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Charles Allen

Colorado State University

Sara Thames

Colorado State University

Linda Chance

Oak Ridge Institute for Science and Education

Charles Stagg

Fort Polk Environmental Section

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Flora of the Anacoco Prairie on Fort Polk, Louisiana

by Charles Allen¹, Sara Thames¹, Linda Chance² and Charles Stagg³

¹Colorado State University, Fort Polk Station, 1647 23rd St., Fort Polk, LA 71459; Charles.Allen@polk.army.mil

²Oak Ridge Institute for Science and Education, 1647 23rd St., Fort Polk, LA 71459

³Fort Polk Environmental Section, 1647 23rd St., Fort Polk, LA 71459

Abstract

The two major types of prairie in Louisiana are Cajun Prairie—a coastal prairie type located in southwest Louisiana—and the calcareous prairies that are scattered across central and north Louisiana. Fort Polk, located in west central Louisiana, is predominately longleaf pine forest, but also includes calcareous prairies. A floristic survey of the Anacoco Prairie on Fort Polk has been ongoing since 1991. Herbaceous species dominant in the small prairie openings, which are surrounded by strips of calcareous forests. A total of 177 species of vascular plants have been identified from the Anacoco Prairie. The top two families are Poaceae and Asteraceae with more than one-half of the herbaceous species. The next family with regard to number of species is Fabaceae. The genera with the most number of species include *Paspalum*, *Andropogon*, and *Liatris*.

Keywords: calcareous prairies, Anacoco Prairie, Poaceae, Asteraceae, Fabaceae, *Paspalum*, *Andropogon*, *Liatris*

Introduction

The calcareous or inland prairie system occurs in the central and northern parts of Louisiana (Post 1969, Smith 1995) while Cajun Prairie, a coastal prairie type, is located in southwest Louisiana and was described by Allen and his colleagues (2001). The calcareous prairies occur in small patches in widely scattered locations, while Cajun Prairie occupied 2,470,000 acres that was only interrupted by the gallery forests that developed along the streams (Allen and Vidrine 1989). A calcareous forest surrounds most calcareous prairie patches while the Cajun Prairie grades into coastal marsh to the south, bottomland hardwood forests to the east, and pine savanna forest to the north and west. The soils in the Cajun Prairie are moderately acid silt loams underlain by a densely packed, hard clay pan located 7.8 to 15.6 inches below the surface (Allen and others 2001). The soils of the Anacoco Prairie are usually moderately alkaline clays (Soil Survey Staff 2003).

The calcareous prairie located in Vernon Parish in west-central Louisiana is known as the Anacoco Prairie (Post 1969). A large portion of this prairie occurs in the northwest corner of Fort Polk (Hart and Lester 1993; Allen 1994, 1995). Apparently, this prairie was more common in areas to the west and north of Fort Polk but those areas have been highly disturbed by agricultural and forestry practices. The prairie is located on Hornbeck clay soil (Soil Survey Staff 2003).

Reports and Observations

The Anacoco Prairie flora is based on the published reports of Hart and Lester (1993), Johnson and others (1993), and Allen (1994, 1995, 1998) plus additional species observed by the authors. A floristic survey of Fort Polk was conducted from 1991 to 1992 (Johnson and others 1993) in which the

Anacoco Prairie species were lumped into the shortleaf loblolly pine system. Hart and Lester (1993) described the Anacoco Prairie and listed some of the species found there. Allen (1994, 1995) conducted an intensive search for Anacoco Prairie and provided a list of species. He also reported that the Anacoco Prairie consisted of 26 areas and about 2,090 acres. In a description of the entire vegetation of Fort Polk, Allen (1998) described the Anacoco Prairie and provided a list of species.

Since 2001, the authors have visited the Anacoco Prairie sites several times per year and documented the presence of additional species. Voucher specimens of many of the species have been collected and deposited in the Fort Polk Herbarium and/or the Herbarium of the University of Louisiana at Monroe (NLU).

Results

A total of 177 species are reported from the Anacoco Prairie at Fort Polk. In the Anacoco Prairie, the family with the most species is the Poaceae with 46 species and was followed by the Asteraceae with 43 and the Fabaceae with 25. The genus with the most species (six) was *Paspalum* and two genera (*Andropogon* and *Liatris*) each had five species. Only 13 species (7.34 %) of the species are non-native. The nomenclature follows the USDA Plants Database (USDA, NRCS 2004).

Discussion

The Louisiana Flora as reported by Thomas and Allen (1993, 1996, 1998) includes 3,249 taxa—177 (5.4 %) were identified from the Anacoco Prairie. The 177 taxa or 5.4 % is notable given the small total area of the Anacoco Prairie. A total of

128 species, 72.3 % of the 177 Anacoco Prairie species were in common with Cajun Prairie (Allen and others 2001). Smith and others (1989) report 314 species from Keiffer Prairie/forest complex, another calcareous prairie system located in Winn Parish, Louisiana. The Anacoco Prairie has 78 (44.1 %) of the 177 species in common with the Keiffer system. When compared to the Konza Prairie in Kansas (Freeman and Hulbert 1985), there are also 78 (44.1 %) species of the 177 in the Anacoco Prairie that are also in the Konza Prairie. Only 67 (37.9 %) species in the Anacoco Prairie are also reported from one or more Iowa prairies (Sorensen 1962, Crum 1972, Glenn-Lewin 1976, Wetzel and others 1999). Note the decrease in species in common with the increase in distance.

This is a floristic listing of the species of the Anacoco Prairie on Fort Polk, Louisiana. It provides other prairie researchers a flora for comparison. The prairie on Fort Polk is a refugium for the species and the ecosystem as it is protected from agricultural disturbance that has virtually destroyed this prairie at other locations.

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Appendix 1.

List of taxa by major plant group and then by Family from Anacoco Prairie, Fort Polk, Louisiana.

Key: *before name = introduced taxon

The superscripted letter, if present, ^c indicates a report also from Cajun Prairie in Louisiana (Allen and others 2001), ⁱ indicates a report also from one or more Iowa prairies (Sorensen 1962, Krum 1972, Glenn-Lewin 1976, Wetzel and others 1999), ^k indicates a report also from Konza Prairie (Freeman and Hulbert 1985), and ^w indicates a report also from Keiffer Prairie in Winn Parish, Louisiana (Smith and others 1989).

PTERIDOPHYTES

MONOCOTYLEDONS

AGAVACEAE

Manfreda virginica (L.) Salisb. ex Rose ^{cw}

CYPERACEAE

Carex cherokeensis Schwein. ^{cw}

Carex crinita Lam.

Carex meadii Dewey^{ik}

Carex microdonta Torr. & Hook.^c

Cyperus strigosus L.^{ci}

Fimbristylis annua (All.) Roemer & J.A. Schultes

Fimbristylis puberula (Michx.) Vahl ^{cw}

Rhynchospora caduca Ell.^c

Rhynchospora globularis (Chapman) Small var. *globularis* ^c

Rhynchospora inexpansa (Michx.) Vahl

Rhynchospora recognita (Gale) Kral

IRIDACEAE

Herbertia lahue (Molina) Goldblatt ssp. *caerulea* (Herbert)
Goldblatt

JUNCACEAE

Juncus tenuis Willd.ⁱ

LILIACEAE

Nothoscordum bivalve (L.) Britt. ^{cw}

POACEAE

Agrostis hyemalis (Walt.) B.S.P.^{cikw}

Andropogon gerardii Vitman^{cikw}

Andropogon glomeratus (Walt.) B.S.P.^{cw}

Andropogon gyrans Ashe var. *gyrans*^c

Andropogon ternarius Michx.^c

Andropogon virginicus L. var. *virginicus*^{cw}

Aristida longispica Poir. var. *longispica*^{cw}

Aristida oligantha Michx.^{cikw}

Aristida palustris (Chapman) Vasey

Aristida purpurascens Poir. var. *purpurascens*^{cw}

**Avena sativa* L.

**Bothriochloa ischaemum* (L.) Keng var. *songarica* (Rupr. ex Fisch. & C.A. Mey.) Celarier & Harlan ^{cwk}

Bouteloua rigideseta (Steud.) Hitchc.

Dichanthelium aciculare (Desv. ex Poir.) Gould & C.A. Clark^{cw}

Dichanthelium acuminatum (Sw.) Gould & C.A. Clark var. *acuminatum*^{cikw}

Dichanthelium depauperatum (Muhl.) Gould

Dichanthelium oligosanthes (J.A. Schultes) Gould var. *scribnerianum* (Nash) Gould^{cikw}

Eragrostis elliottii S. Wats.^c

Eragrostis hirsuta (Michx.) Nees^c

Eragrostis lugens Nees^c

Eragrostis refracta (Muhl.) Scribn.^c

Eragrostis spectabilis (Pursh) Steud.^{cikw}

Gymnopogon brevifolius Trin.^c

Hordeum pusillum Nutt.^{ck}

Muhlenbergia capillaris (Lam.) Trin.^{cw}

Panicum anceps Michx.^{cw}

Panicum flexile (Gattinger) Scribn.^w

Panicum virgatum L.^{cikw}

**Paspalum dilatatum* Poir.^{cw}

Paspalum floridanum Michx.^{cw}

Paspalum plicatulum Michx.^c

Paspalum pubiflorum Rupr. ex Fourn.

Paspalum setaceum Michx.^{cik}

**Paspalum urvillei* Steud.^{cw}

Saccharum giganteum (Walt.) Pers.

Schizachyrium scoparium (Michx.) Nash var. *scoparium*^{cikw}

Schizachyrium tenerum Nees^c

Setaria parviflora (Poir.) Kerguélen^{cw}

Sorghastrum nutans (L.) Nash^{cikw}

Sporobolus compositus (Poir.) Merr.^{cikw}

Sporobolus junceus (Beauv.) Kunth^{cw}

Sporobolus neglectus Nash^k

Tridens ambiguus (Ell.) J.A. Schultes^c

Tridens strictus (Nutt.) Nash^{cw}

Tripsacum dactyloides (L.) L.^{ck}

Trisetum interruptum Buckl.

DICOTYLEDONS

ACANTHACEAE

Ruellia humilis Nutt.^{cikw}

APIACEAE

Chaerophyllum tainturieri Hook.^c

Eryngium yuccifolium Michx.^{ci}

APOCYNACEAE

Apocynum cannabinum L.^{ikw}

ASCLEPIADACEAE

Asclepias obovata Ell.^{cw}

Asclepias tuberosa L.^{cikw}

Asclepias verticillata L.^{cik}

Asclepias viridis Walt.^{cwk}

ASTERACEAE

Ambrosia artemisiifolia L.^{cik}

Ambrosia bidentata Michx.^c

Cirsium horridulum Michx.^{cw}

Coreopsis lanceolata L.^{cw}

Coreopsis pubescens Ell. var. *debilis* (Sherff) E.B. Sm.^c

Coreopsis tinctoria Nutt.^{ck}

Echinacea pallida (Nutt.) Nutt.^{cw}

Echinacea purpurea (L.) Moench

Echinacea sanguinea Nutt.

Erechtites hieracifolia (L.) Raf. ex DC.^{cw}

Erigeron strigosus Muhl. ex Willd.^{cikw}

Eupatorium capillifolium (Lam.) Small^c

Eupatorium hyssopifolium L.^c

Eupatorium rotundifolium L. var. *rotundifolium*^c

Eupatorium serotinum Michx.^{cw}

Eurybia hemispherica (Alexander) Nesom^{cw}

Euthamia leptocephala (Torr. & Gray) Greene^{cw}

Gaillardia aestivalis (Walt.) H. Rock var. *aestivalis*^c



- **Helenium amarum* (Raf.) H. Rock^c
Helianthus angustifolius L.^c
Helianthus hirsutus Raf.^{cw}
Ionactis linariifolia (L.) Greene
Liatris aspera Michx.^{ikw}
Liatris elegans (Walt.) Michx.^c
Liatris pycnostachya Michx.^{cw}
Liatris spicata (L.) Willd.^c
Liatris squarrulosa Michx.^w
Oligoneuron nitidum (Torr. & Gray) Small^{cw}
Pityopsis graminifolia (Michx.) Nutt.^c
Pseudognaphalium helleri (Britt.) A. Anderb.
Pseudognaphalium obtusifolium (L.) Hilliard & Burtt^{ci}
Pyrrhopappus carolinianus (Walt.) DC.^{cw}
Ratibida pinnata (Vent.) Barnh.ⁱ
Rudbeckia hirta L.^{ckw}
Rudbeckia missouriensis Engelm. ex C.L. Boynt. & Beadle
Silphium gracile Gray^c
Silphium laciniatum L.^{ckw}
Solidago canadensis L.^{ckw}
Solidago odora Ait.^c
Solidago rugosa P. Mill.^c
Symphyotrichum dumosum (L.) Nesom^{cw}
Symphyotrichum patens (Ait.) Nesom var. *patens*^{cw}
Symphyotrichum pratense (Raf.) Nesom^{ckw}
- BORAGINACEAE
Heliotropium tenellum (Nutt.) Torr.^w
Myosotis verna Nutt.^{ck}
- BUDDLEJACEAE
Polypteron procumbens L.^{cw}
- CAMPANULACEAE
Triodanis perfoliata (L.) Nieuwl. var. *biflora* (Ruiz & Pavón)
 Bradley^w
Triodanis perfoliata (L.) Nieuwl. var. *perfoliata*^{ck}
- CLUSIACEAE
Hypericum drummondii (Grev. & Hook.) Torr. & Gray^c
- CONVOLVULACEAE
Dichondra carolinensis Michx.^{cw}
- EUPHORBIACEAE
Acalypha gracilens Gray^{cw}
Chamaesyce maculata (L.) Small^{ci}
Chamaesyce serpens (Kunth) Small^k
Croton capitatus Michx.^{ck}
Croton monanthogynus Michx.^k
Euphorbia corollata L.^{ckw}
Euphorbia marginata Pursh^k
Tragia betonicifolia Nutt.^{ck}
- FABACEAE
Acacia angustissima (P. Mill.) Kuntze var. *hirta* (Nutt.) B.L. Robins.^w
Baptisia alba (L.) Vent. var. *macrophylla* (Larisey) Isely^{cw}
Baptisia nuttalliana Small^c
Centrosema virginianum (L.) Benth.^c
Chamaecrista fasciculata (Michx.) Greene^{ckw}
Crotalaria sagittalis L.^{ckw}
Dalea candida Michx. ex Willd.^{ckw}
Dalea purpurea Vent.^{ikw}
Galactia volubilis (L.) Britt.^{cw}
- **Glottidium vesicarium* (Jacq.) Harper^{cw}
Lespedeza cuneata (Dum.-Cours.) G. Don
Lespedeza repens (L.) W. Bart.^c
Mimosa nuttallii (DC.) B.L. Turner^k
Neptunia lutea (Leavenworth) Benth.^{cw}
Orbexilum pedunculatum (P. Mill.) Rydb.^c
Tephrosia virginiana (L.) Pers.)
Vicia minutiflora F.G. Dietr.^w
- GENTIANACEAE
Sabatia angularis (L.) Pursh^w
- GERANIACEAE
Geranium carolinianum L.^{cik}
**Geranium dissectum* L.^w
- LAMIACEAE
Hedeoma hispida Pursh^{ikw}
Salvia azurea Michx. ex Lam.^{cw}
Salvia lyrata L.^{cw}
- LYTHRACEAE
Lythrum alatum Pursh var. *lanceolatum* (Ell.) Torr. & Gray ex Rothrock^{ci}
- ONAGRACEAE
Gaura longiflora Spach^{cw}
- PRIMULACEAE
**Anagallis arvensis* L. ssp. *arvensis*^c
**Anagallis arvensis* L. ssp. *foemina* (P. Mill.) Schinz & Thellung
Anagallis minima (L.) Krause^c
- RANUNCULACEAE
Ranunculus fascicularis Muhl. ex Bigelow^{ci}
- RHAMNACEAE
Ceanothus americanus L.^{cw}
- ROSACEAE
**Rosa bracteata* J.C. Wendl.
Rubus argutus Link^{cw}
Rubus trivialis Michx.^{cw}
- RUBIACEAE
Galium pilosum Ait.^w
Galium tinctorium L.^{ci}
Galium virgatum Nutt.^c
Hedyotis nigricans (Lam.) Fosberg^{ckw}
Houstonia micrantha (Shinners) Terrell
Oldenlandia boscii (DC.) Chapman^c
**Sherardia arvensis* L.
- SCROPHULARIACEAE
Agalinis oligophylla Pennell^{cw}
Agalinis pulchella Pennell
Agalinis purpurea (L.) Pennellⁱ
Agalinis viridis (Small) Pennell^c
Mecardonia acuminata (Walt.) Small^{cw}
- SOLANACEAE
Physalis heterophylla Nees^{ik}
Physalis longifolia Nutt. var. *subglabrata* (Mackenzie & Bush)
 Cronq.ⁱ
Physalis pumila Nutt.^{kw}
- VERBENACEAE
**Verbena brasiliensis* Vell.^{cw}
- VITACEAE
Ampelopsis arborea (L.) Koehne^{cw}