

14250

Florida Dry Prairie

BpS Model/Description Version: Aug. 2020

Modelers		Reviewers	
Kenneth W Outcalt	koutcalt@fs.fed.us	Chris Szell	cszell@tnc.org

Vegetation Type

Herbaceous

Map Zones

56

Geographic Range

Dry prairie occurs in south-central and south FL with the largest concentrations along the Kissimmee River, west and south of Lake Okeechobee, and the region north of Charlotte Harbor in Sarasota and Manatee counties.

Historically its extent was much larger. Harper (1927) indicates palmetto prairie may have covered 2,000-3,000 square miles in south and south-central FL. The multi species recovery plan for south Florida (USFWS, 1999) states that dry prairie occurred on the Desoto Plain in most of Desoto, southern Hardee, western Highlands, northeastern Charlotte, southern Manatee, and part of Glades counties; within the Gulf coastal lowlands in parts of Sarasota and southern Manatee counties; on the Osceola Plain in parts of Okeechobee, northern Highlands, southeastern Polk and Osceola counties; on the intermediate coastal lowlands of the Okeechobee Plain in northeastern Glades, southeastern Highlands and southwestern Okeechobee counties; and on the Immokalee Rise in part of Hendry County and northern Collier County.

Biophysical Site Description

Dry prairie, also called palmetto prairie, is a mostly treeless grass dominated community that occupies broad flat regions where fire is very frequent because there are no major natural fire barriers. Interspersed throughout the community are areas occupied by wet prairie, ephemeral depression ponds, marshes, flatwoods and mesic hammocks. Soils are sandy, poorly to somewhat poorly drained, acidic and nutrient poor. The subtropical climate of the region has a pronounced wet and dry season. During the wet season the water table often is at or above the soil surface, while during the dry season it is a meter or more below the surface.

Vegetation Description

Intact examples of this system are generally open and essentially treeless areas (NatureServe 2006). The diverse ground cover is often dominated by wiregrass (*Aristida beyrichiana*) with scattered saw palmetto (*Serenoa repens*) and patches of runner oak (*Quercus minima*). Other common plants include bottlebrush three awn (*A. spiciformis*), broomsedge (*Andropogon virginicus*), fetterbush (*Lyonia lucida*), rusty lyonia (*L. fruticosa*), dwarf blueberry (*Vaccinium myrsinites*), and yellow eyed grasses (*Xyris* spp.)

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
ARBE7	<i>Aristida beyrichiana</i>	Beyrich threeawn
SERE2	<i>Serenoa repens</i>	Saw palmetto
ANVI2	<i>Andropogon virginicus</i>	Broomsedge bluestem
QUMI2	<i>Quercus minima</i>	Dwarf live oak
ARSP3	<i>Aristida spiciformis</i>	Bottlebrush threeawn
LYLU3	<i>Lyonia lucida</i>	Fetterbush lyonia
VAMY3	<i>Vaccinium myrsinites</i>	Shiny blueberry

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

Disturbance Description

The reason for the lack of trees on dry prairie is frequent fire. Huffman and Blanchard (1991) observed a significant increase in the extent of trees invading prairie in the Myakka River region after 40yrs of fire suppression, and a subsequent reduction in tree cover after fire was reintroduced. FNAI (1990) suggests that the higher frequency of fire is probably the primary factor that limits pine recruitment in this community.

The historic fire return interval for palmetto prairie is unclear, but authors indicate it was more frequent than other communities in FL (Abrahamson and Hartnett 1990; USFWS 1999). Harper (1927) indicated that palmetto prairie burned almost every year. FNAI (1990) suggests that the natural fire frequency in dry (palmetto) prairies appears to be every 1-4yrs. The fire frequency may also result from the historical distribution of dry prairie in a natural landscape that was historically essentially devoid of impediments to the spread of fire (USFWS 1999). This region of FL has one of the highest incidences of lightning in the US at 8-16 flashes per square kilometer per year, which is the ignition source for natural fires (NWS 1996-2000). Under these conditions, a single ignition could easily burn thousands of hectares before being naturally extinguished. Most fires occurred in April to June during the transition stage from dry to wet season (Beckage and Platt 2003).

The wiregrass, palmetto, and ericaceous shrubs are highly flammable and dry prairie typically burns vigorously and completely, but re-sprouts quickly from underground stems and roots (Abrahamson and Hartnett, 1990, Harper 1927). The frequent, high severity replacement fires keep the majority of dry prairies in the post-replacement phase. Occasionally, surface or mosaic fires would occur during wetter periods. This allows shrubs to increase in height and percent cover. Without fire, trees can begin to encroach and become tall enough to survive subsequent fires. This leads to scattered trees.

Severe, high intensity fires may occur at least once every 10-50yrs, probably as a result of drought cycles associated with El Nino Southern Oscillation influences. Beckage et. al. (2003) and Gunderson and Snyder (1994) observed significant influences to fire regimes in the Everglades as a result of the El Nino Southern Oscillation. These high intensity fires would be severe enough to kill trees and send the prairie back to the post-replacement phase.

Because the vegetation is so pyrogenic and burns severely at least once every 10-25yrs, late development phases do not occur naturally, although they can now be found on the landscape

Fire Frequency

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.

This vegetation was probably historically present mostly in smaller scale 10ac patches restricted to the southern part of central peninsular Florida. Some patches, however may have reached 200,000-300,000ac in size.

The composition of this community is very similar to that of South Florida Slash Pine Flatwoods. Because of historic fire frequency, south Florida slash pine (*Pinus elliottii* var. *densa*) does not have the opportunity to become established. With an interruption in fire frequency, pines will begin to intrude.

Issues or Problems

Urban development, agricultural clearing and cattle grazing are common throughout this community. Thus, only scattered patches of dry prairie remain. This fragmentation results in an interruption of the natural fire regime, which results in invasion by trees and conversion to flatwoods or hammock.

Native Uncharacteristic Conditions

Comments

Mapping Rules

[illegible]

Herb	>1.0	A	A	A	A	A	A	A	A	A	A
Shrub	0-0.5	A	A	B	B	B	C	C	C	C	C
Shrub	0.5-1.0	A	A	B	B	B	C	C	C	C	C
Shrub	1.0-3.0	B	B	B	B	B	C	C	C	C	C
Shrub	>3.0	B	B	B	B	B	C	C	C	C	C
Tree	0-5	C	C	C	UN	UN	UN	UN	UN	UN	UN
Tree	5-10	C	C	C	UN	UN	UN	UN	UN	UN	UN
Tree	10-25	C	C	C	UN	UN	UN	UN	UN	UN	UN
Tree	25-50	C	C	C	UN	UN	UN	UN	UN	UN	UN
Tree	>50	C	C	C	UN	UN	UN	UN	UN	UN	UN

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 73 Early Development 1 - All Structures

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
ARBE7	<i>Aristida beyrichiana</i>	Beyrich threeawn	Middle
ANVI2	<i>Andropogon virginicus</i>	Broomsedge bluestem	Middle
ARSP3	<i>Aristida spiciformis</i>	Bottlebrush threeawn	Middle
SERE2	<i>Serenoa repens</i>	Saw palmetto	Mid-Upper

Description

The early post-replacement stage. Vegetation is dominated by grasses, primarily wiregrass, numerous forbs and scattered low saw palmetto and shrubs. The dominant species is wiregrass (*Aristida beyrichiana*).

Class occurs post-fire. Replacement fires occur and wind/weather disturbances, primarily flooding, can also work to keep vegetation in this early post-replacement phase.

Maximum Tree Size Class

None

Class B 25 Mid Development 1 - Closed

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
ARBE7	<i>Aristida beyrichiana</i>	Beyrich threeawn	Middle
ANVI2	<i>Andropogon virginicus</i>	Broomsedge bluestem	Middle
SERE2	<i>Serenoa repens</i>	Saw palmetto	Upper
QUMI2	<i>Quercus minima</i>	Dwarf live oak	Mid-Upper

Class is characterized by a closed understory without trees. Grasses still dominate the understory but there are fewer forbs. The dominant species is wiregrass (*Aristida beyrichiana*). Saw palmetto and shrubs are becoming a noticeable feature. There is no bare ground in this class. In later stages of this class, shrubs are more prominent.

Differentiated from class A by taller shrub layer.

None

Indicator Species

Description

Without fire the prairie transitions into a forested or woodland system such as oak hammock or pine flatwoods. Replacement fires would occur during drought conditions. Mixed or surface fires occurring during wetter conditions would have a limited impact to the developing tree canopy or tall shrubs. Flooding events can kill the developing tree and shrub canopy.

Pole 5-9" DBH

Deterministic Transitions

From Class	Begins at (yr)	Succeeds to	After (years)
EarlyI:ALL	0	MidI:CLS	2

Mid1:CLS	3	Late1:CLS	10
Late1:CLS	11	Late1:CLS	50

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
Wind or Weather or Stress	Early1:ALL	Early1:ALL	0.033	30	Yes	0
Replacement Fire	Early1:ALL	Early1:ALL	0.5	2	Yes	0
Wind or Weather or Stress	Mid1:CLS	Early1:ALL	0.033	30	Yes	0
Mixed Fire	Mid1:CLS	Mid1:CLS	0.1	10	No	0
Surface Fire	Mid1:CLS	Mid1:CLS	0.2	5	No	0
Replacement Fire	Mid1:CLS	Early1:ALL	0.4	3	Yes	0
Wind or Weather or Stress	Late1:CLS	Early1:ALL	0.033	30	Yes	0
Replacement Fire	Late1:CLS	Early1:ALL	0.033	30	Yes	0
Mixed Fire	Late1:CLS	Late1:CLS	0.1	10	No	0
Surface Fire	Late1:CLS	Late1:CLS	0.2	5	No	0

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