JUNE 2000

DREDGE MATERIAL MANAGEMENT AREA CONSTRUCTION PABLO CREEK SITE (DU-9, Alt. 2) INTRACOASTAL WATERWAY ST. JOHNS COUNTY, FLORIDA

ENVIRONMENTAL ASSESSMENT

US Army Corps
of Engineers
Jacksonville District
South Atlantic Division

DEPARTMENT OF THE ARMY
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REPLY TO
ATTENTION OF

DREDGED MATERIAL MANAGEMENT AREA CONSTRUCTION
PABLO CREEK (DU-9,Alt.2)
INTRACOASTAL WATERWAY
ST. JOHNS COUNTY, FLORIDA

FINDING OF NO SIGNIFICANT IMPACT

I have reviewed the Environmental Assessment (EA) of the proposed action. This Finding incorporates by reference all discussions and conclusions contained in the EA enclosed hereto. Based on information analyzed in the EA, reflecting pertinent information obtained from other agencies and special interest groups having jurisdiction by law and/or special expertise, I conclude that the proposed action will have no significant impact on the quality of the human environment. Reasons for this conclusion are, in summary:

1. Consultation with the U.S. Fish and Wildlife Service was conducted. No impacts on species listed as threatened or endangered were identified and concurred with by the Service.

2. The Florida State Historic Preservation Officer concurred with the Jacksonville District's determination that the project will not affect significant historic properties.

3. Water Quality Certification (WQC) from the Florida Department of Environment and Conservation has been received for impacts to isolated wetlands.

4. The proposed project has been determined to be consistent with the Florida Coastal Zone Management Program (CZMP).

5. Measures to eliminate, reduce, or avoid potential impacts to fish and wildlife resources will be implemented during project construction.

6. Benefits to the public will include continued long-term maintenance of this reach of the Intracoastal Waterway and short-term benefits on the local economy from the construction of the dredged material management area.

In consideration of the information summarized, I find that the proposed action will not significantly affect the human environment and does not require an Environmental Impact Statement.

19 July 2000
Date

JOE R. MILLER
Colonel, U.S. Army
District Engineer

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1.0. PURPOSE OF AND NEED FOR ACTION

1.1. Introduction. The proposed action consists of the Phases I and II construction of Pablo Creek Alternative 2 Southern Extension (hereafter referred to as DU-9), an upland dredged material management area serving Reach VII (as defined in Taylor and McFetridge, 1986) of the Northeast Florida portion of the Intracoastal Waterway (IWW). Phase I consists of the clearing and grubbing of the foot print of the dike area excluding wetland areas. Phase II construction consists of dike construction along with appurtenant features such as exterior surface water drainage and wetland mitigation. Reach VII spans parts of Duval and St. Johns Counties, extending from IWW mile 7.52 southward to mile 12.5. The purpose of the project is to create a long-term upland dredged material management facility that would provide adequate capacity for 50 years of maintenance material dredged from the adjacent IWW. Maintenance dredging in the IWW has been constrained by a lack of suitable sites to place dredged material. Existing easements for dredged material management are largely unusable because they are located in wetlands or their upland areas are too small for efficient dredged material management. As the demand for residential and commercial property along the waterway increases, upland sites suitable for dredged material management are becoming scarce. Therefore, long-term dredged material management facilities must be constructed so that the federal channel can be maintained at its authorized depth.

1.2. Authority. Spanning nearly the length of Florida from Jacksonville to Miami, an 8 x 75 ft IWW channel was authorized January 21, 1927 by House Document 586, 69th Congress, 2nd Session. The present channel configuration (12 x 125 ft) was authorized by House Document 740, 79th Congress, 2nd Session. The U.S. Army Corps of Engineers is responsible for maintenance of the channel and the Florida Inland Navigation District (FIND) serves as the local sponsor.

1.3. Decision to be Made. The decision to be made is whether to construct a dredged material management facility for Reach VII of the IWW in Northeast Florida.

1.4. Relevant Issues. The following issues are relevant to the decision:

- water quality
- wetlands
- biological resources
- threatened and endangered species
- migratory birds
- cultural, historical, and archaeological resources
- socioeconomics
- prime farmland
- navigation
- aesthetics
- air quality

- hazardous, toxic, and radioactive materials

1.5. Methodology.

1.5.1. In 1986, the FIND initiated a long-range dredged material management program to provide a permanent infrastructure of management facilities for all maintenance material dredged from the IWW. In support of this program, Taylor Engineering, Inc., under contract to the FIND, has prepared dredged material management plans for the IWW on a county-by-county basis. The management program for each county includes a systematic plan comprising the following elements:

- Review of all available dredging records, channel surveys, existing FIND dredged material easements, and pertinent sediment data;
- Establishment of operational channel reaches and corresponding 50-yr maintenance dredging and material storage/management requirements;
- Determination of operational reach deficits in existing material storage capacity;
- Evaluation of dredged material management alternatives and definition of the dredged material management concept most appropriate for each reach;
- Identification, where appropriate, of candidate upland sites for evaluation as dredged material management areas;
- Evaluation of suitable existing easements and candidate sites for development as dredged material management areas using a standard set of engineering, environmental, and socioeconomic criteria; and
- Establishment of a site bank of primary (first-choice) and secondary (second-choice) dredged material management alternatives for each reach.

1.5.2. The Northeast Florida plan, covering Nassau, Duval, and a small part of St. Johns Counties, is described in the *Long-range Dredged Material Management Plan for the Intracoastal Waterway in Northeast Florida* (Taylor and McFetridge, 1986), an accompanying engineering plan book, and subsequent technical reports (Taylor Engineering, 1989; Taylor and McFetridge, 1988). The plan was prepared by an interdisciplinary team of engineers and environmental scientists using the systematic process outlined above. The evaluation of alternatives described in the above documents (reviewed in Sections 2.1 — 2.4) resulted in the selection of DU-9 as the primary dredged material management area for Reach VII. Subsequently, an environmental characterization (Mosura, 1992 — included as Appendix I), permit drawings and *Engineering Narrative* (included as Appendix II), and a site management plan (Taylor et al., 1993) were prepared for DU-9.

1.6. Permits Required. Isolated wetlands would be impacted by the Phase II construction and therefore, a state Water Quality Certification would be required. A National Pollutant Discharge Elimination System (NPDES) stormwater permit would be required from the Environmental Protection Agency. There is currently a General Permit issued for disposal area construction with conditions in order to be covered by the permit. This includes a surface water control plan to be submitted to the EPA. Permits to burn the cleared vegetation would be obtained from the appropriate local governments.

2.0. ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1. Introduction. Several dredged material management alternatives were considered for the Northeast Florida portion of the IWW. The alternatives were evaluated in the context of a long-term dredged material management strategy intended to resolve the recurring conflicts between the engineering and operational requirements of channel maintenance and the environmental and land-use constraints imposed on dredged material placement and storage. Evaluation of alternative management strategies led to the adoption of three primary tenets to guide the long-term management strategy. These are:

a. Future dredged material management will be confined to upland areas to the maximum extent possible.

b. Centralized management sites will be established for each identified channel reach. Centralized sites will reduce the total acreage required for dredged material management and will reduce the proliferation of smaller dredged material management facilities, each with its own set of outlet works and attendant water quality considerations.

c. Dredged material management sites will be operated and maintained as permanent facilities in which dredged material will be actively managed and made available for reuse.

2.2. History of Alternative Formulation. Dredged material management alternatives for the IWW in Northeast Florida were developed as part of the FIND's long-range dredged material management program. The alternative selected for Reach VII must be able to handle 1.95 million cubic yards of maintenance dredging material, the projected 50-year material storage requirement. Throughout the alternative evaluation process, federal, state, and local regulatory issues were addressed through continued coordination with appropriate agencies via an interagency project advisory committee. The long-range dredged material program and alternative evaluation procedures, summarized in Section 1.5, are documented in Taylor and McFetridge (1989) and Taylor Engineering, Inc. (1989).

2.3. Eliminated Alternatives. During the development of the Northeast Florida long-range dredged material management plan, the following dredged material management alternatives were considered and eliminated.

2.3.1. Ocean Disposal. Ocean disposal of dredged material requires the use of deep draft ocean barges or hopper dredges. These vessels, because of their size, cannot operate in the relatively shallow depths of the IWW. Therefore, ocean disposal would require multiple handling of dredged material using shallow draft vessels or pumping in combination with seagoing barges. Limited ocean access within the project area would introduce significant increases in transport or pumping distances with associated increases in operational costs. Collectively, these requirements render ocean disposal impractical and prohibitively expensive.

2.3.2. Beach Placement. The sediments in the northern portion of Northeast Florida segment of the IWW contain significant amounts of fine, organic-rich materials (Taylor and McFetridge, 1989). Sediments in Reach VII would therefore not be suitable for beach placement.

2.3.3. Open Water Placement with Habitat Restoration. Open water placement in artificial dikes followed by habitat restoration was the only form of open water placement that could be considered feasible in Northeast Florida. The opportunity to employ this alternative is restricted, however, by the limited amount of open water in much of Reach I, an artificial cut. Further, should this alternative be considered for parts of Reach II, significant difficulties would be encountered, including the unproven likelihood of success and the uncertainty of obtaining environmental permits and approval to use submerged state lands. Additionally, this alternative would require increasing acreages of submerged land for each dredging operation. These limitations preclude the use of this alternative as a long-term management strategy.

2.3.4. Other Upland Sites. Taylor and McFetridge (1989) evaluated several alternative upland dredged material management sites. Their evaluation was based on the engineering, environmental, and cultural considerations listed below.

- Engineering/Operational Considerations
  - Capacity
  - Adequate dike material
  - Pumping distance
  - Pipeline access
  - Upland access
  - Soil properties

- Environmental Considerations
  - Wetland avoidance or minimum wetland impact
  - Isolated wetlands and wetland quality
  - Upland impacts
  - Ability to provide buffer zone
  - Groundwater conditions

- Cultural/Economic Considerations
  - Minimal existing development
  - Ownership
  - Archeological or historical sites

The candidate sites evaluated for Reach VII included several existing dredged material placement easements that were eliminated from consideration because they were partly submerged, too small, lacked road access, or a combination of these factors. One existing easement was considered as a possible alternative as were five additional upland sites. From these, a site situated on the north side of Pablo Creek (identified as site I-11.5 W-SJ3-5 in Taylor and McFetridge, 1986) was determined to best satisfy the evaluation criteria listed above and was thus selected as the primary dredged material management area for Reach VII. Subsequently, the Danov Corporation, owner of the large tract of land upon which the site was located, requested that the primary site be repositioned to the south of Pablo Creek. Relocation alternatives were examined (Taylor and McFetridge, 1988; Taylor Engineering, 1989), resulting in the selection of the site now known as Pablo Creek Alternative 2 Southern Extension or DU-9.

2.4. Alternatives

2.4.1. No Action. The no action alternative would be to not construct this dredged material management facility for Reach VII at this site.

2.4.2. Construction of Disposal Area in Palm Valley (DU-9, Alt. 2). DU-9, Alt. 2 would be an approximately 180 acre site containing a dredged material containment basin, associated perimeter ditch and access road, and buffer area. Construction would occur in two phases. Phase I construction would consist of the clearing and grubbing of the site and installing security fencing. Wetland areas would be left intact during this phase. Phase II would consist of the construction of the diked containment basin. Impacts to isolated wetlands from the construction of the disposal area would be mitigated by the construction of wetlands in the northwest section of the buffer zone.

2.5. Alternative Comparison. Table 2.1 provides a summary comparison of the two alternatives described above, derived from the information presented in Sections 4.1 and 4.2.

2.6. Preferred Alternative. Construction of DU-9 is the preferred dredged material management alternative for Reach VII in Northeast Florida. The DU-9 dredged material management area would satisfy the dredged material handling requirements for Reach VII and would result in minimal impacts to wetlands. It is centrally located on the boundary of Reach VII, and it is the only single site with enough upland acreage to satisfy both reach requirements. The selection of a single site to serve two reaches reduces the costs of site acquisition, eliminates the need to operate and maintain two sites, and limits environmental impacts to a single area.

TABLE 2.1, ALTERNATIVE COMPARISON

RESOURCE/ISSUE	NO ACTION ALTERNATIVE	CONSTRUCTION OF DISPOSAL AREA DU-9, Alt. 2
Water Quality	No impact.	Short-term minor inclusion of salt water into the groundwater aquifer. This impact would be mitigated by the design of the dikes to avoid affecting this resource. Wells would be placed around the perimeter to monitor this potential impact.
Wetlands	No impact.	Elimination of 3.13 acres of wetlands. Impacts mitigated by creation of 6.3 acres of new wetlands.
Biological Resources	No impact.	Elimination of 107 acres of upland coniferous plantation.
Threatened and Endangered Species	No impact.	No impact.
Migratory Birds	No impact.	The construction activities would have a short-term impact on migratory bird nesting. These impacts would be mitigated through the implementation of the District's Migratory Bird Protection Policy.
Cultural Resources	No impact.	No impact.
Navigation	Short-term minor adverse impact during reformulation of alternatives.	Long-term benefit to navigation by providing adequate disposal facilities for this reach of the IWW.
Socioecomonics	Short-term minor adverse impact during reformulation of alternatives.	Short-term stimulus to the local economy from the sale of goods and services in support of the construction. Short-term secondary stimulus to the local economy during dredging and disposal activities.
Prime Farmland	No impact.	No impact.

RESOURCE/ISSUE	NO ACTION ALTERNATIVE	CONSTRUCTION OF DISPOSAL AREA DU-9, Alt. 2
Aesthetics	No impact.	Short-term medium noise impacts from the presence and operation of heavy equipment. If residential areas are close by impacts could be mitigated by daytime only construction. Short-term impact on visual scape from the construction activities. Long-term medium impact from the presence of the dike structure. Impacts would be mitigated by the creation of buffer area with adequate vegetative cover.
Air Quality	No impact.	Short-term medium impact from burning of on-site vegetation during clearing and grubbing Short-term medium impact from fugitive dust during construction of dikes. Short-term medium impact from odors during dredging episodes.
Hazardous Toxic Wastes	No impact.	No impact.

3.0. AFFECTED ENVIRONMENT

3.1. General. Dredged material management area DU-9 is a 180-acre parcel located about 0.45 miles west of the IWW and 0.5 miles south of Pablo Creek (Sheet 1 of 5, Appendix II) in a rural part of St. Johns County, Florida. It is situated within a large tract of land, the Dee Dot Ranch, belonging to the Danov Corporation. During preparation of the long-range dredged material management plan for Northeast Florida, Mosura (1992) characterized the environmental setting of DU-9. The environmental characterization (copy attached as Appendix I) includes descriptions and maps of land cover and vegetative communities, characterization of wildlife communities, and discussion of jurisdictional wetlands.

3.2. Water Quality.

3.2.1. Groundwater Resources. The ground water aquifer is not used locally and should not be a factor. If development occurs in the vicinity, then, impacts would be addressed before dredging and placement occur.

3.2.2. Surface Water Resources. There are no surface water drainages in the site. The estuaries are located far enough away that it should not be affected by the work.

3.3. Wetlands. Mosura (1992) first identified and located wetlands using blue line aerial photography (1"=200'), U.S. Department of Interior Wetland Inventory Maps, a U.S. Department of Agriculture soil survey, and U.S. Geological Survey topographic maps. The type and extent of wetland communities was verified during field inspections conducted on July 21 and December 9, 1988; June 9, 1989; and July 28 and August 3, 1992. Wetlands and other vegetative communities were classified according to Level III of the *Florida Land Use, Cover and Forms Classification System* (FDOT, 1985). On August 3, 1992, Mike Eaton of the Florida Department of Environmental Protection (FDEP) and Bill Bossuot of the SJRWMD visited the site and made informal, nonbinding determinations of wetland jurisdiction. Delineation of wetland boundaries was conducted in June 1998 (Lotspeich and Associates, Inc., 1998; Appendix IX).

Wetlands (marsh, swamp, and wet prairie) along the western and southern site boundaries are under FDEP jurisdiction (Figure 3-1, Appendix I; Sheet 4, Appendix II). Water in these areas appears to flow south and eventually drain toward the IWW. Likwise, a small cypress wetland on the southeast side of the site is also jurisdictional. Jurisdictional wetlands on site are classified as Class III waters under Chapter 17-302 F.A.C. In addition to the wetlands falling under FDEP jurisdiction, the site also contains several smaller isolated wetlands. Mosura's (1992) environmental characterization did not include examination of water quality indicators or trends in water quality in these wetlands. It is unlikely that such information is available for the subject site.

3.4. Biological Resources. DU-9 contains six upland vegetative communities: improved pasture (1.6 acres), unimproved pasture (13.8 acres), palmetto prairie (7.2 acres), pine flatwoods (61.3 acres), coniferous plantation (82.5 acres), and roads (2.9 acres). Five wetland communities are present: bay swamp (0.2 acres), stream and lake swamp (5.1 acres), cypress (3.8 acres), freshwater marsh (0.3 acres), and wetland prairie (1.3 acres). The composition and locations of these communities are described in Mosura (1992).

The pine habitat dominating the site provides good forage for browsing wildlife as well as for predatory birds such as red-tailed hawks, red-shouldered hawks, and kestrels. Other common birds in this habitat are northern quail, mourning dove, rufous-sided towhee, and woodpeckers. Common mammals include gray squirrel, fox squirrel, armadillo, white-tailed deer, cotton mouse, cotton rat, and gray fox. The most common reptile in the area is the gopher tortoise, whose burrows provide habitat for commensal fauna including the Florida gopher frog, Florida mouse, and indigo snake. Some other common reptiles include the black racer, eastern diamondback rattlesnake, and hog-nosed snake.

The wetlands provide habitat for a variety of wildlife, including water snakes, cottonmouths, turkey, barred owls, pileated woodpeckers, raccoons, bobcats, and white-tailed deer. The wetlands area used as breeding habitat by a variety of amphibians and are also used as forage areas by wading birds, gulls, terns, and osprey (Mosura, 1992).

3.5. Threatened and Endangered Species. The following species that could be in the construction area are listed as threatened or endangered by the U.S. Fish and Wildlife Service (Mosura, 1992). Those species observed during Mosura's survey are marked with an asterisk (*).

American alligator . . . . . *Alligator mississippiensis*
Eastern indigo snake . . . . . *Drymarchon corais couperi*
Peregrine falcon . . . . . *Falco peregrinus*
Bald eagle . . . . . *Haliaeetus leucocephalus*
Wood stork* . . . . . *Mycteria americana*
Red-cockaded woodpecker . . . . . *Picoides borealis*

Wood storks were occasionally observed flying over the site during Mosura's survey. A wood stork rookery is located about one mile west of DU-9.

A survey for the presence of red cockaded woodpeckers was conducted on December 12, 1992. Biologists first visited the site and checked for suitable longleaf pine woodpecker habitat. Those areas with suitable habitat were then surveyed by pedestrian transect. The biologists found no woodpeckers, sign, or nest cavities anywhere on the site (Appendix IV).

3.6. Migratory Birds. Migratory birds of various types use this site for nesting (Mosura, 1992).

3.7. Cultural, Historical, and Archeological Resources. The Florida Department of State, Division of Historical Resources was contacted to determine whether any known archaeological or historic resources are present on DU-9, Alt. 2 (Appendix VI). The response (quad sheet in Appendix VI) indicates that the Florida Master Site File contains no known archaeological or historic resources on DU-9, Alt. 2.

3.8. Navigation. The major navigation activity on the IWW is recreational. Commercial craft on the waterway include barges, fishing vessels, and excursion boats. Several types of government vessels also use the IWW. Maintenance dredging of the IWW, must occur in order to maintain the economic benefits of navigation on the IWW.

3.9. Socioeconomics. DU-9 is situated on a large tract of land owned by the Danov Corporation. A small area of improved pasture on the site (1.6 acres) is apparently used as a game plot and for harvesting hay. Much of the site is used as a coniferous plantation.

3.10. Prime Farmland. Even though there are pasturelands on this site, there are no prime farmlands on this site.

3.11. Aesthetics. Located on a large tract of private land, DU-9 is removed from public view. The nearest area from which the site is visible to the general public is along the

IWW, over 1,700 ft east of the site. No public roads are near DU-9. Observations made during field inspections (July 21 and December 9, 1988; June 9, 1989; and July 28 and August 3, 1992) and a review of 1985 aerial photographs (ca. 1" = 900') of the site show that site aesthetics are typical of a rural Northeast Florida silviculture setting.

3.12. Air Quality. No significant sources of air pollution are located on or immediately adjacent to the site.

3.13. Hazardous, Toxic, and Radioactive Wastes. No evidence of hazardous, toxic, or radioactive wastes was noted on DU-9, Alt. 2 during site visits. However, no investigations for the express purpose of identifying such materials have been conducted on the property.

4.0. ENVIRONMENTAL CONSEQUENCES

4.1. Introduction. This section describes the probable consequences of implementing each alternative on selected environmental resources. These resources are directly linked to the relevant issues listed in Section 1.4 that drive and focus the environmental analysis. The following includes anticipated changes to the existing environment including direct and indirect impacts, irreversible and irretrievable commitment of resources, unavoidable effects and cumulative impacts as described below.

4.1.1. Cumulative Impacts. Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7).

4.1.2. Irreversible and Irretrievable Commitment of Resources.

a. Irreversible. An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. One example of an irreversible commitment might be the mining of a mineral resource.

b. Irretrievable. An irretrievable commitment of resources is one in which, due to decisions to manage the resource for another purpose, opportunities to use or enjoy the resource as they presently exist are lost for a period of time. An example of an irretrievable loss might be where a type of vegetation is lost due to road construction.

4.2. No Action.

4.2.1. General. Under the no action alternative, a dredged material management site would not be constructed for Reach VII of the IWW in Northeast Florida.

4.2.2. Water Quality. No impacts would occur.

4.2.3. Wetlands. There would be no effects on wetlands from the no action alternative.

4.2.4. Biological Resources. There would be no impact on biological communities.

4.2.5. Threatened and Endangered Species. There would be no impact on threatened and endangered species.

4.2.6. Migratory Birds. There would be no impact on migratory birds.

4.2.7. Cultural, Historical, and Archeological Resources. There would be no impact on archaeological and historical resources.

4.2.8. Navigation. No action would result in failure to construct a long-term dredged material management site at this location for Reach VII of the IWW in Northeast Florida.

4.2.9. Socioeconomics. There would be a long-term adverse impact on water-related businesses associated with the loss of navigable capacity of the channel. There would also be an economic loss from not being able to use the property for the purposes to which it was intended.

4.2.10. Prime Farmland. The would be no impacts on prime farmland since none are located in the project area.

4.2.11. Aesthetics. There would be no change in site aesthetics.

4.2.12. Air Quality. There would be no change in air quality.

4.2.13. Hazardous, Toxic, and Radioactive Waste. There would be no change in hazardous, toxic, or radioactive materials on the property.

4.2.14. Unavoidable Adverse Impacts. There would be no unavoidable adverse impacts.

4.2.15. Irreversible and Irretrievable Commitments of Resources. There would be no commitment of significant resources for this alternative.

4.2.16. Cumulative effects. The loss of this project along with the 55 other proposed site along the waterway could have a negative cumulative impact on maintaining the IWW. However, this impact would be considered minor.

4.3. Construction of Disposal Area DU-9, Alt. 2

4.3.1. General. DU-9 would serve as an upland dredged material management area for Reach VII (as defined in Taylor and McFetridge, 1986) of the Northeast Florida portion of the IWW. A summary description of the project is contained in the *Engineering Narrative*

(Appendix II) prepared for the dredge and fill permit application. The *Management Plan, Pablo Creek Alternative 2 (Southern Extension) Dredged Material Management Area* (Taylor et al., 1993) discusses site preparation and design features, operational considerations, and site management.

As described in the above documents, approximately 77.2 acres of the total 180-acre DU-9 dredged material management facility would be preserved as a buffer area surrounding the containment basin. The containment basin would occupy 96 acres and an additional 6.8 acres impacted by the excavation of a perimeter ditch and the construction of access roads surrounding the containment area. Thus, a total of 102.8 acres would be impacted by the development of the containment facility. This represents approximately 57% of the total site area leaving 43% of the total acreage as a natural buffer.

The containment basin, as shown in Sheet 2, Appendix II, would be formed by a dike with a crest elevation of 16.5 ft (+31.37 ft NGVD) above the existing mean site elevation. As shown in Sheet 3, Appendix II, the dike would have a crest width of 12 ft and side slopes of 1V:3H. Material for dike construction would be obtained by excavating the interior of the containment basin to +11.72 ft NGVD (3.15 ft below existing grade) with a 20-ft setback from the inside toe of the dike. A perimeter ditch with a mean invert elevation of 11.57 ft NGVD, set 20 ft beyond the outside toe of the dike, would be constructed to control stormwater runoff from the exterior face of the dike, perimeter road, and portions of the buffer area. The perimeter ditch would also intercept any horizontal migration of saltwater from the interior of the containment area.

The stability of the containment dike against erosion from rainfall runoff and wind would be ensured by vegetating the dike slopes and crest with native grasses immediately following dike construction. The grasses would quickly form soil binding mats while not rooting so deeply so as to structurally weaken the dike. An additional benefit of vegetating the dikes in this manner is the reduction of the visual impact of the containment basin.

The configuration of the containment basin would provide a buffer, ranging from 300 to 430 ft in width, on all sides of the site. Most of the buffer would remain undisturbed with existing vegetation left in place. The buffer would include all on-site Florida Department of Environmental Protection (FDEP) jurisdictional wetlands. The buffer would also isolate the containment basin from any future development on adjacent land.

4.2.2. Water Quality. There would be no impacts on the water quality of the area from clearing and grubbing of the non-wetland vegetation within the footprint of the dike. During Phase II construction of the dike there would be minor short-term impacts on surface water runoff from turbidity generated during construction. These impacts would be mitigated by implementation of an erosion control plan. There could be short-term impacts on groundwater during dredging events from the intrusion of saltwater from the slurried material. This impact would be monitored if an impact could impact potable drinking

Water. At this time no impact is foreseen. The impacts would be minimized by the construction of drainage ditches around the dikes and by the installation of monitoring wells around the dikes if groundwater potentials realized. If impact potentials exist and occur, dredging will cease until causes are remedied.

The site management plan (Taylor et al., 1993; Appendix III) and *Engineering Narrative* (Appendix II) describe in detail the operating procedures and expected hydraulic performance of the proposed dredged material management facility. As discussed in these documents, the design features and facility operations would ensure that discharge from the containment basin during dredging operations meets state Class III water quality standards for turbidity and other parameters.

The facility design and management plans also contain provisions to control stormwater runoff between dredging operations. The containment basin would include an interior retention area of sufficient capacity to retain the first inch of stormwater runoff. The site operator would gradually release any ponded stormwater through the weir system into the perimeter ditch. The discharge point for the perimeter ditch would be determined during final design. Retention and gradual release of stormwater would serve to minimize turbidity and to simulate natural discharge patterns following rainfall.

Although the design features above should prevent impacts to wetlands in the buffer, the site management plan includes provisions to monitor the status of these wetlands. The plan recommends that an environmental survey of the site be completed prior to construction to establish baseline habitat and vegetation conditions. Periodic re-surveys would then continue throughout the service life of the site. Degradation of the wetlands related to the interruption of natural drainage patterns, groundwater impacts, or other possible consequences of site construction or operations would be noted, corrective actions taken, and guidelines developed to minimize further adverse impact.

4.2.3. Wetlands. All wetlands on the site are subject to FDEP jurisdiction. Only the isolated wetlands on the site totaling 3.13 acres would be affected by the Phase II dike construction. Impacts would be mitigated by the creation of 6.3 acres of new wetlands located within the buffer zone (Taylor Engineering, Inc., 1999; Appendix X).

4.2.4. Biological Resources. All vegetation would be removed from the containment area. This would include about 10 acres of unimproved pasture, 7 acres of palmetto prairie, 34 acres of pine flatwoods, 42 acres of coniferous plantation, 2.4 acres of cypress swamp, and 0.2 acres of bay swamp. During vegetative removal, most motile wildlife would relocate to adjacent vegetated habitats. Vegetative removal and wildlife relocation would lower the biological productivity of the site during Phase I construction. Wildlife not moving would likely be extirpated during construction. During the lag time between Phases I and II, pioneer species of plants would colonize the area followed by small mammals, birds, and reptiles.

4.2.5. Threatened and Endangered Species. Construction on DU-9, Alt. 2 would not impact species listed by the USFWS. The pelican nesting area is far enough away from the site that construction ,operation and management of the site should not impact nesting activities.

4.2.6. Migratory Birds. Dredged material management sites are generally viewed as desirable nesting habitat by migratory birds such as terns, laughing gulls, and plovers. Present land cover on DU-9, Alt. 2 does not provide favorable habitat for nesting. No impacts on migratory birds would be anticipated during Phase I (clearing and grubbing). However, during Phase II (dike construction) there could be adverse impacts on birds attracted to the site. These impacts would be mitigated by the implementation of the Jacksonville District Corps of Engineers district-wide migratory bird protection policy (COE, 1993).

The purpose of the migratory bird protection policy is to "provide protection to nesting migratory bird species that commonly use the dredged material disposal sites within Jacksonville District while facilitating disposal of dredged material to meet the Federal standard for navigation channel and harbor maintenance as authorized by Congress" (pg. 1). The migratory bird protection policy includes the following alternatives to prevent impacts to nesting birds — avoidance, creation of undesirable habitat, dissuasion through noise or activity, or creation of alternative nesting sites. A final alternative, incidental take, is undesirable and would not be considered unless an emergency situation exists. Should construction occur during nesting season (April 1 to September 1), the site protection plan presented in Appendix I of the Migratory Bird Policy (COE, 1993) would be implemented. The site protection plan provides for education of contractor personnel, daily monitoring for nesting activity, steps to deter nesting in the construction area, avoidance of nests that may be present and, if necessary to protect nesting birds, cessation of construction activities.

4.2.7. Cultural, Historical, and Archeological Resources. No known archaeological or historical resources would be affected by construction of DU-9, Alt. 2.

4.2.8. Navigation. The construction of the DU-9, Alt. 2 dredged material management facility would have long-term benefits to navigation on the IWW by facilitating maintenance dredging.

4.2.9. Prime Farmland. There would no impacts on prime farmland since none are located on the project site.

4.2.10. Socioeconomics. There would be a short-term stimulus to the local economy from the contracting of equipment and labor and the sale of goods and services (fuel, food, lodging) in support of the construction. There would be a long-term benefit to water-related businesses through continued maintenance of the IWW. No significant social activities would be altered by the site development.

4.2.11. Aesthetics. Site construction activities would have a temporary, adverse impact on the aesthetic resources of the site. A minor, temporary increase in noise could be expected during construction. Following construction, however, the dredged material management area would be inactive except during dredging which is projected to take place at five to ten year intervals. There would be no significant long-term increase in noise.

4.2.12. Air Quality. In the short term, smoke and particulates could increase if burning is used to dispose of cleared vegetation. Burn permits would be required from the appropriate governmental agencies. Should state standards be such that burning cannot be accomplished on site, then the cleared materials would be removed from the site and disposed of properly. Minor amounts of dust could be generated during site construction. However, the infrequent use of the site (once every five to ten years), the maintenance of vegetative cover on the dikes, and the presence of the buffer zones would ensure minimal long-term dust generation. No significant long-term impacts on air quality would be expected.

4.2.13. Hazardous, Toxic, and Radioactive Wastes. Small quantities of equipment fuels or lubricants could spill or leak during construction. However, no significant quantities of hazardous, toxic, or radioactive wastes would be released. Sediments would be tested prior to dredging to ensure that material placed in the facility contains no significant hazardous, toxic, or radioactive wastes.

4.2.14. Unavoidable Adverse Impacts. No significant adverse impacts have been identified. Minor impacts would include long-term loss of wildlife habitat and short-term reduction in air quality from burning.

4.2.15. Irreversible and Irretrievable Commitments of Resources. There would be no commitment of significant resources for this work.

4.3.16. Cumulative Impacts. The construction of this site along the IWW has relatively minor long-term adverse impacts. However, this site is to be one of 55 such sites constructed along the IWW. Even though the total number of acres of constructed disposal sites is large (approximately 5500 acres), when spread out along the entire water coarse is relatively minor to other developments.

5.0 COORDINATION WITH OTHERS. The site selection process has been coordinated with state and federal agencies through the work of an interagency advisory committee (Taylor and McFetridge, 1989). A public notice (PN-SPH-203) was issued on 13 July 1995 (Appendix V). The following comments were received in response to the public notice:

5.1. The Florida Department of Community Affairs responded to the public notice by letter dated 13 September 1995 stating that the Department of Environmental Protection would require an Environmental Resources Permit (ERP). It also recommended that the EA for

the project include impacts on listed species, water quality and the alternative for dredged material management. The St. Johns River Water Management District requests consultation regarding mitigation plans and identification and planning for future sites. The Department of Transportation requests that the EA include impacts on dredged material transportation. It also stated that the project was consistent with the Florida Coastal Zone Management Program.

RESPONSE: The project is being evaluated in accordance with NEPA and ESA requirements. Impacts to any of the species listed by the US Fish and wildlife Service and the State of Florida considered to be on the site and water quality impacts have been addressed in this document. The management for dredged material has been previously coordinated with the State through the Technical Advisory Group established by the Florida Inland Navigation District. The Florida Inland Navigation District will be advised of the Water Management Districts request. No material will be transported using DOT areas of jurisdiction.

5.2. The Audubon Society responded to the public notice by telephone on 28 July 1995 requesting additional information on the locations of the sites.

RESPONSE: The information was given to them by telephone on 31 July 1995.

5.3. The National Marine Fisheries Service responded to the public notice by letter dated 7 August 1995 stating that impact would only be minimal on marine and anadromas fisheries and would not object.

5.4. Mr. Charlie Jabally of Florida Department of Environmental Protection responded to the public notice by telephone on 6 August 1995 stating that an aquatic preserve was located south of the project area.

5.5. The Florida Division of Historical Resources responded to the public notice by letter dated 9 October 1995 stating that no significant archeological or historic resources are recorded for or likely to be within the project area. Therefore, it was their opinion that the project would not affect properties eligible for or on the National Register of Historic Places.

6.0. REFERENCES.

Lotspeich and Associates, Inc. 1998. *Wetland Delineation Report: Dredged Material Management Area DU-9.* Winter Park, FL.

Mosura, E.L. 1992. *Environmental Site Documentation for Proposed Dredged Material Disposal Areas in St. Johns County, Pablo Creek Alternative 2 Site (Extended Southerly).* Water and Air Research, Inc., Gainsville, FL.

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U.S. Army Corps of Engineers (COE). 1993. *Draft Final Migratory Bird Protection Policy.* Jacksonville, FL.

7.0. LIST OF PREPARERS

Name	Discipline	Experience	Role in Preparing Preliminary Environmental Assessment
Steven J. Schropp, Ph.D.	Environmental Scientist	Five years with the FDER CZM program; three years as an environmental consultant — environmental audits, sediment and water quality evaluations.	Assembled and formatted information on SJ-14 for the preliminary environmental assessment.
R. Bruce Taylor, Ph.D., P.E.	Coastal Engineer	Twenty years as consulting engineer — dredged material management, environmental impact assessment, mathematical modeling.	Project Manager for the FIND's long-term dredged material management program.
William F. McFetridge	Coastal Engineer	Nine years as consulting engineer specializing in dredged material management issues, identification and evaluation of dredged material management areas, and design of dredged material management facilities.	Identified and evaluated candidate sites, designed dredged material management facility.
Michael L. Cochrane	Civil Engineer	Five years as consulting engineer specializing in the identification and evaluation of dredged material management	Identified and evaluated candidate sites, designed dredged material management facility.

Table 7.1 List of preparers

Table 7.2, List of Preparers, Corps of Engineers

NAME	DISCIPLINE	EXPERIENCE	ROLE IN PREPARING EA
William J. Fonferek	Biologist	18 years environmental impact assessment	O&M NEPA Coordinator, Environmental Impact Assessment, Endangered Species Coordination
Paul E. Stodola	Biologist	7 years wetland mitigation review and environmental impact assessment	Wetland Mitigation Coordination, EA Updates
Janice E. Adams	Archaeologist	9 years experience NEPA documentation	Cultural Resources Analysis
Paul C. Stevenson	Landscape Architect	9 years landscape architect, field and design work	Aesthetic and Recreational Resource Analysis
Glen Schuster	Environmental Engineer	16 years professional engineer	Water Quality Impacts
Joe Tavarez	Civil Engineer	1 year	Dredged Material Management Plans

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APPENDIX I

ENVIRONMENTAL SITE DOCUMENTATION

ENVIRONMENTAL SITE DOCUMENTATION FOR DREDGED MATERIAL DISPOSAL AREAS IN ST. JOHNS COUNTY

PABLO CREEK ALTERNATIVE 2 SITE (EXTENDED SOUTHERLY)

Report Prepared under Contract to:

TAYLOR ENGINEERING, INC., FOR THE FLORIDA INLAND NAVIGATION DISTRICT

Prepared by:

E. Lynn Mosura
WATER AND AIR RESEARCH, INC.
Gainesville, Florida

October 1992
File: 92-5162

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1.0 INTRODUCTION

1.0 INTRODUCTION

A 50-year dredged material management plan is being developed for the Intracoastal Waterway (ICWW) along Duval and St. Johns counties, Florida. The plan's concept was developed during Phase I of the project (Taylor and McFetridge 1986, 1989). Potential sites were screened for use as dredged material management areas. A total of sixteen primary and thirteen secondary sites were selected in Duval and St. Johns counties after consideration of preliminary environmental, engineering, and operational factors.

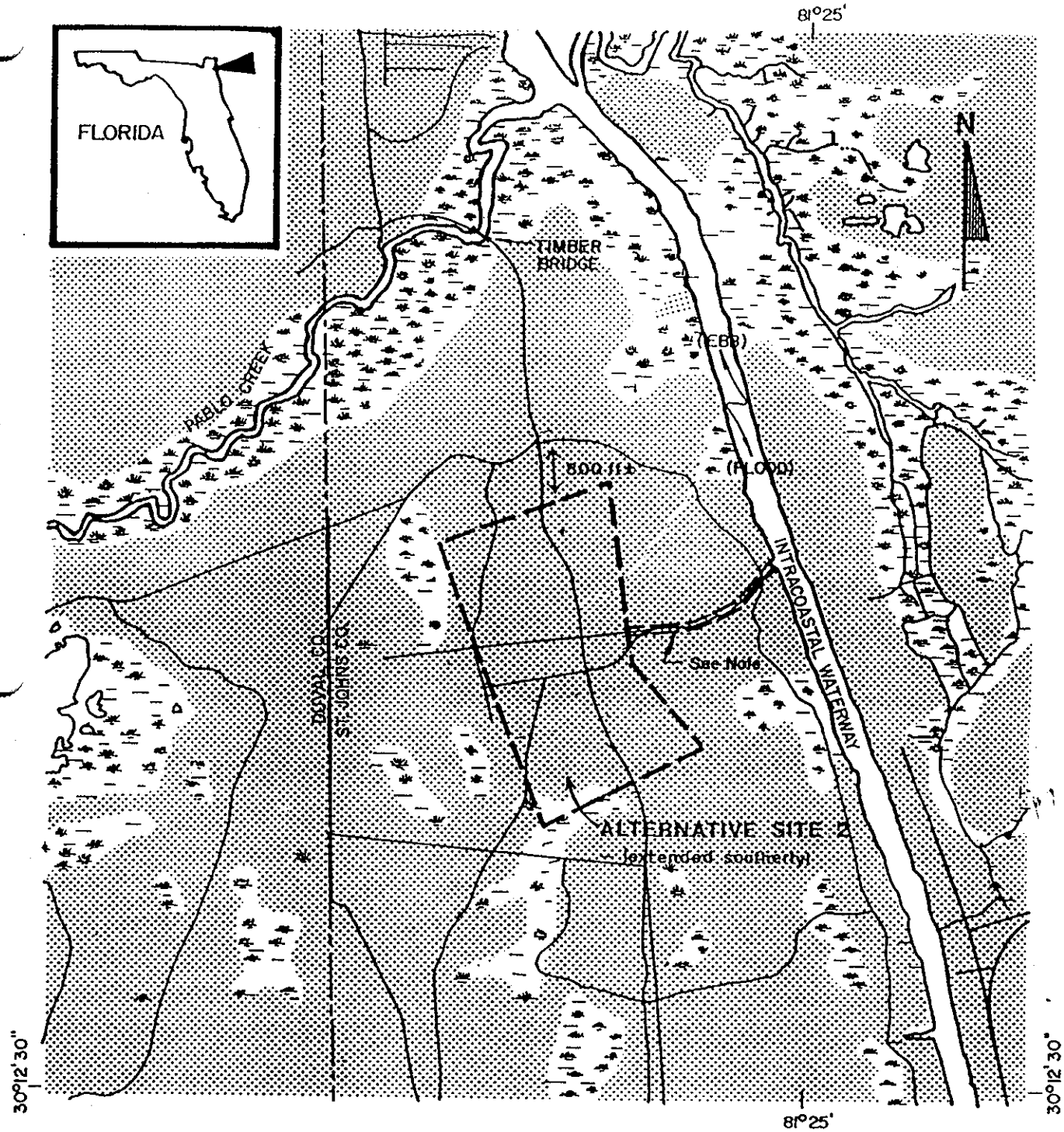
During the current Phase II effort, primary sites (or in some cases secondary sites) will undergo further environmental scrutiny to assure the selection of sites with minimal environmental constraints. This document reports the results of the environmental survey carried out at one of these sites.

The Pablo Creek Alternative 2 dredged material management area (extended southerly) is a 180-acre site that lies west of the ICWW and south of Pablo Creek (Figure 1-1). The area is vegetated by pastures in various stages of succession, pine flatwoods, planted pine, and various wetland communities. The central portion of the site is high (greater than 15 feet National Geodetic Vertical Datum [NGVD]) and the eastern and western sides slope into low wetland drainages on either side. The wetland drainage system to the east is off site but a portion of the western wetland drainage system is included within the parcel.

Soils on the site consist mainly of poorly and somewhat poorly drained Myakka fine sand and Zolfo fine sand, and very poorly drained Wesconnett fine sand (Readle 1983). No historical or archaeological sites are known to occur on this property based on a review of the Florida Master Site File.

The overland pipeline access will exit the waterway approximately 1.3 miles south of the confluence of Pablo Creek and the ICWW. It will traverse the saltmarsh and adjacent uplands, then follow an existing dirt road west to the site's eastern boundary.

301233



REFERENCES

USGS PALM VALLEY QUAD-RANGLE 1964, REVISED 1981

NOTE:

Approx. Location of Pipeline Route. Which Follows Dirt Road to R/W I.C.W.W.

0 2000'

SCALE

TAYLOR ENGINEERING INC

9086 CYPRESS GREEN DRIVE
JACKSONVILLE FLORIDA 32216

Figure 1-1
Location of Pablo Creek Alternative 2 Dredged Material Management Area (Extended Southerly) St. Johns Co., Fl.

PROJECT	
REVISION	
SHEET	
DATE	

2.0 METHODOLOGY

2.0 METHODOLOGY

A biologist ground truthed the site to assess vegetative and wildlife conditions on July 21, and December 9, 1988; June 9, 1989; and July 28, 1992. Site visits were made December 9, 1988, and August 3, 1992, with various regulatory personnel from interested state and federal agencies. During the course of these brief visits, incidental wildlife sightings were recorded and vegetation conditions were also noted.

Recent (1985) black and white aerial photography at a scale of 1"=800' was used to identify pertinent land use and vegetation features prior to the pedestrian survey. During the field survey, photographic signatures identified were visited and plant species at these locations were identified or collected for subsequent examination. Vegetation mapping was done on 1988 blueline aerials (1"=200'). The frequency of occurrence of each plant species within each identified community was determined using a qualitative ranking system. Designations include abundant (A), locally abundant (LA), common (C), locally common (LC), occasional (O), rare (R), and trace (X). The site was reviewed for the presence and location of possible wetlands using the black and white aerial photography mentioned above as well as 1984 color infrared aerial photography (1" = 2,000'). U.S. Department of Interior Wetland Inventory maps, the country's soil survey and USGS topographic maps were also consulted to locate possible wetlands on site.

The occurrence of wildlife species on site was documented during visits to each vegetation community. Efforts were made to visit locations of high wildlife habitat value. Areas that were likely to yield animal sign were sought out (i.e., muddy roads and wetland edges). Indirect evidence (nests, scat, and tracks) and direct observation (calls and visual sightings) were utilized to confirm species presence. No systematic trapping or baiting methods were used to document wildlife occurrence. All visits were made during daylight hours, hence nocturnal wildlife observations were not made.

Prior to the field survey, lists of endangered and threatened species and species of special concern possibly occurring on site were compiled. Those

species that range in St. Johns County and occur in habitat types represented on site were included. The locations of sensitive species found on site were recorded and observations about population size and habitat use were noted.

3.0 VEGETATION COMMUNITIES

3.0 VEGETATION COMMUNITIES

3.1 INTRODUCTION

Vegetative communities identified on the Pablo Creek Alternative 2 dredged material management area (extended southerly) and mapped in Figure 3-1 include pastureland (211), unimproved pastures (212), palmetto prairie (321), pine flatwoods (411), coniferous plantations (441), bay swamp (611), stream and lake swamp (615), cypress (621), freshwater marsh (641), and wet prairies (643). The vegetation and land uses on site have been categorized according to Level III of the Florida Land Use, Cover, and Forms Classification System (Florida Department of Transportation 1985). Acreages of the various map units were determined by the use of a digitizer and reported in Table 3-1. Table 3-2 is a listing of the vegetation species found at the Pablo Creek Alternative 2 dredged material management area.

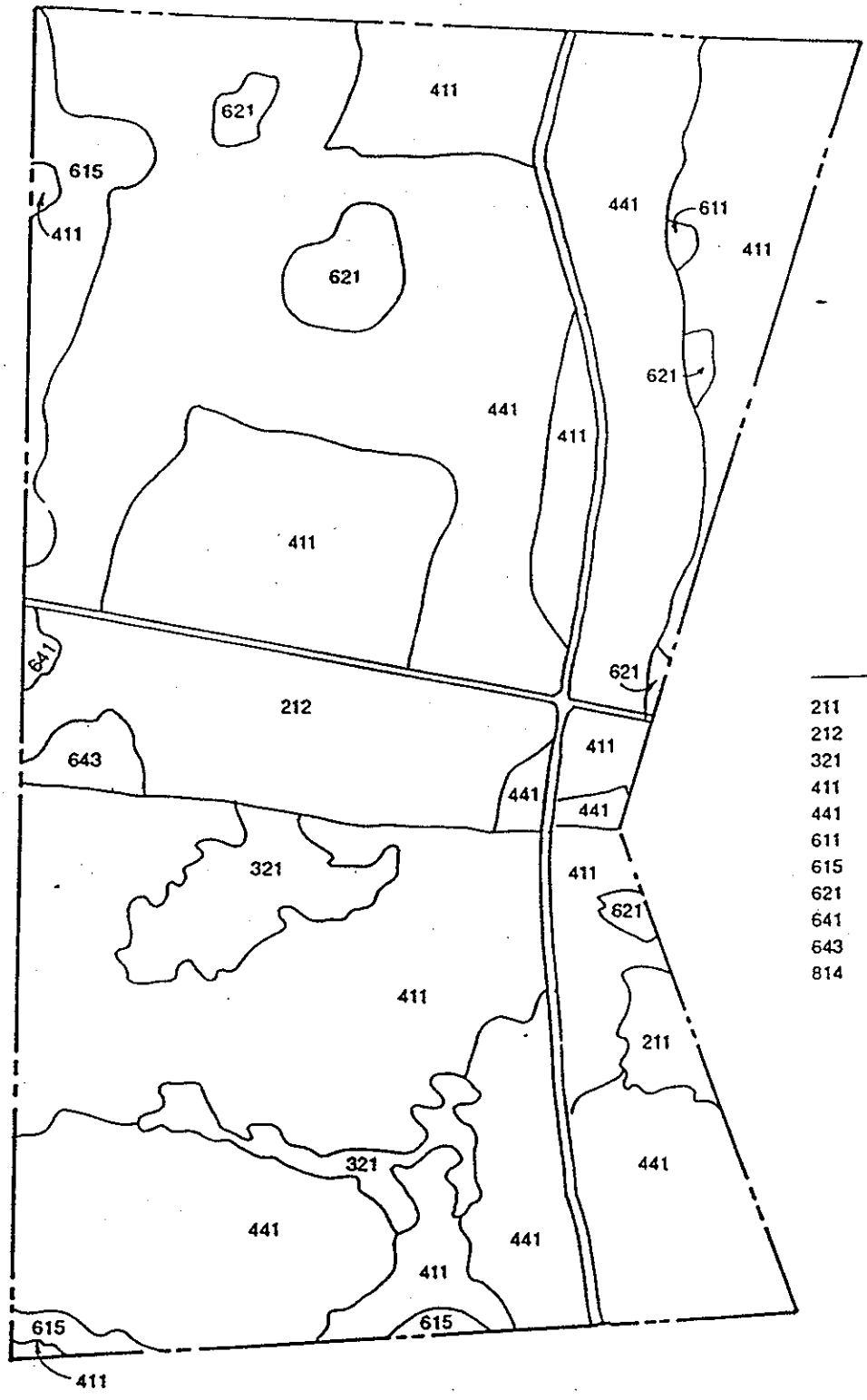
3.2 IMPROVED PASTURE (211)

This small unfenced patch of pasture is maintained as a game plot and hay may be periodically harvested from this area. During some of the site visits, this area was planted with ryegrass. During the most recent site visit, the field was a mixture of grasses and low-growing herbs.

3.3 UNIMPROVED PASTURES (212)

These are previously cleared areas in the southern portion of the site showing evidence of having been used for grazing. They are currently unmanaged as pastureland and are in a variety of oldfield successional states. Most of the area consists of young pine trees and a variety of annuals and grasses, including broomsedge. The eastern portion was formerly used to dispose of septic tank sludge. The western portion of the site adjacent to a disturbed marsh is vegetated by broomsedge, a variety of small trees, and wax myrtle. This area has a very irregular topography which has been impacted by some earth-moving activities.

9/25/92
92-5162/New Pablo



LEGEND

211	Improved Pasture
212	Unimproved Pasture
321	Palmetto Prairie
411	Pine Flatwoods
441	Coniferous Plantation
611	Bay Swamp
615	Stream and Lake Swamp
621	Cypress
641	Freshwater Marsh
643	Wet Prairie
814	Roads and Highways

Scale in Feet

0 250 500

FIGURE 3-1.

Land Use and Vegetation of Pablo Creek Alternative 2 Dredged Material Management Area (extended southerly), St. Johns County, Florida.

Table 3-1. Approximate Acreage of the Florida Land Use, Cover, and Forms Classification System Types (FLUCFCS) Found on the Pablo Creek Alternative 2 Dredged Material Management Area (Extended Southerly), St. Johns County, Florida

Map I.D. No.	Name	Approximate Acreage*
211	Improved Pastures	1.6
212	Unimproved Pastures	13.8
321	Palmetto Prairie	7.2
411	Pine Flatwoods	61.3
441	Coniferous Plantations	82.5
611	Bay Swamp	0.2
615	Stream and Lake Swamp	5.1
621	Cypress	3.8
641	Freshwater Marsh	0.3
643	Wet Prairie	1.3
814	Roads and Highways	2.9
TOTAL		180.0

Source: WAR 1992.

Table 3-2. Vegetation Observed at the Pablo Creek Alternate 2 Dredged Material Management Area (Extended Southerly), St. Johns County (Page 1 of 8)

Scientific Name	Common Name	Occurrence*
IMPROVED PASTURE (211)		
Ground Cover and Vines		
Cyperus sp.	Sedge	O
	Sterile grass	A
Paspalum notatum	Bahia grass	C
Richardia scabra		O
UNIMPROVED PASTURES (212)		
Trees and Shrubs		
Myrica cerifera	Wax myrtle	LC
Pinus elliottii	Slash pine	LC
Pinus palustris	Longleaf pine	O
Quercus virginiana	Live oak	O
Ground Cover and Vines		
Andropogon virginicus	Broomsedge	A
Eupatorium compositifolium	Dog fennel	O
Paspalum notatum	Bahia grass	O
Rubus cuneifolius	Sand blackberry	LC
PALMETTO PRAIRIE (321)		
Trees and Shrubs		
Ilex glabra	Ink berry	C
Lyonia fruticosa	Staggerbush	O
Lyonia lucida	Fetterbush	O-C
Myrica cerifera	Wax myrtle	O-C
Pinus elliottii	Slash pine	R
Pinus palustris	Longleaf pine	R
Serenoa repens	Saw palmetto	A

Table 3-2. Vegetation Observed at the Pablo Creek Alternate 2 Dredged Material Management Area (Extended Southerly), St. Johns County (Page 2 of 8)

Scientific Name	Common Name	Occurrence*
Ground Cover and Vines		
Aristida sp.	Wiregrass	O
Carphephorus sp.	Deer tongue	R
Gaylussacia nana	Huckleberry	O
Pteridium aquilinum	Bracken fern	O
Vaccinium myrisintes	Shiny blueberry	O
PINE FLATWOODS (411)		
Trees and Shrubs		
Gordonia lasianthus	Loblolly bay	O
Ilex glabra	Ink berry	C
Ilex vomitoria	Yaupon	R
Lyonia fruticosa	Staggerbush	O
Lyonia lucida	Fetterbush	O
Magnolia virginiana	Sweetbay	R-X
Myrica cerifera	Wax myrtle	C
Persea palustris	Swampbay	O
Pinus elliottii	Slash pine	A-C
Pinus palustris	Longleaf pine	C-O
Pinus serotina	Pond pine	O-C
Pinus taeda	Loblolly pine	O
Quercus myrtifolia	Myrtle oak	R
Quercus nigra	Water oak	C-O
Quercus pumila	Post oak	R
Quercus virginiana	Live oak	O
Sabal palmetto	Cabbage palm	C-O
Serenoa repens	Saw palmetto	C

Table 3-2. Vegetation Observed at the Pablo Creek Alternate 2 Dredged Material Management Area (Extended Southerly), St. Johns County (Page 3 of 8)

Scientific Name	Common Name	Occurrence*
Ground Cover and Vines		
Amphicarpum muhlenbergia	Blue maidencane	O-R
Andropogon tenuis		O
Aristida stricta	Wiregrass	C
Asimina sp.	Pawpaw	O
Asplenium platyneuron	Ebony spleenwort	R
Carphephorus sp.	Deer tongue	O
Eleocharis sp.		R
Elephantopus sp.	Elephant's foot	O
Eryngium yuccifolium		O
Eupatorium compositifolium	Dog fennel	A-O
Gaylussacia nana	Huckleberry	O
Gelsemium sempervirens	Yellow-jessamine	LC
Heterotheca gramnifolia	Silk grass	C
Hypericum tetrapetalum	St. John's wort	O
Liatris sp.	Blazing star	O
Osmunda cinnamomea	Cinnamon fern	R-X
Polygala nana	Milkwort	R
Pteridium aquilinum	Bracken fern	O
Rubus sp.	Blackberry	O
Smilax bono-nox	Cat-briar	O
Smilax glauca		O-R
	Sterile grass	LC
Stillingia sylvatica	Queen's delight	R
Vaccinium myrsinites	Shiny-blueberry	O
Vitis rotundifolia	Muscadine grape	O

Table 3-2. Vegetation Observed at the Pablo Creek Alternate 2 Dredged Material Management Area (Extended Southerly), St. Johns County (Page 4 of 8)

Scientific Name	Common Name	Occurrence*
CONIFEROUS PLANTATION (441)		
Asimina sp.	Pawpaw	O
Gaylussacia dumosa	Dwarf huckleberry	O
Ilex glabra	Gallberry	C-A
Liquidambar styraciflua	Sweetgum	O
Lyonia lucida	Fetterbush	O
Myrica cerifera	Wax myrtle	O
Pinus elliottii	Slash pine	A
Serenoa repens	Saw palmetto	C
Vaccinium darrowii		R-O
Herbs and Ground Covers		
Andropogon sp.	Broomsedge	O-C
Aristida sp.	Wiregrass	O-R
Galactia sp.		O
Licania michauxii	Gopher apple	O
Pteridium aquilinum	Bracken fern	O
BAY SWAMP (611)		
Trees and Shrubs		
Gordonia lasianthus	Loblolly bay	A-C
Myrica cerifera	Wax myrtle	O
Lyonia lucida	Fetterbush	C
Nyssa sylvatica var. biflora	Blackgum tupelo	O-LC
Persea palustris	Swampbay	O
Pinus elliottii	Slash pine	C

Table 3-2. Vegetation Observed at the Pablo Creek Alternate 2 Dredged Material Management Area (Extended Southerly), St. Johns County (Page 5 of 8)

Scientific Name	Common Name	Occurrence*
Ground Cover and Vines		
	Sterile grass	O
Woodwardia virginica	Chain fern	O
STREAM AND LAKE SWAMP (615)		
Trees and Shrubs		
Acer rubrum	Red maple	C
Gordonia lasianthus	Loblolly bay	O
Ilex cassine	Dahoon	O
Iris virginica	Blue flag	R
Lyonia lucida	Fetterbush	O
Myrica cerifera	Wax myrtle	C
Nyssa sylvatica var. biflora	Blackgum tupelo	A-C
Persea borbonia	Redbay	O
Pinus elliottii	Slash pine	C-O
Sabal palmetto	Cabbage palm	O-R
Taxodium distichum	Bald cypress	A
Ground Cover and Vines		
Boehmeria cylindrica	False nettle	LC
Osmunda cinnamonea	Cinnamon fern	R
Osmunda regalis	Royal fern	R
Polygonum sp.	Smart weed	O
Pontederia cordata	Pickerelweed	LC
Saururus cernuus	Lizard's tail	O
Spartina bakerii	Sand cordgrass	R
Woodwardia areolata	Netted chain fern	LC

Table 3-2. Vegetation Observed at the Pablo Creek Alternate 2 Dredged Material Management Area (Extended Southerly), St. Johns County (Page 6 of 8)

Scientific Name	Common Name	Occurrence*
CYPRESS (621)		
Trees and Shrubs		
Cephalanthus occidentalis	Buttonbush	R
Ilex cassine	Dahoon	R
Ilex glabra	Ink berry	R
Myrica cerifera	Wax myrtle	C-O
Persea palustris	Swampbay	R
Pinus elliottii	Slash pine	A-C
Taxodium ascendens	Pond cypress	C-O
Ground Cover and Vines		
Andropogon virginicus	Broomsedge	O
Lachnanthes caroliniana	Redroot	C
Rhynchospora sp.		O
Sphagnum sp.	Moss	O
	Sterile grass	C-O
Woodwardia virginica	Chain fern	A
FRESHWATER MARSHES (641)		
Trees and Shrubs		
Acer rubrum	Red maple	R
Baccharis halimifolia	Silverling	O
Myrica cerifera	Wax myrtle	O
Salix carolinania	Southern willow	R
Ground Cover and Vines		
Andropogon virginicus	Broomsedge	C
Canna flacida	Yellow canna	O
Circium sp.	Thistle	O

Table 3-2. Vegetation Observed at the Pablo Creek Alternate 2 Dredged Material Management Area (Extended Southerly), St. Johns County (Page 7 of 8)

Scientific Name	Common Name	Occurrence*
Juncus effusus	Soft rush	O
Lycopus rubellus	Water hoarhound	X
Panicum hemitomon	Maidencane	C
Phyla nodiflora	Matchhead	O
Polygonum sp.	Smart weed	LC
Sagittaria lancifolia	Duck potatoe	O
SALTWATER MARSHES (642)		
Trees and Shrubs		
Borrichia frutescens	Sea oxeye	O
Iva frutescens	Marsh elder	LC
Ground Cover and Vines		
Batis maritima	Saltwort	O
Distichlis spicata	Saltgrass	LA
Juncus roemarianus	Needle rush	LC
Salicornia perennis	Glasswort	O
Spartina alterniflora	Saltmarsh cordgrass	A
WET PRAIRIES (643)		
Trees and Shrubs		
Baccharus halimifolia	Saltbush	R
Myrica cerifera	Wax myrtle	R
Ground Cover and Vines		
Amphicarpum muhlenbergia	Blue maidencane	O
Juncus effusus	Soft rush	LA
Panicum sp.	Panic grass	O
Phyla nodiflora	Matchhead	O

Table 3-2. Vegetation Observed at the Pablo Creek Alternate 2 Dredged Material Management Area (Extended Southerly), St. Johns County (Page 8 of 8)

Scientific Name	Common Name	Occurrence*
Pluchea foetida	Marsh fleabane	O
Polygonum sp.	Smartweed	R
Woodwardia virginica	Chain fern	O

* A=Abundant, LA=Locally Abundant, C=Common, LC=Locally Common, O=Occasional, R=Rare, X=Trace.

3.4 PALMETTO PRAIRIE (321)

This area is located in the southwest part of the site within the pine flatwoods. This area contains little pine cover and is dominated by flatwood shrubs. Common species include saw palmetto, gallberry, and fetterbush. Other ground cover species include wiregrass and bracken fern.

3.5 PINE FLATWOODS (411)

Most of the site is characterized by flatwoods or former flatwoods planted in pines. The north-central portion of the site is covered by "dry" flatwoods, having a dominance of longleaf pines with some slash pines. The ground cover includes wiregrass, saw palmetto, and bracken fern. Most of the other flatwoods areas are more mesic and contain slash pine, saw palmetto, and gallberry. A few pond pines occur in the northeastern portion of the site.

3.6 CONIFEROUS PLANTATIONS (441)

Much of the former native flatwoods area is now in slash pine production. The area in the center part of the site is oldest, containing trees averaging 8 to 10 inches diameter breast height (dbh). Much of this area has been burned and has a thick ground cover of saw palmetto. In the vicinity of wetlands, or in moist areas, the ground cover is dominated by gallberry.

3.7 BAY SWAMP (611)

A small depressional area located in the eastern part of the site is a bay-dominated wetland. It occurs at the boundary between a young planted pine plantation and the flatwoods. The isolated bayhead is dominated by loblolly bay, slash pine, and blackgum. The ground cover was a combination of chain fern and a sterile grass.

3.8 STREAM AND LAKE SWAMP (615)

This mixed hardwood slough on the western part of the site appears to flow south eventually forming an off-site intermittent stream which turns eastward and drains toward the ICWW. The floodplain appears to be regularly inundated having almost no ground cover due to regular flooding. The trees have large

buttresses and the floor of the swamp is covered with fallen trees or limbs. At the time of the most recent field visit, the swamp forest was dry. The forest contains blackgum, bald cypress, and red maple. Other occasional tree species include dahoon, wax myrtle, slash pine, and cabbage palm. A portion of this drainage is interrupted by a road; south of this road the forested swamp has been cleared and now consists primarily of marsh vegetation. In the southwestern corner of the site, the floodplain forest contains a mixture of pine and wetland hardwoods, and has a more open canopy and less frequent inundation compared to the swamp forest north of the road. Ground cover is prevalent throughout this area and includes a variety of grasses and sedges, as well as netted chain fern, lizard's tail, and Virginia chain fern.

3.9 CYPRESS (621)

There are five cypress wetlands scattered throughout the property. Four of these are isolated wetlands and one located in the southeastern part of the site connects to an off-site larger wetland drainage. The canopy in the cypress wetlands is predominately pond cypress and slash pine with some occasional swamp bay. The common ground cover is red root and Virginia chain fern.

3.10 FRESHWATER MARSH (641)

The freshwater marsh in the southwestern portion of the site is an extension of the forested wetland system to the north. Apparently, some time ago, the forested system in this location was cleared and the area was used for grazing. The surface topography is irregular, having some mounds (perhaps a result of the site clearing). Vegetation is generally very disturbed. This marsh connects with a predominately soft rush-dominated wet prairie area through a slightly depressed area along the site's western border. The marsh is vegetated with yellow canna, soft rush, maidencane, and smartweed.

3.11 WET PRAIRIE (643)

There is a wet prairie located in the west-central portion of the site. It was dry during the recent site visits. Vegetation of the area is dominated by soft rush with smaller amounts of panic grass and matchhead.

3.12 ENDANGERED AND THREATENED PLANTS

Five state and no federally protected plant species were found on the Pablo Creek Alternative 2 dredged material management area (extended southerly) (see Table 3-3). Protected fern species found include royal fern, cinnamon fern, ebony spleenwort, and netted chain fern. Royal and cinnamon fern are protected from commercial exploitation. These species are common in a variety of wooded wetlands. Cassine, listed as commercially exploited, was found in the cypress community. A variety of other protected species may be found on site based on species distribution and habitat requirements. Some of the more likely species include southern clubmoss, hooded pitcher plant, and a variety of orchids in the cypress or wet prairie wetlands.

Table 3-3. Status of State or Federally Listed Endangered and Threatened Plants That May Occur at the Pablo Creek Alternative 2 Dredged Material Management Area (Extended Southerly), St. Johns County, Florida (Page 1 of 4)

Species	Status	
	State	Federal
Asplenium platyneuron* Ebony spleenwort	T	
Asclepias viridula Southern milkweed	T	C1
Calamovilfa curtissii Curtiss' sandgrass	E	C2
Calopogon barbatus Bearded marsh pink	T	II
Calopogon multiflorus Many-flowered grass pink	T	II
Calopogon pallidus Pale grass pink	T	II
Calopogon tuberosus Grass pink	T	II
Cleistes divaricata Rosebud orchid	T	II
Drosera intermedia Water sundew	T	
Habenaria odontopetala Rein orchid	T	II
Helianthus carnosus Lake-side sunflower	E	C2
Ilex cassine* Cassine	CE	
Lilium catesbaei Southern red lily	T	
Lycopodium alopecuroides Foxtail club moss	T	

Table 3-3. Status of State or Federally Listed Endangered and Threatened Plants That May Occur at the Pablo Creek Alternative 2 Dredged Material Management Area (Extended Southerly), St. Johns County, Florida (Page 2 of 4)

Species	Status	
	State	Federal
Lycopodium appressum Southern club moss	T	
Lycopodium carolinianum Slender club moss	T	
Lycopodium cernuum Nodding club moss	T	
Lycopodium prostratum Prostrate club moss	T	
Nolina atopocarpa Florida bear-grass	E	C2
Osmunda cinnamomea* Cinnamon fern	CE	
Osmunda regalis* Royal fern	CE	
Platanthera blephariglottis Large white fringed orchid	T	II
Platanthera ciliaris Yellow fringe orchid	T	II
Platanthera cristata Crested fringed orchid	T	II
Platanthera integra Yellow fringeless orchid	T	II
Plantanthera nivea Snowy orchid	T	II
Pteroglossaspis acristata Wild coco	E	C2,II
Rudbeckia nitida St. John's-Susan	E	C2

Table 3-3. Status of State or Federally Listed Endangered and Threatened Plants That May Occur at the Pablo Creek Alternative 2 Dredged Material Management Area (Extended Southerly), St. Johns County, Florida (Page 3 of 4)

Species	Status	
	State	Federal
Phlebodium aureum Golden polypody	T	
Sarracenia minor Hooded pitcher plant	T	
Sphenostigma coelestinum Bartram's ixia	T	
Spiranthes brevilabris var. floridana Florida ladies' tresses	T	II
Spiranthes laciniata Lace-lip ladies' tresses	T	II
Spiranthes longilabris Long-lip ladies' tresses	T	II
Spiranthes pracox Giant ladies' tresses	T	II
Spiranthes vernalis Spring ladies' tresses	T	II
Verbesina heterophylla Variable-leaf crownbeard		C1

* Presence confirmed on site.

Federal: U.S. Fish and Wildlife Service. C1 = A candidate for federal listing, with enough substantial information on biological vulnerability and threats to support proposals for listing; C2 = A candidate for listing, with some evidence of vulnerability, but for which not enough data exist to support listing.

Convention on International Trade in Endangered Species of Wild Fauna and Flora; II = Appendix II species.

Table 3-3. Status of State or Federally Listed Endangered and Threatened Plants That May Occur at the Pablo Creek Alternative 2 Dredged Material Management Area, St. Johns County, Florida (Page 4 of 4)

State: E = Endangered; T = Threatened; CE = Commercially Exploited.

Sources: FGFWFC 1991.
Florida Natural Areas Inventory 1990.
WAR 1992.

4.0 WILDLIFE COMMUNITIES

4.0 WILDLIFE COMMUNITIES

Table 4-1 lists species of wildlife observed during field surveys of the dredged material management area and pipeline access. The diversity of habitat types, and proximity to large, undeveloped tracts of land provides good wildlife habitat value on site. A total of 4 reptile, 2 amphibian, 19 bird, and 6 mammal species were encountered. Wildlife habitats that were visited include pine forests and flatwoods, freshwater wetlands, and saltwater marshes.

4.1 WILDLIFE HABITATS

The pine-dominated habitats on site, the pine flatwoods and pine plantation, provide good forage for wildlife by supplying a variety of grasses, seeds, and berries for browsers. The open canopy of the dry flatwoods provides good foraging areas for predatory birds such as red-tailed hawks, red-shouldered hawks, and kestrels. Common ground dwelling birds such as the northern quail, morning dove, and rufous-sided towhee are found in this habitat. Many woodpeckers will utilize pine trees in this type of community. Other typical birds include pine warblers, American crow, and white-eyed vireo.

Common mammals utilizing the food resources of the pine forests include gray squirrel, fox squirrel, armadillo, white-tailed deer, cotton mouse, cotton rat and gray fox. The mesic flatwoods provide better cover for a variety of small mammals. The most abundant reptile encountered in the flatwoods is the gopher tortoise. The burrow of the tortoise provides a refuge for a variety of commensal fauna including Florida gopher frog, Florida mouse, and the indigo snake. Other common reptiles include black racer, eastern diamondback rattlesnake and hog-nosed snake.

The closed canopy of the stream and lake swamp community provides cool, shaded habitat to a variety of wildlife that also occur in the adjacent pinelands. The greater variety of trees provides a wider range of fruits and forage for wildlife. Some animals typical of stream and lake swamps include a variety of salamanders, water snakes, cottonmouths, turkey, barred owls, pileated woodpecker, raccoon, bobcat, and white-tailed deer.