Forked Creek Stream Assessment

Study Area

Forked Creek has a mostly urban watershed. The watershed becomes less urban above US-41 where there is a mix of agriculture and natural lands which results in a watershed LDI value of 3.6. The majority of Forked Creek is channelized and navigable via boat. Forked Creek's banks have been either developed to have rip-rap or to seawalls. There are some areas of mangroves on downstream portion of the creek where there are also some shallower areas which have not been dredged. The urbanized and non-natural areas immediately surrounding Forked Creek gives it a buffer LDI value of 6.0.

Figure 52. Overview of the Forked Creek Study Area

Vegetation Survey

The Forked Creek vegetation assessment encompassed 18 vegetation regions from the mouth in Lemon Bay to the near Keyway Road as shown in Figure 53. In these regions, 36 species of vegetation were identified. Most of the regions were dominated by mangroves (*Rhizophora mangle, Laguncularia racemosa* and *Avicennia geminans*) with few other salt tolerant species present until Region 18 which was dominated by a variety of freshwater and upland species. The majority of the Forked Creek study area was lined by seawall which is reflected in the lack of a dominant species in Regions 5, 6, 9, 10, 14 and 15. The first occurrence of Leather Fern (*Acrostichum danaeifolium*) was in Region 17. Needle Rush (*Juncus roemerianus*) was first observed in Region 1 with the last occurrence in Region 10. Above region 17 the vegetation communities are populated by many species indicative of dominating freshwater influence.

Figure 53. Overview of Forked Creek Vegetation Assessment Regions

Figure 54 shows the vegetation transition zone of Forked Creek indicating the first occurrence of *Juncus* and *Spartina* in Region 1 as well as the first occurrences of Leather Fern in Regions 13 and 17. Based on the available vegetation assessment data Regions 1 through 9 would comprise the highest salinity and tidal influence zone, Regions 10 through 12 and Regions 14 through 16 would comprise the "mixing" zone and Regions 13 and 17 through 18 would comprise the freshwater dominant zone. The vegetation assessment species lists are shown in Table 14.

Figure 54. Forked Creek Vegetation Waypoints

Table 14. Forked Creek Vegetation Assessment List

Plant Species	Common Name	Sample Region																		Regions Found
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Rhizophora mangle	**Red Mangrove**	D	D	D	D	1	1	D	D	1	1	C	C	C	1		C	D	1	17
Laguncularia racemosa	**White Mangrove**	1	1	1	1	1	1	1	1	1	1	1	1	1			1	1	1	16
Schinus terebinthifolius	**Brazilian Pepper**	1	1	1	1		1		1		1	C	C	C			C	1	1	13
Avicennia germinans	**Black Mangrove**	1	1	1	1				1				1				1	1	1	9
Sphagneticola (Wedelia) trilobata	**Creeping Oxeye**			1	1		1		1				1	1			1	1	1	9
Pinus spp	**Pine**	1	1	1		1	1											1	1	7
Quercus virginiana	**Virginia Live Oak**	1	1	1	1				1			1	1							7
Coccoloba uvifera	**Seagrape**			1	1		1	1				1	1							6
Vitis rotundifolia	**Muscadine Grape**			1	1								1	1				1	1	6
Juncus roemerianus	**Needle Rush, Black Rush**	1	1	1					1		1									5
Spartina alterniflora	**Salt Marsh Grass**	1	1	1	1												1			5
Conocarpus erecta	**Buttonwood**	1	1	1	1															4
Sabal palmetto	**Sabal Palm**	1	1	1	1															4
Baccharis halimifolia	**Eastern False Willow, Saltbush**												1				1	1		3
Distichlis spicata	**Salt Grass**			1		1		1												3
Myrica cerifera	**Wax Myrtle**	1																1	1	3
Acrostichum danaeifolium	**Leather Fern**													1				1	1	3
Callicarpa americana	**American Beauty Berry**													1				1		2
Cyperus ligularis	**Flat Sedge**					1			1											2
Iva frutescens	**Marsh Elder**	1			1															2
Parthenocissus quinquefolia	**Woodbine**				1		1													2
Quercus laurifolia	**Laurel oak**																	1	1	2
Ampelopsis arborea	**Peppervine**											*1*								1
Casuarina equisetifolia	**Australian Pine**												1							1
Colocasia esculenta	**Wild Taro, Dasheen, Coco Yam**																		1	1
Cupaniopsis anacardioides	**Carrotwood**													1						1
Cyperus involucratus	**Umbrella flat sedge**												1							1
Dioscorea bulbifera	**Air Potato**																		1	1
Eupatorium capillifolium	**Dog Fennel**				1															1
Halodule wrightii	**Shoal-grass**	1																		1
Ipomoea pes-caprae	**Railroad Vine**				1															1
Juncus scirpoides	**Needlepod Rush**																	1		1
Lygodium japonicum	**Japanese Climbing Fern**								1											1
Nephrolepsis spp.	**Sword Fern**																		1	1
Opuntina humifusa	**Pricklypear Cactus**				1															1
Ruppia martima	**Widgeon-grass**	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 Forked Creek. Figure 55 shows the bottom hardness raster for Forked Creek. In this raster, the higher the hardness value, the harder the bottom substrate. This map is meant to help identify locations of harder and softer bottoms for benthic invertebrate sampling, fish sampling and benthic chlorophyll sampling.

Figure 55. Forked Creek Relative Bottom Hardness Map

Bathymetry Mapping

In the study area, Forked Creek had a mean depth of 3.33 feet and a maximum depth of 8.37 feet. A total of 47.8 acres of creek was mapped during the assessment. At the time of assessment, Forked Creek contained an estimated 45,924,792 gallons of water in the study area. Figure 56 details the bathymetric mapping for Forked Creek showing the three depth stratum.

Figure 56. Forked Creek Bathymetric Stratum Map