Yucca Pen Creek Stream Assessment

Study Area

Yucca Pen Creek is located in the Charlotte Harbor Watershed in Northern Lee County with its head waters in a swamp east of Burnt Store Road and its mouth in Charlotte Harbor as shown in Figure 84. The watershed of Yucca Pen Creek has a LDI value of 2.4 while the creek has less development immediately surrounding it giving it a buffer LDI value of 1.8.

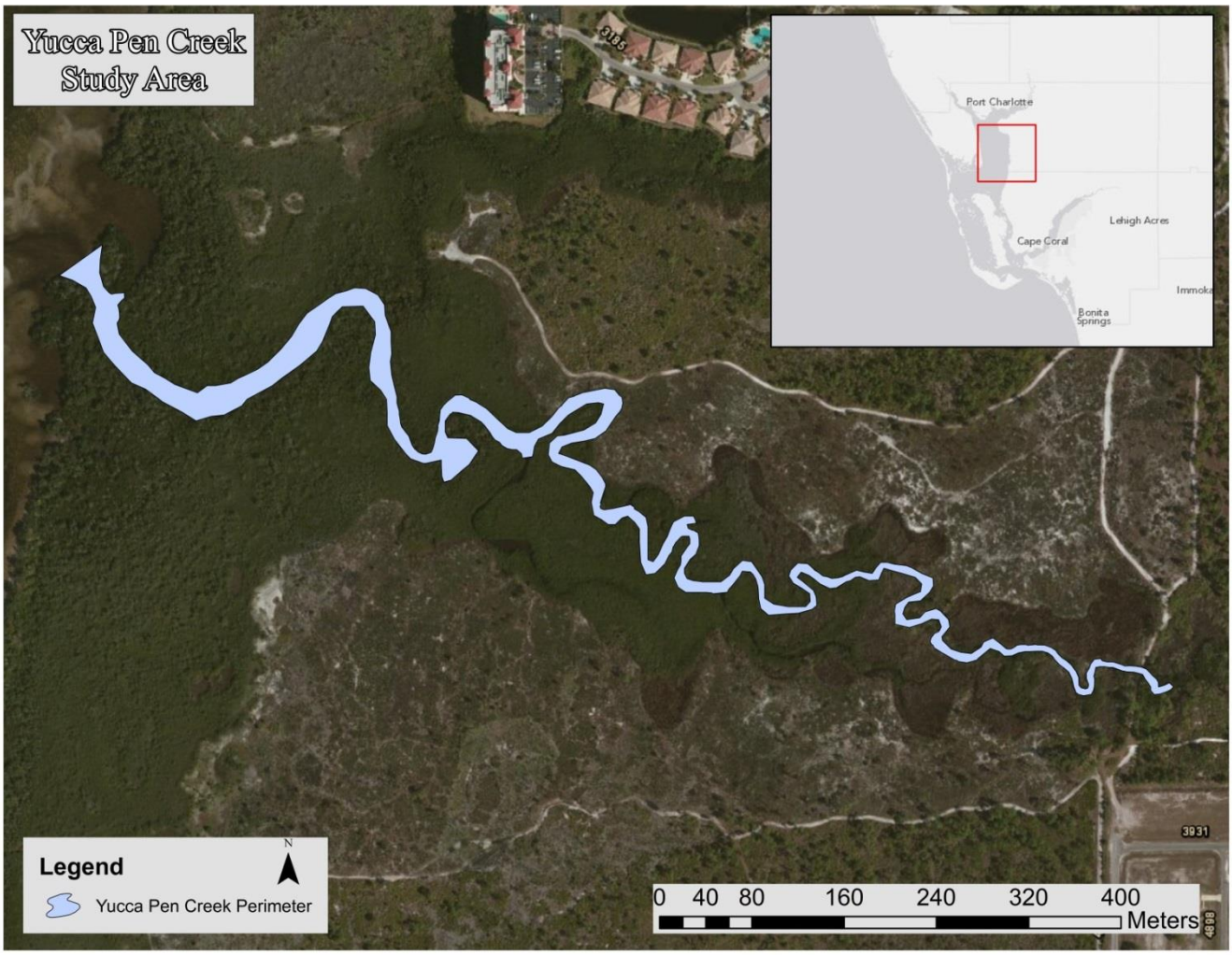

Figure 84. Overview of the Yucca Pen Creek Study Area

Vegetation Survey

The Yucca Pen Creek vegetation assessment encompassed 8 vegetation regions from the mouth in Charlotte Harbor to Old Burnt Store Road as shown in Figure 85. In these regions, 20 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 6, becoming dominant in region 7. Needle Rush (*Juncus roemerianus*) was first observed in region 4. Throughout the study area they vegetation indicated influence of salinity.

Figure 85. Overview of Yucca Pen Creek Vegetation Assessment Regions

Figure 86 shows the vegetation transition zone of Yucca Pen Creek indicating the downstream extent of Leather fern and Juncus. Based on the vegetation assessment data for Yucca Pen Creek, regions 1 through 6 would comprise the highest salinity and tidal influence zone, regions 7 through 8 would comprise the "mixing" zone. The vegetation assessment species list is shown in Table 20.

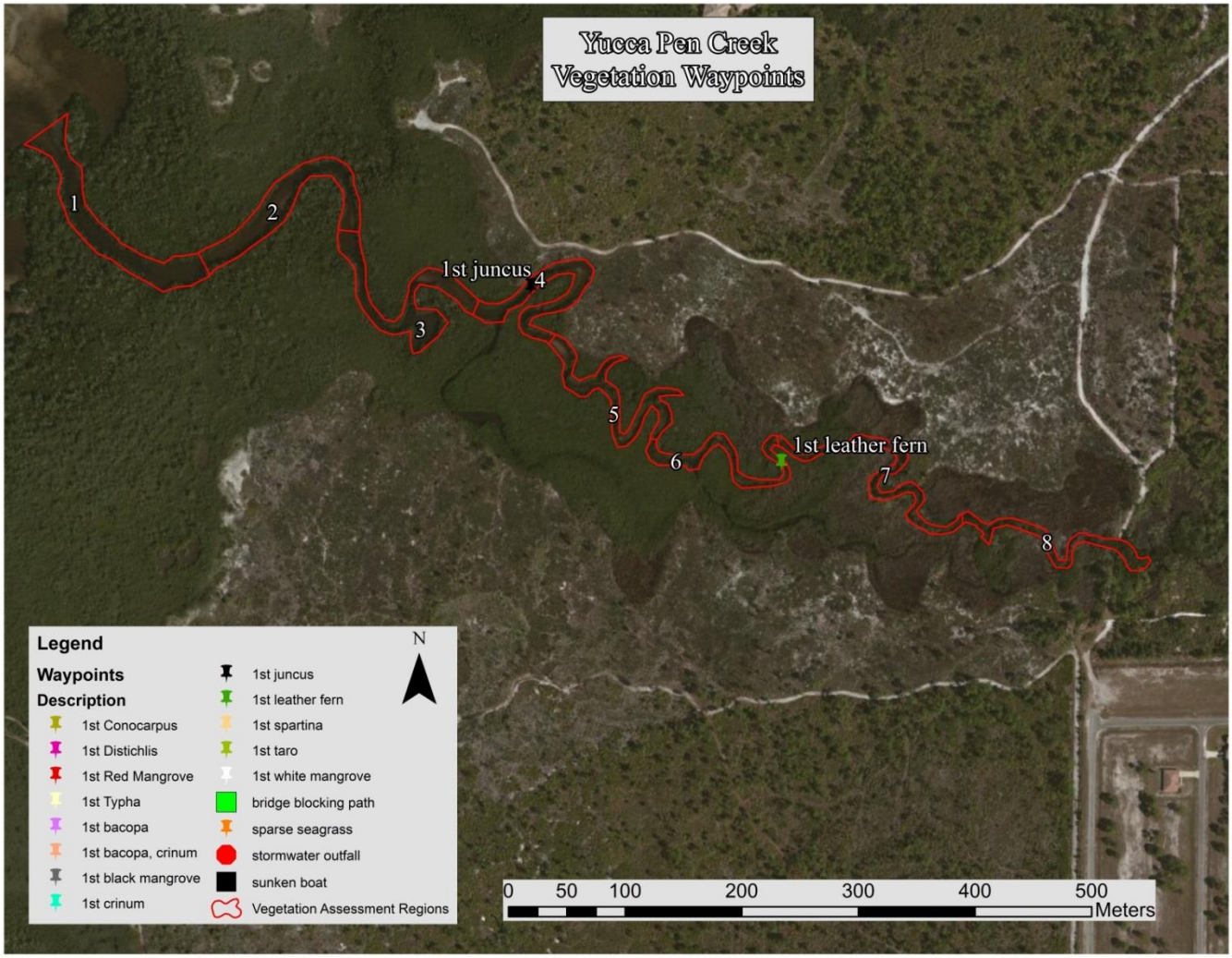

Figure 86. Yucca Pen Creek Vegetation Assessment Waypoints

Table 20. Yucca Pen Creek Vegetation Assessment List

Plant Species	Common Name	Sample Region								Regions Found
		1	2	3	4	5	6	7	8	
Laguncularia racemosa	White Mangrove	1	1	1	1	1	1	1	1	**8**
Rhizophora mangle	Red Mangrove	D	D	D	C	D	D	C	D	**8**
Juncus roemerianus	Needle Rush, Black Rush				1	1	1	1	1	**5**
Avicennia germinans	Black Mangrove	1	1	1	1					**4**
Acrostichum danaeifolium	Leather Fern						1	C	1	**3**
Baccharis halimifolia	Eastern False Willow, Saltbush				1	1			1	**3**
Conocarpus erecta	Buttonwood				1			1	1	**3**
Schinus terebinthifolius	Brazilian Pepper				1			1	1	**3**
Myrica cerifera	Wax Myrtle				1	1				**2**
Serenoa repens	Saw palmetto				C	1				**2**
Bacopa monnieri	Common Bacopa, Herb-Of-Grace								1	**1**
Eustachys glauca	Saltmarsh Fingergrass				1					**1**
Borrichia frutescens	Sea Oxeye					1				**1**
Dalbergia ecastaphyllum	Coin Vine				1					**1**
Melaleuca quinquenervia	Punk Tree, Melaleuca								1	**1**
Pinus spp	Pine				1					**1**
Quercus geminata	Sand Live Oak							1		**1**
Sabal palmetto	Sabal Palm				1					**1**
Spartina alterniflora	Salt Marsh Grass	1								**1**
Spartina bakerii	Cordgrass				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 Yucca PenCreek. Figure 87 shows the bottom hardness raster for Yucca Pen Creek. This map is meant to help identify locations of harder and softer bottoms for benthic invertebrate sampling, fish sampling and benthic chlorophyll sampling.

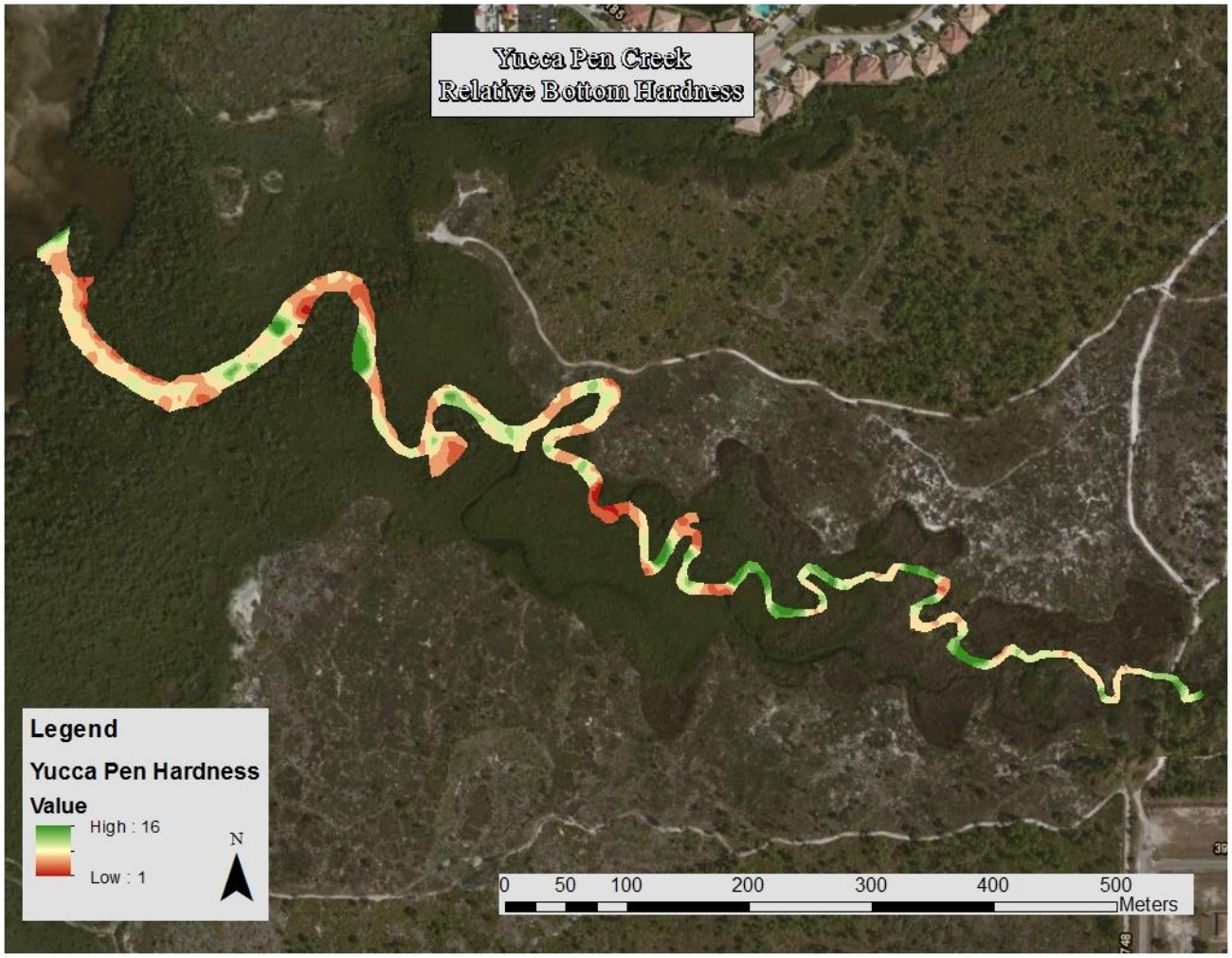

Figure 87. Yucca Pen Creek Relative Bottom Hardness Map

Bathymetry Mapping

In the study area, Yucca Pen Creek had a mean depth of 3.49 feet and a maximum depth of 12.87 feet. A total of 5.12 acres of creek was mapped during the assessment. At the time of assessment, Yucca Pen Creek contained an estimated 3,051,932 gallons of water in the study area. Figure 88 details the bathymetric mapping for Yucca Pen Creek showing the three depth stratum.

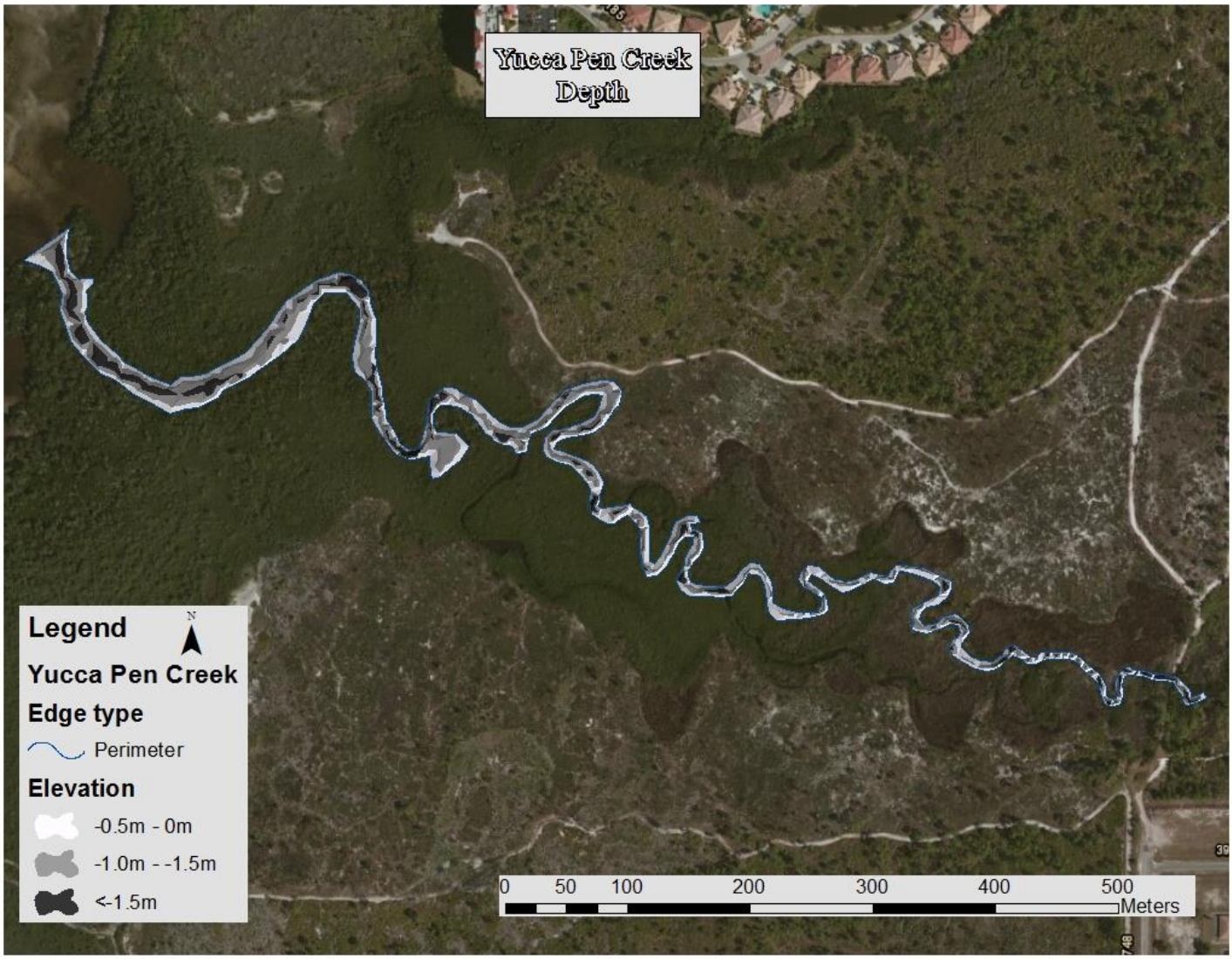

Figure 88. Yucca Pen Creek Bathymetric Stratum Map