# **Jekyll Island Authority**

# **Living Shoreline**

**Project Description** 

March 2022

# 1.0 Introduction and Background

Jekyll Island State Park Authority (JIA) and the University of Georgia (UGA), documented nutrient loads in Fortson Pond that were consistently in the hyper-eutrophic range. Average dissolved oxygen levels were found to be consistently in the hypoxic to anoxic range year-round. Average salinity was highly variable but was below 6 ppt at the southern end of the pond adjacent to the parkway. These conditions were found to correlate to very high phytoplankton abundance, reduced abundance and diversity of macroinvertebrates, and an extreme accumulation of dead cyanobacteria biomass to the exclusion of submerged or emergent plants. This information confirmed our previously held hypothesis that Fortson Pond is the most degraded fragment of the former First Creek system on Jekyll Island. Fortson Pond's expanse of unvegetated mucky sediment is the accumulated dead biomass resulting from decades of overabundant phytoplankton blooms. A non-toxic colonial cyanobacteria species, *Aphanothece stagnina*, is believed to be the dominant over-abundant species. Through a hydro-dynamic modeling study, a restoration plan has been formulated for the system. This project initiates actions recommended under that plan.

#### 2.0 Project Purpose

The purpose of this project is to prevent erosion at the site of a recently installed culvert by installing a living shoreline.

# 3.0 Proposed Project

Jekyll Island Authority staff plan to install a living shoreline at the site of a recently installed culvert. The living shoreline itself will consist of Oyster filled bags as the base and anchor points. Everywhere else will have a Filtrexx tube material filled with natural compost that will provide nutrients for plants. The living shoreline will be anchored with 4' sediment anchors and wooden stakes that will be installed with a hammer or drill. Once construction is completed, we will install plants and replace as necessary for success. All plants will be native and will depend on availability at the time of planting. Due to the location of the plantings, most will be salt tolerant species such as Spartina alterniflora, Spartina patens, Borrichia frutescens, etc.

Construction of both projects will be completed during neap tide periods at low tide to ensure we comply with erosion and sediment control requirements. Best Management Practices will be implemented to avoid secondary impacts to adjacent waters.

#### 3.1 Marshlands Component

The project area within marsh jurisdiction for each side of the culvert will be 0.01 acres or 0.02 acres total. Temporary disturbance due to construction will occur across the ~0.02 acres. Installation of the oyster bags, geogrid, and possibly some of the Filtrexx Soxx material with plants may occur within jurisdictional marshlands. Grading may occur, including bringing in or taking our a small amount of fill to ensure the grade is to spec. All materials related to the shoreline will be contained within the geogrid and anchored with Stainless anchors or wood stakes.

### 3.2 Upland Component

The upland component will equal ~0.023 acres.

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We will bring in sediment and equipment to pack the bank prior to upland installation. The Filtrexx Soxx material will have plants placed into it once the installation has been completed. We will also use the upland component for staging of materials prior to installation. This staging will occur primarily on the paved bike path. Plants will also be installed above the Filtrexx Soxx in the native material. The plants will be native and will be chosen based on the location (Sea oxeye daisy, muhly grass, sand live oaks, etc.).

# 3.3 Stormwater Management

The proposed project does not include any site development activities, so no stormwater management plan is required. The project will implement standard BMP's during construction for sedimentation and control purposes to protect the adjacent marsh. For the living shoreline, the upland component is 40% pervious and will remain as such once the project has been completed.

#### 4.0 Alternatives analysis

4.1 Alternatives would be a traditional culvert headwall which would not fit with the mission and overall goals of the project.

#### 5.0 Essential Fish Habitat

The proposed project will not adversely affect essential fish habitat, but rather enhance the overall function of the system within the project area and beyond.

#### 6.0 Threatened and Endangered Species

The proposed project will not adversely impact threatened or endangered species. This was reviewed by Bill Wikoff with USFWS and he concurred with this statement.

7.0 Commercial Bait Shrimp, Oyster, and Crabbing Areas

The proposed project is not located within any of the commercial shrimp, oyster, or crabbing areas.

#### 8.0 Impaired Waters

The subject waterway is not listed on the US EPA 303(d) list for impaired water bodies

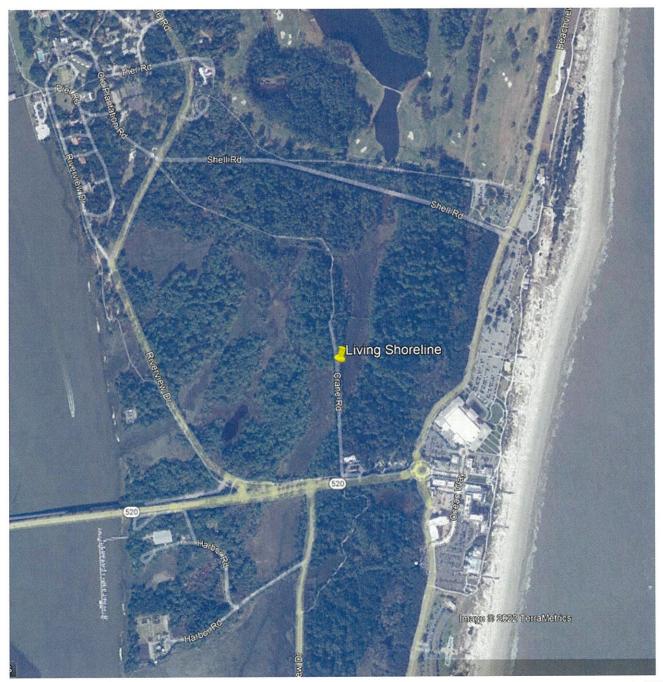
#### 9.0 Supplemental Information

- 9.1 Jekyll Island Authority 100 James Road Jekyll Island, GA, 31527
- 9.2 Plan or drawings have been attached
- 9.3 Plat of the area is not available as it is unplatted land managed by the JIA as Jekyll Island State Park
- 9.4 A copy of the deed has been attached
- 9.5 There are no adjoining landowners because it is land within Jekyll Island State Park
- 9.6 The JIA is the governing authority over the land and are also the P.I. on the project
- 9.7 Application fee is waived for state entities
- 9.8 A copy of the Hydro-dynamic modeling will be attached as an appendix to show reasons for the locations chosen and the lack of feasibility in alternatives
- 9.9 According to the hazardous site inventory. The proposed project does not occur near a landfill or hazardous waste site
- 9.10 Water quality certification is not applicable
- 9.11 The project will conform to soil and erosion control responsibilities required by Glynn County
- 9.12 This application has been prepared with consideration for the interests of the general public of the State of Georgia as defined in OCGA 12-5-286(g)

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- 9.12.1 The proposed project will not adversely impact flow of navigable waters or obstruct public navigation. The intention is to increase flow within the system
- 9.12.2 The proposed project will not increase erosion, shoaling of channels, or create stagnant areas of water
- 9.12.3 The proposed project will not interfere with the conservation of fish, shrimp, oysters, crabs, clams, or other marine line, or wildlife, or other resources, including but not limited to water and oxygen supply

#### Site Location

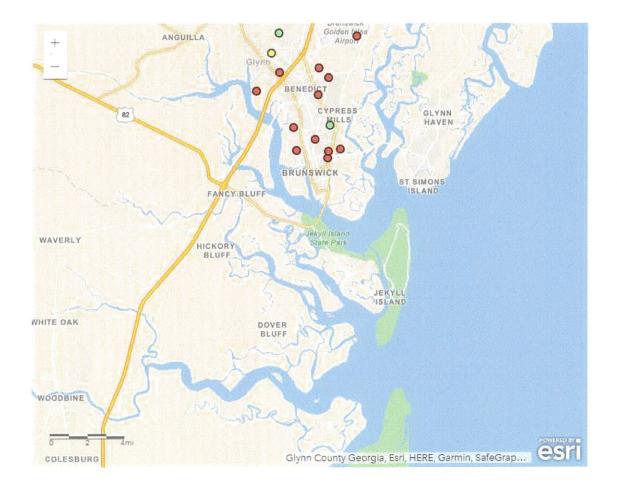


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# Hazardous Site Inventory Map





# COASTAL RESOURCES DIVISION ONE CONSERVATION WAY · BRUNSWICK, GA 31520 · 912.264.7218 COASTALGADNR.ORG

MARK WILLIAMS COMMISSIONER

DOUG HAYMANS DIRECTOR

August 12, 2020

Yank Moore Jekyll Island Authority 100 James Road Jekyll Island, GA 31527

Re: Coastal Marshlands Protection Act (CMPA), Jurisdictional Determination Verification, Potions of Tax Parcel ID #06-14433, Crane Road, Jekyll Island, Glynn County, Georgia

Dear Mr. Moore:

Our office has received the surveys and plats, dated August 5, 2020, prepared by Brewer Land Surveying, No. 3022 entitled "A Salt Marsh Jurisdiction Survey of 0.043 Acre Portion of Tax Parcel 06-04433 Jekyll Island, Glynn County, Georgia" and "A Salt Marsh Jurisdiction Survey of 0.189 Acre Portion of Tax Parcel 06-04433 Jekyll Island, Glynn County, Georgia" prepared for The Jekyll Island Authority. Based on my site inspection, on April 29, 2020, this plat and survey generally depict the delineation of the coastal marshlands boundary as required by the State of Georgia for jurisdiction under the authority of the Coastal Marshlands Protection Act O.C.G.A. § 12-5-280 et seq.

The Coastal Marshlands Protection Act O.C.G.A. § 12-5-280 et seq. delineation of this parcel is subject to change due to environmental conditions and legislative enactments. This jurisdiction line is valid for one year from date of the delineation. It will normally expire on April 29, 2021 but may be voided should legal and/or environmental conditions change.

This letter does not relieve you of the responsibility of obtaining other state, local, or federal permission relative to the site. Authorization by the Coastal Marshlands Protection Committee or this Department is required prior to any construction or alteration in the marsh jurisdictional area. We appreciate you providing us with this information for our records. If you have any questions, please contact me at (912) 262-3134.

Sincerely,

Paul Tobler

Coastal Permit Coordinator

Marsh and Shore Management Program

Enclosure:

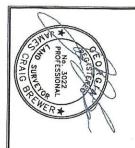
"A Salt Marsh Jurisdiction Survey of 0.043 Acre Portion of Tax Parcel 06-04433 Jekyll

Island, Glynn County, Georgia" and "A Salt Marsh Jurisdiction Survey of 0.189 Acre

Portion of Tax Parcel 06-04433 Jekyll Island, Glynn County, Georgia"

File:

JDS20200072



N00'00'00"W

19.71

LAT: 31.050360° LON: -81.415001° N: 382792.81 E: 891544,48

Graphic Scale 1" = 10' 20

ACREAGE TABLE

UPLAND "A" 0.023 ACRES SALT MARSH "A" 0.010 ACRES SALT MARS "B" 0.010 ACRES TOTAL AREA 0.043 ACRES

SALT MARSH JURISDICTION LINE DELENEATED BY CEORGIA DEPARTMENT OF MATURAL RESOURCES ENVIRONMENTAL DIVISION IN JUNE 2020 AND SURVEYED BY BERKER LAND SURVEYED BY BERKER LAND SURVEYING. WELLAKED BY THE GEORGIA WELLAKED BY THE GEORGIA WELLAKED BY THE GEORGIA WELLAKED STATES ARMY DEPARTMENT OF MATURAL RESOURCES MOJOR THE UNITED STATES ARMY CORPS OF ENGINEERS, DISTURBANCE TO THESE PROTECTED AREAS WITHOUT PROPER AUTHORIZATION MAY RESULT IN BEHALLTY BY LINK.

THE PROJECT AREA LIMITS DO NOT FOLLOW PROPERTY BOUNDARY LINES. IN AY DONION IN ACCORDANCE MITH FLEM, PANEL NO 13127003411 DATE 1/05/2018, THIS PROPERTY LEE IN A 100 YEAR FLOOD HAZARD AREA, ZONE THE PROPERTY SUBJECT TO ANY AND ALL EASEMENTS, COVENANTS, OR RESTRICTIONS ETHER RECORDED ON UNECCORDED AND ALL PROPERTY SHOWN ON THIS ACCORDING TO ALL WAY COMIN'T TAY RECORDED, THE PROPERTY SHOWN ON THIS SURRY US A PORTION OF TAX PARCEL NUMBER OF 00433, JEYNL ISLAND STATE PARK

SALT MARSH "A" 0.010 ACRES PROJECT AREA LIMITS
0.043 ACRES 813.42.15.E SD N90'00'00"E 92.48 UPLAND "A" 0.023 ACRES 49.71 54.36 24" CONCRETE PIPE LAT: 31.050392\*

CON: -81.414854\* M,00,00,06N 92.48 N30 03:24:E N08'53'37"E & W.94.02.50N SALT MARSH "E 0.010 ACRES 23.06 LAT: 31.050415° LON: --81.414705° N: 382813.28 E: 891636.96 20.48' - S00'00'00"W

GRID NORTH

0.043 ACRE PORTION OF TAX PARCEL 06-04433 JEKYLL ISLAND, GLYNN COUNTY, GA

> PREPARED FOR THE JEKYLL ISLAND AUTHORITY



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