

South Creek Stream Assessment

Study Area

South Creek has a watershed that is largely within Oscar Scherer State Park making for a relatively unaltered and natural hydrologic system. The upstream portion of South Creek is comprised of both forested and non-forested uplands. The majority of development is at the mouth of South Creek beyond US-41 this is also where there are minimal seawalls present. South Creek is one of the more natural watersheds in the study with a watershed LDI value of 4.6 and a creek LDI value of 2.0.

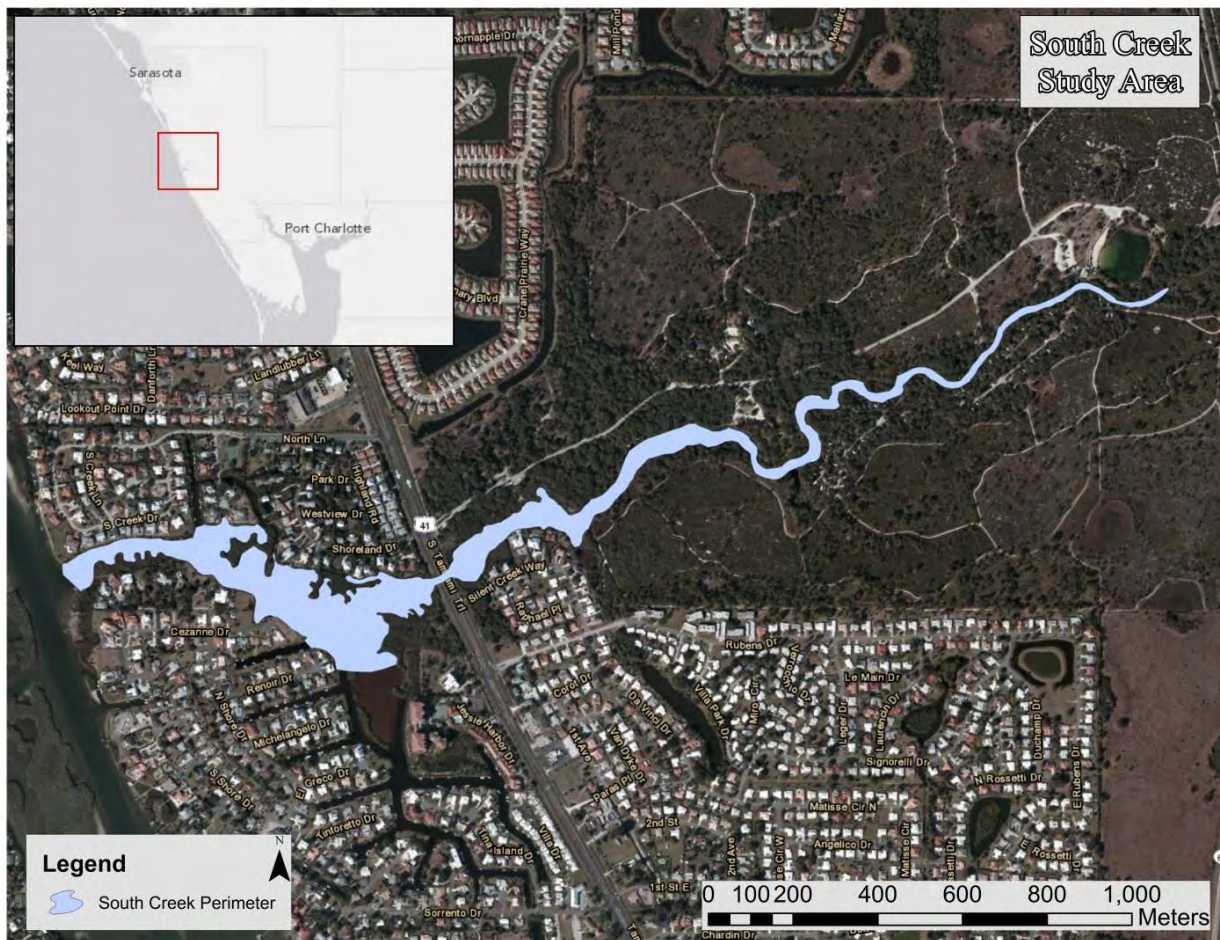


Figure 47. Overview of the South Creek Study Area

Vegetation Survey

The South Creek vegetation assessment encompassed 16 vegetation regions from the mouth in Blackburn Bay to upstream in Oscar Scherer State Park as shown in Figure 48. In these regions, 46 species of vegetation were identified. Regions 1 through 12 were dominated by mangroves (*Rhizophora mangle*, *Laguncularia racemosa* and *Avicennia geminans*) with few other salt tolerant species present. The most upstream mangrove was *Avicennia geminans* in Region 15. The first occurrence of Leather Fern (*Acrostichum danaeifolium*) was in Region 6. Needle Rush (*Juncus roemerianus*) was first observed in Region 6 with the last occurrence in Region 14. Above Region 13 the vegetation communities are populated by many species indicative of dominating freshwater influence.



Figure 48. Overview of South Creek Vegetation Assessment Regions

Figure 49 shows the vegetation transition zone of South Creek indicating the most upstream *Juncus* as well as the most downstream Leather Fern, *Juncus* and *Spartina*. Based on the vegetation assessment data for South Creek, regions 1 through 4 would comprise the highest salinity and tidal influence zone, regions 5 through 12 would comprise the “mixing” zone and regions 13 through 16 would comprise the freshwater dominant zone. The vegetation assessment species list is shown in Table 13.



Figure 49. South Creek Vegetation Waypoints

Table 13. South 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	
<i>Quercus virginiana</i>	Virginia Live Oak	1	1	1	1	C	C	C	C	C	C	C	1	C	C	C	16	
<i>Laguncularia racemosa</i>	White Mangrove	1	1	1	1	C	C	C	C	C	C	C	1	1	1		15	
<i>Sabal palmetto</i>	Sabal Palm	1	1	1	1	1	1	1	1	1	1	1	1	1	1		15	
<i>Schinus terebinthifolius</i>	Brazilian Pepper	1	1	1	1	1	1	1	1	1	1	1	1	1	1		13	
<i>Rhizophora mangle</i>	Red Mangrove	D	D	D	D	C	C	C	C	C	1	1	1				12	
<i>Serenoa repens</i>	Saw palmetto					1	1	1	C	C	C	C	1	C	C	C	12	
<i>Acrostichum danaeifolium</i>	Leather Fern					1	1	1	1	1	1	1	1	1	1	1	11	
<i>Conocarpus erecta</i>	Buttonwood	1	1	1	1	1	1	1	1	1	1	1					11	
<i>Pinus spp</i>	Pine					1	1	1	1	1	1	1	1	1	1	1	11	
<i>Vitis rotundifolia</i>	Muscadine Grape					1	1	1	1	1	1	1	1		1	1	11	
<i>Baccharis halimifolia</i>	Eastern False Willow, Saltbush		1		1	1	1	1	1	1	1	1					10	
<i>Avicennia germinans</i>	Black Mangrove	1	1	1	1	1	1	1	1	1							9	
<i>Juncus roemerianus</i>	Needle Rush, Black Rush					1	1	1	1	1	1	1	1	1			8	
<i>Myrica cerifera</i>	Wax Myrtle								1	1	1	1	1	1		1	7	
<i>Quercus laurifolia</i>	Laurel oak										1	1	1	1	1	1	6	
<i>Callicarpa americana</i>	American Beauty Berry							1				1	1	1		1	5	
<i>Juniperus virginiana</i>	Red Cedar	1				1	1	1	1								5	
<i>Iva frutescens</i>	Marsh Elder	1			1	1	1	1									4	
<i>Bacopa monnieri</i>	Common Bacopa, Herb-Of-Grace													1	1	1	3	
<i>Cyperus ligularis</i>	Flat Sedge				1	1								1			3	
<i>Parthenocissus quinquefolia</i>	Woodbine	1				1	1										3	
<i>Smilax auriculata</i>	Earleaf Greenbriar							1		1		1					3	
<i>Borrhchia frutescens</i>	Sea Oxeye				1				1	1							3	
<i>Ampelopsis arborea</i>	Peppervine				1											1	2	
<i>Eupatorium capillifolium</i>	Dog Fennel													1		1	2	
<i>Spartina alterniflora</i>	Salt Marsh Grass				1	1											2	
<i>Thelypteris denata</i>	Shield Fern													1	1		2	
<i>Abrus precatorius</i>	Rosary Pea				1												1	
<i>Andropogon glomeratus</i>	Bushy bluestem															1	1	
<i>Blechnum serrulatum</i>	Swamp Fern															1	1	
<i>Boehmeria cylindrica</i>	Bog Hemp, False Nettle													1			1	
<i>Casuarina equisetifolia</i>	Australian Pine		1														1	
<i>Cephalanthus occidentalis</i>	Common Buttonbush															1	1	
<i>Distichlis spicata</i>	Salt Grass				1												1	
<i>Ipomoea pes-caprae</i>	Railroad Vine		1														1	
<i>Melaleuca quinquenervia</i>	Punk Tree, Melaleuca			1													1	
<i>Paspalum repens</i>	Water Paspalum															1	1	
<i>Pluchea rosea</i>	Rosy Camphorweed											1					1	
<i>Quercus nigra</i>	Water Oak															1	1	
<i>Rapanea punctata</i>	Myrsine								1								1	
<i>Salix caroliniana</i>	Carolina Willow; Coastalplain Willow													1			1	
<i>Spartina bakerii</i>	Cordgrass								1								1	
<i>Typha spp.</i>	Cattails					1											1	
<i>Urochloa mutica</i>	Para Grass															1	1	
<i>Ximenia americana</i>	Tallow Wood, Hog Plum									1							1	
<i>Schefflera actinophylla</i>	Australian Umbrella Tree	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 South Creek. Figure 50 shows the bottom hardness raster for South 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 50. South Creek Relative Bottom Hardness Map

Bathymetry Mapping

In the study area, South Creek had a mean depth of 2.7 feet and a maximum depth of 8.4 feet. A total of 39.5 acres of creek was mapped during the assessment. At the time of assessment, South Creek contained an estimated 25,269,730 gallons of water in the study area. Figure 51 details the bathymetric mapping for South Creek showing the three depth stratum.



Figure 51. South Creek Bathymetric Stratum Map