

Environmental Assessment Report

BH Stone Road Drainage Improvements

SECTION 1, TOWNSHIP 3 SOUTH, RANGE 10 WEST
CALHOUN COUNTY, FLORIDA

PREPARED FOR:

Preble-Rish, Inc.
20684 East Central Avenue
Blountstown, Florida 32424

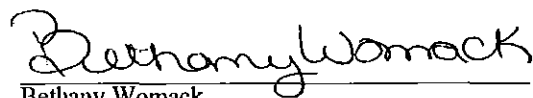
PREPARED BY:

Cypress Environmental of Bay County, LLC
P.O. Box 16062
Panama City, Florida 32406
850-481-6824

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NWFWMD


Bethany Womack
Cypress Environmental of Bay County, LLC

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EXECUTIVE SUMMARY

This report presents the findings of an environmental assessment of the project site pursuant to Part III, Section 10.2.3.7, ERP Applicants Handbook, Volume I, effective November 1, 2010.

The project area is located on BH Stone Road, approximately 1,450 feet from its intersection with Highway 71, in Section 1, Township 3 South, Range 10 West, Calhoun County, Florida. The proposed impact area consists of a surface water crossing at Crooked Creek, ditch impacts within the existing right-of-way, as well as, hardwood wetland impacts within a proposed right-of-way expansion, associated with drainage improvements to alleviate flooding during significant rain events to allow for increased evacuation times for the sole ingress / egress route for the Cypress Park Subdivision. The wetland and surface water areas are jurisdictional for Northwest Florida Water Management District (WMD) and the US Army Corps of Engineers (COE).

A listed protected species assessment conducted for this project in October 2011 did not result in direct evidence that state- or federally-listed faunal species inhabit the project area or immediately adjacent areas, however, the project area is located within a half mile of known collections of five federally listed freshwater mussels: *Elliptio chipolaensis* (Chipola slabshell), *Amblema neislerii* (fat threeridge), *Medionidus penicillatus* (gulf moccasinshell), *Pleurobema pyriforme* (oval pigtoe), and *Lampsilis subangulata* (shinyrayed pocketbook). Additionally, the project area is in the vicinity of known occurrences of two state listed species, *Pteronotropis welaka* (bluenose shiner) and *Graptemys barbouri* (Barbour's map turtle).

1.0 INTRODUCTION

The Calhoun County Board of County Commissioners (County) is proposing to impact 0.498 acres of mixed hardwood and pine wetlands and 0.142 acres of vegetated swales, associated with the elevation of BH Stone Road; as well as, 0.02 acres of surface waters for the installation of rip rap at the toe of the proposed culvert extension at Crooked Creek, collectively the BH Stone Road Drainage Improvement Project (Project), located in Calhoun County, Florida. Preble-Rish, Inc. prepared an application to the Northwest Florida Water Management District on behalf of the County. Preliminary review of the submitted application produced a Request for Additional Information (RAI) dated March 5, 2012, which among other items, requested that the applicant provide an environmental site assessment report pursuant to Part III, Section 10, ERP Applicant's Handbook Vol. I. Cypress Environmental has been authorized by Preble-Rish, Inc. to conduct the assessment. This report presents the findings of the assessment, including methodologies employed, a description of existing conditions, results of field surveys, and an evaluation of ERP Environmental Considerations relating to the proposed project.

2.0 PROJECT LOCATION AND DESCRIPTION

The project area is located on BH Stone Road, approximately 1,450 feet from its intersection with Highway 71, Section 1, Township 3 South, Range 10 West, within the local jurisdiction of Calhoun County, Florida.

The proposed project will improve the existing hydraulic capacities of a cross drain system for a culvert crossing located on BH Stone Road, within the Cypress Creek Drainage Basin and will elevate the roadway above the 100 year flood elevation. The existing capacities are inadequate to prevent overtopping of the roadway during a 10 year storm event. Based on modeling of the system, the proposed improvements have been designed to prevent flooding during the 100-year, 24-hour storm event, and a flood stage elevation of 30 feet by replacing four 52 inch cross drain pipes with four 72 inch x 48 LF pipes.

Figure 1. Vicinity Map



3.0 METHODOLOGY

3.1 PRE-FIELD DATA REVIEW

Prior to conducting onsite activities, various data sources were reviewed to provide a preliminary assessment of resources potentially occurring onsite. This data included the following:

- 1) Calhoun County aerial photography – See Appendix A
- 2) National Wetlands Inventory Map (NWI) – See Appendix B
- 3) Natural Resource Conservation Service (NRCS) Soil Survey for Calhoun Co. – See Section 4.2
- 4) Florida Natural Areas Inventory listed species GIS data (FNAI)
- 5) FL Fish and Wildlife Conservation Commission (FWCC) “*Conservation Resource Guide*”
- 6) Florida Fish and Wildlife Conservation Commission (FWCC) listed species GIS data
- 7) US Fish & Wildlife listed species GIS data (USFWS) – See Appendix C
- 9) Florida Master Sites File – See Appendix D

3.2 HABITATS/LAND USE CLASSIFICATIONS

Vegetative associations and land uses on the project site were mapped according to the *Florida Land Use, Cover, and Forms Classification System* (FLUCCS).

3.3 SOILS, TOPOGRAPHY AND DRAINAGE

Soils data was obtained by reference to the U.S. Department of Agriculture-Natural Resources Conservation Service *Soil Survey of Calhoun County, Florida*, as well as onsite observations. Drainage and topography data was obtained from the U.S. Geological Survey’s topographic quadrangle for the area, as well as, onsite observations.

3.4 JURISDICTIONAL WETLAND DELINEATION

Wetland jurisdictional boundaries were field delineated with pink “Wetland Delineation” flagging and/or orange pin flags, by Cypress Environmental of Bay County, LLC on January 17, 2011. The delineation was conducted in accordance with the Florida Department of Environmental Protection (FDEP) *Florida Wetlands Delineation Manual* (62-340, F.A.C) and the US Army Corps of Engineers (USACE) *1987 Wetland Delineation Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*. The wetland delineation line was subsequently located by Preble-Rish, Inc. The wetland line depicted on the project drawings is an accurate representation of the flagged jurisdictional line, which was reviewed and approved in the field by WMD staff on April 17, 2012.

3.5 LISTED SPECIES SURVEYS

A listed species survey was conducted in October 2011. Listed species were not observed at that time, however, if any listed species are identified within the property, they will be marked in the field, latitude / longitude coordinates for each occurrence will be obtained via GPS unit, and detailed field notes with photographs will be taken.

4.0 RESULTS

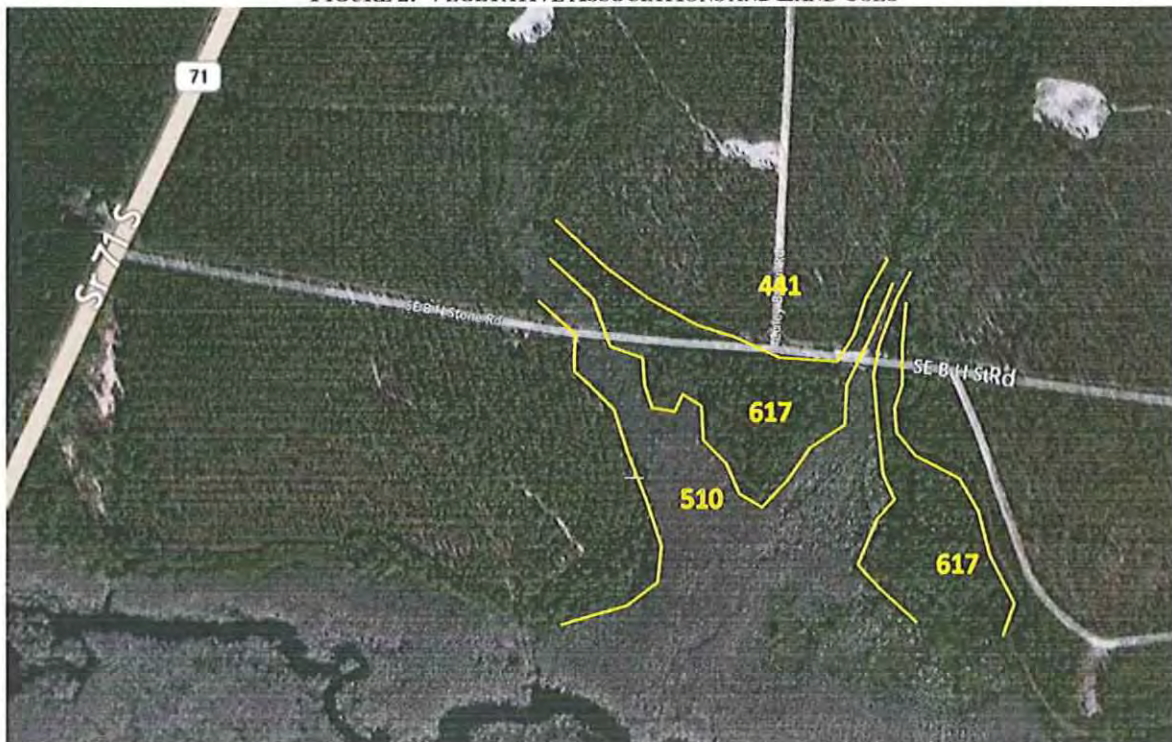
4.1 HABITATS AND LAND USES

Table 1 provides a summary of the vegetative associations/land uses on the site per the FLUCCS system. Figure 2 provides a graphic representation of the extent of site habitats/land uses.

TABLE 1. VEGETATIVE ASSOCIATIONS & LAND USE SUMMARY

FLUCCS CODE	FLUCCS Description	Upland Acres	Wetland Acres	Total Acres
441	Pine plantation	2.57	----	2.57
510	Streams and Waterways	----	0.3	0.3
617	Mixed wetland hardwood, depressional	----	0.5	0.5
TOTAL				11.11

FIGURE 2. VEGETATIVE ASSOCIATIONS AND LAND USES



The following is a description of the existing FLUCCS habitats/land uses present on the site:

Pine Plantation (FLUCCS 441): These are almost exclusively pine forests artificially generated by planting seedling stock or seeds. These stands are characterized by high numbers of trees per acre and their uniform appearance. Although row patterns often stand out, this is not always the case, especially where stands are as a result of aerial seeding.

Streams and Waterways (FLUCCS 510): This classification is described as rivers, creeks, canals and other linear water bodies.

Mixed Wetland Hardwood (FLUCCS 617): This category is reserved for those wetland hardwood communities which are composed of a large variety of hardwood species tolerant of hydric conditions yet exhibit an ill-defined mixture of species.

Within the area identified as wetland, a prevalence of hydrophytic vegetation, hydric soil characteristics, and indicators were observed. Vegetation includes *Pinus elliottii*, *Cliftonia monophylla*, *Magnolia virginiana*. Hydric soil indicators include low chroma color, oxidized rhizospheres, and local soil data. Hydrology indicators include drainage patterns in wetlands, water marks, oxidized rhizospheres within 12 inches of surface, and a positive FAC-Neutral test.

4.2 SOIL UNITS

According to the *Soil Survey of Calhoun County, Florida* (NRCS), three soil units are present in the project area: (7) Blanton sand, 0-5% slopes, (67) Alapaha loamy sand 0-2% slopes, and (68) Croatan, Kinston and Surrency, frequently flooded. An exhibit depicting the soil map is provided as Figure 3.

FIGURE 3. SOIL UNITS



As described in the referenced soil survey:

Blanton sand, 0-5% slopes (7): is a moderately well drained soil is on summits and shoulders in the uplands. Slopes are smooth to convex. Typically, the surface layer is dark grayish brown sand about 4 inches thick. The subsurface layer is light yellowish brown sand to a depth of 40 inches, pale yellow sand to a depth of 60 inches, and pale yellow loamy sand that has mottles in shades of gray, yellow, and red to a depth of 68 inches. The subsoil is yellowish brown sandy loam that has mottles in shades of gray, yellow, and red to a depth of 80 inches or more. The seasonal high water table is at a depth of 42 to 72 inches from January through March and from June through September. The available water capacity is very low or low in the surface and subsurface layers and moderate in the subsoil. Typically, this map unit supports the Mixed Hardwood and Pine ecological community, which has several variations. In mature, natural stands, the hardwoods replace the pines. The natural climax vegetation is thought to be a beech-magnolia-maple association. The trees that characterize this community are loblolly pine, white oak, pignut hickory, American beech, and flowering dogwood. The herbaceous plants and vines include aster, partridge pea, poison ivy, violet, Virginia creeper, and wild grape. Grasses include broomsedge bluestem, longleaf uniola, low panicum, and spike uniola.

Alapaha loamy sand, 0-2% slopes (67): is a poorly drained soil on flats, on footslopes, and in poorly defined drainageways in the Coastal Plain uplands. Slopes are smooth to concave. Typically, the surface layer is very dark gray loamy sand about 6 inches thick. The subsurface layer is loamy sand. It is dark gray to a depth of 16 inches and is gray and has mottles in shades of gray, yellow, and red to a depth of 28 inches. The subsoil is gray sandy loam to a depth of 48 inches; is gray sandy loam that has plinthite and has mottles in shades of gray, yellow, and red to a depth of 62 inches; and is gray sandy clay loam that has plinthite and has mottles in shades of gray, yellow, and red to a depth of 80 inches or more. The seasonal high water table is at the surface to a depth of 7 inches from December through March and from June through September. The available water capacity is low in the surface and subsurface layers, moderate in the upper part of the subsoil, and low in the lower part of the subsoil. Typically, this map unit supports the North Florida Flatwoods ecological community, which has only slight variations in composition. Slash pine and water oak are the main trees. Herbaceous plants and shrubs include blackberry, dog fennel, gallberry, greenbrier, saw palmetto, and wax-myrtle. Grasses and grass-like plants include chalky bluestem, yellow Indiangrass, low panicum, pineland threeawn, and sedges.

Croatan, Kinston, and Surrency soils, frequently flooded (68): consists of very poorly drained very poorly drained Croatan and Surrency soils and poorly drained Kinston soils on flood plains along creeks and streams. Typically, the surface layer of the Croatan soil is black muck to a depth of 28 inches. The substratum is gray sandy loam to a depth of 40 inches and is gray sandy clay loam to a depth of 80 inches or more. In areas of the Croatan soil, the seasonal high water table is at or near the surface during most of the year. The available water capacity is very high in the surface layer and moderate or high in the layers below. Typically, the surface layer of the Kinston soil is very dark gray fine sandy loam about 6 inches thick. The substratum is light brownish gray sandy clay loam to a depth of 27 inches, gray sandy clay loam to a depth of 47 inches, and light gray loamy sand to a depth of 80 inches or more. In areas of the Kinston soil, the seasonal high water table is at or near the surface during most of the year. The available water capacity is moderate or high throughout. Typically, the surface layer of the Surrency soil is very dark gray mucky sand about 6 inches thick. The subsurface layer is grayish brown loamy sand to a depth of 22 inches. The subsoil is light gray sandy loam to a depth 31 inches and is gray sandy clay loam that has mottles in shades of gray, yellow, and red to a depth of 80 inches or more. In areas of the Surrency soil, the seasonal

high water table is at or near the surface during most of the year. The available water capacity is low throughout. In this map unit, flooding is likely to occur often under usual weather conditions. On the average, flooding occurs more than 50 times in 100 years. The chance of flooding is more than a 50 percent in any year but is less than 50 percent in all months in any year. The average duration of the flooding ranges from 7 to 30 days in areas of the Croatan soil, from 2 to 30 days in areas of the Kinston soil, and is more than 30 days in areas of the Surrency soil. Many areas are isolated by meandering stream channels. Excess water ponds in low-lying areas for very long periods after heavy rains. Typically, this map unit supports the Bottomland Hardwoods ecological community, which is extremely diverse. Understory growth is profuse where light enters through the openings in the canopy. Common trees include black willow, green ash, river birch, swamp chestnut oak, sweetgum, American sycamore, water hickory, water oak, and willow oak. Common herbaceous vines include crossvine, greenbrier, peppervine, poison ivy, trumpet creeper, and wild grape. Dothan sandy loam, 0-2 percent. Within the mapped area, a "wet spot" symbol is noted within the vicinity of the isolated wetland area that was identified on the property. An exhibit depicting the soil map is provided as Figure 3.

4.3 TOPOGRAPHY AND DRAINAGE

The natural topography of the project area ranges from approximately 24 to 63 feet in elevation, with the highest elevations on the east (31') and west (63') ends and sloping to the lowest point (24') in the center of the project area. The project area is located in and adjacent to Crooked Creek, which drains to Cypress Creek, a tributary of Dead Lakes.

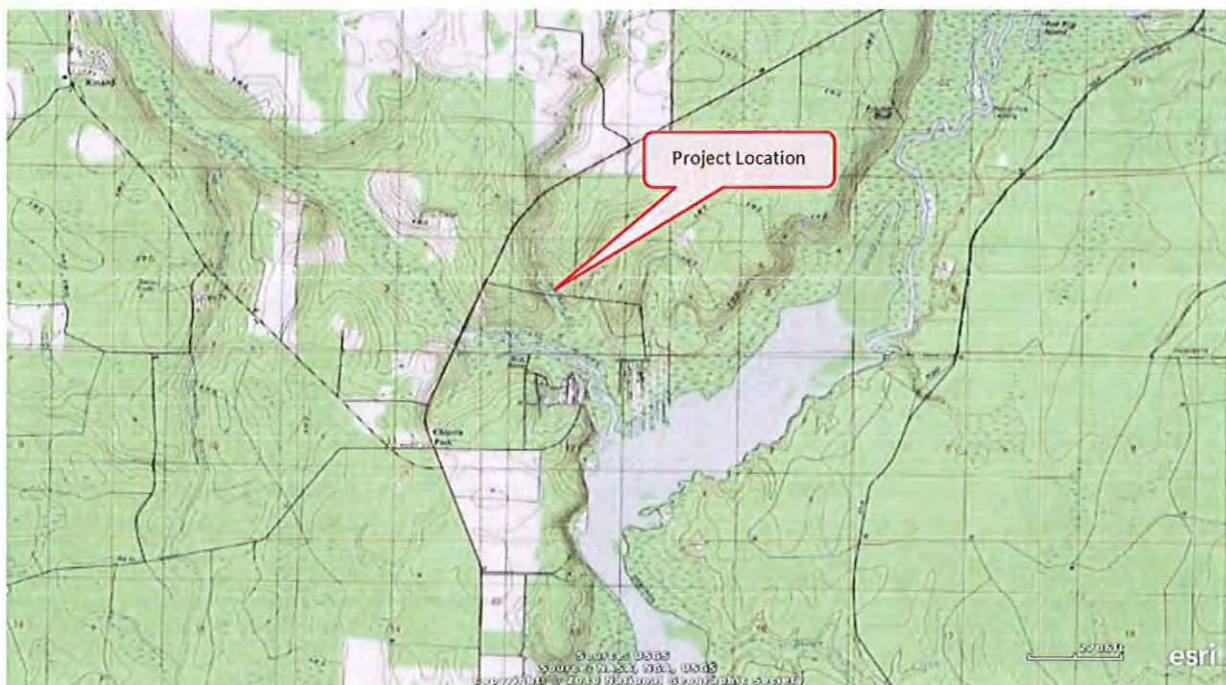


FIGURE 4. USGS TOPOGRAPHIC MAP

4.4 JURISDICTIONAL WETLANDS AND OTHER SURFACE WATERS

Jurisdictional wetlands and/or other surface waters (OSWs) within the project area have been identified on the project drawings (Appendix F). These areas are jurisdictional for the WMD, as well as, the COE.

Descriptions of the wetland habitat are provided in Section 4.1 above. The project drawings in Appendix F accurately depicts the wetland delineation line as flagged by Cypress Environmental and subsequently surveyed by Preble-Rish, Inc.

4.5 NATURAL ECOLOGICAL COMMUNITIES

Natural ecological communities within the project area include Stream / Waterways, Mixed Wetland Hardwood and Pine. Please see Appendix D for historical ecological community descriptions as described by the Florida Natural Areas Inventory (FNAI), Guide to the Natural Communities of Florida, 2010 Edition.

4.6 UNIFORM MITIGATION ASSESSMENT METHOD

It is the opinion of Cypress Environmental that the swale / ditch features within the project area are low quality and the natural wetland communities within the project area are moderately high to high quality, based on the qualitative assessment parameters provided in 62-345, Florida Administrative Code, Uniform Mitigation Assessment Method (UMAM). UMAM utilizes three categories of indicators to assess wetland function of an assessment area: Location and Landscape Support; Water Environment; and Community Structure.

Location and Landscape Support

As discussed in 62-345, FAC, "the value of functions provided by an assessment area to fish and wildlife are influenced by the landscape position of the assessment area and its relationship with surrounding areas." Connecting impervious surfaces with water courses such as a roadside ditch, influences the sediment loads, hydrologic regime, and quality of surface runoff downstream. As such, land use information is very important when characterizing a watershed and determining potential impacts to water quality. The extent of development in an area and where the development is located can play a key role in the contaminant loading to downstream waterbodies, which can increase as a result of stormwater runoff from pervious and impervious surfaces, including overland flow from manicured lawns through the use of pesticides and fertilizers, and runoff from road surfaces that may contain petroleum products and/or other automotive debris.

The assessment parameters for Location and Landscape Support, as defined in 62-345, FAC, were used for this assessment.

Water Environment

Water quantity and quality each have an effect on the overall water environment within an assessment area. Water quality within an assessment area is affected by inputs from upstream and the surrounding areas and the ability of the system to integrate those inputs.

The assessment parameters for Water Environment, as defined in 62-345, FAC, were used for this assessment.

Community Structure

For natural communities: As discussed in 62-345, FAC, “the presence, abundance, health, condition, appropriateness, and distribution of plant communities in surface waters, wetlands, and uplands can be used as indicators to determine the degree to which the functions of the community type are provided. Vegetation is the base of the food web in the degree to which the functions of the community type are provided. Vegetation is the base of the food web in a community and provides many additional structural habitat benefits to fish and wildlife.

The assessment parameters for Community Structure, as defined in 62-345, FAC, were used for this assessment.

For swales / ditches: Based on our field meeting with WMD staff on April 17, 2012, the impacts to the ditch / swale systems within the project area have negligible impact on the wetland system. As such, the impacts will be considered as “diminimus” impacts and have not been included in the UMAM assessment.

With regards to the qualitative parameters outlined in UMAM, each parameter is scored 0 – 10.

A score of (10) means the assessment area is ideally located and the surrounding landscape provides full opportunity for the assessment area to perform beneficial functions at an optimal level.

A score of (7) means that, compared to the ideal location, the location of the assessment area limits its opportunity to perform beneficial functions to 70% of the optimal ecological value.

A score of (4) means that, compared to the ideal location, the assessment area location limits its opportunity to perform beneficial functions to 40% of the optimal ecological value.

A score of (0) means that the location of the assessment area provides no habitat support for wildlife utilizing the assessment area and no opportunity for the assessment area to provide benefits to fish and wildlife outside the assessment area.

Based on the above scoring, Cypress Environmental has assigned the following UMAM values to the natural community areas:

Location / Landscape Support = 8

- Availability of habitats outside the assessment area is sufficient to provide optimal support (10)
- Some of the plant community in the proximity of the assessment area consists of invasive exotic or other invasive plant species (7)
- Wildlife access to and from habitats outside assessment area is partially limited by barriers (7)
- Functions of the assessment area that would be expected to benefit fish and wildlife downstream are not limited (10)
- Land uses outside the assessment area have minimal adverse impact on wildlife in the assessment area (7)
- Discharges from the assessment area provide significant benefit from discharges from the assessment area and could suffer substantial adverse impacts if the quantity or quality of the discharges were altered (7)

Water Environment = 9.4 → 9

- Water levels and flows appear appropriate, considering seasonal variation, tidal cycle, antecedent weather and other climatic effects (10)
- Water level indicators are distinct and consistent with the expected hydrologic conditions for the type of system being evaluated (10)
- Soil moisture is appropriate for the type of system being evaluated (10)
- Direct observation of standing water indicates minimal water quality degradation such as obvious discoloration, turbidity, or oil sheen – receives runoff from adjacent roadway (7)
- Presence or evidence of use by animal species with specific hydrologic requirements is consistent with expected hydrologic conditions (10)

Community Structure = 7

- Most of plant cover is by appropriate or desirable plant species in the canopy, shrub, or ground stratum – perimeter of wetland system (also impact area) is comprised primarily of titi (7)
- Invasive plant species are present, but cover is minimal (7)
- Land management practices are generally appropriate, but introduction of artificial features (ie. roadway) has altered natural structures (7)
- Topographic features are slightly less than optimal (7)
- Plant condition is generally good condition, with very little evidence of chlorotic or spindly growth or insect damage (7)
- Some evidence of regeneration or natural recruitment of desirable species (7)
- Age and size distribution is typical (7)

UMAM SCORE = 8+9+7 = 24 / 30 = 0.8 Functional Value

Please see Appendix D for UMAM data sheets / calculations.

4.7 LISTED SPECIES

No direct or indirect evidence of listed species was observed during the field inspection.

With regards to freshwater mussels, the conclusion of the listed species assessment conducted in October 2011 states:

While the tributary is not listed as mussel critical habitat, it is upstream of the Chipola River, which is designated critical habitat. As such, the proposed project does have some potential to affect the mussels or their habitat. For this reason, the FWS, through informal consultation, has stated that “if the conditions in the 2009 FEMA EHP Guidance for Repair and Replacement of Stream Crossings”, as well as the following conditions are implemented, they would concur that the proposed project **may affect, but are not likely to adversely affect** the mussels or their habitat:

- 1) Use of effective sediment and erosion controls, such as silt fencing to avoid entry of sediment and other pollutants into the stream or river, and
- 2) Use of proper turbidity controls, such as turbidity curtains during all phases of construction to reduce sedimentation.

With regards to the bluenose shiner and Barbour’s map turtle, the conclusion of the listed species assessment conducted in October 2011 states:

These species were not observed during the field inspection of the Crooked Creek tributary. However, being an upstream tributary of the Chipola River, where there are documented occurrences of these species, the proposed project does have some potential

to affect these species or their habitat. It is the opinion of Cypress Environmental that with the implementation of the conditions referenced above for the mussel species, the proposed project may affect, but is not likely to adversely affect these species or their habitat.

The listed species assessment did not result in any direct or indirect evidence that federally-listed floral species inhabit the project area or immediately adjacent areas. The Florida Natural Areas Inventory (FNAI) suggests that three state listed floral species could occur in the project area, however, being that the species are state only, Chapter 581.185(8), Florida Statute, allows the clearing or removal of regulated plants from a canal, ditch, survey line, building site, or road or other right-of-way by the landowner or his or her agent (581.185(8)(b), as well as, the clearing of land by a public agency or a publicly or privately owned public utility when acting in the performance of its obligation to provide service to the public (581.185(8)(c). As such, a review for these species was not performed.

5.0 ENVIRONMENTAL CONSIDERATIONS

(Pursuant to Section 10, ERP App. HB, Vol. 1)

5.1 WETLAND IMPACTS

The proposed wetland impacts include 0.498 acres of mixed hardwood and pine wetland, 0.14 acres of vegetated swale (other surface waters), and 0.02 acres of surface waters, all being jurisdictional for the WMD and the COE. Please refer to Section 3.4 for delineation methodology and Sections 4.1 and 4.4 for wetland characterization.

5.2 ELIMINATION OR REDUCTION OF WETLAND IMPACTS

Impacts to onsite wetlands cannot be avoided due to the location of wetlands on the property, which directly abuts the existing roadway.

Design modifications have been implemented to insure that the wildlife utilization function will increase or at a minimum be consistent with current conditions. Specifically, the project improvement will provide stormwater treatment via roadside swales for the length of the project, which currently does not exist. As such, water quality within the receiving waters is expected to be an improvement from current water quality conditions.

The proposed project is being funded through a federal grant program. As such, design alternatives are limited to federal funding amounts. For this reason, alternative designs, such as bridging or vertical retaining walls, are not feasible due to the costs associated with these options. The only viable options from a cost standpoint are 1) to do nothing, and 2) the project as proposed.

The do-nothing option is not feasible as it does not address the public health, safety, and welfare concerns of the affected residents. As such, the proposed project is the only option that meets the cost constraints and addresses the public health, safety, and welfare concerns.

5.3 FISH, WILDLIFE, LISTED SPECIES AND THEIR HABITATS

Based on the results of the data review and field inspections conducted as part of this assessment, we have found no evidence that listed species currently inhabit the project site or immediately adjacent areas.

Additionally, it is the opinion of Cypress Environmental that the proposed wetland impacts will not have a measurable effect on surface water functions so as to cause adverse impacts to the abundance or diversity of fish, wildlife, or listed species:

The proposed impact area is a titi fringe of a mixed hardwood and pine wetland.

The project area is adjacent to waters of the state. As such, project drawings include a detailed erosion control plan to prevent impacts outside of the project area.

The proposed wetland impact area and its floral and faunal components are not unique in relation to the surrounding regional landscape.

The proposed impact area is not utilized by fish or any listed species for resting, feeding, breeding, nesting, or denning. Other wildlife utilization may include resting or feeding by birds, small mammals (ie. squirrels), insects, etc.

5.4 WATER QUANTITY IMPACTS TO WETLANDS & OTHER SURFACE WATERS

The proposed project is not expected to change the hydroperiod of surrounding wetlands and/or other surface waters, so as to adversely affect wetland or other surface water functions.

5.5 PUBLIC INTEREST TEST

It is our opinion that the proposed project is not contrary to the public interest, and is clearly in the public interest, being a drainage improvement project that will significantly reduce roadway flooding by elevating the roadway above the 100 year storm event and will increase evacuation time for the sole ingress / egress point for residents in the Cypress Park Subdivision.

Economics

From an economic perspective, the proposed project will increase resident evacuation times, which will decrease the need for local emergency response during times when evacuation of the area may be necessary. Additionally, the elevation of the roadway above the 100 year storm event will decrease the likelihood of costly road failures associated with flooding, which will decrease maintenance costs for the local government and will reduce financial liabilities associated with the major flooding problems that currently plague the area.

Aesthetics

The project is located on in and adjacent to an existing road right-of-way. As such, the proposed project is not expected to have an adverse impact on aesthetics above the environment that currently surrounds the project site.

Historical and Cultural Resources

There are no known or expected cultural or historical resources on the project site. A review of the Florida Master Sites File, S-T-R for the project, showed no previously listed cultural resources within the Section.

Threatened and/or Endangered Species

A listed protected species assessment was conducted in October 2011. No species were identified within the project area.

Public Health, Safety, and Welfare or the Property of Others

The proposed project will benefit the public health, safety, and welfare of the residents within the Cypress Park Subdivision by providing increased evacuation times during times when evacuation of the area may be needed, and provides more protection to the sole ingress / egress point for these residents.

Water Quality

The proposed project includes provisions for the treatment of stormwater generated by the proposed project. As such, the project would not be expected to cause any adverse effects to water quality.

5.6 WATER QUALITY

Short term water quality considerations have been addressed within the Erosion Control Details and the Stormwater Pollution Prevention Plan (SWPPP) detailed in the construction plan drawings.

Long term water quality considerations through the design of a swale system to treat stormwater, providing an improvement from current conditions.

5.7 CLASS II WATERS; WATERS APPROVED FOR SHELLFISH HARVESTING

Not Applicable

5.8 VERTICAL SEAWALLS

Not Applicable

5.9 SECONDARY IMPACTS

The proposed project includes a detailed erosion control plan to prevent secondary impact to adjacent wetlands. As such, it is our opinion that any secondary impacts associated with the proposed project will have a de minimus effect on the surrounding area.

5.10 CUMULATIVE IMPACTS

Given the nature of the proposed wetland impact area, it is the opinion of Cypress Environmental that the proposed project will not have an unacceptable cumulative impact upon wetlands and/or other surface waters within the watershed.

5.11 MITIGATION

A preliminary UMAM assessment shows that the functional loss associated with the 0.49 acres of wetland impacts is 0.39 Function Units. It is our opinion that the public benefit associated with this project far outweighs the functional loss. As such, we would request consideration of this project without mitigation.

6.0 DISCLAIMERS

Descriptions and conclusions presented in this report are based on field conditions, GIS data, and regulations/policies present or in effect as of the date of this report. Future changes to these parameters may affect the recommendations and conclusions herein.

The characterizations of wetland quality are not final or "binding" until such time as they are confirmed by the regulatory entity. As such, any quantitative or qualitative assessments presented in this report may be subject to changes.

This assessment does not provide authorization for any activity requiring a permit. However, Cypress Environmental can provide professional assistance in obtaining permits as requested.

7.0 REFERENCES CITED

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Bald eagle nest locations through 2010–GIS data for Calhoun Co. FWC-FWRI

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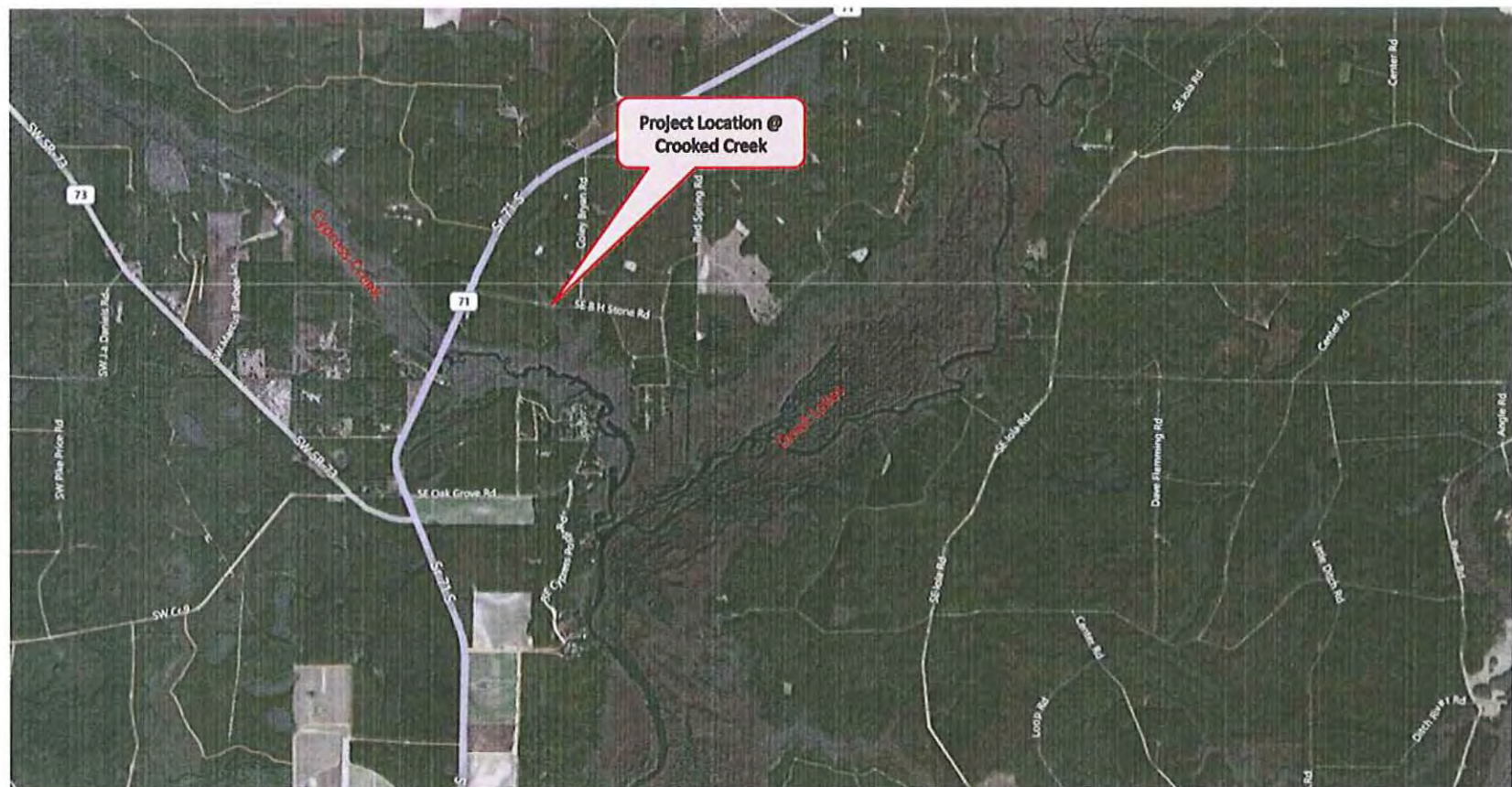
National Wetlands Inventory. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC. FWS/OBS-79/31.

U.S Geological Survey (USGS). 7.5-Minute Quadrangle.

APPENDIX A

MOST CURRENT AVAILABLE AERIAL PHOTOGRAPH

Current Aerial Photography



APPENDIX B

NATIONAL WETLAND INVENTORY MAP

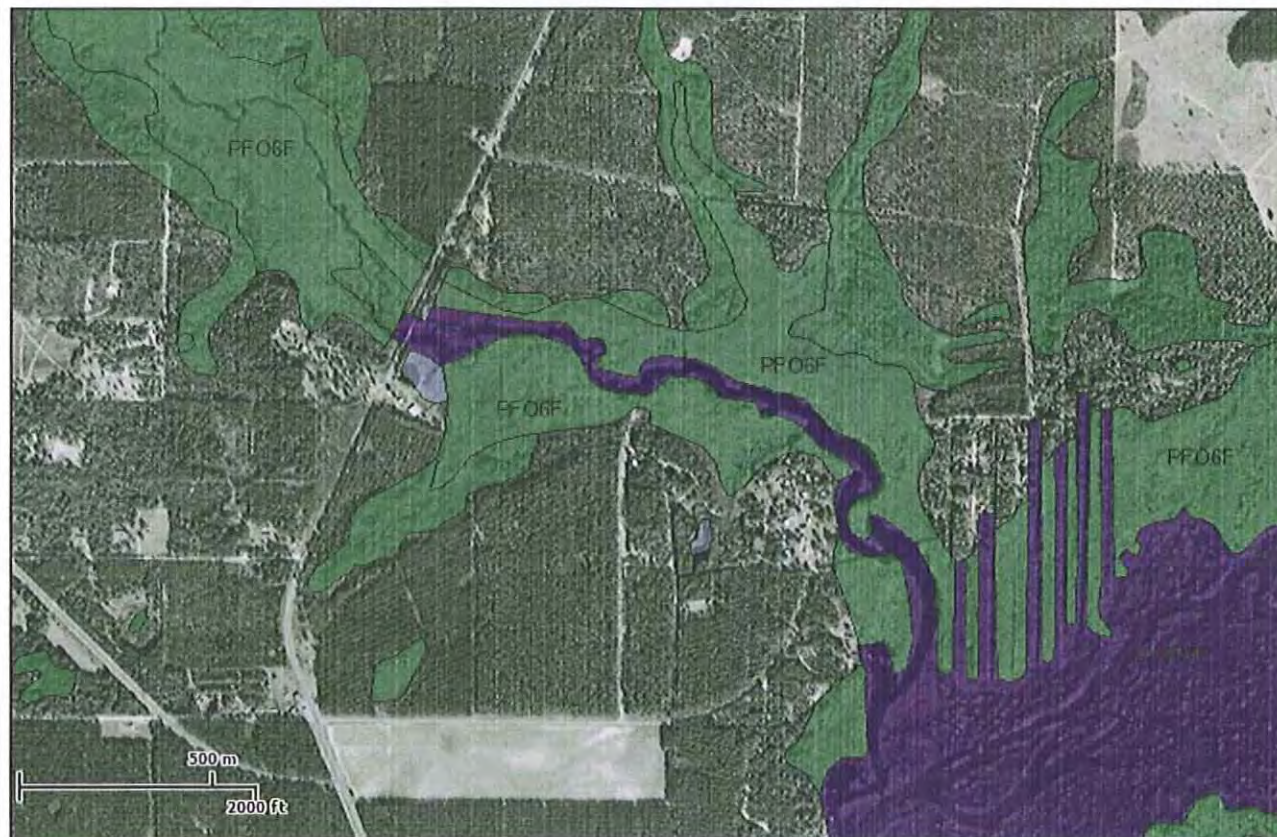


U.S. Fish and Wildlife Service

National Wetlands Inventory

BH Stone Road
Project

May 1, 2012



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

APPENDIX C

US FISH & WILDLIFE SERVICE MAPS

Listed Species for Calhoun County

Critical Habitat Map for Calhoun County

Bald Eagle Nest Locator Search

Coastal Wood Stork Nesting Colonies Map

FEDERAL THREATENED, ENDANGERED,
AND OTHER SPECIES OF CONCERN LIKELY TO OCCUR IN
CALHOUN COUNTY FLORIDA

Compiled by the U.S. Fish and Wildlife Service July 2011

Common Name	Scientific Name	State Status	FWS Status	Natural Communities
FISH:				
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	SSC	T CH	ESTUARINE: various MARINE: various habitats RIVERINE: alluvial and blackwater streams
Bluestripe shiner	<i>Cyprinella callitaenia</i>		ce	RIVERINE: alluvial stream
AMPHIBIANS & REPTILES:				
Reticulated flatwoods salamander	<i>Ambystoma bishopi</i>	SSC	E CH	PALUSTRINE: wet flatwoods, dome swamp, basin swamp, TERRESTRIAL: mesic flatwoods (reproduces in ephemeral wetlands within this community)
Eastern Indigo snake	<i>Drymarchon couperi</i>	T	T	ESTUARINE: tidal swamp PALUSTRINE: hydric hammock, wet flatwoods TERRESTRIAL: mesic flatwoods, upland pine forest, sandhills, scrub, scrubby flatwoods, rockland hammock, ruderal
Coal skink	<i>Eumeces anthracinus</i>		ce	PALUSTRINE: seepage slope, baygall TERRESTRIAL: upland pine forest, upland hardwood forest, mesic flatwoods
Gopher tortoise	<i>Gopherus polyphemus</i>	SSC	ce	TERRESTRIAL: sandhills, scrub, scrubby flatwoods, xeric hammocks, coastal strand, ruderal
Barbour's map turtle	<i>Graptemys barbouri</i>	SSC	ce	PALUSTRINE: floodplain stream, floodplain swamp RIVERINE: alluvial stream
Alligator snapping turtle	<i>Macrochelys temminckii</i>	SSC	ce	ESTUARINE: tidal marsh LACUSTRINE: river floodplain lake, swamp lake RIVERINE: alluvial stream, blackwater stream
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	SSC	ce	LACUSTRINE: ruderal, sandhill upland lake TERRESTRIAL: sandhill, scrubby flatwoods, xeric hammock, ruderal
Suwannee cooter	<i>Pseudemys concinna suwanneensis</i>	SSC		RIVERINE: alluvial stream, blackwater stream, spring-fed stream
Gopher frog	<i>Rana capito</i>	SSC	ce	TERRESTRIAL: sandhill, scrub, scrubby flatwoods, xeric hammock (reproduces in ephemeral wetlands within these communities)
BIRDS:				
Bald eagle	<i>Haliaeetus leucocephalus</i>		BGEPA	ESTUARINE: marsh edges, tidal swamp, open water LACUSTRINE: swamp lakes, edges PALUSTRINE: swamp, floodplain RIVERINE: shoreline, open water TERRESTRIAL: pine and hardwood forests, clearings
Wood stork	<i>Mycteria americana</i>	E	E	ESTUARINE: marshes LACUSTRINE: floodplain lakes, marshes (feeding), various PALUSTRINE: marshes, swamps, various

E=endangered, T=threatened, P=proposed, C=candidate, s/a=similar appearance, SSC=species of special concern, ce=consideration encouraged, CH=Critical Habitat, p=proposed, BGEPA=Bald and Golden eagle protection act

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FEDERAL THREATENED, ENDANGERED,
AND OTHER SPECIES OF CONCERN LIKELY TO OCCUR IN
CALHOUN COUNTY FLORIDA

Compiled by the U.S. Fish and Wildlife Service July 2011

Common Name	Scientific Name	State Status	FWS Status	Natural Communities
Red-cockaded woodpecker	<i>Picoides borealis</i>	SSC	E	TERRESTRIAL: mature pine forests
Limpkin	<i>Aramus guarauna</i>	SSC		LACUSTRINE: various PALUSTRINE: various RIVERINE: various
Little blue heron	<i>Egretta caerulea</i>	SSC		ESTUARINE: marshes, shoreline PALUSTRINE: floodplains, swamps RIVERINE: shoreline
Snowy egret	<i>Egretta thula</i>	SSC		ESTUARINE: marshes, tidal swamps, shoreline LACUSTRINE: lake edges PALUSTRINE: swamp, floodplain, ruderal RIVERINE: shoreline
Tricolored heron	<i>Egretta tricolor</i>	SSC		ESTUARINE: marshes, tidal swamps, shoreline LACUSTRINE: lake edges PALUSTRINE: swamp, floodplain, ruderal RIVERINE: shoreline
Arctic peregrine falcon	<i>Falco peregrinus tundrius</i>	E	ce	ESTUARINE: winters along coasts LACUSTRINE: various PALUSTRINE: various
Southeastern kestrel	<i>Falco sparverius paulus</i>	T	ce	TERRESTRIAL: various, ruderal ESTUARINE: various habitats PALUSTRINE: various habitats TERRESTRIAL: open pine forests, clearings, ruderal, various
Black skimmer	<i>Rynchops niger</i>	SSC		ESTUARINE: various LACUSTRINE: various RIVERINE: various TERRESTRIAL: ocean beaches, beach dune, ruderal. Nests common on rooftops.
MAMMALS:				
Southeastern big-eared bat	<i>Plecotus rafinesquii</i>		ce	PALUSTRINE: various, floodplains TERRESTRIAL: pine and hardwood forests, ruderal, various
Florida black bear	<i>Ursus americanus floridanus</i>	T	ce	PALUSTRINE: titi swamps, floodplains TERRESTRIAL: pine and hardwood forests
INVERTEBRATES:				
Fat threeridge (mussel)	<i>Amblema neislerii</i>		E CH	RIVERINE: main channels of small to large rivers; slow to moderate currents; various substrates (Panhandle watersheds: Apalachicola, Chipola)
Chipola slabshell (mussel)	<i>Elliptio chipolaensis</i>		T CH	RIVERINE: main channel of the Chipola River and its larger tributaries; prefers muddy sand and sandy clay substrates, but also found in silty sand substrates (Panhandle watersheds: Chipola upstream of Dead Lake)
Purple bankclimber (mussel)	<i>Elliptioideus sloatianus</i>		T CH	RIVERINE: small to large rivers in slow to moderate currents over sand, sand mixed with mud, or gravel substrates (Panhandle watersheds: Apalachicola, Ochlockonee)

E=endangered, T=threatened, P=proposed, C=candidate, s/a=similar appearance, SSC=species of special concern, ce=consideration encouraged, CH=Critical Habitat, p=proposed, BGEPA=Bald and Golden eagle protection act

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CALHOUN COUNTY FLORIDA

Compiled by the U.S. Fish and Wildlife Service July 2011

Common Name	Scientific Name	State Status	FWS Status	Natural Communities
Shinyrayed pocketbook (mussel)	<i>Hamiota subangulata</i>		E CH	RIVERINE: medium-sized creeks to mainstem rivers; clean or silty sand substrates, in slow to moderate currents (Panhandle watersheds: Chipola, Ochlockonee upstream of Lake Talquin)
Gulf moccasinshell (mussel)	<i>Medionidus penicillatus</i>		E CH	RIVERINE: medium-sized creeks to large rivers with sand and gravel substrates in slow to moderate currents (Panhandle watersheds: Chipola, Econfina Creek)
Oval pigtoe (mussel)	<i>Pleurobema pyriforme</i>		E CH	RIVERINE: medium-sized creeks to small rivers; various substrates; slow to moderate currents (Panhandle watersheds: Chipola, Econfina Creek, Ochlockonee)
Southern elktoe (mussel)	<i>Alasmidonta triangulata</i>		ce	RIVERINE: medium-sized creeks to large rivers with sandy mud, sand, and gravel substrates in slow to moderate currents (Panhandle watersheds: Chipola, Apalachicola)
Apalachicola floater (mussel)	<i>Anodonta heardi</i>		ce	RIVERINE: floodplain lakes and backwater areas of large rivers in muddy substrates (Panhandle watersheds: Apalachicola)
Rayed creekshell (mussel)	<i>Anodontoides radiatus</i>		ce	RIVERINE: Small to medium sized creeks in substrates of mud, sandy mud, or sand and gravel (Panhandle watersheds: Apalachicola, Chipola, Escambia, Choctawhatchee)
Sculptured pigtoe (mussel)	<i>Quadrula infucata</i>		ce	RIVERINE: small streams to large rivers in sandy, muddy sand, or fine gravel substrates, pools, and rocky areas with swift current, often under debris (Panhandle watersheds: Apalachicola, Chipola)
Downy rainbow (mussel)	<i>Villosa villosa</i>		ce	RIVERINE: small streams to large rivers in sand or muddy sand substrates (Panhandle watersheds: Apalachicola, Chipola, Escambia, Choctawhatchee, Ochlockonee, Suwannee)
PLANTS:				
Harper's beauty	<i>Harperocallis flava</i>	E	E	PALUSTRINE: wet prairie, seepage slope, roadsides, edges of tili swamps
Godfrey's (violet) butterwort	<i>Pinguicula lonantha</i>	E	T	PALUSTRINE: wet flatwoods, wet prairie, bog; in shallow water RIVERINE: seepage slope; in shallow water. Also, roadside ditches and similar habitat.
Gentian pinkroot	<i>Spigelia gentianoides</i>	E	E	TERRESTRIAL: mixed hardwood forest; rich humus
Pine-woods aster	<i>Eurybia spinulosus</i>	E	ce	PALUSTRINE: seepage slope TERRESTRIAL: sandhill, scrubby and mesic flatwoods

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Compiled by the U.S. Fish and Wildlife Service July 2011

Common Name	Scientific Name	State Status	FWS Status	Natural Communities
Apalachicola wild indigo	<i>Baptisia megacarpa</i>	E		PALUSTRINE: floodplain forest TERRESTRIAL: upland mixed forest, slope forest
Buckthorn	<i>Bumelia lycioides</i>	E		PALUSTRINE: bottomland forest, dome swamp, floodplain forest TERRESTRIAL: upland hardwood forest
Baltzell's sedge	<i>Carex baltzellii</i>	T	ce	TERRESTRIAL: slope forest, moist sandy loam; moist sandy loam
Alternate-leaf or pagoda dogwood	<i>Cornus alternifolia</i>	E		PALUSTRINE: creek swamps TERRESTRIAL: slope forest, upland hardwood forest, bluffs
Canada honewort	<i>Cryptotaenia canadensis</i>	E		PALUSTRINE: floodplain forest, bottomland forest RIVERINE: alluvial stream bank
Tropical waxweed	<i>Cuphea aspera</i>		ce	PALUSTRINE: wet prairie, seepage slope TERRESTRIAL: mesic flatwoods
Spoon-leaved sundew	<i>Drosera intermedia</i>	T		LACUSTRINE: sinkhole lake edges PALUSTRINE: seepage slope, wet flatwoods, depression marsh RIVERINE: seepage stream banks, drainage ditches
Dark-headed hatpin	<i>Eriocaulon nigrobacteatum</i>		ce	PALUSTRINE: Wet Boggy Seepage slopes, mucky soils
Wiregrass gentian	<i>Gentiana pennelliana</i>	E	ce	PALUSTRINE: seepage slope, wet prairie, roadside ditches TERRESTRIAL: mesic flatwoods, planted slash pine
Florida anise	<i>Illicium floridanum</i>	T		PALUSTRINE: floodplain forest, baygall RIVERINE: seepage stream bank TERRESTRIAL: slope forest, seepage slope
Mountain laurel	<i>Kalmia latifolia</i>	T		RIVERINE: seepage stream bank TERRESTRIAL: slope forest, seepage stream banks
Southern red lily	<i>Lilium catesbaei</i>	T		PALUSTRINE: wet prairie, wet flatwoods, seepage slope TERRESTRIAL: mesic flatwoods, seepage slope; usually with grasses
West's flax	<i>Linum westii</i>	E	ce	PALUSTRINE: dome swamp, depression marsh, wet flatwoods, wet prairie, pond margins
Curtiss' loosestrife	<i>Lythrum curtissii</i>	E	ce	PALUSTRINE: wet flatwoods edges, floodplain swamp, seepage slope, dome swamp edges TERRESTRIAL: seepage slope
Hummingbird flower	<i>Macranthera flammea</i>	E		PALUSTRINE: seepage slope, dome swamp edges, floodplain swamps RIVERINE: seepage stream banks TERRESTRIAL: seepage slopes
Pyramid magnolia	<i>Magnolia pyramidata</i>	E		TERRESTRIAL: slope forest
Nuphar ulvacea	West Florida cow-lily		ce	
Giant water-dropwort	<i>Oxypolis filiformis greenmanii</i>	E		PALUSTRINE: dome swamp, wet flatwoods, ditches; in water
Eastern ninebark	<i>Physocarpus opulifolius</i>	E		RIVERINE: seepage stream banks

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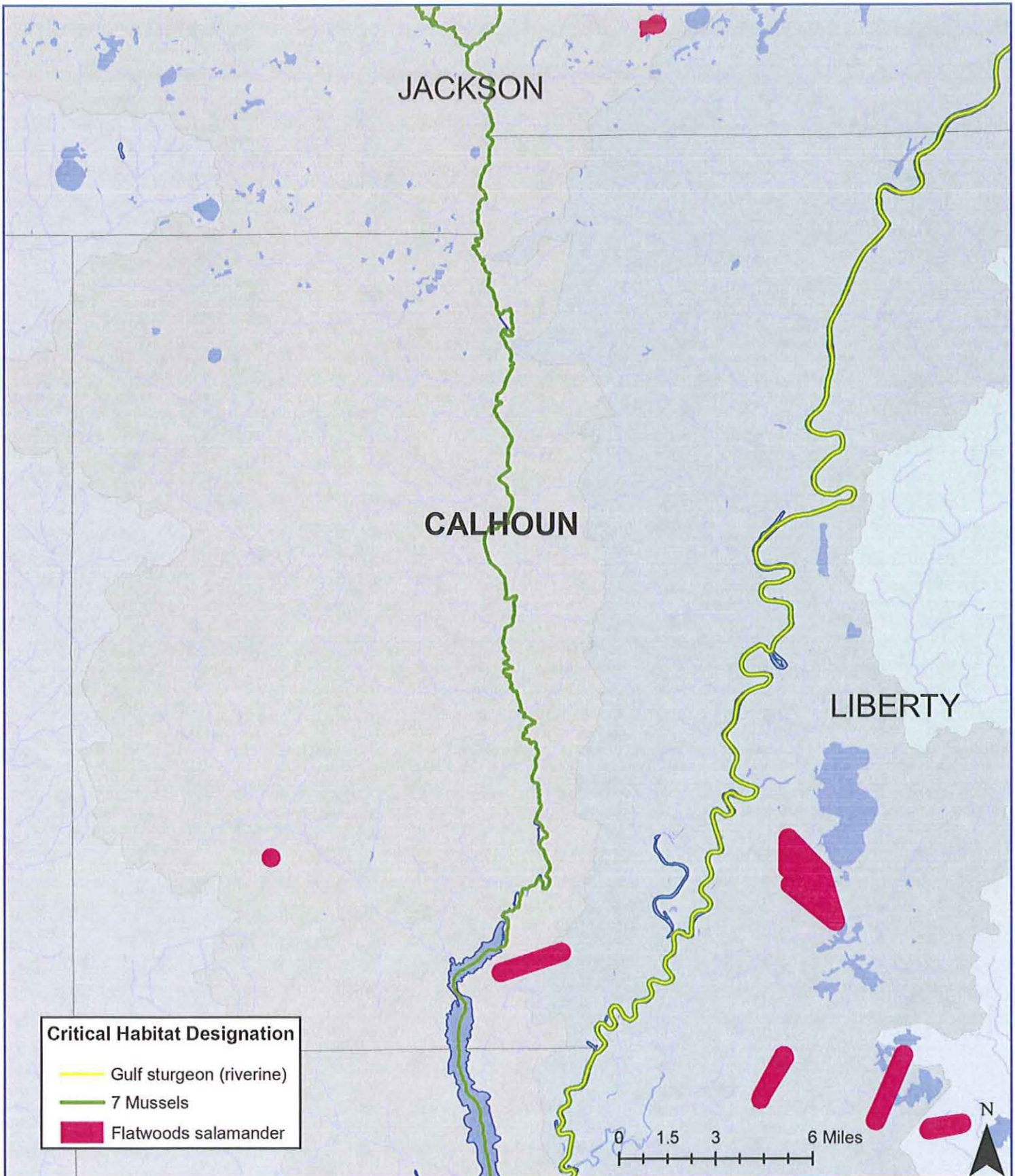
Common Name	Scientific Name	State Status	FWS Status	Natural Communities
Chapman's butterwort	<i>Pinguicula planifolia</i>	T	ce	PALUSTRINE: wet flatwoods, seepage slopes, bog, dome swamp, ditches; in water
Yellow fringed orchid	<i>Platanthera ciliaris</i>	T		PALUSTRINE: bogs, wet flatwoods TERRESTRIAL: Bluff
Yellow fringeless orchid	<i>Platanthera integra</i>	E	ce	PALUSTRINE: wet prairie, seepage slope TERRESTRIAL: mesic flatwoods
Snowy orchid	<i>Platanthera nivea</i>	T		PALUSTRINE: bogs
Meadowbeauty	<i>Rhexia parviflora</i>	E	ce	PALUSTRINE: dome swamp margin, seepage slope, depression marsh; on slopes; with hypericum
Panhandle Meadowbeauty	<i>Rhexia salicifolia</i>		ce	
Orange azalea	<i>Rhododendron austrinum</i>	E		PALUSTRINE: bottomland forest RIVERINE: seepage stream bank TERRESTRIAL: slope forest, upland mixed forest
White-top pitcher plant	<i>Sarracenia leucophylla</i>	E	ce	PALUSTRINE: wet prairie, seepage slope, baygall edges, ditches
Parrot pitcher plant	<i>Sarracenia psittacina</i>	T		PALUSTRINE: wet flatwoods, wet prairie, seepage slope
Decumbant pitcher plant	<i>Sarracenia purpurea</i>	T		PALUSTRINE: Bogs
Silky camellia	<i>Stewartia malacodendron</i>	E		PALUSTRINE: baygall PALUSTRINE: slope forest, upland mixed forest, TERRESTRIAL: slope forest, upland mixed forest; acid soils
Chapman's crownbeard	<i>Verbesina chapmanii</i>	T	ce	PALUSTRINE: seepage slope TERRESTRIAL: mesic flatwoods with wiregrass (<i>Aristida stricta</i>)
Harper's yellow-eyed grass	<i>Xyris scabrifolia</i>	T	ce	PALUSTRINE: seepage slope, wet prairie, bogs

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Critical Habitat for Calhoun County, Florida



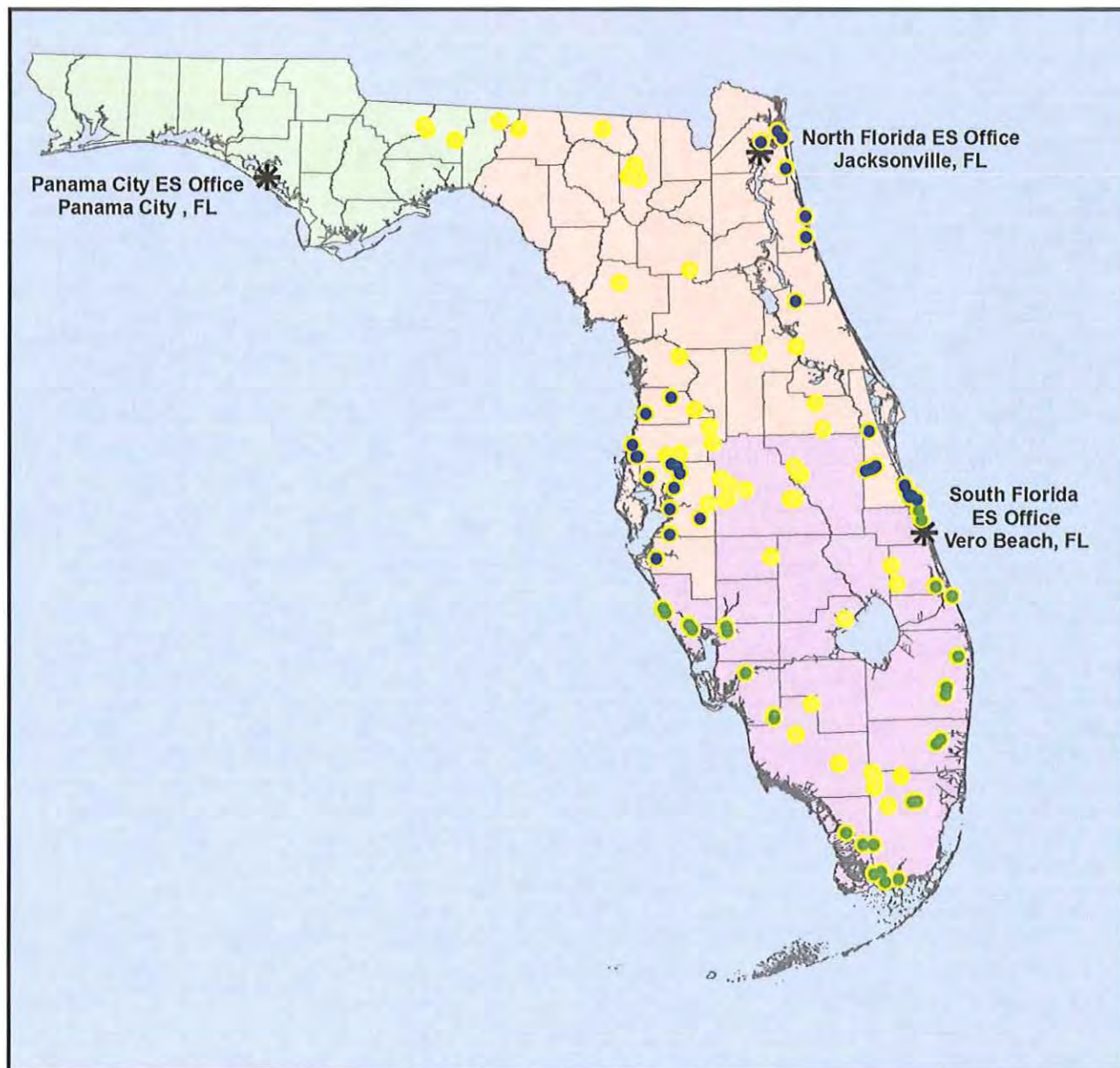
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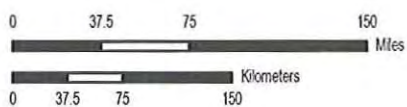
0 record(s) were found; 0 record(s) are shown
(see disclaimer that follows)



This report was generated using the Florida Fish and Wildlife Conservation Commission's (FWC) eagle nest locator web site, which can be found at <https://public.myfwc.com/FWRI/EagleNests/nestlocator.aspx>. The data displayed reflect all known FWC documented eagle nesting territories that fall within the search criteria specified at the top of the page. Search results reflect the activity status observed by FWC and are current through spring 2011. Nest locations were determined with the use of aircraft-based Global Positioning System (GPS) units. The accuracy of the locations is estimated to be within one-tenth of a mile of the true location. Locations are given in longitude and latitude to one-hundredth of a minute and stored and displayed in NAD83 datum, a latitude and longitude coordinate system. Township, range, and section were determined from the Public Land Survey System grid that includes Land Grant parcels. The 'Last Known Active' column denotes the year in which the nest was last observed to be active. The 'Last Surveyed' column denotes the most recent year that the territory was surveyed. For search results containing nest history information, 'Y' denotes an active nest, 'N' denotes an inactive nest, 'U' denotes a nest that was visited but status was undetermined, '-' denotes an unobserved nest, and '*' denotes a nest that was not surveyed. Nest activity histories are provided for the last five nesting seasons. Not all eagle nests in Florida have been documented by the FWC. Non-documented nests receive the same level of protection as FWC documented nests.



- Florida Wood Stork Nesting Colonies
- Colonies Within 15 Miles of Coast
- Colonies Within 18 Miles of Coast
- Ecological Services Office Areas of Responsibility**
 - Panama City Ecological Services Office
 - North Florida Ecological Services Office
 - South Florida Ecological Services Office



APPENDIX D

FNAI ECOLOGICAL COMMUNITY DESCRIPTIONS UNIFORM MITIGATION ASSESSMENT (UMAM)

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Calhoun Co, / BH Stone Road Drainage Improvements		Application Number WMD Application No. 1804	Assessment Area Name or Number Onsite wetlands
FLUCCs code 617 -Mixed Wetland Hardwood	Further classification (optional) None	Impact or Mitigation Site? Impact	Assessment Area Size 0.49 acres
Basin/Watershed Name/Number Apalachicola Watershed / 03130011	Affected Waterbody (Class) Cypress Creek - Dead Lakes (Class III)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands wetlands are adjacent to Cypress Creek a water of the State / United States, which drains to the Dead Lakes and the Chipola River.			
Assessment area description See attached FLUCCS Description			
Significant nearby features None		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not Unique	
Functions See attached FLUCCS Description		Mitigation for previous permit/other historic use None	
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) See attached FLUCCS Description		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) None	
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): 			
Additional relevant factors: 			
Assessment conducted by: Bethany Womack		Assessment date(s): 4/30/2012	

617 Mixed Wetland Hardwoods

FLUCCS Description

This classification is reserved for those wetland hardwood communities which are composed of a large variety of hardwood species tolerant of hydric conditions.

Mixed Wetland Hardwoods (synonyms: Swamp Forests, Wetland Hardwood Hammocks, Freshwater Swamp Forests, Mixed Hardwood Swamps, Bottomland Forests, Stillwaters, Basin or Depression Wetlands) - Found in large and irregularly shaped basins not associated with rivers (refer to FLUCCS code 616 Inland Ponds and Sloughs), as well as within river floodplains (refer to FLUCCS code 615 Stream and Lake Swamp (Bottomland)).

Vegetation: Commonly composed of species such as *Acer rubrum* (red maple), *Annona glabra* (pond apple), *Carya* spp. (hickory), *Craetagus* spp. (hawthorns), *Ficus aurea* (strangler fig), *Fraxinus caroliniana* (Carolina ash), *Hamamelis virginiana* (witch hazel), *Ilex cassine* (dahoon holly), *Juniperus virginiana* (red cedar), *Liquidambar styraciflua* (sweet gum), *Magnolia virginiana* (sweet bay), *Myrsine guianensis* (myrsine), *Nyssa aquatica* (water tupelo), *N. sylvatica* (swamp tupelo or blackgum), *Persea palustris* (swamp bay), *Pinus* spp. (pines), *Quercus laurifolia* (diamond-leaf oak), *Q. nigra* (water oak), *Roystonea regia* (royal palm), *Sabal palmetto* (cabbage palm), and *Taxodium distichum* (bald cypress). Other plants may include *Carpinus caroliniana* (American hornbeam), *Celtis* spp. (hackberry), *Magnolia grandiflora* (southern magnolia), *Myrica cerifera* (wax myrtle), *Osmunda cinnamomea* (cinnamon fern), *O. regalis* (royal fern), *Quercus michauxii* (swamp chestnut oak), *Rhaphidophyllum hystrix* (needle palm), *Sabal minor* (bluestem palmetto), *Serenoa repens* (saw palmetto), *Toxicodendron radicans* (poison ivy), and *Ulmus americana* var. *floridana* (Florida elm).

Wildlife:

Mammals - *Lynx rufus* (bobcat), *Neotoma floridana* (wood rat), *Odocoileus virginianus* (white-tailed deer), *Oryzomys palustris* (rice rats), *Sciurus carolinensis* (gray squirrel), raccoon (*Procyon lotor*), and *Ursus americanus floridanus* (black bear)^T. *Puma concolor coryi* (Florida panther)^E may also be found in this wetland habitat.

Birds - hawks (ex. *Buteo jamaicensis* - red-tailed hawk), herons (ex. *Egretta caerulea* - little blue heron), woodpeckers (ex. *Picoides pubescens* - downy woodpecker, *Dryocopus pileatus* - pileated woodpecker), *Aix sponsa* (wood duck), *Elanoides forficatus* (swallow-tailed kite), *Ictinia mississippiensis* (Mississippi kite), *Limnithlypis swainsonii* (Swainson's warblers), *Meleagris gallopavo* (wild turkey), *Mycteria americana* (wood stork)^E, *Protonotaria citrea* (prothonotary warblers), and *Strix varia* (barred owl).

Herpetofauna - *Acris gryllus* (southern cricket frog), *Agkistrodon piscivorus* (cottonmouth snake), *Alligator mississippiensis*^{SCC} (alligator), *Ambystoma opacum* (marbled salamander), *Ambystoma talpoideum* (mole salamander), *Anolis carolinensis* (green anole), *Desmognathus auriculatus* (southern dusky salamander), *Diadophis punctatus* (ring-necked snake), *Eumeces inexpectatus* (southeastern five-lined skink), *Eurycea longicauda guttolineata* (three-lined salamander), *Plethodon glutinosus* (slimy salamander), and *Regina* sp. (crayfish snake).

Landscape Location: Occur on low, flat, wet sites in a variety of lowland situations such as in depressional basins (refer to FLUCCS code 616 Inland Ponds and Sloughs) or within river floodplains (refer to FLUCCS code 615 Stream and Lake Swamp (Bottomland)). Shallow lakes with fluctuating water levels may be ringed by cypress trees, grading into mixed hardwoods around the landward edge.

Soils: Seasonally flooded organic soils with organic matter accumulation of greater than 1 meter.

Fire Interval: Low fire frequencies of approximately one fire per century. Mixed wetland hardwoods regenerate readily in stands protected from fire in South Florida, displacing cypress from dominance in such areas.

Hydrology: The hydroperiod is moderate ranging from 6-9 months. The main water source in these wetlands may be shallow, acid, groundwater or bodies of water such as rivers, lakes, streams or creeks. These communities tend to have a deep, fairly permanent pool of water. The maintenance of natural hydrologic regimes is important to the health of these wetlands. The species composition and functional relationships within the wetland would be negatively impacted by hydrological alterations such as artificial impoundments, river diversion projects, pesticide use, forest clearcutting, or intensive agriculture.

Functions:

- Provide permanent water pools for wildlife while improving water quality and controlling quantity.
- Structural and species diversity within canopy layer supports one of the most productive and diverse habitats.
- Support recreational activities including hunting, hiking, and nature study.

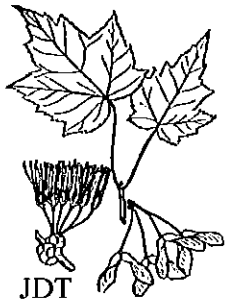
^EListed as Endangered by Florida Fish and Wildlife Conservation Commission

^TListed as Threatened by Florida Fish and Wildlife Conservation Commission

^{SCC}Listed as Species of Special Concern by Florida Fish and Wildlife Conservation Commission

Main Sources:

1. Florida Fish and Wildlife Conservation Commission. 2004. Florida's Endangered Species, Threatened Species, And Species of Special Concern. Last accessed 7/10/04. Found at: <http://wildflorida.org/imperiled/pdf/Endangered-Threatened-Special-Concern-2004.pdf>
2. Florida Natural Areas Inventory and Department of Natural Resources. 1990. Guide to Natural Communities of Florida. Last accessed 2/04. Found at: http://www.fnai.org/PDF/Natural_Communities_Guide.pdf
3. Myers, R.L and J.J. Ewel, eds. 1990. Ecosystems of Florida. University of Central Florida Press, Orlando, USA.
4. Soil Conservation Service. 1984. 26 Ecological Communities of Florida. United States Department of Agriculture, Washington, D.C., USA.



Red Maple

Acer rubrum

FACW- Opposite simple leaves, deciduous, palmately 3-5 lobed with acute sinuses. Petioles red or reddish-green



Diamond-Leaf Oak

Quercus laurifolia

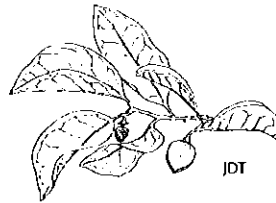
FACW- Tardily deciduous tree, alternate leaves, some diamond shaped, with tufts of short hairs in main vein axils on lower surface of mature leaves.



Swamp bay

Persea palustris

OBL-Evergreen tree or large shrub; simple alternate leaves, aromatic when crushed and often having many insect galls; underside of leaves with shaggy pubescent, more apparent along midrib and major lateral veins.



Pond Apple

Ammonia glabra

OBL - Densely branched shrub or small tree up to 6m tall, upwardly buttressed trunk with dark reddish-brown bark. Reflexed, evergreen leaves, cream-white to pale yellow flowers with thick petals, large, fleshy, egg or heart shaped fruit.



Water Tupelo

Nyssa aquatica

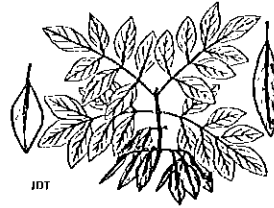
OBL-Tree up to 30m tall with swollen buttressed base, large, deciduous, alternate, simple leaves with a few large teeth on margin and long petioles, blue drupe fruit on a long stalk.



Southern magnolia

Magnolia grandiflora

FAC*-Large, broad-leaved evergreen tree 18-27 m; trunk up to 1 m diameter, typically straight and erect with spreading branches that form a dense, broadly pyramidal crown; large leaves 13-20 cm long, leathery and dark glossy green above with rusty, velvety undersides; large, showy white flowers.



Carolina Ash

Fraxinus caroliniana

OBL - Tree up to 12m tall, opposite, pinnately compound leaves, twigs flattened at the nodes, fruit is a flat, diamond-shaped, winged samara.



Dahoon Holly

Ilex cassine

OBL-Evergreen shrub, smooth gray bark, alternate leathery leaves of variable shape and entire margins, often with few short spines, bright red to



Swamp Tupelo

Nyssa sylvatica

OBL-Large tree, often with buttressed trunk and swollen base; leaves alternate, simple, 2-5" long, 1-3" broad, mostly obovate and oval, margin entire, dark green and lustrous above, paler with silky hairs on lower surface, often purple spotted by late summer or fall.



Pond Cypress

Taxodium ascendens

OBL-Deciduous coniferous canopy tree with alternate, spirally arranged, narrowly linear "needle-like" leaves, appressed to branchlets; base of the trunk is often swollen and buttressed, knees often present.



American hornbeam

Carpinus caroliniana

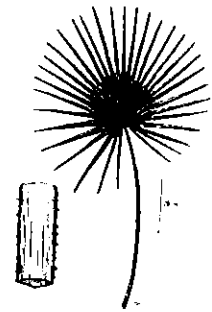
FACW-Small tree with fluted trunk ("flexed muscle"); bark gray, smoothish and thin; alternate leaves with parallel veins, doubly serrate margins, rough upper surface.



Sweet gum, Red gum

Liquidambar styraciflua

FACW-Deciduous canopy tree to 37 m tall; alternate, star-shaped palmately veined leaves with 5 (rarely 7) pointed lobes, margins toothed; hard, spiny, round fruit capsule; thick, stiff branches, twigs with corky wings/warts; gray bark deeply vertically furrowed.



Saw palmetto

Serenoa repens

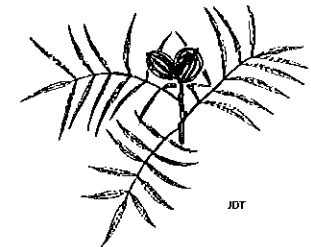
FACU*-Small fan palm growing in clumps often 6m or more wide, main stem usually underground; palmate leaves 0.6-0.9 m across attached by sharply saw-toothed petioles (~0.6 m long).



Sweetbay

Magnolia virginiana

OBL-Evergreen tree, alternate leathery leaves, light gray or silvery-white underneath; bark smooth and light gray; fragrant showy flowers in spring.



Water Hickory

Carya aquatica

OBL - thin, compound leaves, 7 to 17 slender scythe shaped leaflets, coarsely toothed on the margin, dark green above and brownish and hairy along the veins beneath. Fruit usually clustered, one and one-quarter inches long, angled and compressed.

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Calhoun Co. / BH Stone Road	Application Number WMD Application No. 1804	Assessment Area Name or Number Impact Area
Impact or Mitigation Impact 0.49 acres	Assessment conducted by: Bethany Womack	Assessment date: 4/30/2012

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current with 8 0	Please see Section 4.6 of the Environmental Site Assessment
.500(6)(b) Water Environment (n/a for uplands) w/o pres or current with 9 0	Please see Section 4.6 of the Environmental Site Assessment
.500(6)(c) Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 7 0	Please see Section 4.6 of the Environmental Site Assessment

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.633	0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.6 x 0.49 acres = 0.392

Delta = [with-current]
0.8

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =