



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
WATER

MEMORANDUM TO ASSERT JURISDICTION FOR SAC-2008-2191

Subject: Determination of Wetland Adjacent to Traditional Navigable Waters (TNWs) for SAC-2008-2191

I. Summary

The United States government has determined that the interdunal wetland at issue on the project site for JD SAC-2008-2191 is adjacent to Capers Creek, Harbor River, and Village Creek, all TNWs. This determination is consistent with the Clean Water Act (CWA), the Environmental Protection Agency (EPA) regulations (including 40 C.F.R. § 230.3(s)(7) and 40 C.F.R. § 230.3(b)), relevant case law and existing guidance, including the December 2, 2008 joint EPA and Department of the Army legal memorandum entitled *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States* (Rapanos Guidance).

II. Background

This Memorandum summarizes the results of the Headquarters (HQ) level review conducted by U.S. EPA and the U.S. Army Corps of Engineers (Corps) regarding the draft JD form prepared by the Corps Charleston District for case number SAC-2008-2191. The subject of the JD is an interdunal wetland on St. Helena Island, South Carolina. In the draft JD form, the Corps Charleston District initially determined that the wetland was isolated non-jurisdictional with no substantial connection to interstate (or foreign) commerce. The review of this JD form was completed in accordance with the EPA and the Corps *Memorandum for Coordination on Jurisdictional Determinations (JDs) under Clean Water Act (CWA) Section 404 in Light of the SWANCC and Rapanos Supreme Court Decisions*, dated June 5, 2007 (Coordination Memo).

The Wallace tract is a back dunal zone that is generally a stable environment characterized by dunal ridges. These ridges transition across the site and have interdunal depressional areas, allowing for the formation of the freshwater wetlands onsite. Topographically, the project site has little relief hovering around 19 feet above sea level with dunes oriented in a Northeast – Southwest direction. The wetland ranges from 1000 feet from the waters of the Harbor River tributary to 2900 feet to the waters of Capers Creek (including wetlands). Based on an examination of the site location and characteristics for the project wetland, the Wallace Tract wetland is part of an integrated interdunal wetland system and is adjacent to the three TNWs.

III. Location and Setting

The project site encompasses 3.43 acres in Beaufort County South Carolina and is located at 32.377° north latitude and -80.569° west longitude on the Wallace Tract site on St. Helena Island (see Exhibit 1). St. Helena Island is a relic barrier island (also known as a sea island) east of the city of Beaufort, South Carolina. The island is surrounded by tidal waters in St. Helena Sound to the north, Point Royal Sound to the south, and several more tidal rivers and creeks. The Harbor River and a fragmented stretch of barrier islands, from Bay Point Island in the southeast to Harbor Island in the East, separate St. Helena Island from the Atlantic Ocean. Capers Creek flowing into the Chowan River and the Beaufort River all emptying into Port Royal Sound form the southern and western borders of the island. Eddings Point Creek flows into the Morgan River which empties into St. Helena Sound, together these form the western and northern borders of the island. Village Creek bisects the northern part of St. Helena Island, flowing from the center of the island northeast out to the Morgan River and St. Helena Sound. The Harbor River, Capers Creek, and Village Creek are TNWs because they are subject to the ebb and flow of the tides.¹

A barrier island is a narrow strip of sand located some distance offshore of the mainland. Barrier islands form along seacoasts throughout the world whenever there is adequate supply of sand, a low sloping coastal plain, and a wave dominated energy regime with tidal ranges less than three meters.² The actions and energy of the ocean initiate the formation of barrier islands and its series of dune ridges, interdunal depressional areas, and freshwater interdunal wetlands. Barrier islands can be very transient in that sea level, anthropogenic effects, and storm events can cause barrier islands to migrate landward, seaward, or laterally with adequate sand supplies and longshore currents. As these barrier islands mature and migrate, they typically form a series of dunes. The primary and secondary dunes generally occur near the shorefront and migrate in direct response to the seasonal stresses of wind and oceanic processes.³ Behind these more active dune fields, more stable fields generally develop. These areas typically support vegetation, including perennial shrubs, trees and vines. As a result of the more stable environment and increased vegetation, topographic relief in these areas is generally less pronounced than those dunes on the shorefront. Over time barrier islands may migrate landward and or become shielded from the open ocean by another line of barrier islands, becoming relic barrier or sea islands. St. Helena Island is one such island.

In both active and stable dune fields on barrier islands the environmental conditions may create depressional areas behind the dune ridges; it is in these areas that freshwater interdunal wetlands may occur. Generally, precipitation will easily permeate

¹ 40 C.F.R. § 230.3(s)(1), "All waters which are currently used, or were used in the past, or may be susceptible to use in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;" and *See Rapanos* Guidance, page 5.

² Bascom, W. 1980. *Waves and beaches, the dynamics of the ocean surface*. Anchor Press, Garden City. 366 pp.

³ For example, during the summer, the beaches and dunes will generally grow in width as the mild summer waves supply the onshore areas with sand and the gentle breezes blow that sand back into the dune fields. During the winter, the processes reverse.

sand and accumulate within a fresh water zone or freshwater lens beneath the surface of the barrier island. Where this freshwater table intersects the surface of the barrier island, freshwater wetlands may be found in the interdunal depressional areas atop a higher density salt water lens. This interface can be sharp or may grade slowly with depth into salt water in a transition zone discernible by increasing salinity.⁴

The project site consists predominantly of an interdunal environment, which includes 1.09 acres of an approximately 20 acre wetland. The wetland on site exhibits low-chroma sandy soils (2/1), 100% hydrophytic vegetation, and seven indicators of hydrology at the wetland boundary. The wetland is situated between two relic beach dunes in a depression. United States Geological Survey (USGS) maps mark this area as an enclosed depression and United States Fish and Wildlife Service (FWS) National Wetland Inventory (NWI) maps identify the larger wetland which extends off the site. Overall the Wallace tract is surrounded mostly by a natural interdunal landscape, with farm fields to the south and a few houses and roads scattered across the area.

The Wallace tract wetland is in close geographic proximity to other interdunal wetlands and the above listed TNWs. At the project site St. Helena Island is approximately 2.4 miles across (Northwest to Southeast) and over 13.4 miles long (Northeast to Southwest). The wetland ranges from 1000 feet from the waters of the Harbor River tributary to 2900 feet to the waters of Capers Creek (including wetlands). In addition, patches of wetlands and the remains of a small tributary, now bisected by a roads and a farm field, extends north from Harbor River to within a few hundred feet of the Wallace Tract wetland.

Interdunal wetlands are typically formed as a result of oceanic processes where the wetlands establish behind relic dune ridges. After being separated from the Atlantic Ocean by a string of barrier islands, contemporary St. Helena Island is functioning as a relic dune ridge. The interaction of the sediment laden Beaufort River, Morgan River and numerous creeks segmenting the island together with the rise and fall of the tides continue to reshape the marshes, open water spaces, and upland edges of St. Helena Island. St. Helena Island is relatively protected from wave action which has allowed the dune ridges and interdunal wetlands to become densely vegetated coastal pine-mixed hardwood forest. Moreover, the upland dune ridges on St. Helena Island remain relatively protected, which has allowed this interdunal wetland to form between a few central dune ridges. The Wallace tract is dominated by marine deposited fine sands. Table 1 lists the soils found on the Wallace Tract.

⁴ Collins, W.H. III, and D.H. Easley. 1999. Fresh-water Lens Formation in an Unconfined Barrier-Island Aquifer. *Journal of the American Water Resources Association* 35(1): 1-21.

Soil Type	Map Unit Symbol	Parent Material	% Area on Site*	Texture	Depth to Restrictive Feature
Polawana	Po	Loamy fluviomarine deposits	5.1%	Loamy fine sand	More than 80 inches
Ridgeland	Rd	Sandy marine deposits	25.2%	Fine sand	More than 80 inches
Rosedhu	Ro	Sandy marine deposits	12.5%	Fine sand	More than 80 inches
Seabrook	Sk	Sandy marine deposits	3.9%	Fine sand	More than 80 inches
Seewee	Sw	Sandy marine deposits	29.0%	Fine sand	More than 80 inches
Wando	Wd	Sandy marine deposits	24.3%	Fine sand	More than 80 inches

* Area estimated using NRCS Web Soil Survey 2.0

St. Helena Island supports coastal pine-mixed hardwood forest of live oak, water oak, laurel oak, loblolly pine, wax myrtle, hollies, hackberry, sweet gum, hickories, southern magnolia, pecan, black cherry, and cherry laurel. Across the lagoon and Harbor River from St. Helena Island is Hunting Island State Park which is known for supporting a wide diversity of plants and animals many of which are also found on St. Helena Island. The dry lands and freshwater wetlands of the area support deer, alligators, raccoons and even eastern diamondback rattlesnakes. In addition, hundreds of species of birds also are resident on or visit the barrier and sea islands, including painted buntings, tanagers and orioles, along with pelicans, oystercatchers, skimmers and terns, herons, egrets and wood storks.⁵ As noted in the *Ecological Characterization of the Sea Island Coastal Region of Southern Carolina and Georgia*, the tidal creeks surrounding St. Helena Island support the much of the area's oyster fishery.⁶ In the 2008 Integrated Report to Congress no parts of Capers Creek, the Harbor River or Village Creek were listed as impaired, in fact the two sections of Capers Creek closest to the Wallace tract were removed from the impaired waters list for shellfish harvesting because the fecal coliform bacteria standard was attained.⁷ Interdunal wetlands and pools, such as the wetland on the Wallace tract, support a diverse array of sea island plants and wildlife that use both fresh and estuarine habitats. In addition, these interdunal wetlands also help filter nutrients and pollutants, such as fecal coliform bacteria, out as water passes through the fine sands of the dunes into the surrounding tidal creeks and wetlands.

IV. Basis for Determination⁸

The wetland on the Wallace tract is surrounded by marine deposited fine sands in an interdunal landscape on a relic barrier island. The interdunal landscape and fine sands indicate that subsurface flow connects the wetland on the Wallace tract to the wetlands and open waters of Village Creek to the northeast, the tributary of Harbor River to the east and south, and Capers Creek to the west, through a free exchange of freshwater through the fine sands of the dunes. Based on the above physical characteristics this wetland is part of the larger network of interdunal and tidal creeks and wetlands that are

⁵ <http://www.southcarolinaparks.com/park-finder/state-park/1019.aspx>

⁶ *Ecological Characterization of the Sea Island Coastal Region of Southern Carolina and Georgia*. U.S. Department of Interior. Fish and Wildlife Service. Biological Services Program. FWS/OBS-79-40/December 1980.

⁷ South Carolina Department of Health and Environmental Control, 2008 Integrated Report: Listing of Impaired Waters.

⁸ The memorandum summarizes the evidence considered by the agencies in reaching this conclusion. Additional information regarding the determination is contained in the administrative record for this action.

physically connected, and reasonably close to support the inference of an ecological connection, between the Wallace tract wetland and Village Creek, Harbor River, and Capers Creek.

According to the Corps and EPA regulations at 33 C.F.R. § 328.3(c) and 40 C.F.R. 230.3(b). “The term *adjacent* means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes, or barriers, natural river berms, beach dunes, and the like are ‘adjacent wetlands.’” The *Rapanos Guidance* states that finding a continuous surface connection is not required to establish adjacency under this definition.⁹ The wetland on site is separated by from Village Creek, Harbor River, and Capers Creek (all TNWs) by beach dunes and has a subsurface connection these TNWs through the fine sands of the dunes. The wetland on site is also reasonably close to the surrounding TNWs given the proximity, landscape position on a sea island, surrounding habitat, and soil characteristics to infer an ecological connection.¹⁰

V. Conclusion

The wetland on the Wallace tract for JD SAC-2008-2191 is jurisdictional because it is adjacent (as defined by 33 CFR 328.3(c) and 33 CFR 328(a)(7)) to Village Creek, Harbor River, and Capers Creek, all TNWs. This determination is based on our finding that the wetland subject to this JD is part of an interdunal system that is in close proximity to and is connected to Village Creek, Harbor River and Capers Creek, is part of the natural interdunal landscape that makes up St. Helena Island, and is separated from the TNWs by beach dunes.



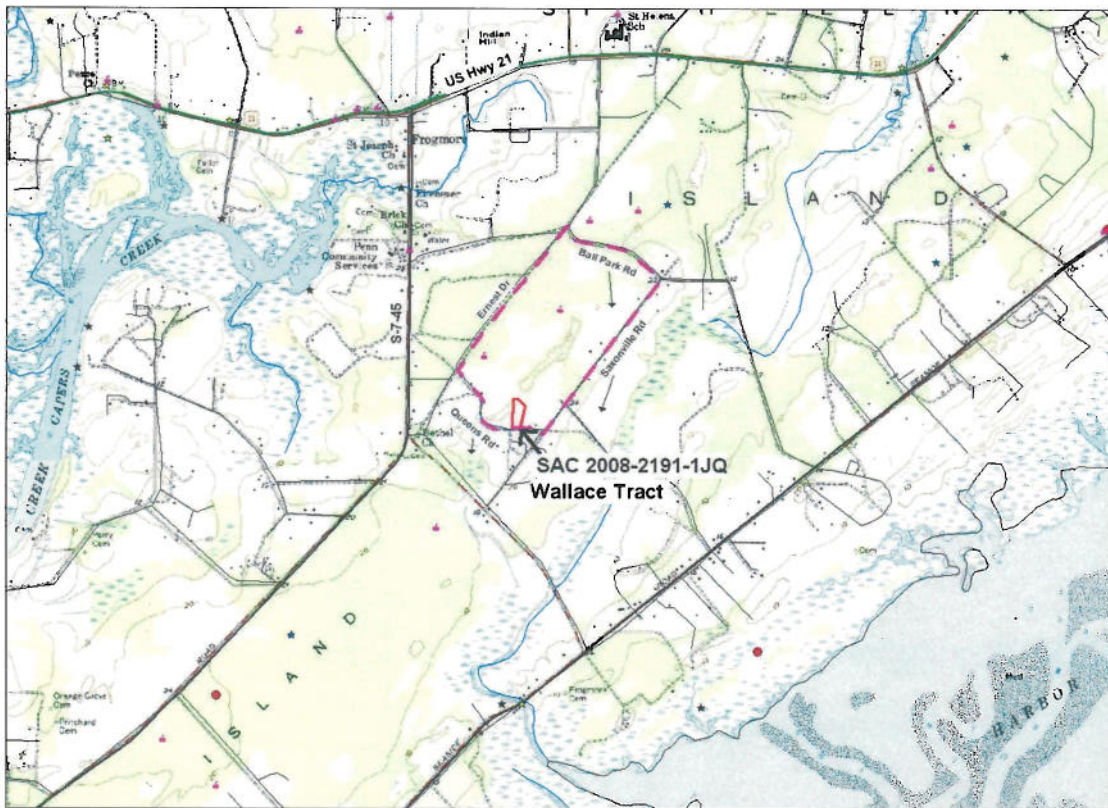
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Date: 4/22/09

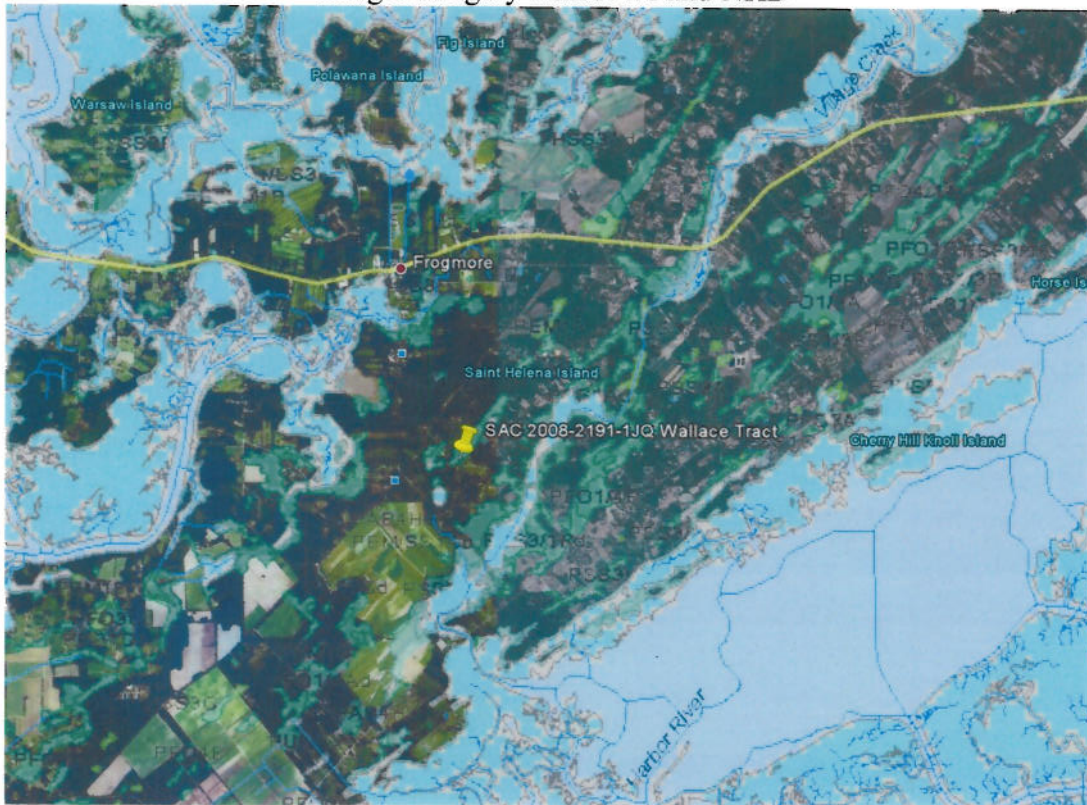
⁹ See *Rapanos Guidance*, page 5.

¹⁰ See *Rapanos Guidance*, page 6.

USGS Topography



Google Imagery with NWI and NHD



Wallace Tract Imagery

