FANNIN BAYOU-WARREN BAYOU CONSERVATION UNIT

Ecological Resource Consultants, Inc.

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I. GENERAL DESCRIPTION OF CONSERVATION UNIT

The Fannin Bayou-Warren Bayou Conservation Unit (CU) is a 2,113 (+/-) acre area divided into two sections. This CU borders the northern, northeastern and eastern shorelines of West Bay in Sections 1, 2, 11 and 12 of Township 3 South, Range 15 West; Sections 12, 13, 23, 24, and 25 of Township 2 South, Range 16 West; and Sections 19-22, 29 and 30 Township 2 South, Range 15 West in Bay County, Florida (see Figure 1: General Location Map). The 2,113 total acres are broken into 553 acres of Type 1 CU and 1,560 acres of Type 2 CU. The wetlands in this area are dominated by tidal marsh and tidal flats, which rely on the freshwater influx from upstream as well as the marine waters in West Bay, and are fringed by 26,962 feet of estuarine shoreline.

The land cover of the Fannin Bayou-Warren Bayou CU is dominated by coniferous plantation (40%), forest regeneration areas (24%), and salt marsh (7%). There are also small inclusions of wetland forested hardwood, upland pine, wetland pinelands, wetland shrub, tidal flats, upland coniferous forest, and mixed coniferous hardwood. The National Wetland Inventory (NWI) identifies 59% of the CU as palustrine wetlands, 9% as estuarine wetlands, less than 1% as water, and the remainder as uplands (32%), which is slightly different than the wetland coverage based on the soil types. Based on soil types the CU is comprised of 79% wetland and 21% uplands. The majority of the uplands and a quarter of the wetlands are currently planted with slash pine (*Pinus elliottii*).

The wetlands within the Fannin Bayou-Warren Bayou CU are comprised of Basin Swamps and Seepage Slopes/Wet Prairies that drained into Tidal Marshes and Tidal Creeks. This CU also has upland areas that are classified as Mesic Flatwoods. Groundwater seeps from the Mesic Flatwoods through the wetlands and into the Tidal Marshes and Tidal Creeks. Many of these plant communities have been replaced by pine plantations or have been become fire suppressed; however, these areas currently provide forestry resources and habitat for wildlife. Once these areas are placed into a conservation easement, they can potentially be restored to their historical plant communities. These plant communities provide habitat for State and Federal listed flora and fauna. There are documented threatened species within 1 mile of this site (FLEO, 2009). Table 1 provides a list of species that would be expected to use these habitats.

II. REGIONAL SIGNIFICANCE

The Fannin Bayou-Warren Bayou CU protects both uplands and wetlands that are directly adjacent to West Bay and will therefore provide an essential buffer to West Bay, especially when combined with the Burnt Mill Creek-Doyle Bayou CU and the Bay County International Airport mitigation site, which are adjacent. Conserving this CU will contribute to sustained water quality and water quantity treatment for Burnt Mill Creek, West Bay, and ultimately, St. Andrews Bay.

The Fannin Bayou-Warren Bayou CU consists of 26,962 feet of shoreline within estuarine habitats. It is essential to protect this shoreline to maintain ecological productivity.

The Fannin Bayou-Warren Bayou CU is identified as a priority Strategic Habitat Conservation Area (SHCA) by the Florida Fish and Wildlife Conservation Commission (FFWCC) (Endries et al., 2008). Further, this CU is ranked as a priority area by FFWCC based on their Integrated Habitat Ranking System (IHRS) (FFWCC, 2008) These rankings take into consideration the types of habitat and the species likely to use these habitats. Due to the landscape-scale conversion of this CU to pine plantation, the historical habitats are listed on FNAI's list of underrepresented plant communities (FNAI, 2009).

This CU is vital to water quality treatment and storage, habitat conservation, and species conservation. This CU is directly adjacent to the Burnt Mill Creek-Doyle Bayou CU and airport mitigation land.

III. BIODIVERSITY

The habitats within the Fannin Bayou-Warren Bayou CU are a landscape of herbaceous and forested wetlands and uplands. The Wet Prairie/Seepage Slope component has a dense herbaceous layer, while the Basin Swamps contain the majority of their diversity in the canopy and subcanopy strata. The Basin Swamps grade into Tidal Marshes that surround Tidal Creeks. Groundwater seeps through these systems from the surrounding Mesic Flatwoods. In the current condition, the existing pine plantations have altered the plant communities and wildlife composition. Although these landscapes are planted in pine, they have retained physical characteristics that would allow for restoration to their historical plant communities.

The areas directly adjacent to the bay are dominated by Tidal Marshes and Tidal Flats which contain typical estuarine plant species including *Juncus roemerianus*, *Spartina alterniflora*, *Spartina patens*, and *Scirpus* spp. These areas are currently very similar to the historical conditions.

The Fannin Bayou-Warren Bayou CU has been documented to overlap with the potential habitat of at least eight wildlife species resulting in a species richness index of 8 (FFWCC, 2008). This CU has also been ranked as a SHCA by FFWCC due to the potential to protect imperiled species (Endries et al., 2008). Additionally, this CU has been ranked as a priority under the IHRS (FFWCC, 2008) due to an analysis of various factors affecting the ecological significance of land areas including species richness, listed species locations, and SHCA.

No threatened species have been documented within the CU and a portion of the CU is

documented as potential habitat for the indigo snake. Bald eagle (*Haliaeetus leucocephalus*) has been documented within one mile of the CU (FNAI, 2009). Further, there are 41 plants and 9 animals identified in Bay County as Threatened or Endangered Species that could potentially occur in this CU. Conserving these areas will help to maintain habitat for listed species in the region. Table 1 provides a list of species that may be expected to use these areas if the planted pine areas are restored to their historical plant communities.

IV. WATER QUALITY

The Fannin Bayou-Warren Bayou CU is adjacent to large parcels of airport mitigation lands within the West Bay watershed. This CU is comprised of 38% of the Fannin Bayou-Warren Bayou Hydrologic Unit Code 12 drainage area within the GPEMA2 area; therefore, the preservation of this CU will provide significant protection compared to other watersheds that have experienced heightened development pressures. This large preservation area will provide an essential buffer to the bay and ensure that the airport mitigation lands and tidal areas are protected.

Fannin Bayou-Warren Bayou is not listed on either the 305(b) or 303(d) list of impaired waters (FDEP, 2008). There are currently no known point sources in the watershed and non-point sources are limited to forestry roads. Conserving lands within the CU will help to maintain a restored buffer around the mouth of Burnt Mill Creek, Alligator Bayou, Warren Bayou, Fannin Bayou, and the tidal marshes that fringe the West Bay shoreline. The CU protects 26,962 feet of estuarine shoreline and maintaining this buffer in a natural condition will ensure water quality protection and will reduce future impairment from point and non-point sources

The habitats within the Fannin Bayou-Warren Bayou CU are shallow Wet Prairie/Seepage Slopes that graded into Basin Swamps and then eventually into Tidal Marshes and Tidal Creeks. Seepage through these systems comes from the adjacent Mesic Pine Flatwoods and significantly contributes to surface water inflows to West Bay. These habitats have experienced minor alterations from being planted in pine; however, they still provide valuable water input, water filtration, and water storage function.

This CU has been identified by FNAI as a significant surface water priority (FNAI, 2009) primarily due to the support it provides to coastal surface waters. Fannin Bayou-Warren Bayou provides a significant portion of the recharge and shoreline protection for West Bay. West Bay is a Class II Waterbody that supports extensive Tidal Marsh and seagrass beds. Preserving the lands surrounding Fannin Bayou-Warren Bayou will help to maintain the brackish shallow water estuaries.

IV. ESSENTIAL FISH HABITAT AND MARINE RESOURCES

Land areas within Fannin Bayou-Warren Bayou subwatershed drain into Tidal Creeks associated with Burnt Mill Creek, Alligator Bayou, Fannin Bayou, and eventually West Bay. West Bay is classified as Class II waters. The majority of West Bay is conditionally approved for shellfish harvesting with some areas classified as prohibited for shellfish harvesting. West Bay and St. Andrews Bay are not classified as Essential Fish Habitat but seagrasses in both West Bay and St. Andrews Bay provide resources for fish and a variety of non-game species. As mentioned above, preserving this CU will contribute to water quality protection both at the headwaters and further downstream, which will help maintain the downstream aquatic resources.