The Everglades National Park and Big Cypress National Preserve Vegetation Mapping Project

Interim Report—*Eastern Big Cypress (Regions 5 & 6), Big Cypress National Preserve*

Natural Resource Report NPS/SFCN/NRR—2019/2035

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Please cite as:

> Ruiz, P.L., A. Lee, C. Thompson, I. Castillo, M. Guichardot, C.P. Perry, A. Arteaga Garcia, M. Foguer, M. C. Prats, E. Garcia, S. Lamosa, R. B. Shamblin, and K. R. T. Whelan. 2019. The Everglades National Park and Big Cypress National Preserve Vegetation Mapping Project: Interim Report—Eastern Big Cypress (Regions 5 & 6), Big Cypress National Preserve. Natural Report NPS/SFCN/NRR-2019/2035. National Park Service, Fort Collins, Colorado.

Summary

The Everglades National Park and Big Cypress National Preserve vegetation mapping project is part of the Comprehensive Everglades Restoration Plan (CERP). It is a cooperative effort between the South Florida Water Management District (SFWMD), the United States Army Corps of Engineers (USACE), and the National Park Service (NPS) Vegetation Mapping Inventory Program (VMI). The goal of this project is to produce a spatially and thematically accurate vegetation map of Everglades National Park and Big Cypress National Preserve prior to the completion of restoration efforts. The vegetation map will serve as a record of baseline conditions to: (1) document changes to the spatial extent, pattern, and proportion of plant communities within these two federally-managed units as they respond to hydrologic modifications resulting from the implementation of the CERP; and (2) provide vegetation and land-cover information to NPS park managers and scientists for use in park management, resource management, research, and monitoring.

This project covers an area of approximately 7,400 square kilometers (1.84 million acres [ac]) and consists of seven mapping regions: four regions in Everglades, Regions 1–4, and three in Big Cypress, Regions 5–7. The report that follows focuses on the mapping effort associated with Regions 5 and 6, eastern Big Cypress. Eastern Big Cypress encompasses a total area of 2068.8 square kilometers (798.8 square miles [mi^2], 511,212 ac) and is bounded by Water Conservation Areas to the east, Shark River Slough/Long Pine Key (Region 1) to the southeast, the Northwest Coastal Everglades (Region 4) to the south, and western Big Cypress National Preserve (Region 7) to the west.

Photo-interpretation was performed by superimposing a 50 × 50 meter (164 × 164 feet [ft] or 0.25 hectare [0.61 ac]) grid cell vector matrix over stereoscopic, 0.15 meters (0.492 ft) spatial resolution, color-infrared aerial imagery on a digital photogrammetric workstation. Photo-interpreters identified the dominant community in each cell by applying majority-rule algorithms, recognizing community-specific spectral signatures, and referencing an extensive ground-truth database. The dominant vegetation community within in each grid cell was classified using a hierarchical classification system developed specifically for this project. Additionally, photo-interpreters categorized the absolute cover of cattail (*Typha* sp.) and any exotic species detected as either: Sparse (10–49%), Dominant (50–89%), or Monotypic (90–100%).

A total of 140 thematic classes were used to map eastern Big Cypress. The most common vegetation class was Cypress Forest. Cypress Forest communities (i.e., Domes, Forest, and Strands) accounted for 28.5% of the total area mapped. Other notable classes include Cypress Scrub (24.2%), Pine Woodlands (13.4%), and Mixed Graminoid Freshwater Marshes and Prairies (11.9%). The map has a thematic class accuracy of 93.1% with a lower 90th Percentile Confidence Interval of 90.8%.

Content

The geospatial data for the Eastern Big Cypress National Preserve (EBICYNP), Regions 5 & 6, vegetation map. The geodatabase contains 6; feature classes:

- BICY_Boundary
- EBICYNP_Cattails
- EBICYNP_Exotics
- EBICYNP_Mapping_Boundary
- EBICYNP_Vegetation
- EBICYNP_Vegetaion_Dissolve

The BICY_Boundary feature class contains one record delineating the bounding area for the area mapped. The EBICYNP_Cattails feature class shows the distribution of cattails (Typha sp.) within eastern Big Cypress and quantifies the absolute cover of cattails within each grid cell as either Sparse (10%-49%), Dominant (50%-89%), or Monotypic (90%-100%). Blank grid cells indicate that cattails are either not present within the grid cell or below the minimum detectable threshold value of ten percent. The EBICYNP_Exotics feature class shows the distribution of Brazilian pepper (Schinus terebinthifolia) and Punk tree pine (Melaleuca quinquenervia) within the mapping area and quantifies the absolute cover of these two species within each grid cell as either Sparse (10%-49%), Dominant (50%-89%), or Monotypic (90%-100%). Blank grid cells indicate that these two species are either

not present or below the minimum detectable threshold value of ten percent. The EBICYNP_Boundary feature class contains one record delineating the bounding area for the area mappedThe EBICYNP_Vegetation feature class contains the vegetation data for each grid cell within the EBICYNP bounding area. It contains 827,521 records and 15 attributes (Table 1). The attributes represent grid cell specific information regarding the dominant community type identified. The EBICYNP_Vegetaion_Dissolve represent the same vegetation information stored in the previously described feature class (see Table 1). However, vegetation codes have been merged (dissolved) to reduce the number of total records to 140 (unique vegetation classes) and to speed up the geoprocessing time needed to load the EBICYNP vegetation map for display purposes.

Table 1: Description of attributes in the EBICYNP_Vegetation feature class

Attribute	Description
OBJECTID	ESRI default (ID)
SHAPE	ESRI default (polygon)
Cell_ID	Grid cell unique identification
VegCode	Vegetation code from classification system
VegCode_Level	Level Indicates the level of detail (hierarchy) associated with the vegetation code within the classification system. Community specificity increases with increasing level of detail.
VegCode_Name	The long name associated with the vegetation code (VegCode) attribute (see classification system)
L1_name	Level 1 classification name (see classification system)
L2_name	Level 2 classification name (see classification system)
L3_name	Level 3 classification name (see classification system)
L4_name	Level 4 classification name (see classification system)
L5_name	Level 5 classification name (see classification system)
L6_name	Level 6 classification name (see classification system)
L7_name	Level 7 classification name (see classification system)
Shape_Length	ESRI default (shape perimeter m)
Shape_Area	ESRI default (shape area m^2)

Acknowledgments

The United States Army Corps of Engineers (USACE) and the National Park Service (NPS) National Vegetation Inventory Program provided the funding for this project. Special thanks to Theodore N. Schall, Donna George, Javier Cortes, and April Patterson from USACE. From the NPS we would like to recognize Pedro Ramos, Karl Brown, Jed Redwine, Agnes McLean, David Rudnick, Leonard Pearlstine, Tony Pernas, Jimi Sadle, Robert Sobczak, Judd Patterson, Robert Muxo, Mario Londono, Andrea Atkinson, and Matt Patterson. From the South Florida Water Management District (SFWMD) Fred Sklar. The SFWMD and Daniel Gann, from the Geographic Information Systems Center at Florida International University (FIU), provided several of the photogrammetric workstations used in this project. The Geographic Information Systems Center at FIU provided multiple interns on the project as well. Helicopter transportation and logistics provided by Big Cypress National Preserve (BICY) Fire and Aviation: Fred Goodwin (pilot), Michael O'Leary, Micheal Roof, Nicholas Connolly, Ashlee Girardi, and Kevin Logiudice. This is a CERP/RECOVER project.