Bear Branch Stream Assessment

Study Area

Bear Branch is located in the Charlotte Harbor Watershed in southern Charlotte County with its head waters in and unnamed canal at the end of Harborside Blvd and its mouth in Charlotte Harbor as shown in Figure 78. Bear Branch is also known as Key Point Canal which is located within a relatively unimpaired watershed. The downstream portion of Bear Branch is surrounded by mangroves. The upstream portion of Bear Branch is surrounded by a combination of open land and low density residential property. Bear Branch's watershed has a LDI value of 2.7 and the area immediately surrounding the creek with a buffer LDI value of 2.1.

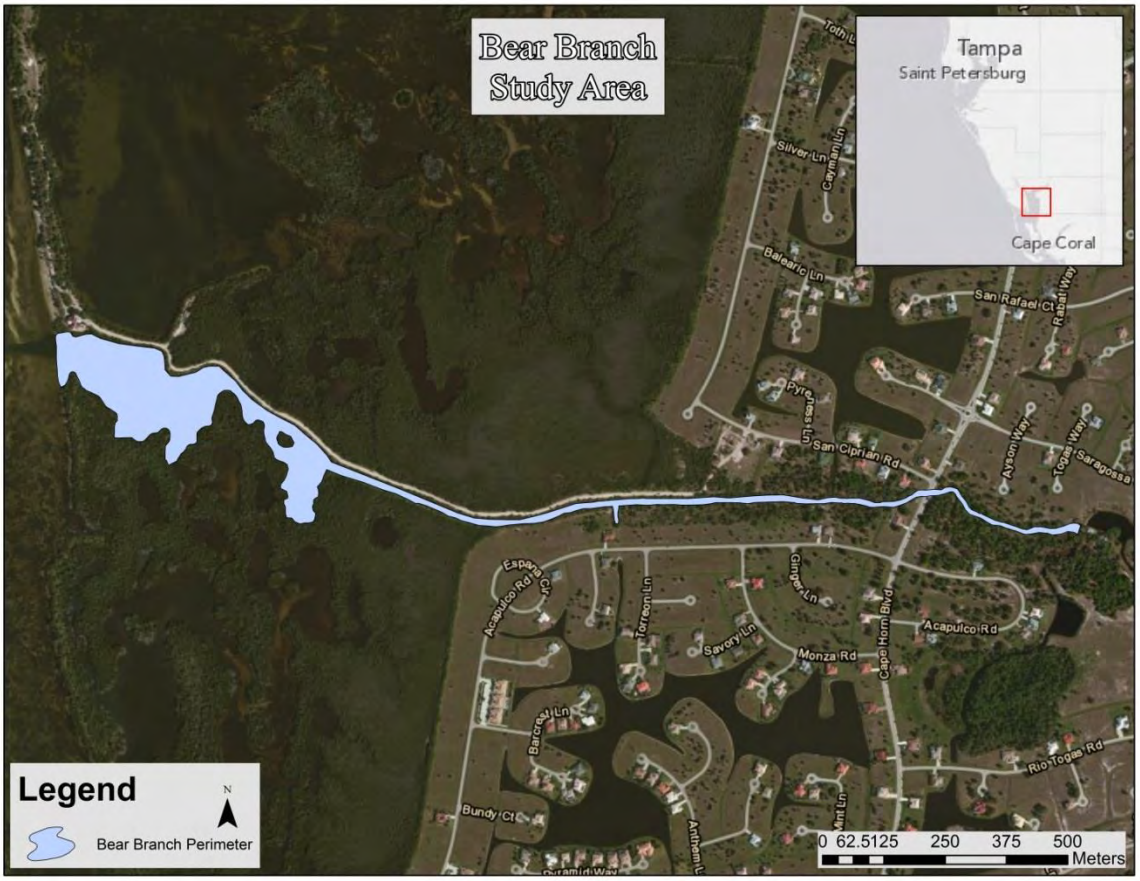

Figure 78. Overview of the Bear Branch Study Area

Vegetation Survey

The Bear Branch vegetation assessment encompassed 12 vegetation regions from the mouth in Charlotte Harbor to the culvert above Cape Horn Road as shown in Figure 79. In these regions, 48 species of vegetation were identified. Regions 1 through 10 were dominated by mangroves (*Rhizophora mangle, Laguncularia racemosa* and *Avicennia geminans*) with few other salt tolerant species present. The most upstream mangrove was *Laguncularia racemosa* in Region 10. The first occurrence of Leather Fern (*Acrostichum danaeifolium*) was in Region 7, becoming co-dominant in regions 10 and 11. Needle Rush (*Juncus roemerianus*) was first observed in Region 9. Above the Cape Horn Road bridge in Region 10 the vegetation communities are populated by many species indicative of dominating freshwater influence.

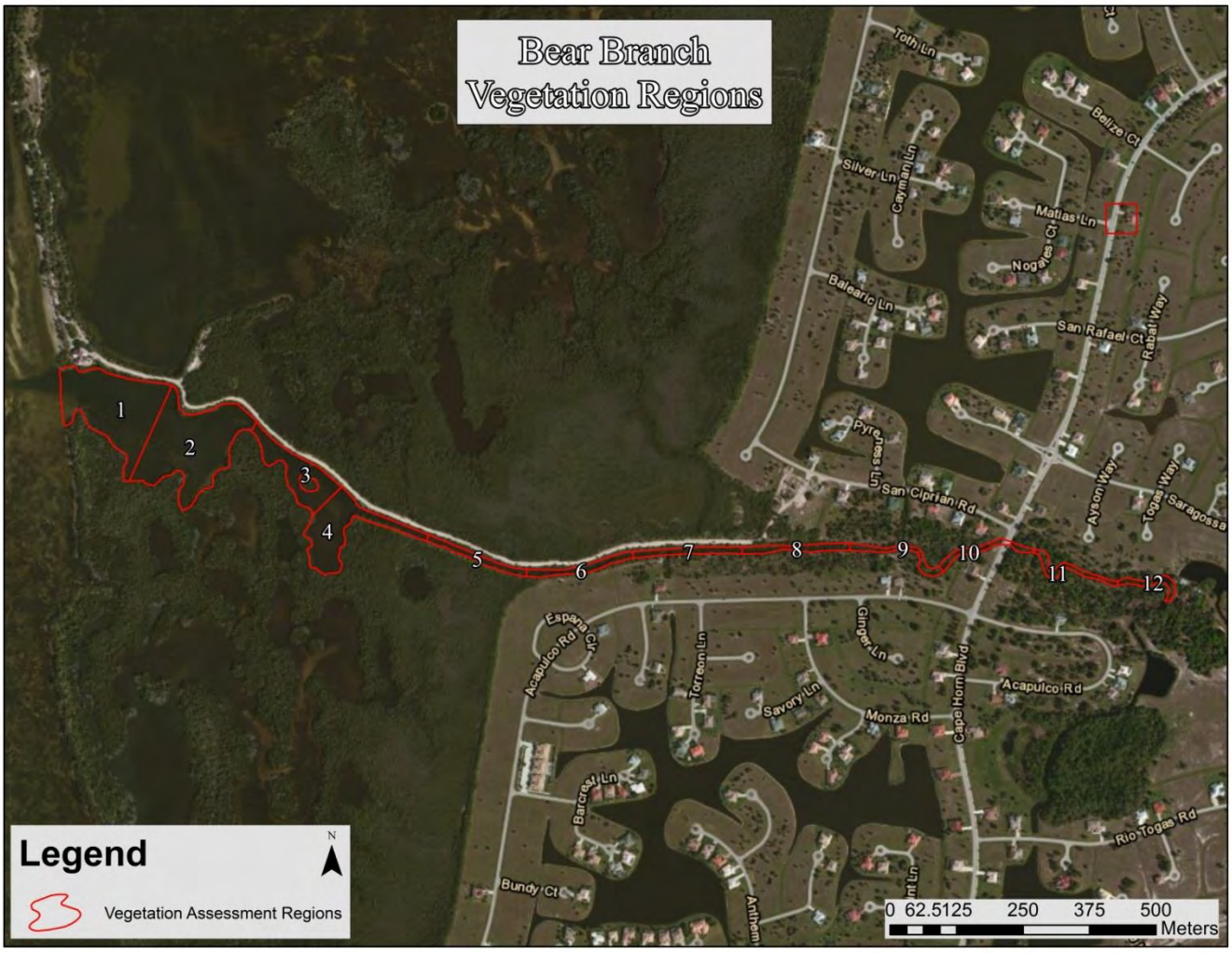

Figure 79. Overview of Bear Branch Vegetation Assessment Regions

Figure 80 shows the vegetation transition zone of Bear Branch indicating the most upstream White Mangrove (*Laguncularia racemosa*) as well as the most downstream Leather Fern (*Acrostichum danaeifolium*), Waterhyssop (*Bacopa monnieri*), and Needle Rush (*Juncus roemerianus*). The locations of stormwater outfalls are also indicated on the map. Based on the vegetation assessment data for Bear Branch, regions 1 through 7 would comprise the highest salinity and tidal influence zone, regions 8 through 10 would comprise the "mixing" zone and regions 11 and 12 would comprise the freshwater dominant zone. The vegetation assessment species list is shown in Table 19.

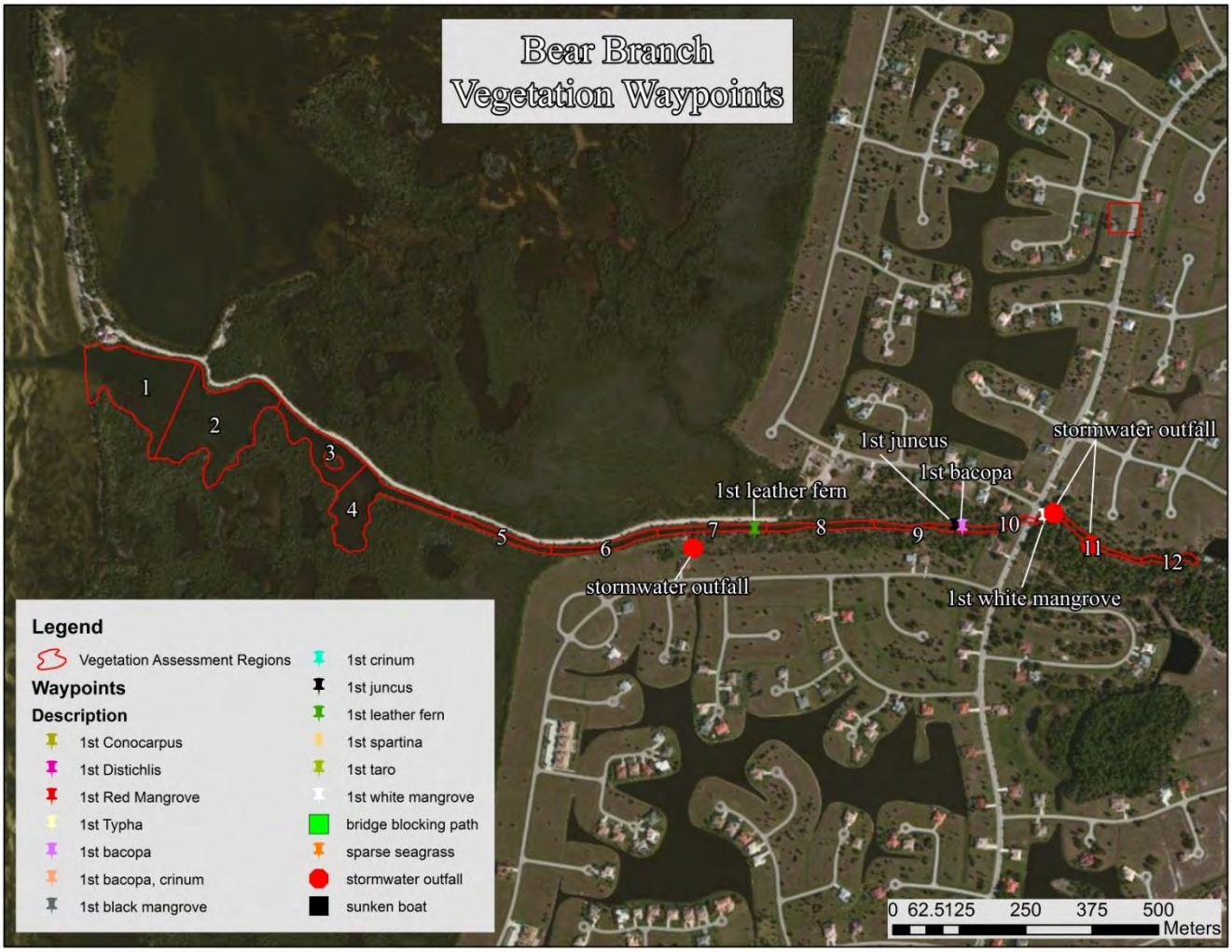

Figure 80. Bear Branch Vegetation Waypoints

Table 19. Bear Branch Vegetation Assessment List

Plant Species	Common Name	Sample Region												
		1	2	3	4	5	6	7	8	9	10	11	12	Sites Found
Sabal palmetto	**Sabal Palm**	1	1	1	1	1	1	1	1	1	1	1	1	12
Avicennia germinans	**Black Mangrove**	1	1	1	1	1	1	1	1	1	1			10
Laguncularia racemosa	**White Mangrove**	1	1	1	1	1	1	1	1	1	1			10
Rhizophora mangle	**Red Mangrove**	D	D	D	D	C	C	D	D	D	C			10
Schinus terebinthifolius	**Brazilian Pepper**				1	C	C	1	1	1	1	1	1	9
Coccoloba uvifera	**Seagrape**	1	1	1	1	1	1	1			1			8
Dalbergia ecastaphyllum	**Coin Vine**	1	1	1	1			1	1	1	1			8
Baccharis halimifolia	**Eastern False Willow, Saltbush**				1		1	1		1	1	1	1	7
Bidens alba	**White Beggar Ticks**			1			1	1	1	1	1		1	7
Conocarpus erectus	**Buttonwood**	1	1	1	1	1	1	1						7
Abrus precatorius	**Rosary Pea**							1	1	1	1	1	1	6
Acrostichum danaeifolium	**Leather Fern**							1	1	1	C	C	1	6
Alternanthera philoxeroides	**Alligator Weed**				1				1	1	1	1	1	6
Vitis rotundifolia	**Muscadine Grape**							1	1	1	1	1	1	6
Pinus elliottii	**Slash Pine**								1	1	1	1	1	5
Bacopa monnieri	**Common Bacopa, Herb-Of-Grace**									1	1	1	1	4
Myrica cerifera	**Wax Myrtle**							1			1	1	1	4
Quercus virginiana	**Virginia Live Oak**							1	1	1	1			4
Solidago sempervirens	**Goldenrod**							1	1	1	1			4
Andropogon virginicus var. glaucus	**Broom grass**						1	1			1			3
Caesalpinia bonduc	**Gray Nicker**	1	1	1										3
Callicarpa americana	**American Beauty Berry**							1		1		1		3
Eustachys glauca	**Saltmarsh Fingergrass**			1						1	1			3
Leucaena leucocephala	**White leadtree**				1			1					1	3
Micranthemum umbrosum	**Shade Mudflower, Baby's Tears**										1	1	1	3
Sphagneticola (Wedelia) trilobata	**Creeping Oxeye**	1									1		1	3
Urochloa mutica	**Para Grass**										1	1	1	3
Blutaparon vermiculare	**Silverhead, Saltweed**	1	1											2
Cyperus ligularis	**Flat Sedge**				1							1		2
Distichlis spicata	**Salt Grass**		1					1						2
Panicum repens	**Torpedo Grass**	1									1			2
Parthenocissus quinquefolia	**Woodbine**											1	1	2
Quercus laurifolia	**Laurel oak**											1	1	2
Smilax bona-nox	**Saw Greenbrier Cat Briar**									1	1			2
Thespesia populnea	**Seaside Mahoe**					1		1						2
Blechnum serrulatum	**Swamp Fern**											1		1
Casuarina equisetifolia	**Australian Pine**						1							1
Dichromena colorata	**White-Top Sedge**										1			1
Dioscorea bulbifera	**Air Potato**												1	1
Hydrocotyl umbellata	**Manyflower Marshpennywort, Water Pennywort**												1	1
Juncus roemerianus	**Needle Rush, Black Rush**									1				1
Ludwigia leptocarpa	**Anglestem Primrosewillow**												1	1
Ludwigia spp.	**Water Primroses, Primrosewillow**												1	1
Mikania scandens	**Climbing Hempvine**												1	1
Salix caroliniana	**Carolina Willow; Coastalplain Willow**												1	1
Schoenoplectus tabernaemontani	**Softstem Bulrush**										1			1
Typha spp.	**Cattails**												1	1
Urena lobata	**Caesar's Weed**												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 Bear Branch. Figure 81 shows the bottom hardness raster for Bear Branch. This map is meant to help identify locations of harder and softer bottoms for benthic invertebrate sampling, fish sampling and benthic chlorophyll sampling. The higher the hardness values the harder the substrate.

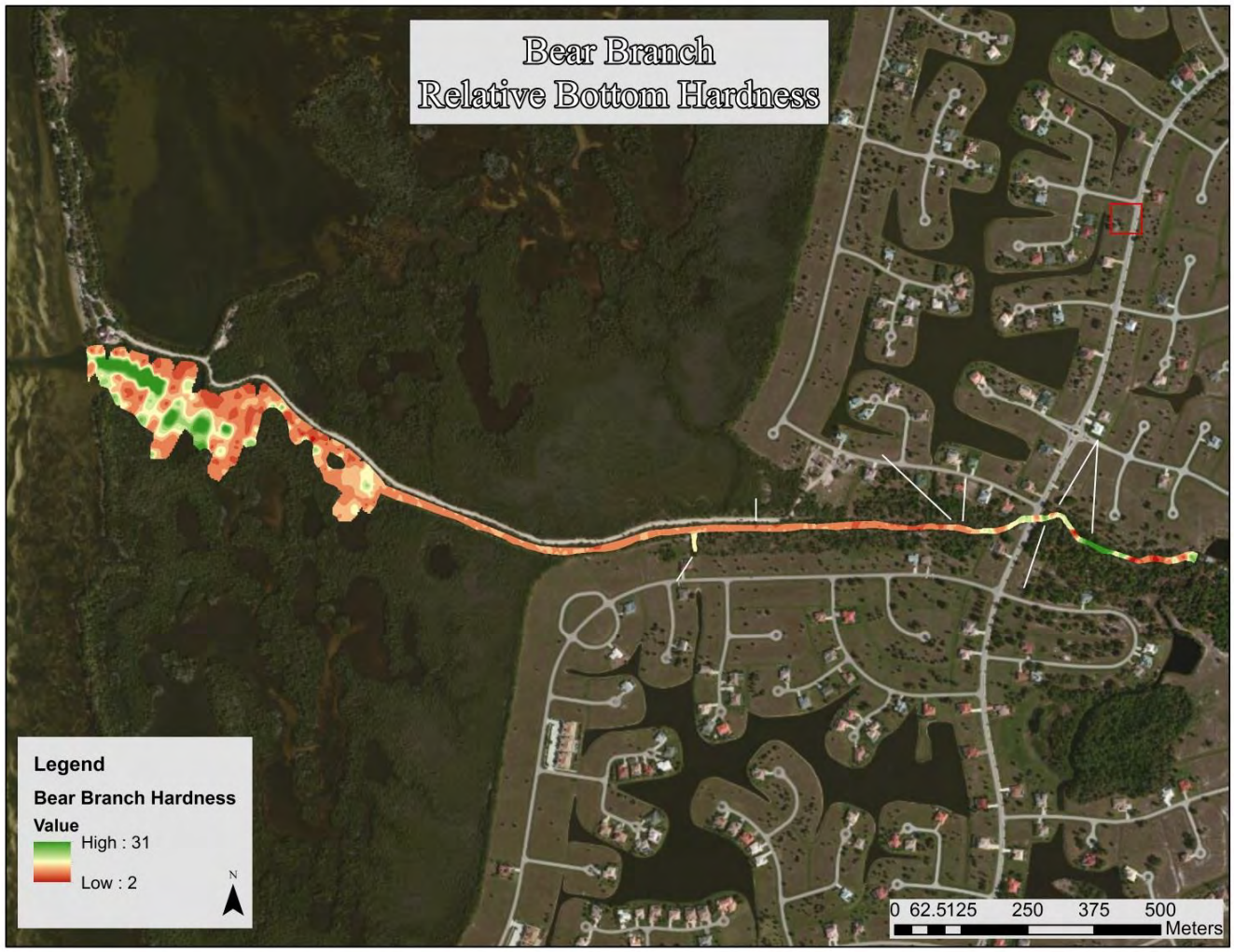

Figure 81. Bear Branch Relative Bottom Hardness Map

Bathymetry Mapping

In the study area, Bear Branch had a mean depth of 3.28 feet and a maximum depth of 10.22 feet. A total of 21.19 acres of creek was mapped during the assessment. At the time of assessment, Bear Branch contained an estimated 18,600,604 gallons of water in the study area. Figure 82 and Figure 83 detail the bathymetric mapping for Bear Branch showing the three depth stratum.

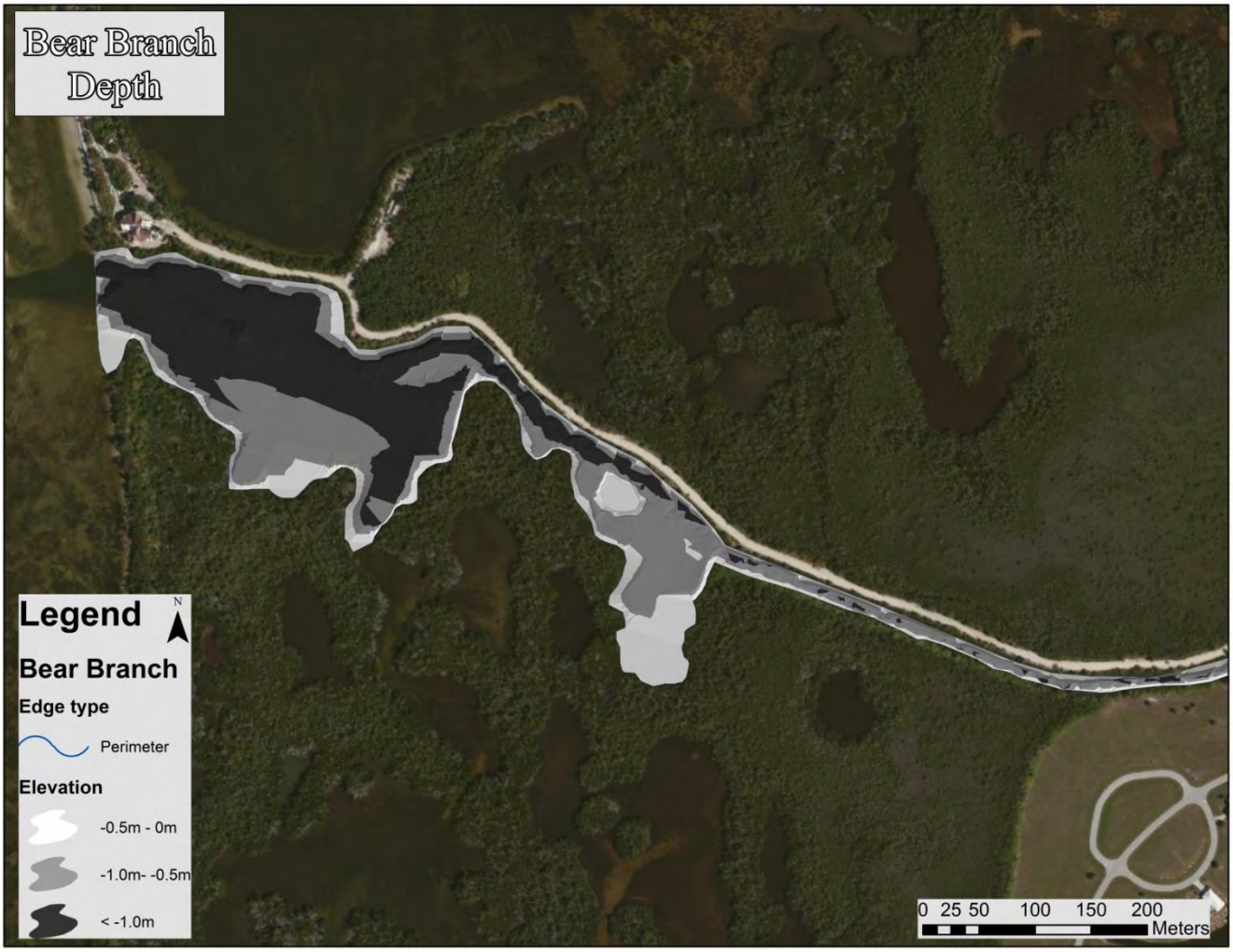

Figure 82. Bear Branch Bathymetric Stratum Map (1 of 2)

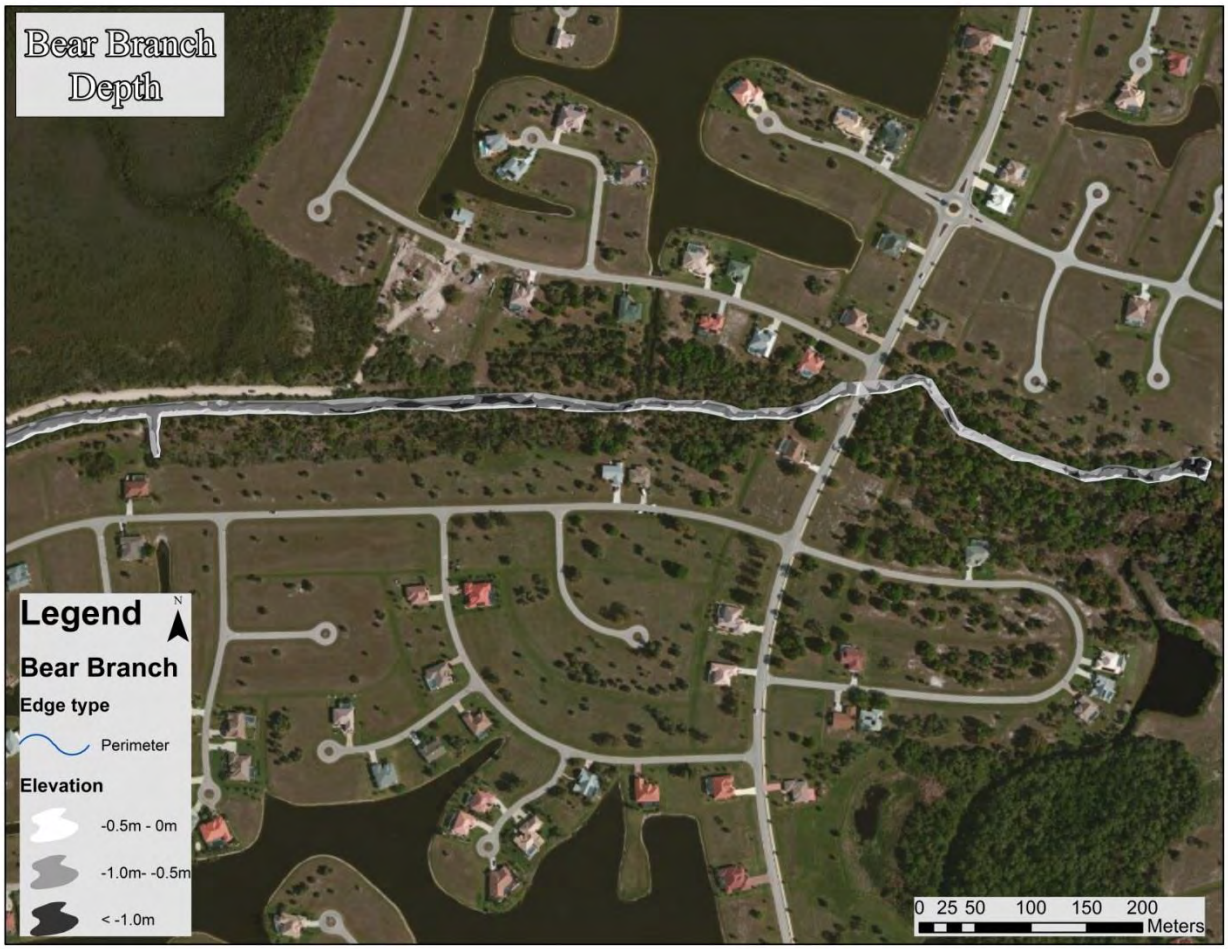

Figure 83. Bear Branch Bathymetric Stratum Map (2 of 2)