

APPENDIX B--DESCRIPTION OF PLANT COMMUNITIES ALONG THE MYAKKA RIVER

UPLANDS

PINE FLATWOODS/PINE PRAIRIE (SOUTH FLORIDA FLATWOODS, MESIC FLATWOODS, PINE SAVANNAHS, PINE BARRENS)

Slash pine flatwoods occur throughout south and central Florida, with northern limits on a west-east line from Levy County to St. Johns County. Pine flatwoods covers more land area than any other in South Florida and is the predominant plant community found within Sarasota County.

Pine flatwoods are characterized by a nearly flat topography with relatively poorly-drained soils. Generally, an organic or clay hardpan is situated a few feet beneath the soil layer. During the rainy season, pine flatwoods may have water on or near the soil surface. Scattered slash pine in the canopy and a dense saw palmetto shrub layer characterize the pineland. Other shrubs within the saw palmetto layer include gallberry, gopher apple, wax myrtle, tarflower, dwarf huckleberry, shiny blueberry and fetterbush. Herbaceous plants that may be commonly found within the flatwoods include chalky bluesteam, false foxglove, indiagrass, dichanthelium grass, blackroot, blue-eyed grass, and wiregrass. Other minor types of pine flatwoods occur along the Myakka River which include woodlands with other tree species or combinations of other tree species with slash pine within the canopy (e.g., slash pine-oak woodlands, longleaf pine and slash pine-cabbage palm). The longleaf pine occurs within small stands scattered within the more well-drained flatwood sites. Longleaf pine is in the southernmost limit of its range within Sarasota County.

Next to man, fire and water are the most common contributing factors to the successional status of pine flatwoods. Pine flatwoods are a subclimax community that rely on fire to control the invasion of hardwoods and promote the natural regeneration of pines. However, if crown fires were to occur after a long period of fire exclusion, pine trees and seedlings could be destroyed and the flatwoods would then be converted to a dry prairie condition. Water can also cause shifts in plant species composition from a mesic to a hydric condition in a relatively short period of time. However, man has caused the greatest changes to this community through the suppression and misuse of fire, the alteration of drainage patterns, and agricultural conversion practices. Since flatwoods are good cellulose and forage producers, natural flatwoods have been logged for timber and converted to

rangeland and improved pasture for cattle, pine plantation for commercial wood production, vegetable and citrus groves, and urban development has also occurred in this community.

SCRUBBY FLATWOODS/OAK SCRUB (XERIC OAK, XERIC FLATWOODS, DRY FLATWOODS)

Scrubby flatwoods/oak scrub, a rather rare habitat type in Sarasota County, is a xeric community type that possesses an evergreen shrubby understory situated upon well-drained, deep white sandy soils on high ground. Scrubby flatwoods typically contain widely scattered slash or longleaf pine in the overstory. However, when characterized by an association of scrub oaks interspersed with areas of barren white sand without a pine canopy, the community is considered to be an oak scrub. Understory shrubs include sand live oak and myrtle oak, rusty lyonia, Chapman's oak, gopher apple and saw palmetto. Herbaceous plants and vines within the xeric association include wiregrass, goldenrod, deer moss, greenbriar, and pinweeds. Small areas of scrubby flatwoods and oak scrub occurs at only a few locations along the Myakka River. This xeric association occurs along the edges of pine flatwoods at slightly elevated terrain upon relict sandbars and dunes. The scrubby flatwoods and oak scrub, to maintain a scrub-like condition, require fire at widely-spaced intervals.

HAMMOCKS (SHADY HAMMOCKS)

In the State of Florida the term "hammock" refers to any hardwood or broad-leaved evergreen forest which is not inundated or saturated for a sufficient period of time during the year to support the dominant growth of aquatic vegetation. Hammocks occur on well-drained to wet, highly organic soils. Vegetation composition within hammocks varies depending upon the type of soils, hydroperiod and location. The primary hammock associations found along the Myakka River include xeric and mesic-hydric hammocks which border both sides of the Myakka River to form a natural, forested corridor. Coastal hammocks are smaller associations that occur sporadically as "islands" within wetlands and/or larger hammock areas of the Myakka River.

Xeric Hammock (Upland Hammock, Live Oak-Cabbage Palm Hammock)

Xeric hammocks are dry forests that occur on well-drained soils in slightly elevated areas, and contain saw palmetto within the understory and live oaks in the canopy layer. In addition to live oak, xeric hammock may also contain laurel oak and cabbage palm in the canopy. On occasion cabbage palm may become dominant on moister, highly organic soils. Depending upon the openness of the canopy layer, the shrub and herb strata may be dense to sparse. Additional common shrubs that occur in xeric hammocks include beautyberry and wax myrtle. Herbaceous plants and vines in xeric hammock include Caesar's weed, poison ivy, grape and yellow jessamine.

Mesic-Hydric Hammock (Wetland-Fringing Hammock, Wetland Hardwood Hammock, Prairie Hammock, Wet Hammock)

Mesic-hydric hammock occurs on rich, organic soils of intermediate moisture content to wet, poorly-drained soils contiguous to the surface waters or wetlands of the Myakka River. Due to the intergradation and subsequent difficult differentiation between hydric and mesic hammock along the Myakka River, the two associations were combined into one descriptor.

Mesic-hydric hammock typically contains laurel oak, cabbage palm, water oak, red maple, swampbay, sweetbay, and Florida elm within the upper and lower canopy layers. This hammock generally has a well-developed canopy layer and, therefore, the understory and ground layers are rather depauperate. Common herbaceous, vining and shrubby plants found within mesic-hydric hammock include wax myrtle, saw palmetto, lizard's tail, saw-toothed fern, wild coffee, greenbriar, poison ivy, Virginia creeper, pepper vine, and grape. The oak canopy blankets the lower strata and, thereby, regulates the microclimate of the system, keeping the interior moist, shady and cool. The natural air conditioning and aesthetics provided by spreading stately oaks of the hammock offered desirable homesites and were extensively used for this purpose by the early settlers. The limbs of the mature oaks and the boots of cabbage palms also provide a haven for epiphytic and parasitic vegetation. Epiphytes, such as resurrection fern, butterfly orchid, and air plants, are the most conspicuous floral components visible along the Myakka River.

The hydroperiod of mesic-hydric hammocks is typically 2 months out of the year. Due to saturated soils and a sparse herb layer, mesic-hydric hammocks rarely burn. However, if the hydrological regime is altered, the species composition of this hammock community could be affected.

Being situated between uplands and wetlands/surface waters, mesic-hydric hammock provides valuable functions including flood attenuation, filtration of stormwaters, and erosion control. This hammock type is becoming extremely rare in Sarasota County due to development.

Coastal Hammock Palm/Oak Hammock, Tropical Hammock, Prairie Hammock, Shell Middens, Shell Mounds, Indian Mounds)

These small hammocks typically occur as "islands" within wetlands or other larger hammocks of the Myakka River corridor. Coastal hammock is typically dominated by cabbage palm and live oak in the overstory. Other plant species associated with coastal hammock include stoppers, wax myrtle, wild coffee, water oak, marlberry, Florida coontie, poison ivy, orchids, and serpent fern. Coastal hammocks occur on slightly elevated areas and are often associated with indian shell mounds. Coastal hammock typically is dominated by cabbage palm and live oaks, but live oak is replaced by southern red cedar on the tidal reaches of the Myakka River near Deer Prairie Slough. Coastal hammock has a unique position as a botanical depository for rare tropical plants.

DRY PRAIRIE (PALM SAVANNAH, PALMETTO PRAIRIE, PALMETTO AND HERBACEOUS RANGELAND, GRASSY DRY PRAIRIE)

Dry prairie is characterized as treeless plains that generally resemble pine flatwood communities, except for the lack of pines in the overstory. Typically, dry prairie is dominated by a dense assemblage of mesophytic grasses (indian grass, love grass, broomsedge, wiregrass), herbs (blazing star, rabbit tobacco, marsh pink, goldenrod, milkwort), and low shrubs (saw palmetto, paw paw, fetterbush, gallberry, staggerbush, dwarf blueberry).

Dry prairie is often contiguous to wet prairie and pine flatwoods. Fire is important in the maintenance of the prairie condition. Large areas of this vegetation type have been converted to vegetable farms, citrus groves,

improved pasture, urban development, or conserved as natural rangeland with land management.

AGRICULTURAL AREAS/DEVELOPED LANDS

Agricultural areas and developed lands include all of the vegetated or landscaped areas of land along the Myakka River where the original vegetation has been significantly altered or disturbed. Intensive agricultural areas include improved pastures, cropland, citrus groves, and pine plantation. Nonintensive agricultural uses such as cattle rangeland, where the vegetation is maintained in a somewhat natural state through proper fire management, are included in the upland category as pine flatwoods/pine prairie, scrubby flatwoods/oak scrub and dry prairie.

Intensive agriculture and developments eliminate, or significantly alter, the natural upland and wetland plant communities along the Myakka River. These activities are the major sources of poor water quality within the Myakka River through erosion of sediments and contributions of excess nutrients and other pollutants.

WETLANDS

FRESHWATER WETLANDS

Freshwater wetlands filter and improve storm waters, provide flood storage, and control the erosion of shorelines. Freshwater wetlands are low-lying, wet associations that are vegetated with either aquatic trees (swamp) or herbs (marsh). Both wooded and herbaceous wetlands occur along the Myakka River from river mile 7.5 to the vicinity of Snook Haven.

Freshwater Wooded Wetlands

A freshwater wooded wetland can be characterized as any low-lying system that has water above or just below the ground surface for a sufficient period of time during the year to support the dominant growth of aquatic woody vegetation. This category of freshwater wetlands includes several major wooded swamp types. The differences that separate the swamp community types includes species composition, variance in seasonal and/or permanent inundation, hydrologic connection (contiguous or isolated) and ecology. The freshwater wooded wetlands along the Myakka River consist of mixed hardwood swamps, swamp thickets and bay swamp. It is of interest to note that there

are no natural cypress swamps within the Myakka River. Although there are some cypress stands within Myakka River State Park, these associations were artificially created through the planting of cypress trees within existing freshwater marshes.

Mixed Hardwood Swamp (Mixed Swamp, Basin Swamp, Freshwater Swamp, Hardwood Swamp)

--Mixed hardwood swamp occurs within the Myakka River and along the associated floodplain reaches. Dominant trees that comprise fresh-water swamp include, blackgum, popash, water locust, red maple and sweetbay. Buttonbush, wax myrtle, Virginia willow, dahoon holly, and willow are common in the understory. Typical herbaceous components of the mixed hardwood swamp include lizard's tail, smartweed, royal fern, and false nettle. The degree of canopy closure and seasonal water levels typically dictate the species cover and density at the understory and ground levels. The periodic water level fluctuations associated within the Myakka River are important to the integrity of the mixed hardwood swamp. Mixed hardwood swamps are valuable by filtering and improving water quality and providing flood storage and recharge.

Swamp Thickets (Heads, Shrub Swamp)--Swamp thickets are dense stands of aquatic shrubs or small trees that occupy standing water or periodically flooded sites. Swamp thickets that may be found along the Myakka River are dominated by almost pure monocultures of the following three aquatic woody species: popash, willow and buttonbush. These associations occur within the open areas of the Lower and Upper Myakka Lakes and along transitional zones between wetlands and uplands. Typically, these thickets represent a secondary successional seral stage of marshes or wet prairie that have not been burned or experienced a reduction in water levels.

Bay Swamp (Gum Swamp, Bay, Bay Gall, Bayhead, Bay Swamp)--Bay swamp occurs on acidic, highly organic soils which are often seasonally flooded. Typically, bay swamp has shallower standing water and shorter periods of inundation than the other swamp systems. A linear area of bay swamp occurs just above the northwest edge of the Upper Myakka Lake. Bay swamp is dominated by loblolly bay, swamp bay, and sweet bay. The understory layers of bay swamp are typically open and commonly contain sphagnum moss, dahoon holly, fetterbush, Virginia willow, bamboo-briar, poison ivy, cinnamon fern, chain fern, grape, net-vein chain fern and lizard's tail.

Freshwater Herbaceous Wetlands (Depression Marsh, Wet Weather Pond, Flatwoods Pond, Ephemeral Pond, Grass Pond, Wet Prairie, Pineland Depression, Swale, Slough, Prairie Pond)

A freshwater herbaceous wetland can be characterized as any low-lying system that has water above or just below the ground surface for a sufficient period of time during the year to support the dominant growth of aquatic emergent, floating-leaved and free floating vegetation.

Based upon a number of factors such as size, location, drainage characteristics and species composition, this category of freshwater wetlands includes several wetland types (both contiguous and isolated). However, in an effort to provide a concise account of freshwater herbaceous wetlands along the Myakka River, only two types are recognized: freshwater marsh and wet prairie.

Freshwater Marsh--Freshwater marsh can be characterized as seasonally inundated shallow, round or elliptical depressions within terrestrial habitats (typically pine flatwoods) to more elongate, broad irregular-shaped formations that occur along the shoreline of (i.e., littoral zones) or as sloughs to the Myakka River. The inland marshes are further characterized by concentric zones of emergent vegetation with floating-leaved and/or floating plants at the center. The center may contain permanent to semi-permanent standing water and depending upon the size of the system may be devoid of vegetation and resemble a pond or small lake. These marshes commonly support the following species: St. John's wort, pickerelweed, arrowhead, sedges, maidencane, and net-vein chain fern. The large marshes along the shallow, littoral shoreline

reaches or as sloughs (drainageways) of the Myakka River tend to be mixed assemblages of species including maidencane, smartweed, water paspalum, cattail, bulrush, and pickerelweed. Shortened hydroperiods within freshwater marshes will permit the invasion of mesic and exotic vegetation, while longer hydroperiods will transform marsh into surface waters. Fire is a necessary component of freshwater marsh maintenance; however, an uncontrolled fire during a long period of drought could violate the underlying muck layers.

Wet Prairie--Large to small wetland associations of shallow water areas primarily within pine flatwoods and dry prairie that are dominated by grasses and St. John's wort are called wet prairie. Wet prairies differ from freshwater marsh by the occurrence of sandy soils with thin organic layers rather than the deep mucks/peats and plants associated with "true" marshes. Wet prairies provide similar functions and values as freshwater marshes.

BRACKISH-SALTWATER WETLANDS (ESTUARINE EDGES)

Tidal wetlands are brackish to salt water wetlands that occur along low energy coastlines and estuaries. Tidal wetlands along the Myakka River begin just south of Snook Haven in the form of tidal marshes and continue as mangrove islands and tidal marshes past the Sarasota/Charlotte County line.

Brackish-Saltwater Marsh (Black Needlerush Marsh)

Brackish-saltwater marsh is the dominant plant community of the tidal portion of the river. Brackish-saltwater marsh along the Myakka River is characterized as small littoral zones along the incised tidal reaches to large expanses of open wetlands situated along the broad lower tidal floodplain. The dominant species of the tidal marsh is black needlerush although other minor species do occur such as cattail, bulrush, and leather ferns. Sawgrass also occurs within tidal marsh along the Myakka River. Although this species is typically common in fresh to brackish water marshes, it only occurs within a small area of the Myakka River in the vicinity of Deer Prairie Slough. The detrital production and contribution of tidal marsh to the marine food web is substantial. Development along the shoreline edges of the Myakka River and drainage alterations through the construction of seawalls, rip rap, and ditches may adversely affect this valuable wetland system.

Mangrove Swamp (Mangrove Islands, Mangles, Mangroves)

Mangrove swamps or islands are found at the lower reaches of the Myakka River, starting at a point just above Deer Prairie Creek. Red mangrove was the dominant mangrove species on the shorelines of the islands, while black and white mangroves occupied higher elevations.

Mangrove swamps provide many ecological benefits to man, including buffering storm tides and winds, shoreline stabilization, and vegetative filtration and assimilation of pollutants or nutrients within stormwater runoff.

Mangrove swamps also provide an extremely valuable function in the production of detritus to the estuarine food web and as habitat for a variety of species. Destruction of mangroves via filling, dredging and ditching has contributed to the deterioration of South Florida's aquatic resources.

SUBMERGED AQUATIC VEGETATION

Submerged aquatic vegetation (SAV) in the upper river is largely dominated by the exotic, hydrilla (*Hydrilla verticillata*). This submerged plant is considered a nuisance and has spread throughout Florida. It has created a large problem within Upper and Lower Myakka Lakes, and attempts at its control include the application of herbicides. Hydrilla infestation is evident in the Myakka River to below Downs Dam. The growth of hydrilla gradually decreases downriver from the dam. SAV within the lower river in general is not common although it is locally abundant along shallow water edges and shoals. The distribution of SAV is potentially determined by salinity, currents, light penetration and sediment type. Species of SAV which have been observed in the lower Myakka River include Cuban shoal grass (*Halodule wrightii*), widgeon grass (*Ruppia maritima*), tape grass (*Vallisneria neotropicalis*), dwarf arrowhead (*Sagittaria subulata*), *Nitella* sp., coontail (*Ceratophyllum demersum*), and spike rush (*Eleocharis baldwinii*). Cuban shoal grass and widgeon grass occur in the widest range of salinities (<1 ppt to 25 ppt).

Tape grass is found from less than 1 ppt to about 3 ppt, and the remaining species are generally found at salinities of less than 1 ppt. The SAV of the Myakka River are most commonly found on shoal areas (Mote Marine Laboratory, 1986).