

Palma Sola Creek Stream Assessment

Study Area

Palma Sola Creek has a watershed that is dominated by residential (40.14%), natural/open land (18.88%) and pasture (9.09%) with an LDI of 30.09. Palma Sola Creek flows into Palm Sola Bay north of Cortez Road in Manatee County.



Figure 41. Overview of the Palma Sola Creek Study Area

Vegetation Survey

The Palma Sola Creek vegetation assessment encompassed 2 vegetation regions from the mouth in Palma Sola Bay to 75th Street West as shown in Figure 42. In these regions, 20 species of vegetation were identified. Region 1 was dominated by mangroves (*Rhizophora mangle*, *Laguncularia racemosa* and *Avicennia geminans*) with few other salt tolerant species present. The most upstream mangrove was in Region 2. The first occurrence of Leather Fern (*Acrostichum danaeifolium*) was in Region 1. Needle Rush (*Juncus roemerianus*) was also first observed in Region 1. Above Region 2 the vegetation communities are populated by many species indicative of dominating freshwater influence. The main channel of Palma Sola Creek is very congested with mangroves and Brazilian Pepper (*Schinus terebinthifolius*). It was not possible to travel upstream past the beginning portion of Region 2. At 75th Street many species of freshwater vegetation were observed and none of the typical salt water species were observed.



Figure 42. Overview of Palma Sola Creek Vegetation Assessment Regions

Figure 43 shows the vegetation transition zone of Palm Sola Creek indicating the most downstream *Juncus* and *Spartina*. Based on the vegetation assessment data for Palma Sola Creek, Region 1 and 2 would comprise the highest salinity and tidal influence zone. The upper portion of Region 2 would comprise the “mixing” zone and above Region 2 would comprise the freshwater dominant zone. The vegetation assessment species list is shown in Table 13.



Figure 43. Palm Sola Creek Vegetation Waypoints

Table 10. Palma Sola Creek Vegetation Assessment List

Plant Species	Common Name	Sample Region		Regions Found
		1	2	
<i>Quercus virginiana</i>	Virginia Live Oak	1	1	2
<i>Schinus terebinthifolius</i>	Brazilian Pepper	1	1	2
<i>Algal Spp.</i>	Algal Mats, Floating		1	1
<i>Alternanthera philoxeroides</i>	Alligator Weed		1	1
<i>Avicennia germinans</i>	Black Mangrove	1		1
<i>Casuarina equisetifolia</i>	Australian Pine	1		1
<i>Commelina diffusa</i>	Dayflower		1	1
<i>Cyperus odoratus</i>	Fragrant Flatsedge		1	1
<i>Dalbergia ecastaphyllum</i>	Coin Vine	1		1
<i>Eleocharis baldwinii</i>	Baldwin's Spikerush, Roadgrass		1	1
<i>Juncus roemerianus</i>	Needle Rush, Black Rush	1		1
<i>Laguncularia racemosa</i>	White Mangrove	1		1
<i>Leucaena leucocephala</i>	White leadtree		1	1
<i>Ludwigia repens</i>	Creeping Primrosewillow, Red Ludwigia		1	1
<i>Myrica cerifera</i>	Wax Myrtle	1		1
<i>Najas guadelupensis</i>	Southern Waternymph		1	1
<i>Quercus laurifolia</i>	Laurel oak		1	1
<i>Rhizophora mangle</i>	Red Mangrove	1		1
<i>Sesuvium portulacastrum</i>	Sea-Purslane	1		1
<i>Spartina alterniflora</i>	Salt Marsh Grass	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 Palma Sola Creek. Figure 44 shows the bottom hardness raster for Palma Sola Creek. This map is meant to help identify locations of harder and softer bottoms for benthic invertebrate sampling, fish sampling and benthic chlorophyll sampling.

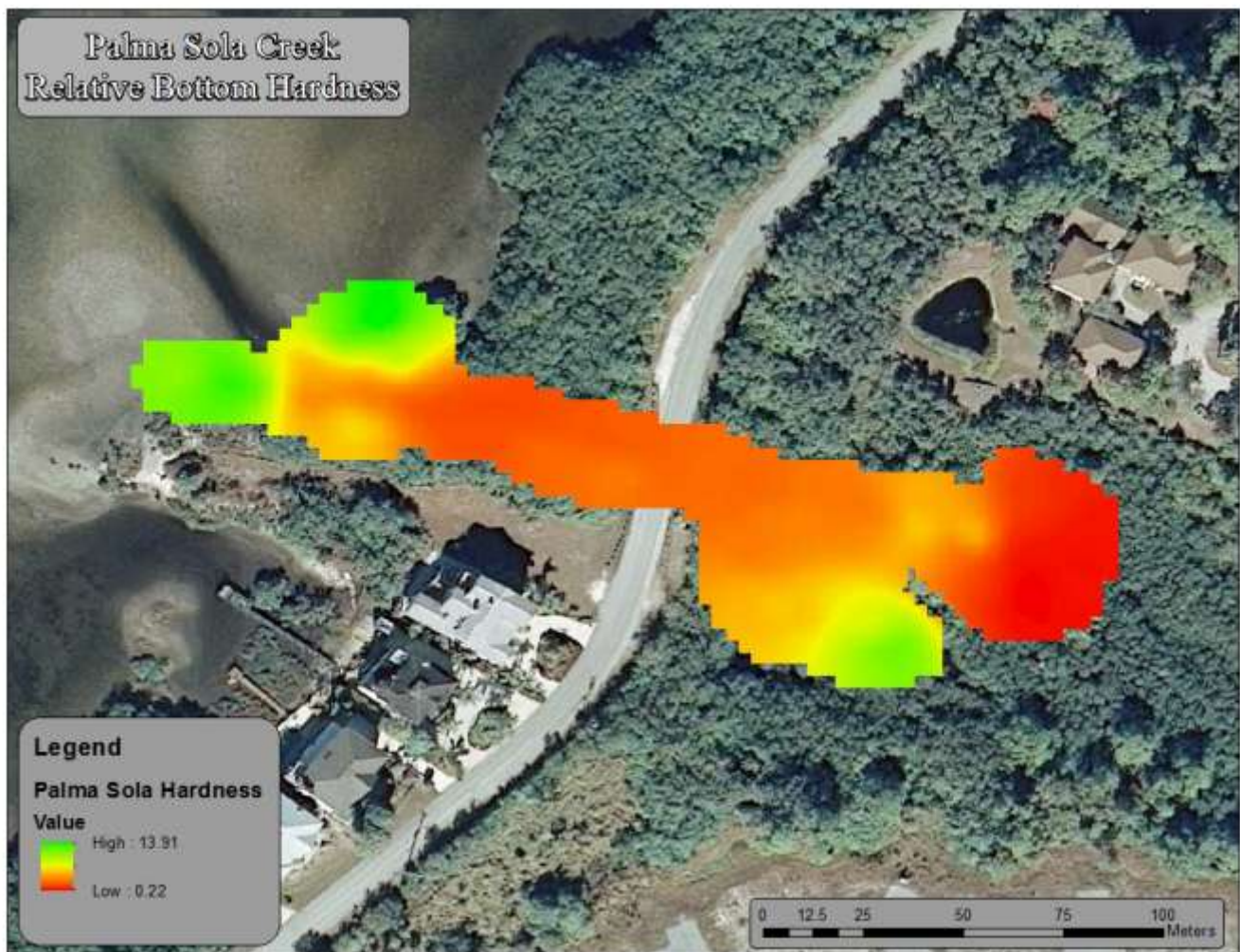


Figure 44. Palma Sola Creek Relative Bottom Hardness Map

Bathymetry Mapping

In the study area, Palma Sola Creek had a mean depth of 1.88 feet and a maximum depth of 4.44 feet. A total of 1.27 acres of creek was mapped during the assessment. At the time of assessment, Palma Sola Creek contained an estimated 41,849 gallons of water in the study area. The water level elevation at the time of the assessment was 2.51 feet at SWFWMD 26206. Figure 45 details the bathymetric mapping for South Creek showing the three depth strata.



Figure 45. Palma Sola Creek Bathymetric Stratum Map