

Bartram Island is owned by the Jacksonville Port Authority (JPA) and operated as a spoil disposal site. A ground and water survey was conducted on June 18, 1996.

The Aquic Quartzipsamments and Arens soils associated with Site 52 are indicative of its past and current use as a disposal site for dredged river spoil. Prior to the beginning of its expansion in the late 1800's, the original island was a small area of mixed upland and salt marsh east of Dames Point. Upland habitat now predominates throughout all but the far western section, where current disposal activities within a diked area have created a shallow, open water impoundment (Figure 42). The section east of the Dames Point bridge has a few wet depressions that are dominated by Carolina willow and wax myrtle. Grasses and other herbaceous ground cover were prominent on the dike slopes and were also patchily distributed within inactive diked areas. Some other vegetation observed included black cherry, sumac, southern red cedar, slash pine, longleaf pine, oaks, and cabbage palms (Figures 43 thru 46).

A generally narrow, fringing salt marsh occurs along the perimeter of most of the island. Marsh width expands significantly beginning near the island's southeastern tip and extending westward for approximately 2.5 miles. This expanded area east of the Dames Point bridge also contains some salt flats between the marsh and upland transitional zones. Vegetation associated with high marsh and transitional zones were prominent in the expanded areas and either narrow or absent from most of the remaining marsh areas. Smooth cordgrass (*Spartina alterniflora*) was the most abundant species within the low marsh. Black needle rush (*Juncus roemerianus*) was observed at slightly higher marsh elevations, along with other typical salt marsh species such as glasswort (*Salicornia virginica*), saltwort (*Batis maritima*), salt grass (*Distichlis spicata*), salt marsh bulrush (*Scirpus robustus*) and various shrubs including sea ox-eye (*Borrchia frutescens*), groundsel bush, and marsh elder (*Iva frutescens*) (Figures 47 and 48). The vegetated portion of the intertidal area expected to be impacted by the proposed project is approximately 118 acres.

The mosaic of varying successional upland areas within Bartram Island appears to be of greatest benefit to resident and migratory birds, and for egrets and herons seeking roost sites near their feeding areas. No wading bird rookeries were observed on the uplands, but a small number of least terns was observed on bare sand within the large diked area east of the Dames Point bridge. Their presence at that location in June was consistent with possible nesting activity. The salt marsh and shallow water impoundment support fish, invertebrates, reptiles such as the diamondback terrapin (*Malaclemys terrapin*), many species of shore and wading birds, and marsh specialists such as the marsh wren (*Cistothorus palustris*) and clapper rail (*Rallus longirostris*).

As stated previously, the Corps' spoil disposal options for Bartram Island include filling the western impoundment to capacity and either increasing its current capacity by raising the height of the existing dikes, or expanding the island's length and width along its southern and western shores by depositing spoil over intertidal wetlands and open water habitat (Figures 49 and 50). Complete filling of the active spoil impoundment will likely deepen its open water

areas enough to initially reduce foraging by wading and shore birds. As the impoundment loses water, flats and other shallow foraging areas will reemerge. Without further spoil input, however, water loss and vegetative succession will convert this portion into a mostly dry spoil field and ultimately a disturbed, vegetated upland. Raising the dike heights would at least prolong the cycle of reduced and renewed foraging opportunities for wading and shore birds.

Spoil deposition over littoral and sublittoral areas will smother vertebrates, invertebrates, algae and higher plants, eliminate foraging and nesting habitats, and introduce contaminants, such as heavy metals and synthetic organic compounds, into the water column, and semi-aquatic and terrestrial habitats where they may be assimilated into estuarine and other food webs. These impacts may be rapid and concentrated or slow and spread out, depending upon the spatial and temporal scheduling of the proposed filling. The threat from the organic and inorganic contaminants will depend in part on whether the proposed actions will increase their current environmental quantities to beyond regulated safe levels. Successful adjustments and recovery by fish and wildlife populations will depend upon the availability of nearby habitat refugia and the speed and extent of natural and assisted habitat restoration.

The Service has reviewed information provided with the proposed project as well as other sources and objects to the option of expanding the length and width of Bartram Island by covering open water habitat and jurisdictional wetlands with dredged spoil. We do not object to the option of using and vertically expanding the island's 280-acre western impoundment to accommodate spoil from both Phase II and III because these actions avoid wetland loss and minimize impacts to fish and wildlife resources currently using the impoundment.

If the Corps determines that actions affecting jurisdictional wetlands associated with Bartram Island cannot be avoided due to problems with proposed upland spoil disposal sites, the Service will not object to these actions provided the following recommendations are implemented to minimize and mitigate for the anticipated impacts. These recommendations are based on the Corps' mitigation plan for Bartram Island provided to the Service as part of the background information for this report.

Move the upland expansion planned for the easternmost 2.5 miles of shoreline further west. This action will further expand the upland width of Bartram Island over its narrowest sections while avoiding impacts to the best of the existing on-site salt marsh.

Convert the above vacated expanded storage area into a marsh development and enhancement area.

Create a narrow fringing high and low salt marsh waterward of wherever upland expansion occurs.



Figure 31. Slash pine timber stand.



Figure 32. Advanced succession within previous slash pine stand.



Figure 33. Active gopher tortoise burrow.

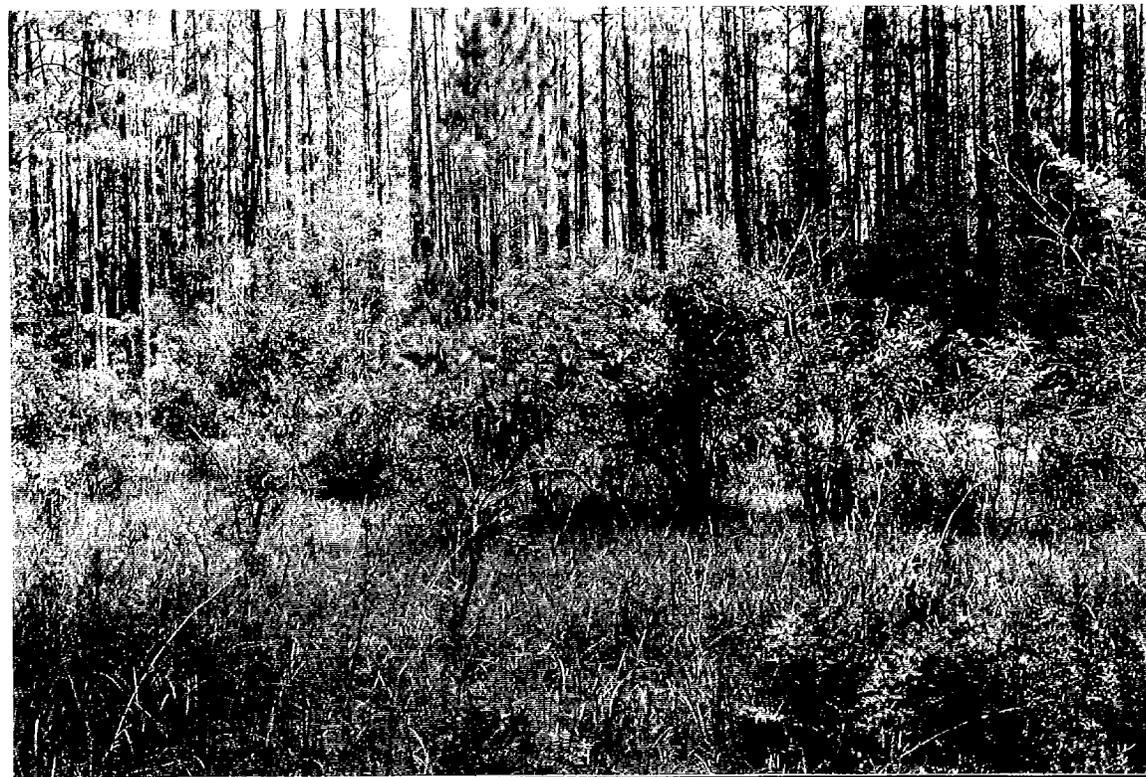


Figure 34. Seasonally flooded forested wetland.



Figure 35. Depressional wetland adjacent to logging road.

would have to mitigate for the wetlands lost at a minimum of a 1:1 ratio and preferably within the same watershed. The sites' location in the middle of the peninsula makes conveyance of dredged spoil and drainage water more difficult than other sites. A possible pipeline route through Dunn Creek to an existing drainage ditch east of the site would have to traverse adjacent off-site wetlands and thus require additional mitigation.

Due to the sites' increased ecological attributes and uncertainties involving potentially significant additional wetland impacts from transporting spoil and drainage water, the Service objects to the use of this site for proposed spoil disposal.

Mitigation for upland loss may be required pursuant to State of Florida guidelines. Impacts to gopher tortoises would have to be coordinated with the Florida Game and Fresh Water Fish Commission.

The Service did not observe any federally threatened or endangered species or their sign during the site survey. Due to the presence of undeveloped adjacent tracts of wetlands and uplands, however, it is possible that the federally-threatened Eastern indigo snake may occur at this site.

Sites 22A and B. St. Johns River Power Park Parcels

This site consists of two separate parcels owned by the Jacksonville Electric Authority (JEA); an approximately 54 acre tract (A parcel) adjacent to the east side of San Carlos Creek and an approximately 68 acre tract (B parcel) southwest of the first parcel and on the western border of San Carlos Creek (Figure 36). The A parcel is bordered by the power plant on the south, power lines on the east, William Ostner Drive to the north, and the upper San Carlos Creek on the west. The B parcel is bordered on the south by Hecksher Drive, San Carlos Creek on the east, and New Berlin Road and residential homes on the west and north, respectively. A ground survey was conducted on May 16, 1996.

The A parcel is underlain by three soils; Kershaw and Ortega fine sands, and Leon fine sand having drainage characteristics ranging from excessive to poor, respectively. In 1988 and 1993 this site was described as consisting of an altered natural habitat supporting JEA Power Park development and some small scale silviculture. The site has since been diked and used for spoil disposal. Spoil settling and removal in support of State Road 9A construction has resulted in the formation of two ponds, one permanent and one seasonal. The larger, L-shaped dike is vegetated predominantly with groundsel bush (*Baccharis halimifolia*). Wading birds such as the Great egret (*Casmerodius albus*) were observed foraging in the shallow open water areas. According to JEA personnel, the ponds also support abundant waterfowl during spring and fall migrations. A single active gopher tortoise burrow was observed on the dike (Figures 37 and 38).

The Service previously described Site 22A as having little or no environmental quality attributes. Site changes have significantly increased its attributes for waterfowl and wading birds. The Service does not object to the use of the majority of the diked area for spoil disposal from the proposed project. The Service does recommend that the Corps attempt to retain the sites' special open-water attributes by avoiding or minimizing the filling of those previously identified areas.

The B parcel is predominantly underlain by Kershaw and Ortega fine sands with a small area of Wesconnett fine sand along its western edge between a relocated church and residential houses. A mesic hardwood hammock similar to that occurring at site 13D constitutes over 90% of the upland habitat at this site (Figures 39 and 40). Vegetation associated with a remnant sandhill community occurs at scattered higher elevations. Tree sizes and the observation of a single old house foundation with some excavation and a rotting dock suggest that recent human disturbance of this site has been minimal. Piles of oysters were observed within the hammock at its border with the San Carlos Creek salt marsh. It is not known whether these piles represent historic Indian middens or are of some more recent origin. A narrow powerline right-of-way traverses the southern border of this parcel parallel to Hecksher Drive.

A 2-3 acre remnant cypress dome is present along the west central boundary of the parcel. The larger portion of this wetland was impacted by construction associated with State Road 9A.

With its wetland and upland habitats and its long border with the San Carlos Creek drainage, site 22B offers significant ecological value to migratory and resident birds, small mammals, reptiles, amphibians, numerous invertebrates and plants. Only two very large gopher tortoise burrows were observed and the site does not appear suitable to support a self-sustaining population. Project use of this parcel would result in the complete and unavoidable loss of the remnant dome wetland and would probably impact a portion of the adjacent salt marsh. The Corps should mitigate for wetlands lost at a minimum of a 1:1 ratio preferably within the same watershed. Mitigation for upland loss may be required pursuant to State of Florida guidelines.

Due to its ecological attributes, the Service objects to the use of site 22B for spoil disposal.

The federally endangered wood stork may occur at site 22A while site 22B may support the protected Eastern indigo snake and bald eagle.

Site 52. Bartram Island Parcel

Bartram Island, formerly known as Quarantine Island, is approximately 4 miles long and varies in width from less than a quarter mile to about one-half mile. It is located in the St. Johns River beginning at around river mile 10 near the western-most tip of Blount Island and extends along the river's contour to just beyond the mouth of Dunn Creek (Figure 41).

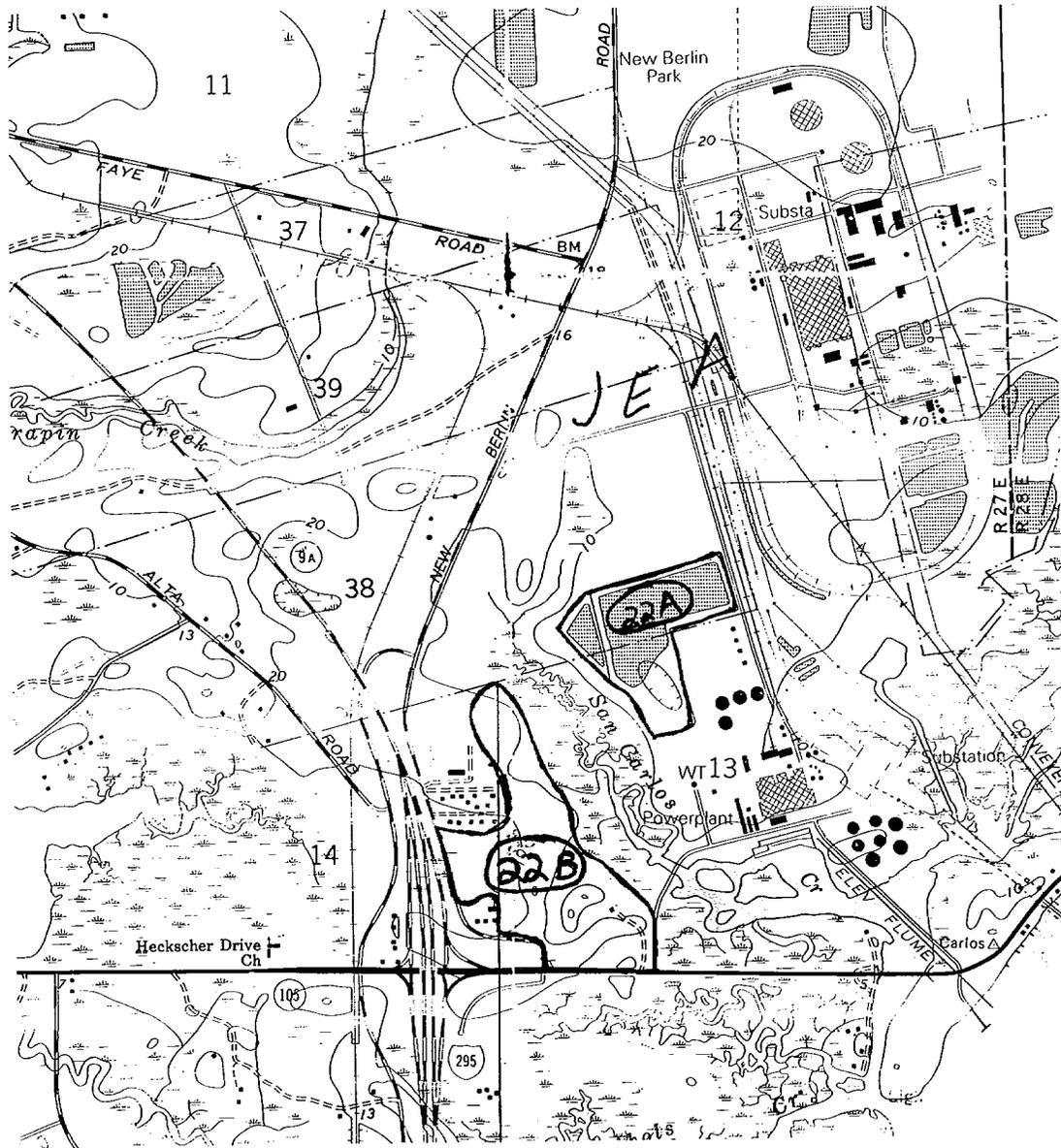


Figure 36. Sites 22A and B



Figure 37. Permanent pond within spoil dike.

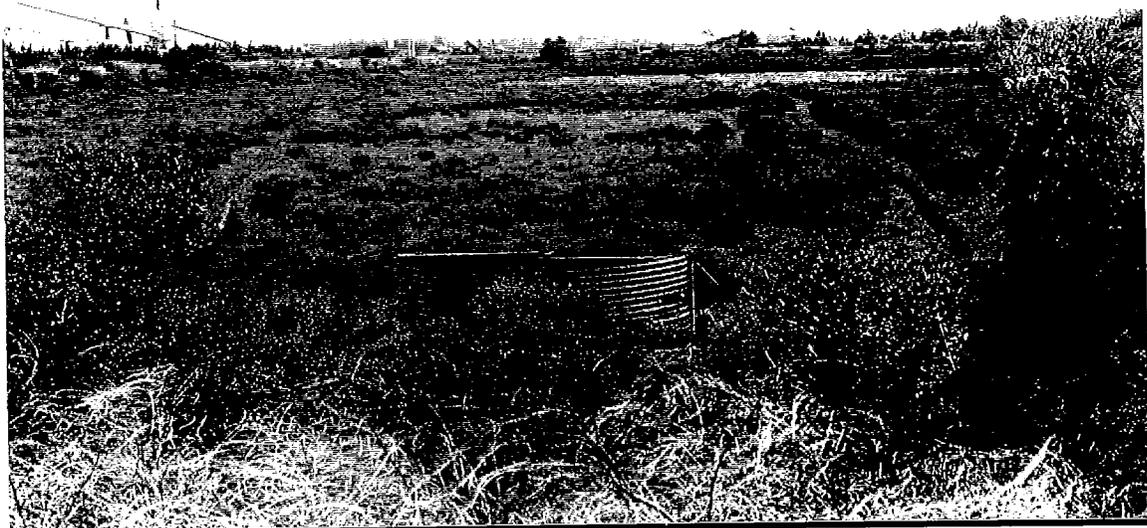


Figure 38. Inactive spoil disposal site, seasonally flooded, exhibiting vegetative succession



Figure 39. Mesic hardwood hammock and salt marsh associated with San Carlos Creek.

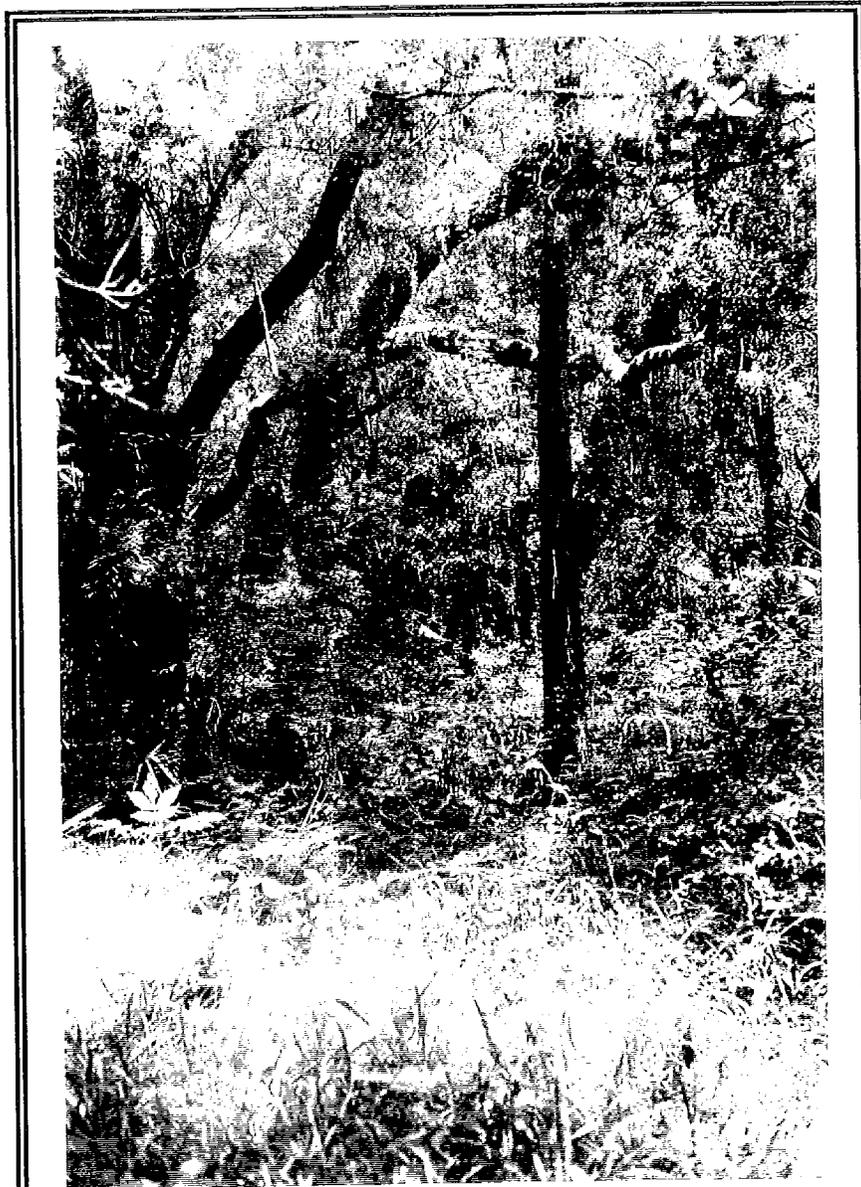


Figure 40. Vegetation within mesic hammock.

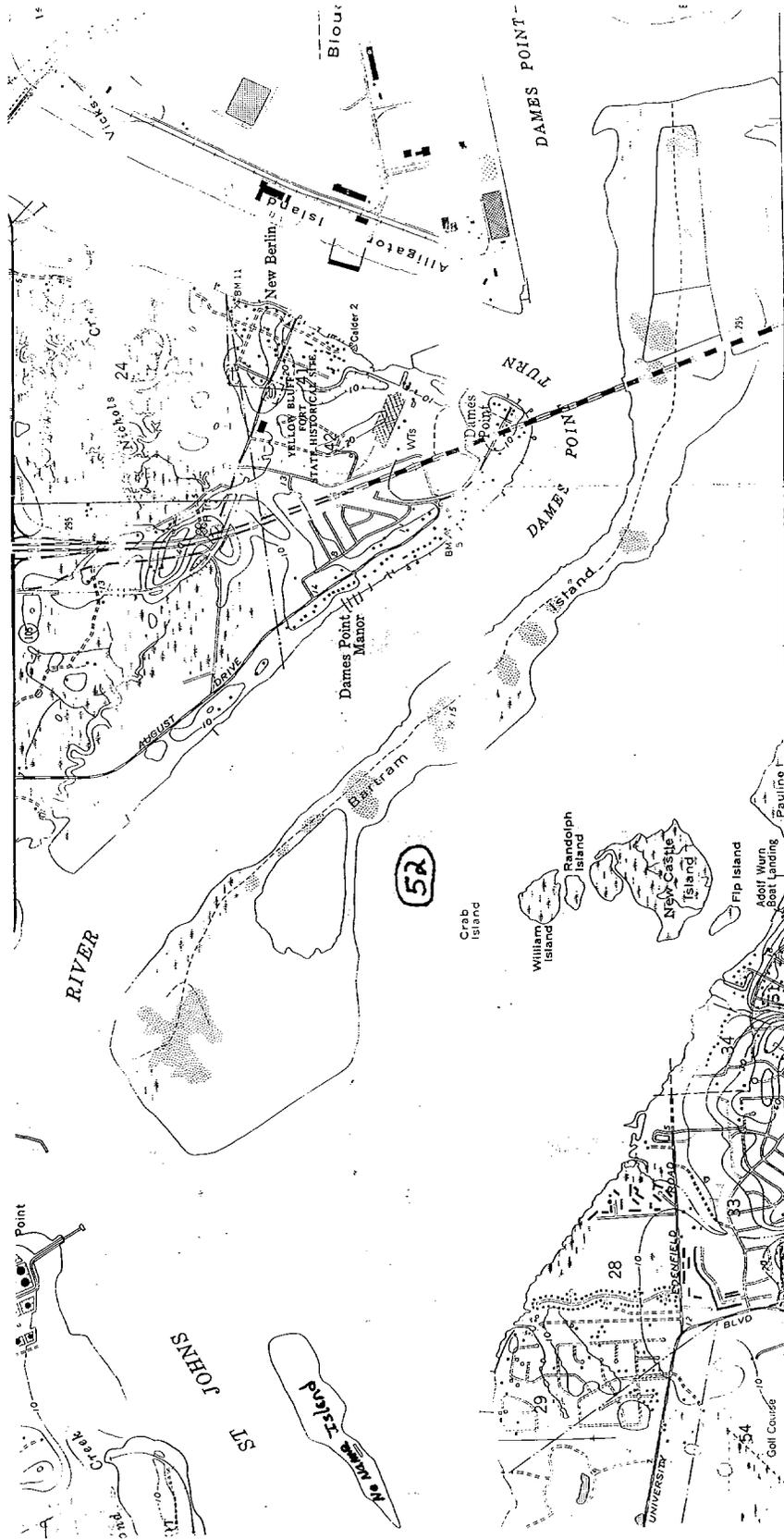


Figure 41. Site 52



Figure 42. Active spoil disposal impoundment - west Bartram Island.



Figure 43. Inactive spoil disposal area - east Bartram Island.



Figure 44. Vegetative succession within inactive spoil site - east Bartram Island.



Figure 45. Longleaf and sabal palms - Bartram Island interior.



Figure 46. Fringing saltmarsh - Bartram Island central.

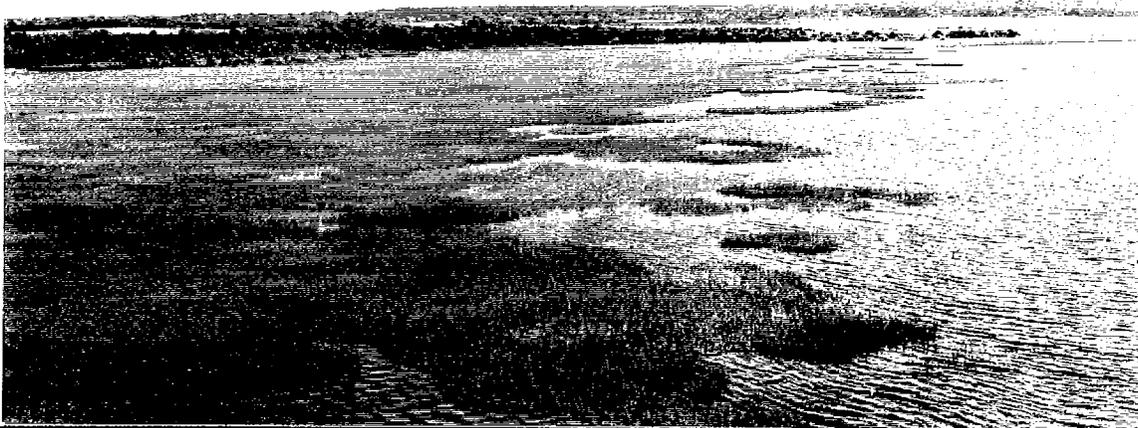


Figure 47. Smooth cordgrass dominated saltmarsh - eastern Bartram Island.



Figure 48. Black needlerush on Marion Island east of Dames Point Bridge.



Figure 49. Mill Cove site for aquatic spoil disposal.

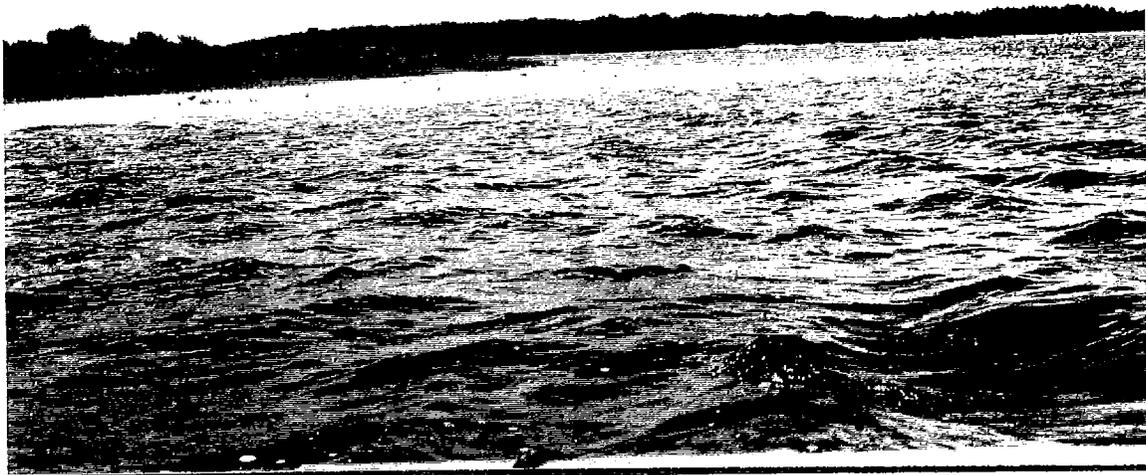


Figure 50. Shorebird use of sand spit at northern end of No Name Island west of Bartram Island.

Do not connect salt marsh islands but create additional islands west of and adjacent to Crab Island and east of and adjacent to New Castle Island. Additional islands will increase the overall surface area of salt marsh and adjacent tidal flats, which are important considerations for invertebrates, fish, and foraging wading and shore birds.

Avoid or minimize upland expansion of west Bartram Island and the filling of adjacent open water habitat. If some expansion is necessary, redirect a portion of the westward expansion southward and eastward. This action avoids connecting Bartram Island with the adjacent spoil island and avoids loss of nesting and loafing habitat for various terns and shorebirds. It also maintains an open water area of intermediate depth which will likely benefit some fish species and perhaps manatees. The recommended expansion may also help direct flow from the proposed Mill Cove channel.

Include meanders of different sizes where wide expanses of salt marsh development mitigation is proposed. These meanders will facilitate the exchange of water, nutrients, and solids in a manner similar to that which occurs under natural conditions.

The federally endangered West Indian manatee occurs within Mill Cove and the river segment bordering Bartram Island. This area is also part of the manatee's designated critical habitat. The shortnose sturgeon may also be found in this section of the St. Johns River. The wood stork may also occasionally feed and/or roost on the island.

Site 62. Buck Island Parcel

This parcel is an existing, 150 acre spoil disposal site owned by the Florida Department of Environmental Protection and leased to the Jacksonville Port Authority (JPA). It is located on the south bank of the St. Johns River at river mile 6 (Figure 51). The island is bordered on the west by St. Johns Creek, on the north by the St. Johns River, on the east by Chicopit Bay, and on the south by Colorinda Creek. This site is adjacent to the Fort Caroline National Memorial and is part of the National Park Service's Timucuan Ecological and Historic Preserve. A ground survey was conducted on June 4, 1996.

The majority of the island's interior has been used for spoil disposal and is highly disturbed. More recently used areas are primarily bare sand with patchy weeds, such as goldenrod (*Solidago* sp.) (Figure 52). Older areas are more robustly vegetated with some wax myrtle and groundsel bush and Carolina willow in the wet depressions (Figure 53). No evidence of least tern breeding was observed in the bare areas. The National Park Service has reported past breeding by least terns on Buck Island. Outside the perimeter dike, remnant upland vegetation includes wax myrtle, some live oak, cabbage palm, and southern red cedar. Intertidal marsh occurs around the entire island perimeter, though it is much more extensive along the island's eastern and southern edges. A mitigation project begun in 1989 and involving creation of 7.1 acres of salt marsh on the island's southeast side appeared physically identical to the surrounding natural marsh (Figure 54). With the exception of past use by the