North Creek Stream Assessment

Study Area

North Creek was assessed on September 3, 2014. North Creek is located in the Little Sarasota Bay Watershed in Sarasota County as shown in Figure 26. The North Creek watershed is dominated by residential (44.69%), natural land/open water (18.85%) and golf courses (14.41%). The watershed of North Creek has an LDI value of 29.21. North Creek's banks have little development and are naturally sloping with a vegetative border.

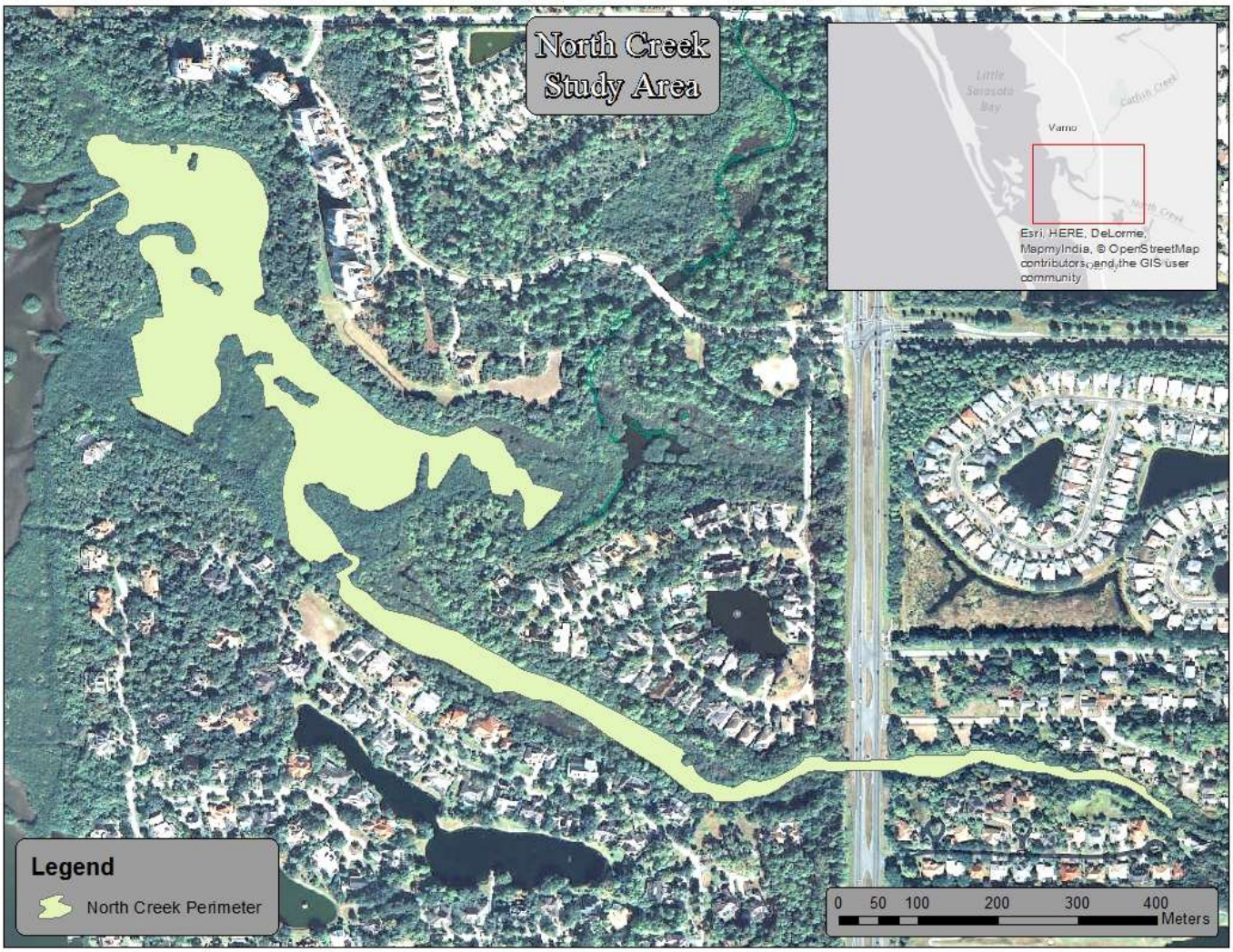

Figure 26. Overview of the North Creek Study Area

Vegetation Survey

The North Creek vegetation assessment encompassed 12 vegetation regions from the mouth in Little Sarasota Bay to upstream from U.S. Highway 41 as shown in Figure 27. In these regions, 34 species of vegetation were identified. Regions 1 through 6 were dominated by mangroves (*Rhizophora mangle, Laguncularia racemosa* and *Avicennia geminans*) with few other salt tolerant species present. The first occurrences of Leather Fern (*Acrostichum danaeifolium*), Cattails (*Typha*) and Needle Rush (*Juncus roemerianus*) were in Region 7. Common Bacopa (*Bacopa monnieri*) was first observed in Region 8. Above Region 12 was not accessible due to the creek being blocked by mangroves and Brazilian Pepper (*Schinus terebinthifolius*).

Figure 27. Overview of North Creek Vegetation Assessment Regions

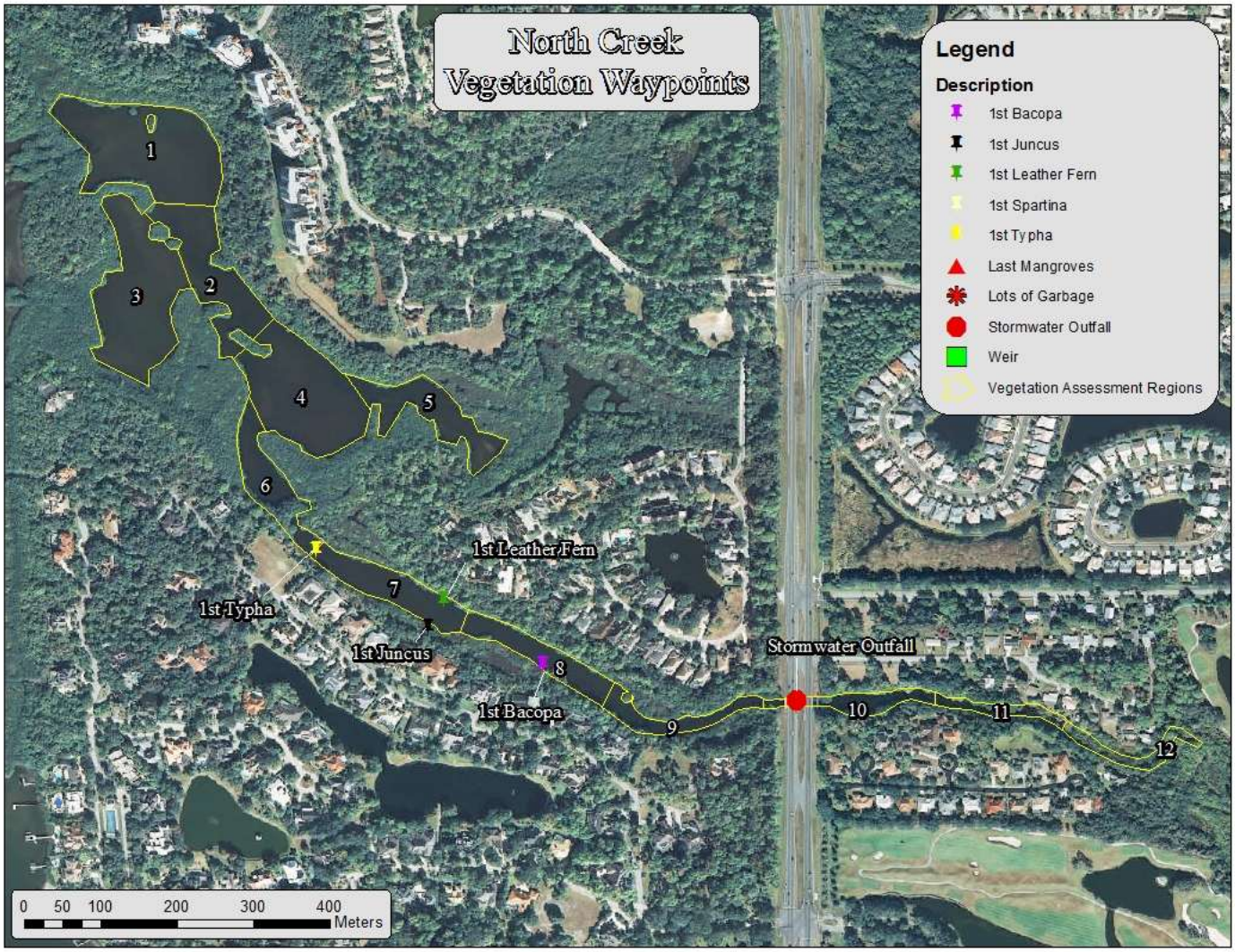

Figure 28. North Creek Vegetation Waypoints

Figure 28 shows the vegetation transition zone of North Creek indicating the most downstream Leather Fern, *Bacopa*, *Typha* and *Juncus*. Based on the vegetation assessment data for North Creek, Regions 1 through 6 would comprise the highest salinity and tidal influence zone, Regions 7 through 12 would comprise the "mixing" zone and above Region 12 would comprise the freshwater dominant zone. The vegetation assessment species lists are shown in Tables 6 through 8.

Table 6. North Creek Vegetation Assessment List

Plant Species	Common Name	Sample Region												Regions Found
		1	2	3	4	5	6	7	8	9	10	11	12	
Laguncularia racemosa	White Mangrove	1	1	1	1	1	1	1	1	1	1	1	1	12
Quercus geminata	Sand Live Oak	1	1	1	1	1	1	1	1	1	1	1	1	12
Sabal palmetto	Sabal Palm	1	1	1	1		1	1	1	1	1	1	1	11
Vitis rotundifolia	Muscadine Grape	1	1		1	1		1	1	1	1	1	1	10
Schinus terebinthifolius	Brazilian Pepper	1	1		1			1	1	1	1	1	1	9
Avicennia germinans	Black Mangrove	1	1	1	1	1				1		1	1	8
Conocarpus erecta	Buttonwood	1	1	1	1	1	1		1	1				8
Myrica cerifera	Wax Myrtle		1		1	1			1	1	1	1		7
Pinus elliottii	Slash Pine		1	1		1	1	1	1	1				7
Acrostichum danaeifolium	Leather Fern							1	1	1	1	1	1	6
Juniperus virginiana	Red Cedar	1	1	1		1	1	1						6
Rhizophora mangle	Red Mangrove	D	D	D	D	D	D	1	1	1	1	1	1	6
Typha spp.	Cattails						1	1		1	1	1	1	6
Bacopa monnieri	Common Bacopa, Herb-Of-Grace								1	1	1	1	1	5
Serenoa repens	Saw palmetto	1	1		1				1	1				5
Crinum americanum	Swamp lily									1	1	1	1	4
Spartina alterniflora	Salt Marsh Grass					1		1	1	1				4
Alternanthera philoxeroides	Alligator Weed										1	1	1	3
Juncus roemerianus	Needle Rush, Black Rush							1	1	1				3
Casuarina equisetifolia	Australian Pine			1			1							2
Cyperus involucratus	Umbrella flat sedge										1	1		2
Panicum repens	Torpedo Grass									1		1		2
Pluchea rosea	Rosy Camphorweed										1	1		2
Albizia lebbeck	Woman's Tounge						1							1
Andropogon glomeratus	Bushy bluestem										1			1
Baccharis halimifolia	Eastern False Willow, Saltbush								1					1
Borrichia frutescens	Sea Oxeye												1	1
Cladium jamaicense	Jamaica Swamp Saw Grass										1			1
Cyperus odoratus	Fragrant Flatsedge												1	1
Diospyros virginiana	Common Persimmon										1			1
Distichlis spicata	Salt Grass										1			1
Ficus aurea	Strangler Fig										1			1
Iva frutescens	Marsh Elder												1	1
Syzgium cumini	Java Plum											1		1

Habitat Assessment

Collected sonar data were 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 North Creek. Figure 29 shows the bottom hardness raster for North Creek. This map is meant to help identify locations of harder and softer bottoms for benthic invertebrate sampling, fish sampling and benthic chlorophyll sampling.

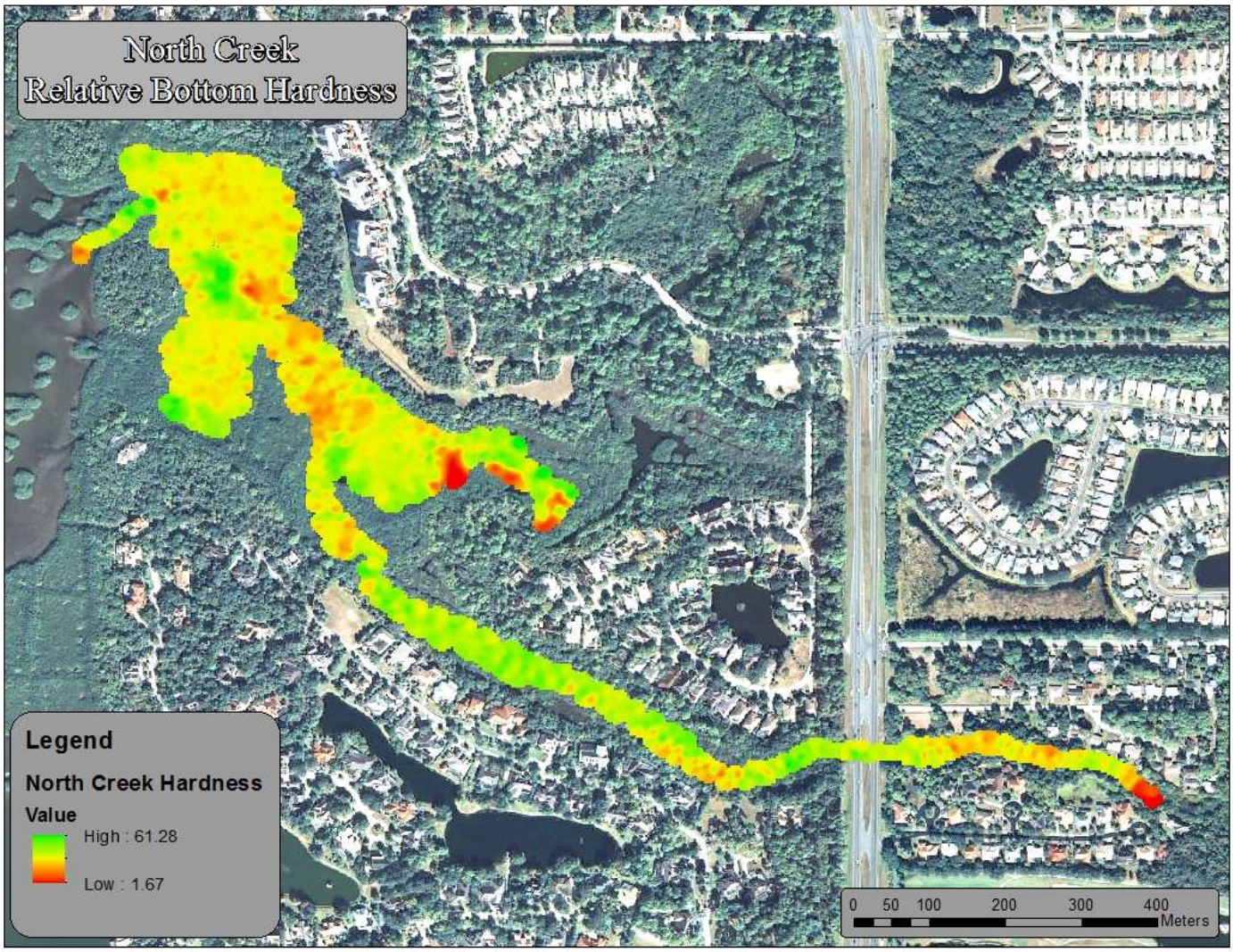

Figure 29. North Creek Relative Bottom Hardness Map

Bathymetry Mapping

In the study area, North Creek had a mean depth of 1.74 feet and a maximum depth of 5.52 feet. A total of 25.23 acres of creek was mapped during the assessment. At the time of assessment, North Creek contained an estimated 11,629,899 gallons of water in the study area. The water level elevation was 4.75 at Sarasota ARMS NO-1 station at the time of the assessment. Figure 30 details the bathymetric mapping for North Creek showing the three depth strata.

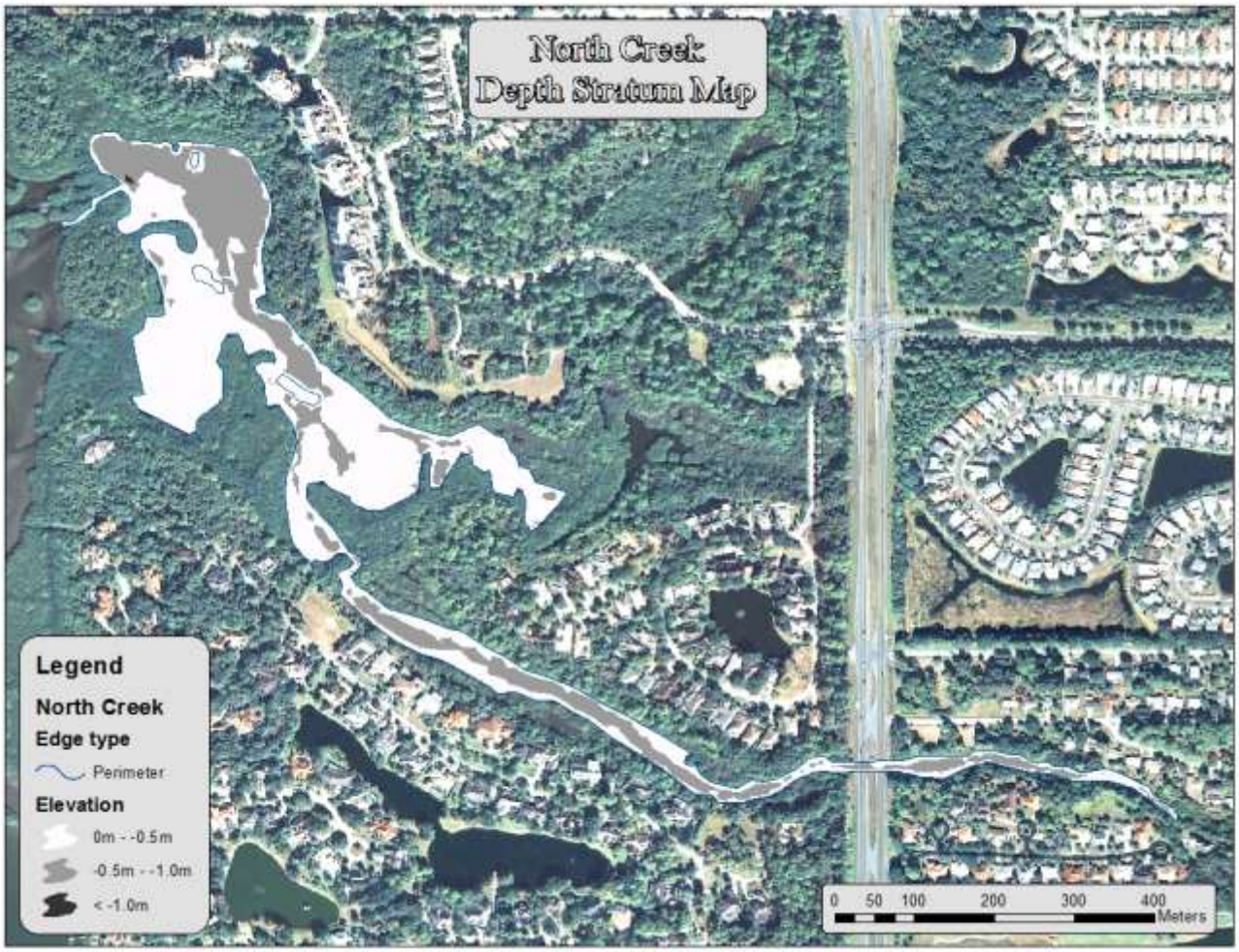

Figure 30. North Creek Bathymetric Stratum Map