

# Sugarhouse Creek Stream Assessment

## Study Area

Sugarhouse Creek is located in Manatee County converges from two creek branches with different landscapes before converging and flowing into the estuary. The western branch of Sugarhouse Creek has steep banks and is highly ditched and runs through agricultural lands and a high density residential area. The southern branch of Sugarhouse Creek has a natural upland forest buffer which has banks that naturally sloped and receives water from a upstream medium density residential area. The downstream portion of Sugarhouse Creek is impacted on either side by a high density mobile home park and a golf course to the north where it flows into the Braden River. The Braden River is a natural area with marsh and mangrove habitats and a medium to low saline water. The Braden River eventually flows into Lower Tampa Bay through the Manatee River. This creek is impacted by both agriculture and a high density urban environment with a receiving water body that has natural habitat and a low salinity. The watershed and buffer area immediately surrounding Sugarhouse Creek are very similar and results in both having a LDI value of 6.0.



Figure 36. Overview of the Sugarhouse Creek Study Area

## Vegetation Survey

The Sugarhouse Creek vegetation assessment encompassed 9 vegetation regions from the mouth in the Braden River to the footbridge on the south branch and the agricultural field on the west branch as shown in Figure 37. In these regions, 46 species of vegetation were identified. Regions 1 through 5 and Region 9 were dominated by mangroves (*Rhizophora mangle*, *Laguncularia racemosa* and *Avicennia germinans*) with few other salt tolerant species present. The most upstream mangrove was *Laguncularia racemosa* in Region 6. The first occurrence of Leather Fern (*Acrostichum danaeifolium*) was in Region 3, becoming dominant in regions 5 through 7. Needle Rush (*Juncus roemerianus*) was first observed in Region 2 with the last occurrence in regions 3 and 9. Above Region 6 the vegetation communities are populated by many species indicative of dominating freshwater influence.





Figure 37. Overview of Sugarhouse Creek Vegetation Assessment Regions



Figure 38 shows the vegetation transition zone of Sugarhouse Creek indicating the most upstream Red Mangrove as well as the most downstream Leather Fern and *Juncus*. Based on the vegetation assessment data for Sugarhouse Creek, regions 1 through 4 and Region 9 would comprise the highest salinity and tidal influence zone, regions 5 and 6 would comprise the “mixing” zone and regions 7 and 8 would comprise the freshwater dominant zone. The vegetation assessment species lists are shown in Table 9.

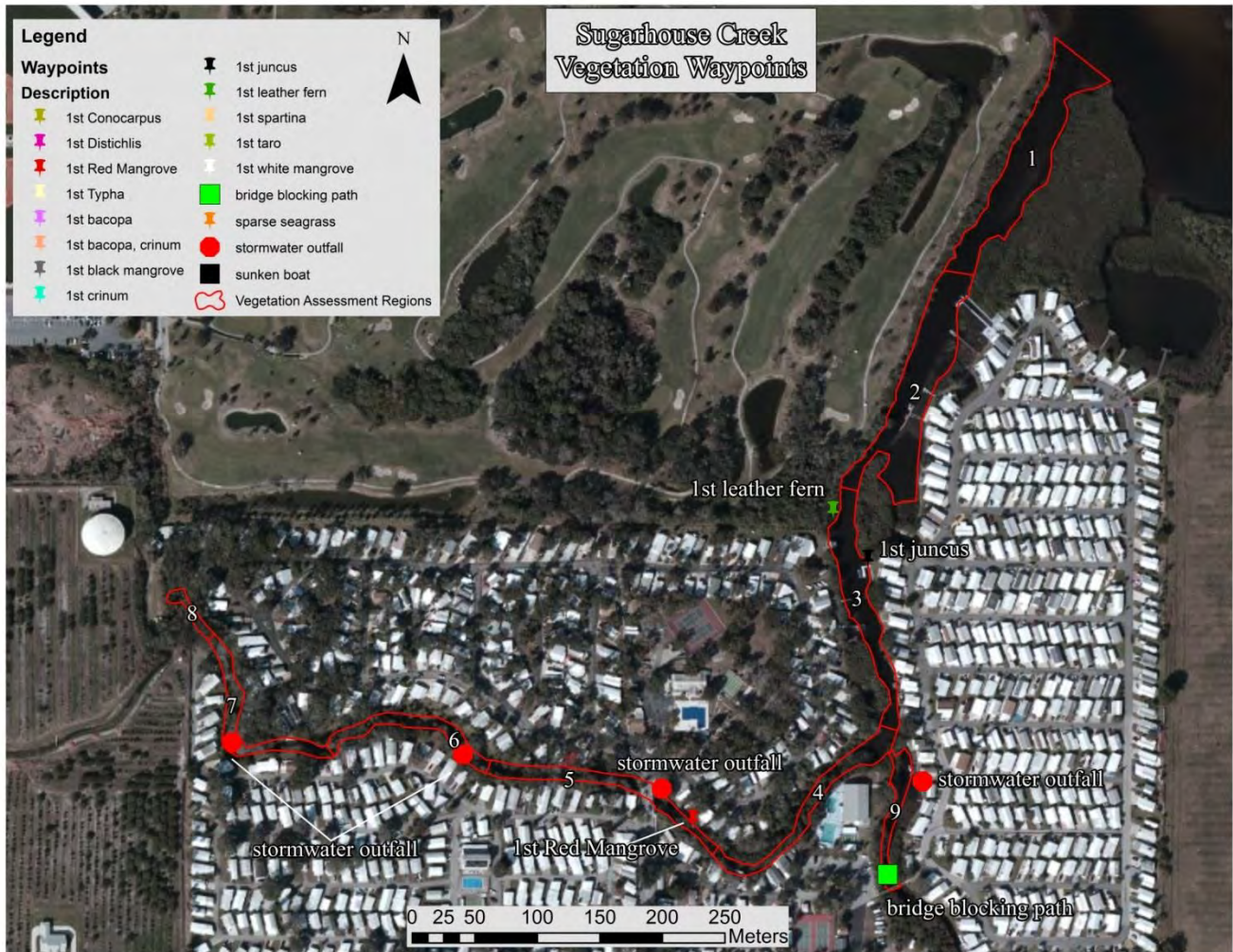


Figure 38. Sugarhouse Creek Vegetation Waypoints

Table 9. Sugarhouse Creek Vegetation Assessment List

Plant Species	Common Name	Sample Region									Regions Found
		1	2	3	4	5	6	7	8	9	
<i>Schinus terebinthifolius</i>	Brazilian Pepper	1	1	1	C	C	1	1	1	1	9
<i>Alternanthera philoxeroides</i>	Alligator Weed	1	1	1	1	1	1	1	1	1	8
<i>Laguncularia racemosa</i>	White Mangrove	C	C	C	C	C	1			C	7
<i>Sphagneticola (Wedelia) trilobata</i>	Creeping Oxeye		1	1	1	1	1	1	1	1	7
<i>Acrostichum danaeifolium</i>	Leather Fern			1	1	C	C	C	1		6
<i>Rhizophora mangle</i>	Red Mangrove	C	C	C	C	1				C	6
<i>Vitis rotundifolia</i>	Muscadine Grape				1	1	1	1	1	1	6
<i>Bacopa monnieri</i>	Common Bacopa, Herb-Of-Grace				1	1	1	1	1	1	5
<i>Quercus virginiana</i>	Virginia Live Oak					1	1	1	1	1	5
<i>Sabal palmetto</i>	Sabal Palm				1	1	1	1	1	1	5
<i>Carya aquatica</i>	Water Hickory					1	1	1	1	1	4
<i>Dioscorea bulbifera</i>	Air Potato					1	1	1	1	1	4
<i>Xanthosoma sagittifolium</i>	Arrowleaf Elephant's Ear					1	1	1	1	1	4
<i>Panicum maximum</i>	Guneagrass					1	1	1	1	1	4
<i>Billbergia pyramidalis</i>	Foolproofplant					1	1	1	1	1	4
<i>Syngonium podophyllum</i>	Nephitis, American Evergreen					1	1	1	1	1	4
<i>Erythrina herbacea</i>	Coralbeans						1	1	1	1	3
<i>Eupatorium capillifolium</i>	Dog Fennel		1		1	1					3
<i>Saccharum officinarum</i>	Sugarcane						1	1	1	1	3
<i>Quercus laurifolia</i>	Laurel oak						1	1	1	1	3
<i>Ruellia simplex</i>	Britton's Wild Petunia					1	1	1	1	1	3
<i>Avicennia germinans</i>	Black Mangrove	1	1								2
<i>Juncus roemerianus</i>	Needle Rush, Black Rush	C	1							1	3
<i>Ludwigia repens</i>	Creeping Primrosewillow, Red Ludwigia						1	1	1	1	2
<i>Melia azedarach</i>	Chinaberry Tree						1	1	1	1	2
<i>Ricinus communis</i>	Castorbean						1	1	1	1	2
<i>Sansevieria hyacithoides</i>	Bowstring Hemp						1	1	1	1	2
<i>Abrus precatorius</i>	Rosary Pea						1	1	1	1	1
<i>Bidens alba</i>	White Beggar Ticks						1	1	1	1	1
<i>Casuarina equisetifolia</i>	Australian Pine			1							1
<i>Colocasia esculenta</i>	Wild Taro, Dasheen, Coco Yam						1	1	1	1	1
<i>Crinum americanum</i>	Swamp lily						1	1	1	1	1
<i>Distichlis spicata</i>	Salt Grass	1									1
<i>Eclipta alba (prostrata)</i>	False Daisy, Yerba De Tajo			1							1
<i>Mikania scandens</i>	Climbing Hempvine						1	1	1	1	1
<i>Myrica cerifera</i>	Wax Myrtle								1	1	1
<i>Panicum repens</i>	Torpedo Grass						1	1	1	1	1
<i>Polygonum hydropiperoides</i>	Swamp Smartweed						1	1	1	1	1
<i>Pontederia cordata</i>	Pickereel Weed						1	1	1	1	1
<i>Senna spp</i>	Senna						1	1	1	1	1
<i>Rumex verticillatus</i>	Swamp Dock						1	1	1	1	1
<i>Spartina alterniflora</i>	Salt Marsh Grass								1	1	1
<i>Taxodium ascendens</i>	Pond Cypress						1	1	1	1	1
<i>Thelypteris interrupta</i>	Tri-vented Fern						1	1	1	1	1
<i>Typha spp.</i>	Cattails						1	1	1	1	1
<i>Urochloa mutica</i>	Para Grass						1	1	1	1	1



## Habitat Assessment

Collected sonar data was processed through Dr. Depth software to analyze the strength of the return signal from the bottom to get an estimate of the relative bottom hardness for Sugarhouse Creek. Figure 39 shows the bottom hardness raster for Sugarhouse Creek. This map is meant to help identify locations of harder and softer bottoms for benthic invertebrate sampling, fish sampling and benthic chlorophyll sampling.



Figure 39. Sugarhouse Creek Relative Bottom Hardness Map

## Bathymetry Mapping

In the study area, Sugarhouse Creek had a mean depth of 2.06 feet and a maximum depth of 4.71 feet. A total of 7.26 acres of creek was mapped during the assessment. At the time of assessment, Sugarhouse Creek contained an estimated 3,302,061 gallons of water in the study area. Figure 40 details the bathymetric mapping for Sugarhouse Creek showing the three depth stratum.



Figure 40. Sugarhouse Creek Bathymetric Stratum Map