Beaufort County

Land Preservation Department

Pocotaligo Preserve Management Plan

Property Description

Pocotaligo Preserve (Preserve) was acquired by Beaufort County's Rural and Critical Lands Preservation Program on October 20, 2023 for $5,449,000, of which the SC Conservation Bank contributed $1,000,000 towards the purchase price. The Preserve consists of 527 acres along Hwy 17 and Cotton Hall Road in the Town of Yemassee, South Carolina. Site conditions at the time of acquisition included fallow fields, forested wetlands, open water, clearcut timber land and mesic upland forest. A large powerline easement runs through the property in a NW-SE direction. Several defunct structures reside on the property, including an open-air covered pole barn, several silos and a cattle pen. This plan serves as direction for adaptive management of the Preserve, which will be reviewed and updated on a regular basis.

Infrastructure

The Preserve is bound on the east by Hwy 17, on the north by Cotton Hall Road and interiorly on the west and south by the adjacent private neighbor. (Figure A) The roadside boundaries have been posted and painted with the County boundary signs and purple paint, which indicate no trespassing, no hunting and no dumping on the Preserve and allow County and State law enforcement agencies to implement appropriate County and State laws. The interior south-west boundary between the Preserve and the adjacent neighbor will be resurveyed to determine exactly where the line is located within the previously timbered area and will be appropriately posted with the County boundary signs.

There is an existing network of interior roads, trails, access points, and structures on the Preserve (Figure B). The roadside access points have been gated, locked and signed with temporary no trespassing signs. Most of the structures existing on the Preserve at the time of acquisition are in a state of deterioration and will be demolished due to hazardous conditions. These defunct structures include several silos, a cattle pen and other smaller livestock pens. The existing pole barn is in decent condition and can be minimally repaired to serve as an amenity for the Preserve and use by the Land Preservation Department.

Natural and Cultural Resources

The Preserve was acquired for the protection of natural resources, its connectivity and ecological contribution to the function of the ACE Basin, and for future public access. The Preserve consists of a variety of habitat types and has a long history of active land management

for uses including hunting, fishing and silviculture. Habitat types at the time of acquisition include fallow fields (stands 1, 2, 3, 4, 5, 9, 10, 11, 12, and 13), forested mesic uplands (stands 8 and 14), clearcut forested wetlands (stands 6 and 7), and open water impoundments (Figure C). The Preserve is mapped into manageable "stands" in order to effectively plan and implement habitat restoration objectives over time. Previous land management activities included actions such as timber harvesting, impoundment management for fishing, mowing fields for turkey and quail hunting, food plot sowing for deer hunting, and prescribed burning for habitat health. Knowledge of prior uses provides valuable information about challenges and obstacles that may affect future restoration efforts.

Soil types on the Preserve include Coosaw Loamy Fine Sand, Argent Fine Sandy Loam, Bladen Fine Sandy Loam, Wahee Fine Sandy Loam, Nemours Fine Sandy Loam, Santee Fine Sandy Loam, and Capers Association (Figure D). Aside from the open water and marsh soil type (Capers Association), the Preserve is a mixture of sand and clay of varying percentages and a few areas of higher ground. Soil types are taken into consideration during habitat restoration planning to ensure the soil conditions will support the vegetation considered for restoration.

Wildlife observed on the Preserve include deer, coyote, bobcat, alligator, otter, raccoon, armadillo, and a variety of wetland and upland birds (Figure E). Additional wildlife surveys will continue to be conducted and a full list of observed wildlife will be maintained by County staff.

As of the completion of this plan, there are no known cultural or historic resources on the Preserve. The existing structures located on the Preserve are modern and do not hold any historic significance. However, if any cultural or historic resources are found, then County staff will appropriately report and document those resources with the necessary County, State, and/or Federal agencies.

Management and Use

Management and use by the previous landowner included farming, hunting, fishing and timber production. Farming of corn and sunflowers previously occurred in some of the fallow fields on the Preserve, as well as sowing wildlife food plots for various hunting purposes. The acquisition purpose of the Preserve includes future property uses such as natural resource restoration and management and future development for public access, specifically for non-boat fishing access in the ACE Basin.

Natural resource management activities that will enhance and maintain the native and restored habitats may include longleaf pine reforestation, seeding/planting of native grasses and herbaceous ground cover, targeted herbicide application of invasive exotic plant species (namely Chinese Tallow), prescribed burning, mechanical vegetation management, impoundment management for natural hydrologic flow, and monitoring of habitat and wildlife recovery. County staff may coordinate natural resource restoration and management efforts with other land management agencies, organizations, and/or contractors as appropriate.

Public access and passive recreation opportunities may include fishing, hiking, biking, horseback riding, and camping. County staff will obtain community feedback during the conceptual planning process to determine the public's priorities for passive recreation opportunities before an outdoor recreation development plan is finalized.

Upland Habitat Restoration

Long-term upland resource goals for the Preserve include restoration of native habitat types that mimic native habitat form, processes, and functions, and invasive exotic plant control, for the benefit of the wildlife that inhabit the Preserve.

The intact forested mesic upland acreage (Figure C stands 8 and 14) does not require specific habitat restoration actions. That habitat type will be maintained as is and will be allowed to evolve naturally over time. The only action necessary will be the targeted removal of invasive exotic plant species.

Some of the fallow fields will be minimally replanted with longleaf pine and managed for restoration as longleaf/grass savannah, and some of the fallow fields will be maintained as unforested grasslands (Figure C stands 1-5 and 9-13). Vegetation surveys and soil conditions will provide evidence in the determination of which fields may be replanted with longleaf pine, or not. The previously clearcut acreage in the southern portion of the Preserve (Figure C stands 6 and 7) was a forested hardwood wetland that would be difficult to support long-term silviculture or use as a pine forest. That area will be managed for native wetland forest regeneration and permitted to evolve naturally over time. Supplemental tree plantings may be necessary to mimic the intact forested wetlands, which will be determined by periodic vegetation surveys.

Various land management activities will be used to implement habitat restoration and long-term management actions. These activities may include mechanical vegetation control such as, but not limited to, bush-hogging, mowing, plowing, and brush cutting; use of prescribed burning; and use of targeted herbicide for invasive exotic plant control in the form of hack-and-squirt or stump treatments. County staff will make every effort to avoid broadcast spraying of herbicide or other chemicals on the Preserve.

Wetland Management

Long-term wetland resource goals for the Preserve include repair of the water control structures that improve connectivity and flow for the benefit of fish production, wetland avian fauna, and non-boat fishing access for the public (Figure C impoundments). The areas of open water have been evaluated to determine a maintenance regime necessary to manage hydrology fluctuations so as not to negatively impact any neighboring property owners. The evaluation also provides recommendations on necessary improvements for the system of ditches, dikes,

weirs and culverts that aid in the circulation and transportation of water through the Preserve. The wetland management plan is provided in greater detail in Appendix A.

Activity Schedule

The following schedule of activities is a general estimate and is solely dependent upon availability of funding, materials, labor and permitting. This plan will be updated on a routine basis to account for adjustments related to adaptive management and scheduling.

- FY25
  - Complete the Preserve management plan
  - Initiate land management activities (prescribed burning, exotic control, wildlife monitoring)
  - Obtain Army Corps of Engineers Managed Tidal Impoundment general permit
- FY26
  - Complete initial water control structure repairs
  - Begin routine land management actions (reforestation site preparation, prescribed burning, exotic control, vegetation monitoring)
- FY27
  - Complete longleaf pine reforestation
  - Begin canal/berm improvements
  - Begin conceptual public access planning
- FY28
  - Complete canal/berm improvements
  - Complete conceptual public access planning
  - Begin civil planning and permitting
- FY29
  - Complete civil planning and permitting
  - Begin Phase I public access construction
- FY30
  - Complete Phase I public access construction

FIGURES

Figure A. Pocotaligo Preserve roads and boundary map.

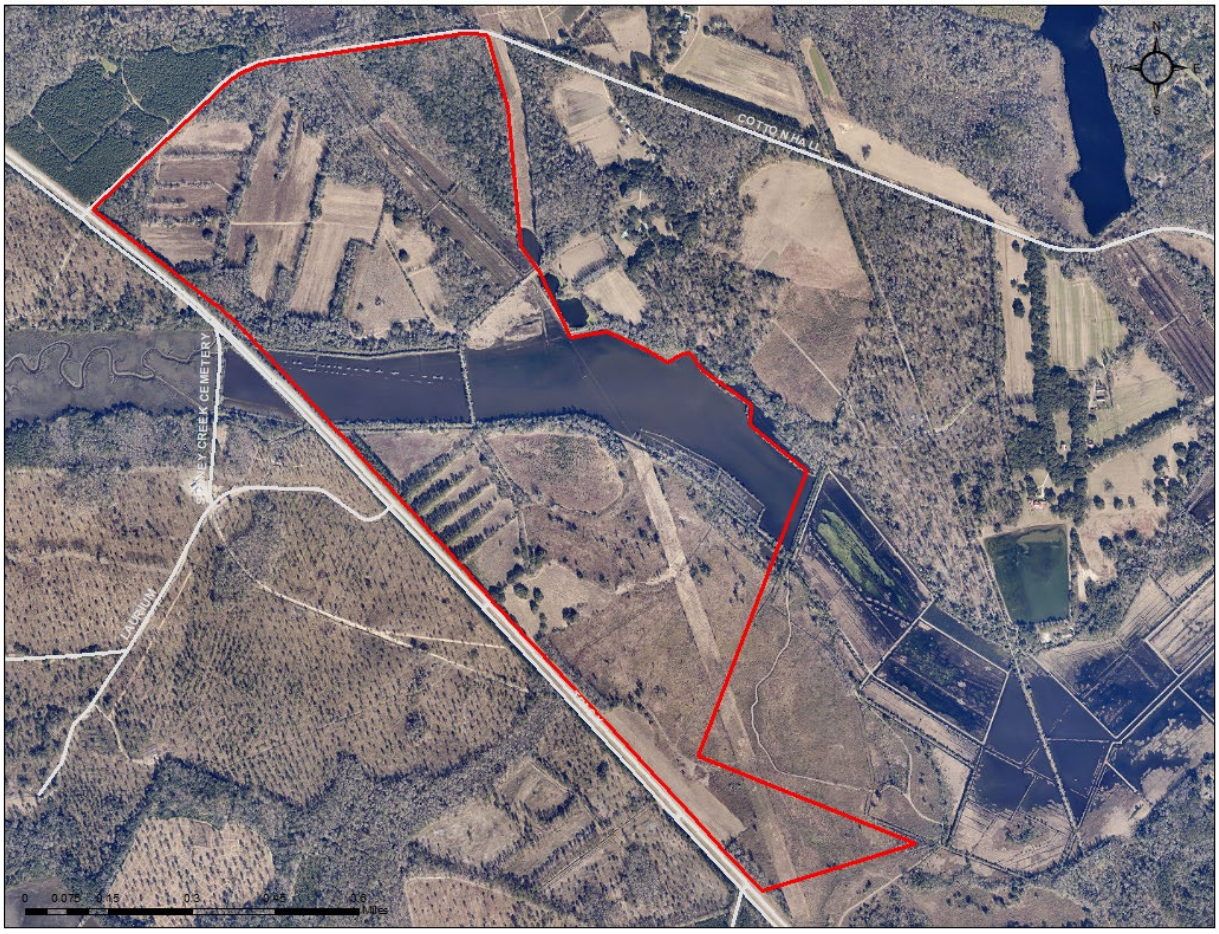


Figure B. Pocotaligo Preserve internal trails map.

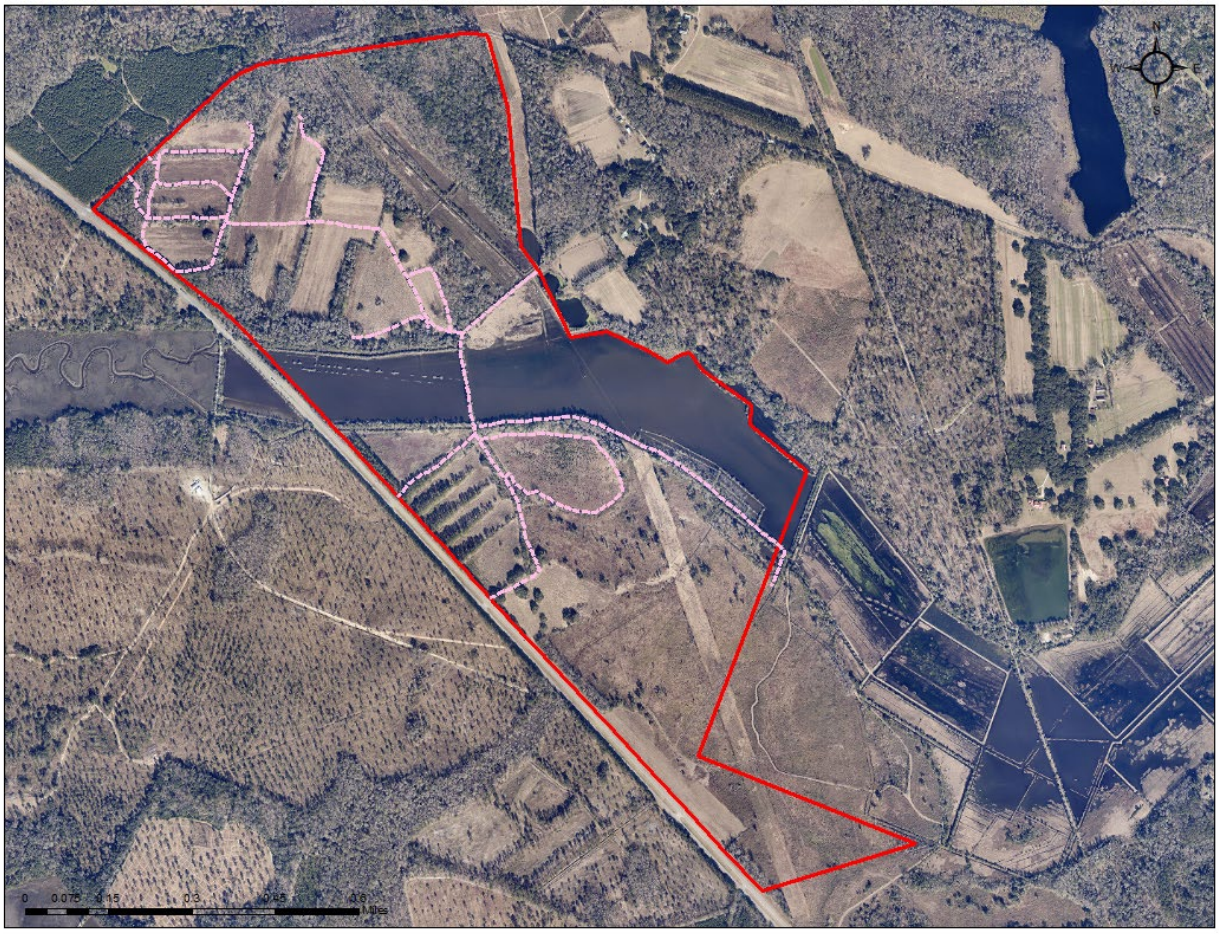


Figure C. Pocotaligo Preserve stand map.

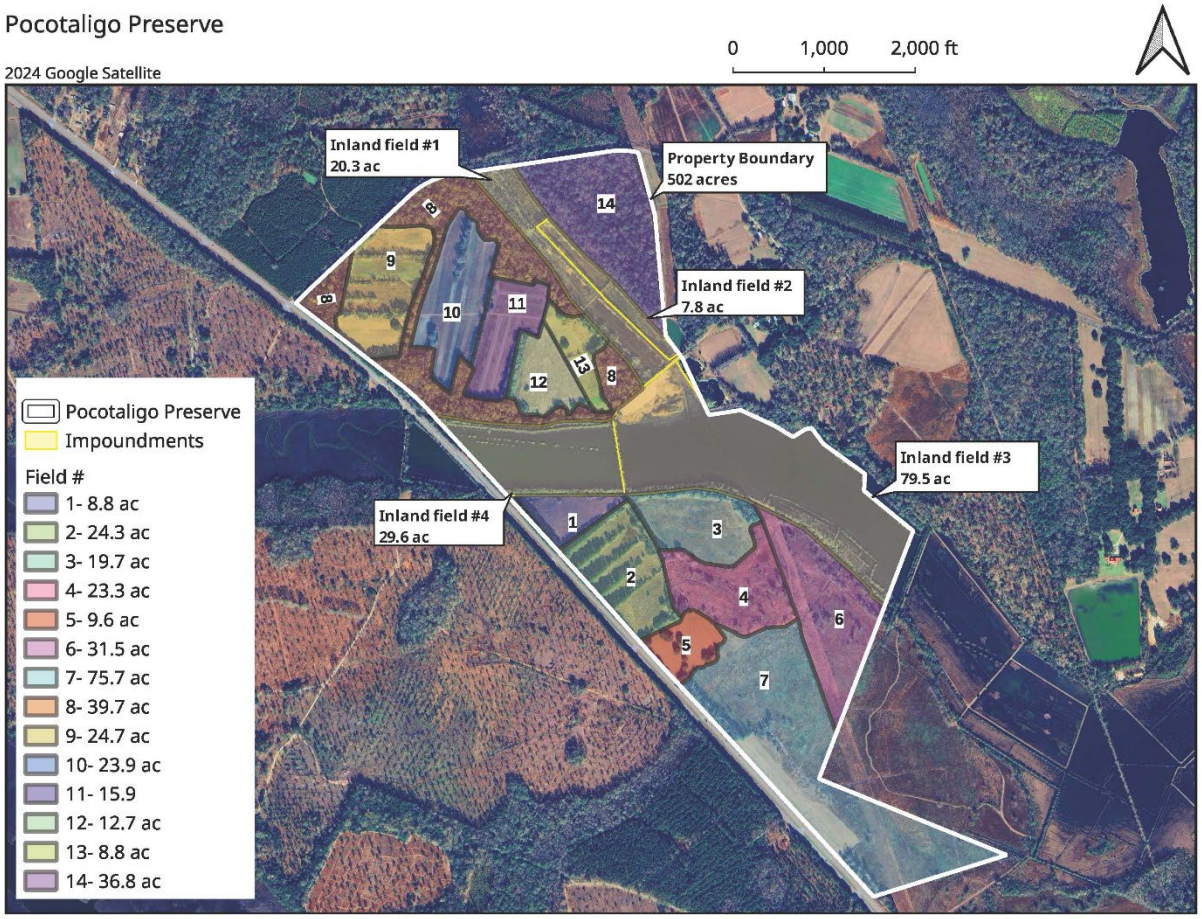


Figure D. Pocotaligo Preserve soils map.

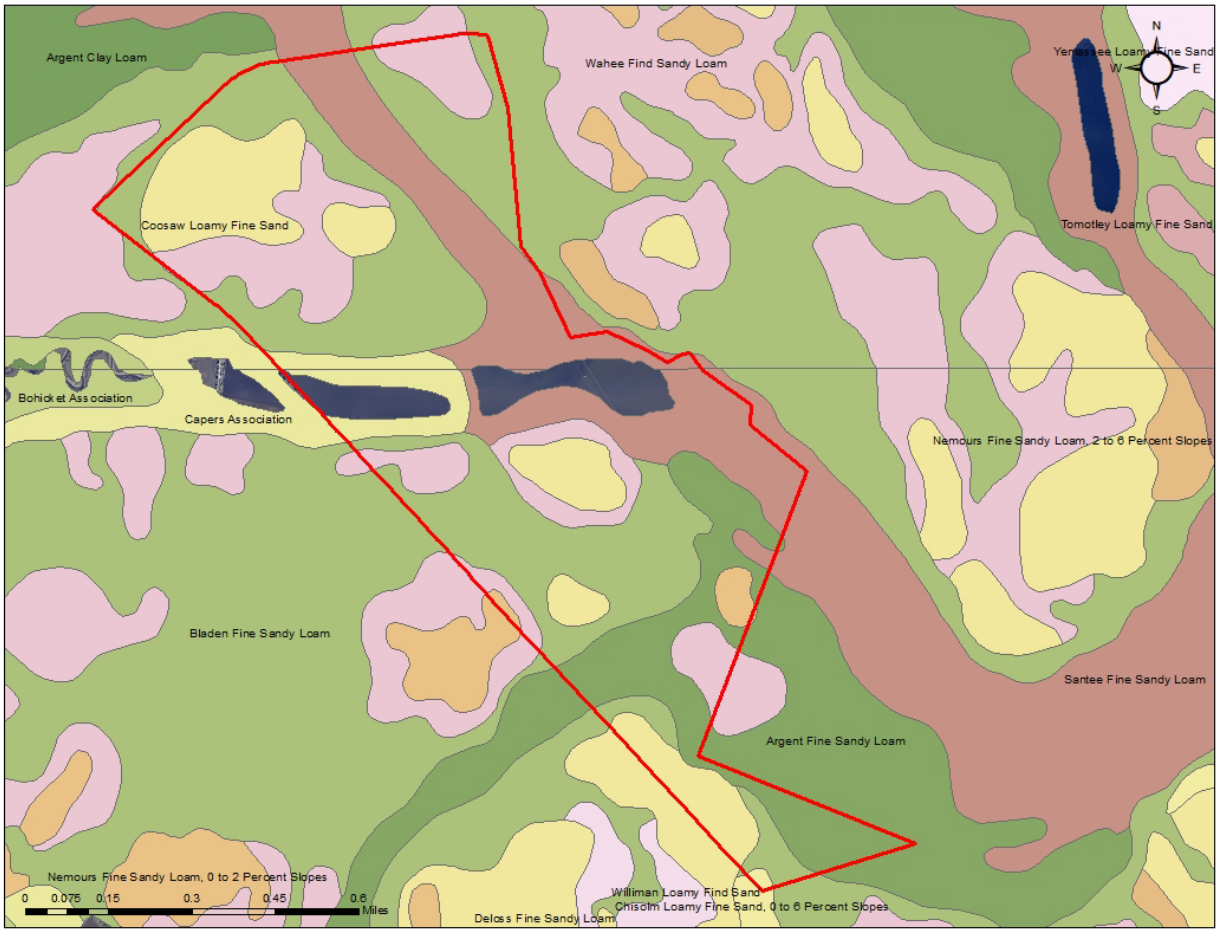


Figure E. Wildlife observed by camera traps on Pocotaligo Preserve.

APPENDIX A

Wetland management plan for Pocotaligo Preserve

Pocotaligo Preserve, Beaufort County

Wetland Management Plan

Dean Harrigal, Travis Folk, Rachel Frankhouser

Folk Land Management

3515 White Hall Rd.

Green Pond, SC 29446

December 31, 2024

Overview

The wetland complex of the Pocotaligo Preserve encompasses approximately 133 acres of the 527 acre Preserve. The wetlands are based upon the foot print of historic rice fields. These fields received water from rainfall which was trapped in reservoirs and delivered to the rice fields via a system of canals and water control structures (WCS). The draining of the fields was through 2 major canals into the tidal salt marsh of a tributary to the Pocotaligo River.

The fields, and their layout have been drastically altered over the last 2 centuries. Highway project development (US highway 17) and changes in land ownership have compromised the ability to effectively manage water delivery and drainage of the wetlands. At the time of this writing the County has no direct control over water delivery and management within the systems. Onsite water control structures are in disrepair and the main water control structures for the entire system are owned by adjacent property owners.

The system is quite complex so to effectively describe management options, the complex is broken into 2 categories based upon primary water sources. The Inland fields (Inland Fields 1 and 2) receive their water from rainfall and its runoff. The Tidal fields (Tidal Fields 1 and 2) receive water from the twice daily high tides of the adjacent tidal estuary. Both systems still effectively drain into the tide waters of the Pocotaligo river. Map 1 depicts the layout of the wetlands utilizing LIDAR to show the fields and their relationship to the overall elevations across the property.

INLAND FIELDS (Map 2)

History and Current Conditions

The existing inland fields are carved out of the remains of an approximately 28-acre historic rice field. This field received water from the drainage extending under Cotton Hall Road and towards the town of Yemassee. The fields were drained by a canal (Northern Canal) which borders the fields of the tidal system and was designed to empty into the tidal marsh. There is evidence of a water control structure with a flap gate to prevent the back flow of salt water into the system, this structure has been replaced with a simple plastic culvert pipe. During the 20th century a center canal was dug through the original field to expedite drainage of water flowing under Cotton Hall Road, this canal empties directly into the Northern canal.

Inland Field 2 (8 acres) was fashioned out of the spoil paralleling the center canal and the rebuilding of some remnant dikes in the existing field. A small flash board riser was installed to drain into the outlet canal. Water was sourced from an upland pond adjacent to the field. (This pond is now owned by another landowner.) The dikes of the field are overgrown with trees and shrubs. Inland Field 1 (20 acres) is the remaining portion of the old rice field and is essentially non manageable due to the lack of a complete dike and water control structure. It is subject to routine flooding from run off during rainy periods. It appears to have been periodically mowed. There is also some evidence it was fenced for grazing.

Recommendation

Infrastructure: Install a water control structure into the existing center canal and rebuild the lower dike to manage this area as a single unit. We recommend a water control structure (36" pipe with 48" flash board riser and 30' long) placed in the center canal to regulate flow. An emergency overflow structure (rock weir or similar structure) should be placed in the dike to aid in handling major rain fall events. The rebuilding of the lower dike would also provide access to the north east portion of the preserve.

The existing interior spoil areas which act as dikes in the wetland should be breached in places to allow even flooding and cleared of woody vegetation. Select trees could be left to serve as potential loafing and roosting areas for birds.

Management: The fields should be managed as shallowly flooded seasonal wetlands (late fall- early spring) focused on providing habitat for waterfowl, wading birds, and shorebirds. The annual management cycle includes keeping the field in dry to moist conditions during the growing season (March-November) to promote the growth of desirable plants and other forage items. At the end of growing season, the areas should be mowed or burned in preparation for fall flooding. The field should be flooding to a depth of 8'-12" deep from late fall until early spring (November-March). The field should be drained in late March at the onset of growing season. The wetlands should never be flooded during the growing season as this promotes undesirable plants, such as cattails.

TIDAL FIELDS

Tidal Field 1 (Map 3)

History and Current Conditions

Tidal Field 1 (70 acres) is the largest field of the complex. Most of the northern shoreline forms the property line with the adjacent landowner. A dike along the eastern side of the property forms the property boundary in this direction. A cross dike with a marginally functional water control structure separates this wetland from Tidal Field 2. On the southern edge a dike separates the wetland from a large canal (Southern canal). Historically this canal was used to divert upland run-off from the rice field and aid in draining of the fields in the system. At the junction of the cross- dike and the outside canal are the remains of failed water control structure. This structure evidently had a downstream flap gate to prevent the back flow of brackish water into the system and possibly an upstream spillway box to trap fresh water when needed for flooding. Currently this structure just acts as a bridge across the canal and allows for the ebb and flow of tidewater in the canal. At the eastern end of the southern dike there is a breach in the dike where an old water control structure has failed that allows for free tidal flow of brackish water into the field. Along the northern shore a sub-impoundment was created by connecting an existing pond dike (owned by adjacent landowner) with the high ground parallel to the Northern canal dike. A pipe under the

dike connects the sub-impoundment to the Northern canal. This sub-impoundment collects overflow from the adjacent landowner's pond and delivers it to the canal. The dike has subsided significantly and in times of highwater probably backflows into the main portion of Tidal Field 1. Also, along portions of the north and south shorelines are small remnant non- functional dikes that enclosed additional sub-impoundments.

Because of the breach and lack of effective water control, the wetland cannot be managed to its full potential. It is also quite shallow, averaging around 3 feet deep across the bed, with no evidence of canals bordering the dikes. Overall water circulation within the wetland is minimal.

Recommendation

We recommend managing this wetland as a brackish marsh impoundment (salinity 10-15 ppt) utilizing the Southern outside canal and Tidal Field 2 as the as the sources of brackish water.

Infrastructure: We recommend the following infrastructure enhancements:

1) Replace the old structure in the cross dike (between Tidal Fields 1 and 2) with a new water control structure (with tidal flap gates, and riser).
2) Replace the failed water control structure in the Southern canal with a 36" aluminum pipe to allow optimum flow of water through the canal.
3) Install new water control structure (with tidal flap gates and riser) connecting the wetland to Southern canal
4) Excavate a circulation canal (20-25' wide and 4-6' deep) adjacent to the existing dike system utilizing the spoil to widen the dike (app. 5,000 feet).
5) Install a new water control structure (with tidal flap gates and riser) in existing breach at eastern end of the southern canal leading into the sub-impoundment and into the main area of Tidal Field 1.
6) Repair the dike of the Northern sub-impoundment and install a new water control structure (pipe with flash board riser) for emergency overflow.

Management: The installation of the new water control structures would allow for the efficient inflow of water into the wetland at high tides along with providing sheet flow circulation in the pond during falling tides. The creation of the circulation canals further improves water circulation and oxygenation along with providing thermal refuge for aquatic organisms (fish, crabs, shrimp). The widening of the dikes provides additional access.

The annual management cycle should include providing sheet water, mud flats and shallow water areas (< 6") for shorebirds and wading birds during the spring migration and nesting periods, followed by increasing water depths during the late spring, summer and early fall to provide optimum habitat for marine organisms. During the fall and winter, water levels on the main bed of the pond should be 6-12" to provide foraging habitat for wintering waterfowl and wading birds. The interior circulation canals should be kept full the year-round.

The water control structures should be set to obtain water during high tides by raising the outside doors of the structure. During the annual cycle water levels within in the wetland should be regulated by adjusting the number of flash boards within each structure. Ideal setting of the boards would be to allow 1-2 inches

of water spilling over the boards through the low tide cycle to maintain sheet flow circulation. Adaptive management will be needed to fine tune the working of each structure.

Tidal Field 2 (Maps 4)

History and Current Conditions

Tidal Field 2 is the westernmost field and is the terminal field in the system. It is bounded to the east by Tidal Field 1 and to the north and south by dikes adjacent to the respective exterior canals. The western boundary of the field (and property line) is US Highway 17 which has a culvert under the highway connecting it to a wetland on the adjacent property. This property has a water control structure in the terminal dike connecting the wetlands to the tidal marsh. Brackish tidal water enters Tidal Field 2 by transiting up the Northern canal during the high tide and then backflowing through an opening in the Northern exterior canal dike (near the its junction with the cross dike of Tidal Field 1). During the falling tide, water flows the length of the field, through the culvert under Hwy 17 and exits through the water control structure on the adjacent property (currently set to only drain). Also, additional water leaves the system by exiting the open canal. Water from Tidal Field 1 may also drain into this field. There is no independent water control for this field on Pocotaligo Preserve and the wetland fills and drains with the tide largely based upon the settings of the water control structure on the adjacent property.

This arrangement provides some habitat values such as foraging habitat for wading and shorebirds during low tides and some habitat for marine organisms during periods of high tide.

Recommendation

Given its current condition, the best management option for Tidal Field 2 is to utilize it to provide additional brackish water flow into Tidal Field 1.

Infrastructure: We recommend replacing the open- ended plastic pipe in the Northern canal crossing with a 36" X 20" long aluminum pipe with an exterior flap gate. This modification will block the inflow of tidal water into the upper reaches of the canal and divert additional tidal water through the gap in the dike into Tidal Field 2. This water can then be forced by hydraulic pressure through the water control structure between the two fields and add additional water into Tidal Field 1.

Management: The increased flow of water into Tidal Field 2 will likely increase some wildlife and marine resource habitat benefits. However, the area will still be under the influence of twice daily tidal exchange so is difficult to estimate the extent of the benefits.

Overall Final Recommendations

Implementing all the recommended enhancements at one time would be quite costly (upwards $1,000,000) and require coordination with permitting agencies.

Priorities

1 Replace the water control structure in the South canal. The old water control structure in the South canal has been severely compromised by recent storms and is no longer safe for routine vehicular travel. This structure should be replaced by a pipe (36”x20’) to allow for tidal flow in the canal and safe vehicle passage. **Estimated cost: $ $15,000.**

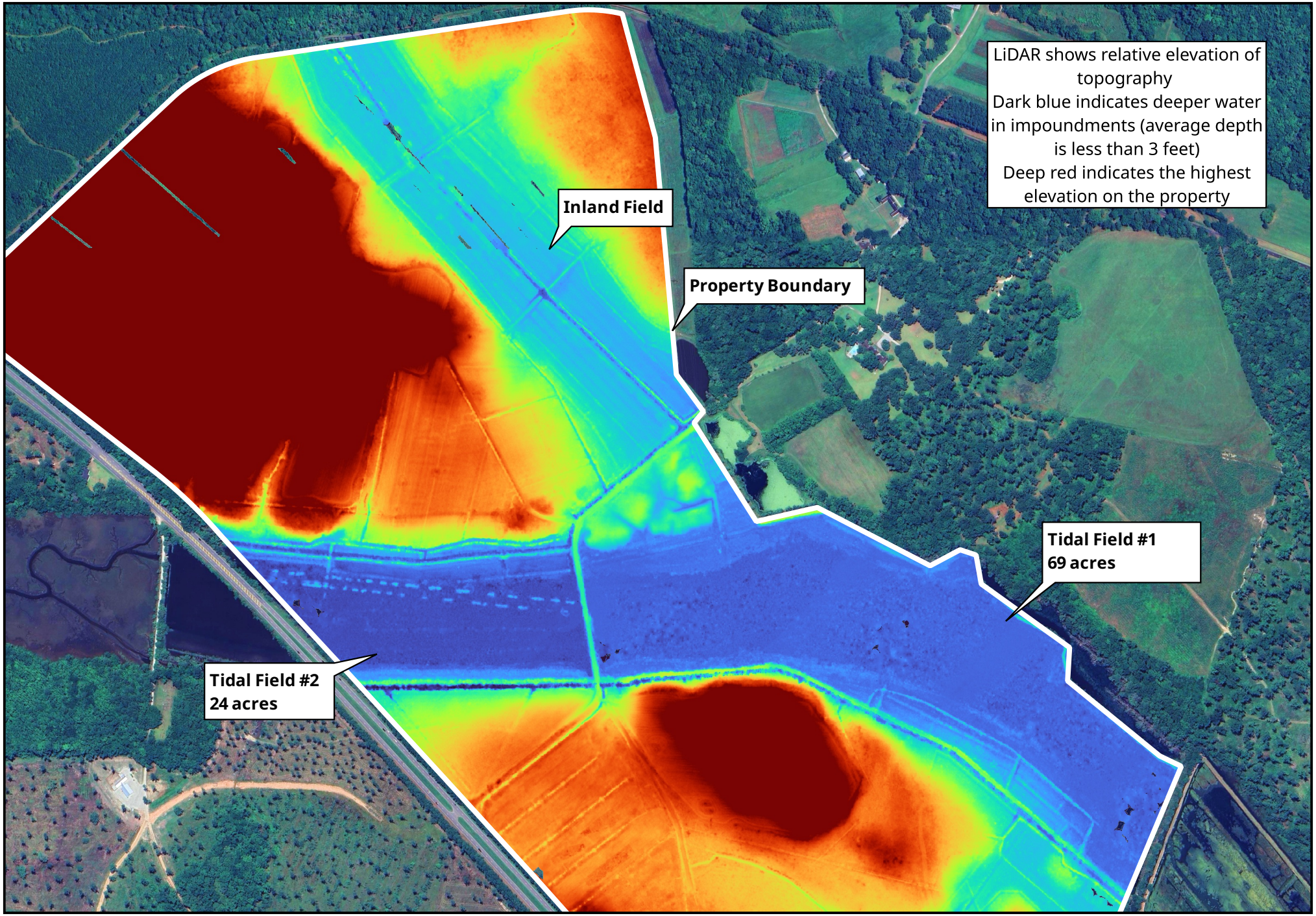
2. Replace the pipe in the Northern canal. The open pipe in the northern canal has the potential to allow for the passage of salt water well up into the system and impact the management of Inland Field 1 and neighboring landowners. Replacing this pipe with a flap gate structure will inhibit the flow of saltwater up the canal. **Estimated cost: $20,000**

3. Tidal Field 1: Since aquatic recreation opportunities (such as fishing and crabbing) is a major goal of the preserve, we recommend enhancing Tidal Field 1 as a priority. Enhancing Tidal Field 1 not only develops the aquatic resources but provides important habitat for shore birds and wading birds and provides opportunity for the wildlife viewing community. **Estimated Cost: $250, 000 for the construction of the 5,000 linear feet of circulation canal with accompanying dike; and $175,000** for the 4 recommended water control structures.

Map 1. LiDAR of inland and tidal impoundments

2018 LiDAR
2024 Google Satellite

0 1,000 2,000 ft

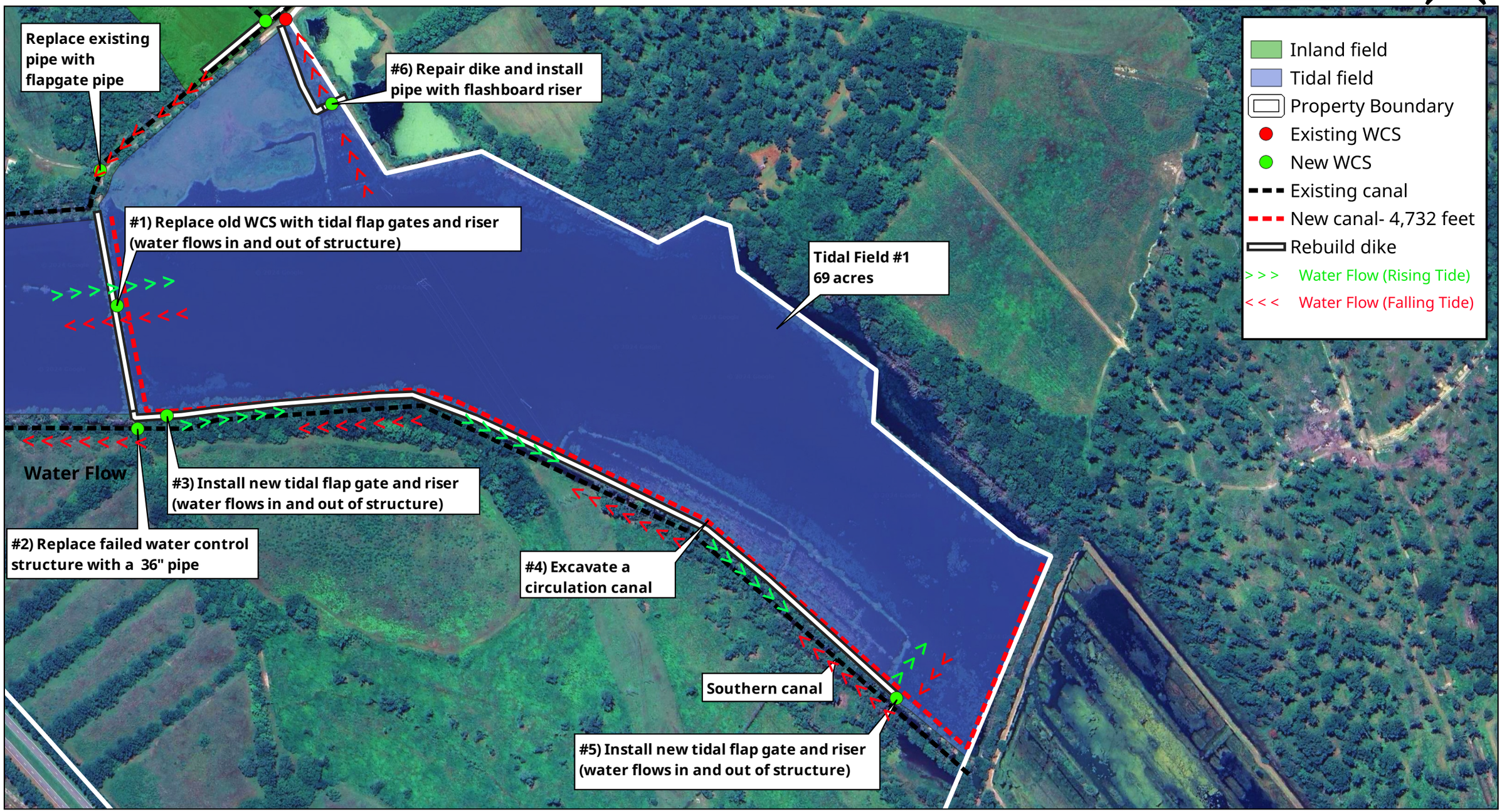


Map 2. Proposed work in inland field

2024 Google Satellite

Map 3. Proposed work in tidal field 1

2024 Google Satellite



Map 4. Proposed work in tidal field 2

2024 Google Satellite