# APPENDIX 9

# Shell Key Preserve Habitat Mapping Descriptions

I. **Intertidal Zone** (taken from Ecosystems of Florida)

The area between the low and high tide mark where no vegetation occurs because of the daily influence of the tides. The intertidal zone has a sloped topography and is used as a feeding area for most birds.

II. **Pioneer Zone** (taken from Ecosystems of Florida)

This zone experiences the brunt of storm surges and salt sprays. Therefore, the plants that colonize here are among the hardiest of all coastal species.

A. **Beach Dune** (FNAI) – the upper beach and foredunes make up the beach dune. Sand substrate; xeric.

1) **Upper Beach** (Ecosystems of Florida) – located just above the high tide mark, this area has a relatively flat topography with sparse vegetation that includes sand atriplex, sea rocket, seaside heliotrope and marsh elder. This area is common nesting ground for American Oystercatchers, least terns and black skimmers.
2) **Foredunes** (Ecosystems of Florida) – the undulating topography of the foredunes is a result of physical processes. The plants growing in the foredunes retain windblown sand and are referred to as dune builders. Common dune forming plants are marsh elder and sea oats. Other plants common in this area are railroad vine, beach morning glory, ground cherry, and beach sunflower. Wilson's plovers, snowy plovers, least terns and black skimmers will nest in foredunes.

III. **Transitional Zone** (taken form Ecosystems of Florida)

The transitional zone or backdunes lies behind the pioneer zone. Many plants that occur in the pioneer zone also occur here and may be patchy or very dense.

A. **Coastal Strand** (FNAI) – vegetation usually grows along a narrow strip just behind the foredunes. Dwarfed forms of trees like cabbage palm and buttonwood are common. Herbs and woody shrubs are also common and include sea grape, Spanish bayonet, inkberry, nickerbean, coin vine, goldenrod, and woody spurge. Topography is generally flat; sand substrate; xeric.

1) **Natural** – consisting of native vegetation. Nesting ground for willets, oystercatchers, mottled ducks and ground doves.
2) **Exotic** – Australian pines. Popular area for human use.

B. **Coastal Grasslands** (FNAI) – Located inland of the beach dune, this habitat consists primarily of herbaceous plants with some shrubs. Vegetative species include salt joint grass, marsh hay chord grass, Virginia drop seed, bitter panicum, sea oats, inkberry, and railroad vine. We have further defined coastal grasslands based upon topography and dominant vegetative species.

1) **Overwash** – these areas are very close to sea level and may become saturated during a storm event. Typically dominated by Virginia drop seed.
    a. **Open** – overwash areas with less than 25% vegetative coverage. Used by roosting peeps, nesting oystercatchers, plovers, least terns and black skimmers.
    b. **Vegetated** – overwash areas with greater than 25% vegetative cover. Used by nesting American Oystercatchers.

2) **Swale** – these are low-lying areas that often hold precipitation and are typically dominated by salt joint grass and marsh hay chord grass.

IV. **Marine Zone**

A. **Tidal Marsh** (FNAI) – expansive intertidal or supratidal are occupied primarily by rooted, emergent vascular macrophytes (e.g., cord grass, saltgrass and glasswort). Young chicks of willets, plovers, rails and oystercatchers, which seek refuge from predators, often utilize this habitat.

B. **Tidal Swamp** (FNAI) – expansive intertidal and supratidal area occupied primarily by woody vascular macrophytes (e.g., black mangrove, buttonwood, red mangrove, and white mangrove). Utilized by clapper rails for nesting. Egrets and herons forage in this habitat. Young of willets are also found in this habitat.

C. **Unconsolidated Substrate** (FNAI) – expansive subtidal, intertidal and supratidal area composed primarily of loose mineral matter (e.g., marl, mud, sand and shell); nondrift macrophytic algae, blue-green mat-forming algae and sparse seagrasses if present. We have further divided this habitat into 2 categories that represent the degree of inundation.

1) **Intermittently exposed** – these areas are routinely exposed due to tidal influence. They include the large mudflats and sandbars, which are used for foraging and loafing respectively. Almost all species of birds have been observed to use these areas.
2) **Continuously inundated** – these areas retain water regardless of the tide and are commonly called the lagoons. Wading birds and rails often forage in this habitat.