



Map 2-D Navarre Beach Digital Ortho-Photography Map

Legend

 Navarre Beach Boundary



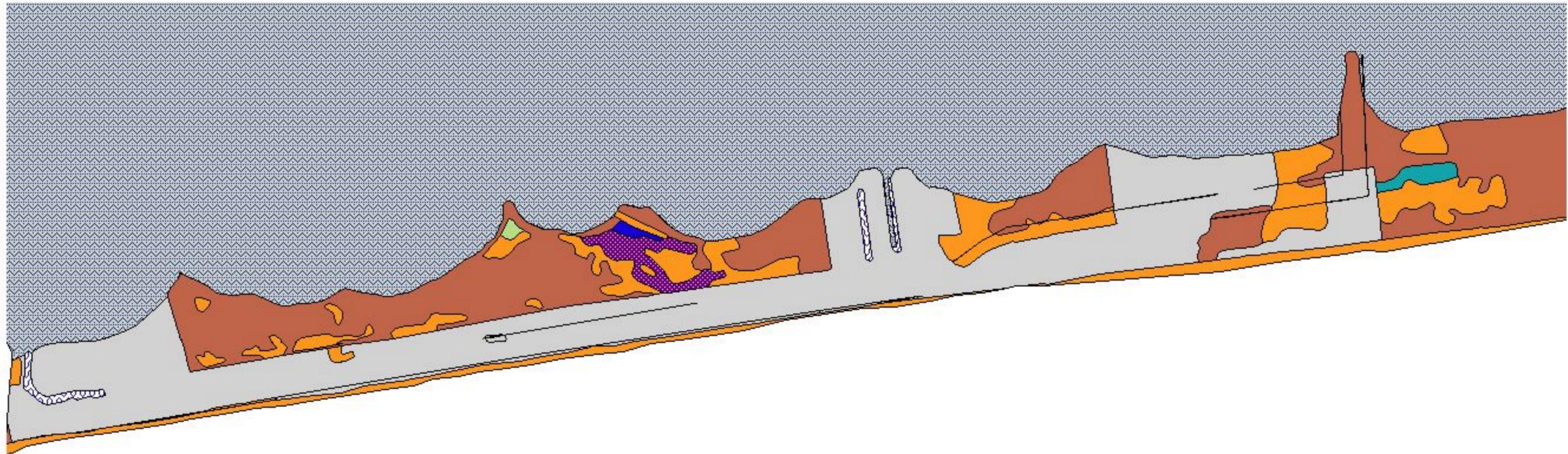
0.2 0 0.2 0.4 0.6 0.8 1 Miles



Community Planning, Zoning
and
Development Division
September, 2001

Map 2-E

Navarre Beach Northwest Florida Water Management District Wetlands Data Map

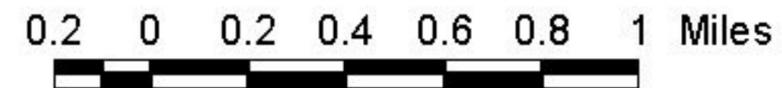


Legend

NWFL Water Management District

-  Embayment not Opening into Gulf
-  Beaches or Coastal Scrub
-  Burned or Forest Regeneration Areas
-  Lakes or Inland Ponds
-  Wetlands
-  Riverine Sandbars, Saltwater Marshes or Reservoirs
-  Embayments Opening into the Gulf
-  Streams, Tidal Flats and Waterways
-  Disturbed or Other Unclassified Land

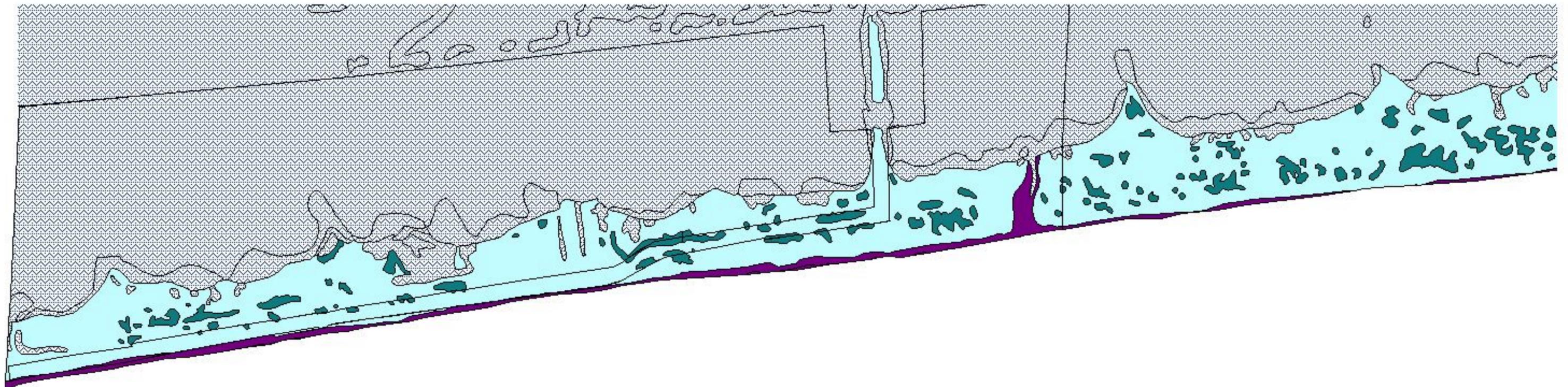
Geographic Data, Research and Analysis
 Provided by
 University of West Florida
 July 20, 2001



Community Planning, Zoning
 and
 Development Division
 September, 2001

Map 2-F

Navarre Beach National Wetlands Inventory Map



Legend

National Wetlands Inventory

-  Estuarine
-  Lacustrine
-  Marine
-  Palustrine
-  Riverine
-  Uplands
-  No Data

Geographic Data, Research and Analysis
Provided by
University of West Florida
July 20, 2001



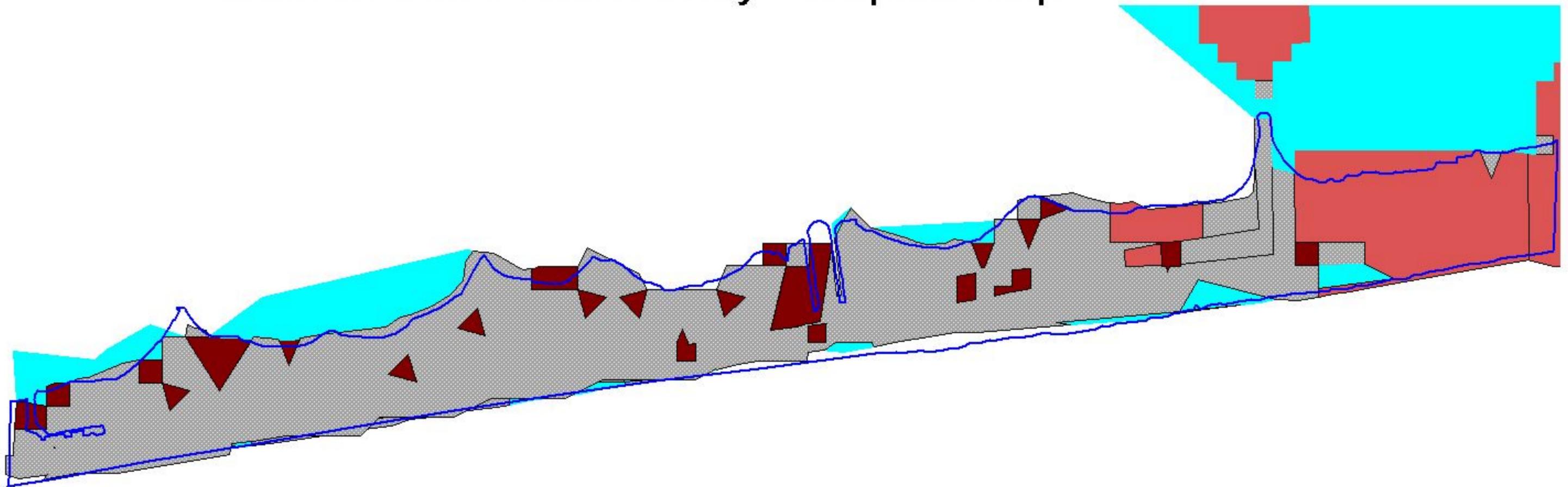
0.2 0 0.2 0.4 0.6 0.8 1 Miles



SANTA ROSA COUNTY
FLORIDA
Community Planning, Zoning
and
Development Division
September, 2001

Map 2-G

Navarre Beach Biodiversity Hotspots Map



Legend

- Navarre Beach Boundary
- Biodiversity Hotspots
 - 3-4 FOCAL SPECIES
 - 5-6 FOCAL SPECIES
 - 7 OR MORE FOCAL SPECIES
- BACKGROUND
- OPEN WATER
- SPECIES OCCURRENCE RECORD

Geographic Data, Research and Analysis
Provided by
University of West Florida
July 20, 2001



0.2 0 0.2 0.4 0.6 0.8 1 Miles



Community Planning, Zoning
and
Development Division
September, 2001

Subsection 2.F.1: Adjacent Waters

The Gulf of Mexico and Santa Rosa Sound water bodies are arguably the single most important natural resource in the Navarre Beach area. These waters draw tourist worldwide and support the economic development of the area. These waters provide nursery habitats for many commercially important fish species. To maintain the economic vitality of Navarre Beach, protection of water quality, access, and public safety are critical.

The Gulf of Mexico is a large, open body of water with little or no sources of pollution from the Navarre Beach area. The beach face and primary dune serve as an excellent buffer from domestic sources.

Santa Rosa Sound at Navarre Beach is a narrow water body and has both Class II and Class III water designations with the State. Class II designation is given to waters that are presently utilized and the most beneficial future use is for shellfish propagation or harvesting (ref. Section 62-302.550, Florida Administrative Code). Class III designation is given to waters used for recreation, propagation and maintenance of a healthy, well balanced population of fish and wildlife (ref. Section 62-302.560, Florida Administrative Code) The Class III water classification results from the existing sewage treatment plant discharge west of the Navarre bridge to Channel Marker 106. As noted in previously, the County is investigating alternative effluent disposal methods that include eliminating the discharge into the Sound.

The Florida Department of Environmental Protection (FDEP) and the United States Army Corps of Engineers (USCOS) have regulatory authority over waters of the State and Nation, respectively. These programs have been developed and implemented over the years to protect and conserve these natural resources. The FDEP regulates water quality and sovereignty issues regarding the water bodies regarding surface water quality and its use.

Subsection 2.F.2: Flora

The two (2) biggest floral resources on Navarre Beach are the wetlands and primary dune systems. The wetland systems can be further classified into two (2) categories; adjacent marsh wetlands and inter-dunal swales. The marsh wetlands are adjacent to Santa Rosa Sound and are dominated by black needlerush (Juncus roemerianus) and salt meadow cordgrass (Spartina patens). The two large systems with open water and connections to the sound provide habitat for small fishes and wading birds as well as detrital (nutrient) export to Santa Rosa Sound. The smaller adjacent wetlands provide the same functions, however, detrital export is limited to high water associated with storm events. Transitional areas of these wetlands have canopy and subcanopy species such as slash pine (Pinus elliottii), yaupon holly (Ilex vomitoria), wax myrtle (Nyssa cerifera) and sea myrtle (Baccharis halimifolia), which provide habitat and shelter for raccoons, skunks, and similar small animals. Adjacent wetlands fall under the regulatory authority of the Florida Department of Environmental Protection (DEP) and the U.S. Army Corps of Engineers (COS). These regulatory programs have stringent development criteria and contain provisions which allow development impacts to be mitigated.

The second type of wetlands occurring on Navarre Beach is inter-dunal swales. These wetlands appear as isolated pockets and are more temporary in nature. These wetlands have retention functions by containing water for limited periods after rainfall events. These wetlands provide temporary freshwater and limited habitat to animal life. Deeper swales may also exist long enough to become populated with mosquito fish and macro invertebrates. As the water recedes the fish can congregate and provide food to avifauna. Regulations regarding inter-dunal swales vary from wetland to wetland depending on their proximity and hydrological connection to adjacent water bodies. As reflected on the Natural Resources Inventory maps, most of these swales are isolated from hydrological connections. The DEP does not exert jurisdiction over isolated wetlands in Northwest Florida (reference Section 62-301 F.A.C.). Inter-dunal swales

have a more limited resource function than adjacent wetland marshes and such is reflected in adopted regulatory provisions and established jurisdictions.

Subsection 2.F.3: Primary Dune System

Primary dunes provide protection from violent storms, habitat, as well as aesthetic functions. Primary dunes lie immediately landward of the beach face. These dunes are stabilized by xeric plants such as sea oats (Uniola vaniculata) and largeleaf pennywort (1-hydrocotyle bonariaensis). Primary dunes absorb the initial impact of strong storms like hurricanes and help protect manmade structures built behind them. The primary dunes at Navarre Beach provide habitat for the Santa Rosa beach mouse (Peromyscus polionotus leucocephalus).

The FDEP regulates construction and development waterward of the established coastal construction control line along the Gulf of Mexico. This encompasses and protects the primary dune zone. The primary dune is susceptible to the stresses associated with development and beach access. Development frequently concentrates access to fewer locations, often resulting in adverse impacts to the primary dunes. Provisions for adequate public access with dune walkovers can reduce these stresses.

Subsection 2.F.4: Submerged Grasses

The waters of Santa Rosa Sound immediately adjacent to Navarre Beach have very little submerged grass beds. The small patches that do exist include Cuban Shoal grass (1-lalodule wriahitii), Widgeon Grass (Runpia niaritima), and Turtle Grass (Thalassia testudinum). These resources occur on State owned bottom lands and are under the permitting jurisdiction of the FDEP's Regulatory and Submerged Lands Sections. The FDEP permitting program is designed to effectively protect these resources.

Other floral resources considered threatened or endangered are the Godfrey's Golden Aster (Chrysopsis ciodfrevi), Cruise's Golden Aster (Chrysoosis crossypina), and the Gulf Coast Lupinc (Lupinus westinaus). These may exist within the planning area but

none were noted during this effort.

Subsection 2.F.5: Fauna

Inventoring faunal resources can best be performed in a project of this scope by identifying the potential animal habitats. The activities of coastal area animals are dynamic and their presence in an area can be limited to the time of day as well as the time year. Potential habitat areas have been delineated utilizing aerial photography (reference Map 2-D).

The primary beach zone from the mean high water level of the Gulf of Mexico to the primary dune area can serve as potential nesting sites for the threatened Loggerhead Sea Turtle (*Caretta caretta*) and the endangered Green Turtle (*Chelonia mydas*). These species nest during the summer along the beach face at night. These potential nesting sites can be critical the species survival.

Development is not necessarily the primary adverse impact because it is limited waterward of the beach face. However, the secondary impacts of development such as lighting can both deter nesting and distract the hatchlings from a safe return to the ocean. Promoting exterior lighting restrictions near the beach face zone including provisions such as shielded low pressure sodium lamps and other turtle nesting protective measures can reduce these impacts.

Avifuna can be transient or year round inhabitants of the Navarre Beach area. Species of concern are the threatened Piping Plover (*Charadrius melodus*), and a candidate species, the Snowy Plover (*Charadrius alexandrius tenuirostris*) . The Least Tern (*Sterna albifrons*) is another species of concern. The transient nature of these species means that they have similar habitat requirements and prefer large flat sandy beaches with little vegetation. The Navarre Beach area does have a few places that meet these requirements and are listed as potential habitat areas. The beach face, already listed as marine turtle habitat, is also included as a plover and tern habitat.

These habitats are the most vulnerable to development. Existing regulations limit and restrict development in wetlands and the primary dune zone and therefore concentrate development to the remaining available land. The large flat beach zones are often the most desirable locations for development.

Much of the mammalian habitat is limited by the vast open areas of sparse vegetation that occur in this area. This lack of habitat likely contributes to low populations of these animals. As mentioned in the wetland portions of this report, there are a few limited areas of canopy and subcanopy vegetation that offer habitat and shelter in the transitional zones of the bigger adjacent wetlands. Although these habitat areas are reviewed in wetlands permitting situations, upland buffers can minimize development impacts.

The Santa Rosa beach mouse is a candidate species for the threatened and endangered list and inhabits the primary dune systems. Candidate species designation is the result of the lack of information available on the species to make a determination.

Subsection 2.F.6: Parcel Specific Inventory

The Navarre Beach Parcel Specific Wetlands and Marsh Map 2-H indicates the presence of natural resources, by parcel, at Navarre Beach. The opportunities for development with minimal adverse impacts to the resources are as indicated in Part 5 and on the proposed new Future Land Use Maps (FLUM). The Master Plan proposed changes to the adopted FLUM that are designed to provide protection to such resources to the extent that Future Land Use designations can provide such. These recommended designations include significant consideration for, and use of, the many environmental protection provisions contained in the County's regulations (including the Comprehensive Plan) and those regulations and provisions of the State and Federal Governments (reference Appendix 2).