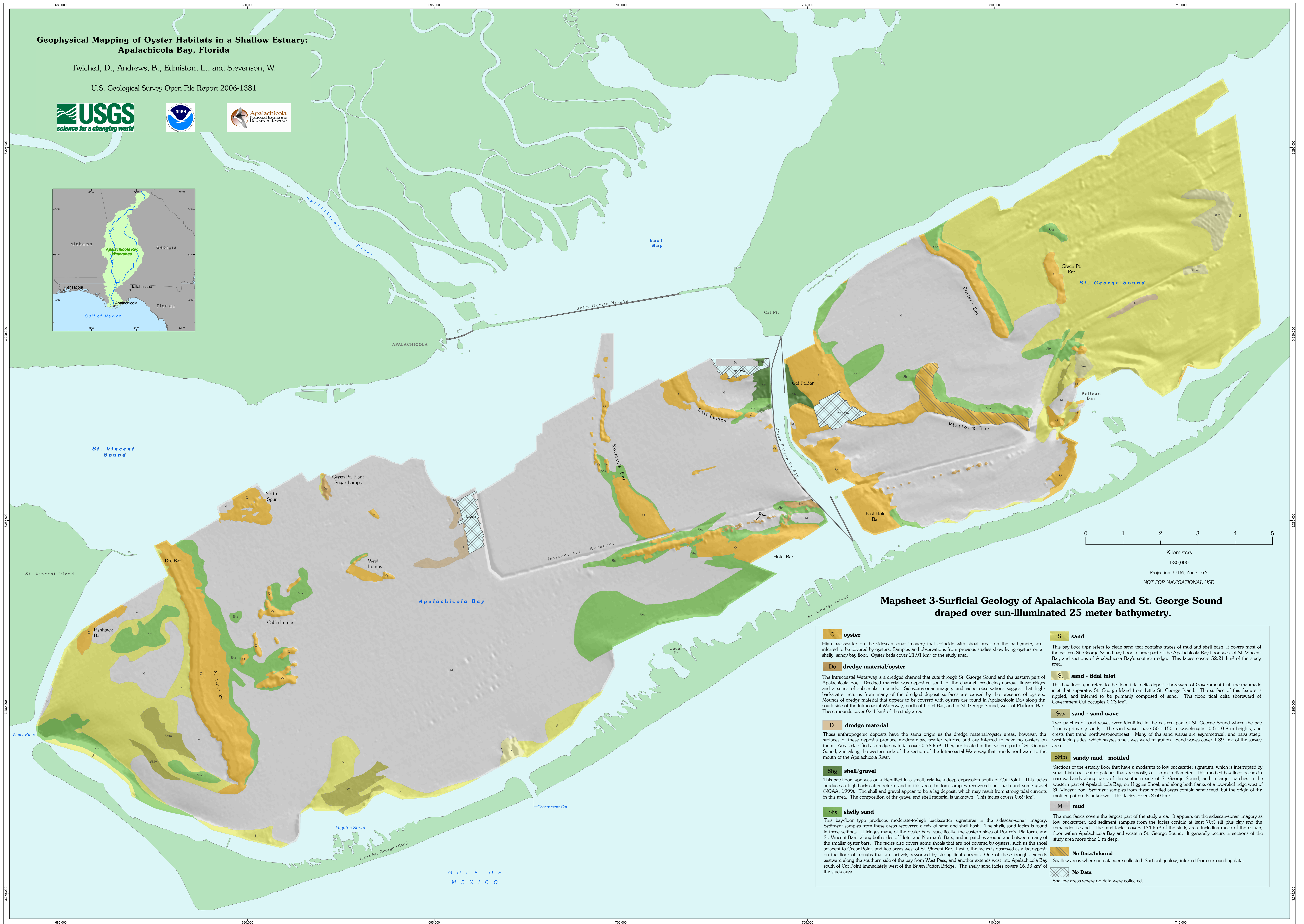


**Geophysical Mapping of Oyster Habitats in a Shallow Estuary:
Apalachicola Bay, Florida**

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Mapsheet 3-Surficial Geology of Apalachicola Bay and St. George Sound draped over sun-illuminated 25 meter bathymetry.

<p>O oyster High backscatter on the sidescan-sonar imagery that coincide with shoal areas on the bathymetry are inferred to be covered by oysters. Samples and observations from previous studies show living oysters on a shelly, sandy bay floor. Oyster beds cover 21.91 km² of the study area.</p> <p>Do dredge material/oyster The Intracoastal Waterway is a dredged channel that cuts through St. George Sound and the eastern part of Apalachicola Bay. Dredged material was deposited south of the channel, producing narrow, linear ridges and a series of subcircular mounds. Sidescan-sonar imagery and video observations suggest that high-backscatter returns from many of the dredged deposit surfaces are caused by the presence of oysters. Mounds of dredge material that appear to be covered with oysters are found in Apalachicola Bay along the south side of the Intracoastal Waterway, north of Hotel Bar, and in St. George Sound, west of Platform Bar. These mounds cover 0.41 km² of the study area.</p> <p>D dredge material These anthropogenic deposits have the same origin as the dredge material/oyster areas; however, the surfaces of these deposits produce moderate-backscatter returns, and are inferred to have no oysters on them. Areas classified as dredge material cover 0.78 km². They are located in the eastern part of St. George Sound, and along the western side of the section of the Intracoastal Waterway that trends northward to the mouth of the Apalachicola River.</p> <p>Shg shell/gravel This bay-floor type was only identified in a small, relatively deep depression south of Cat Point. This facies produces a high-backscatter return, and in this area, bottom samples recovered shell hash and some gravel (NOAA, 1995). The shell and gravel appear to be a lag deposit, which may result from strong tidal currents in this area. The composition of the gravel and shell material is unknown. This facies covers 0.69 km².</p> <p>Shs shelly sand This bay-floor type produces moderate-to-high backscatter signatures in the sidescan-sonar imagery. Sediment samples from these areas recovered a mix of sand and shell hash. The shelly-sand facies is found in three settings. It fringes many of the oyster bars, specifically, the eastern sides of Porter's, Platform, and St. Vincent Bars, along both sides of Hotel and Norman's Bars, and in patches around and between many of the smaller oyster bars. The facies also covers some shoals that are not covered by oysters, such as the shoal adjacent to Cedar Point, and two areas west of St. Vincent Bar. Lastly, the facies is observed as a lag deposit on the floor of troughs that are actively reworked by strong tidal currents. One of these troughs extends eastward along the southern side of the bay from West Pass, and another extends west into Apalachicola Bay south of Cat Point immediately west of the Bryan Patton Bridge. The shelly sand facies covers 16.33 km² of the study area.</p>	<p>S sand This bay-floor type refers to clean sand that contains traces of mud and shell hash. It covers most of the eastern St. George Sound bay floor, a large part of the Apalachicola Bay floor, west of St. Vincent Bar, and sections of Apalachicola Bay's southern edge. This facies covers 52.21 km² of the study area.</p> <p>St sand - tidal inlet This bay-floor type refers to the flood tidal delta deposit shoreward of Government Cut, the manmade inlet that separates St. George Island from Little St. George Island. The surface of this feature is rippled, and inferred to be primarily composed of sand. The flood tidal delta shoreward of Government Cut occupies 0.23 km².</p> <p>Ssw sand - sand wave Two patches of sand waves were identified in the eastern part of St. George Sound where the bay floor is primarily sandy. The sand waves have 50 - 150 m wavelengths, 0.5 - 0.8 m heights, and crests that trend northwest-southeast. Many of the sand waves are asymmetrical, and have steep, west-facing sides, which suggests net, westward migration. Sand waves cover 1.39 km² of the survey area.</p> <p>SMm sandy mud - mottled Sections of the estuary floor that have a moderate-to-low backscatter signature, which is interrupted by small high-backscatter patches that are mostly 5 - 15 m in diameter. This mottled bay floor occurs in narrow bands along parts of the southern side of St. George Sound, and in larger patches in the western part of Apalachicola Bay, on Higgins Shoal, and along both flanks of a low-relief ridge west of St. Vincent Bar. Sediment samples from these mottled areas contain sandy mud, but the origin of the mottled pattern is unknown. This facies covers 2.60 km².</p> <p>M mud The mud facies covers the largest part of the study area. It appears on the sidescan-sonar imagery as low backscatter, and sediment samples from the facies contain at least 70% silt plus clay and the remainder is sand. The mud facies covers 134 km² of the study area, including much of the estuary floor within Apalachicola Bay and western St. George Sound. It generally occurs in sections of the study area more than 2 m deep.</p> <p>No Data/Inferred Shallow areas where no data were collected. Surficial geology inferred from surrounding data.</p> <p>No Data Shallow areas where no data were collected.</p>
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