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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 St. Johns County, Florida. The plan concept was developed during Phase I of the project (Taylor and McFetridge 1989). Potential sites were screened for dredged material disposal, and a total of seven primary and seven secondary sites were selected after consideration of environmental, engineering, and operational factors.

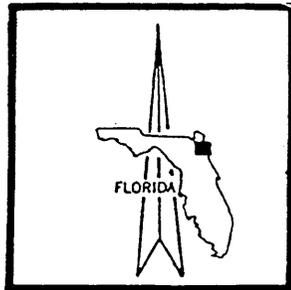
During the current Phase II effort, primary sites (or in some cases secondary sites) will undergo further environmental scrutiny to assure the selection of sites with minimal environmental constraints. This document reports the results of the environmental survey carried out at one of these sites.

Site SJ-29 is a 48.85-acre parcel located at the west marsh edge of the Tolomato River (ICWW), just west of Stokes Creek (Figure 1-1). The property lies northeast of a small, low density subdivision and is approximately 1 mile northeast of US Highway 1.

The soil types are typical of a transition from the Pellicer silty clay loam within the salt marsh to Cassia fine sand and Smyrna fine sand which underlie the Pine-Mesic Oak community (414). These latter soil types are typically poorly drained with a high water table. Most of the central part of the site is underlain by Myakka fine sand which is poorly drained sand that occurs in nearly level areas. The southwest corner of the site is moderately well drained Orsino fine sand found on gently sloping knolls and ridges (Readle 1983).

A review of the Florida Master File indicates no historical or archaeological sites known on this property.

The pipeline access route crosses the saltwater marsh which separates the ICWW from the mainland and enters the site at its northeastern corner.



81°22'30"

(FLOOD)

(EBB)

TOLOMATO RIVER

MARSHALL CREEK

DISPOSAL SITE

STOKES CREEK



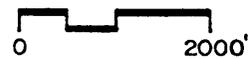
30°00'00"

81°22'30"

30°00'00"

REFERENCED

USGS DURBIN, FL. QUAD-RANGLE 1952, PHOTOREVISED 1970.
 USGS S.PONTE VEDRA BCH., FL. 1952, PHOTOREVISED 1970.



TAYLOR ENGINEERING INC
 9086 CYPRESS GREEN DRIVE
 JACKSONVILLE, FLORIDA 32256

FIGURE I-1

**LOCATION of SJ-29
 PROPOSED DREDGED
 MATERIAL DISPOSAL
 SITE, ST. JOHNS CO., FL.**

PROJECT

REVISION

SHEET

DATE

2.0 METHODOLOGY

2.0 METHODOLOGY

Water and Air Research, Inc., biologists ground-truthed the site to assess vegetation and wildlife conditions on September 19, 1990. A previous site visit was made on July 10, 1989. During these visits, incidental wildlife sightings were recorded and vegetative communities and compositions were noted.

Black and white aerial photography (1985) 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, all photographic signatures identified were visited and plant species at these locations were identified or collected for subsequent examination. Vegetation mapping was done on 1986 blue-line 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 and blue-line aerial photography mentioned above as well as 1984 color infrared aerial photography (1"=2,000'). U.S. Department of Interior Wetland Inventory Maps, the County'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 signs were sought out (i.e., muddy roads/wetland edges). Indirect evidence (nests, scat, and tracks) and direct observation (calls and visual sightings) were utilized to confirm species present. All ecological surveys were conducted 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

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11/21/90

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

Vegetation communities identified on Site SJ-29 and mapped in Figure 3-1 include pine flatwoods (411), sand pine (413), pine-mesic oak (414), xeric oak (421), wetland coniferous forest (620), wetland forested mixed (630), saltwater marsh (642), and wet prairie (643). The vegetation and land uses have been categorized according to Level III of the Florida Land Use, Cover and Forms Classification System (FDOT 1985). Acreages of the various map units were determined by the use of a digitizer and are reported in Table 3-1. Table 3-2 lists the observed plant species by community type.

3.2 PINE FLATWOODS (411)

Transitional between the pine-mesic oak woodland and the xeric sand pine community along the western boundary of the site is a band of pine flatwoods. The canopy is dominated by slash pine with an occasional pond pine on the eastern edge and small sand pine on the western edge. The understory is dominated by saw palmetto, wax myrtle, and scattered bracken fern.

3.3 SAND PINE (413)

The eastern one-third of the site is covered by sand pine. The area east of the north-south trail is made up of young sand pine. This area appears to be more recently logged or burned than the more mature sand pine along the western border. Both areas have not been burned for some time and the understory is quite dense. The understory includes rosemary, gallberry, huckleberry, staggerbush, and tarflower.

3.4 PINE-MESIC OAK (414)

Extending from the saltwater marsh to the pine flatwoods is a mixed forest that represents a number of vegetation associations ranging from live oak and cabbage palm to a mixed pine forest dominated by pond pine or slash pine. Occasionally included in the canopy are southern red maple, water oak, and live oak. The understory is dominated by saw palmetto or gallberry with high bush blueberry, gooseberry, and, in some places, a dense cover of greenbrier.

LEGEND

- TRAIL
- 411 PINE FLATWOODS
- 413 SAND PINE
- 414 PINE-MESIC OAK
- 421 XERIC OAK
- 620 WETLAND CONIFEROUS FOREST
- 630 WETLAND FORESTED MIXED
- 642 SALTWATER MARSH
- 643 WET PRAIRIE

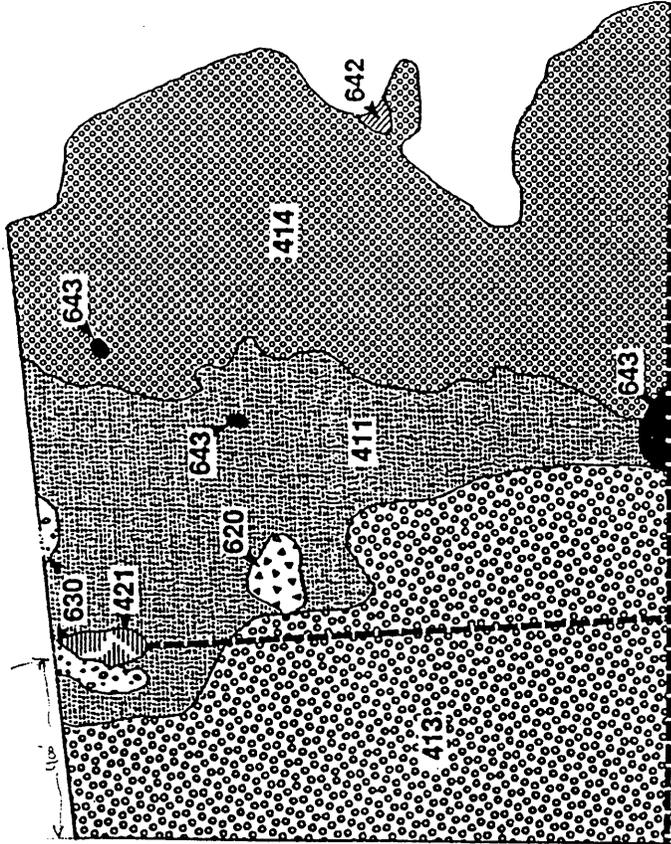


FIGURE 3-1. Land Use and Vegetation of SJ-29 Proposed Dredged Material Disposal Site, St. Johns County, Florida

SOURCE: WAR 1990.

Table 3-1. Approximate Acreage of the Florida Land Use, Cover and Forms Classification System Found at the SJ-29 Proposed Dredged Material Disposal Site, St. Johns County, Florida

| Map I.D. No. | Name | Approximate Acreage |
|--------------|---------------------------|---------------------|
| 411 | Pine Flatwoods | 11.7 |
| 413 | Sand Pine | 16.9 |
| 414 | Pine-Mesic Oak | 18.8 |
| 421 | Xeric Oak | 0.2 |
| 620 | Wetland Coniferous Forest | 0.4 |
| 630 | Wetland Forested Mixed | 0.4 |
| 642 | Saltwater Marsh | 0.1 |
| 643 | Wet Prairie | 0.3 |
| TOTAL | | 48.8 |

Source: WAR 1990.

Table 3-2. Vegetation Species by Community Type Observed at the SJ-29 Proposed Dredged Material Disposal Site, St. Johns County, Florida (Page 1 of 5)

| Species | Common Name | Occurrence |
|--------------------------------|---------------|------------|
| PINE FLATWOODS (411) | | |
| Trees and Shrubs | | |
| <u>Gaylussacia</u> sp. | Huckleberry | O |
| <u>Ilex glabra</u> | Gallberry | O-C |
| <u>Lyonia fruticosa</u> | Staggerbush | O |
| <u>Lyonia lucida</u> | Fetterbush | O-LC |
| <u>Myrica cerifera</u> | Wax myrtle | R-O |
| <u>Pinus clausa</u> | Sand pine | X |
| <u>Pinus elliottii</u> | Slash pine | C |
| <u>Pinus palustris</u> | Longleaf pine | R |
| <u>Pinus serotina</u> | Pond pine | O |
| <u>Quercus geminata</u> | Sand live oak | R |
| <u>Serenoa repens</u> | Saw palmetto | C-A |
| Herbs and Ground Covers | | |
| <u>Pteridium aquilinum</u> | Bracken fern | O |
| SAND PINE (413) | | |
| Trees and Shrubs | | |
| <u>Befaria racemosa</u> | Tarflower | C |
| <u>Ceratiola ericoides</u> | Rosemary | R |
| <u>Gaylussacia</u> sp. | Huckleberry | C |
| <u>Ilex ambigua</u> | Holly | O |
| <u>Ilex glabra</u> | Gallberry | LC |
| <u>Lyonia fruticosa</u> | Staggerbush | O |
| <u>Lyonia lucida</u> | Fetterbush | C |
| <u>Magnolia grandiflora</u> | Bull`bay | R |
| <u>Myrica cerifera</u> | Wax myrtle | O |
| <u>Osmanthus americana</u> | Wild olive | R |
| <u>Persea palustris</u> | Swampbay | O |
| <u>Pinus clausa</u> | Sand pine | C-A |
| <u>Pinus elliottii</u> | Slash pine | O-C |
| <u>Pinus serotina</u> | Pond pine | R |
| <u>Quercus geminata</u> | Sand live oak | LC |
| <u>Quercus myrtifolia</u> | Myrtle oak | O-LC |
| <u>Quercus nigra</u> | Water oak | R-O |
| <u>Rhus copallina</u> | Winged sumac | O |

Table 3-2. Vegetation Species by Community Type Observed at the SJ-29
Proposed Dredged Material Disposal Site, St. Johns County,
Florida (Page 2 of 5)

| Species | Common Name | Occurrence |
|-----------------------------|--------------------------|------------|
| <u>Serenoa repens</u> | Saw palmetto | C |
| <u>Vaccinium darrowii</u> | | O |
| Herbs and Ground Covers | | |
| <u>Galactia</u> sp. | | O |
| <u>Opuntia</u> sp. | Prickly pear | R |
| <u>Osmunda cinnamomea</u> | Cinnamon fern | R |
| <u>Pteridium aquilinum</u> | Bracken fern | O |
| PINE-MESIC OAK (414) | | |
| Trees and Shrubs | | |
| <u>Acer rubrum</u> | Southern red maple | X |
| <u>Asimina</u> sp. | Pawpaw | R |
| <u>Gaylussacia</u> sp. | Huckleberry | O |
| <u>Ilex glabra</u> | Gallberry | C |
| <u>Juniperus silicicola</u> | Southern red cedar | C |
| <u>Lyonia fruticosa</u> | Staggerbush | O |
| <u>Pinus elliottii</u> | Slash pine | C |
| <u>Pinus serotina</u> | Pond pine | O-LC |
| <u>Quercus laurifolia</u> | Laurel oak | O |
| <u>Quercus nigra</u> | Water oak | R-O |
| <u>Quercus virginiana</u> | Live oak | O |
| <u>Rhus copallina</u> | Winged sumac | O |
| <u>Sabal palmetto</u> | Cabbage palm | C |
| <u>Serenoa repens</u> | Saw palmetto | C |
| <u>Vaccinium corymbosum</u> | Highbush blueberry | O |
| <u>Vaccinium stamineum</u> | Gooseberry | O |
| Herbs and Ground Covers | | |
| <u>Sabatia brevifolia</u> | Narrowleaf white sabatia | X |
| <u>Sarracenia minor</u> | Hooded pitcher plant | X |
| <u>Smilax auriculata</u> | Greenbrier | LC |
| <u>Vitis rotundifolia</u> | Muscadine | O |

Table 3-2. Vegetation Species by Community Type Observed at the SJ-29
Proposed Dredged Material Disposal Site, St. Johns County,
Florida (Page 3 of 5)

| Species | Common Name | Occurrence |
|--|---------------------|------------|
| XERIC OAK (421) | | |
| Trees and Shrubs | | |
| <u>Befaria racemosa</u> | Tarflower | O |
| <u>Ilex ambigua</u> | Holly | R |
| <u>Lyonia fruticosa</u> | Staggerbush | X |
| <u>Pinus clausa</u> | Sand pine | O |
| <u>Pinus elliottii</u> | Slash pine | O |
| <u>Quercus geminata</u> | Sand live oak | A |
| <u>Quercus myrtifolia</u> | Myrtle oak | A |
| <u>Serenoa repens</u> | Saw palmetto | C |
| Herbs and Ground Covers | | |
| <u>Aristida stricta</u> | Wire grass | O |
| <u>Carphephorus</u> sp. | | LC |
| <u>Galactia</u> sp. | | O |
| <u>Pteridium aquilinum</u> | Bracken fern | R-O |
| <u>Smilax auriculata</u> | Greenbrier | O |
| WETLAND CONIFEROUS FOREST (620) | | |
| Trees and Shrubs | | |
| <u>Diospyros virginiana</u> | Persimmon | R |
| <u>Ilex glabra</u> | Gallberry | O-LC |
| <u>Persea</u> sp. | Bay | O |
| <u>Pinus elliottii</u> | Slash pine | C |
| Herbs and Ground Covers | | |
| <u>Woodwardia virginica</u> | Virginia chain fern | A |
| WETLAND FORESTED MIXED (630) | | |
| Trees and Shrubs | | |
| <u>Acer rubrum</u> | Red maple | C |
| <u>Liquidambar styraciflua</u> | Sweetgum | C |
| <u>Nyssa sylvatica</u> | Swamp tupelo | O |

Table 3-2. Vegetation Species by Community Type Observed at the SJ-29
Proposed Dredged Material Disposal Site, St. Johns County,
Florida (Page 4 of 5)

| Species | Common Name | Occurrence |
|----------------------------------|---------------------------|------------|
| <u>Persea palustris</u> | Swampbay | O |
| <u>Pinus elliottii</u> | Slash pine | O |
| SALTWATER MARSH (642) | | |
| Trees and Shrubs | | |
| <u>Baccharis glomeruliflora</u> | Groundsel tree | R-O |
| Herbs and Ground Covers | | |
| <u>Borrichia frutescens</u> | Sea ox-eye | O-LC |
| <u>Distichlis spicata</u> | Saltgrass | O |
| <u>Iva frutescens</u> | Marsh elder | LC |
| <u>Juncus roemerianus</u> | Needle rush | O-R |
| <u>Limonium carolinianum</u> | Sea lavender | O-R |
| <u>Sesuvium portulacastrum</u> | Sea-purslane | O |
| <u>Spartina alterniflora</u> | Saltwater marsh cordgrass | A |
| <u>Spartina patens</u> | Marsh hay cordgrass | O-LC |
| WET PRAIRIE (643) | | |
| Trees and Shrubs | | |
| <u>Acer rubrum</u> | Red maple | O |
| <u>Diospyros virginiana</u> | Persimmon | X-R |
| <u>Ilex cassine</u> | Dahoon holly | R |
| <u>Ilex glabra</u> | Gallberry | O-LC |
| <u>Persea palustris</u> | Long-leaf pine | R-O |
| <u>Pinus elliottii</u> | Slash pine | O |
| Herbs and Ground Covers | | |
| <u>Andropogon virginicus</u> | Chalky bluestem | C |
| <u>Centella asiatica</u> | Coinwort | O-LC |
| <u>Hypericum myrtifolium</u> | | R |
| <u>Juncus roemerianus</u> | Needle rush | C |
| <u>Lachnanthes caroliniana</u> | Redroot | R-O |
| <u>Osmunda cinnamomea</u> | Cinnamon fern | R-O |
| <u>Panicum rufidulum</u> | Redtop panicum | LC |
| <u>Rhynchospora chapmanii</u> | Chapman's beakrush | O |
| <u>Rhynchospora microcephala</u> | Tinyhead beakrush | C |
| <u>Woodwardia virginica</u> | Virginia chain-fern | C |

Table 3-2. Vegetation Species by Community Type Observed at the SJ-29
Proposed Dredged Material Disposal Site, St. Johns County,
Florida (Page 5 of 5)

Occurrence Code:

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

Where a range of codes are shown, occurrences of a particular species varies
within that community at different locations.

Source: WAR 1990.

3.5 XERIC OAK (421)

A small area of xeric oak habitat occurs along the northern border of the site. The habitat is quite open with little overstory and has scattered sand pine, sand live oak, and myrtle oak. The ground cover includes wire grass, greenbrier, and other herbaceous plants. Several active gopher tortoise burrows are found at this location.

3.6 WETLAND CONIFEROUS FOREST (620)

Limited to a small depression in the north central area of the site, this area is a dish-shaped isolated ephemeral wetland. A dense stand of young slash pine has taken root in the depression. This is probably due to the extended drought and lack of water in these types of wetlands over the past few years. Other trees also found include persimmon, gallberry and bay. Herbaceous vegetation is typical of a wetland with a short hydroperiod. Virginia chain fern dominates the ground cover in this wetland.

3.7 WETLAND FORESTED MIXED (630)

Along the central part of the northern boundary are portions of two areas of mixed wetland forest which continue off site to the north. The canopy is dominated by red maple, sweetgum, swamp tupelo and slash pine.

3.8 SALTWATER MARSH (642)

A small area of saltwater marsh is located within the eastern site boundary in association with the broad marshes of the Tolomato River. These marshes are dominated by smooth cordgrass, but have stands of needle rush in the upper marsh. Scattered among the patchy needle rush of the upper marsh is sea ox-eye daisy and marsh hay cordgrass.

3.9 WET PRAIRIE (643)

At least three wet prairie communities exist within or partially within Site SJ-29. One is located along the southern boundary road. Only the northern edge of this wet prairie lies within the site boundary. The southern portion of the prairie (off site) has been slightly modified as a result of rural residential development to the south and east. The wet prairie is open with

scattered young slash pine, red maple, gallberry, and dahoon holly.
Herbaceous cover includes redbud panicum, cinnamon and Virginia chain fern.

Two isolated ephemeral wet prairies are located in the pine-mesic oak habitat and in the pine flatwoods. Both of these areas are not discernable from aerial photographs or from infrared imagery. This is due to the fact that the small, open wet prairie is obscured by tree canopies surrounding the wet prairies. It is probable that there are other small (less than one-half acre) isolated wetlands scattered within the pine-mesic oak and pine flatwoods communities.

3.10 ENDANGERED AND THREATENED PLANTS

Table 3-3 lists protected species that may occur on site. The majority of these species occur in mesic flatwoods or wet prairies. A number of these species are terrestrial orchids which are not obvious unless flowering. One state threatened plant, the hooded pitcher plant, is growing along an old fire break within the pine-mesic oak community. It is likely that some common but listed ferns such as aspidium fern and netted-chain fern also occur on site within the forested wetlands.

Table 3-3. Status of State or Federally Listed Endangered and Threatened Plants That May Occur at SJ-29 Proposed Dredged Material Disposal Site, St. Johns County, Florida (Page 1 of 4)

| Species | Status | |
|--|--------|---------|
| | State | Federal |
| <u>Asclepias viridula</u> Southern milkweed | T | C1 |
| <u>Calamovilfa curtissii</u> Curtiss' sandgrass | E | C2 |
| <u>Calopogon barbatus</u> Bearded marsh pink | T | II |
| <u>Calopogon multiflorus</u> Many-flowered grass pink | T | II |
| <u>Calopogon pallidus</u> Pale grass pink | T | II |
| <u>Calopogon tuberosus</u> Grass pink | T | II |
| <u>Cleistes divaricata</u> Rosebud orchid | T | |
| <u>Drosera intermedia</u> Water sundew | T | |
| <u>Habenaria odontopetala</u> Rein orchid | T | II |
| <u>Helianthus carnosus</u> Lake-side sunflower | E | C2 |
| <u>Ilex ambigua*</u> Holly | T | |
| <u>Ilex cassine*</u> Cassine | CE | |
| <u>Lilium catesbaei</u> Southern red lily | T | |

Table 3-3. Status of State or Federally Listed Endangered and Threatened Plants That May Occur at SJ-29 Proposed Dredged Material Disposal Site, St. Johns County, Florida (Page 2 of 4)

| Species | Status | |
|--|--------|---------|
| | State | Federal |
| <u>Lycopodium alopecuroides</u> Foxtail club moss | T | |
| <u>Lycopodium appressum</u> Southern club moss | T | |
| <u>Lycopodium carolinianum</u> Slender club moss | T | |
| <u>Lycopodium cernuum</u> Nodding club moss | T | |
| <u>Lycopodium prostratum</u> Prostrate club moss | T | |
| <u>Nolina atopocarpa</u> Florida bear-grass | E | C2 |
| <u>Platanthera blephariglottis</u> Large white fringed orchid | T | II |
| <u>Platanthera ciliaris</u> Yellow fringe orchid | T | II |
| <u>Platanthera cristata</u> Crested fringed orchid | T | II |
| <u>Platanthera integra</u> Yellow fringeless orchid | T | II |
| <u>Platanthera nivea</u> Snowy orchid | T | II |
| <u>Pteroglossaspis acristata</u> A wild coco | E | C2, II |
| <u>Rudbeckia nitida</u> St. John's-Susan | E | C2 |

Table 3-3. Status of State or Federally Listed Endangered and Threatened Plants That May Occur at SJ-29 Proposed Dredged Material Disposal Site, St. Johns County, Florida (Page 3 of 4)

| Species | Status | |
|---|--------|---------|
| | State | Federal |
| <u>Sarracenia minor</u> * Hooded pitcher plant | T | |
| <u>Sphenostigma coelestinum</u> Bartram's ixia | T | PE |
| <u>Spiranthes brevilabris</u> <u>var. floridana</u> Florida ladies' tresses | T | II |
| <u>Spiranthes laciniata</u> Lace-lip ladies' tresses | T | II |
| <u>Spiranthes longilabris</u> Long-lip ladies' tresses | T | II |
| <u>Spiranthes praeox</u> Giant ladies' tresses | T | |
| <u>Spiranthes tuberosa</u> Little pearl twist | T | II |
| <u>Spiranthes vernalis</u> Spring ladies' tresses | T | II |
| <u>Verbesina heterophylla</u> Variable-leaf crownbeard | | Cl |
| <u>Woodwardia areolata</u> * Netted chain fern | T | |
| <u>Zamia umbrosa</u> East coast coontie | C | II |

Table 3-3. Status of State or Federally Listed Endangered and Threatened Plants That May Occur at SJ-29 Proposed Dredged Material Disposal Site, St. Johns County, Florida (Page 4 of 4)

* Presence confirmed on site.

Federal: U.S. Fish and Wildlife Service. PE = Proposed Endangered; 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.

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

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

4.0 WILDLIFE COMMUNITIES

4.0 WILDLIFE COMMUNITIES

Table 4-1 lists species of wildlife observed during field surveys and identifies habitats in which they were observed. Wildlife habitats on the site are quite diverse. The number of species observed are few primarily due to the extreme dry conditions during the field surveys. All ephemeral wetlands have been dry for at least a year and the litter and soils in them were completely dry at the time of the site visit.

4.1 PINE-MESIC OAK (414) AND PINE FLATWOODS (411)

These areas provide a gradient of soil moisture levels under normal rainfall conditions. The soils, along with a scattering of isolated ephemeral wetlands (643, 620) provide for a wide diversity of amphibians and reptiles possibly occurring in these habitats. Considering the number of gopher tortoise burrows in the sand pine communities, gopher frogs are very likely to breed in the isolated ponds found on site. It is likely that all species of amphibians and most species of reptiles recorded for St. Johns County occur on this site. These include amphibians like the pinewoods, barking, and squirrel treefrogs, and various winter breeding chorus frogs. Salamanders may possibly include the tiger salamander, southern dusky and flatwoods salamander. When the isolated ponds contain water and amphibians are breeding, various wading birds and mammals, such as raccoon and opossum, use these areas to feed.

Mixed forested areas near coastal waterways are important flyway stopovers for many species of northern passerine birds. The edge of the habitat, next to the saltwater marsh, provides important feeding and perching habitats for several birds of prey including bald eagle, osprey, migrating peregrine falcon, red-shouldered hawk, sharp-shinned hawk, and others.

4.2 SAND PINE (413) AND XERIC OAK (421)

There is one area of xeric oak habitat on Site SJ-29. The west central part of the site is covered by a scrubby area with young sand pine and oak. The area appears to have been disturbed within the last 5 or 6 years; most likely some timber cutting has taken place. The western side of the site is covered

Table 4-1. Vertebrates and Invertebrates Observed at SJ-29 Proposed Dredged Material Disposal Site, Pipeline Easement or Adjacent Waters, St. Johns County, Florida (Page 1 of 4)

| Scientific Name | Common Name | Vegetation Community * |
|------------------------------|--------------------------|------------------------|
| <u>BIRDS</u> | | |
| <u>Ardeidae</u> | | |
| <u>Ardea herodias</u> | Great Blue Heron | 642 |
| <u>Bubulcus ibis</u> | Cattle Egret | 642 |
| <u>Butorides striatus</u> | Green-backed Heron | 642 |
| <u>Casmerodius albus</u> | Great Egret | 642 |
| <u>Egretta caerulea</u> | Little Blue Heron | 642 |
| <u>Egretta thula</u> | Snowy Egret | 642 |
| <u>Egretta tricolor</u> | Tricolored Heron | 642 |
| <u>Threskiornithidae</u> | | |
| <u>Eudocimus albus</u> | White Ibis | 642 |
| <u>Ciconiidae</u> | | |
| <u>Mycteria americana</u> | Wood Stork | 642 |
| <u>Cathartidae</u> | | |
| <u>Cathartes aura</u> | Turkey Vulture | 411 |
| <u>Coragyps atratus</u> | Black Vulture | 411 |
| <u>Pandionidae</u> | | |
| <u>Pandion haliaetus</u> | Osprey | 642 |
| <u>Accipitridae</u> | | |
| <u>Accipiter striatus</u> | Sharp-shinned Hawk | 414 |
| <u>Buteo jamaicensis</u> | Red-tailed Hawk | 414 |
| <u>Buteo lineatus</u> | Red-shouldered Hawk | 411 |
| <u>Columbidae</u> | | |
| <u>Zenaida macroura</u> | Mourning Dove | 413 |
| <u>Melanerpes carolinus</u> | Red-bellied Woodpecker | 414 |
| <u>Sphyrapicus varius</u> | Yellow-bellied Sapsucker | 413 |
| <u>Corvidae</u> | | |
| <u>Corvus brachyrhynchos</u> | American Crow | 642 |
| <u>Corvus ossifragus</u> | Fish Crow | 642 |
| <u>Cyanocitta cristata</u> | Blue Jay | 411,413 |

Table 4-1. Vertebrates and Invertebrates Observed at SJ-29 Proposed Dredged Material Disposal Site, Pipeline Easement or Adjacent Waters, St. Johns County, Florida (Page 2 of 4)

| Scientific Name | Common Name | Vegetation Community * |
|---------------------------------|--------------------------|------------------------|
| <u>Paridae</u> | | |
| <u>Parus bicolor</u> | Tufted Titmouse | 411,413 |
| <u>Parus carolinensis</u> | Carolina Chickadee | 413 |
| <u>Troglodytidae</u> | | |
| <u>Thryothorus ludovicianus</u> | Carolina Wren | 411 |
| <u>Mimus polyglottos</u> | Northern Mockingbird | 411,413 |
| <u>Toxostoma rufum</u> | Brown Thrasher | 413 |
| <u>Vireonidae</u> | | |
| <u>Vireo flavifrons</u> | Yellow-throated Vireo | 413 |
| <u>Vireo griseus</u> | White-eyed Vireo | 411 |
| <u>Dendroica pinus</u> | Pine Warbler | 411 |
| <u>Thraupidae</u> | | |
| <u>Piranga rubra</u> | Summer Tanager | 414 |
| <u>Fringillidae</u> | | |
| <u>Cardinalis cardinalis</u> | Northern Cardinal | 413,414 |
| <u>Pipilo erythrophthalmus</u> | Rufous-sided Towhee | 421 |
| <u>Quiscalus major</u> | Boat-tailed Grackle | 642 |
| <u>Quiscalus quiscula</u> | Common Grackle | 421 |
| <u>Phalacrocoracidae</u> | | |
| <u>Phalacrocorax auritus</u> | Double-crested Cormorant | 642 |
| <u>MAMMALS</u> | | |
| <u>Didelphidae</u> | | |
| <u>Didelphis marsupialis</u> | Opossum | 643 |
| <u>Dasypodidae</u> | | |
| <u>Dasypus novemcinctus</u> | Nine-banded Armadillo | 643 |
| <u>Procyonidae</u> | | |
| <u>Procyon lotor</u> | Raccoon | 642,643 |
| <u>Felidae</u> | | |
| <u>Lynx rufus</u> | Bobcat | 414 |

Table 4-1. Vertebrates and Invertebrates Observed at SJ-29 Proposed Dredged Material Disposal Site, Pipeline Easement or Adjacent Waters, St. Johns County, Florida (Page 3 of 4)

| Scientific Name | Common Name | Vegetation Community * |
|--|------------------------------|------------------------|
| <u>Talpidae</u> | | |
| <u>Scalopus aquaticus</u> | Eastern Mole | 643 |
| <u>Sciuridae</u> | | |
| <u>Sciurus carlinensis</u> | Gray Squirrel | 411,414 |
| <u>Suidae</u> | | |
| <u>Sus scrofa</u> | Wild Boar | 413 |
| <u>Cervudae</u> | | |
| <u>Odocoileus virginianus</u> | White-tailed Deer | 414 |
| <u>REPTILES</u> | | |
| <u>Anguidae</u> | | |
| <u>Ophisaurus attenuatus</u> <u>longicaudus</u> | Eastern Slender Glass Lizard | 642 |
| <u>Iguanidae</u> | | |
| <u>Anolis carolinensis</u> | Green Anole | 421,642 |
| <u>Sceloporus u. undulatus</u> | Southern Fence Swift | 642 |
| <u>Scincidae</u> | | |
| <u>Scincella laterale</u> | Ground Skink | 642 |
| <u>Teiidae</u> | | |
| <u>Cnemidophorus s. sexlineatus</u> | Six-lined Racerunner | 421,642 |
| <u>AMPHIBIANS</u> | | |
| <u>Bufo</u> | | |
| <u>Bufo terrestris</u> | Southern Toad | 642 |
| <u>FISH</u> | | |
| <u>Gambusia affinis</u> | Mosquitofish | 642 |
| <u>Cyprinodon</u> sp. | Sheepshead Minnow | 642 |
| <u>Mugil cephalus</u> | Mullet | 642 |

Table 4-1. Vertebrates and Invertebrates Observed at SJ-29 Proposed Dredged Material Disposal Site, Pipeline Easement or Adjacent Waters, St. Johns County, Florida (Page 4 of 4)

| Scientific Name | Common Name | Vegetation Community * |
|---------------------------|----------------------|------------------------|
| <u>INVERTEBRATES</u> | | |
| MOLLUSCA | | |
| <u>Nerita peloronta</u> | Bleeding Tooth Snail | 642 |
| <u>Littorina irrorata</u> | Marsh Periwinkle | 642 |
| <u>Atrina serrata</u> | Saw-toothed Pen | 642 |
| CRUSTACEA | | |
| <u>Sesarma cinereum</u> | Saltwater Marsh Crab | 642 |
| <u>Uca pugilator</u> | Sand Fiddler | 642 |

* 411 = Pine Flatwoods; 413 = Sand Pine; 414 = Pine-Mesic Oak; 421 = Xeric Oak; 642 = Saltwater marsh; 643 = Wet Prairie.

Source: WAR 1990.

with mature sand pine which has not been burned or cleared in many years. The shrub layer is thick and beginning to shade out the herbaceous layer, thus reducing diversity. According to a local resident who has a large number of gopher tortoise immigrants from the site in his backyard, there is a large concentration of tortoises in the sand pine area. We observed several active tortoise burrows within the xeric oak community at the northern end of the trail near the northern boundary. Also observed were six-lined racerunners and green anoles. This habitat is excellent for the Florida mouse, gopher frog, indigo snake, southern fence lizard, peninsula crowned snake, southern black racer, red rat snake, and the eastern coachwhip.

4.3 SALTWATER MARSH (642)

The saltwater marsh community along and east of the eastern boundary of the site provides a diverse wildlife community typical of saltwater marshes in this region. Approximately 1,200 feet east of the southeast corner of the site is a bird rookery island. A number of cabbage palms, dead live oak, and other trees occur on the island. Birds that were observed on or near the island include wood stork, double-crested cormorant, little blue heron, and white ibis. Also east and north of the site is the Guano Wildlife Management area. Within this area is a known bird rookery island (No. 606003) containing double-crested cormorant and various wading birds. Another island within the saltwater marsh and near Site SJ-29 is Little Pine Island. This upland island and others like it provide important resting and feeding areas for migratory birds.

The northern branch of Stokes Creek drains the area adjacent to the site. Observed in the mud flats in this area are numerous fiddler crabs, saltwater marsh crabs and bleeding-tooth snails. Little blue heron, great blue heron, great egret, and white ibis are observed feeding here. Wood stork and osprey are observed flying over the area. Virginia rail is heard in the denser saltwater marsh cordgrass area. Raccoon and bobcat signs are common along the edge of the marsh and live oak strand.

4.4 THREATENED AND ENDANGERED WILDLIFE

The diversity of habitats, from saltwater marsh to xeric oak, provides a setting that supports a number of species listed as endangered, threatened or species of special concern. These species are listed in Table 4-2. Gopher tortoises and Florida pine snakes are confined primarily to the drier areas of the site while species like the gopher frog move from these areas into the ephemeral wetland habitats for breeding. The flatwoods salamander, which is being considered for federal listing, are possible residents of the site. The saltwater marsh provides feeding, resting and nesting areas for a number of birds listed by the state. Birds observed at or near the property line include snowy egret, little blue heron, osprey, and tricolored heron. One unconfirmed observation includes a great white heron sighted in the saltwater marsh near the eastern boundary.

Table 4-2. Status of State and Federally Listed Animal Species that May Occur at SJ-29 Proposed Dredged Material Disposal Site, the Proposed Pipeline Route or Adjacent Waters, St. Johns County, Florida (Page 1 of 4)

| Species | Status | | |
|--|--------|--------|-----------|
| | State | FCREPA | Federal |
| AMPHIBIANS AND REPTILES | | | |
| <u>Alligator mississippiensis</u> American Alligator | SSC | SSC | T(S/A),II |
| <u>Caretta c. caretta</u> Atlantic Loggerhead | T | T | T |
| <u>Chelonia mydas mydas</u> Atlantic Green Turtle | E | E | E |
| <u>Drymarchon corais couperi</u> Eastern Indigo Snake | T | SSC | T |
| <u>Gopherus polyphemus</u> * Gopher Tortoise | SSC | T | C2 |
| <u>Pituophis melanoleucus mugitus</u> Florida Pine Snake | SSC | | C2 |
| <u>Rana aerolata</u> Florida Gopher Frog | SSC | T | C2 |
| BIRDS | | | |
| <u>Accipiter cooperii</u> Cooper's Hawk | SSC | | |
| <u>Casmerodius albus</u> * Great Egret | | SSC | |
| <u>Charadrius melodus</u> Piping Plover | T | SSC | T |
| <u>Circus cyaneus</u> Northern Harrier | | | II |
| <u>Cistothorus palustris griseus</u> Worthington's Marsh Wren | SSC | SSC | |

Table 4-2. Status of State and Federally Listed Animal Species that May Occur at SJ-29 Proposed Dredged Material Disposal Site, the Proposed Pipeline Route or Adjacent Waters, St. Johns County, Florida
(Page 2 of 4)

| Species | Status | | |
|---|--------|--------|---------|
| | State | FCREPA | Federal |
| <u>Egretta caerulea</u> * Little Blue Heron | SSC | SSC | |
| <u>Egretta thula</u> * Snowy Egret | SSC | SSC | |
| <u>Egretta tricolor</u> * Tricolored Heron | SSC | SSC | |
| <u>Eudocimus albus</u> * White Ibis | | SSC | |
| <u>Falco columbarius</u> Merlin | | | II |
| <u>Falco peregrinus</u> Peregrine Falcon | E | E | T,I |
| <u>Falco sparverius paulus</u> Southeastern Kestrel | T | T | C2,II |
| <u>Falco sparverius sparverius</u> American Kestrel | | | II |
| <u>Haliaeetus leucocephalus</u> Bald Eagle | T | T | E,I |
| <u>Mycteria americana</u> * Wood Stork | E | | E |
| <u>Nyctanassa violacea</u> Yellow-crowned Night Heron | | SSC | |
| <u>Nycticorax nycticorax</u> Black-crowned Night Heron | | SSC | |
| <u>Pandion haliaetus</u> * Osprey | | T | II |

Table 4-2. Status of State and Federally Listed Animal Species that May Occur at SJ-29 Proposed Dredged Material Disposal Site, the Proposed Pipeline Route or Adjacent Waters, St. Johns County, Florida (Page 3 of 4)

| Species | Status | | |
|--|--------|--------|---------|
| | State | FCREPA | Federal |
| <u>Pelecanus occidentalis</u> Brown Pelican | SSC | T | |
| <u>Plegadis falcinellus</u> Glossy Ibis | | SSC | |
| <u>Picoides villosus auduboni</u> Southern Hairy Woodpecker | | SSC | |
| <u>Sterna antillarum</u> Least Tern | T | T | |
| <u>Sterna caspia</u> Caspian Tern | | SSC | |
| <u>Sterna maxima</u> Royal Tern | | SSC | |
| <u>Sterna sandvicensis</u> Sandwich Tern | | SSC | |
| MAMMALS | | | |
| <u>Lutra canadensis</u> River Otter | | | C2, II |
| <u>Mustela frenata olivacea</u> Southeastern Weasel | | R | |
| <u>Mustela vision lutensis</u> Florida Mink | | R | C2 |
| <u>Neofiber alleni</u> Florida Water Rat | | | C2 |
| <u>Podomys floridanus</u> Florida Mouse | SSC | T | C2 |
| <u>Trichechus manatus</u> West Indian Manatee | E | E | E, I |

Table 4-2. Status of State and Federally Listed Animal Species that May Occur at SJ-29 Proposed Dredged Material Disposal Site, the Proposed Pipeline Route or Adjacent Waters, St. Johns County, Florida
(Page 4 of 4)

* Presence confirmed on site.

State: Florida Game and Fresh Water Fish Commission. E = Endangered;
T = Threatened; SSC = Species of Special Concern.

FCREPA: Florida Committee on Rare and Endangered Plants and Animals
(unofficial). E = Endangered; T = Threatened; R = Rare;
SSC = Species of Special Concern.

Federal: U.S. Fish and Wildlife Service (50 CFR 17.11-12). E = Endangered;
T = Threatened; T(S/A) = Threatened due to similarity of appearance;
C2 = A candidate for federal listing, with some evidence of
vulnerability, but for which not enough data exists to support
listing.

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

Source: FGFWFC 1990.
Florida Natural Areas Inventory 1990.
WAR 1990.