Double Branch Creek Stream Assessment

Study Area

Double Branch Creek is located on the west side of Hillsborough County and flows into Old Tampa Bay. Double Branch Creek's watershed is a mix of medium density urban land use and natural areas giving it a watershed LDI value of 4.2. The creek banks are naturally sloping and have not been heavily altered. Double Branch Creek also has natural vegetation adjacent to it resulting in a creek buffer LDI value of 5.6. The creek flows through a natural area of mangroves and marshes before reaching Old Tampa Bay.

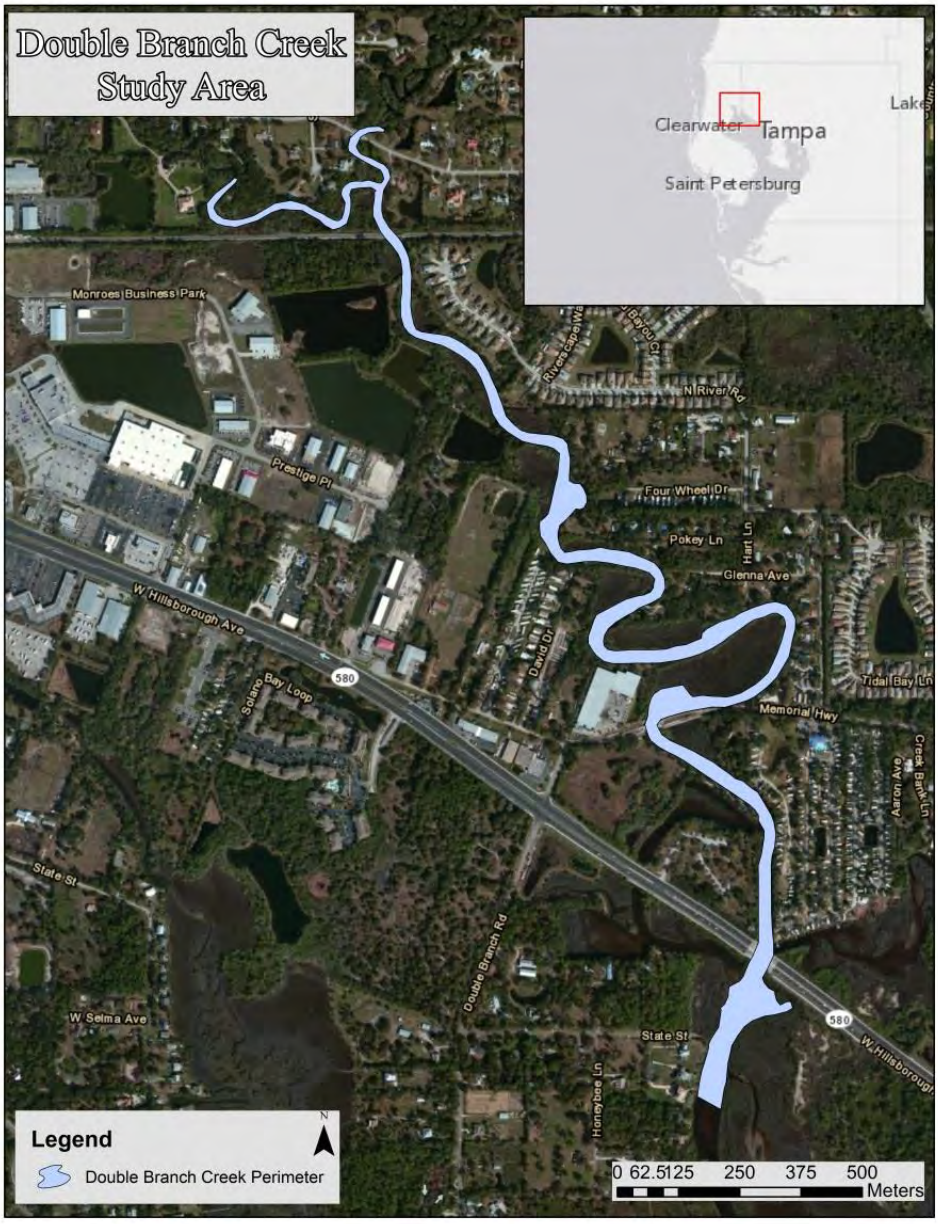

Figure 11. Overview of the Double Branch Creek Study Area

Vegetation Survey

The Double Branch Creek vegetation assessment encompassed 19 vegetation regions from the mouth in Old Tampa Bay to the Twin Branch Acres Road as shown in Figure 12. In these regions, 47 species of vegetation were identified. Regions 1 through 8 were dominated by mangroves (*Rhizophora mangle, Laguncularia racemosa* and *Avicennia geminans*) with few other salt tolerant species present. The first occurrence of Leather Fern (*Acrostichum danaeifolium*) was in Region 8. Needle Rush (*Juncus roemerianus*) was first observed in Region 3, becoming dominant in regions 5 and 9 through 17. Above Region 14 the vegetation communities are more frequently dominated by Brazilian Pepper (*Schinus terebinthifolius*) and Live Oak (*Quercus virginiana*).

Figure 12. Overview of Double Branch Creek Vegetation Assessment Regions

Figure 13 shows the vegetation transition zone of Double Branch Creek indicating the most downstream Leather Fern, *Bacopa*, *Crinum* and *Typha*. Based on the vegetation assessment data for Double Branch Creek, regions 1 through 8 would comprise the highest salinity and tidal influence zone, regions 9 through 14 would comprise the "mixing" zone and regions 15 through 19 would comprise the freshwater dominant zone. The vegetation assessment species lists are shown in Table 3.

Figure 13. Double Branch Creek Vegetation Waypoints

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 Double Branch Creek. Figure 14 shows the bottom hardness raster for Double Branch 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.

Table 3. Double Branch 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	19	
Schinus terebinthifolius	Brazilian Pepper	1	1	1	1	C	1	C	C	1	1	C	C	1	C	1	C	C	C	C	19
Laguncularia racemosa	White Mangrove	C	C	C	C	C	C	C	C	C	C	C	1	1	1	1		1	C	1	18
Quercus virginiana	Virginia Live Oak		1	C	C	1	C	C	C	1	C	1	1	1	C	C	1	C	C	C	18
Rhizophora mangle	Red Mangrove	C	C	C	C	1	1	1	1	1	1	1	1	1	1		1	1	1	1	18
Juncus roemerianus	Needle Rush, Black Rush			1	1	C	C	1	1	C	C	C	C	C	C	C	C	C	1		16
Avicennia germinans	Black Mangrove	1	1	1	1	1	1	1	1	1	1	1	1	1	1				1		15
Vitis rotundifolia	Muscadine Grape				1			1	1	1	1	1	1	1	1	1	1	1	1	1	14
Pinus spp.	Pine	1	1	1	1		1		1	1	1						1	1	1	1	12
Baccharis halimifolia	Eastern False Willow, Saltbush		1	1	1	1	1		1						1	1	1	1	1		11
Serenoa repens	Saw palmetto							1	C		1	1			1	1	1	1	1	1	10
Acrostichum danaeifolium	Leather Fern								1	1	1			1		1	1	1	1	1	9
Myrica cerifera	Wax Myrtle								1		1		1	1	1	1	1			1	8
Smilax bona-nox	Saw Greenbrier Cat Briar						1		1	1	1			1	1				1	1	8
Spartina alterniflora	Salt Marsh Grass							1							1	1	1	1	1	1	7
Bacopa monnieri	Common Bacopa, Herb-Of-Grace														1	1	1	1	1	1	6
Leucaena leucocephala	White leadtree		1	1		1				1					1					1	6
Quercus laurifolia	Laurel oak										1					1	1	1	1	1	6
Symphyotrichum subulatum	Salt Marsh Aster														1	1	1	1	1	1	6
Typha spp.	Cattails													1	1	1	C	1	1		6
Sabal palmetto	Sabal Palm	1			1	1							1	1							5
Alternanthera philoxeroides	Alligator Weed														1	1	1		1		4
Callicarpa americana	American Beauty Berry												1	1			1			1	4
Casuarina equisetifolia	Australian Pine									1	1			C	C						4
Eupatorium capillifolium	Dog Fennel			1		1		1									1				4
Pluchea rosea	Rosy Camphorweed														1	1	1			1	4
Dioscorea bulbifera	Air Potato				1			1										1			3
Symphyotrichum carolinianum	Climbing Aster																1	1	1		3
Distichlis spicata	Salt Grass	1			1																2
Ipomoea sagittata	Saltmarsh morning Glory																	1	1		2
Iva frutescens	Marsh Elder			1								1									2
Lemna spp	Duckweed													1					1		2
Solidago sempervirens	Goldenrod																1			1	2
Andropogon virginicus var. glaucus	Broom grass									1											1
Bidens alba	White Beggar Ticks					1															1
Broussonetia papyrifera	Paper Mulberry					1															1
Cladium jamaicense	Jamaica Swamp Saw Grass												1								1
Crinum americanum	Swamp lily																	1			1
Dalbergia sissoo	Indian Rosewood		1																		1
Hypericum fasciculatum	Sandweed, Peelbark St. John's-wort																		1		1
Juniperus virginiana	Red Cedar		1																		1
Paederia foetida	Skunk Vine																		1		1
Parthenocissus quinquefolia	Woodbine																			1	1
Rumex verticillatus	Swamp Dock																1				1
Salvinia minima	Water Spangles, Water Fern																		1		1
Spartina bakerii	Cordgrass									1											1
Sphagneticola (Wedelia) trilobata	Creeping Oxeye				1																1
Urochloa mutica	Para Grass																			1	1

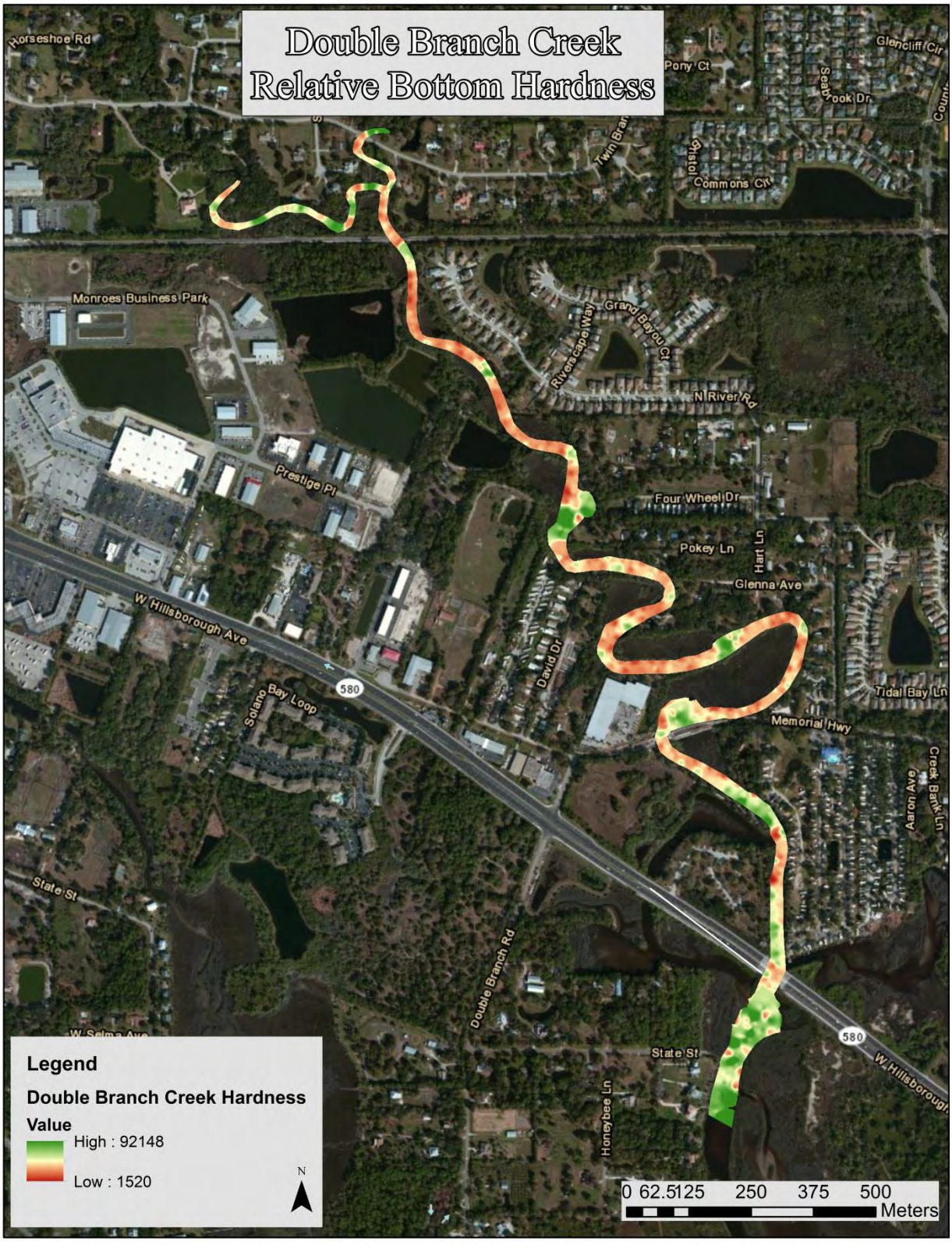

Figure 14. Double Branch Creek Relative Bottom Hardness Map

Bathymetry Mapping

In the study area, Double Branch Creek had a mean depth of 3.43 feet and a maximum depth of 12.53 feet. A total of 25.64 acres of creek was mapped during the assessment. At the time of assessment, Double Branch Creek contained an estimated 15,610,182 gallons of water in the study area. Figure 15 and Figure 16 detail the bathymetric mapping for Double Branch Creek showing the three depth stratum.

Figure 15. Double Branch Creek Bathymetric Stratum Map (1 of 2)

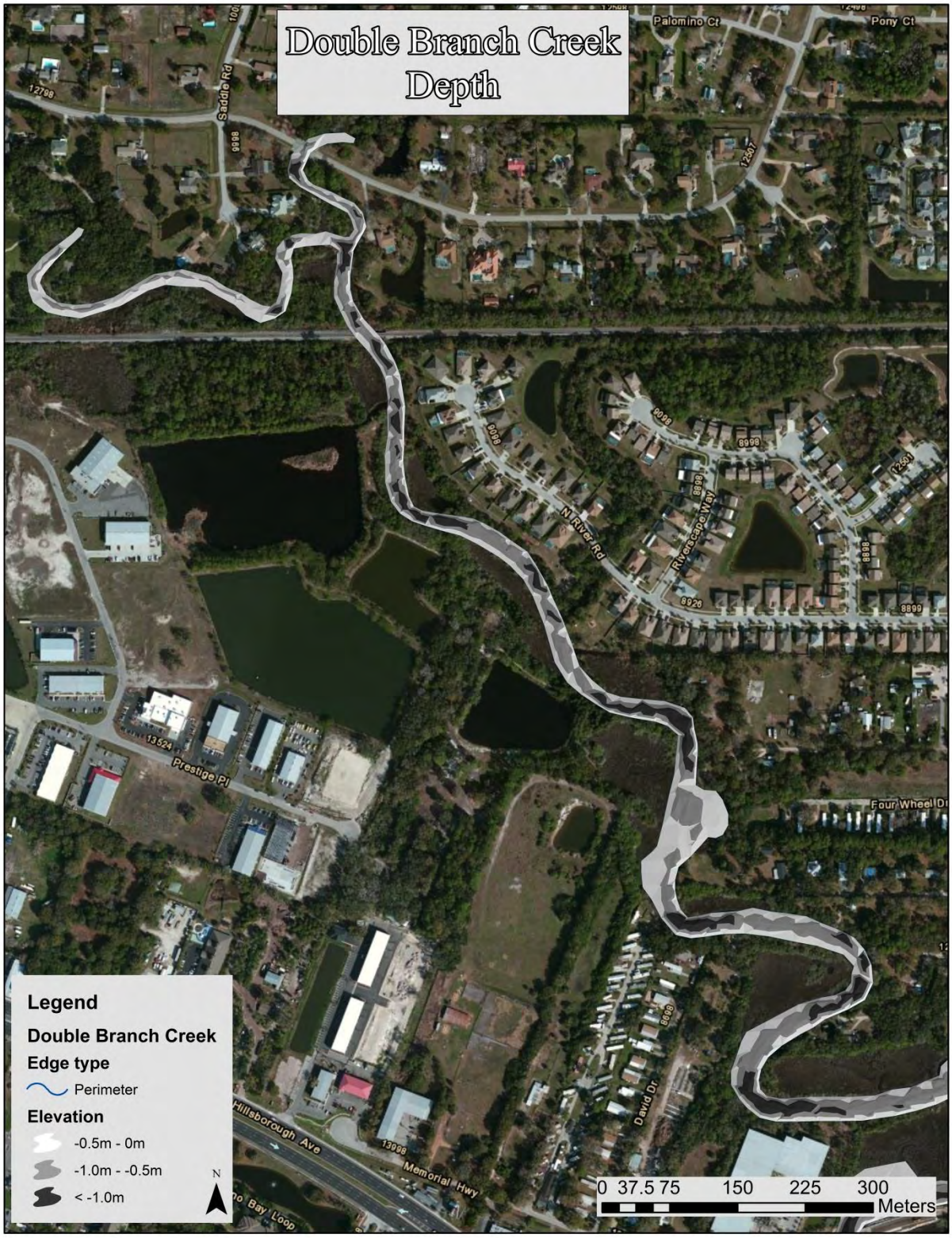

Figure 16. Double Branch Creek Bathymetric Stratum Map (2 of 2)