National Park Service
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# The 2009 Vegetation Map of De Soto National Memorial

Natural Resource Technical Report NPS/SFCN/NRTR–2009/240

**ON THE COVER**
Photo Credit NPS-SFCN Robert Brooke Shamblin
Mangroves are the most common vegetation community at De Soto National Memorial.

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Natural Resource Technical Report NPS/SFCN/NRTR—2009/240

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NPS 388/100291, September 2009

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# Abstract

De Soto National Memorial (DESO) was created in 1948 to commemorate the 1539 landing of Hernando de Soto. De Soto National Memorial and the adjacent Riverview Pointe Preserve are part of the Shaw's Point Archaeological District which comprises a large prehistoric coastal village site that was inhabited by Florida Indians from about 356 B.C. to A.D. 110. The native vegetation consists primarily of mangroves, beaches, hammock, and pines. The majority of the park is comprised of wetlands (mangroves and associated shoreline mostly) that are intimately tied to the Manatee River and Tampa Bay. De Soto National Memorial provided $5,900 funded by the Natural Resources Preservation Program (NRPP), Small Parks (Project Management Information System [PMIS] project number 105225), to the NPS South Florida / Caribbean Network (SFCN) to create a vegetation map of De Soto National Memorial (26 acres) and the adjacent Riverview Pointe Preserve (11 acres) in 2007. This report documents the steps involved in creating the De Soto National Memorial vegetation map.

The De Soto National Memorial vegetation map was made in UTM, NAD 83, zone 17N coordinates with a minimum mapping unit of 400$m^2$. Aerial imagery from January 2007 and LIDAR imagery from 2003 were used for initial polygon development. These polygons were further refined with field data from December 2007 and June 2009. The final vegetation map has a total of 21 mapping classes and 56 polygons. Map class descriptions are provided in Appendix B with some modifications to the Rutchey *et al*. (2006, v. 5/22/2007) vegetation key and classification provided in Appendix F. Photos of map classes are provided in Appendix C. A list of species encountered during the field assessment is provided in Appendix D. Maps are provided in Appendix E. Data were collected for 70 field points as well as additional points delineating 0.57 miles of drainages. Nineteen (19) shell mound polygons were created from data collected during this project and a previous effort by Daniel Stephens (DESO NPS). Eighty-four percent (84%) of the polygons had vegetation plot data collection and the remainder were visually confirmed.

# Acknowledgments

The funding for this mapping project was supplied from Natural Resources Preservation Program (NRPP), Small Parks, from the Project Management Information System (PMIS) of the National Park Service, specifically, PMIS project number 105225. The funds were used for map creation, field time, and travel to the park. Original PMIS funds were obtained by the hard work and effort of Cliff Kevill (Chief Ranger, De Soto National Memorial).

# Introduction

De Soto National Memorial (DESO) was created in 1948 to commemorate the 1539 landing of Hernando de Soto. De Soto National Memorial and the adjacent Riverview Pointe Preserve are part of the Shaw's Point Archaeological District which comprises a large prehistoric coastal village site that was inhabited by Florida Indians from about 356 B.C. to A. D. 110 (Conservation Lands Management). The native vegetation consists primarily of mangroves, beaches, hammock, and pines. The majority of the park is comprised of wetlands (mangroves and associated shoreline mostly) that are intimately tied to the Manatee River and Tampa Bay. De Soto National Memorial provided $5,900 funded by the Natural Resources Preservation Program (NRPP), Small Parks, from the Project Management Information System (PMIS) project number 105225 to the NPS South Florida / Caribbean Network (SFCN) to create a vegetation map of De Soto National Memorial (26 acres) and the adjacent Riverview Pointe Preserve (11 acres) in 2007. This report documents the steps involved in creating the De Soto National Memorial vegetation map.

# Methods

### Project Overview

SFCN conducted the De Soto National Memorial vegetation mapping project internally by partially funding two Student Conservation Association (SCA) interns (Eric Sudalter and Rachel Vargas) who created most of the map polygons under the supervision of the SFCN community ecologist Kevin Whelan and SFCN data manager Brian Witcher. SFCN staff conducted the field data collection, analysis and adaptation of the Rutchey *et al.* (2006, v. 5/22/2007) vegetation classification for use in De Soto National Memorial.

Creation of the map involved the following nine phases which are detailed further below:

Phase 1: Gathering background information
Phase 2: Imagery Acquisition
Phase 3: Draft Polygon Creation
Phase 4: Selection of Plots and Creation of Field Sheet
Phase 5: Collection of field data
Phase 6: Database Design
Phase 7: Vegetation Classification
Phase 8: Refinement and Finalization of Polygons
Phase 9: Creation of Non-vegetation Data Layers

### Phase 1: Gathering background information

This vegetation map project began by acquisition of materials immediately associated with De Soto National Memorial vegetation and potentially useful in the mapping process:

- Vegetation Classification System for South Florida Natural Areas (Rutchey *et al.*, 2006, v. 5/22/2007). This document became the basis for mapping class descriptions used in this map project.
- A draft copy of the *Vascular Plant and Ecological Inventory of De Soto National Memorial and an Adjacent Upland Area* internal NPS product. This was used for general plant identification background information.

### Phase 2: Imagery Acquisition

Imagery used to delineate vegetation polygons included aerial photography as well as LIDAR data. The aerial image was collected in January 2007 by EarthData International for the Manatee County Government. This is true color imagery with a 0.31 m pixel size and a verified horizontal accuracy of 2.3 m at the 95% confidence interval (http://public.mymanatee.org/gishome/jsp/ortho_map_07.jsp). The LIDAR data was collected in 2003 as part of the Windstorm Simulation Modeling Project under a contract between the International Hurricane Research Center at Florida International University and Manatee County. LIDAR data consisted of digital elevation models (DEMs) for both bare earth and first return with a 1.5 m spatial resolution (http://gis.ihrc.fiu.edu/website/ihrclidar/viewer.htm).

### Phase 3: Draft Polygon Creation

Initial polygons were drawn by SCA intern Eric Sudalter based upon a combination of four data layers: true color imagery, bare earth LIDAR, first return LIDAR, and canopy depth LIDAR. The canopy depth layer was created by subtracting the bare earth layer from the first return layer using the Raster Calculator within ESRI ArcMap v9.1. All four image layers were utilized to make decisions on where to draw polygons within the park. These polygons were drawn using the vector editing tools in ESRI ArcMap software. The guideline followed was a minimum mapping unit of 400$m^2$, however, a few smaller polygons were also created. A photo interpretation key was not created as this was a small map with the majority of the polygons directly visited on the ground.

### Phase 4: Selection of Plots and Creation of Field Sheet

Locations of field vegetation plots were initially selected with the primary goal of visiting as many polygons as possible, while ensuring each plot was representative of the visited polygon. The feasibility of reaching plots in De Soto National Memorial was challenging due to limitations of Trimble ProXR GPS units in a closed canopy environment. This was overcome by using handheld Garmin 12XL GPS and Garmin 60CSx GPS units. This switch did come with the price of slightly reduced horizontal accuracy (±4m). A field sheet was created prior to field work (Appendix A).

### Phase 5: Collection of Field Data

Two field visits were conducted. The first occurred in December 4-5, 2007. All vegetation plots were reached by foot. The vegetation plots that were taken were either preselected (potential) or non-preselected. Preselected plots were selected prior to field work (see Phase 4). Originally a Trimble Pro XR unit was loaded with GPS locations for preselected sample points. The Trimble unit did not function under canopy, so a dead reckoning approach was used to navigate to the preselected areas of interest. Then a new GPS coordinate was taken with a Garmin 12XL GPS. Standing at the center of the plot, the two observers visually evaluated a circular area with an average radius of 3-10m from the center of the plot depending on visibility due to vegetation density, representing an approximate area of 28-300$m^2$. The observers completed a field sheet for each plot.

Vegetation data collected included: general description of point and surrounding vegetation types, dominant vegetation type in plot, overall canopy cover, average canopy height, relative

cover of species in the tallest stratum (i.e. relative percent cover for graminoids, shrubs, and trees by species as appropriate), and description of understory species. Often if there was a shrub canopy under the tree canopy, the species and percent cover of each were recorded. In general, environmental data such as soil type was not collected, although in a few instances it was noted. Percent cover in all four quarters of the circular plot was recorded for the first few plots as outlined on the back page of the field sheets. However, it was rapidly determined that this was not an effective use of the limited field time for this project and subsequently estimates of percent cover of trees, shrubs, herbs were made for the entirety of the plot. Additional, non-preselected plots were sometimes recorded in areas of interest as determined in the field. Some preselected points could not be sampled due to problems with Trimble GPS unit.

The second field trip occurred June 18, 2009 and is described under Phase 8 below.

### Phase 6: Database Design

A geodatabase was created to hold the spatial and tabular data for this project. After field work was completed, waypoints from the Garmin 12XL GPS unit were downloaded and stored as a feature class in the geodatabase. Additional datasets were added to hold the image layers, boundaries for the parks, and map annotations (labels). Data recorded on field sheets and notes were entered into Microsoft Excel, imported into the geodatabase, and finally linked to the GPS waypoints. Additional derived layers such as the visitor center, trails, shell mounds, and interpretive signs were also added to the geodatabase. Tables 1 and 2 provide field descriptions for the Vegetation Field Plots Points Feature Class and the Vegetation Classification Polygon Feature Class tables.

### Phase 7: Vegetation Classification

The National Vegetation Classification System (NVCS) hierarchy is currently under revision and is especially underdeveloped in the areas of sub-tropical Florida. SFCN used the Vegetation Classification System for South Florida Natural Areas (Rutchey *et al*, 2006, v. 5/22/2007) provided in Appendix F as the basis for the map categories used for this map product. This hierarchical classification is a combination of a classification key and classification descriptions, is similar in many respects to the National Vegetation Classification System, and was developed to match closely with it. The lowest levels of the Rutchey *et al.* (2006, v. 5/22/2007) classification are assumed in most cases to be equivalent to “Alliances” in the NVCS and in some cases where the herbaceous community is described to “Associations” in the NVCS. However, a final cross-walk has yet to be accomplished between the two systems.

De Soto National Memorial is north of the area covered by the Classification System for South Florida Natural Areas and as a consequence some of the map classification descriptions required adjustment for this project. This was typically done by expanding the definitions to include species found in De Soto such as hickory (*Carya sp.*). The revised map classification descriptions are provided in Appendix B.

### Phase 8: Refinement and Finalization of Polygons

Polygons were further refined by SCA intern Eric Sudalter based on a combination of photointerpretation, vegetation plots, and field notes. Linework was double-checked and adjusted by SCA intern Rachel Vargas. The most common adjustments were to subdivide large polygons

based upon the field data and to smooth polygon edges. The spatial topology of the final polygon feature class was checked using ESRI ArcMap v9.3 to find and remove slivers or overlaps. In some cases neighboring polygons looked different in the imagery but were classified as being the same in the vegetation classification; several of these polygons were left unmerged as management may find this linework useful in the future.

A second field trip was conducted on June 18, 2009. SFCN Botanist Robert B. Shamblin checked polygon classification and linework, especially in areas that were identified as needing further investigation, and collected 13 additional field points. Field data collection during this trip was limited to providing a general description of the site, listing of species present, taking of a GPS point, taking of a photograph, and making a final determination of vegetation class. On the same day a final meeting was held with Park Superintendant Scott Pardue during which Kevin Whelan reviewed the map product and made comments. The combination of the field trip and meeting resulted in the creation of two additional small polygons, refinement of linework on a third, identification of an "unknown polygon" that had resulted from splitting a larger polygon into two, and changes to the classification of four polygons. "Human impacted" polygons were differentially labeled as requested by park staff, i.e., separated into lawn, landscape oaks, landscape gumbo limbo, and Camp Uzita (an interpretive village).

### Phase 9: Creation of Non-vegetation Data Layers

Over the course of this project, non-vegetative GPS data was acquired from Daniel Stephens (DESO NPS) and the SFCN field crew. These GPS waypoints and tracklines were converted into feature classes showing the visitor center, drainages, and trails. One layer of particular importance was a shell mound polygon layer. The basis for this file was a set of points collected by Daniel Stephens in March 2007. These points represent the boundary of large shell mounds within the park. Additional opportunistic shell mound points were collected by the SFCN field crew in December 2007. These two point layers were combined and used to draw approximate shell mound polygon boundaries. Additionally, Kevin Whelan walked along each of the drainages within the park to create the drainages (a.k.a. "creeks") layer. Using the GPS waypoints and field notes that he collected, six different drainages were drawn within the park and attributed with details on their size and drainage type. There were two drainage types distinguished enhanced and natural (drainage type field in the attribute table for Drainage layer). The natural drainage " i.e. creeks" were preferential flow ways that appeared not to be maintained. The enhanced drainages had soil that had be removed and typically mounded near the edge of the drainage raising it bank elevation compared to the surrounding area.

**Table 1. Descriptions of Fields for Vegetation Field Plots Points Feature Class**

| Field Name | Description |
|---|---|
| Researcher | Researcher who collected plot data (Whelan & Sudalter in 2007; Shamblin in 2009) |
| Plot_ID | Field plot point name |
| Plot_Radius | Plot radius |
| Mark_Number | Number of the GPS waypoint taken at the point (if any) |
| Description | General description of point and surrounding vegetation types |
| Dominant_Vegetation | Dominant vegetation type in plot |
| Overall_Canopy_Cover | Overall canopy cover (if present) |
| Avg_Canopy | Average canopy height and highest height in tallest stratum |
| Graminoid_Species | Graminoid species in plot area |
| Graminoid_Percent | Relative percent cover of shrub species |
| Shrub_Species | Shrub species in plot area |
| Shrub_Percent | Relative percent cover of shrub species |
| Tree_Species | Tree species in plot area |
| Tree_Percent | Relative percent cover of tree species |
| Additional | Other notes on field sheets |
| Class_ID_FieldSheet | Vegetation class given to point on field sheet |
| Class_ID_Polygon | Vegetation class given to the polygon that the point falls into |
| Class_ID _Name | Vegetation class name |
| Field_Polygon_Match | Do Class_ID_Fieldsheet and Class_ID_Polygon match (Y or N) |
| Comment | Comments about the point i.e. was original Class ID changed |
| X_Coordinate | UTM Easting (X) coordinate based on Zone 17N |
| Y_Coordinate | UTM Northing (Y) coordinate based on Zone 17N |
| Latitude | Latitude in decimal degrees (NAD83) |
| Longitude | Longitude in decimal degrees (NAD83) |
| Raster_ID | Corresponding Raster ID number for vegetation class |
| Date | Date and time mark was taken |
| Pictures | Number of photos taken on June 18, 2009 field trip |
| Species | Species found on June 18, 2009 field trip |

**Table 2. Field descriptions for 'veg_classification' polygon feature class**

| Field Name | Description |
|---|---|
| Raster_ID | Raster ID for vegetation class |
| Class_ID | Vegetation class ID code |
| Class_ID_Name | Vegetation class ID name |
| Basis_for_Polygon | Basis for polygon shape |
| Plot_ID | Point (Plot_ID) used to classify polygon's vegetation |
| Centroid_X | X coordinate (easting) of center of polygon |
| Centroid_Y | Y coordinate (northing) of center of polygon |
| Shape_Length | Perimeter length of the polygon in meters |
| Shape_Area | Area of the polygon in square meters |

**Table 3. Abbreviated Vegetation Classification Hierarchy from "Vegetation Classification System for South Florida Natural Areas" (Rutchey *et al.*, 2006, version 5/22/2007).** The following hierarchy includes only those parts of the classification key used to create the map. Classes used in map are in *italics.* Descriptions of map classes are in Appendix B. Classes with map photos in Appendix C are marked with a "*". For the complete vegetation classification, see Appendix F.

**F - Forest** (**Forests are high-density stands of trees, >60% tree canopy cover with heights >5 meters)**

- **FM - Mangrove Forest**
  - *FMa - Black Mangrove Forest*
  - *FMX - Mixed Mangrove Forest**
    - *FMXac - Black Mangrove - Buttonwood Forest*
    - *FMXal - Black Mangrove - White Mangrove Forest*
    - *FMXcr - Buttonwood - Red Mangrove Forest**
- **FH - Hammock Forest**
  - *FHC - Coastal Hardwood Hammock*
  - *FHT - Temperate Hardwood Hammock**

**W - Woodland (Woodlands are low-density stands of trees [10 - 60% tree canopy cover] with heights >5 meters in a matrix of shrubs, graminoids, and/or herbaceous vegetation.)**

- *WM - Mangrove Woodland*
  - *WMc - Buttonwood Woodland**
    - *WMcS - Buttonwood Woodland-Succulent*
- **WS - Swamp Woodland**
  - *WSh – Hardwood Swamp Woodland*
- **WU - Upland Woodland**
  - **WUp - Pine Upland**
    - **WUpS - Pine Upland-Shrub**
      - *WUpSs - Pine Upland-Saw Palmetto*
  - *WUh - Upland Hardwood Woodland**

**S - Shrubland (Shrublands are high-density stands of shrubs with >50% canopy cover and heights <5 meters)**

- **SM - Mangrove Shrubland**
  - **SMX - Mixed Mangrove Shrubland**
    - *SMXal - Black Mangrove-White Mangrove Shrubland**
- **SU - Upland Shrubland**
  - *SUC - Coastal Hardwood Shrubland**
  - *SUs - Saw Palmetto Shrubland*

**C - Scrub ((Mangrove scrub canopy heights are less than two meters. Canopy densities are generally from 10% - 50% but can be as high as 100%.)**

- **CM - Mangrove Scrub**
  - *CMc - Buttonwood Scrub*
  - *CMr - Red Mangrove Scrub*

**D - Dune**

- *DG - Graminoid Dune**

**N - Non-Vegetative**

- *BCH - Beach*
- *HI - Human Impacted (Lawn, Landscape Oaks, Gumbo Limbo, Camp Uzita)**

# Results and Discussion

### Plots
A total of 70 vegetation plots were recorded over 2 trips (Figure 1) that occurred in December 4 and 5, 2007 (57 plots)and June 18th, 2009 (13 plots). Appendix D lists the various species documented throughout all the vegetation plots.

### Mapping Classes
A total of 21 mapping classes were used in classifying all polygons that were drawn (Table 3). Three of the original Rutchey *et al.* (2006, v. 5/22/2007) classes required adjustment to create classes that described vegetation adequately in De Soto National Memorial: Coastal Hardwood Hammock, Temperate Hardwood Hammock, and Pine Upland-Saw Palmetto. In addition the label for Upland Woodland was changed to Upland Hardwood Woodland as this better described the vegetation.

### Polygons
A total of 56 polygons were drawn (Figure 1) based on interpretation of the 4 data layers used. A map was designed identifying all of the map classes representing polygons (Figure 2). Polygon boundaries that were difficult to determine (generally due to gradation between vegetation types) were made with photointerpreters best judgment.

Table 4 provides a map summary of acreages by "Level 1" category in the classification (i.e., acreage of Forest, Shrub, Scrub, Dune, Beach, Human Impacted). Table 5 provides a map summary of acreages by major type (i.e. Mangrove, Hammock, Hardwood Swamp, Pineland, Dune, and Beach). Table 6 provides a summary by map category of acreages, number of polygons and number of field plots by map category.

### Buildings, Monuments, Drainages, and Shell Mounds
As part of this project 0.57 miles of drainages were mapped (Figure 3). Eight additional shell mounds were added as part of this project, for a total of 19 shell mounds. As new shell mound locations were found opportunistically while visiting field points, it is possible additional shell mounds exist within the park that were not found during SFCN field visits. A Buildings and Monuments layer was created from the aerial photography as requested by park staff. The locations are approximate and have not been checked for accuracy on the ground.

### Accuracy Assessment
A separate formal accuracy assessment of the classification accuracy was not conducted as 47 of the 56 polygons (84%) had vegetation plot data collection as part of the mapping effort (Figure 1). However, a second SFCN botanist, not involved with the map development or first field visit, reviewed and assessed the classification and linework of many of the polygons in the field. The remaining polygons (4 Human Impacted, 3 Beach, 1 Red Mangrove Scrub, and 1 Coastal Hardwood Shrubland) were all visually confirmed although plot data was not taken. In total, all of the polygons (100%) either had vegetation plot data collection or were visually confirmed. Thus the authors felt that the combination of these factors is sufficient to meet the NPS Vegetation Mapping Inventory Program standard of 80% classification accuracy with 90% confidence. As mentioned above the horizontal accuracy associated with the 2007 imagery is

±2.3 meters. Although a separate positional accuracy of the vegetation map was not conducted, the accuracy of the imagery suggests that the map should be well within the 12.2 meters required by the NPS Vegetation Mapping Inventory Program.

## Summary of final project specifications, products and files

The De Soto National Memorial vegetation map was made in UTM, NAD 83, zone 17N coordinates with a minimum mapping unit of 400$m^2$. Aerial imagery from January 2007 and LIDAR imagery from 2003 were used for initial polygon development. These polygons were further refined with field data from December 2007 and June 2009. The final vegetation map has a total of 21 mapping classes and 56 polygons. Map class descriptions are provided in Appendix B with some adjustments to the Rutchey *et al*. (2006, v. 5/22/2007) vegetation key and classification provided in Appendix F. Photos of map classes are provided in Appendix C. A list of species encountered during the field assessment is provided in Appendix D. Maps (8.5" x 11") are provided in Appendix E. Data were collected for 70 field points as well as additional points delineating 0.57 miles of drainages. Nineteen (19) shell mound polygons were created from data collected during this project and a previous effort by Daniel Stephens (DESO NPS). Eighty-four percent (84%) of the polygons had vegetation plot data collection and the remainder were visually confirmed.

Table 7 summarizes the products and filenames included in the De Soto National Memorial vegetation mapping project products and files. A variety of different maps were created as PDF's with various combinations of layers to assist park staff (see Appendix E).

**Table 4. Acreage of Forest, Shrub, Scrub, Dune, Beach, Anthropogenic**

| | Total Area (acres) | |
|---|---|---|
| **Level 1 Category** | De Soto | Riverview Pointe |
| Forest | 14.8 | 7.4 |
| Woodland | 1.7 | 3.7 |
| Shrub | 2.6 | 0.1 |
| Scrub | 0.3 | 0 |
| Dune | 0.1 | 0 |
| Non-Vegetative-Beach | 1.7 | 0.2 |
| Non-Vegetative-Human Impacted | 3.3 | 0.3 |

**Table 5. Acreage of major types of vegetation.**

| | Total Area (acres) | |
|---|---|---|
| Major type of vegetation | De Soto | Riverview Pointe |
| Mangrove (includes CMc, CMr, FMa, FMX, FMXal, FMXac, FMXcr, SMXal, WM, WMc, WMcS) | 14 | 0.7 |
| Hammock (FHC, FHT, SUC, SUT, WUh) | 4.8 | 7.9 |
| Pineland (WupSs, SUs) | 0 | 2.6 |
| Hardwood swamp (WSh) | 0.6 | 0 |
| Beach (BCH) | 1.7 | 0.2 |
| Dune (Dune) | 0.1 | 0 |

**Table 6. Number of polygons, mapped acres, and number of plots sampled in vegetation classes in De Soto National Memorial and Riverview Pointe Preserve.**

| Vegetation Class | Vegetation Class Code | Level 1 Classification | Major Vegetation Type | Number of Polygons | Total Area (acres) | Number of Plots Sampled |
|---|---|---|---|---|---|---|
| Beach | BCH | Non-Vegetative | Beach | 5 | 4.9 | 2 |
| Black Mangrove Forest | FMa | Forest | Mangrove | 4 | 2.3 | 6 |
| Black Mangrove-Buttonwood Forest | FMXac | Forest | Mangrove | 1 | 0.2 | 1 |
| Black Mangrove-White Mangrove Forest | FMXal | Forest | Mangrove | 3 | 4.2 | 4 |
| Black Mangrove-White Mangrove Shrubland | SMXal | Shrubland | Mangrove | 2 | 0.7 | 3 |
| Buttonwood- Red Mangrove Forest | FMXcr | Forest | Mangrove | 1 | 0.3 | 1 |
| Buttonwood Scrub | CMc | Scrub | Mangrove | 1 | 0.2 | 1 |
| Buttonwood Woodland | WMc | Woodland | Mangrove | 1 | 0.4 | 3 |
| Buttonwood Woodland-Succulent | WMcS | Woodland | Mangrove | 1 | 0.8 | 1 |
| Coastal Hardwood Hammock | FHC | Forest | Hammock | 3 | 2.3 | 3 |
| Coastal Hardwood Shrubland | SUC | Shrubland | Hammock | 5 | 2.0 | 6 |
| Graminoid Dominated Dune | DG | Dune | Dune | 1 | 0.1 | 2 |
| Hardwood Swamp Woodland | WSh | Woodland | Hardwood swamp | 1 | 0.6 | 1 |
| Human Impacted | HI | Non-Vegetative | Human impacted | 11 | 3.8 | 13 |
| Mangrove Woodland | WM | Woodland | Mangrove | 1 | 0.08 | 1 |
| Mixed Mangrove Forest | FMX | Forest | Mangrove | 2 | 5.6 | 5 |
| Pine Upland-Saw Palmetto | WUpSs | Woodland | Pineland | 1 | 2.6 | 2 |
| Red Mangrove Scrub | CMr | Scrub | Mangrove | 1 | 0.04 | 0 |
| Saw Palmetto Shrubland | SUs | Shrubland | Pineland | 1 | 0.1 | 1 |
| Temperate Hardwood Hammock | FHT | Forest | Hammock | 7 | 8.1 | 10 |
| Upland Hardwood Woodland | WUh | Woodland | Hammock | 3 | 1.3 | 4 |
| **Total** | | | | **56** | **40.6** | **70** |

**Table 7. DESO vegetation mapping projects products or file descriptions and filenames.** (Note: Shell mound layers are not included in public versions of the map products).

| Category | Product or File Description | Filename |
|---|---|---|
| Aerial photography | Orthophoto aerial photography graphic, 2007 | desoortho.pdf |
| | LIDAR bare earth return graphic, 2003 | desolidar_bareearth.pdf |
| | LIDAR first return graphic, 2003 | desolidar_firstreturn.pdf |
| | LIDAR canopy depth graphic, 2003 | desolidar_canopydepth.pdf |
| Project Report | Project report (contains full report about the vegetation map 2009 including funding source, background information, methods and results, final product specifications, brief description of products and files, map class descriptions, species list from plots, example field form, vegetation classification and key, and photos of map classes) | desorpt.pdf |
| Field data | Graphic showing location of field sites | desoplots.pdf |
| | MS Access database containing field plot data | desodata.mdb |
| | MS Excel format of plot data | plots.xls |
| | Field plot photos (photos named using Plot_ID field in plots.xls, i.e., *deso_date_plot_ID*_a, *deso_date_plot_ID*_b,…) See Appendix C in project report for labeled photos. | field_photos.zip |
| Geospatial Vegetation Information | Zip folder containing geodatabase (deso.mdb & deso.idb) of spatial data (includes data for vegetation polygons, field plot points and data, park boundaries, buildings, trails, drainages, shell mounds, orthophoto, LIDAR bare earth, LIDAR first return, LIDAR canopy depth) | deso.zip |
| | ESRI ArcMap Project file – displays geodatabase (MDB) files | deso_veg_project.mxd |
| | Graphic of vegetation communities (low resolution) | deso.pdf |
| | Graphic of vegetation communities (high resolution) | deso_large.pdf |
| | Graphic of trails, buildings, shell mounds, and drainages | deso_additional.pdf |
| | Graphic of trails, buildings, and interpretive signs | deso_trails_bldgs.pdf |
| | Graphic of shell mounds and buildings | deso_shellmound.pdf |
| | Graphic of drainages and buildings | deso_drainages.pdf |
| | Although use of the geodatabase and ArcMap Project File is recommended, individual shapefiles are also included as zip files: | |
| | Vegetation communities | vegetation.zip |
| | Field plot points | field_plot_points.zip |
| | Boundaries for De Soto and Riverview | boundary.zip |
| | Shoreline | shoreline.zip |
| | Buildings | buildings.zip |
| | Drainages | drainages.zip |
| | Field waypoints from field visits | field_waypoints.zip |
| | Interpretive signs | interp_signs.zip |
| | Roads | roads.zip |
| | Shell mounds | shell_mounds.zip |
| | Trails | trails.zip |
| Project Metadata | De Soto National Memorial boundary metadata | metadesobdy.txt |
| | Riverview Pointe Preserve boundary metadata | metariverbdy.txt |
| | Buildings metadata | metadesobldg.txt |
| | Drainage metadata | metadesodrain.txt |
| | Field waypoints March 2007 metadata | metadesowaypts1.txt |
| | Field waypoints December 2007 metadata | metadesowaypts2.txt |
| | Field waypoints June 2009 metadata | metadesowaypts3.txt |

| Category | Product or File Description | Filename |
|---|---|---|
| | Field plots metadata | metadesofield.txt |
| | March 2007 aerial orthophoto metadata | metadesoortho.txt |
| | February 2006 aerial orthophoto metadata | metadesoortho2.txt |
| | Interpretive signs metadata | metadesointerp.txt |
| | LIDAR bare earth metadata | metadesolidarbe.txt |
| | LIDAR first return metadata | metadesolidarfr.txt |
| | LIDAR calculated canopy depth metadata | metadesolidarcd.txt |
| | Roads metadata | metadesoroads.txt |
| | Shell mounds metadata | metadesoshell.txt |
| | Shoreline metadata | metadesoshl.txt |
| | Trails metadata | metadesotrails.txt |
| | Spatial vegetation metadata | metadesospatial.txt |


**Figure 1. Map of vegetation polygons and field plots in De Soto National Memorial and Riverview Pointe Preserve**

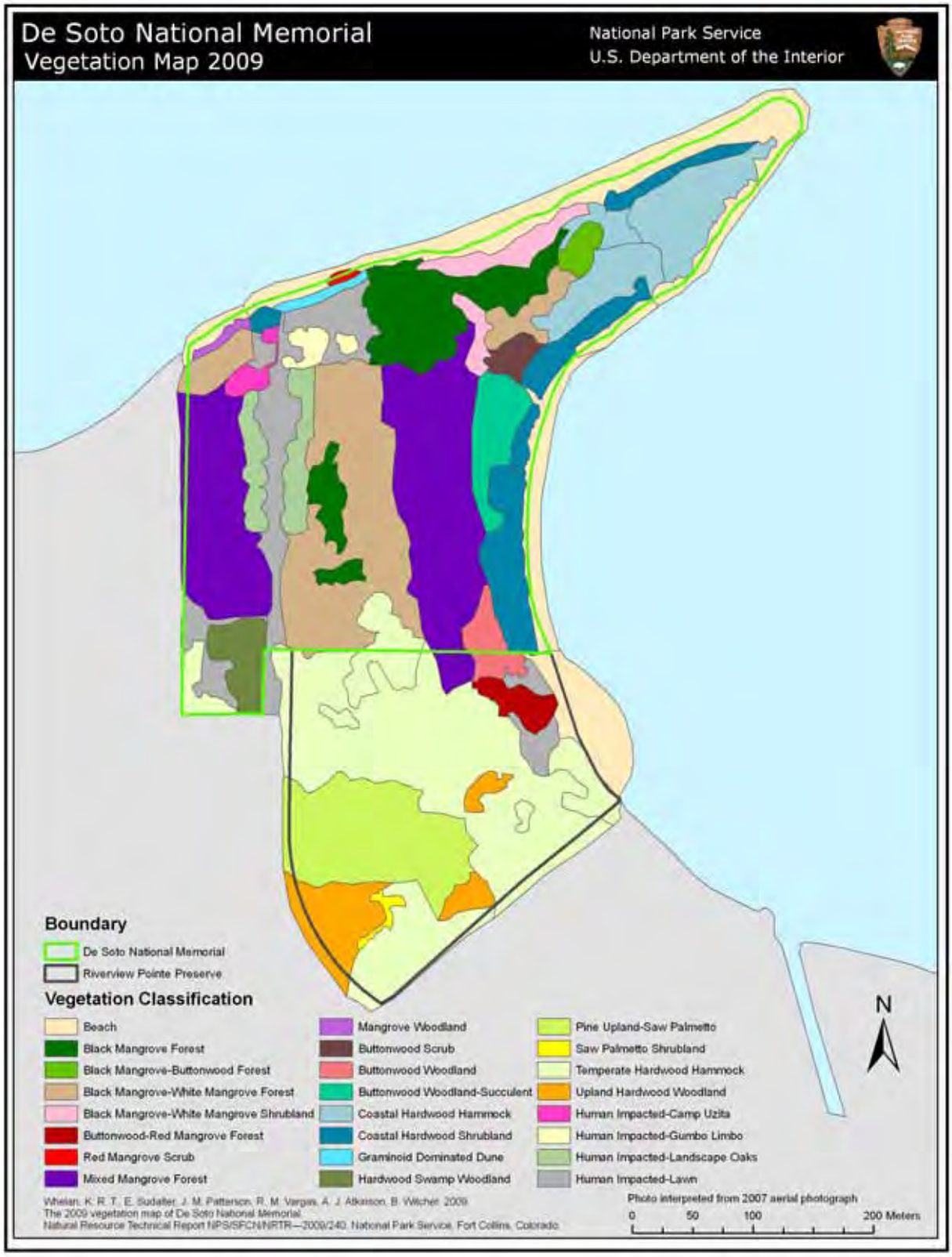



**Figure 2. Map of color-coded vegetation polygons for De Soto National Memorial**


**Figure 3. Map of drainages and buildings.**


**Figure 4. Map of trails, buildings, interpretive signs, and park road.**

# Literature Cited

Rutchey, K., T. Schall., R. Doren, A. Atkinson, M. Ross, K. Bradley, J. Snyder, J. Burch, T. Pernas, B. Witcher, and others. 2006. Vegetation classification system for South Florida natural areas. U.S. Geological Survey. Open-file report 2006-1240, Miami, FL. Version 5/22/2007.

# Appendix A. Field Form

## Desoto Data Sheet

**Observers**_____ **Polygon ID**_____
**Date**_____ **Plot ID**_____
**Plot Radius**_____

*General Description of point and surrounding Vegetation Types (use compass direction)*

_____
_____
_____

*Dominant Vegetation Type in Cell*_____

*Overall Canopy Cover (if Present*_____

*Average Canopy Height and highest height in Tallest Stratum (if present)*

_____

*(Example: 30 feet canopy some trees 50 feet*
*Shrubs dominate cell (10 to 12 feet) with three tall sable palms (25 feet))*
*[Canopy defined as top 1/3 of tree/shrub Canopy- not the extreme tallest part of the plant]*

*Relative Cover of Species in Tallest Stratum (should add to ca. 100%)*

| Graminoid | Shrub | Tree |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

*Description of Understory Species (when visible)*

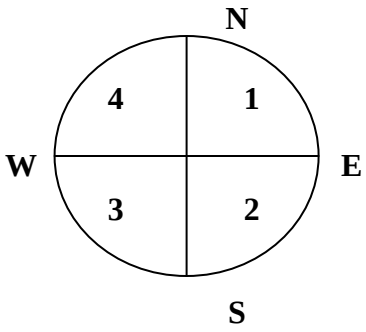
_____
_____
_____
_____

*Water Cover*_____ *Soil Cover*_____

*Other Comment*

_____
_____
_____
_____

**Quadrants**




***Quadrant 1 NE***

| Graminoid | Shrub | Tree |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

***Quadrant 2 SE***

| Graminoid | Shrub | Tree |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

***Quadrant 3 SW***

| Graminoid | Shrub | Tree |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

***Quadrant 4 NW***

| Graminoid | Shrub | Tree |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

# Appendix B. Map Class Descriptions

Below is an abbreviated vegetation classification hierarchy (i.e. classification key) followed by map classes descriptions. Map class descriptions were taken from the "Vegetation Classification System for South Florida Natural Areas" (Rutchey *et al.*, 2006, version 5/22/2007)**.** Three map class descriptions were adjusted to better describe vegetation at De Soto National Memorial. WUh (Upland Woodland) was relabeled as Upland Hardwood Woodland. Map classes in the hierarchy are shown in *italics.* Classes with map photos in Appendix C are marked with a "*". For the complete vegetation classification, see Appendix D.

**F - Forest** (**Forests are high-density stands of trees, >60% tree canopy cover with heights >5 meters)**

- **FM - Mangrove Forest**
  - *FMa - Black Mangrove Forest*
  - *FMX - Mixed Mangrove Forest**
    - *FMXac - Black Mangrove - Buttonwood Forest*
    - *FMXal - Black Mangrove - White Mangrove Forest*
    - *FMXcr - Buttonwood - Red Mangrove Forest**
- **FH - Hammock Forest**
  - *FHT - Temperate Hardwood Hammock**
  - *FHC - Coastal Hardwood Hammock*

**W - Woodland (Woodlands are low-density stands of trees [10 - 60% tree canopy cover] with heights >5 meters in a matrix of shrubs, graminoids, and/or herbaceous vegetation.)**

- *WM - Mangrove Woodland*
  - *WMc - Buttonwood Woodland**
    - *WMcS - Buttonwood Woodland-Succulent*
- **WS - Swamp Woodland**
  - *WSh – Hardwood Swamp Woodland*
- **WU - Upland Woodland**
  - **WUp - Pine Upland**
    - **WUpS - Pine Upland-Shrub**
      - *WUpSs - Pine Upland-Saw Palmetto*
  - *WUh - Upland Hardwood Woodland**

**S - Shrubland (Shrublands are high-density stands of shrubs with >50% canopy cover and heights <5 meters)**

- **SM - Mangrove Shrubland**
  - **SMX - Mixed Mangrove Shrubland**
    - *SMXal - Black Mangrove-White Mangrove Shrubland**
- **SU - Upland Shrubland**
  - *SUC - Coastal Hardwood Shrubland**
  - *SUs - Saw Palmetto Shrubland*

**C - Scrub ((Mangrove scrub canopy heights are less than two meters. Canopy densities are generally from 10% - 50% but can be as high as 100%.)**

- **CM - Mangrove Scrub**
  - *CMc - Buttonwood Scrub*
  - *CMr - Red Mangrove Scrub*

**D - Dune**

- *DG - Graminoid Dune**

**N - Non-Vegetative**

- *BCH - Beach*
- *HI - Human Impacted (Lawn, Landscape Oaks, Gumbo Limbo, Camp Uzita)**

| Class ID | Map Class Name | Vegetation Description |
|---|---|---|
| FMa | Black Mangrove Forest | Black Mangrove (*Avicennia germinans*) dominant forest (High-density stands of trees, >60% tree canopy cover with heights greater than five meters). Black mangrove is distinguishable from other mangrove species by leaves with grayish undersurfaces, by green, flattened "lima bean-like" fruits, by dark to blackish bark, and by the presence of numerous short breathing roots projecting vertically from the ground below and around the tree. |
| FMX | Mixed Mangrove Forest | Mangrove forest with a mix of mangrove species with no particular species of dominance. (Forest is a high-density stands of trees, >60% tree canopy cover with heights greater than five meters). |
| FMXac | Black Mangrove-Buttonwood Forest | Co-dominant mix (60/40% or 40/60% split) of Black Mangrove (*Avicennia germinans*) and Buttonwood (*Conocarpus erectus*) trees.(Forest is a high-density stands of trees, >60% tree canopy cover with heights greater than five meters). |
| FMXal | Black Mangrove-White Mangrove Forest | Co-dominant mix (60/40% or 40/60% split) of Black Mangrove (*Avicennia germinans*) and White Mangrove (*Laguncularia racemosa*) trees. (Forest is a high-density stands of trees, >60% tree canopy cover with heights greater than five meters). |
| FMXcr | Buttonwood-Red Mangrove Forest | Co-dominant mix (60/40% or 40/60% split) of Buttonwood (*Conocarpus erectus*) and Red Mangrove (*Rhizophora mangle*) trees. (Forest is a high-density stands of trees, >60% tree canopy cover with heights greater than five meters). |
| FHT | Temperate Hardwood Hammock | Upland or briefly flooded hardwood forest with a mix of Laurel Oak (*Quercus laurifolia*), Live Oak (*Q. virginiana*), Cabbage Palm (*Sabal palmetto*), and occasionally Strangler Fig (*Ficus aurea*), Red Mulberry (*Morus rubra*), Hackberry (*Celtis laevigata*), Common Persimmon (*Diospyros virginiana*), and/or Saw Palmetto (*Serenoa repens*). (Forest is a high-density stand of trees, >60% tree canopy cover with heights greater than five meters). ***For the purposes of De Soto National Memorial this classification has been modified to include hickory (Carya sp.) as a dominant tree species.*** |

| Class ID | Map Class Name | Vegetation Description |
|---|---|---|
| FHC | Coastal Hardwood Hammock | Upland or briefly flooded hardwood forest with most common species are Pigeon Plum (*Coccoloba diversifolia*), False Mastic (*Sideroxylon foetidissimum*), Gumbo Limbo (*Bursera simaruba*), Strangler Fig (*Ficus aurea*), and White Stopper (*Eugenia axillaris*) but can potentially have many of the same species found in the Tropical Hardwood Hammock (FHS) category. However, it must also include some of the following in species as well: Jamaican Dogwood (*Piscidia piscipula*), Spanish Stopper (*Eugenia foetidia*), Mahogany (*Swietenia mahagoni*), Cabbage Palm (*Sabal Palmetto*), Wild Lime (*Zanthoxylum fagara*), Blackbead (*Pithecellobium keyense*), Spanish Bayonet (*Yucca aloifolia*), Catclaw Blackbead (*Pithecellobium unguis-cati*), Triangle Cactus (*Acanthocereus tetragonus*), Prickly Pear (*Opuntia stricta*), Wild Cinnamon (*Canella winterana*), Sea Grape (*Coccoloba uvifera*), Buttonwood (*Conocarpus erectus*), Geiger Tree (*Cordia Sebestena*), Milk Bark (*Drypetes lateriflora*), Seven Year Apple (*Genipa clusiifolia*), Crabwood (*Gymnanthes lucida*), Mancinella (*Hippomane mancinella*), Joewood (*Jacquinia keyensis*), and Thrinax (*Thrinax morrissii, Thrinax. radiata*). (Forest is a high-density stand of trees, >60% tree canopy cover with heights greater than five meters). ***For the purposes of De Soto National Memorial this classification has been modified to describe a canopy cover that varies from 40 to 100%. It must be kept in mind that many of the tropical species are at their northern limit of distribution due to frost events. Referred to as Coastal Hammock ecosystem by the Manatee County Conservation Lands Management Department and can be identified by its large trees and a rich understory of small woody plants and vines. Some of these areas would be referred to as Coastal Strand ecosystem by the Manatee County Conservation Lands Management Department and is a transitional zone between the windy coast and the stable upland systems. The plants living in this area serve to protect the more inland sites from severe storms.*** |
| WM | Mangrove Woodland | Regularly flooded mangrove woodlands that are typically found along saltwater shorelines. (Woodlands are low-density stands of trees [10 - 60% tree canopy cover] with heights greater than five meters in a matrix of shrubs, graminoids, and/or herbaceous vegetation.) |
| WMc | Buttonwood Woodland | Buttonwood (*Conocarpus erectus*) in a matrix composed of salt marsh graminoids, herbs, and/or succulents. (Woodlands are low-density stands of trees [10 - 60% tree canopy cover] with heights greater than five meters in a matrix of shrubs, graminoids, and/or herbaceous vegetation.) |
| WMcS | Buttonwood Woodland-Succulent | Buttonwood *(Conocarpus erectus)* in a matrix composed predominately of succulents. (Woodlands are low-density stands of trees [10 - 60% tree canopy cover] with heights greater than five meters in a matrix of shrubs, graminoids, and/or herbaceous vegetation.) |
| WSh | Hardwood Swamp Woodland | Seasonally to semi-permanently flooded freshwater woodland with a mix of lowland hardwood trees such as Laural Oak (*Quercus laurifolia*), Red Maple (*Acer rubrum*), Cabbage Palm (*Sabal palmetto*), Pop Ash (*Fraxinus caroliniana*), Swamp Bay (*Persea palustris*), Red Bay (*P. borbonia*), and Sweetbay (*Magnolia virginiana*). (Woodlands are low-density stands of trees [10 - 60% tree canopy cover] with heights greater than five meters in a matrix of shrubs, graminoids, and/or herbaceous vegetation.) |

| Class ID | Map Class Name | Vegetation Description |
|---|---|---|
| WUpSs | Pine Upland-Saw Palmetto | Upland or briefly flooded Slash Pine (*Pinus elliottii var. densa*) in a matrix composed predominately of Saw Palmetto (*Serenoa repens*). (Woodlands are low-density stands of trees [10 - 60% tree canopy cover] with heights greater than five meters in a matrix of shrubs, graminoids, and/or herbaceous vegetation.) ***For the purposes of De Soto National Memorial this classification has been modified to describe an area dominated by Sand Pine (Pinus clausa) with an understory of Saw Palmetto (Serenoa repens). Referred to as Coastal Sand Pine Scrub habitat by the Manatee County Conservation Lands Management Department, this is the ancient coastal sand dunes which comprise an ecosystem that features plants adapted to living in high heat and sandy soil.*** |
| SMXal | Black Mangrove-White Mangrove Shrubland | Co-dominant mix (60/40% or 40/60% split) of Black Mangrove (*Avicennia germinans*) and White Mangrove (*Laguncularia racemosa*) shrubs. (Mangrove shrubs are high-density stands of mangroves with >50% canopy cover and heights 2-5 meters). |
| SUC | Coastal Hardwood Shrubland | Upland or briefly flooded shrubland with a mix of Sea Grape (*Coccoloba uvifera*), Gumbo Limbo (*Bursera simaruba*), Mahogany (*Swietenia mahagoni*), Spanish Stopper (*Eugenia foetida*), Poisonwood (*Metopium toxiferum*), Willow Bustic (*Dipholis salicifolia*), Jamaican Dogwood (*Piscidia piscipula*), Florida Thatch Palm (*Thrinax radiata*), Bahama Maidenbush (*Savia bahamensis*), Florida Swampprivet (*Forestiera segregata*), Pride-of-Big-Pine (*Strumpfia maritima*), and Yellow Necklacepod (*Sophora tomentosa*). Common understory components include Pricklypear (*Opuntia stricta*), Triangle Cactus (*Acanthocereus tetragonus*), among others. (Shrublands are high-density stands of small trees and/or shrubs [>50% tree/shrub canopy cover] with heights less than five meters). ***Referred to as Coastal Strand ecosystem by the Manatee County Conservation Lands Management Department, this is a transitional zone between the windy coast and the stable upland systems. The plants living in this area serve to protect the more inland sites from severe storms.*** |
| SUs | Saw Palmetto Shrubland | Saw Palmetto (*Serenoa repens*) dominant shrubland. (Shrublands are high-density stands of small trees and/or shrubs [>50% tree/shrub canopy cover] with heights less than five meters). |
| CMc | Buttonwood Scrub | Buttonwood (*Conocarpus erectus*) dominant scrub; occasionally mixed with sparse Cocoplum (*Chrysobalanus icaco*), Wax Myrtle (*Myrica cerifera*), and/or Red Mangrove (*Rhizophora mangle*). (Mangrove scrub canopy heights are less than two meters. Canopy densities are generally from 10% - 50% but can be as high as 100%.) |
| CMr | Red Mangrove Scrub | Red Mangrove (*Rizophora mangle*) dominant scrub; occasionally mixed with sparse Cocoplum (*Chrysobalanus icaco*), Wax Myrtle (*Myrica cerifera*), and/or Buttonwood (*Conocarpus erectus*). (Mangrove scrub canopy heights are less than two meters. Canopy densities are generally from 10% - 50% but can be as high as 100%.) |
| DG | Graminoid Dune | Graminoid dominated dune. |
| BCH | Beach | Sand covered ground adjacent to lakes, bays, oceans, or other large bodies of water. |
| HI | Human Impacted | Areas impacted by human disturbance. |

# Appendix C. Map Class Photos

**Black Mangrove-White Mangrove Shrubland**
(DESO_20090728_1005_a.JPG, DESO_20090728_1005_b.JPG)

**Coastal Hardwood Shrubland**
(DESO_20090728_1004_a.JPG, DESO_20090728_1004_b.JPG)

**Graminoid Dune** (DESO_20090728_1003_a.JPG)

**Human Impacted-Landscape Oaks** (DESO_20090728_1002_a.JPG)

**Human Impacted-Lawn**
(DESO_20090728_1017_a.JPG, DESO_20090728_1018_a.JPG)

**Mixed Mangrove Forest**
(DESO_20090728_1007_a.JPG, DESO_20090728_1007_b.JPG)

**Mixed Mangrove Forest** (DESO_20090728_1012_a.JPG)

**Buttonwood Woodland looking towards Mixed Mangrove Forest**
(DESO_20090728_1013_a.JPG)

**Buttonwood-Red Mangrove Forest**
(DESO_20090728_1008_a.JPG, DESO_20090728_1008_b.JPG)

**Temperate Hardwood Hammock**
(DESO_20090728_1001_a.JPG, DESO_20090728_1001_b.JPG)

**Temperate Hardwood Hammock**
(DESO_20090728_1016_a.JPG, DESO_20090728_1016_b.JPG)

**Upland Hardwood Woodland**
(DESO_20090728_1009_a.JPG, DESO_20090728_1009_b.JPG)

# Appendix D. Species List for Field Plots at De Soto National Memorial

(Note: Table only includes species recorded at field plots and is not a complete species list for the park)

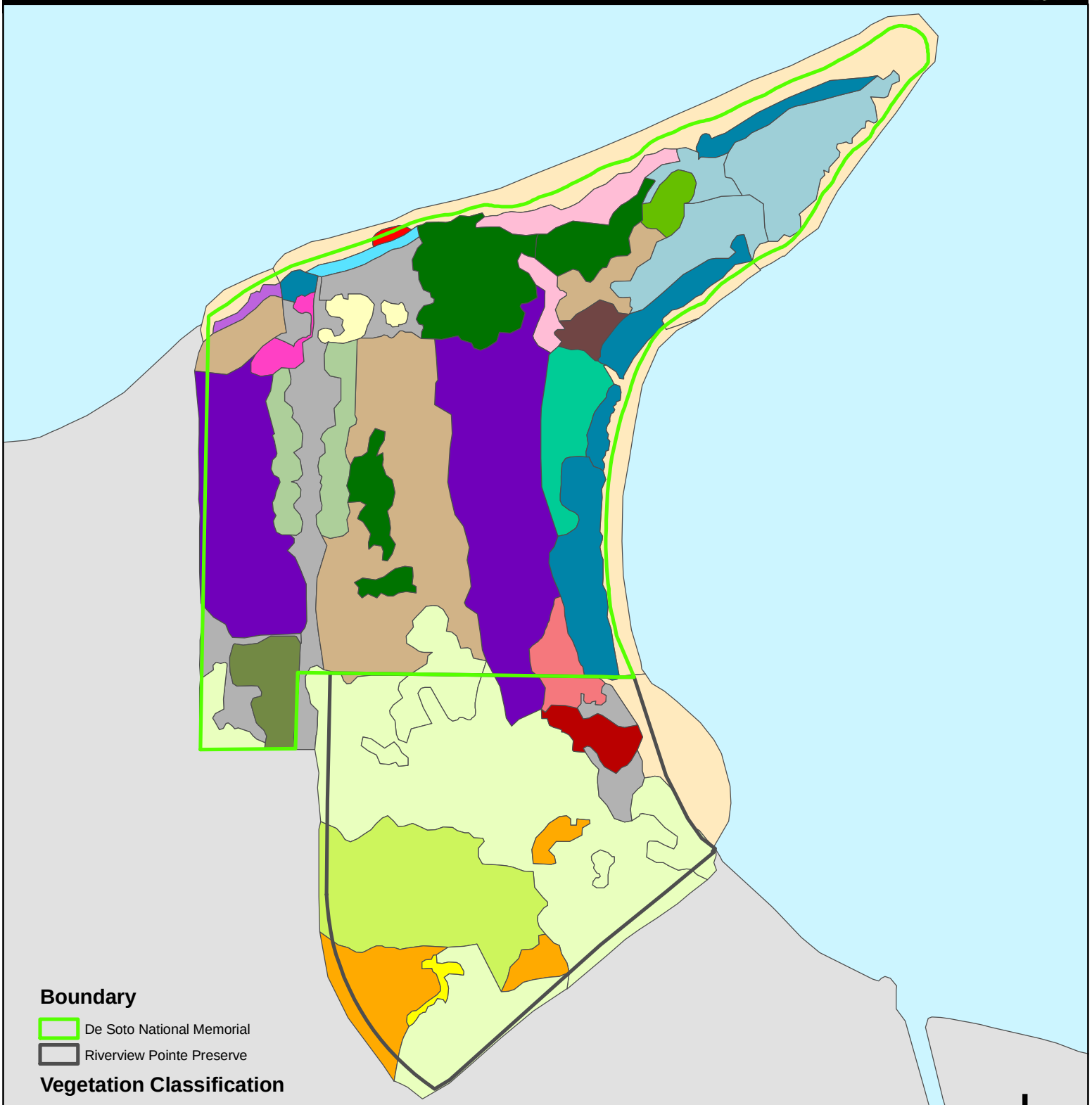
| Species Names | Field sheet names | Other Common Names |
|---|---|---|
| *Acrostichum danaeifolium* | Acrostichum | Inland Leatherfern |
| *Avicennia germinans* | Black Mangrove / BLACKS | Black Mangrove |
| *Batis maritima* | Batmar | Saltwort |
| *Blechnum serrulatum* | Bleser | Swamp Fern |
| *Borrichia frutescens* | Bor | Bushy Seaside Oxeye |
| *Bursera simaruba* | Gumbo Limbo | Gumbo Limbo |
| *Caesalpinia bonduc* | Nicker Bean | Gray Nicker |
| *Callicarpa americana* | Beauty Berry | Beauty Bush |
| *Canavalia rosea* | Canros | Baybean |
| *Capparis cynophallophora* | Jamaica Caper | Jamaican Caper |
| *Carya Sp.* | Hickory | Hickory |
| *Chiococca alba* | Chiccoa Alba | Snowberry |
| *Coccoloba uvifera* | Seagrape | Seagrape |
| *Commelina diffusa var. diffusa* | Comdif | Common Dayflower |
| *Conocarpus erectus* | ButtonWood / BUTTON | ButtonWood / BUTTON |
| *Dactyloctenium aegyptium* | Egyptian Grass | Crowsfootgrass |
| *Dalbergia ecastaphyllum* | Dalbergia | Coin Vine / Fish poison plant vine |
| *Desmodium incanum* | Desinc | Ticktrefoil |
| *Encyclia tampensis* | E. Tampensis | Tampa Butterfly Orchid |
| *Erythrina herbacea* | Erythrina | Coral Bean |
| *Eugenia axillaris* | White stopper | White Stopper |
| *Ficus aurea* | FICUS | Florida Strangler Fig, Florida Strangler |
| *Forestiera segregata* | FORESTIERA | Florida Privet, Florida Swamp Privet |
| *Gaillardia pulchella* | Gaillardia | Blanketflower, Firewheel |
| *Helianthus debilis* | SEASIDE Daisy | Dune Sunflower |
| *Hydrocotyle umbellata* | Hydumb | Marshpennywort |
| *Ilex cassine* | Ilex | Dahoon Holley |
| *Juniperus virginiana* | Cedar / Bay Cedar | Eastern Redcedar, Red Cedar Juniper |
| *Laguncuaria racemosa* | White Mangrove / WHITE | White Mangrove |
| *Lantana camara* | Lantana | Lantana |
| *Morella cerifera* | Waxmyrtle | Southern bayberry, Wax myrtle |
| *Opuntia stricta* | Opustr | Pricklypear, Shell-Mound Pricklypear |
| *Oxalis corniculata* | Oxalis (yellow) | Common Yellow Woodsorrel |
| *Persea borbonia* | Red Bay, Persea, Persea borbonia | Red Bay |
| *Phragmites australis* | MaidenCane | Common Reed , Maidencane |
| *Pinus clausa* | SAND Pines | Sand Pine |
| *Psychotria nervosa* | Psyner | Wild Coffee |
| *Psychotria sulzneri* | Coffee | Soft-leafed coffee |
| *Pteridium aquilinum* | Petris * incorrect common name / FERNS / Bracken | Bracken Fern |
| *Quercus laurifolia* | Quelau | Laurel Oak |
| *Quercus virginiana* | Oak | Live Oak |

| Species Names | Field sheet names | Other Common Names |
|---|---|---|
| *Rapanea punctata* | Myrsine | Myrsine |
| *Rhizophora mangle* | Red Mangrove /RED | Red Mangrove |
| *Sabal palmetto* | Sabal / Palms | Cabbage Palm |
| *Sarcocornia perennis* | Salvir | Perennial Glasswort |
| *Schinus terebinthifolius var. raddianus* | SCHINUS | Brazillian Peppertree |
| *Serenoa repens* | Serenoa / Saw Palmetto | Saw Palmetto |
| *Sideroxylon celastrinum* | Bumcel | Saffron Plum |
| *Smilax bona-nox* | Smilax | Saw Green-brier |
| *Stenotaphrum secundatum* | Stesec | St. Augustine Grass |
| *Suaeda linearis* | Sualin | Sea Blite |
| *Syzygium cumini* | Syzcum | Java Plum, Jambolan Tree |
| *Taliparitiliaceum var. tiliaceum* | Hibtil | Sea Hibiscus, Mahoe |
| *Uniola paniculata* | Unipan | Sea Oats |
| *Ximenia americana* | Hog's Plum | Tallow wood |
| *Yucca aoifolia* | Yucca | Spanish Bayonet |

# Appendix E. Maps

# De Soto National Memorial
## Vegetation Map 2009

National Park Service
U.S. Department of the Interior



### Boundary

- De Soto National Memorial
- Riverview Pointe Preserve

### Vegetation Classification

- Beach
- Black Mangrove Forest
- Black Mangrove-Buttonwood Forest
- Black Mangrove-White Mangrove Forest
- Black Mangrove-White Mangrove Shrubland
- Buttonwood-Red Mangrove Forest
- Red Mangrove Scrub
- Mixed Mangrove Forest
- Mangrove Woodland
- Buttonwood Scrub
- Buttonwood Woodland
- Buttonwood Woodland-Succulent
- Coastal Hardwood Hammock
- Coastal Hardwood Shrubland
- Graminoid Dominated Dune
- Hardwood Swamp Woodland
- Pine Upland-Saw Palmetto
- Saw Palmetto Shrubland
- Temperate Hardwood Hammock
- Upland Hardwood Woodland
- Human Impacted-Camp Uzita
- Human Impacted-Gumbo Limbo
- Human Impacted-Landscape Oaks
- Human Impacted-Lawn

Whelan, K. R. T., E. Sudalter, J. M. Patterson, R. M. Vargas, A. J. Atkinson, B. Witcher. 2009.
The 2009 vegetation map of De Soto National Memorial.
Natural Resource Technical Report NPS/SFCN/NRTR—2009/240. National Park Service, Fort Collins, Colorado.

Photo interpreted from 2007 aerial photograph

0 50 100 200 Meters

# De Soto National Memorial

## Trails, Buildings, and Interpretive Signs

National Park Service
U.S. Department of the Interior

# De Soto National Memorial
## Drainages and Buildings

National Park Service
U.S. Department of the Interior

# De Soto National Memorial

## Vegetation Plots and Polygons for Vegetation Map 2009

National Park Service
U.S. Department of the Interior

Whelan, K. R. T., E. Sudalter, J. M. Patterson, R. M. Vargas, A. J. Atkinson, B. Witcher. 2009.
The 2009 vegetation map of De Soto National Memorial.
Natural Resource Technical Report NPS/SFCN/NRTR—2009/240. National Park Service, Fort Collins, Colorado.

- Vegetation Plots
- Vegetation Polygons
- De Soto National Memorial
- Riverview Pointe Preserve

0 25 50 100 Meters

Photo interpreted from 2007 aerial photograph

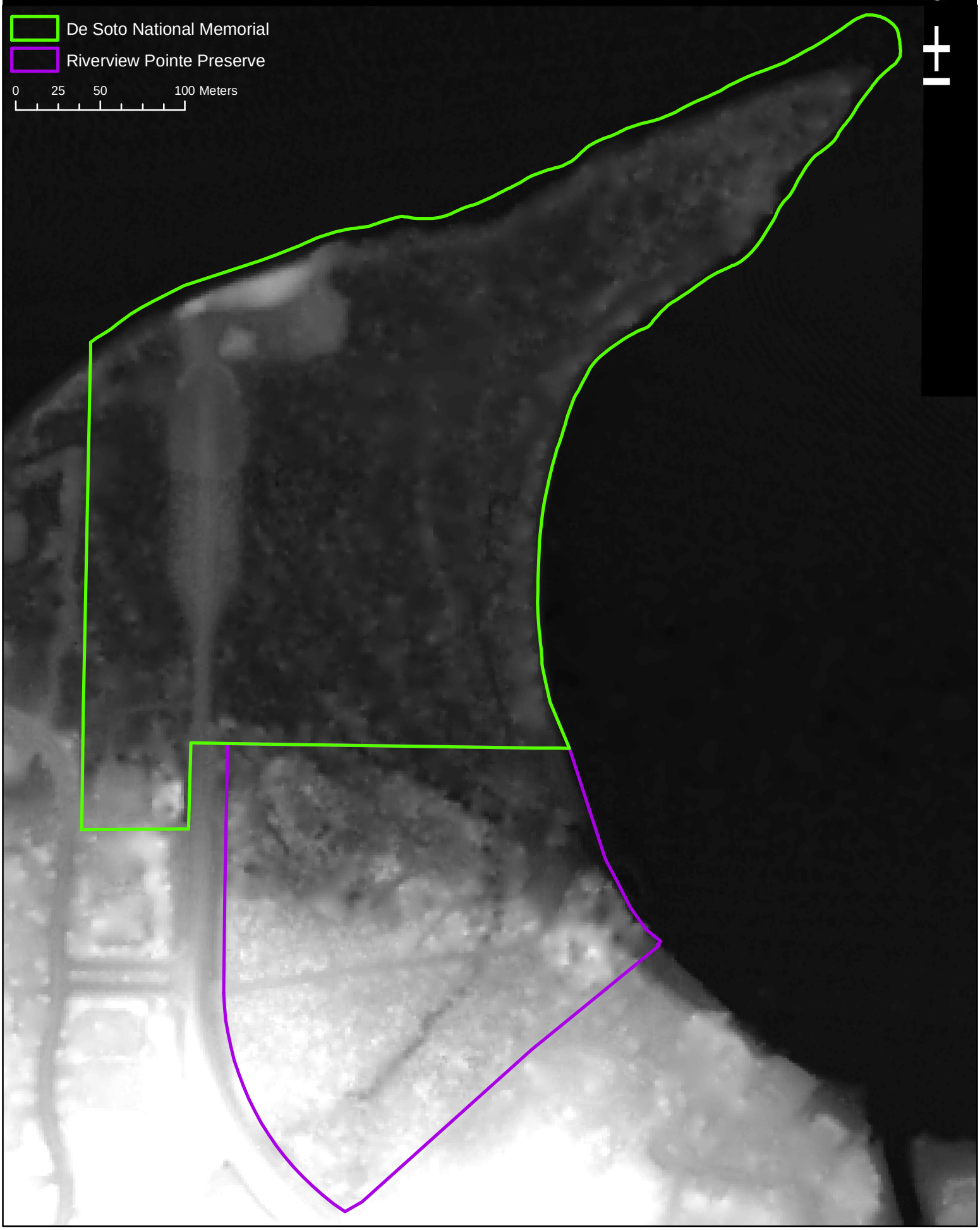
# De Soto National Memorial
## Orthophoto 2007

National Park Service
U.S. Department of the Interior

# De Soto National Memorial

## LIDAR 2003 - Bare Earth

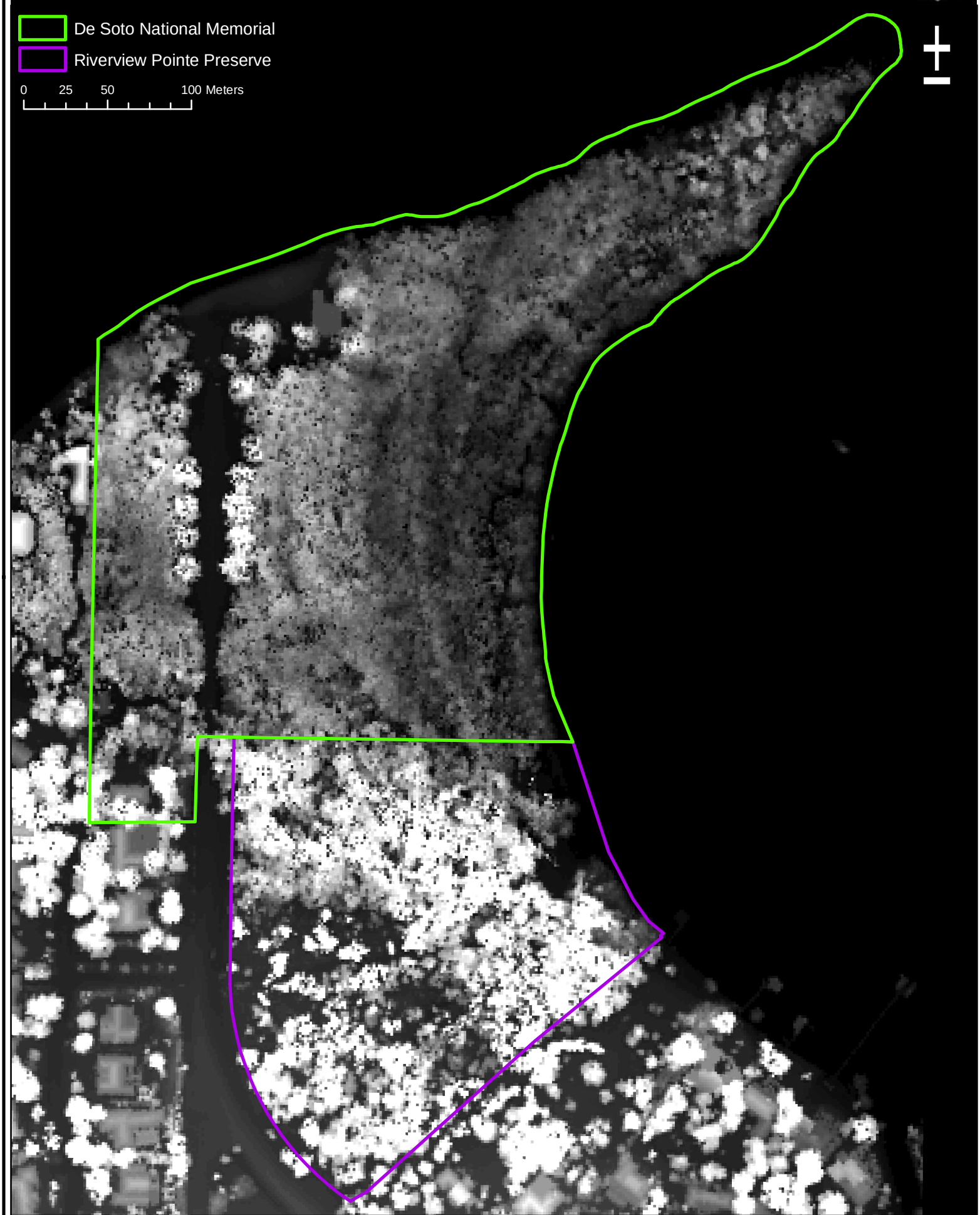
National Park Service
U.S. Department of the Interior



# De Soto National Memorial

## LIDAR 2003 - First Return

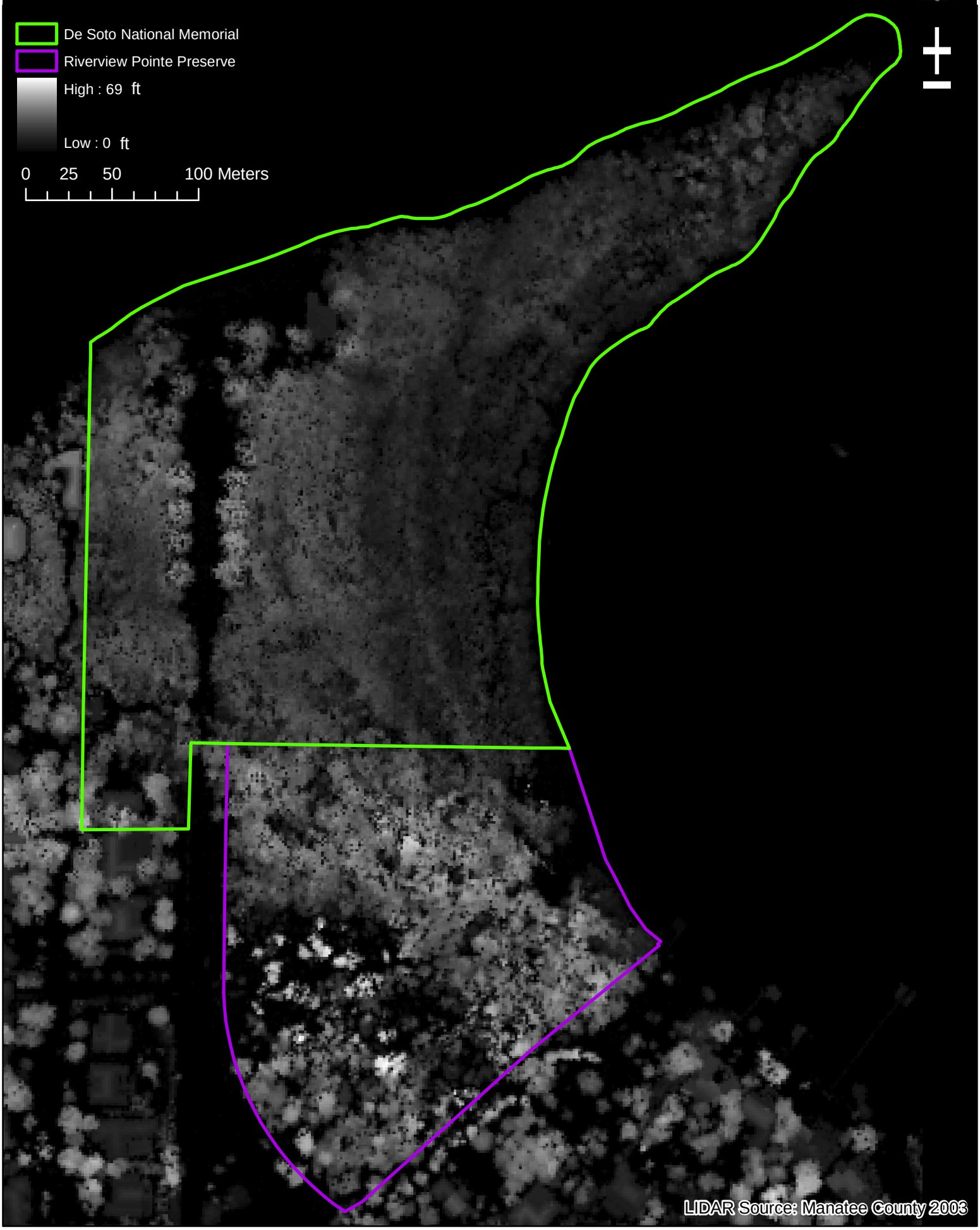
National Park Service
U.S. Department of the Interior



# De Soto National Memorial

## LIDAR 2003 - Canopy Depth

National Park Service
U.S. Department of the Interior



# Appendix F. Vegetation Classification System for South Florida Natural Areas, v. 5/22/2007 (Rutchey *et al.*, 2006)

# Vegetation Classification System for South Florida Natural Areas

**Update:** **May 22, 2007**

**Authors**


| Last Name | First Name | Agency |
|---|---|---|
| Rutchey | Ken | South Florida Water Management District |
| Schall | Ted N. | South Florida Water Management District |
| Doren | Robert F. | Florida International University |
| Atkinson | Andrea | National Park Service - South Florida & Caribbean Network |
| Ross | Mike S. | Florida International University |
| Jones | David T. | Florida International University |
| Madden | Marguerite | University of Georgia |
| Vilchek | Les | U.S. Fish and Wildlife Service |
| Bradley | Keith A. | The Institute for Regional Conservation |
| Snyder | Jim R. | U.S. Geological Survey |
| Burch | Jim N. | Big Cypress National Preserve |
| Pernas | Tony | National Park Service - Exotic Plant Management Team |
| Witcher | Brian | National Park Service - South Florida & Caribbean Network |
| Pyne | Milo | NatureServe |
| White | Rickie | NatureServe |
| Smith | Tom J. | U.S. Geological Survey |
| Sadle | Jimi | Big Cypress National Preserve |
| Smith | Craig S. | Everglades National Park |
| Patterson | Matt E. | National Park Service - South Florida & Caribbean Network |
| Gann | George D. | The Institute for Regional Conservation |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| F | 100000 | Forest | 1 | High-density stands of trees (>50% tree canopy cover) with heights greater than five meters. Tree canopy cover from 50% - 60% will be considered Forest unless specifically described in the Woodland section of this classification system. | Found throughout Florida. |
| FM | 110000 | Mangrove Forest | 2 | Regularly flooded forests that are typically found along saltwater shorelines, including Black Mangrove (*Avicennia germinans*), White Mangrove (*Laguncularia racemosa*), Red Mangrove (*Rhizophora mangle*), and Buttonwood (*Conocarpus erectus*). | Found along coastal Florida. |
| FMa | 111000 | Black Mangrove Forest | 3 | Black Mangrove (*Avicennia germinans*) dominant forest. Black mangrove is distinguishable from other mangrove species by leaves with grayish undersurfaces, by green, flattened “lima bean-like” fruits, by dark to blackish bark, and by the presence of numerous short breathing roots projecting vertically from the ground below and around the tree. | Found along coastal Florida. Predominates in the upper part of the intertidal zone and into the irregularly flooded higher elevations; common forest fringing Florida Bay along Snake Bite in ENP; sometimes found on higher drier soils than the red or white mangrove. However, it can be found amongst any of the other Mangrove communities. |
| FMc | 112000 | Buttonwood Forest | 3 | Buttonwood (*Conocarpus erectus*) dominant forest with variable understory composition. | Generally coastal in distribution, normally found along the landward edge of the mangrove zone and along the edges of hammocks bordering the transition zone between freshwater and saltwater environments; thriving in areas that are only occasionally subjected to tidal washing (e.g., elevated ridges in or near the tidal zone); southern Florida and the Keys; more specifically found along the Buttonwood ridge in ENP and around Coot Bay. However, it can be found amongst any of the other Mangrove communities. |
| FMl | 113000 | White Mangrove Forest | 3 | White Mangrove (*Laguncularia racemosa*) dominant forest. | Found along coastal Florida. Occurs throughout the intertidal zone, but predominatley in the irregularly flooded higher portions of the swamp. However, it can be found amongst any of the other Mangrove communities. |
| FMr | 114000 | Red Mangrove Forest | 3 | Red Mangrove (*Rhizophora mangle*) dominant forest. | Found along coastal Florida primarily in the middle and lower portions of the intertidal and upper subtidal zone. However, it can be found amongst any of the other Mangrove communities. |
| FMX | 115000 | Mixed Mangrove Forest | 3 | Mix of mangrove species with no particular species of dominance. | |
| FMXac | 115100 | Black Mangrove-Buttonwood Forest | 4 | Co-dominant mix (60/40% or 40/60% split) of Black Mangrove (*Avicennia germinans*) and Buttonwood (*Conocarpus erectus*) trees. | |
| FMXal | 115200 | Black Mangrove-White Mangrove Forest | 4 | Co-dominant mix (60/40% or 40/60% split) of Black Mangrove (*Avicennia germinans*) and White Mangrove (*Laguncularia racemosa*) trees. | |
| FMXar | 115300 | Black Mangrove-Red Mangrove Forest | 4 | Co-dominant mix (60/40% or 40/60% split) of Black Mangrove (*Avicennia germinans*) and Red Mangrove (*Rhizophora mangle*) trees. | |
| FMXcl | 115400 | Buttonwood-White Mangrove Forest | 4 | Co-dominant mix (60/40% or 40/60% split) of Buttonwood (*Conocarpus erectus*) and White Mangrove (*Laguncularia racemosa*) trees. | |
| FMXcr | 115500 | Buttonwood-Red Mangrove Forest | 4 | Co-dominant mix (60/40% or 40/60% split) of Buttonwood (*Conocarpus erectus*) and Red Mangrove (*Rhizophora mangle* ) trees. | |
| FMXlr | 115600 | White Mangrove-Red Mangrove Forest | 4 | Co-dominant mix (60/40% or 40/60% split) of White Mangrove (*Laguncularia racemosa* ) and Red Mangrove (*Rhizophora mangle*) trees. | |

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|---|---|---|---|---|---|
| FS | 120000 | Swamp Forest | 2 | Seasonally to semi-permanently flooded freshwater forests. | Found throughout Florida. |
| FSa | 121000 | Red Maple Forest | 3 | Red Maple (*Acer rubrum* ) dominant forest. | Common to wet areas and moist woods throughout system southward to about Tamiami Trail. |
| FSc | 122000 | Paurotis Palm Forest | 3 | Paurotis Palm (*Acoelorrhaphe wrightii*) dominant forest. | Commonly found landward of the mangrove zone from around US 1 west to Flamingo; also common to the Fakahatchee Strand State Preserve and can be a common understory component of swamp forests, including portions of Everglades tree islands. |
| FSaf | 123000 | Pond Apple-Pop Ash Forest | 3 | Co-dominant mix (60/40% or 40/60% split) of Pond Apple (*Annona glabra*) and Pop Ash (*Fraxinus caroliniana*) trees, generally including a diverse epiphytic assemblage. | Commonly inundated 9-12 months a year and occurring in the center of large cypress domes and strands, such as in Barnes Strand in BICY; also common to Florida Panther NWR. |
| FSB | 124000 | Bayhead Forest | 3 | Mix of Swamp Bay (*Persea palustris* ), Red Bay (*Persea borbonia*), Cocoplum (*Chrysobalanus icaco*), Dahoon Holly (*Ilex cassine* ), Willow (*Salix caroliniana*), Wax Myrtle (*Myrica cerifera* ), Sweetbay (*Magnolia virginiana*), Cypress (*Taxodium* spp.), Pond Apple (*Annona glabra*), and occasionally Buttonwood (*Conocarpus erectus*). | Typical of tree islands in Shark River Slough, C-111, and the WCAs; commonly inundated 4-10 months a year. |
| FSBT | 141000 | Transitional Bayhead Forest | 3 | Mix of trees characterized by Buttonwood (*Conocarpus erectus* ), Red Mangrove (*Rhizophora mangle*), Cocoplum (*Chrysobalanus icaco*), Wax Myrtle (*Myrica cerifera* ), Mahogany (*Swietenia mahagoni*), Poisonwood (*Metopium toxiferum*), and occasionally Swamp Bay (*Persea palustris* ), Red Bay (*P. borbonia* ), Sweetbay (*Magnolia virginiana*), and Dahoon Holly (*Ilex cassine* ). The presence of Buttonwood and Red Mangrove set this class apart from the Bayhead Forest class. Signatures for Buttonwood and Dahoon Holly (*Ilex cassine* ) are often confused in regions where the two species co-exist, leaving Red Mangrove as the distinguishing component between the Transitional Bayhead and Bayhead classes in regions where both classes are likely to be found. | Typically occurring in a several kilometer wide band in the southern reaches of Taylor Slough and the Southeast Saline Everglades, extending west to Mahogany Hammock in ENP, and forming a transitional forest between the exclusively freshwater Bayhead forests to the north and the coastal Buttonwood and Mangrove forests to the south. Most often associated with tree islands within the scrub Red Mangrove zone. |
| FSf | 142000 | Pop Ash Forest | 3 | Pop Ash (*Fraxinus caroliniana* ) dominant forest. | Found in Florida Panther NWR. |
| FSH | 125000 | Hardwood Swamp Forest | 3 | Mix of lowland hardwood trees such as Laurel Oak (*Quercus laurifolia*), Red Maple (*Acer rubrum* ), Cabbage Palm (*Sabal palmetto*), Pop Ash (*Fraxinus caroliniana*), Swamp Bay (*Persea palustris* ), Red Bay (*P. borbonia* ), and Sweetbay (*Magnolia virginiana* ). | Found in Gator Hook Strand and East Crossing Strand in BICY, and in the Florida Panther NWR |
| FSt | 127000 | Cypress Forest | 3 | Pond Cypress (*Taxodium ascendens*) and/or Bald Cypress (*T. distichum* ) dominant forest with common understory vegetation consisting of Pond Apple (*Annona glabra*), Wax Myrtle (*Myrica cerifera* ), Pop Ash (*Fraxinus caroliniana*), Cocoplum (*Chrysobalanus icaco* ), and Leather Fern (*Acrostichum danaeifolium* ). | Common in EVER, BICY, western WCA3, Strazzulla property adjacent to eastern Loxahatchee NWR, JW Corbett and Pal-Mar WMA; found throughout Florida, except in the southernmost peninsula and the Keys. |
| FStD | 127100 | Cypress Forest-Dome | 4 | Pond Cypress (*Taxodium ascendens*) and/or Bald Cypress (*T. distichum* ) dominant forest typically found in a pond-like depression. | Common in EVER, BICY, western WCA3, JW Corbett and Pal-Mar WMA. |
| FStS | 127300 | Cypress Forest-Strand | 4 | Pond Cypress (*Taxodium ascendens*) and/or Bald Cypress (*T. distichum* ) dominant forest typically found in an elongated slough-like or open ended depression. | Common in EVER, BICY, western WCA3. |
| FStH | 128000 | Cypress-Hardwood Forest | 3 | Co-dominant mix (60/40% or 40/60% split) of Cypress (*Taxodium* spp.) with lowland hardwood trees such as Red Maple (*Acer rubrum* ) and Laurel Oak (*Quercus laurifolia*). Common understory vegetation often consists of Pond Apple (*Annona glabra*), Wax Myrtle (*Myrica cerifera* ), Pop Ash (*Fraxinus caroliniana*), Cocoplum (*Chrysobalanus icaco* ), and Leather Fern (*Acrostichum danaeifolium* ). | Common in Sweetwater Strand in BICY and Florida Panther NWR. |
| FStp | 129000 | Cypress-Pine Forest | 3 | Mix of Cypress (*Taxodium* spp.) with Slash Pine (*Pinus elliottii var. densa*). Common understory vegetation can include mixed hardwood shrubs or various graminoids. | Common in BICY and Florida Panther NWR. |
| FH | 130000 | Hammock Forest | 2 | Briefly flooded forests | Found throughout Florida. |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| FHC | 131000 | Coastal Hardwood Hammock | 3 | Most common species are Pigeon Plum (Coccoloba diversifolia), False Mastic (Sideroxylon foetidissimum), Gumbo Limbo (Bursera simaruba), Strangler Fig (Ficus aurea), and White Stopper (Eugenia axillaris) but can potentially have many of the same species found in the Tropical Hardwood Hammock (FHS) category. However, it must also include some of the following in species as well: Jamaican Dogwood (Piscidia piscipula), Spanish Stopper (Eugenia foetidia), Mahogany (Swietenia mahagoni), Cabbage Palm (Sabal Palmetto), Wild Lime (Zanthoxylum fagara),] Blackbead (Pithecellobium keyense), Spanish Bayonet (Yucca aloifolia), Catclaw Blackbead (Pithecellobium unguis-cati), Triangle Cactus (Acanthocereus tetragonus), Prickly Pear (Opuntia stricta), Wild Cinnamon (Canella winterana), Sea Grape (Coccoloba uvifera), Buttonwood (Conocarpus erectus), Geiger Tree (Cordia Sebestena), Milk Bark (Drypetes lateriflora), Seven Year Apple (Genipa clusiifolia), Crabwood (Gymnanthes lucida), Mancinella (Hippomane mancinella), Joewood (Jacquinia keyensis), and Thrinax (Thrinax morrissii, Thrinax. radiata). | Found in lower Gulf and Florida Bay coastal areas. |
| FHa | 132000 | Cabbage Palm Hammock | 3 | Cabbage Palm (*Sabal palmetto*) dominated forest with sparse, generally less than 25%, Laurel Oak (*Quercus laurifolia*), Live Oak (*Q. virginiana* ), Strangler Fig (*Ficus aurea* ), and Swamp Fern (*Acrostichum* spp.) as a common understory component. | Common in BICY and Florida Panther NWR. |
| FHM | 135000 | Tropical Hardwood Shell Mound | 3 | Mix of Gumbo Limbo (*Bursera simaruba*), Strangler Fig (*Ficus aurea* ), False Mastic (*Sideroxylon foetidissimum*), Jamaican Dogwood (*Piscidia piscipula*), Cabbage Palm (*Sabal Palmetto*), Inkwood (*Exothea paniculata*), Black Ironwood (*Krugiodendron ferreum* ), and occasionally Royal Palm (*Roystonea regia*) with plants of ethnobotanical importance such as White Stopper (*Eugenia axillaris*), Spanish Stopper (*Eugenia foetidia* ), Wild Coffee (*Psychotria nervosa* ), Marlberry (*Ardisia escallonioides*), Pigeon Plum (*Coccoloba diversifolia*), Indigoberry (*Randia aculeata*), Milkberry (*Chiococca alba* ), Citrus (*Citrus* spp.), Guava (*Psidium* guajava), Soapberry (*Sapindus saponaria*), Papaya (*Carica papaya*), False Sisal (*Agave decipiens*), among others. This class is distinguished from other Hardwood Hammock classes by the presence of many plants introduced by early human inhabitants to the region as well as being specifically located on shell mounds. | Found throughout the Ten Thousand Islands area. |
| FHS | 133000 | Tropical Hardwood Hammock | 3 | Mix of Live Oak (Quercus virginiana), False Tamarind (Lysiloma latisiliquum), Gumbo Limbo (Bursera simaruba), Poisonwood (Metopium toxiferum), Pigeon Plum (Coccoloba diversifolia), and White Stopper (Eugenia axillaris). May also contain Strangler Fig (Ficus aurea), Swamp Bay (Persea borbonia), Dahoon Holly (Ilex Cassine), Sugarberry (Celtis laevigata), False Mastic (Sideroxylon foetidissimum), Wax Myrtle (Myrica cerifera), and Myrsine (Myrsine floridana), Willow Bustic (Sideroxylon salicifolium), Water Oak (Quercus nigra), Red Maple (Acer rubrum), Laurel Oak (Quercus laurifolia) and Lancewood (Nectandra coriacea). Canopy heights often exceed 8 meters, except in the Keys where the canopy is typically shorter. | Found in interor regions of the Atlantic Coastal Ridge, Big Cypress, Shark Slough and adjacent prairies, Taylor Slough and Southeast Everglades |
| FHT | 134000 | Temperate Hardwood Hammock | 3 | Mix of Laurel Oak (*Quercus laurifolia*), Live Oak (*Q. virginiana* ), Cabbage Palm (*Sabal palmetto* ), and occasionally Strangler Fig (*Ficus aurea* ), Red Mulberry (*Morus rubra* ), Hackberry (*Celtis laevigata*), Common Persimmon (*Diospyros virginiana*), and/or Saw Palmetto (*Serenoa repens* ). | Commonly found north of US 41 and on sandy substrates with a dense organic layer. Common to BICY, especially Bear Island, and JW Corbett WMA. |
| FHp | 136000 | Hardwood Hammock - Pine Forest | 3 | A co-dominate mix (40/60 to 60/40) of Slash Pine (*Pinus elliottii var. densa* ) with Laural Oak (*Quercus laurifolia*), Live Oak (*Q. virginiana* ), and/or Cabbage Palm (*Sabal palmetto* ). Common understory vegetation can include mixed hardwood shrubs Red Mulberry (*Morus rubra* ), Hackberry (*Celtis laevigata*), Common Persimmon (*Diospyros virginiana*), and/or Saw Palmetto (*Serenoa repens*). | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| W | 200000 | Woodland | 1 | Specific described communities of low-density stands of trees (10 - 60% tree canopy cover) with heights greater than five meters in a matrix of shrubs, graminoids, and/or herbaceous vegetation. | Found throughout Florida. |
| WM | 210000 | Mangrove Woodland | 2 | Regularly flooded woodlands that are typically found along saltwater shorelines. | Found along coastal Florida. |
| WMa | 212000 | Black Mangrove Woodland | 3 | Black Mangrove (*Avicennia germinans*) in a matrix composed of salt marsh graminoids, herbs, and/or succulents. | |
| WMaG | 212010 | Black Mangrove-Graminoid | 5 | Black Mangrove (*Avicennia germinans*) in a matrix composed predominately of graminoids. | |
| WMaO | 212020 | Black Mangrove Woodland-Open Marsh | 5 | Black Mangrove (*Avicennia germinans*) in a matrix composed predominately of Open Marsh. | |
| WMaS | 212030 | Black Mangrove Woodland-Succulent | 5 | Black Mangrove (*Avicennia germinans*) in a matrix composed predominately of succulents. | |
| WMc | 211000 | Buttonwood Woodland | 3 | Buttonwood (*Conocarpus erectus*) in a matrix composed of salt marsh graminoids, herbs, and/or succulents. | Generally coastal in distribution, normally found along the landward edge of the mangrove zone and along the edges of hammocks bordering the transition zone between freshwater and saltwater environments; thriving in areas that are only occasionally subjected to tidal washing (e.g., elevated ridges in or near the tidal zone); southern Florida and the Keys; more specifically found along the Buttonwood ridge in ENP and around Coot Bay. However, it can be found amongst any of the other Mangrove communities. |
| WMcB | 211040 | Buttonwood Woodland-Broadleaf | 5 | Buttonwood *(Conocarpus erectus)* in a matrix composed predominately of broadleaf emergents. | |
| WMcBa | 211041 | Buttonwood Woodland-Leather Fern | 6 | Buttonwood *(Conocarpus erectus)* in a matrix composed predominately of Golden Leather Fern (*Acrostichum aureum*) and/or Giant Leather Fern (*A. danaeifolium*). | |
| WMcG | 211010 | Buttonwood Woodland-Graminoid | 5 | Buttonwood *(Conocarpus erectus)* in a matrix composed predominately of graminoids. | |
| WMcO | 211020 | Buttonwood Woodland-Open Marsh | 5 | Buttonwood *(Conocarpus erectus)* in a matrix composed predominately of Open Marsh. Mangroves can occur in both salt and freshwater dominated marshes. | |
| WMcS | 211030 | Buttonwood Woodland-Succulent | 5 | Buttonwood *(Conocarpus erectus)* in a matrix composed predominately of succulents. | |
| WS | 220000 | Swamp Woodland | 2 | Seasonally to semi-permanently flooded freshwater woodlands. | Found throughout Florida. |
| WSp | 221000 | Pine Lowland | 3 | Slash Pine (*Pinus elliottii var. densa*) in a matrix composed of marsh graminoids, herbs, and/or shrubs. Also known as hydric pine flatwoods. | Common to EVER and BICY. |

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|---|---|---|---|---|---|
| WSpG | 221010 | Pine Lowland-Graminoid | 5 | Slash Pine (*Pinus elliottii var. densa*) in a matrix composed predominately of graminoids, such as Sawgrass (*Cladium jamaicense*), Muhly Grass (*Muhlenbergia capillaris* ), Panicgrass (*Panicum* spp.), Paspalum (*Paspalum* spp.), Little Bluestem (*Schizachyrium scoparium*), Flatsedge (*Cyperus* spp.), Spikerush (*Eleocharis* spp.), Fimbry (*Fimbristylis* spp.), Beaksedge (*Rhynchospora* spp.), Bulrush (*Scirpus* spp.), Nutrush (*Scleria* spp.), Yelloweyed Grass (*Xyris* spp.), Bluestem (*Andropogon* spp.), Threeawn (*Aristida* spp.), Witchgrass (*Dichanthelium* spp.), Lovegrass (*Eragrostis* spp.), Dropseed (*Sporobulus* spp.), and Hairsedge (*Bulbostylis* spp.). | |
| WSpS | 221030 | Pine Lowland-Shrub | 5 | Slash Pine (*Pinus elliottii var. densa*) in a matrix composed predominately of shrubs and small trees, such as Wax Myrtle (Myrica cerifera), Cabbage Palm (*Sabal palmetto*), Dahoon Holly (*Ilex cassine* ), Red Bay (*Persea palustris* ), Buttonbush (*Cephalanthus occidentalis* ), and other hardwood swamp species. | |
| WSpX | 221040 | Pine Lowland-Mixed | 5 | Slash Pine (*Pinus elliottii var. densa*) in a matrix composed of a co-dominant mix (60/40% or 40/60% split) of lowland graminoids and shrubs. | |
| WSs | 223000 | Cabbage Palm Lowland | 3 | Cabbage Palm (*Sabal palmetto*) in a matrix composed of marsh graminoids, herbs, and/or shrubs. | |
| WSsG | 223010 | Cabbage Palm Lowland-Graminoid | 5 | Cabbage Palm *(Sabal palmetto)* in a matrix composed predominately of marsh graminoids, such as Sawgrass (*Cladium jamaicense*), Muhly Grass (*Muhlenbergia capillaris* ), among others. | |
| WSsGc | 223011 | Cabbage Palm Lowland-Sawgrass | 6 | Cabbage Palm *(Sabal palmetto)* in a matrix composed predominately of Sawgrass (*Cladium jamaicense*). | |
| WSsS | 223020 | Cabbage Palm Lowland-Shrub | 5 | Cabbage Palm *(Sabal palmetto)* in a matrix composed predominately of marsh shrubs, such as Buttonwood (*Conocarpus erectus*), Wax Myrtle (*Myrica cerifera* ), among others. | |
| WSsX | 223030 | Cabbage Palm Lowland-Mixed | 5 | Cabbage Palm (*Sabal palmetto*) in a matrix composed of a co-dominant mix (60/40% or 40/60% split) of marsh graminoids and shrubs. | |
| WSt | 222000 | Cypress Woodland | 3 | Bald Cypress (T*axodium distichum*) and/or Pond Cypress (*T. ascendens* ) in a matrix composed of Open Marsh, graminoids, herbs, and/or shrubs. | |
| WStG | 222010 | Cypress Woodland-Graminoid | 5 | Bald Cypress (*Taxodium distichum*) and/or Pond Cypress (*T. ascendens* ) in a matrix composed predominately of graminoids, such as Sawgrass (*Cladium jamaisense*), Switchgrass (*Panicum vergatum*), Maidencane (*P. hemitomon*), among others. | |
| WStO | 222020 | Cypress Woodland-Open Marsh | 5 | Bald Cypress (*Taxodium distichum*) and/or Pond Cypress (*T. ascendens* ) in a matrix composed predominately of Open Marsh. | |
| WStS | 222030 | Cypress Woodland-Shrub | 5 | Bald Cypress (*Taxodium distichum*) and/or Pond Cypress (*T. ascendens* ) in a matrix composed predominately of shrubs, such as Wax Myrtle (*Myrica cerifera* ), Pond Apple (*Annona glabra* ), and/or Cocoplum (*Chrysobalanus icaco* ). | |
| WSh | 224000 | Hardwood Swamp Woodland | 3 | Mix of lowland hardwood trees such as Laural Oak (Quercus laurifolia), Red Maple (Acer rubrum), Cabbage Palm (Sabal palmetto), Pop Ash (Fraxinus caroliniana), Swamp Bay (Persea palustris), Red Bay (P. borbonia), and Sweetbay (Magnolia virginiana). | |
| WU | 230000 | Upland Woodland | 2 | Briefly flooded woodlands | Found throughout Florida. |
| WUp | 231000 | Pine Upland | 3 | Slash Pine (*Pinus elliottii var. densa*) in a matrix composed of upland graminoids, herbs, and/or shrubs. Also known as a mesic pine flatwoods. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| WUpG | 231010 | Pine Upland-Graminoid | 5 | Slash Pine (*Pinus elliottii var. densa*) in a matrix composed predominately of graminoids, such as Broomgrass (*Andropogon longiberis*), Gamagrass (*Tripsacum* spp.), Threeawn (*Aristida* spp.), Lovegrass (*Eragrostis* spp.), Witchgrass (*Dichanthelium* spp.), Panicgrass (*Panicum* spp.), among others. | |
| WUpS | 231020 | Pine Upland-Shrub | 5 | Slash Pine (*Pinus elliottii var. densa*) in a matrix composed predominately of shrubs and small trees, such as Wax Myrtle (*Myrica cerifera* ), Saw Palmetto (*Serenoa repens* ), Cabbage Palm (*Sabal palmetto*), Fetterbush (*Lyonia lucida*), Tarflower (*Bejaria racemosa*), Rusty Staggerbush (*Lyonia ferruginea*), St. John's Wort (*Hypericum* spp.), and other upland hardwood species. | |
| WUpSs | 231021 | Pine Upland-Saw Palmetto | 6 | Slash Pine (*Pinus elliottii var. densa*) in a matrix composed predominately of Saw Palmetto (*Serenoa repens* ). | |
| WUpX | 231030 | Pine Upland-Mixed | 5 | Slash Pine (*Pinus elliottii var. densa*) in a matrix composed of a co-dominant mix (60/40% or 40/60% split) of upland graminoids and shrubs. | |
| WUpO | 231040 | Pine Upland-Open Prairie | 5 | Slash Pine (*Pinus elliottii var. densa*) in a matrix composed predominately of Open Prairie. | |
| WUpR | 231100 | Pine Rockland | 4 | Pine Upland found on low ridges of oolitic limestone. | Found on the Miami rock ridge, in the Florida Keys, EVER, and in BICY. |
| WUpRG | 231110 | Pine Rockland-Graminoid | 5 | Pine Rockland in a matrix composed predominately of graminoids, such as Broomgrass (*Andropogon longiberis*), Gamagrass (*Tripsacum* spp.), Threeawn (*Aristida* spp.), Lovegrass (*Eragrostis* spp.), Witchgrass (*Dichanthelium* spp.), Panicgrass (*Panicum* spp.), among others. | |
| WUpRS | 231120 | Pine Rockland-Shrub | 5 | Pine Rockland in a matrix composed predominately of shrubs and small trees, such as Wax Myrtle (*Myrica cerifera* ), Saw Palmetto (*Serenoa repens*), Cabbage Palm (*Sabal palmetto* ), Fetterbush (*Lyonia lucida*), Tarflower (*Bejaria racemosa*), Rusty Staggerbush (*Lyonia ferruginea*), St. John's Wort (*Hypericum* spp.), and other upland hardwood species. | |
| WUpRSs | 231121 | Pine Rockland-Saw Palmetto | 6 | Pine Rockland in a matrix composed predominately of Saw Palmetto (*Serenoa repens*). | |
| WUpRX | 231130 | Pine Rockland-Mixed | 5 | Pine Rockland in a matrix composed of a co-dominant mix (60/40% or 40/60% split) of upland graminoids and shrubs. | |
| WUpRO | 231140 | Pine Rockland-Open Prairie | 5 | Pine Rockland in a matrix composed predominately of Open Prairie. | |
| WUpF | 231200 | Pine Flatwoods | 4 | Pine Upland found on moderately to well-drained sandy soils. | |
| WUpFG | 231210 | Pine Flatwoods – Graminoid | 5 | Pine Flatwoods in a matrix composed predominately of graminoids, such as Broomgrass (*Andropogon longiberis*), Gamagrass (*Tripsacum* spp.), Threeawn (*Aristida* spp.), Lovegrass (*Eragrostis* spp.), Witchgrass (*Dichanthelium* spp.), Panicgrass (*Panicum* spp.), among others. | |
| WUpFS | 231220 | Pine Flatwoods – Shrub | 5 | Pine Flatwoods in a matrix composed predominately of shrubs and small trees, such as Wax Myrtle (*Myrica cerifera* ), Saw Palmetto (*Serenoa repens*), Cabbage Palm (*Sabal palmetto* ), Fetterbush (*Lyonia lucida*), Tarflower (*Bejaria racemosa*), Rusty Staggerbush (*Lyonia ferruginea*), St. John's Wort (*Hypericum* spp.), and other upland hardwood species. | |
| WUpFSs | 231221 | Pine Flatwoods – Saw Palmetto | 6 | Pine Flatwoods in a matrix composed predominately of Saw Palmetto (*Serenoa repens* ). | |
| WUpFX | 231230 | Pine Flatwoods – Mixed | 5 | Pine Flatwoods in a matrix composed of a co-dominant mix (60/40% or 40/60% split) of upland graminoids and shrubs. | |
| WUpFO | 231240 | Pine Flatwoods – Open Prairie | 5 | Pine Flatwoods in a matrix composed predominately of Open Prairie. | |
| WUs | 232000 | Cabbage Palm Upland | 3 | Cabbage Palm (*Sabal palmetto*) in a matrix composed of upland graminoids, herbs, and/or shrubs. | Common in and around Florida Panther NWR and near the intersection of I-75 and State Route 29. |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| WUsG | 232010 | Cabbage Palm Upland-Graminoid | 5 | Cabbage Palm *(Sabal palmetto)* in a matrix composed predominately of upland graminoids. | |
| WUsS | 232020 | Cabbage Palm Upland-Shrub | 5 | Cabbage Palm *(Sabal palmetto)* in a matrix composed predominately of upland shrubs, such as Saw Palmetto (*Serenoa repens* ). | |
| WUsSs | 232021 | Cabbage Palm Upland-Saw Palmetto | 6 | Cabbage Palm *(Sabal palmetto)* in a matrix composed predominately of Saw Palmetto (*Serenoa repens*). | |
| WUsX | 232030 | Cabbage Palm Upland-Mixed | 5 | Cabbage Palm (*Sabal palmetto*) in a matrix composed of a co-dominant mix (60/40% or 40/60% split) of upland graminoids and shrubs. | |
| WUh | 233000 | Upland Woodland | 3 | Mix of Live Oak (Quercus virginiana), False Tamarind (Lysiloma latisiliquum), Gumbo Limbo (Bursera simaruba), Poisonwood (Metopium toxiferum), Pigeon Plum (Coccoloba diversifolia), and White Stopper (Eugenia axillaris). May also contain Strangler Fig (Ficus aurea), Swamp Bay (Persea borbonia), Dahoon Holly (Ilex Cassine), Sugarberry (Celtis laevigata), False Mastic (Sideroxylon foetidissimum), Wax Myrtle (Myrica cerifera), and Myrsine (Myrsine floridana), Willow Bustic (Sideroxylon salicifolium), Water Oak (Quercus nigra), Red Maple (Acer rubrum), Laural Oak (Quercus laurifolia) and Lancewood (Nectandra coriacea), Laural Oak (Quercus laurifolia), Cabbage Palm (Sabal palmetto), Red Mulberry (Morus rubra), Hackberry (Celtis laevigata), and Common Persimmon (Diospyros virginiana). | |
| | | | | | |
| S | 300000 | Shrubland | 1 | High-density stands of small trees and/or shrubs (>50% tree/shrub canopy cover) with heights less than five meters. Exception: Mangrove shrubs less than or equal to 2 meters are scrub - see scrub section; Willow shrublands can be greater than 5 meters. | Found throughout Florida. |
| SM | 310000 | Mangrove Shrubland | 2 | Regularly flooded shrublands that are typically found along saltwater shorelines, including Black Mangrove (*Avicennia germinans*), White Mangrove (*Laguncularia racemosa* ), Red Mangrove (*Rhizophora mangle*), Buttonwood (*Conocarpus erectus*), and Sea-Oxeye (*Borrichia* spp). Canopy heights are generally less than five meters and greater than two meters. | Found along coastal Florida. |
| SMa | 311000 | Black Mangrove Shrubland | 3 | Black Mangrove (*Avicennia germinans*) dominant shrubland. Black mangrove is distinguishable from other mangrove species by leaves with grayish undersurfaces, by green, flattened “lima bean-like” fruits, by dark to blackish bark, and by the presence of numerous short breathing roots projecting vertically from the ground below and around the tree. | Found along coastal Florida. Predominates in the upper part of the intertidal zone and into the irregularly flooded higher elevations; common forest fringing Florida Bay along Snake Bite in ENP; sometimes found on higher drier soils than the red or white mangrove. However, it can be found amongst any of the other Mangrove communities. |
| SMb | 312000 | Sea-Oxeye Shrubland | 3 | Sea-Oxeye (*Borrichia arborescens*) dominant shrubland. | Typically found in coastal areas of BISC and southern EVER where tidal flooding is common. |
| SMc | 313000 | Buttonwood Shrubland | 3 | Buttonwood (*Conocarpus erectus*) dominant shrubland. | Generally coastal in distribution, normally found along the landward edge of the mangrove zone and along the edges of hammocks bordering the transition zone between freshwater and saltwater environments; thriving in areas that are only occasionally subjected to tidal washing (e.g., elevated ridges in or near the tidal zone); southern Florida and the Keys; more specifically found along the Buttonwood ridge in ENP and around Coot Bay. However, it can be found amongst any of the other Mangrove communities. |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| SMl | 314000 | White Mangrove Shrubland | 3 | White Mangrove (*Laguncularia racemosa*) dominant shrubland. | Found along coastal Florida. Occurs throughout the intertidal zone, but predominatley in the irregularly flooded higher portions of the swamp. However, it can be found amongst any of the other Mangrove communities. |
| SMr | 315000 | Red Mangrove Shrubland | 3 | Red Mangrove (*Rhizophora mangle*) dominant shrubland. | Found along coastal Florida primarily in the middle and lower portions of the intertidal and upper subtidal zone. However, it can be found amongst any of the other Mangrove communities. |
| SMX | 316000 | Mixed Mangrove Shrubland | 3 | Mix of mangrove species with no particular species of dominance. | |
| SMXac | 316100 | Black Mangrove-Buttonwood Shrubland | 4 | Co-dominant mix (60/40% or 40/60% split) of Black Mangrove (*Avicennia germinans*) and Buttonwood (*Conocarpus erectus*) shrubs. | |
| SMXal | 316200 | Black Mangrove-White Mangrove Shrubland | 4 | Co-dominant mix (60/40% or 40/60% split) of Black Mangrove (*Avicennia germinans*) and White Mangrove (*Laguncularia racemosa*) shrubs. | |
| SMXar | 316300 | Black Mangrove-Red Mangrove Shrubland | 4 | Co-dominant mix (60/40% or 40/60% split) of Black Mangrove (*Avicennia germinans*) and Red Mangrove (*Rhizophora mangle*) shrubs. | |
| SMXcc | 316400 | Buttonwood-Cocoplum Shrubland | 4 | Co-dominant mix (60/40% or 40/60% split) of Buttonwood (*Conocarpus erectus*) and Cocoplum (*Chrysobalanus icaco*) shrubs. | Commonly found in the transition zone between freshwater and tidal environments within EVER. |
| SMXcl | 316500 | Buttonwood-White Mangrove Shrubland | 4 | Co-dominant mix (60/40% or 40/60% split) of Buttonwood (*Conocarpus erectus*) or White Mangrove (*Laguncularia racemosa*) shrubs. | |
| SMXcr | 316600 | Buttonwood-Red Mangrove Shrubland | 4 | Co-dominant mix (60/40% or 40/60% split) of Buttonwood (*Conocarpus erectus*) and Red Mangrove (*Rhizophora mangle*) shrubs. | |
| SMXlr | 316700 | White Mangrove-Red Mangrove Shrubland | 4 | Co-dominant mix (60/40% or 40/60% split) of White Mangrove (*Laguncularia racemosa*) and Red Mangrove (*Rhizophora mangle*) shrubs. | |
| SMXrc | 316800 | Red Mangrove-Cocoplum Shrubland | 4 | Co-dominant mix (60/40% or 40/60% split) of Red Mangrove (*Rhizophora mangle*) and Cocoplum (*Chrysobalanus icaco*) shrubs. | Found in the transition zone between freshwater and tidal environments within EVER. |
| SS | 320000 | Swamp Shrubland | 2 | Seasonally to semi-permanently flooded freshwater shrublands. | Found throughout Florida. Some of these shrublands can be found in coastal areas along the transition zone between tidal and freshwater environments. |
| SSaf | 333000 | Pond Apple-Pop Ash Shrubland | 3 | Co-dominant mix (60/40% or 40/60% split) of Pond Apple (*Annona glabra*) and Pop Ash (*Fraxinus caroliniana* ) shrubs. | |
| SSa | 321000 | Pond Apple Shrubland | 3 | Pond Apple (*Annona glabra*) dominant shrubland. | Commonly found on the banks of freshwater ponds and streams and wet hammocks; from about Brevard County southward; sparsely distributed in the Keys, especially on Big Pine and Lignum Vitae Keys. |
| SSr | 322000 | Falsewillow Shrubland | 3 | Broombush Falsewillow (*Baccharis dioica*), Silverling (*B. glomeruliflora*), and/or Groundsel Bush (*B. halimifolia*) dominant shrubland. | Found throughout Florida along the edges of freshwater and brackish marshes, wet coastal hammocks, shores of estuaries and bays, and various disturbed places, both wet and dry. |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| SSB | 323000 | Bayhead Shrubland | 3 | Mix of Swamp Bay (*Persea palustris* ), Red Bay (*Persea borbonia*), Cocoplum (*Chrysobalanus icaco*), Dahoon Holly (*Ilex cassine* ), Willow (*Salix caroliniana*), Wax Myrtle (*Myrica cerifera* ), Sweetbay (*Magnolia virginiana*), Cypress (*Taxodium* spp.), Pond Apple (*Annona glabra*), and occasionally Buttonwood (*Conocarpus erectus*). | Typical of tree islands within WCA2 and Loxahatchee NWR where tree heights rarely exceed 5 meters. |
| SSBT | 332000 | Transitional Bayhead Shrubland | 3 | Mix of shrubs characterized by Buttonwood (*Conocarpus erectus* ), Red Mangrove (*Rhizophora mangle*), Cocoplum (*Chrysobalanus icaco*), Wax Myrtle (*Myrica cerifera* ), Mahogany (*Swietenia mahagoni*), Poisonwood (*Metopium toxiferum*), and occasionally Swamp Bay (*Persea palustris* ), Red Bay (*P. borbonia* ), Sweetbay (*Magnolia virginiana*), and Dahoon Holly (*Ilex cassine* ). The presence of Buttonwood and Red Mangrove set this class apart from the Bayhead Shrub class. Signatures for Buttonwood and Dahoon Holly (*Ilex cassine* ) are often confused in regions where the two species co-exist, leaving Red Mangrove as the distinguishing component between the Transitional Bayhead and Bayhead classes in regions where both classes are likely to be found. | Typically occurring in a several kilometer wide band in the southern reaches of Taylor Slough and the Southeast Saline Everglades, extending west to Mahogany Hammock in ENP, and forming a transitional forest between the exclusively freshwater Bayhead forests to the north and the coastal Buttonwood and Mangrove forests to the south. Most often associated with tree islands within the scrub Red Mangrove zone. |
| SSc | 324000 | Buttonbush Shrubland | 3 | Buttonbush (*Cephalanthus occidentalis*) dominant shrubland. | Commonly found in wet areas and sites with standing water, such as swamps, sloughs, stream banks, depressions, marshes, and edges of ponds and lakes; throughout Florida except in the Keys. |
| SSy | 325000 | Cocoplum Shrubland | 3 | Cocoplum (*Chrysobalanus icaco*) dominant shrubland. | Found in low hammocks, beaches, sand dunes, cypress heads, and other wet habitats, primarily along the coast but occasionally in inland swamps; Brevard and Charlotte Counties southward and throughout the Keys; common component of tree islands within Loxahatchee NWR and of the tidal-freshwater transition zone within EVER. |
| SSf | 326000 | Pop Ash Shrubland | 3 | Pop Ash (*Fraxinus caroliniana*) dominant shrubland. | Commonly found in areas of prolonged deep inundation; riverine swamps and flood plains, wooded sloughs, wet depressions in flatwoods, ponds; distributed throughout northern Florida, southward to about the Tamiami Trail on the west coast, Martin and Palm Beach counties on the east coast. |
| SSi | 327000 | Dahoon Holly Shrubland | 3 | Dahoon Holly (*Ilex cassine* ) dominant shrubland. | Occurring close to the coast in the Panhandle of Florida but found throughout the peninsula, south nearly to Flamingo in Monroe County and to the Ten Thousand Islands in Collier County, not present in the Keys; often associated with Cypress ponds, flatwoods, and tree islands of the Water Conservation Areas. |
| SSl | 328000 | Primrosewillow Shrubland | 3 | Peruvian Primrosewillow (*Ludwigia peruviana*) dominant shrubland and occasionally Angelstem Primrosewillow (*L. leptocarpa* ) and Mexican Primrosewillow (*L. octovalvis* ). | Commonly found in in shallow water of ditches, canals (along the interior side of the bounding canals of the WCAs between the canal edge and the bounding Willow stands), marshes, and adjacent to alligator holes; throughout Florida but much more common in central and southern Florida from about Gainesville southward. |
| SSm | 329000 | Wax Myrtle Shrubland | 3 | Wax Myrtle (*Myrica cerifera* ) dominant shrubland. | Found in a wide variety of habitats throughout Florida including the Keys; common component of tree islands throughout the WCAs; one of the State's most widespread plants. |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| SSs | 331000 | Willow Shrubland | 3 | Willow (*Salix caroliniana*) dominant shrubland with sparse Leather Fern (*Acrostichum danaeifolium*), Cattail (*Typha* spp.), Sawgrass (*Cladium jamaicense*), Arrowhead (*Sagittaria* spp.), and other freshwater marsh species as possible understory components. Willow shrublands can be greater than 5 meter in height. | Typically found throughout the WCAs in monotypic stands adjacent to canals. |
| SU | 340000 | Upland Shrubland | 2 | Briefly flooded shrublands | Found throughout Florida. |
| SUa | 341000 | Nicker Bean Shrubland | 3 | Nicker Bean (*Caesalpinia bundoc*) dominant shrubland. | Found primarily in coastal areas along western BISC, Flamingo, and the islands of the Gulf of Mexico and the Keys; does well in disturbed areas. |
| SUC | 342000 | Coastal Hardwood Shrubland | 3 | Mix of Sea Grape (*Coccoloba uvifera* ), Gumbo Limbo (*Bursera simaruba* ), Mahogany (*Swietenia mahagoni*), Spanish Stopper (*Eugenia foetida*), Poisonwood (*Metopium toxiferum* ), Willow Bustic (*Dipholis salicifolia*), Jamaican Dogwood (*Piscidia piscipula*), Florida Thatch Palm (*Thrinax radiata* ), Bahama Maidenbush (*Savia bahamensis*), Florida Swampprivet (*Forestiera segregata*), Pride-of-Big-Pine (*Strumpfia maritima*), and Yellow Necklacepod (*Sophora tomentosa*). Common understory components include Pricklypear (*Opuntia stricta* ), Triangle Cactus (*Acanthocereus tetragonus*), among others. | Commonly found along coastal South Florida and especially in the Florida Keys. |
| SUr | 343000 | Indigoberry Shrubland | 3 | Indigoberry (*Randia aculeata*) dominant shrubland. | Found in a variety of habitats in southern Florida and the Keys, especially in unburned pinelands and along the margins of coastal hammocks; more specifically found along the margins and as an understory component of the Jamaican Dogwood dominated coastal hammocks along Snake Bite in EVER. |
| SUs | 344000 | Saw Palmetto Shrubland | 3 | Saw Palmetto (*Serenoa repens*) dominant shrubland. | Typically located in sandy prairies, dunes, flatwoods, scrub oak ridges, and Cabbage Palm (*Sabal palmetto*) hammocks. Commonly found within BICY. |
| SUT | 345000 | Temperate Hardwood Shrubland | 3 | Mix of Laurel Oak (*Quercus laurifolia*), Live Oak (*Q. virginiana* ), Cabbage Palm (*Sabal palmetto* ), and occasionally Strangler Fig (*Ficus aurea* ), Red Mulberry (*Morus rubra* ), Hackberry (*Celtis laevigata*), Common Persimmon (*Diospyros virginiana*), and Saw Palmetto (*Serenoa repens* ). | Found north of US 41; often associated with recovering lands. |
| SUH | 346000 | Tropical Hardwood Shrubland | 3 | Mix of Gumbo Limbo (*Bursera simaruba*), Poisonwood (*Metopium toxiferum*), Pigeon Plum (*Coccoloba diversifolia*), White Stopper (*Eugenia axillaris*), Strangler Fig (*Ficus aurea* ), Swamp Bay (*Persea borbonia*), Dahoon Holly (*Ilex Cassine* ), Saffron Plum (*Sideroxylon celastrinum*), Sugarberry (*Celtis laevigata*), False Mastic (*Sideroxylon foetidissimum*), Wax Myrtle (*Myrica cerifera* ), and Myrsine (*Myrsine floridana*); similar to Tropical Hardwood Hammock (FHS) except canopy heights are less than 5 meters. | |
| | | | | | |
| C | 400000 | Scrub | 1 | Specific described communities of dwarf trees or low density shrubs typically in a matrix of graminoids, and/or herbaceous vegetation. Canopy cover ranges from 10% to 50% but can be as much as 100% for Mangrove and Cypress classes. Canopy heights are less than 5 meters with the exception being for Mangrove which is less than or equal to 2 meters. | Found throughout Florida. |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CM | 410000 | Mangrove Scrub | 2 | Regularly flooded dwarf trees that are typically found along saltwater shorelines and especially in the transition zone between freshwater and saltwater dominated environments. Mangrove scrub includes dwarf Black Mangrove (*Avicennia germinans*), dwarf White Mangrove (*Laguncularia racemosa*), dwarf Red Mangrove (*Rhizophora mangle*), and/or dwarf Buttonwood (*Conocarpus erectus*) with canopy heights less than two meters. Canopy densities are generally from 10% - 50% but can be as high as 100%. | Found along coastal Florida. |
| CMG | 410010 | Mangrove Scrub-Graminoid | 5 | Mangrove scrub in a matrix composed predominately of graminoids. | |
| CMGc | 410011 | Mangrove Scrub-Sawgrass | 6 | Mangrove scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense* ). | |
| CMGd | 410012 | Mangrove Scrub-Saltgrass | 6 | Mangrove scrub in a matrix composed predominately of Saltgrass (*Distichlis spicata* ). | |
| CMGe | 410013 | Mangrove Scrub-Spikerush | 6 | Mangrove scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CMGf | 410014 | Mangrove Scrub-Fimbry | 6 | Mangrove scrub in a matrix composed predominately of Marsh Frimbry (*Fimbristylis spadicea* ). | |
| CMGj | 410015 | Mangrove Scrub-Black Rush | 6 | Mangrove scrub in a matrix composed predominately of Black Rush (*Juncus roemerianus* ). | |
| CMGm | 410016 | Mangrove Scrub-Keysgrass | 6 | Mangrove scrub in a matrix composed predominately of Keysgrass (*Monanthocloe littoralis* ). | |
| CMGs | 410017 | Mangrove Scrub-Cordgrass | 6 | Mangrove scrub in a matrix composed predominately of Cordgrass (*Spartina* spp.). | |
| CMGp | 410018 | Mangrove Scrub-Dropseed | 6 | Mangrove scrub in a matrix composed predominately of Seashore Dropseed (*Sporobulus virginicus* ). | |
| CMGt | 410019 | Mangrove Scrub-Cattail | 6 | Mangrove scrub in a matrix composed predominately of Cattail (*Typha* spp.). | |
| CMH | 410020 | Mangrove Scrub-Herbaceous | 5 | Mangrove scrub in a matrix composed predominately of herbaceous vegetation. | |
| CMO | 410030 | Mangrove Scrub-Open Marsh | 5 | Mangrove scrub in a matrix composed predominately of Open Marsh or Open Salt Marsh. Mangroves can occur in both salt and freshwater dominated marshes. | |
| CMS | 410040 | Mangrove Scrub-Succulent | 5 | Mangrove scrub in a matrix composed predominately of succulents. | |
| CMSb | 410041 | Mangrove Scrub-Saltwort | 6 | Mangrove scrub in a matrix composed predominately of Saltwort (*Batis maritima*). | |
| CMSs | 410042 | Mangrove Scrub-Glasswort | 6 | Mangrove scrub in a matrix composed predominately of Glasswort (*Salicornia* spp.). | |
| CMD | 410050 | Mangrove Scrub-Dominant | 5 | Greater than 50% areal coverage of Mangrove scrub. | |
| CMa | 411000 | Black Mangrove Scrub | 3 | Black Mangrove (*Avicennia germinans*) dominant scrub. | Found along coastal Florida. Predominates in the upper part of the intertidal zone and into the irregularly flooded higher elevations; common forest fringing Florida Bay along Snake Bite in ENP; sometimes found on higher drier soils than the red or white mangrove. However, it can be found amongst any of the other Mangrove communities. |
| CMaG | 411010 | Black Mangrove Scrub-Graminoid | 5 | Black Mangrove (*Avicennia germinans*) scrub in a matrix composed predominately of graminoids. | |
| CMaGd | 411011 | Black Mangrove Scrub-Saltgrass | 6 | Black Mangrove (*Avicennia germinans*) scrub in a matrix composed predominately of Saltgrass (*Distichlis spicata* ). | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CMaGf | 411012 | Black Mangrove Scrub-Fimbry | 6 | Black Mangrove (*Avicennia germinans*) scrub in a matrix composed predominately of Marsh Frimbry (*Fimbristylis spadicea* ). | |
| CMaGj | 411013 | Black Mangrove Scrub-Black Rush | 6 | Black Mangrove (*Avicennia germinans*) scrub in a matrix composed predominately of Black Rush (*Juncus roemerianus*). | |
| CMaGm | 411014 | Black Mangrove Scrub-Keysgrass | 6 | Black Mangrove (*Avicennia germinans*) scrub in a matrix composed predominately of Keysgrass (*Monanthocloe littoralis*). | |
| CMaGs | 411015 | Black Mangrove Scrub-Cordgrass | 6 | Black Mangrove (*Avicennia germinans*) scrub in a matrix composed predominately of Cordgrass (*Spartina* spp.). | |
| CMaGp | 411016 | Black Mangrove Scrub-Dropseed | 6 | Black Mangrove (*Avicennia germinans*) scrub in a matrix composed predominately of Seashore Dropseed (*Sporobulus virginicus* ). | |
| CMaH | 411020 | Black Mangrove Scrub-Herbaceous | 5 | Black Mangrove (*Avicennia germinans*) scrub in a matrix composed predominately of herbaceous vegetation. | |
| CMaO | 411030 | Black Mangrove Scrub-Open Marsh | 5 | Black Mangrove (Avicennia germinans) scrub in a matrix composed predominately of Open Salt Marsh. | |
| CMaS | 411040 | Black Mangrove Scrub-Succulent | 5 | Black Mangrove (*Avicennia germinans*) scrub in a matrix composed predominately of succulents. | |
| CMaSb | 411041 | Black Mangrove Scrub-Saltwort | 6 | Black Mangrove (*Avicennia germinans*) scrub in a matrix composed predominately of Saltwort (*Batis maritima* ). | |
| CMaSs | 411042 | Black Mangrove Scrub-Glasswort | 6 | Black Mangrove (*Avicennia germinans*) scrub in a matrix composed predominately of Glasswort (*Salicornia* spp.). | |
| CMaD | 411050 | Black Mangrove Scrub-Dominant | 5 | Greater than 50% areal coverage of Black Mangrove (*Avicennia germinans*) scrub. | |
| CMc | 412000 | Buttonwood Scrub | 3 | Buttonwood (*Conocarpus erectus*) dominant scrub; occasionally mixed with sparse Cocoplum (*Chrysobalanus icaco*), Wax Myrtle (*Myrica cerifera* ), and/or Red Mangrove (*Rhizophora mangle*). | Generally coastal in distribution, normally found along the landward edge of the mangrove zone and along the edges of hammocks bordering the transition zone between freshwater and saltwater environments; thriving in areas that are only occasionally subjected to tidal washing (e.g., elevated ridges in or near the tidal zone); southern Florida and the Keys; more specifically found along the Buttonwood ridge in ENP and around Coot Bay. However, it can be found amongst any of the other Mangrove communities. |
| CMcG | 412010 | Buttonwood Scrub-Graminoid | 5 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of graminoids. | |
| CMcGc | 412011 | Buttonwood Scrub-Sawgrass | 6 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense* ). | |
| CMcGd | 412012 | Buttonwood Scrub-Saltgrass | 6 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of Saltgrass (*Distichlis spicata* ). | |
| CMcGe | 412013 | Buttonwood Scrub-Spikerush | 6 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CMcGf | 412014 | Buttonwood Scrub-Fimbry | 6 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of Marsh Frimbry (*Fimbristylis spadicea* ). | |
| CMcGj | 412015 | Buttonwood Scrub-Black Rush | 6 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of Rush (*Juncus roemerianus*). | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CMcGm | 412016 | Buttonwood Scrub-Keysgrass | 6 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of Keysgrass (*Monanthocloe littoralis*). | |
| CMcGs | 412017 | Buttonwood Scrub-Cordgrass | 6 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of Cordgrass (*Spartina* spp.). | |
| CMcGp | 412018 | Buttonwood Scrub-Dropseed | 6 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of Seashore Dropseed (*Sporobulus virginicus* ). | |
| CMcGt | 412019 | Buttonwood Scrub-Cattail | 6 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of Cattail (*Typha* spp.). | |
| CMcH | 412020 | Buttonwood Scrub-Herbaceous | 5 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of herbaceous vegetation. | |
| CMcO | 412030 | Buttonwood Scrub-Open Marsh | 5 | Buttonwood (Conocarpus erectus) scrub in a matrix composed predominately of Open Marsh or Open Salt Marsh. Buttonwood can occur in both salt and freshwater dominated marshes. | |
| CMcS | 412040 | Buttonwood Scrub-Succulent | 5 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of succulents. | |
| CMcSb | 412041 | Buttonwood Scrub-Saltwort | 6 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of Saltwort (*Batis maritima* ). | |
| CMcSs | 412042 | Buttonwood Scrub-Glasswort | 6 | Buttonwood (*Conocarpus erectus*) scrub in a matrix composed predominately of Glasswort (*Salicornia* spp.). | |
| CMcD | 412050 | Buttonwood Scrub-Dominant | 5 | Greater than 50% areal coverage of Buttonwood (*Conocarpus erectus*) scrub. | |
| CMl | 413000 | White Mangrove Scrub | 3 | White Mangrove (*Languncularia racemosa*) dominant scrub. | Found along coastal Florida. Occurs throughout the intertidal zone, but predominatley in the irregularly flooded higher portions of the swamp. However, it can be found amongst any of the other Mangrove communities. |
| CMlG | 413010 | White Mangrove Scrub-Graminoid | 5 | White Mangrove (*Languncularia racemosa*) scrub in a matrix composed predominately of graminoids. | |
| CMlGc | 413011 | White Mangrove Scrub-Sawgrass | 6 | White Mangrove (*Languncularia racemosa*) scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense* ). | |
| CMlGd | 413012 | White Mangrove Scrub-Saltgrass | 6 | White Mangrove (*Languncularia racemosa*) scrub in a matrix composed predominately of Saltgrass (*Distichlis spicata* ). | |
| CMlGf | 413013 | White Mangrove Scrub-Fimbry | 6 | White Mangrove (*Languncularia racemosa*) scrub in a matrix composed predominately of Marsh Frimbry (*Fimbristylis spadicea* ). | |
| CMlGj | 413014 | White Mangrove Scrub-Black Rush | 6 | White Mangrove (*Languncularia racemosa*) scrub in a matrix composed predominately of Black Rush (*Juncus roemerianus*). | |
| CMlGm | 413015 | White Mangrove Scrub-Keysgrass | 6 | White Mangrove (*Languncularia racemosa*) scrub in a matrix composed predominately of Keysgrass (*Monanthocloe littoralis*). | |
| CMlGs | 413016 | White Mangrove Scrub-Cordgrass | 6 | White Mangrove (*Languncularia racemosa*) scrub in a matrix composed predominately of Cordgrass (*Spartina* spp.). | |
| CMlGp | 413017 | White Mangrove Scrub-Dropseed | 6 | White Mangrove (*Languncularia racemosa*) scrub in a matrix composed predominately of Seashore Dropseed (*Sporobulus virginicus* ). | |
| CMlH | 413020 | White Mangrove Scrub-Herbaceous | 5 | White Mangrove (*Languncularia racemosa*) scrub in a matrix composed predominately of herbaceous vegetation. | |
| CMlO | 413030 | White Mangrove Scrub-Open Marsh | 5 | White Mangrove (Languncularia racemosa) scrub in a matrix composed predominately of Open Salt Marsh. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CMIS | 413040 | White Mangrove Scrub-Succulent | 5 | White Mangrove (*Languncularia racemosa*) scrub in a matrix composed predominately of succulents. | |
| CMISb | 413041 | White Mangrove Scrub-Saltwort | 6 | White Mangrove (*Languncularia racemosa*) scrub in a matrix composed predominately of Saltwort (*Batis maritima* ). | |
| CMISs | 413042 | White Mangrove Scrub-Glasswort | 6 | White Mangrove (*Languncularia racemosa*) scrub in a matrix composed predominately of Glasswort (*Salicornia* spp.). | |
| CMID | 413050 | White Mangrove Scrub-Dominant | 5 | Greater than 50% areal coverage of White Mangrove (*Languncularia racemosa*) scrub. | |
| CMr | 414000 | Red Mangrove Scrub | 3 | Red Mangrove (*Rizophora mangle*) dominant scrub; occasionally mixed with sparse Cocoplum (*Chrysobalanus icaco*), Wax Myrtle (*Myrica cerifera* ), and/or Buttonwood (*Conocarpus erectus*). | Found along coastal Florida primarily in the middle and lower portions of the intertidal and upper subtidal zone. However, it can be found amongst any of the other Mangrove communities. |
| CMrG | 414010 | Red Mangrove Scrub-Graminoid | 5 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of graminoids. | |
| CMrGc | 414011 | Red Mangrove Scrub-Sawgrass | 6 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense* ). | |
| CMrGd | 414012 | Red Mangrove Scrub-Saltgrass | 6 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of Saltgrass (*Distichlis spicata* ). | |
| CMrGe | 414013 | Red Mangrove Scrub-Spikerush | 6 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CMrGf | 414014 | Red Mangrove Scrub-Fimbry | 6 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of Marsh Frimbry (*Fimbristylis spadicea* ). | |
| CMrGj | 414015 | Red Mangrove Scrub-Black Rush | 6 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of Black Rush (*Juncus roemerianus*). | |
| CMrGm | 414016 | Red Mangrove Scrub-Keysgrass | 6 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of Keysgrass (*Monanthocloe littoralis*). | |
| CMrGs | 414017 | Red Mangrove Scrub-Cordgrass | 6 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of Cordgrass (*Spartina* spp.). | |
| CMrGp | 414018 | Red Mangrove Scrub-Dropseed | 6 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of Seashore Dropseed (*Sporobulus virginicus* ). | |
| CMrGt | 414019 | Red Mangrove Scrub-Cattail | 6 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of Cattail (*Typha* spp.). | |
| CMrH | 414020 | Red Mangrove Scrub-Herbaceous | 5 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of herbaceous vegetation. | |
| CMrO | 414030 | Red Mangrove Scrub-Open Marsh | 5 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of Open Marsh or Open Salt Marsh. Red Mangrove can occur in both salt and freshwater dominated marshes. | |
| CMrS | 414040 | Red Mangrove Scrub-Succulent | 5 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of succulents. | |
| CMrSb | 414041 | Red Mangrove Scrub-Saltwort | 6 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of Saltwort (*Batis maritima* ). | |
| CMrSs | 414042 | Red Mangrove Scrub-Glasswort | 6 | Red Mangrove (*Rizophora mangle*) scrub in a matrix composed predominately of Glasswort (*Salicornia* spp.). | |
| CMrD | 414050 | Red Mangrove Scrub-Dominant | 5 | Greater than 50% areal coverage of Red Mangrove (*Rizophora mangle*) scrub. | |
| CMX | 415000 | Mixed Mangrove Scrub | 3 | Mix of mangrove species with no particular species of dominance. | Found along coastal Florida. |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CMXG | 415010 | Mixed Mangrove Scrub-Graminoid | 5 | Mixed mangrove scrub in a matrix composed predominately of graminoids. | |
| CMXGc | 415011 | Mixed Mangrove Scrub-Sawgrass | 6 | Mixed mangrove scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense* ). | |
| CMXGd | 415012 | Mixed Mangrove Scrub-Saltgrass | 6 | Mixed mangrove scrub in a matrix composed predominately of Saltgrass (*Distichlis spicata* ). | |
| CMXGe | 415013 | Mixed Mangrove Scrub-Spikerush | 6 | Mixed mangrove scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CMXGf | 415014 | Mixed Mangrove Scrub-Fimbry | 6 | Mixed mangrove scrub in a matrix composed predominately of Marsh Frimbry (*Fimbristylis spadicea* ). | |
| CMXGj | 415015 | Mixed Mangrove Scrub-Black Rush | 6 | Mixed mangrove scrub in a matrix composed predominately of Black Rush (*Juncus roemerianus*). | |
| CMXGm | 415016 | Mixed Mangrove Scrub-Keysgrass | 6 | Mixed mangrove scrub in a matrix composed predominately of Keysgrass (*Monanthocloe littoralis*). | |
| CMXGs | 415017 | Mixed Mangrove Scrub-Cordgrass | 6 | Mixed mangrove scrub in a matrix composed predominately of Cordgrass (*Spartina* spp.). | |
| CMXGp | 415018 | Mixed Mangrove Scrub-Dropseed | 6 | Mixed mangrove scrub in a matrix composed predominately of Seashore Dropseed (*Sporobulus virginicus* ). | |
| CMXGt | 415019 | Mixed Mangrove Scrub-Cattail | 6 | Mixed mangrove scrub in a matrix composed predominately of Cattail (*Typha* spp.). | |
| CMXH | 415020 | Mixed Mangrove Scrub-Herbaceous | 5 | Mixed mangrove scrub in a matrix composed predominately of herbaceous vegetation. | |
| CMXO | 415030 | Mixed Mangrove Scrub-Open Marsh | 5 | Mixed mangrove scrub in a matrix composed predominately of Open Marsh or Open Salt Marsh. Mangroves can occur in both salt and freshwater dominated marshes. | |
| CMXS | 415040 | Mixed Mangrove Scrub-Succulent | 5 | Mixed mangrove scrub in a matrix composed predominately of succulents. | |
| CMXSb | 415041 | Mixed Mangrove Scrub-Saltwort | 6 | Mixed mangrove scrub in a matrix composed predominately of Saltwort (*Batis maritima* ). | |
| CMXSs | 415042 | Mixed Mangrove Scrub-Glasswort | 6 | Mixed mangrove scrub in a matrix composed predominately of Glasswort (*Salicornia* spp.). | |
| CMXD | 415050 | Mixed Mangrove Scrub-Dominant | 5 | Greater than 50% areal coverage of Mixed Mangrove scrub. | |
| CMXac | 415100 | Black Mangrove-Buttonwood Scrub | 4 | Co-dominant mix (60/40% or 40/60% split) of Black Mangrove (*Avicennia germinans*) and Buttonwood (*Conocarpus erectus*) scrub. | |
| CMXacG | 415110 | Black Mangrove-Buttonwood Scrub-Graminoid | 5 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of graminoids. | |
| CMXacGc | 415111 | Black Mangrove-Buttonwood Scrub-Sawgrass | 6 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense*). | |
| CMXacGd | 415112 | Black Mangrove-Buttonwood Scrub-Saltgrass | 6 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of Saltgrass (*Distichlis spicata* ). | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CMXacGe | 415113 | Black Mangrove-Buttonwood Scrub-Spikerush | 6 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CMXacGf | 415114 | Black Mangrove-Buttonwood Scrub-Fimbry | 6 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of Marsh Frimbry (*Fimbristylis spadicea*). | |
| CMXacGj | 415115 | Black Mangrove-Buttonwood Scrub-Black Rush | 6 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of Black Rush (*Juncus roemerianus*). | |
| CMXacGm | 415116 | Black Mangrove-Buttonwood Scrub-Keysgrass | 6 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of Keysgrass (*Monanthocloe littoralis*). | |
| CMXacGs | 415117 | Black Mangrove-Buttonwood Scrub-Cordgrass | 6 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of Cordgrass (*Spartina* spp.). | |
| CMXacGp | 415118 | Black Mangrove-Buttonwood Scrub-Dropseed | 6 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of Seashore Dropseed (*Sporobulus virginicus*). | |
| CMXacH | 415120 | Black Mangrove-Buttonwood Scrub-Herbaceous | 5 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of herbaceous vegetation. | |
| CMXacO | 415130 | Black Mangrove-Buttonwood Scrub-Open Marsh | 5 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of Open Salt Marsh. | |
| CMXacS | 415140 | Black Mangrove-Buttonwood Scrub-Succulent | 5 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of succulents. | |
| CMXacSb | 415141 | Black Mangrove-Buttonwood Scrub-Saltwort | 6 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of Saltwort (*Batis maritima*). | |
| CMXacSs | 415142 | Black Mangrove-Buttonwood Scrub-Glasswort | 6 | Black Mangrove-Buttonwood Scrub in a matrix composed predominately of Glasswort (*Salicornia* spp.). | |
| CMXacD | 415150 | Black Mangrove-Buttonwood Scrub-Dominant | 5 | Greater than 50% areal coverage of Black Mangrove-Buttonwood Scrub. | |
| CMXal | 415200 | Black Mangrove-White Mangrove Scrub | 4 | Co-dominant mix (60/40% or 40/60% split) of Black Mangrove (*Avicennia germinans*) and White Mangrove (*Laguncularia racemosa*) scrub. | |
| CMXalG | 415210 | Black Mangrove-White Mangrove Scrub-Graminoid | 5 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of graminoids. | |
| CMXalGc | 415211 | Black Mangrove-White Mangrove Scrub-Sawgrass | 6 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense*). | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CMXalGd | 415212 | Black Mangrove-White Mangrove Scrub-Saltgrass | 6 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of Saltgrass (*Distichlis spicata* ). | |
| CMXalGe | 415213 | Black Mangrove-White Mangrove Scrub-Spikerush | 6 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CMXalGf | 415214 | Black Mangrove-White Mangrove Scrub-Fimbry | 6 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of Marsh Frimbry (*Fimbristylis spadicea*). | |
| CMXalGj | 415215 | Black Mangrove-White Mangrove Scrub-Black Rush | 6 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of Black Rush (*Juncus roemerianus*). | |
| CMXalGm | 415216 | Black Mangrove-White Mangrove Scrub-Keysgrass | 6 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of Keysgrass (*Monanthocloe littoralis*). | |
| CMXalGs | 415217 | Black Mangrove-White Mangrove Scrub-Cordgrass | 6 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of Cordgrass (*Spartina* spp.). | |
| CMXalGp | 415218 | Black Mangrove-White Mangrove Scrub-Dropseed | 6 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of Seashore Dropseed (*Sporobulus virginicus*). | |
| CMXalH | 415220 | Black Mangrove-White Mangrove Scrub-Herbaceous | 5 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of herbaceous vegetation. | |
| CMXalO | 415230 | Black Mangrove-White Mangrove Scrub-Open Marsh | 5 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of Open Salt Marsh. | |
| CMXalS | 415240 | Black Mangrove-White Mangrove Scrub-Succulent | 5 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of succulents. | |
| CMXalSb | 415241 | Black Mangrove-White Mangrove Scrub-Saltwort | 6 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of Saltwort (*Batis maritima*). | |
| CMXalSs | 415242 | Black Mangrove-White Mangrove Scrub-Glasswort | 6 | Black Mangrove-White Mangrove Scrub in a matrix composed predominately of Glasswort (*Salicornia* spp.). | |
| CMXalD | 415250 | Black Mangrove-White Mangrove Scrub-Dominant | 5 | Greater than 50% areal coverage of Black Mangrove-White Mangrove Scrub. | |
| CMXar | 415300 | Black Mangrove-Red Mangrove Scrub | 4 | Co-dominant mix (60/40% or 40/60% split) of Black Mangrove (*Avicennia germinans*) and Red Mangrove (*Rhizophora mangle*) scrub. | |
| CMXarG | 415310 | Black Mangrove-Red Mangrove Scrub-Graminoid | 5 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of graminoids. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CMXarGc | 415311 | Black Mangrove-Red Mangrove Scrub-Sawgrass | 6 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense*). | |
| CMXarGd | 415312 | Black Mangrove-Red Mangrove Scrub-Saltgrass | 6 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of Saltgrass (*Distichlis spicata* ). | |
| CMXarGe | 415313 | Black Mangrove-Red Mangrove Scrub-Spikerush | 6 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CMXarGf | 415314 | Black Mangrove-Red Mangrove Scrub-Fimbry | 6 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of Marsh Frimbry (*Fimbristylis spadicea*). | |
| CMXarGj | 415315 | Black Mangrove-Red Mangrove Scrub-Black Rush | 6 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of Black Rush (*Juncus roemerianus*). | |
| CMXarGm | 415316 | Black Mangrove-Red Mangrove Scrub-Keysgrass | 6 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of Keysgrass (*Monanthocloe littoralis*). | |
| CMXarGs | 415317 | Black Mangrove-Red Mangrove Scrub-Cordgrass | 6 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of Cordgrass (*Spartina* spp.). | |
| CMXarGp | 415318 | Black Mangrove-Red Mangrove Scrub-Dropseed | 6 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of Seashore Dropseed (*Sporobulus virginicus*). | |
| CMXarH | 415320 | Black Mangrove-Red Mangrove Scrub-Herbaceous | 5 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of herbaceous vegetation. | |
| CMXarO | 415330 | Black Mangrove-Red Mangrove Scrub-Open Marsh | 5 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of Open Salt Marsh. | |
| CMXarS | 415340 | Black Mangrove-Red Mangrove Scrub-Succulent | 5 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of succulents. | |
| CMXarSb | 415341 | Black Mangrove-Red Mangrove Scrub-Saltwort | 6 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of Saltwort (*Batis maritima*). | |
| CMXarSs | 415342 | Black Mangrove-Red Mangrove Scrub-Glasswort | 6 | Black Mangrove-Red Mangrove Scrub in a matrix composed predominately of Glasswort (*Salicornia* spp.). | |
| CMXarD | 415350 | Black Mangrove-Red Mangrove Scrub-Dominant | 5 | Greater than 50% areal coverage of Black Mangrove-Red Mangrove Scrub. | |
| CMXcl | 415400 | Buttonwood-White Mangrove Scrub | 4 | Co-dominant mix (60/40% or 40/60% split) of Buttonwood (*Conocarpus erectus*) and White Mangrove (*Laguncularia racemosa*) scrub. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CMXclG | 415410 | Buttonwood-White Mangrove Scrub-Graminoid | 5 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of graminoids. | |
| CMXclGc | 415411 | Buttonwood-White Mangrove Scrub-Sawgrass | 6 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense*). | |
| CMXclGd | 415412 | Buttonwood-White Mangrove Scrub-Saltgrass | 6 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of Saltgrass (*Distichlis spicata* ). | |
| CMXclGe | 415413 | Buttonwood-White Mangrove Scrub-Spikerush | 6 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CMXclGf | 415414 | Buttonwood-White Mangrove Scrub-Fimbry | 6 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of Marsh Frimbry (*Fimbristylis spadicea*). | |
| CMXclGj | 415415 | Buttonwood-White Mangrove Scrub-Black Rush | 6 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of Black Rush (*Juncus roemerianus*). | |
| CMXclGm | 415416 | Buttonwood-White Mangrove Scrub-Keysgrass | 6 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of Keysgrass (*Monanthocloe littoralis*). | |
| CMXclGs | 415417 | Buttonwood-White Mangrove Scrub-Cordgrass | 6 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of Cordgrass (*Spartina* spp.). | |
| CMXclGp | 415418 | Buttonwood-White Mangrove Scrub-Dropseed | 6 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of Seashore Dropseed (*Sporobulus virginicus*). | |
| CMXclH | 415420 | Buttonwood-White Mangrove Scrub-Herbaceous | 5 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of herbaceous vegetation. | |
| CMXclO | 415430 | Buttonwood-White Mangrove Scrub-Open Marsh | 5 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of Open Salt Marsh. | |
| CMXclS | 415440 | Buttonwood-White Mangrove Scrub-Succulent | 5 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of succulents. | |
| CMXclSb | 415441 | Buttonwood-White Mangrove Scrub-Saltwort | 6 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of Saltwort (*Batis maritima*). | |
| CMXclSs | 415442 | Buttonwood-White Mangrove Scrub-Glasswort | 6 | Buttonwood-White Mangrove Scrub in a matrix composed predominately of Glasswort (*Salicornia* spp.). | |
| CMXclD | 415450 | Buttonwood-White Mangrove Scrub-Dominant | 5 | Greater than 50% areal coverage of Buttonwood-White Mangrove Scrub. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CMXcr | 415500 | Buttonwood-Red Mangrove Scrub | 4 | Co-dominant mix (60/40% or 40/60% split) of Buttonwood (*Conocarpus erectus*) and Red Mangrove (*Rhizophora mangle* ) scrub. | |
| CMXcrG | 415510 | Buttonwood-Red Mangrove Scrub-Graminoid | 5 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of graminoids. | |
| CMXcrGc | 415511 | Buttonwood-Red Mangrove Scrub-Sawgrass | 6 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense*). | |
| CMXcrGd | 415512 | Buttonwood-Red Mangrove Scrub-Saltgrass | 6 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of Saltgrass (*Distichlis spicata* ). | |
| CMXcrGe | 415513 | Buttonwood-Red Mangrove Scrub-Spikerush | 6 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CMXcrGf | 415514 | Buttonwood-Red Mangrove Scrub-Fimbry | 6 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of Marsh frimbry (Fimbristylis spadicea). | |
| CMXcrGj | 415515 | Buttonwood-Red Mangrove Scrub-Black Rush | 6 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of Black Rush (*Juncus roemerianus*). | |
| CMXcrGm | 415516 | Buttonwood-Red Mangrove Scrub-Keysgrass | 6 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of Keysgrass (*Monanthocloe littoralis*). | |
| CMXcrGs | 415517 | Buttonwood-Red Mangrove Scrub-Cordgrass | 6 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of Cordgrass (*Spartina* spp.). | |
| CMXcrGp | 415518 | Buttonwood-Red Mangrove Scrub-Dropseed | 6 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of Seashore Dropseed (*Sporobulus virginicus*). | |
| CMXcrGt | 415519 | Buttonwood-Red Mangrove Scrub-Cattail | 6 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of Cattail (*Typha* spp.). | |
| CMXcrH | 415520 | Buttonwood-Red Mangrove Scrub-Herbaceous | 5 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of herbaceous vegetation. | |
| CMXcrO | 415530 | Buttonwood-Red Mangrove Scrub-Open Marsh | 5 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of Open Marsh or Open Salt Marsh. Buttonwood and Red Mangrove can occur in both salt and freshwater dominated marshes. | |
| CMXcrS | 415540 | Buttonwood-Red Mangrove Scrub-Succulent | 5 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of succulents. | |
| CMXcrSb | 415541 | Buttonwood-Red Mangrove Scrub-Saltwort | 6 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of Saltwort (*Batis maritima*). | |
| CMXcrSs | 415542 | Buttonwood-Red Mangrove Scrub-Glasswort | 6 | Buttonwood-Red Mangrove Scrub in a matrix composed predominately of Glasswort (*Salicornia* spp.). | |
| CMXcrD | 415550 | Buttonwood-Red Mangrove Scrub-Dominant | 5 | Greater than 50% areal coverage of Buttonwood-Red Mangrove Scrub. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CMXlr | 415600 | White Mangrove-Red Mangrove Scrub | 4 | Co-dominant mix (60/40% or 40/60% split) of White Mangrove (*Laguncularia racemosa* ) and Red Mangrove (*Rhizophora mangle*) scrub. | |
| CMXlrG | 415610 | White Mangrove-Red Mangrove Scrub-Graminoid | 5 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of graminoids. | |
| CMXlrGc | 415611 | White Mangrove-Red Mangrove Scrub-Sawgrass | 6 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense*). | |
| CMXlrGd | 415612 | White Mangrove-Red Mangrove Scrub-Saltgrass | 6 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of Saltgrass (*Distichlis spicata* ). | |
| CMXlrGe | 415613 | White Mangrove-Red Mangrove Scrub-Spikerush | 6 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CMXlrGf | 415614 | White Mangrove-Red Mangrove Scrub-Fimbry | 6 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of Marsh frimbry (Fimbristylis spadicea). | |
| CMXlrGj | 415615 | White Mangrove-Red Mangrove Scrub-Black Rush | 6 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of Black Rush (*Juncus roemerianus*). | |
| CMXlrGm | 415616 | White Mangrove-Red Mangrove Scrub-Keysgrass | 6 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of Keysgrass (*Monanthocloe littoralis*). | |
| CMXlrGs | 415617 | White Mangrove-Red Mangrove Scrub-Cordgrass | 6 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of Cordgrass (*Spartina* spp.). | |
| CMXlrGp | 415618 | White Mangrove-Red Mangrove Scrub-Dropseed | 6 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of Seashore Dropseed (*Sporobulus virginicus*). | |
| CMXlrH | 415620 | White Mangrove-Red Mangrove Scrub-Herbaceous | 5 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of herbaceous vegetation. | |
| CMXlrO | 415630 | White Mangrove-Red Mangrove Scrub-Open Marsh | 5 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of Open Salt Marsh. | |
| CMXlrS | 415640 | White Mangrove-Red Mangrove Scrub-Succulent | 5 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of succulents. | |
| CMXlrSb | 415641 | White Mangrove-Red Mangrove Scrub-Saltwort | 6 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of Saltwort (*Batis maritima*). | |
| CMXlrSs | 415642 | White Mangrove-Red Mangrove Scrub-Glasswort | 6 | White Mangrove-Red Mangrove Scrub in a matrix composed predominately of Glasswort (*Salicornia* spp.). | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CMXlrD | 415650 | White Mangrove-Red Mangrove Scrub-Dominant | 5 | Greater than 50% areal coverage of White Mangrove-Red Mangrove Scrub. | |
| CS | 420000 | Swamp Scrub | 2 | Freshwater marsh communities with dwarf trees or low density (10% - 49%) shrubs. Canopy cover ranges from 10% to 50% but can be as much as 100% for some classes (e.g., Hardwood Swamp Scrub and Cypress Scrub). | Found throughout Florida. Some of these scrubs can be found in coastal areas along the transition zone between tidal and freshwater environments. |
| CSE | 420010 | Swamp Scrub-Emergent | 5 | Swamp scrub in a matrix composed predominately of broadleaf emergent vegetation. | |
| CSG | 420020 | Swamp Scrub-Graminoid Marsh | 5 | Swamp scrub in a matrix composed predominately of Freshwater Graminoid Marsh. | |
| CSGc | 420021 | Swamp Scrub-Sawgrass | 6 | Swamp scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense*). | |
| CSGe | 420022 | Swamp Scrub-Spikerush | 6 | Swamp scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CSGa | 420023 | Swamp Scrub-Panicgrass | 6 | Swamp scrub in a matrix composed predominately of Panicgrass (*Panicum* spp.). | |
| CSGt | 420024 | Swamp Scrub-Cattail | 6 | Swamp scrub in a matrix composed predominately of Cattail (*Typha* spp.). | |
| CSGP | 420030 | Swamp Scrub-Graminoid Prairie | 5 | Swamp scrub in a matrix composed predominately of Freshwater Graminoid Prairie. | |
| CSGPm | 420031 | Swamp Scrub-Muhly Grass | 6 | Swamp scrub in a matrix composed predominately of Muhly Grass (*Muhlenbergia capillaris var. filipes* ). | |
| CSH | 420040 | Swamp Scrub-Herbaceous | 5 | Swamp scrub in a matrix composed predominately of herbaceous vegetation. | |
| CSO | 420050 | Swamp Scrub-Open Marsh | 5 | Swamp scrub in a matrix composed predominately of Open Marsh. | |
| CSD | 420060 | Swamp Scrub-Dominant | 5 | Greater than 50% areal coverage of Swamp scrub. | |
| CSW | 421000 | Hardwood Swamp Scrub | 3 | Mix of dwarf trees and/or shrubs such as Red Bay (*Persea borbonia*), Sweet Bay (*Magnolia virginiana*), Myrsine (*Myrsine floridana*), Buttonwood (*Conocarpus erectus*), Willow (*Salix caroliniana*), Wax Myrtle (*Myrica cerifera* ), Dahoon Holly (*Ilex cassine* ), and/or Cocoplum (*Chrysobalanus icaco*) in a matrix of grasses, herbs, and, at times, including various species of vines. Canopy density will range from 10% - 49%. Canopy heights can vary according to the composition of hardwoods. | Often associated with flooded out or otherwise disturbed tree islands. |
| CSWE | 421010 | Hardwood Swamp Scrub-Emergent | 5 | Hardwood Swamp Scrub in a matrix composed predominately of broadleaf emergent vegetation. | |
| CSWG | 421020 | Hardwood Swamp Scrub-Graminoid Marsh | 5 | Hardwood Swamp Scrub in a matrix composed predominately of Freshwater Graminoid Marsh. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CSWGc | 421021 | Hardwood Swamp Scrub-Sawgrass | 6 | Hardwood Swamp Scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense*). | |
| CSWGe | 421022 | Hardwood Swamp Scrub-Spikerush | 6 | Hardwood Swamp Scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CSWGa | 421023 | Hardwood Swamp Scrub-Panicgrass | 6 | Hardwood Swamp Scrub in a matrix composed predominately of Panicgrass (*Panicum* spp.). | |
| CSWGt | 421024 | Hardwood Swamp Scrub-Cattail | 6 | Hardwood Swamp scrub in a matrix composed predominately of Cattail (*Typha* spp.). | |
| CSWGP | 421030 | Hardwood Swamp Scrub-Graminoid Prairie | 5 | Hardwood Swamp Scrub in a matrix composed predominately of Freshwater Graminoid Prairie. | |
| CSWGPm | 421031 | Hardwood Swamp Scrub-Muhly Grass | 6 | Hardwood Swamp scrub in a matrix composed predominately of Muhly Grass (*Muhlenbergia capillaris var. filipes*). | |
| CSWH | 421040 | Hardwood Swamp Scrub-Herbaceous | 5 | Hardwood Swamp Scrub in a matrix composed predominately of herbaceous vegetation. | |
| CSWO | 421050 | Hardwood Swamp Scrub-Open Marsh | 5 | Hardwood Swamp Scrub in a matrix composed predominately of Open Marsh. | |
| CSWD | 421060 | Hardwood Swamp Scrub-Dominant | 5 | Greater than 50% areal coverage of Hardwood Swamp Scrub. | |
| CSm | 422000 | Wax Myrtle Scrub | 3 | Wax Myrtle (*Myrica cerifera* ) characterized by canopy densities from 10% - 49% in a matrix of graminoids and/or herbaceous vegetation. | |
| CSmE | 422010 | Wax Myrtle Scrub-Emergent | 5 | Wax Myrtle (*Myrica cerifera* ) scrub in a matrix composed predominately of broadleaf emergent vegetation. | |
| CSmG | 422020 | Wax Myrtle Scrub-Graminoid Marsh | 5 | Wax Myrtle (*Myrica cerifera* ) scrub in a matrix composed predominately of Freshwater Graminoid Marsh. | |
| CSmGc | 422021 | Wax Myrtle Scrub-Sawgrass | 6 | Wax Myrtle (*Myrica cerifera* ) scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense* ). | |
| CSmGe | 422022 | Wax Myrtle Scrub-Spikerush | 6 | Wax Myrtle (*Myrica cerifera* ) scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CSmGa | 422023 | Wax Myrtle Scrub-Panicgrass | 6 | Wax Myrtle (*Myrica cerifera* ) scrub in a matrix composed predominately of Panicgrass (*Panicum* spp.). | |
| CSmGt | 422024 | Wax Myrtle Scrub-Cattail | 6 | Wax Myrtle (*Myrica cerifera* ) scrub in a matrix composed predominately of Cattail (*Typha* spp.). | |
| CSmGP | 422030 | Wax Myrtle Scrub-Graminoid Prairie | 5 | Wax Myrtle (*Myrica cerifera* ) scrub in a matrix composed predominately of Freshwater Graminoid Prairie. | |
| CSmGPm | 422031 | Wax Myrtle Scrub-Muhly Grass | 6 | Wax Myrtle (*Myrica cerifera* ) scrub in a matrix composed predominately of Muhly Grass (*Muhlenbergia capillaris var. filipes*). | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CSmH | 422040 | Wax Myrtle Scrub-Herbaceous | 5 | Wax Myrtle (*Myrica cerifera* ) scrub in a matrix composed predominately of herbaceous vegetation. | |
| CSmO | 422050 | Wax Myrtle Scrub-Open Marsh | 5 | Wax Myrtle (Myrica cerifera) scrub in a matrix composed predominately of Open Marsh. | |
| CSs | 423000 | Willow Scrub | 3 | Willow (*Salix caroliniana*) characterized by canopy densities from 10% - 49% in a matrix of graminoids and/or herbaceous vegetation. | |
| CSsE | 423010 | Willow Scrub-Emergent | 5 | Willow (*Salix caroliniana*) scrub in a matrix composed predominately of broadleaf emergent vegetation. | |
| CSsG | 423020 | Willow Scrub-Graminoid Marsh | 5 | Willow (*Salix caroliniana*) scrub in a matrix composed predominately of Freshwater Graminoid Marsh. | |
| CSsGc | 423021 | Willow Scrub-Sawgrass | 6 | Willow (*Salix caroliniana*) scrub in a matrix composed predominately of Sawgrass (*Cladium jamaicense* ). | |
| CSsGe | 423022 | Willow Scrub-Spikerush | 6 | Willow (*Salix caroliniana*) scrub in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CSsGa | 423023 | Willow Scrub-Panicgrass | 6 | Willow (*Salix caroliniana*) scrub in a matrix composed predominately of Panicgrass (*Panicum* spp.). | |
| CSsGt | 423024 | Willow Scrub-Cattail | 6 | Willow (*Salix caroliniana*) scrub in a matrix composed predominately of Cattail (*Typha* spp.). | |
| CSsH | 423030 | Willow Scrub-Herbaceous | 5 | Willow (*Salix caroliniana*) scrub in a matrix composed predominately of herbaceous vegetation. | |
| CSsO | 423040 | Willow Scrub-Open Marsh | 5 | Willow (*Salix caroliniana*) scrub in a matrix composed predominately of Open Marsh. | |
| CSt | 424000 | Cypress Scrub | 3 | Dwarf Pond Cypress (*Taxodium ascendens*) and/or dwarf Bald Cypress (*T. distichum* ) trees with canopy heights generally below five meters. Canopy densities are generally from 10% - 49% but can be as high as 100%. | |
| CStE | 424010 | Cypress Scrub-Emergent | 5 | Dwarf Cypress (*Taxodium* spp.) in a matrix composed predominately of broadleaf emergent vegetation. | |
| CStG | 424020 | Cypress Scrub-Graminoid Marsh | 5 | Dwarf Cypress (*Taxodium* spp.) in a matrix composed predominately of Freshwater Graminoid Marsh. | |
| CStGc | 424021 | Cypress Scrub-Sawgrass | 6 | Dwarf Cypress (*Taxodium* spp.) in a matrix composed predominately of Sawgrass (*Cladium jamaicense* ). | |
| CStGe | 424022 | Cypress Scrub-Spikerush | 6 | Dwarf Cypress (*Taxodium* spp.) in a matrix composed predominately of Spikerush (*Eleocharis* spp.). | |
| CStGa | 424023 | Cypress Scrub-Panicgrass | 6 | Dwarf Cypress (*Taxodium* spp.) in a matrix composed predominately of Panicgrass (*Panicum* spp.). | |
| CStGs | 424024 | Cypress Scrub-Gulfdune Paspalum | 6 | Dwarf Cypress (*Taxodium* spp.) in a matrix composed predominately of Gulfdune Paspalum (*Paspalum monostachyum*). | |
| CStGt | 424026 | Cypress Scrub-Cattail | 6 | Dwarf Cypress (*Taxodium* spp.) in a matrix composed predominately of Cattail (*Typha* spp.). | |
| CStGP | 424030 | Cypress Scrub-Graminoid Prairie | 5 | Dwarf Cypress (*Taxodium* spp.) in a matrix composed predominately of Freshwater Graminoid Prairie. | |
| CStGPm | 424031 | Cypress Scrub-Muhly Grass | 6 | Dwarf Cypress (*Taxodium* spp.) scrub in a matrix composed predominately of Muhly Grass (*Muhlenbergia capillaris var. filipes* ). | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| CStGPs | 424032 | Cypress Scrub-Little Bluestem | 6 | Dwarf Cypress (*Taxodium* spp.) in a matrix composed predominately of Little Bluestem (*Schizachyrium* scoparium). | |
| CStH | 424040 | Cypress Scrub-Herbaceous | 5 | Dwarf Cypress (*Taxodium* spp.) in a matrix composed predominately of herbaceous vegetation. | |
| CStO | 424050 | Cypress Scrub-Open Marsh | 5 | Dwarf Cypress (Taxodium spp.) in a matrix composed predominately of Open Marsh. | |
| CStD | 424060 | Cypress Scrub-Dominant | 5 | Greater than 50% areal coverage of Dwarf Cypress (*Taxodium* spp.). | |
| CU | 430000 | Upland Scrub | 2 | Upland graminoid and/or herbaceous dominant communities with dwarf trees and/or shrubs. | Found throughout Florida. |
| CUG | 430010 | Upland Scrub-Graminoid Prairie | 5 | Upland scrub in a matrix of graminoids. | |
| CUH | 430020 | Upland Scrub-Herbaceous | 5 | Upland scrub in a matrix of herbaceous vegetation. | |
| CUW | 431000 | Upland Hardwood Scrub | 3 | Mix of dwarf trees and/or shrubs such as Live Oak (*Quercus virginiana*), Poisonwood (*Metopium toxiferum*), Red Bay (*Persea borbonia*), Sweet Bay (*Magnolia virginiana*), Myrsine (*Myrsine floridana*), Wax Myrtle (*Myrica cerifera* ), Dahoon Holly (*Ilex cassine* ), Buttonwood (*Conocarpus erectus*), Cocoplum (*Chrysobalanus icaco*), Varnish Leaf (*Dodonaea viscosa*), and/or Trema (*Trema* spp.) in a matrix of grasses, herbs, and, at times, including various species of vines. Canopy density will range from 10% - 49%. Canopy heights can vary according to the composition of hardwoods. | Often associated with burned out hammocks. |
| CUWG | 431010 | Upland Hardwood Scrub-Graminoid Prairie | 5 | Upland Hardwood Scrub in a matrix of graminoids. | |
| CUWH | 431020 | Upland Hardwood Scrub-Herbaceous | 5 | Upland Hardwood Scrub in a matrix of herbaceous vegetation. | |
| | | | | | |
| M | 500000 | Marsh | 1 | Graminoid and/or herbaceous emergent or floating vegetation in shallow water that stands at or above the ground surface for much of the year. | Found throughout Florida. |
| MS | 510000 | Salt Marsh | 2 | A marsh consisting of salt tolerant graminoid and/or herbaceous vegetation. | Found along coastal Florida. |
| MSG | 511000 | Graminoid Salt Marsh | 3 | Graminoid dominated salt marsh. | Found along coastal Florida. |
| MSGd | 511100 | Saltgrass | 4 | Saltgrass (*Distichlis spicata* ) dominated salt marsh. | Found in salt marshes and flats, brackish habitats and wet marl near the coast; frequent to common, throughout coastal Florida. |
| MSGj | 511200 | Black Rush | 4 | Black Rush (*Juncus roemerianus*) dominated salt marsh. | Commonly found in tidal marshes; typical of southwest BICY and southern mainland BISC. |
| MSGm | 511300 | Keysgrass | 4 | Keysgrass (*Monanthocloe littoralis*) dominated salt marsh. | Found in salty shores, tidal flats and salt marshes; frequent, coastal south, central, and north Florida. |
| MSGs | 511400 | Cordgrass | 4 | Sand Cordgrass (*Spartina bakeri*) and/or Gulf Cordgrass (*S. spartinae* ) dominated salt marsh. | Commonly found in tidal marshes. However, *Spartina bakeri* can also be found in freshwater marshes. |
| MSGp | 511500 | Dropseed | 4 | Dropseed (*Sporobulus* spp.) dominated salt marsh. | Common throughout coastal Florida. |
| MSH | 512000 | Herbaceous Salt Marsh | 3 | Herbaceous dominated salt marsh. | Found along coastal Florida. |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| MSO | 513000 | Open Salt Marsh | 3 | Open water dominated salt marsh often with a mix of sparse graminoids and/or herbaceous salt marsh vegetation, such as Black Rush (*Juncus roemerianus*) and/or Cordgrass (*Spartina* spp.). | Found along coastal Florida. |
| MSS | 514000 | Succulent Salt Marsh | 3 | Succulent dominated salt marsh. | Found along coastal Florida. |
| MSSb | 514100 | Saltwort | 4 | Saltwort (*Batis maritima*) dominated salt marsh | Found bordering salt ponds, marshes, salt flats and fringes of mangrove mud; common along Snake Bite in EVER. |
| MSSs | 514200 | Glasswort | 4 | Glasswort (*Salicornia* spp.) dominated salt marsh. | Found in salt and brackish marshes and flats; throughout coastal regions of Florida; common along Snake Bite in EVER. |
| MSSe | 514300 | Sea Purslane | 4 | Sea Purslane (*Sesuvium* spp.) dominated salt marsh. | Found on beaches, dunes, marshes and marsh banks, salt flats and meadows, mangrove fringes, and other wet open places; throughout coastal Florida. |
| MF | 520000 | Freshwater Marsh | 2 | Freshwater graminoid and/or herbaceous marsh. | Found throughout Florida. |
| MFB | 521000 | Broadleaf Emergent Marsh | 3 | Broadleaf emergent dominated freshwater marsh. | Found throughout Florida. |
| MFBa | 521100 | Leather Fern | 4 | Golden Leather Fern (*Acrostichum aureum*) and/or Giant Leather Fern (*A. danaeifolium*) dominated marsh. | Found in freshwater, brackish, salt marshes, coastal hammocks, and mangrove swamps; Golden Leather Fern is found in southwestern coastal Florida from Manatee Co. south; Giant Leather Fern is widely distributed both coastally and inland in central and south Florida. |
| MFBp | 521200 | Pickerelweed | 4 | Pickerelweed (*Pontederia cordata*) dominated marsh. | Frequent throughout Florida in marshes, streams, ditches, and shallow water of lakes and ponds. |
| MFBs | 521300 | Arrowhead | 4 | Lanceleaf Arrowhead (*Sagittaria lancifolia*) and/or Broadleaf Arrowhead (*S. latifolia* ) dominated marsh. | Found throughout Florida in marshes, ditches, swamps, and lake margins. |
| MFBt | 521400 | Alligator Flag | 4 | Alligator Flag (*Thalia geniculata*) dominated marsh. | Found throughout south Florida in depression marshes, riverine marshes, open ponds in cypress sloughs, ditches, and canal margins with extended periods of deep inundation. |
| MFG | 522000 | Graminoid Freshwater Marsh | 3 | Graminoid dominated freshwater marsh. | Found throughout Florida. |
| MFGc | 522100 | Sawgrass | 4 | Sawgrass (*Cladium jamaicense*) dominated marsh. | Found in swamps, marshes, shores of lakes, and coastal marshes; dominant plant of the Greater Everglades system, including EVER and the WCAs. |
| MFGcS | 522110 | Sawgrass-Short | 5 | Sawgrass (*Cladium jamaicense*) dominated marsh with average height less than 2.5 meters. | |
| MFGcT | 522120 | Sawgrass-Tall | 5 | Sawgrass (*Cladium jamaicense*) dominated marsh with average height greater than 2.5 meters. | |
| MFGe | 522200 | Spikerush | 4 | Coastal Spikerush (*Eleocharis cellulosa*), Slim Spikerush (*E. elongata* ), and/or Knotted Spikerush (*E. interstincta* ) dominated marsh. | Found in marshes, swamps, rivers, streams, lakes, ponds, ditches, canals, and floodplains; common throughout the Greater Everglades system, including ENP and the WCAs. |
| MFGj | 522300 | Soft Rush | 4 | Soft Rush (*Juncus effusus* ) dominated marsh. | Typically found in Central Florida and the Kissimmee River. |
| MFGa | 522400 | Panicgrass | 4 | Maidencane (*Panicum hemitomon*) and/or Redtop Panicum (*P. rigidulum*) dominated marsh. | Generally located in shallow water of ponds, lakes, marshes, ditches, and canals; found sporadically throughout the Greater Everglades system. |
| MFGh | 522500 | Common Reed | 4 | Common Reed (*Phragmites australis*) dominated marsh. | Found in all types of wet habitats and adjoining banks; found throughout Florida and more frequent in south Florida; commonly located along the canals of the WCAs. |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| MFGpa | 528100 | Gulfdune Paspalum | 4 | Gulfdune Paspalum (*Paspalum monostachyum*) dominated marsh. Paspalum found in the substantial presence (> 10%) of Little Bluestem (*Schizachyrium scoparium*) and/or Muhly Grass (*Muhlenbergia capillaris var. filipes*) is characteristic of a Graminoid Freshwater Prairie (MFGP). | |
| MFGr | 522900 | Beakrush | 4 | Beakrush (*Rynchospora* spp.) dominated marsh. Found commonly growing with low stature Sawgrass (Cladium jamaicense). Beakrush found in the substantial presence (> 10%) of Little Bluestem (Schizachyrium scoparium) and/or Muhly Grass (Muhlenbergia capillaris var. filipes) is characteristic of a Graminoid Freshwater Prairie (MFGP). | |
| MFGs | 522600 | American Cupscale | 4 | American Cupscale (*Sacciolepis striata*) dominated marsh. | Found in mostly still water or along banks and shores of canals, marshes, lakes, floating islands, streams, ditches, rivers, glades, pastures, swamps, wet fields, ponds, low pinelands, and wet hammocks; common throughout Florida; occasionally found in disturbed areas along the canals and levees of the WCAs. |
| MFGt | 522700 | Cattail | 4 | Southern Cattail (*Typha domingensis*) and/or Broadleaf Cattail (*T. latifolia* ) dominated marsh. | Found throughout Florida; common throughout the greater Everglades in eutrophic soils. |
| MFGtM | 522710 | Cattail Monotypic | 5 | Greater than or equal to 90% areal coverage of Cattail. | |
| MFGtD | 522720 | Cattail Dominant | 5 | 50% to 89% areal coverage of Cattail. | |
| MFGtS | 522730 | Cattail Sparse | 5 | 10% to 49% areal coverage of Cattail. | |
| MFGz | 522800 | Giant Cutgrass | 4 | Giant Cutgrass (*Zizaniopsis miliacea* ) dominated marsh. | |
| MFGP | 523000 | Graminoid Freshwater Prairie | 3 | Short hydroperiod marsh characterized by a mix of graminoids that includes low-stature sawgrass (*Cladium jamaicense*), Muhly Grass (*Muhlenbergia capillaris var. filipes*), Little Bluestem (*Schizachyrium scoparium*), and Black Sedge (*Schoenus nigricans*), among others. | |
| MFGPc | 523100 | Sawgrass Prairie | 4 | Sawgrass (*Cladium jamaicense*) dominated wet prairie with average height less than 1.5 meters. | Typical component of marl wet prairies. |
| MFGPm | 523500 | Muhly Grass | 4 | Muhly Grass (*Muhlenbergia capillaris var. filipes*) dominated wet prairie. Found commonly growing with low stature Sawgrass (*Cladium jamaicense*) | Typical component of marl wet prairies. Also found on sandy or rocky soils of ridges, flatwoods, low woods, swales, saline flats, beaches and dunes; frequent throughout Florida. |
| MFGPs | 523600 | Little Bluestem | 4 | Little Bluestem (*Schizachyrium scoparium*) dominated wet prairie. Found commonly growing with low stature Sawgrass (Cladium jamaicense) | Typical component of marl wet prairies. Also found in open glades, wet prairies and along margins and open areas of limestone pine rocklands; restricted to south Florida from Miami southward to Big Pine Key, including the Everglades Keys. |
| MFGPh | 523700 | Black Sedge | 4 | Black Sedge (*Schoenus nigricans*) dominated wet prairie. | Found in marshes, wet calcareous pinelands and prairies, and limestone outcrops; in south Florida from Pasco Co. to Broward Co. southward to the Keys. |
| MFF | 524000 | Floating Emergent Marsh | 3 | Floating emergent dominated freshwater marsh. | Found throughout Florida. |
| MFFl | 524100 | Duckweed | 4 | Duckweed (*Lemna* spp.) dominated marsh. | |
| MFFn | 524200 | Spatterdock | 4 | Spatterdock (*Nuphar lutea subsp. advena* ) dominated marsh. | |
| MFFy | 524300 | Waterlily | 4 | Waterlily (*Nymphaea odorata*) dominated marsh. | Common throughout Florida in ponds, lakes, canals, ditches, sloughs, and swamps. |
| MFFs | 524400 | Water Spangles | 4 | Water Spangles (*Salvinia minima* ) dominated marsh. | |
| MFH | 525000 | Herbaceous Freshwater Marsh | 3 | Herbaceous dominated freshwater marsh. | Found throughout Florida. |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| MFHc | 525100 | Water Hemlock | 4 | Water Hemlock (*Cicuta mexicana*) dominated marsh. | Found throughout Florida along marshy shores, in floating mats of vegetation, swamps, springs, streams and ditches. |
| MFHi | 525200 | Morning Glory | 4 | Morning Glory (*Ipomoea* spp.) dominated marsh. | Occasionally found in highly disturbed areas along canals and levees of the WCAs. |
| MFHm | 525300 | Hempvine | 4 | Hempvine (*Mikania* spp.) dominated marsh. | |
| MFHp | 525400 | Smartweed | 4 | Smartweeds (*Polygonum* spp.) dominated marsh. | Found throughout Florida in swamps, marshes, flood plains, and moist hammocks. |
| MFO | 526000 | Open Marsh | 3 | Open water dominated freshwater marsh often with a mix of sparse graminoids, herbaceous, and/or emergent freshwater vegetation, such as Spikerush (*Eleocharis* spp.), Panicgrass (*Panicum* spp.), low stature Sawgrass (*Cladium jamaicense*) , Cattail (*Typha* spp.), Arrowhead (*Sagittaria* spp.), Pickerelweed (*Pontederia cordata*), Waterlily (*Nymphaea* spp.), Green Arum (*Peltandra virginica*), Swamp-Lily (*Crinum americanum*), Spider-lilies (*Hymenocallis* spp.), among others. | Typical of slough or remnant slough areas found throughout the Everglades and WCAs. |
| MFPO | 527000 | Open Prairie | 3 | Open ground, exposed rock, and/or open water dominated short hydroperiod marsh often with a mix of sparse graminoids and/or herbaceous vegetation, such as Muhly Grass (*Muhlenbergia capillaris var. filipes*), low stature Sawgrass (*Cladium jamaicense*), Gulfdune Paspalum (*Paspalum monostachyum*), Little Bluestem (*Schizachyrium scoparium* ), among others. | |
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| D | 600000 | Dune | 1 | Beach-dune associated graminoids and/or herbaceous vegetation. | Found along coastal Florida. |
| DG | 610000 | Graminoid Dune | 2 | Graminoid dominated dune. | Found along coastal Florida. |
| DGc | 611000 | Sandbur | 3 | Sandbur (*Cenchrus* spp.) dominated dune. | Found on open sandy soil and dunes. |
| DGu | 612000 | Sea Oats | 3 | Sea Oats (*Uniola paniculata* ) dominated dune. | Generally found in dunes elevated above the tide line. |
| DH | 620000 | Herbaceous Dune | 2 | Herbaceous dominated dune. | Found along coastal Florida. |
| DHi | 621000 | Railroad Vine | 3 | Railroad Vine (*Ipomoea pes-caprae*) dominated dune. | Generally found on shifting sand prior to colonization by other plants. |
| DHv | 622000 | Seacoast Marshelder | 3 | Seacoast Marshelder (*Iva imbricata* ) dominated dune. | Found on coastal dunes on both the Atlantic and Gulf Coasts of Florida, including the Keys. |
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| A | 700000 | Submerged Aquatic Vegetation | 1 | Vegetation that has evolved the ability to carry out their entire life cycle completely submerged in an aquatic environment. | |
| AM | 710000 | Marine Aquatic Vegetation | 2 | Place holder for future development of marine SAV classes. | |
| AMA | 711000 | Marine Algae | 3 | Place holder for future development of marine SAV classes. | |
| AMS | 712000 | Seagrass | 3 | Place holder for future development of marine SAV classes. | |
| AF | 720000 | Freshwater Aquatic Vegetation | 2 | Place holder for future development of freshwater SAV classes. | |
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| E | 800000 | Exotic | 1 | Non-native and often invasive vegetation. | |
| Ea | 801000 | Shoebutton | 2 | *Ardisia elliptica* | Reported in Broward, Dade, Monroe, Palm Beach, and St. Lucie counties; found in hammocks, disturbed wetlands, tree islands, cypress understories, and mangrove areas. |
| EaM | 801100 | Shoebutton Monotypic | 3 | Greater than or equal to 90% areal coverage of Shoebutton. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| EaD | 801200 | Shoebutton Dominant | 3 | 50% to 89% areal coverage of Shoebutton. | |
| EaS | 801300 | Shoebutton Sparse | 3 | 10% to 49% areal coverage of Shoebutton. | |
| EaT | 802000 | Treated Shoebutton | 2 | Treated *Ardisia elliptica*. | |
| EaMT | 802100 | Treated Shoebutton Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Shoebutton. | |
| EaDT | 802200 | Treated Shoebutton Dominant | 3 | 50% to 89% areal coverage of treated Shoebutton. | |
| EaST | 802300 | Treated Shoebutton Sparse | 3 | 10% to 49% areal coverage of treated Shoebutton. | |
| Ec | 803000 | Australian Pine | 2 | River Sheoak (*Casuarina cunninghamiana*), Australian Pine (*C. equisetifolia*), and Suckering Australian Pine (*C. glauca* ). | Occurs throughout south Florida, from Orlando south, on sandy shores, pinelands, filled wetlands, road shoulders, cleared land, and undeveloped lots. |
| EcM | 803100 | Australian Pine Monotypic | 3 | Greater than or equal to 90% areal coverage of Australian Pine. | |
| EcD | 803200 | Australian Pine Dominant | 3 | 50% to 89% areal coverage of Australian Pine. | |
| EcS | 803300 | Australian Pine Sparse | 3 | 10% to 49% areal coverage of Australian Pine. | |
| EcT | 804000 | Treated Australian Pine | 2 | Treated River Sheoak (*Casuarina cunninghamiana*), Australian Pine (*C. equisetifolia*), and Suckering Australian Pine (*C. glauca* ). | |
| EcMT | 804100 | Treated Australian Pine Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Australian Pine. | |
| EcDT | 804200 | Treated Australian Pine Dominant | 3 | 50% to 89% areal coverage of treated Australian Pine. | |
| EcST | 804300 | Treated Australian Pine Sparse | 3 | 10% to 49% areal coverage of treated Australian Pine. | |
| Eo | 805000 | Wild Taro | 2 | *Colocasia esculenta* | Dense to scattered populations reported throughout Florida; found sporadically in highly disturbed areas along the canals and levees of the WCAs. |
| EoM | 805100 | Wild Taro Monotypic | 3 | Greater than or equal to 90% areal coverage of Wild Taro. | |
| EoD | 805200 | Wild Taro Dominant | 3 | 50% to 89% areal coverage of Wild Taro. | |
| EoS | 805300 | Wild Taro Sparse | 3 | 10% to 49% areal coverage of Wild Taro. | |
| EoT | 806000 | Treated Wild Taro | 2 | Treated *Colocasia esculenta*. | |
| EoMT | 806100 | Treated Wild Taro Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Wild Taro. | |
| EoDT | 806200 | Treated Wild Taro Dominant | 3 | 50% to 89% areal coverage of treated Wild Taro. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| EoST | 806300 | Treated Wild Taro Sparse | 3 | 10% to 49% areal coverage of treated Wild Taro. | |
| Eu | 807000 | Latherleaf | 2 | *Colubrina asiatica* | Found in coastal areas of Florida from Key West north to Hutchinson Island in St. Lucie County and in EVER, including Ten Thousand Islands northwest into Collier County; invades the coastal ridges just above the high tide line, in tropical hammocks, buttonwood and mangrove forests, tidal marshes, and disturbed coastal areas. |
| EuM | 807100 | Latherleaf Monotypic | 3 | Greater than or equal to 90% areal coverage of Latherleaf. | |
| EuD | 807200 | Latherleaf Dominant | 3 | 50% to 89% areal coverage of Latherleaf. | |
| EuS | 807300 | Latherleaf Sparse | 3 | 10% to 49% areal coverage of Latherleaf. | |
| EuT | 808000 | Treated Latherleaf | 2 | Treated *Colubrina asiatica.* | |
| EuMT | 808100 | Treated Latherleaf Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Latherleaf. | |
| EuDT | 808200 | Treated Latherleaf Dominant | 3 | 50% to 89% areal coverage of treated Latherleaf. | |
| EuST | 808300 | Treated Latherleaf Sparse | 3 | 10% to 49% areal coverage of treated Latherleaf. | |
| Ee | 809000 | Water Hyacinth | 2 | *Eichhornia crassipes* | Found throughout Florida; often found choking out canals or other calm bodies of water. |
| EeM | 809100 | Water Hyacinth Monotypic | 3 | Greater than or equal to 90% areal coverage of Water Hyacinth. | |
| EeD | 809200 | Water Hyacinth Dominant | 3 | 50% to 89% areal coverage of Water Hyacinth. | |
| EeS | 809300 | Water Hyacinth Sparse | 3 | 10% to 49% areal coverage of Water Hyacinth. | |
| EeT | 810000 | Treated Water Hyacinth | 2 | Treated *Eichhornia crassipes.* | |
| EeMT | 810100 | Treated Water Hyacinth Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Water Hyacinth. | |
| EeDT | 810200 | Treated Water Hyacinth Dominant | 3 | 50% to 89% areal coverage of treated Water Hyacinth. | |
| EeST | 810300 | Treated Water Hyacinth Sparse | 3 | 10% to 49% areal coverage of treated Water Hyacinth. | |
| EG | 811000 | Giant Grasses | 2 | Napier Grass (*Pennisetum purpureum*) and Silkreed *(Neyraudia reynaudiana*). | Silkreed is currently found in Collier, Monroe, Dade, Broward, Palm Beach, and Highland counties; Napier Grass is located in 29 Florida counties, most commonly in central and south Florida. |
| EGM | 811100 | Giant Grasses Monotypic | 3 | Greater than or equal to 90% areal coverage of Giant Grasses. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| EGD | 811200 | Giant Grasses Dominant | 3 | 50% to 89% areal coverage of Giant Grasses. | |
| EGS | 811300 | Giant Grasses Sparse | 3 | 10% to 49% areal coverage of Giant Grasses. | |
| EGT | 812000 | Treated Giant Grasses | 2 | Treated Napier Grass (*Pennisetum purpureum*) and Silkreed *(Neyraudia reynaudiana*). | |
| EGMT | 812100 | Treated Giant Grasses Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Giant Grasses. | |
| EGDT | 812200 | Treated Giant Grasses Dominant | 3 | 50% to 89% areal coverage of treated Giant Grasses. | |
| EGST | 812300 | Treated Giant Grasses Sparse | 3 | 10% to 49% areal coverage of treated Shoebutton. | |
| Ei | 813000 | Cogongrass | 2 | *Imperata cylindrica* | Reported in dry to moist areas, such as pinelands, in all parts of Florida; found within EVER. |
| EiM | 813100 | Cogongrass Monotypic | 3 | Greater than or equal to 90% areal coverage of Cogongrass. | |
| EiD | 813200 | Cogongrass Dominant | 3 | 50% to 89% areal coverage of Cogongrass. | |
| EiS | 813300 | Cogongrass Sparse | 3 | 10% to 49% areal coverage of Cogongrass. | |
| EiT | 814000 | Treated Cogongrass | 2 | Treated *Imperata cylindrica.* | |
| EiMT | 814100 | Treated Cogongrass Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Cogongrass. | |
| EiDT | 814200 | Treated Cogongrass Dominant | 3 | 50% to 89% areal coverage of treated Cogongrass. | |
| EiST | 814300 | Treated Cogongrass Sparse | 3 | 10% to 49% areal coverage of treated Cogongrass. | |
| Eip | 815000 | Water Spinach | 2 | *Ipomoea aquatica* | Occasionally found in highly disturbed areas along canals and levees of WCA2. |
| EipM | 815100 | Water Spinach Monotypic | 3 | Greater than or equal to 90% areal coverage of Water Spinach. | |
| EipD | 815200 | Water Spinach Dominant | 3 | 50% to 89% areal coverage of Water Spinach. | |
| EipS | 815300 | Water Spinach Sparse | 3 | 10% to 49% areal coverage of Water Spinach. | |
| EipT | 816000 | Treated Water Spinach | 2 | Treated *Ipomoea aquatica*. | |
| EipMT | 816100 | Treated Water Spinach Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Water Spinach. | |
| EipDT | 816200 | Treated Water Spinach Dominant | 3 | 50% to 89% areal coverage of treated Water Spinach. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| EipST | 816300 | Treated Water Spinach Sparse | 3 | 10% to 49% areal coverage of treated Water Spinach. | |
| EI | 817000 | Lygodium | 2 | Japanese Climbing Fern (*Lygodium japonicum*) and Old-world Climbing Fern (*L. microphyllum*). | Found in Broward, Collier, DeSoto, Hardee, Highlands, Lee, Martin, Palm Beach, Polk, and Sarasota counties; found throughout tree islands of Loxahatchee NWR. |
| EIM | 817100 | Lygodium Monotypic | 3 | Greater than or equal to 90% areal coverage of Lygodium. | |
| EID | 817200 | Lygodium Dominant | 3 | 50% to 89% areal coverage of Lygodium. | |
| EIS | 817300 | Lygodium Sparse | 3 | 10% to 49% areal coverage of Lygodium. | |
| EIT | 818000 | Treated Lygodium | 2 | Treated Japanese Climbing Fern (*Lygodium japonicum*) and Old-world Climbing Fern (*L. microphyllum* ). | |
| EIMT | 818100 | Treated Lygodium Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Lygodium. | |
| EIDT | 818200 | Treated Lygodium Dominant | 3 | 50% to 89% areal coverage of treated Lygodium. | |
| EIST | 818300 | Treated Lygodium Sparse | 3 | 10% to 49% areal coverage of treated Lygodium. | |
| Em | 819000 | Melaleuca | 2 | *Melaleuca quinquenervia* | Reported in 16 counties in central and southern Florida; common on lands adjacent to the WCAs and EVER; also found throughout Loxahatchee NWR. |
| EmM | 819100 | Melaleuca Monotypic | 3 | Greater than or equal to 90% areal coverage of Melaleuca. | |
| EmD | 819200 | Melaleuca Dominant | 3 | 50% to 89% areal coverage of Melaleuca. | |
| EmS | 819300 | Melaleuca Sparse | 3 | 10% to 49% areal coverage of Melaleuca. | |
| EmT | 820000 | Treated Melaleuca | 2 | Treated *Melaleuca quinquenervia*. | |
| EmMT | 820100 | Treated Melaleuca Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Melaleuca. | |
| EmDT | 820200 | Treated Melaleuca Dominant | 3 | 50% to 89% areal coverage of treated Melaleuca. | |
| EmST | 820300 | Treated Melaleuca Sparse | 3 | 10% to 49% areal coverage of treated Melaleuca. | |
| Ep | 821000 | Torpedo Grass | 2 | *Panicum repens* | Occurs naturalized in 75% of Florida; generally found in areas of disturbed marsh along canals and ditches. |
| EpM | 821100 | Torpedo Grass Monotypic | 3 | Greater than or equal to 90% areal coverage of Torpedo Grass. | |
| EpD | 821200 | Torpedo Grass Dominant | 3 | 50% to 89% areal coverage of Torpedo Grass. | |
| EpS | 821300 | Torpedo Grass Sparse | 3 | 10% to 49% areal coverage of Torpedo Grass. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| EpT | 822000 | Treated Torpedo Grass | 2 | Treated *Panicum repens*. | |
| EpMT | 822100 | Treated Torpedo Grass Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Torpedo Grass. | |
| EpDT | 822200 | Treated Torpedo Grass Dominant | 3 | 50% to 89% areal coverage of treated Torpedo Grass. | |
| EpST | 822300 | Treated Torpedo Grass Sparse | 3 | 10% to 49% areal coverage of treated Torpedo Grass. | |
| Epi | 823000 | Water Lettuce | 2 | *Pistia stratiotes* | Found throughout peninsular Florida; generally found along the margins of canals or in other areas of mostly still, open water. |
| EpiM | 823100 | Water Lettuce Monotypic | 3 | Greater than or equal to 90% areal coverage of Water Lettuce. | |
| EpiD | 823200 | Water Lettuce Dominant | 3 | 50% to 89% areal coverage of Water Lettuce. | |
| EpiS | 823300 | Water Lettuce Sparse | 3 | 10% to 49% areal coverage of Water Lettuce. | |
| EpiT | 824000 | Treated Water Lettuce | 2 | Treated *Pistia stratiotes* . | |
| EpiMT | 824100 | Treated Water Lettuce Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Water Lettuce. | |
| EpiDT | 824200 | Treated Water Lettuce Dominant | 3 | 50% to 89% areal coverage of treated Water Lettuce. | |
| EpiST | 824300 | Treated Water Lettuce Sparse | 3 | 10% to 49% areal coverage of treated Water Lettuce. | |
| Eh | 825000 | Sugar Cane | 2 | *Saccharum officinarum* | Often found in recovering agricultural areas or in the margins of natural areas adjacent to agricultural fields. |
| EhM | 825100 | Sugar Cane Monotypic | 3 | Greater than or equal to 90% areal coverage of Sugar Cane. | |
| EhD | 825200 | Sugar Cane Dominant | 3 | 50% to 89% areal coverage of Sugar Cane. | |
| EhS | 825300 | Sugar Cane Sparse | 3 | 10% to 49% areal coverage of Sugar Cane. | |
| EhT | 826000 | Treated Sugar Cane | 2 | Treated *Saccharum officinarum*. | |
| EhMT | 826100 | Treated Sugar Cane Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Sugar Cane. | |
| EhDT | 826200 | Treated Sugar Cane Dominant | 3 | 50% to 89% areal coverage of treated Sugar Cane. | |
| EhST | 826300 | Treated Sugar Cane Sparse | 3 | 10% to 49% areal coverage of treated Sugar Cane. | |
| Es | 827000 | Brazilian Pepper | 2 | *Schinus terebinthifolius* | Found in Florida as far north as Levy and St. Johns counties and as far west as Santa Rosa County; commonly located in disturbed areas, along canals and levees, road shoulders, and on disturbed tree islands. |
| EsM | 827100 | Brazilian Pepper Monotypic | 3 | Greater than or equal to 90% areal coverage of Brazilian Pepper. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| EsD | 827200 | Brazilian Pepper Dominant | 3 | 50% to 89% areal coverage of Brazilian Pepper. | |
| EsS | 827300 | Brazilian Pepper Sparse | 3 | 10% to 49% areal coverage of Brazilian Pepper. | |
| EsT | 828000 | Treated Brazilian Pepper | 2 | Treated *Schinus terebinthifolius*. | |
| EsMT | 828100 | Treated Brazilian Pepper Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Brazilian Pepper. | |
| EsDT | 828200 | Treated Brazilian Pepper Dominant | 3 | 50% to 89% areal coverage of treated Brazilian Pepper. | |
| EsST | 828300 | Treated Brazilian Pepper Sparse | 3 | 10% to 49% areal coverage of treated Brazilian Pepper. | |
| En | 829000 | Tropical Soda Apple | 2 | *Solanum viarum* | Now a common weed in fields and groves, along roadsides, in pinelands, and hammock edges as far north as the panhandle of Florida. |
| EnM | 829100 | Tropical Soda Apple Monotypic | 3 | Greater than or equal to 90% areal coverage of Tropical Soda Apple. | |
| EnD | 829200 | Tropical Soda Apple Dominant | 3 | 50% to 89% areal coverage of Tropical Soda Apple. | |
| EnS | 829300 | Tropical Soda Apple Sparse | 3 | 10% to 49% areal coverage of Tropical Soda Apple. | |
| EnT | 830000 | Treated Tropical Soda Apple | 2 | Treated *Solanum viarum*. | |
| EnMT | 830100 | Treated Tropical Soda Apple Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Tropical Soda Apple. | |
| EnDT | 830200 | Treated Tropical Soda Apple Dominant | 3 | 50% to 89% areal coverage of treated Tropical Soda Apple. | |
| EnST | 830300 | Treated Tropical Soda Apple Sparse | 3 | 10% to 49% areal coverage of treated Tropical Soda Apple. | |
| Ey | 831000 | Java Plum | 2 | *Syzygium cumini* | Found mostly in wet pinelands, hammocks, and well drained uplands of south Florida, including Palm Beach, Collier, and Lee counties. |
| EyM | 831100 | Java Plum Monotypic | 3 | Greater than or equal to 90% areal coverage of Java Plum. | |
| EyD | 831200 | Java Plum Dominant | 3 | 50% to 89% areal coverage of Java Plum. | |
| EyS | 831300 | Java Plum Sparse | 3 | 10% to 49% areal coverage of Java Plum. | |
| EyT | 832000 | Treated Java Plum | 2 | Treated *Syzygium cumini* . | |
| EyMT | 832100 | Treated Java Plum Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Java Plum. | |
| EyDT | 832200 | Treated Java Plum Dominant | 3 | 50% to 89% areal coverage of treated Java Plum. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| EyST | 832300 | Treated Java Plum Sparse | 3 | 10% to 49% areal coverage of treated Java Plum. | |
| Et | 833000 | Seaside Mahoe | 2 | *Thespesia populnea* | Now a common constituent of low wave action beaches and mangroves of south Florida. |
| EtM | 833100 | Seaside Mahoe Monotypic | 3 | Greater than or equal to 90% areal coverage of Seaside Mahoe. | |
| EtD | 833200 | Seaside Mahoe Dominant | 3 | 50% to 89% areal coverage of Seaside Mahoe. | |
| EtS | 833300 | Seaside Mahoe Sparse | 3 | 10% to 49% areal coverage of Seaside Mahoe. | |
| EtT | 834000 | Treated Seaside Mahoe | 2 | Treated *Thespesia populnea*. | |
| EtMT | 834100 | Treated Seaside Mahoe Monotypic | 3 | Greater than or equal to 90% areal coverage of treated Seaside Mahoe. | |
| EtDT | 834200 | Treated Seaside Mahoe Dominant | 3 | 50% to 89% areal coverage of treated Seaside Mahoe. | |
| EtST | 834300 | Treated Seaside Mahoe Sparse | 3 | 10% to 49% areal coverage of treated Seaside Mahoe. | |
| | | | | | |
| N | 900000 | Non-Vegetative | 1 | Non-vegetative areal coverage. | |
| BCH | 901000 | Beach | 2 | Sand covered ground adjacent to lakes, bays, oceans, or other large bodies of water. | |
| HI | 902000 | Human Impacted | 2 | Areas impacted by human disturbance. | |
| AG | 902010 | Agriculture | 3 | Agriculture areas such as nurseries, crops, grazing areas, and farms. | |
| AB | 902120 | Airboat Trail | 3 | Airboat trail. | |
| CA | 902020 | Canal | 3 | Water bodies specifically designed to direct water from one location to another. | |
| CO | 902030 | Commercial | 3 | Commercial areas such as malls, parking lots, and factories. | |
| FC | 902050 | Fish Camp | 3 | Camp site, generally with a building(s), and its associated disturbed area. | |
| HID | 902130 | Hole-in-the-Donut | 3 | Restoration and recovery of the Hole-in-the-Donut area to a marl prairie wetland vegetative community. | |
| LEV | 902060 | Levee | 3 | Elevated berm, generally with an access road, utilized to contain a body of water such as a lake or marsh | |
| ORV | 902070 | ORV Trail | 3 | Off-road vehicle trail. | |
| PS | 902040 | Pump Station | 3 | Structure used to move water through canals. | |
| QUA | 902080 | Quarry | 3 | Area used for mining rocks, minerals, or other natural resources. | |
| RES | 902090 | Residential | 3 | Residential areas such as subdivisions, lawns, and playgrounds. | |
| RD | 902100 | Road | 3 | Paved and unpaved roads other than levees. | |
| SP | 902110 | Spoil | 3 | Areas such as power lines and abandoned agricultural areas. | |
| MUD | 903000 | Mud | 2 | Moist or dry open ground. | |
| OW | 904000 | Open Water | 2 | Open water areas such as ponds, lakes, rivers, bays, and estuaries. | |
| O | 905000 | Other | 2 | Describes vegetation or non-vegetation cover other than some vegetation of particular interest. On a cattail map, for example, Other (**O**) would be used to indicate all vegetation and non-vegetation cover except for cattail, the vegetation of particular interest. | |
| REF | 906000 | Refugia | 2 | An alligator hole or refuge. | |
| SF | 907000 | Barren Salt Flat | 2 | Barren, generally hypersaline, flats exposed at low tide. | |
| UNK | 908000 | Unknown | 2 | Unknown vegetation or other land cover. | |

| Class ID | Raster ID | Name | Level | Description | Location |
|---|---|---|---|---|---|
| | | | | | |
| n/a | 1000 | Modifiers | n/a | Additional attributed information. | |
| I | 1001 | Tree Island | n/a | To be used as a modifier to indicate the presence, greater than 10%, of tree island structure within a given cell. This label will be used in addition to the label for the actual community or species comprising the majority of the cell. For example, a cell containing 89% Open Marsh (MFO) and 11% Bayhead Forest (FSB) in the form of a tree island structure, pop-up or strand island, will be labeled as MFO,I. The bayhead component in the previous example can be replaced with willow, wax myrtle, cocoplum, and so forth and the “I” will still be still be necessary if the woody vegetation is in the form of a tree island. | Found throughout the Everglades. |
| P | 1002 | Periphyton | n/a | To be used as a modifier to indicate the presence of floating and submergent periphyton species. | |
| | | | | | |

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

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**U.S. Department of the Interior**

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