Wildcat Creek Stream Assessment

Study Area

Wildcat Creek is a tributary to the Little Manatee River with a watershed that is largely made up of agricultural and natural land use switching to urban only on the one side of the creek in downstream portion. The watershed of Wildcat Creek is a more "natural" system with few obvious hydrologic changes with a LDI value of 3.8. The banks of the creek are not ditched and are gradually sloping with a large buffer of natural vegetation. Wildcat creek's urbanized land use is to the north downstream consists of medium density residential and a golf course. Wildcat Creek flows through 20 acres of marsh in Hillsborough County into the Little Manatee River approximately 4.5 miles upstream from Middle Tampa Bay. This system is one of the only creeks with a watershed that is dominated by agriculture. Wildcat creek also has one of the lowest buffer LDI values at 1.5.

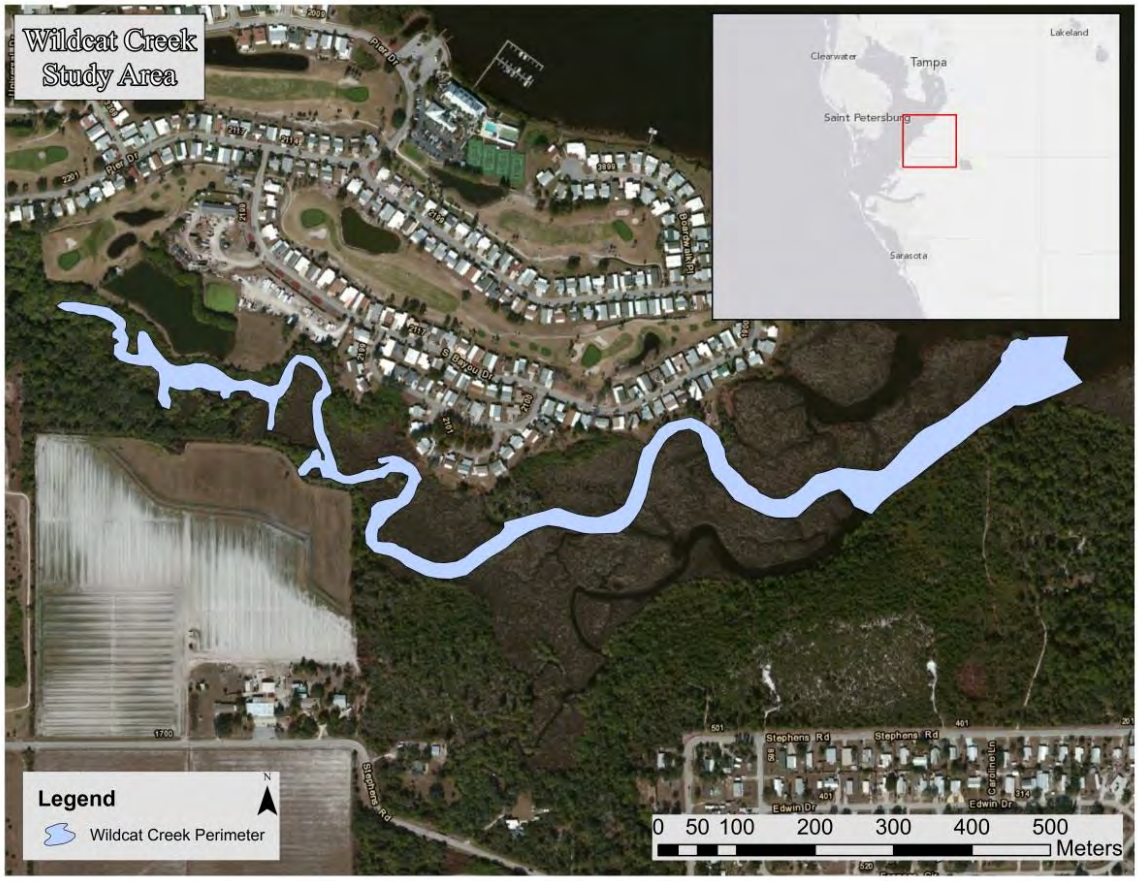

Figure 23. Overview of the Wildcat Creek Study Area

Vegetation Survey

The Wildcat Creek vegetation assessment encompassed 10 vegetation regions from the mouth in Hayes Bayou as shown in Figure 24. In these regions, 43 species of vegetation were identified. Regions 1 through 9 were dominated by Needle Rush (*Juncus roemerianus*) with few other salt tolerant species present. The most upstream mangrove was Red Mangrove (*Rhizophora mangle)* in Region 8. The first occurrence of Leather Fern (*Acrostichum danaeifolium*) was in Region 1, becoming dominant in regions 7-10. Above Region 8 the vegetation communities are populated by many species indicative of dominating freshwater influence.

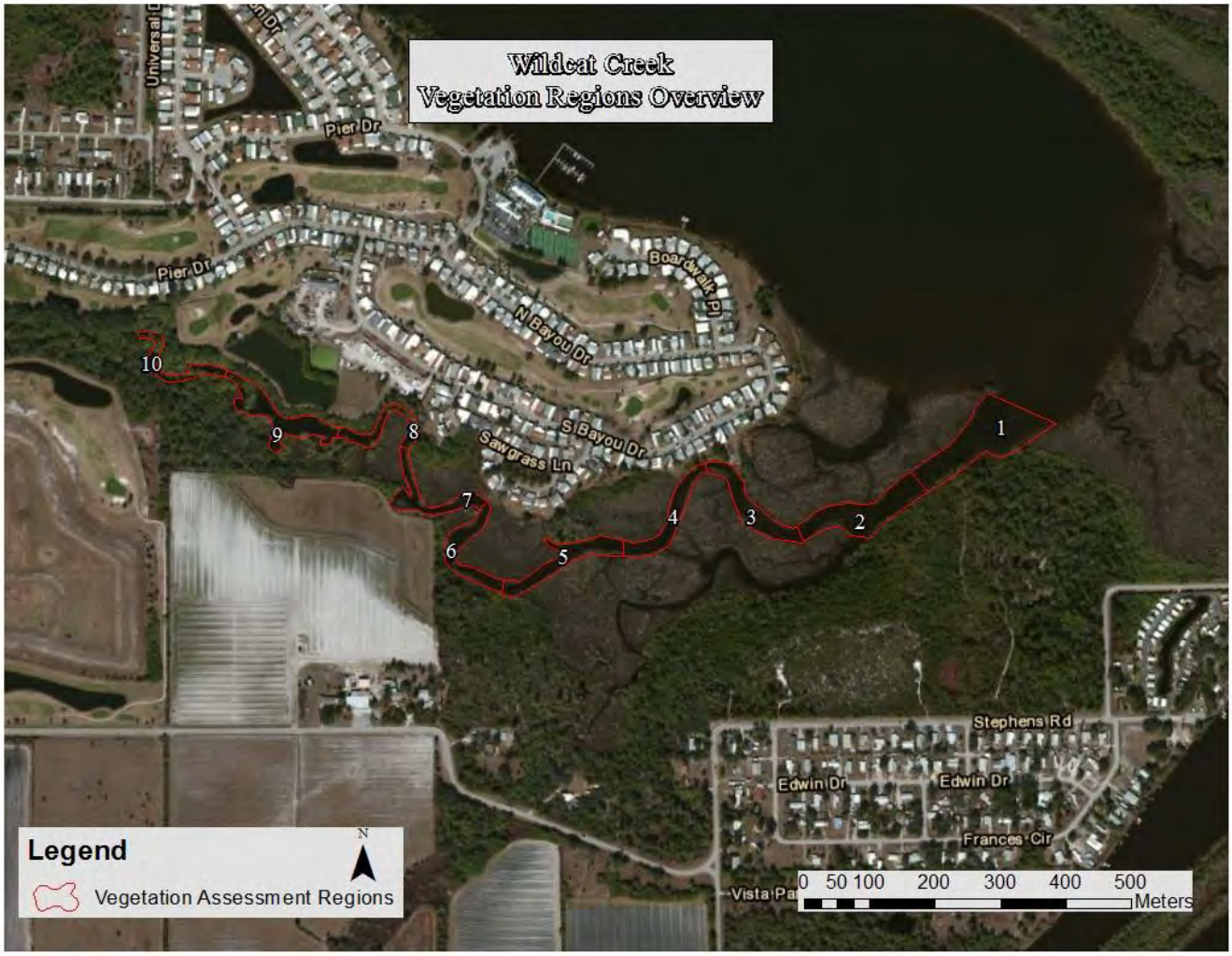

Figure 24. Overview of Wildcat Creek Vegetation Assessment Regions

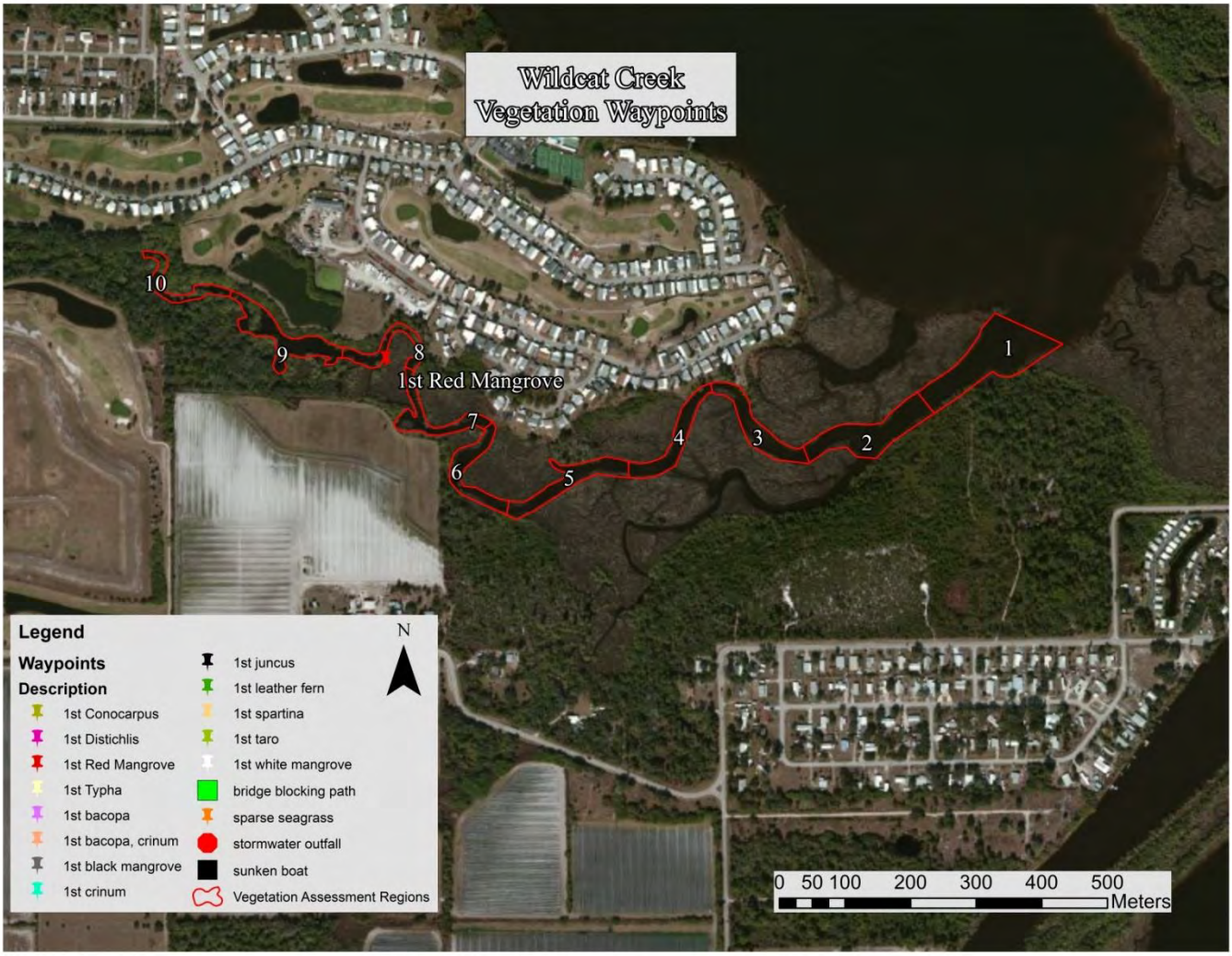

Figure 25. Wildcat Creek Vegetation Waypoints

Figure 25 shows the vegetation transition zone of Wildcat Creek indicating the most upstream Red Mangrove. Based on the vegetation assessment data for Wildcat Creek, regions 1 through 5 would comprise the highest salinity and tidal influence zone, regions 6 through 9 would comprise the "mixing" zone and above Region 9 would comprise the freshwater dominant zone. The vegetation assessment species list is shown in Table 5.

Table 5. Wildcat Creek Vegetation Assessment List

Plant Species	Common Name	Sample Region										Regions Found
		1	2	3	4	5	6	7	8	9	10	
Acrostichum danaeifolium	Leather Fern	1	1	1	1	1	1	C	C	C	C	10
Baccharis halimifolia	Eastern False Willow, Saltbush	1	1	1	1	1	1	1	1	1	1	10
Juncus roemerianus	Needle Rush, Black Rush	C	D	C	D	C	C	C	C	C	1	10
Quercus virginiana	Virginia Live Oak	1	1	1	1	1	1	1	1	1	1	10
Schinus terebinthifolius	Brazilian Pepper	C	1	C	1	C	C	C	C	C	C	10
Myrica cerifera	Wax Myrtle	1	1		1	1	1	1	1	1	C	9
Rhizophora mangle	Red Mangrove	1	1	C	1	1	1	1	1			8
Crinum americanum	Swamp lily	1			1		1	1	1	1	1	7
Pinus spp	Pine	1	1	1		1	1	1	1			7
Vitis rotundifolia	Muscadine Grape			1	1		1	1	1	1	1	7
Laguncularia racemosa	White Mangrove	1	1	C		1	1	1				6
Baccharis augustifolia	False Willow					1	1	1	1	1		5
Pluchea rosea	Rosy Camphorweed						1	1	1	1	1	5
Typha spp.	Cattails						1	1	1	1	1	5
Blechnum serrulatum	Swamp Fern	1					1			1	1	4
Alternanthera philoxeroides	Alligator Weed								1	1	1	3
Quercus laurifolia	Laurel oak						1			1	1	3
Serenoa repens	Saw palmetto						1	1		1		3
Solidago sempervirens	Goldenrod							1		1	1	3
Sphagneticola (Wedelia) trilobata	Creeping Oxeye			1			1	1				3
Symphyotrichum subulatum	Salt Marsh Aster							1	1	1		3
Ximenia americana	Tallow Wood, Hog Plum			1	1					1		3
Amaranthus australis	Southern Amaranth						1	1				2
Cladium jamaicense	Jamaica Swamp Saw Grass						1			1		2
Lemna spp	Duckweed									1	1	2
Spirodelia polyrhiza	Duckweed									1	1	2
Gordonia lasianthus	Loblolly Bay		1	1								2
Ipomoea sagittata	Saltmarsh Morning Glory								1	1		2
Parthenocissus quinquefolia	Woodbine									1	1	2
Persea palustris	Swampbay		1							1		2
Sabal palmetto	Sabal Palm		1					1				2
Spartina alterniflora	Salt Marsh Grass					1					1	2
Blutaparon vermiculare	Silverhead, Saltweed							1				1
Distichlis spicata	Salt Grass	1										1
Eustachys glauca	Saltmarsh Fingergrass							1				1
Juniperus virginiana	Red Cedar								1			1
Magnolia virginiana	Sweetbay Magnolia										1	1
Musa spp.	Banana Tree							1				1
Osmunda cinnamomea	Cinnamon Fern									1		1
Panicum repens	Torpedo Grass				1							1
Sabatia spp.	Rosegentian									1		1
Schoenoplectus robustus	Saltmarsh Bulrush							1				1
Thelypteris denata	Shield Fern										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 Wildcat Creek. Figure 26 shows the bottom hardness raster for Wildcat Creek. This map is meant to help identify locations of harder and softer bottoms for benthic invertebrate sampling, fish sampling and benthic chlorophyll sampling.

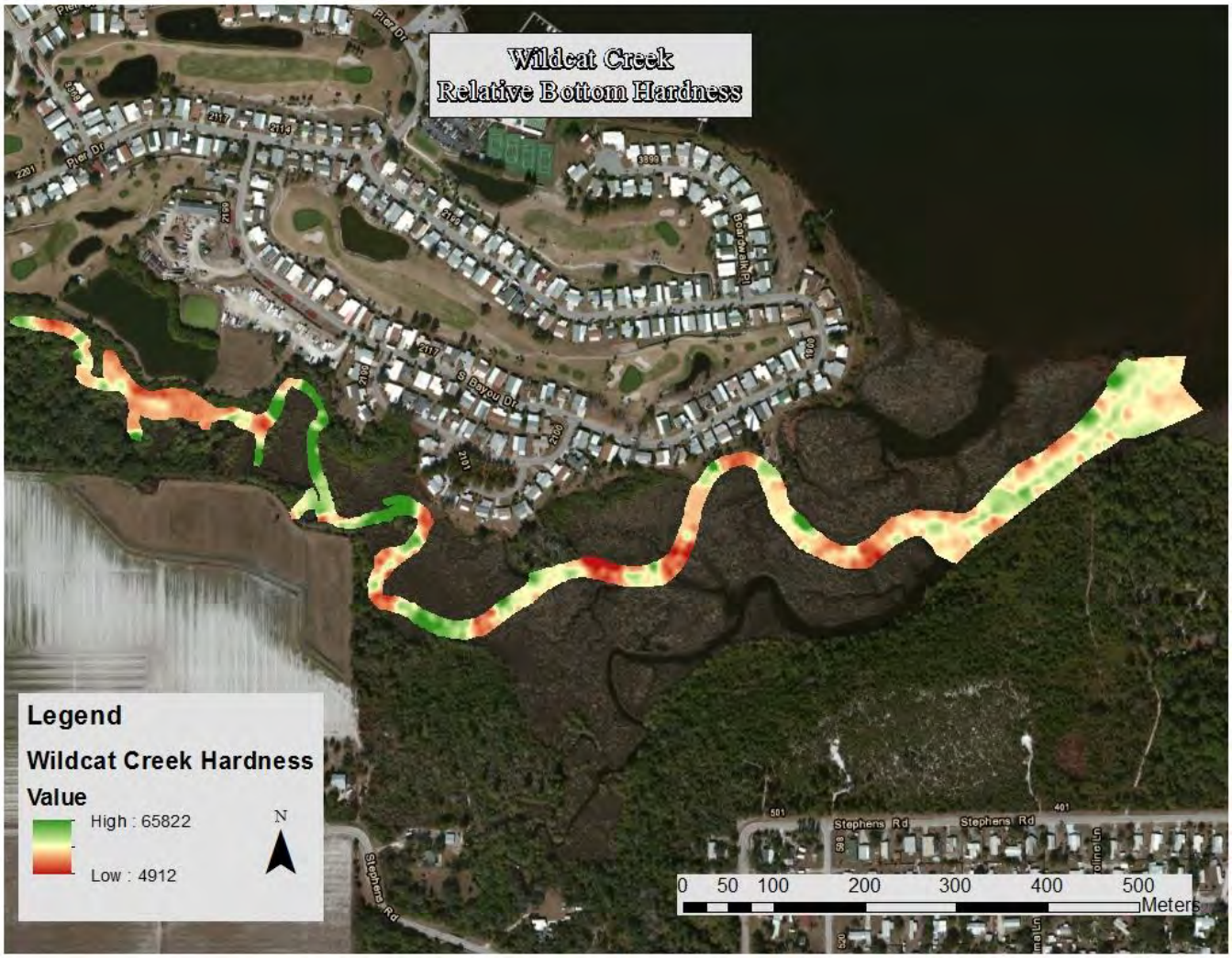

Figure 26. Wildcat Creek Relative Bottom Hardness Map

Bathymetry Mapping

In the study area, Wildcat Creek had a mean depth of 2.37 feet and a maximum depth of 7.72 feet. A total of 12.06 acres of creek was mapped during the assessment. At the time of assessment, Wildcat Creek contained an estimated 6,913,642 gallons of water in the study area. Figure 27 details the bathymetric mapping for Wildcat Creek showing the three depth stratum.

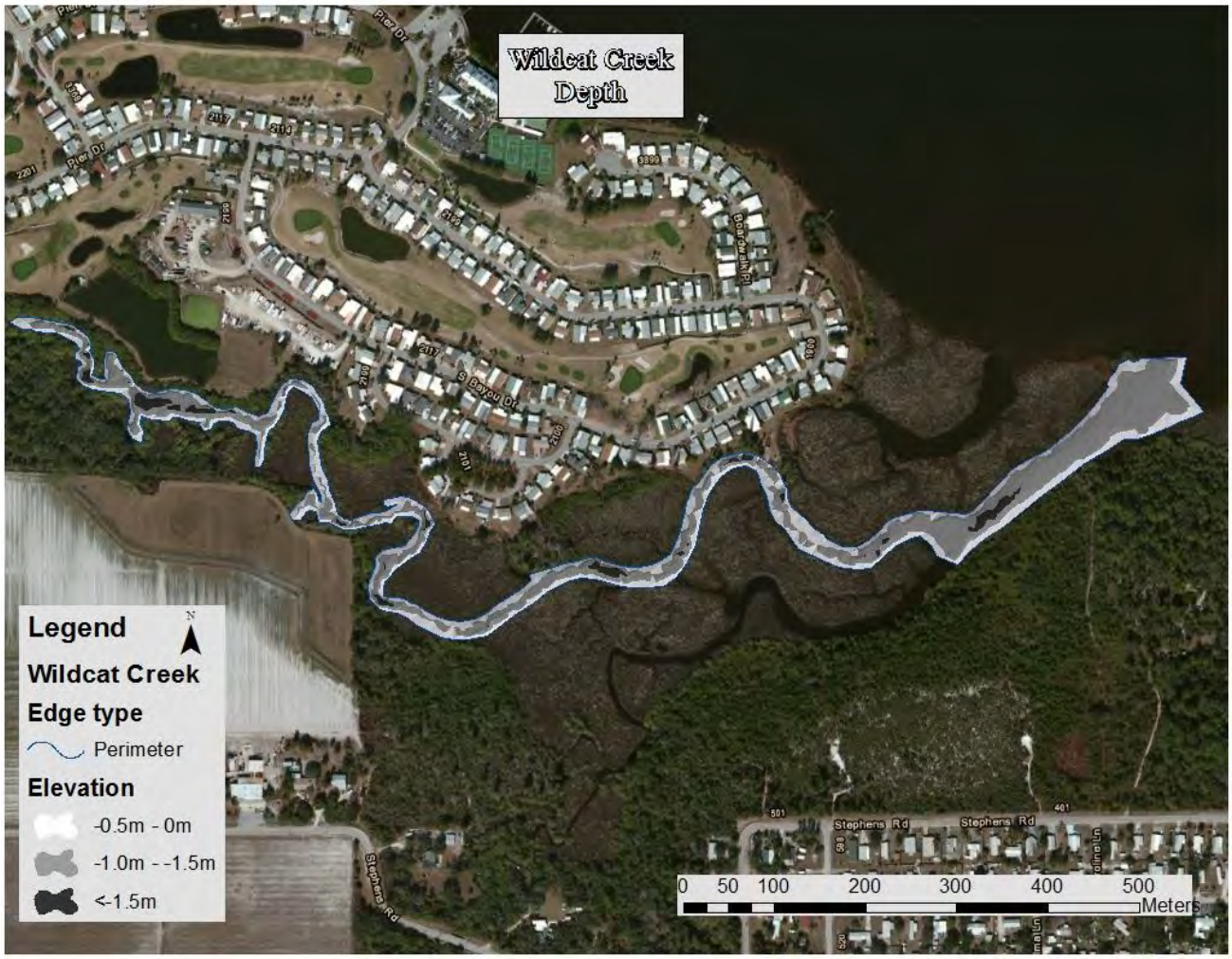

Figure 27. Wildcat Creek Bathymetric Stratum Map