Individuals	3.80	7.83	7.83

SCI Sum	60.31
Final SCI score	67.02

SCI Metric	Raw Totals	SCI scores	Adjusted SCI scores
Total Taxa	29.00	5.83	5.83
Total Ephemeroptera	3.00	6.00	6.00
Total Trichoptera	2.00	2.86	2.86
% Filter Feeders	35.27	8.04	8.04
Total Clingers	4.00	5.71	5.71
Total Long-lived Taxa	0.00	0.00	0.00
% Dominance	27.40	7.32	7.32
% Tanytarsini	36.30	10.64	10.00
Total Sensitive Taxa	2.00	2.86	2.86
% Very Tolerant Individuals	6.16	6.83	6.83

SCI Sum	55.45
Final SCI score	61.61

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

Lake Hanna Outlet SCIA
Stream Condition Index (SCI)
Samples Collected 12/21/2017
Project #: 6063170278

Stream Condition Index Results for Lake Hanna Outlet 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
Annelida	Clitellata	Tubificida	Naididae	Tubificinae spp.	1	1	1	0	0	0	0	0	0		0	0	0
Mollusca	Gastropoda	Hygrophila	Ancylidae	Ancylidae spp.	5	5	1	0	0	0	0	0	0		0	0	0
Mollusca	Gastropoda	Hygrophila	Planorbidae	*Planorbella scalaris*	3	3	1	0	0	0	0	0	0		0	0	3
Arthropoda	Malacostraca	Amphipoda	Dogielinotidae	*Hyalella azteca* sp. complex	4	4	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Ephemeroptera	Caenidae	*Caenis* spp.	7		0		0	0	0	0	0		0	0	0
Arthropoda	Insecta	Ephemeroptera	Caenidae	*Caenis diminuta*	12	18	1	1	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Ephemeroptera	Caenidae	*Caenis amica*	1	2	1	1	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	*Stenacron interpunctatum*	1	1	1	1	0	0	0	1	0		0	1	0
Arthropoda	Insecta	Odonata	Macromiidae	*Macromia* spp.	1	1	1	0	0	0	0	0	1		0	1	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	*Oecetis* sp. E	2	2	1	0	1	0	0	0	0		0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	*Cheumatopsyche* spp.	2	2	1	0	1	0	2	1	0		0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae	*Hydroptila* spp.	1	1	1	0	1	0	0	1	0		0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	*Dubiraphia* spp.	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	*Stenelmis* spp.	5	5	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	Diptera		Diptera spp.	1		0	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Cladotanytarsus* spp.	1	1	1	0	0	0.5	0	0	0		1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Tanytarsus* spp.	12	12	1	0	0	6	0	0	0		12	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum halterale* group	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum scalaenum* group	2	2	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum flavum*	22	22	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum illinoense* group	3	3	1	0	0	0	0	0	0		0	0	3
Arthropoda	Insecta	Diptera	Chironomidae	*Rheotanytarsus exiguus* group	63	64	1	0	0	0	64	1	0	64	64	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Pentaneura inconspicua*	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Stempellina* spp.	1	1	1	0	0	0	0	0	0		1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Stenochironomus* spp.	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Thienemanniella* spp.	2	2	1	0	0	0	0	0	0		0	0	0

Table 3 SCI full results for Sample A

Lake Hanna Outlet SCIB
Stream Condition Index (SCI)
Samples Collected 12/21/2017
Project #: 6063170278

Stream Condition Index Results for Lake Hanna Outlet 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.	1	1	1	0	0	0	0	0	0		0	0	0
Mollusca	Gastropoda	Hygrophila	Physidae	*Physella cubensis*	1	1	1	0	0	0	0	0	0		0	0	1
Mollusca	Gastropoda	Hygrophila	Planorbidae	Planorbidae spp.	1		0	0	0	0	0	0	0		0	0	0
Mollusca	Gastropoda	Hygrophila	Planorbidae	*Planorbella scalaris*	1	2	1	0	0	0	0	0	0		0	0	2
Arthropoda	Malacostraca	Isopoda	Asellidae	*Caecidotea* spp.	1	1	1	0	0	0	0	0	0		0	1	0
Arthropoda	Malacostraca	Amphipoda	Dogielinotidae	*Hyalella azteca* sp. complex	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Ephemeroptera	Caenidae	*Caenis* spp.	6		0		0	0	0	0	0		0	0	0
Arthropoda	Insecta	Ephemeroptera	Caenidae	*Caenis diminuta*	18	24	1	1	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Ephemeroptera	Caenidae	*Caenis amica*	1	1	1	1	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	*Labiobaetis frondalis*	1	1	1	1	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Odonata	Coenagrionidae	Coenagrionidae spp.	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	*Oecetis* sp. E	1	1	1	0	1	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.	3	4	1	0	1	0	4	1	0		0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	*Stenelmis* spp.	5	5	1	0	0	0	0	1	0		0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	*Microcylloepus* spp.	4	4	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Chironomidae spp.	2		0	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Cladotanytarsus* spp.	1	1	1	0	0	0.5	0	0	0		1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Tanytarsus* spp.	12	12	1	0	0	6	0	0	0		12	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Cryptochironomus* spp.	3	3	1	0	0	0	0	0	0		0	0	3
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum halterale* group	2	2	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum scalaenum* group	2	2	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum flavum*	26	27	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum illinoense* group	1	1	1	0	0	0	0	0	0		0	0	1
Arthropoda	Insecta	Diptera	Chironomidae	*Rheotanytarsus exiguus* group	39	40	1	0	0	0	40	1	0	40	40	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Ablabesmyia mallochi*	3	3	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Pentaneura inconspicua*	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Stenochironomus* spp.	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Larsia* spp.	2	2	1	0	0	0	0	0	0		0	0	2
Arthropoda	Insecta	Diptera	Chironomidae	*Thienemanniella* spp.	1	1	1	0	0	0	0	0	0		0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	*Apedilum* spp.	1	1	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	Diptera	Simuliidae	*Simulium* spp.	1	1	1	0	0	0	1	1	0		0	1	0

Table 4 SCI full results for Sample B

Water Quality Assessment

Long-term water quality data is not available for Lake Hanna Outlet. The data that exists is limited to 8 samples during 2012, aside from the sample taken along with this assessment. The 2017 USF Water Institute Assessment data 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 Lake Hanna Outfall Physical Water Quality (Field)

Lake Hanna Outlet								
Date	**Depth (m)**	**Temp (°C)**	**pH**	**DO (mg/L)**	**DO (% Sat)**	**Cond (UMHO/cm**	**Salinity (PPT)**	**Secchi Depth (m)**
5/11/17	0.27	14.61	5.7	8.4	81.4	309	0.14	0.4 VOB
Mean POR		22.74	7.16	4.62	14.6	359	0.17	0.198

The chemical water quality analysis for Lake Hanna Outlet 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 sample value of 0.103 mg/L and a mean value of 0.115 mg/L (2012). Total Nitrogen values were below the nutrient region threshold developed by FDEP of 1.65 mg/L with a mean value of 1.218 mg/L (2012). The Total Nitrogen value from the assessment was also below the threshold with a concentration of 1.083 mg/L. 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, but below this threshold for the period of record 5.29 µg/l (2012). The sample from the assessment measured 13.8 µg/l. For sites with Chlorophyll-a values in this range, the assessment is inconclusive of conditions reflecting an imbalance in flora. Slightly elevated biomass of the bacterial parameters was observed in both the sample for this assessment and the long term dataset.

Table 6 Lake Hanna Outlet Water Quality (Laboratory)

Parameter	Lake Hanna Outlet	POR Mean	Units
Alkalinity	94.0	N/A	mg/LCaCO3
Nitrates/Nitrites	0.279	0.131	mg/L
E Coli	580	N/A	#/100 ml
Enterococci	980	N/A	#/100 ml
Chlorophyll a	15.8	6.787	ug/L
Chlorophyll b	5.1	N/A	ug/L
Chlorophyll c	0.9	N/A	ug/L
Chlorophyll t	17.3	N/A	ug/L
Chlorophylla Corr	13.8	5.288	ug/L
Chlorophyll-pheo	3.2	N/A	ug/L
Ammonia	0.062	0.07	mg/L
Kjeldahl Nitrogen	0.804	1.087	mg/L
Total Nitrogen	1.083	1.218	mg/L
Total Phosphorus	0.103	0.115	mg/L
Color(345)F.45	20.8	83.17	Pt/Co

Conclusion

Lake Hanna Outlet near I-275 is located with some buffer of natural, undeveloped land surrounding it in an expanding urban landscape. The stream itself showed moderate alterations to the banks and substrate availability with some habitats smothered with silt and sand in the region assessed. At the time of the habitat assessment, the water levels were normal with sufficient habitat for macroinvertebrates observed. Due to these factors, the Habit Assessment resulted in a Suboptimal score of 118. Disruption to the vegetation community was observed in the results of the Linear Vegetation Survey with Lake Hanna Outfall not meeting the metric for Percent FLEPPC. The Linear Vegetation Survey did receive passing values for the average coefficient of conservatism metric with a mean value of 3.61. Lake Hanna Outlet also met standards for the rapid periphyton survey with 0% of samples being ranked between 4 and 6. The historical water quality record for Lake Hanna Outlet showed acceptable concentrations of Total Phosphorous and Total Nitrogen, a trend that was repeated with the samples taken during this assessment. The results of the SCI sampling indicate that the stream is not impaired 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		Near I-275	Mean POR	Threshold
Total Phosphorous (mg/l)		0.103	0.115	< 0.49
Total Nitrogen (mg/l)		1.083	1.218	< 1.65
RPS (% Rank 4-6)		0		< 25%
LVS	Avg C of C	3.61		≥ 2.5
	FLEPPC %	27.90%		< 25%
Chlorophyll (µg/l)		13.8	5.288	< 20 µg/l
Habitat Assessment		118		> 34
SCI		64		> 34