Whidden Creek Stream Assessment

Study Area

Whidden Creek is the most natural unaltered creek of the creeks selected for sampling. Located at the southern portion of Cape Haze in Charlotte County, it is highly tidally influenced creek with little fresh water input. Whidden Creek's watershed is mostly comprised of mangroves, marsh lands, and other natural features and has a watershed LDI value of 2.2. The only development near Whidden Creek is to northwest and is a residential area with no structures on it. The buffer LDI score for Whidden Creek is the lowest of all creeks in the study with a value of 1.

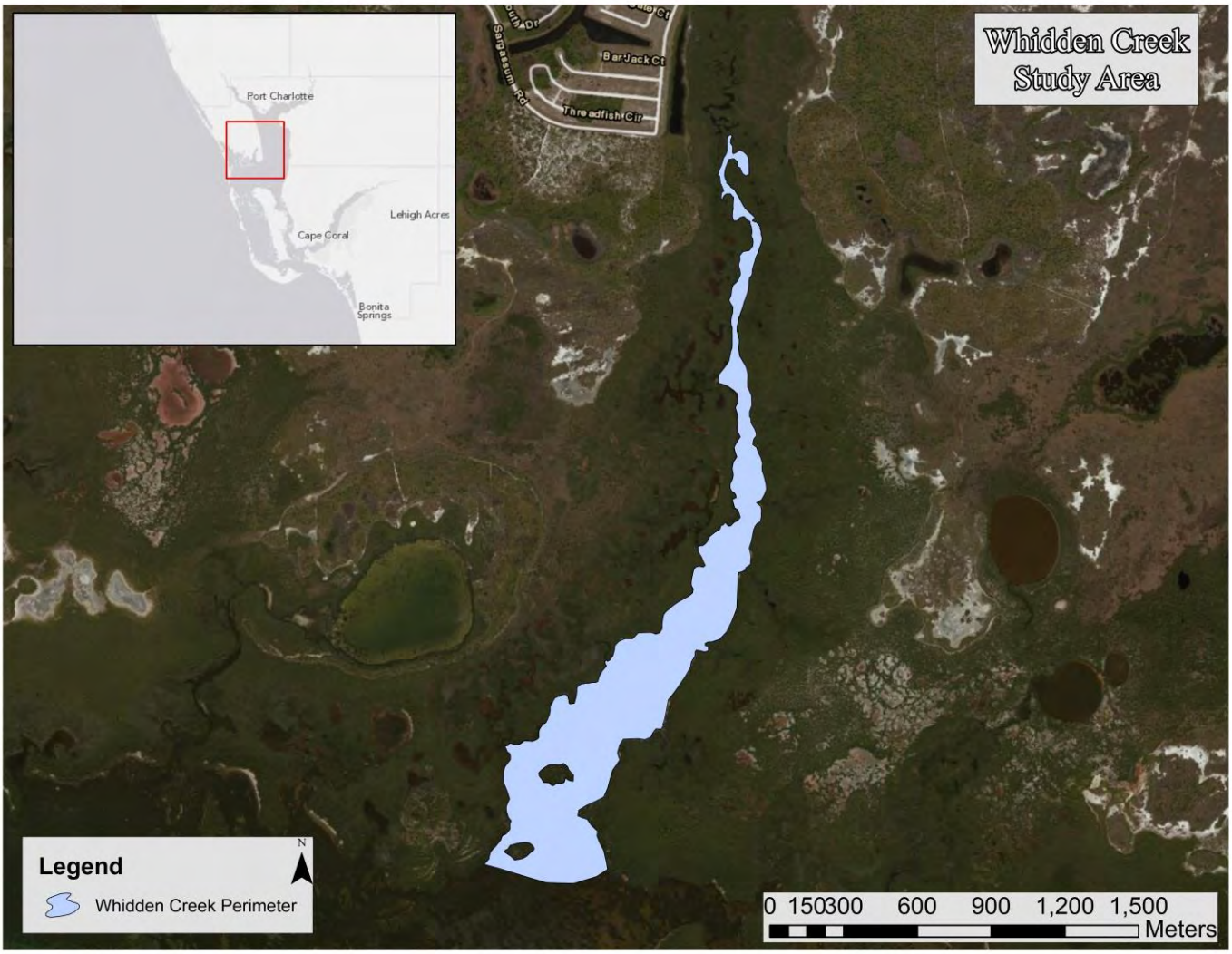

Figure 62. Overview of the Whidden Creek Study Area

Vegetation Survey

The Whidden Creek vegetation assessment encompassed 18 vegetation regions from the mouth in Cape Haze as shown in Figure 63. In these regions, 5 species of vegetation were identified. Regions 1 through 18 were dominated by mangroves (*Rhizophora mangle, Laguncularia racemosa* and *Avicennia geminans*). The only observed vegetation gradient in the study area was a change in species of seagrasses. Turtle Grass (*Thalassia testudinum)* was present in regions 1 through 3. Widgeon Grass (*Ruppia maritima*) was present in regions 1 through 14. Above Region 14 there was no more submerged vegetation observed.

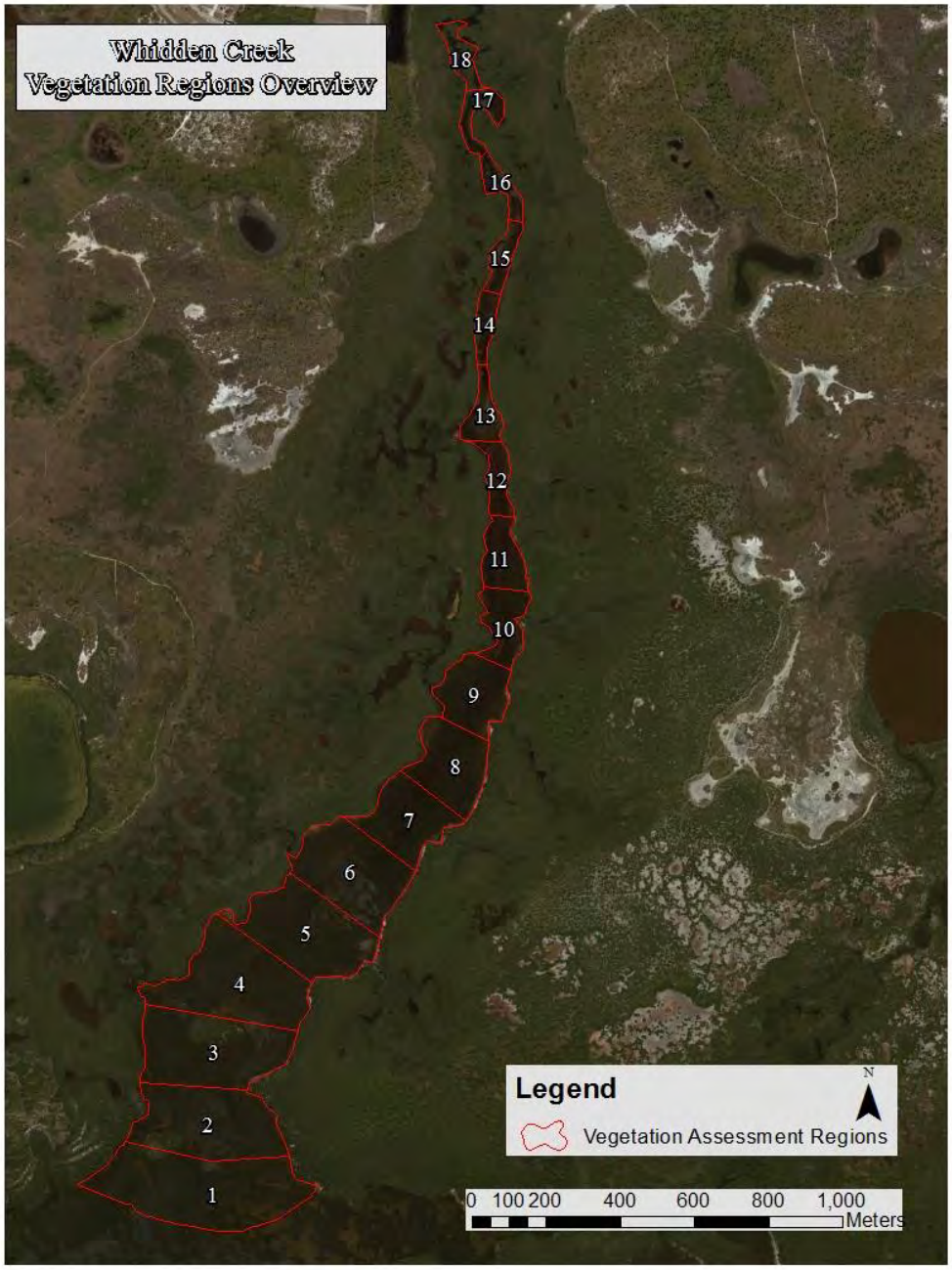

Figure 63. Overview of Whidden Creek Vegetation Assessment Regions

Figure 64 shows the vegetation transition zone of Whidden Creek indicating the most upstream seagrass. Based on the vegetation assessment data for Whidden Creek, regions 1 through 3 would comprise the highest salinity and tidal influence zone due to the presence of Turtle Grass, regions 4 through 14 would comprise the "mixing" zone due to the presence of Widgeon Grass and regions 15 through 18 would comprise the least saltwater dominant zone. The vegetation assessment species list is shown in Table 16.

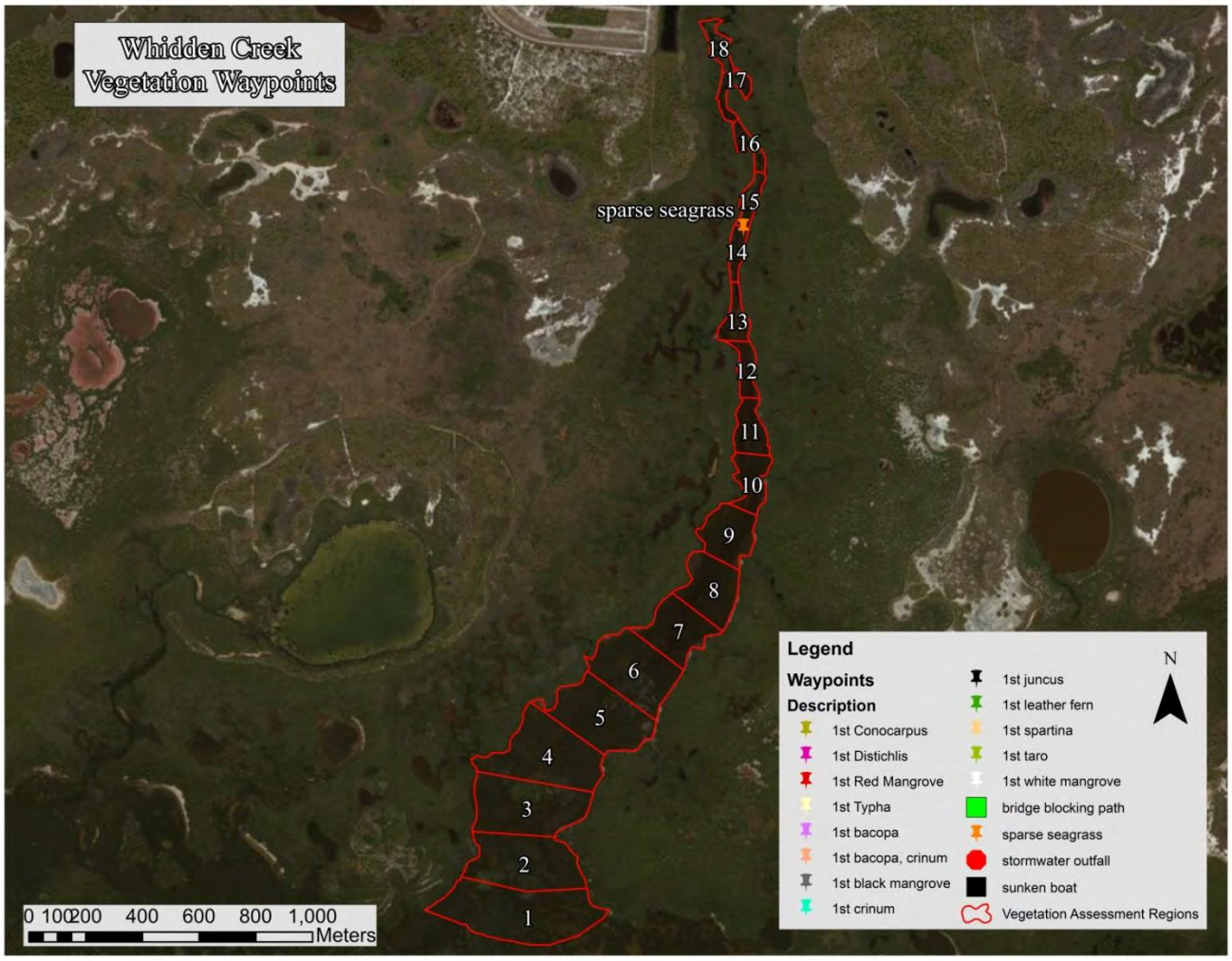

Figure 64. Whidden Creek Vegetation Waypoints

Table 16. Whidden 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**	
Avicennia germinans	**Black Mangrove**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18
Laguncularia racemosa	**White Mangrove**	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	18
Rhizophora mangle	**Red Mangrove**	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	18
Ruppia maritima	**Widgeon Grass**	1	1	1	1	1	1	1	1	1	1	1	1	1	1					14
Thalassia testudinum	**Turtle-grass**	1	1	1																3

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 Whidden Creek. Figure 65 shows the bottom hardness raster for Whidden Creek. This map is meant to help identify locations of harder and softer bottoms for benthic invertebrate sampling, fish sampling and benthic chlorophyll sampling.

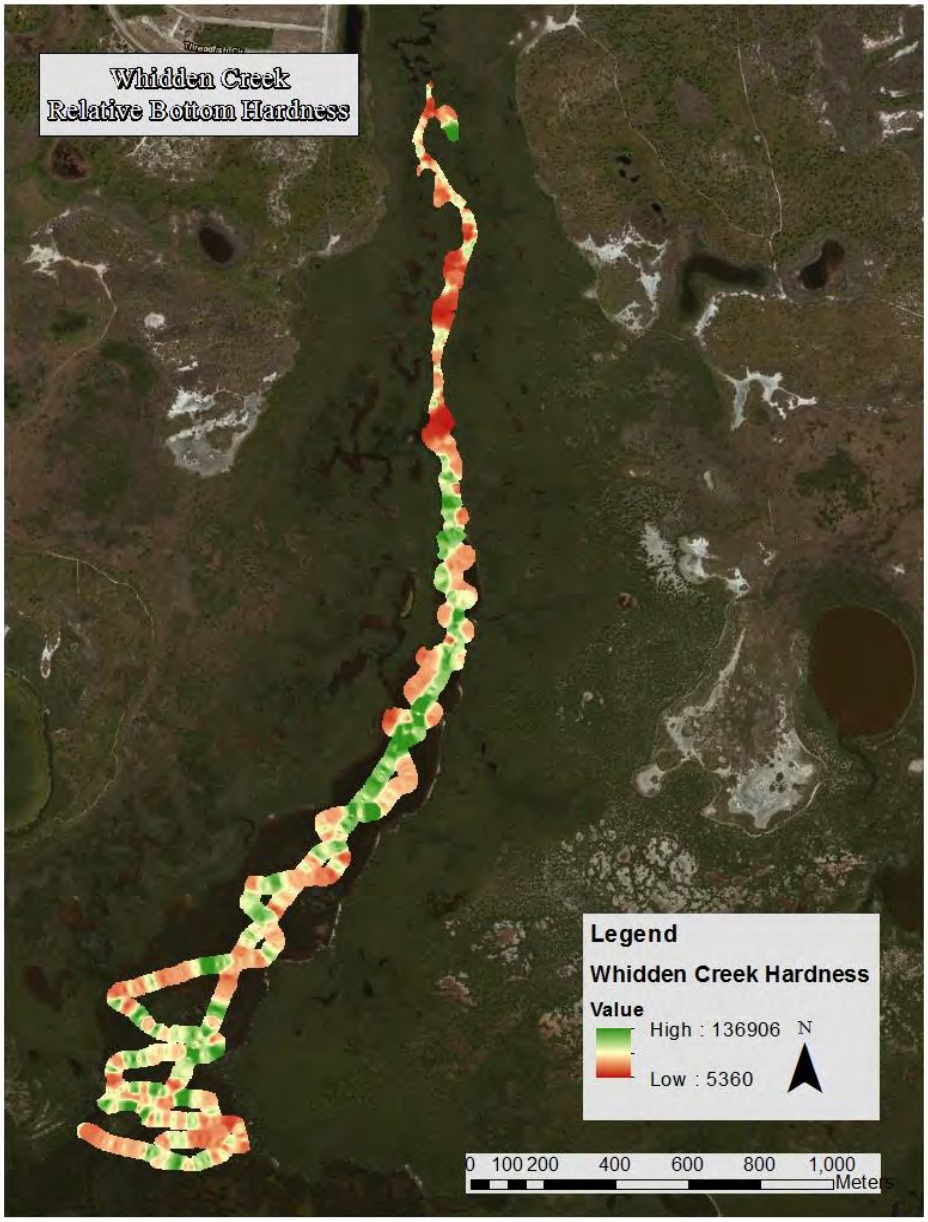

Figure 65. Whidden Creek Relative Bottom Hardness Map

Bathymetry Mapping

In the study area, Whidden Creek had a mean depth of 1.35 feet and a maximum depth of 5.19 feet. A total of 144.95 acres of creek was mapped during the assessment. At the time of assessment, Whidden Creek contained an estimated 39,793,034 gallons of water in the study area. Figure 66 details the bathymetric mapping for Whidden Creek showing the three depth stratum.

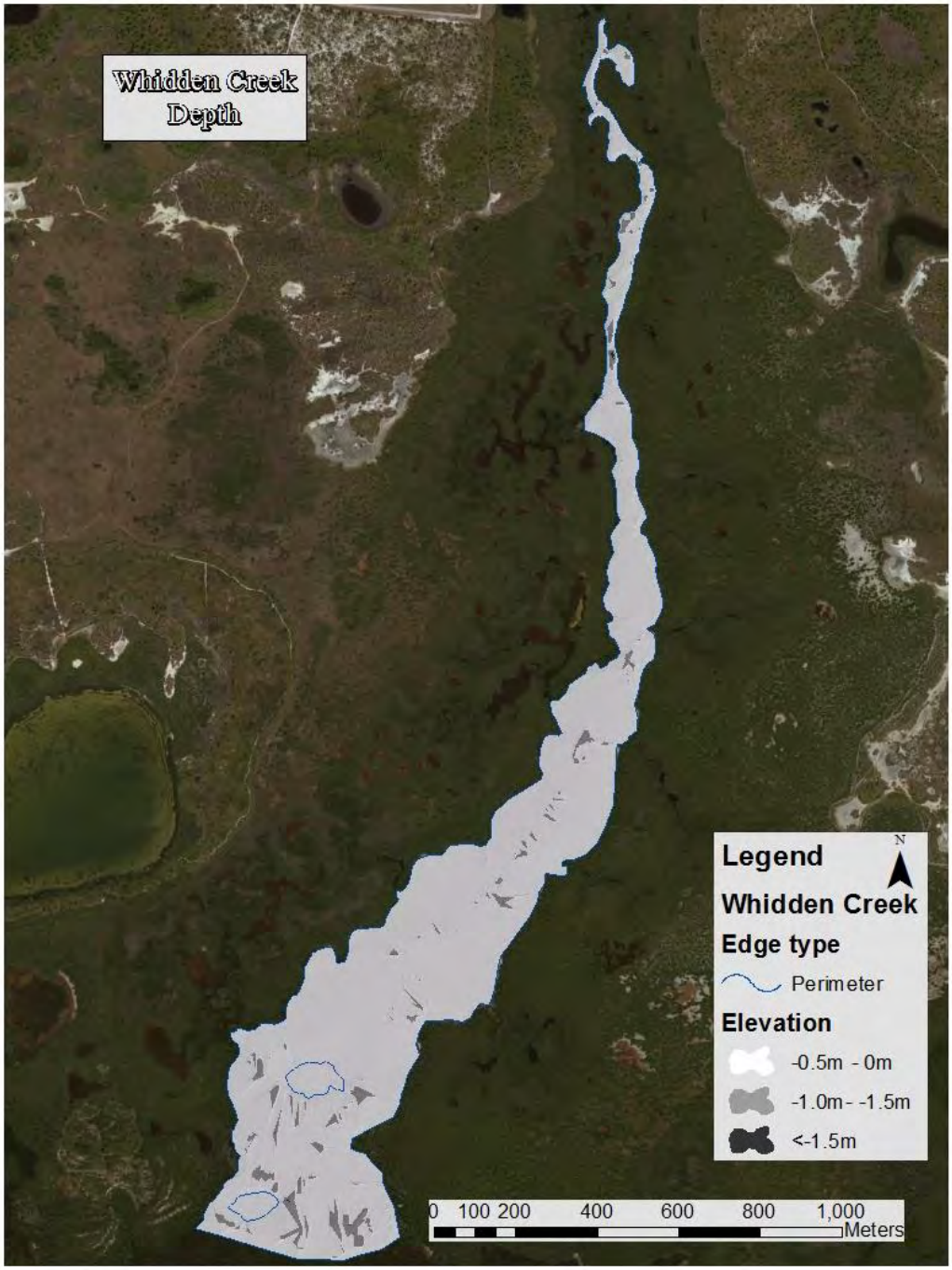

Figure 66. Whidden Creek Bathymetric Stratum Map