



Kissimmee Prairie State Park (Okeechobee County)

Photo by Gary Knight

### **Dry Prairie**

**Description:** Dry prairie is a community of low shrubs and grasses occupying vast, level expanses in three major areas north and west of Lake Okeechobee in south-central Florida. Common shrubs are saw palmetto (*Serenoa repens*), which is often stunted, dwarf live oak (*Quercus minima*), gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), shiny blueberry (*Vaccinium myrsinites*), netted pawpaw (*Asimina reticulata*), Atlantic St. John's wort (*Hypericum reductum*), dwarf wax myrtle (*Myrica cerifera* var. *pumila*), and dwarf huckleberry (*Gaylussacia dumosa*; Carr 2007). These are mixed with about an equal proportion of herbs, predominantly wiregrass (*Aristida stricta* var. *beyrichiana*), along with bottlebrush threeawn (*Aristida spiciformis*), hemlock witchgrass (*Dichantherium portoricense*), broomsedge bluestem (*Andropogon virginicus*), lopsided indiagrass (*Sorghastrum secundum*), and cypress witchgrass (*Dichantherium ensifolium*), plus numerous forbs (Hilmon 1964; Huck 1987; Orzell and Bridges 2006; Carr 2007) including narrowleaf silkgrass (*Pityopsis graminifolia*), milkworts (*Polygala* spp.), meadowbeauties (*Rhexia* spp.), yellow-eyed grasses (*Xyris* spp.), and wild pennyroyal (*Piloblephis rigida*).

Major soils of the dry prairie are poorly drained sandy spodosols with an organic hardpan including the series Eau Gallie, Myakka, Immokalee, Oldsmar, and Smyrna, as well as alfisols (Malabar soils) with a subsurface clay layer that impedes drainage (Orzell and Bridges 2006).

**Characteristic Set of Species:** wiregrass, lopsided indiagrass, dwarf live oak, shiny blueberry, stunted saw palmetto

**Rare Species:** Rare plants include many-flowered grass-pink (*Calopogon multiflorus*), beautiful pawpaw (*Deeringothamnus pulchellus*), and giant orchid (*Pteroglossaspis ecristata*). Rare animals include several bird species that prefer open habitat including Florida sandhill crane (*Grus canadensis pratensis*), crested caracara (*Caracara cheriway*), Florida burrowing owl (*Athene cunicularia floridana*), and Florida grasshopper sparrow (*Ammodramus savannarum floridanus*). Of these, only the grasshopper sparrow is confined to dry prairie habitat, preferring areas burned less than 24 months previously. Populations of this sedentary, ground nesting species have been declining since 1979, with only eight populations known to occur in 2006 (Pranty and Tucker, Jr. 2006). Conversion of dry prairie to pasture and sod farms have accounted for most of the Florida grasshopper sparrow's decline but it has also declined at Avon Park Air Force Range, one of three managed areas where it is protected (Three Lakes Wildlife Management Area and Kissimmee Prairie Preserve State Park being the other two), for reasons that are not clear (Pranty and Tucker, Jr. 2006). Dry prairie is also home to a very rare and declining species of butterfly, the Arogos skipper (*Atrytone arogos arogos*) which inhabits grasslands in the eastern U.S. and the rare Loammi skipper (*Atrytonopsis loammi*), endemic to Florida.

**Range:** Dry prairie is confined to south-central Florida. Until recently the extent of dry prairie had been in question due to the difficulty in distinguishing natural dry prairie from cutover pinelands (Davis, Jr. 1943; Wade et al. 1980; Abrahamson and Hartnett 1990). Bridges (2006a) produced a map of the presettlement extent of the dry prairie using historical sources that includes the Kissimmee River region (Osceola, Okeechobee, Polk, and Highlands counties), the Big Prairie (Desoto, Glades, and Charlotte counties), and the Myakka Prairie (Manatee and Sarasota counties). The presettlement extent of dry prairie encompassed roughly 1.2 million acres. Mesic flatwoods within and surrounding the continuous dry prairie areas mapped by Orzell and Bridges may contain small inclusions of dry prairie (Huck 1987) as well as areas of very sparse pine cover. Dry prairie in Hendry (Harshberger 1914) and Brevard Counties (Harper 1921; Minno et al. 2001) have also been reported in the early literature. Although much has been converted to agriculture and pasture, examples of dry prairie can be found throughout its presettlement range today.

**Natural Processes:** There is as yet no definitive answer to the question of why dry prairie does not support pines. In examining the current landscape at the pine/prairie border as mapped by the mid 1800's public land surveyors in the Kissimmee Region, Bridges (2006b) noted that mesic flatwoods are often correlated with a greater degree of dissection of the landscape, i.e. with forested streams and swamps giving protection from at least some landscape-level fires, in contrast to the broad, flat prairies with little or no physical impediments to fire. Thus frequency of fire could have inhibited tree growth in the dry prairie region.

Lack of drainage dissection of the landscape could result in flooding of dry prairies more frequently than in the mesic flatwoods. Platt et al. (2006) speculate that the stress of fire at the beginning of the rainy season followed immediately by the stress of flooding with the start of the summer rainy season, both of which would have been more frequent events in dry prairie compared to the surrounding flatwoods, may have been sufficient to prevent pine seedlings from becoming established in dry prairies. Thus a suite of

conditions including soil impermeability and timing of fire and rain events in south-central Florida may intersect to produce dry prairie landscapes.

**Community Variations:** The dominant species of dry prairie are fairly uniform throughout its range; drier sites tend to have fetterbush and coastalplain staggerbush (*Lyonia fruticosa*); wetter sites lack these and have Elliott's yelloweyed grass (*Xyris elliottii*; Orzell and Bridges 2006).

**Associated Communities:** Often included within dry prairie are shallow depression marshes, sometimes bordered by mesic hammocks of live oak (*Quercus virginiana*) and cabbage palm (*Sabal palmetto*); grassy wet prairies without saw palmetto; and islands of mesic flatwoods. Dry prairie differs from mesic flatwoods in the nearly complete absence of pines, stumps, or stump holes. Wet prairies are often found in slightly lower areas within dry prairies and are distinguished from them by the dominance of wiregrass or blue maidencane (*Amphicarpum muhlenbergianum*), the absence of shrubs, and the presence of wetland herbs such as pineland rayless goldenrod (*Bigelovia nudata*), water cowbane (*Oxypolis filiformis*), and slenderfruit nutrush (*Scleria georgiana*). A transitional type between wet and dry prairie consisting of a grassy matrix with circular patches of saw palmetto was identified as a type of wet prairie by (FNAI 2004). Bridges and Orzell (2006) group it with dry prairie types (wet-mesic alfic prairie NC4) and note that it has a clayey subsoil. Dry prairie is distinguished from marl prairie by the presence of wiregrass, saw palmetto, and dwarf live oak, by the absence of Gulf hairawn muhly (*Muhlenbergia sericea*), and by the presence of sandy rather than marl (calcareous mud) soils.

**Management Considerations:** Natural fire intervals in dry prairie are very short, on the order of 1-2 years. Preserves with large acreages of dry prairie in isolated areas may need exemptions from general burning restrictions under dry conditions to be able to burn frequently enough for optimal conditions for the Florida grasshopper sparrow. Restoration of long unburned dry prairie may require growing season burns to reduce woody species. Three growing season burns (two in May and one in June) in the space of 6 years were successful at killing mature live oaks that had invaded dry prairie at Myakka River State Park during 46-years of fire exclusion (Huffman and Blanchard 1991). However, reducing dense palmetto cover and increasing herbaceous cover in long fire-excluded prairie is more challenging. Although rollerchopping has been employed prior to fire to reduce saw palmetto, such treatment can damage non-target species and lead to introduction of weedy species.

**Reference Sites:** Kissimmee Prairie Preserve State Park (Okeechobee County), Three Lakes Wildlife Management Area (Osceola and Polk Counties), Myakka River State Park, (Sarasota and Manatee Counties), Babcock Ranch Preserve (Charlotte County)

**Global and State Rank:** G2/S2

**Crosswalk and Synonyms:**

Kuchler	79/Palmetto Prairie
Davis	13/Grasslands of Prairie Type
SCS	6/South Florida Flatwoods
	7/North Florida Flatwoods

Myers and Ewel	Flatwoods - mesic flatwoods, dry prairies
SAF	N/A
FLUCCS	321/Palmetto Prairies 310/Herbaceous

Other synonyms: pineland threeawn range

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Three Lakes Wildlife Management Area (Osceola County)

Photo by Ann F. Johnson



Babcock Ranch Preserve (Charlotte County)

Photo by Katy NeSmith