14450

South Florida Dwarf Cypress Savanna

BpS Model/Description Version: Aug. 2020

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| --- | --- | --- | --- |
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| None | None | None | None |

Vegetation Type

Woody Wetland

Map Zones

56

Geographic Range

This system is endemic to south Florida (NatureServe 2006). Pond cypress savanna occurs in southwest Florida, mainly in the Big Cypress area, Big Cypress National Preserve.

Biophysical Site Description

Pond cypress savanna occurs as often stunted stands of *Taxodium ascendens* growing on shallow sands or marl soils above limestone bedrock (Flohrschutz 1978).

Vegetation Description

This biophysical setting (BpS) is a wet grassland savanna with scattered pond cypress (*Taxodium ascendens*). Individual trees are usually quite small and widely scattered, with canopy coverage ranging from 30-45% (Flohrschutz 1978). The understory is dominated by graminoids including beak rush (*Rhynchospora microcarpa*), sedges (*Cyperus* spp.), muhly grass (*Muhlenbergia filipes*), and sawgrass (*Cladium jamaicense*) (NatureServe 2006). Vegetation density and diversity are low (Ewel 1990).

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| TAAS | *Taxodium ascendens* | Pond cypress |
| RHMI7 | *Rhynchospora microcarpa* | Southern beaksedge |
| MUCAF | *Muhlenbergia capillaris var. filipes* | Gulfhairawn muhly |
| CLMAJ | *Cladium mariscus ssp. jamaicense* | Jamaica swamp sawgrass |

Species names are from the NRCS PLANTS database. Check species codes at http://plants.usda.gov.

Disturbance Description

The herbaceous graminoid and pond cypress canopy is kept sparse by very low nutrient availability and extreme water level fluctuations. Fires are associated with drought in the winter. These droughts occur in association with the El Niño/La Niña Southern Oscillation (ENSO) on 7-15yr cycles. (David Brownlie, personal communication 2005). In the absence of fire for long periods, hardwood encroachment can occur.

Fire Frequency

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Severity** | **Avg FI** | **Percent of All Fires** | **Min FI** | **Max FI** |
| Replacement | 117 | 17 |  |  |
| Moderate (Mixed) | 73 | 27 |  |  |
| Low (Surface) | 35 | 56 |  |  |
| All Fires | 20 | 100 |  |  |

Fire interval is expressed in years for each fire severity class and for all types of fire combined (All Fires). Average FI is the central tendency modeled. Percent of all fires is the percent of all fires modeled in that severity class. Minimum and Maximum FIs show the relative range of fire intervals as estimated by model contributors, if known.

Scale Description

Pond cypress savanna occurs primarily in the Big Cypress region of south Florida. Information describing the size of this system was difficult to find. Pond cypress savanna occurs within a matrix of cypress strands, cypress domes, prairie and pine communities, most contained within Big Cypress National Preserve. Muss et. al. (2003) indicated there is approximately 295,100ha. of cypress within Big Cypress National Preserve, and half of that is open stands of small cypress growing in seasonally flooded grasslands known as cypress prairie.

No information on the scale of disturbances within pond cypress savanna was identified.

Adjacency or Identification Concerns

This is similar to southwest Florida wet prairie, which does not have pond cypress trees. This BpS is equivalent to CES411.290 South Florida Dwarf Cypress Savanna (NatureServe 2006).

Issues or Problems

This three-box model can be brought up to date with the addition of two more boxes to accommodate *Melaleuca quinquenervia* forests, closed and open.

Native Uncharacteristic Conditions

Comments

Succession Classes

**Mapping Rules**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Upper Layer Lifeform** | **Height (m)** | **Canopy Cover (%)** | | | | | | | | | |
| **0-10** | **11-20** | **21-30** | **31-40** | **41 - 50** | **51-60** | **61-70** | **71-80** | **81-90** | **91-100** |
| Herb | 0-0.5 | A | A | A | A | A | A | A | A | A | A |
| Herb | 0.5-1.0 | A | A | A | A | A | A | A | A | A | A |
| Herb | >1.0 | A | A | A | A | A | A | A | A | A | A |
| Shrub | 0-0.5 | A | A | A | A | A | A | A | A | A | A |
| Shrub | 0.5-1.0 | A | A | A | A | A | A | A | A | A | A |
| Shrub | 1.0-3.0 | A | A | A | A | A | A | A | A | A | A |
| Shrub | >3.0 | A | A | A | A | A | A | A | A | A | A |
| Tree | 0-5 | C | C | C | B | B | B | B | B | B | B |
| Tree | 5-10 | C | C | C | B | B | B | B | B | B | B |
| Tree | 10-25 | C | C | C | B | B | B | B | B | B | B |
| Tree | 25-50 | C | C | C | B | B | B | B | B | B | B |
| Tree | >50 | C | C | C | B | B | B | B | B | B | B |

Succession class letters A-E are described in the Succession Class Description section. Some classes use a leafform distinction where a qualifier is added to the class letter: Brdl (broadleaf), Con (conifer), or Mix (mixed conifer and broadleaf). UN refers to uncharacteristic native or a combination of height and cover that would not be expected under the reference condition. NP refers to not possible or a combination of height and cover which is not physiologically possible for the species in the BpS.

**Description**

Class A 16 Early Development 1 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| RHMI7 | Rhynchospora microcarpa | Southern beaksedge | Lower |
| MUCAF | Muhlenbergia capillaris var. filipes | Gulfhairawn muhly | Lower |
| CLMAJ | Cladium mariscus ssp. jamaicense | Jamaica swamp sawgrass | Lower |

Description

Pond cypress savanna where medium to high intensity fire in combination with winter El Niño/La Niña Southern Oscillation (ENSO) related drought has killed pond cypress trees.

*Maximum Tree Size Class*  
None

Class B 9 Mid Development 1 - Closed

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| TAAS | Taxodium ascendens | Pond cypress | Upper |
| ACRU | Acer rubrum | Red maple | Lower |
| SACA5 | Salix caroliniana | Coastal plain willow | Lower |
| COER2 | Conocarpus erectus | Button mangrove | Lower |

Description

Characterized by a pond cypress savanna where a lack of fire has led to hardwood encroachment in the understory, and a decline in the herbaceous graminoid groundcover.

*Maximum Tree Size Class*  
Large 21-33" DBH

Class C 75 Mid Development 1 - Open

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| TAAS | Taxodium ascendens | Pond cypress | Upper |
| RHMI7 | Rhynchospora microcarpa | Southern beaksedge | Lower |
| MUCAF | Muhlenbergia capillaris var. filipes | Gulfhairawn muhly | Lower |
| CLMAJ | Cladium mariscus ssp. jamaicense | Jamaica swamp sawgrass | Lower |

Description

Pond cypress savanna in which low intensity fire in combination with winter ENSO (El Nino/la nina) related drought has maintained an open pond cypress savanna with a low density, low diversity herbaceous graminoid groundcover.

*Maximum Tree Size Class*  
Large 21-33" DBH

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Early1:ALL | 0 | Mid1:OPN | 19 |
| Mid1:OPN | 20 | Mid1:OPN | 999 |
| Mid1:CLS | 20 | Mid1:CLS | 999 |

Probabilistic Transitions

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Disturbance Type** | **Disturbance occurs In** | **Moves vegetation to** | **Disturbance Probability** | **Return Interval (yrs)** | **Reset Age to New Class Start Age After Disturbance?** | **Years Since Last Disturbance** |
| Mixed Fire | Early1:ALL | Early1:ALL | 0.02 | 50 | No | 0 |
| Surface Fire | Early1:ALL | Early1:ALL | 0.03 | 33 | No | 0 |
| Alternative Succession | Mid1:OPN | Mid1:CLS | 1 | 1 | Yes | 50 |
| Mixed Fire | Mid1:OPN | Mid1:OPN | 0.01 | 100 | No | 0 |
| Replacement Fire | Mid1:OPN | Early1:ALL | 0.01 | 100 | Yes | 0 |
| Surface Fire | Mid1:OPN | Mid1:OPN | 0.03 | 33 | No | 0 |
| Surface Fire | Mid1:CLS | Mid1:CLS | 0.01 | 100 | No | 0 |
| Replacement Fire | Mid1:CLS | Early1:ALL | 0.01 | 100 | Yes | 0 |
| Mixed Fire | Mid1:CLS | Mid1:OPN | 0.03 | 33 | Yes | 0 |

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