

CROOKED CREEK – WEST BAY CONSERVATION UNIT

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I. GENERAL DESCRIPTION OF CONSERVATION UNIT

The Crooked Creek - West Bay Conservation Unit (CU) is a 4,591 (+/-) acre tract located north and northwest of West Bay in Sections 6 and 7 of Township 2 South, Range 15 West and Sections 1, 2, 10-16, and 21-26, Township 2 South, Range 16 West in Bay County, Florida (see Figure 1: General Location Map). The 4,591 total acres are broken into 2,734 acres of Type 1 CU and 1,855 acres of Type 2 CU. Crooked Creek is a major tributary to West Bay and approximately 12,575 acres of its drainage area is located within the GPEMA2 area. The wetlands in this CU are dominated by blackwater seepage, which is recharged from the adjacent Sandhills. Since Crooked Creek and its tributaries provide a significant amount of input to West Bay, the CU is vital to the protection of both the Crooked Creek Watershed and West Bay as it protects 43,326 feet of shoreline.

The land cover of the Crooked Creek - West Bay CU is dominated by wetland forested mixed (33%), coniferous plantation (40%), and forest regeneration areas (14%). There are also small inclusions of upland mixed coniferous and hardwood forest, salt marsh, floodplain marsh, wetland coniferous forest, wet prairie, wetland scrub shrub, upland coniferous forest, stream, lakes, tidal flats, residential, shrub brush, and utility. The National Wetland Inventory identifies 63% of the CU as palustrine wetlands, 1% as estuarine wetlands, less than 1% as water, and the remainder as uplands (35%), which is slightly different than the coverage based on the soil types. Based on soil types the CU is comprised of 78% wetlands and 22% uplands. The majority of the uplands and a quarter of the wetlands are currently planted with slash pine (*Pinus elliottii*).

The wetlands within the Crooked Creek - West Bay CU are comprised of Basin Swamps, Baygalls, Floodplain Forests, Seepage Slopes/Wet Prairies. These wetlands grade into the open water Blackwater Streams. Uplands are comprised of Sandhills and Mesic Pine Flatwoods. Portions of these natural ecosystems have been replaced by pine plantations; however, these areas currently provide forestry resources and habitat for wildlife.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 Federally listed flora and fauna. There are documented threatened species within the CU and 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 Crooked Creek - West Bay CU protects both uplands and wetlands that are important for recharge within the Crooked Creek watershed and West Bay. This CU protects the significant portion of Crooked Creek's main channel and smaller creeks that flow into Crooked Creek. Crooked Creek drains to the south directly into West Bay. Conserving this unit to its natural conditions will provide significant protection and

buffering to Crooked Creek and its tributaries, which are all major tributaries of West Bay.

The Crooked Creek – West Bay CU consists of 43,326 feet of shoreline within estuarine and freshwater habitats. The estuarine shoreline length is 14,406 feet, while the freshwater shoreline is 28,920 feet. It is essential to protect these shorelines to maintain ecological productivity.

The Crooked Creek - West Bay CU is identified as a Strategic Habitat Conservation Priority 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 within the CU, Wet Prairies and Pine Flatwoods, 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. Further, this CU protects the majority of the length of Crooked Creek, which is one of the largest tributaries of West Bay.

III. BIODIVERSITY

The habitats within the Crooked Creek - West Bay CU consist of herbaceous and forested wetlands and uplands. The Wet Prairie/Seepage Slope component has an herbaceous layer; while the Basin Swamps and Baygalls contain their diversity in the canopy, subcanopy, and shrub strata. The Basin Swamps and Baygalls grade into Floodplain Forests that surround Blackwater Streams. Groundwater seeps through these systems from surrounding Sandhills and 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 Crooked Creek - West Bay CU has been documented to overlap with the potential habitat of at least ten wildlife species resulting in a species richness index of 10 (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.

Verbesina chapmanii, *Asclepias viridula*, *Macranthera flammaea*, and *Drosera intermedia* have been documented within the CU and a portion of the CU is documented as

potential habitat for the indigo snake and flatwoods salamander. *Gopherus polyphemus*, *Gentiana pennelliana*, and *Xyris isoetifolia* have 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. Due to the likelihood of occurrence of species and documented species, portions of this CU are ranked by FNAI as a Rare Species Habitat Conservation Priority (FNAI, 2009). 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 Crooked Creek - West Bay CU is located within the West Bay subwatershed of the St. Andrews Bay watershed. Crooked Creek flows directly into West Bay. The CU is comprised of 37% of the Crooked Creek - West Bay Hydrologic Unit Code 12 drainage area within the GPEMA2 area; therefore, the preservation of this CU will provide significant protection to both Crooked Creek and West Bay. Further, this CU is located in both the main stem of Crooked Creek and within its headwaters which will ensure that the creek is protected at its source and along its drainage course.

Crooked Creek is not listed on either the 305(b) or 303(d) list of impaired waters. There are currently no known point sources in the watershed and non-point sources are limited to forestry roads and residential development. Conserving lands within the CU will help to maintain a restored buffer around Crooked Creek and its headwaters. This CU protects 14,406 feet of estuarine and 28,920 feet of freshwater shorelines. Maintaining this buffer in a natural condition will ensure water quality protection and will reduce future impairment from point and non-point sources

The wetland habitats within the Crooked Creek - West Bay CU are shallow Wet Prairie/Seepage Slopes that grade into Basin Swamps and Baygalls and then eventually into Blackwater Streams. The Blackwater Streams flow into Tidal Creeks and are eventually discharged directly into West Bay. Seepage through these systems comes from the adjacent Sandhills and Mesic Pine Flatwoods and significantly contributes to surface water inflows to both Crooked Creek and 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. Crooked Creek provides a large portion of the recharge for West Bay. West Bay is a Class II Waterbody that supports extensive Tidal Marsh and seagrass beds. Preserving the lands surrounding Crooked Creek will help to maintain the brackish shallow water estuaries.

IV. ESSENTIAL FISH HABITAT AND MARINE RESOURCES

Land areas within Crooked Creek - West Bay subwatershed drain into Blackwater Streams that flow into Tidal Creeks associated with Crooked Creek 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.