A FLORISTIC STUDY OF THE LA COPITA RESEARCH AREA IN JIM WELLS COUNTY, TEXAS

A Thesis

by

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Texas A&M University
in partial fulfillment of the requirements for the degree of

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ABSTRACT

A Floristic Study of the La Copita Research Area
in Jim Wells County, Texas. (August 1986)
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Chair of Advisory Committee: Dr. Stephan L. Hatch

Vascular plant collections and field data were compiled over a two year period on the La Copita Research Area. Seven range sites, Sandy Loam (inclusive of Tight Sandy Loam), Clay Loam, Gray Sandy Loam, Claypan Prairie, Shallow Sandy Loam, Lakebed, and Shallow Ridge, were sampled. Ecological information such as species longevity, season of growth, growth habit, and frequency of occurrence within range sites was recorded for each species. A total of 334 species, representing 228 genera and 68 families, were collected. Three families, Poaceae (22%), Asteraceae (17%), and Fabaceae (7%), encompass 46% of the species represented. The Research Area supports 39 species of trees and shrubs of which the most dominant genera are Acacia, Aloysia, Celtis, Colubrina, Condalia, Diospyros, Prosopis, Salvia, Schaefferia, and Zanthoxylum. Seventy-three species of grasses are represented of which the most dominant genera are Aristida, Bouteloua, Cenchrus, Chloris, Eragrostis, Panicum, Paspalum, Setaria, and Tridens.

Three keys, an artificial key to the families of herbaceous vascular plants, an artificial key to the genera of herbaceous vascular plants, and a vegetative key to the woody species, are written.

ACKNOWLEDGEMENTS

I wish to express appreciation to my committee members, Dr. Stephan L. Hatch, Mr. Wayne T. Hamilton, and Dr. Hugh D. Wilson for their help, support, and patience during my entire study at Texas A&M University. Special thanks are due to Dr. Hatch for his sincerity and unfailing friendship since our first acquaintance.

Much gratitude and appreciation is forwarded to the staff and students working at the La Copita Research Area, especially Dr. Scifres and Ben Koerth for their interest and help with this project.

Many thanks are also due to the staff and students, both past and present, of the S. M. Tracy Herbarium for their help, patience, and friendship.

My deepest appreciation is due my close family and friends for their inexhaustible concern and support during my stay at Texas A&M University.

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CHAPTER I

INTRODUCTION

Knowledge of plant species and the area in which they occur is essential for communication between researchers in wildlife, range, soil, and animal sciences as well as ranch managers and federal agencies. It is the purpose of this study to enhance and facilitate communication between researchers in related fields such as range science and wildlife science, to give researchers a source by which they may become more familiar with the plants of the La Copita Research Area, and to provide a means by which plants can be identified, verified, and associated with a particular range site.

Floristic work on the vegetation of South Texas has been accomplished by various researchers. Some of the most notable of these were Jones et al. (1961) who compiled a list of flowering plants and ferns of the coastal counties of Texas. Gould and Box (1965) published the "Grasses of the Texas Coastal Bend" which included an area from Kleberg County north to Calhoun County and dealt specifically with the grass flora of this region. Later, Jones (1982) published the "Flora of the Texas Coastal Bend" which included some 1191 species, excluding grasses, with a key to species and limited plant descriptions.

This floristic study of vascular plants was conducted from March, 1984 through December, 1985 on the La Copita Research Area. Literature used to gain insight on similar taxonomic studies included Jones et al. (1961), Webster (1978), Ndegwa (1983), Starbuck (1984), and Radford et

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Journal used as model for this thesis was SIDA Contributions to Botany

al. (1974). These references helped to enhance ideas, guidelines, and the objectives of this study, which were to:

1. Collect and identify all vascular plants growing on the La Copita Research Area in Jim Wells County, Texas.

2. Develop an ecological checklist of the vascular plants found growing on the La Copita Research Area and determine their relative distribution and abundance within the various range sites.

3. Establish a herbarium at the La Copita Research Area for future reference and identification of plant species.

4. Write an artificial key to the genera of herbaceous vascular plants and a vegetative key to the woody plants of the La Copita Research Area.

Jones et al. (1961) eloquently justified the need for floristic studies when he stated, "Among our greatest resource needs are: (1) A public awareness of the value of our renewable natural resources. (2) A realization that Nature is a unity and that each of the related fields of resource management is but a facet or unit of the whole. These fields must be appropriately integrated. Basic research dealing with these resources is essential to progress and effective coordination."

CHAPTER II

PHYSICAL DESCRIPTION

Location

The La Copita Research Area is located 5 miles south of Alice and 7 miles west of Ben Bolt in Jim Wells County, Texas. The Research Area is approximately 1,100 hectares and lies on latitude 27°39' N and longitude 98°12' W. Located in western Jim Wells County (Figure 1), it occurs along a transitional area between the South Texas Plains and Gulf Prairies and Marshes vegetational regions of Texas (Gould, 1975). The mean elevation of the La Copita is about 275 feet (84 meters) and the topography ranges from nearly level to gently rolling with slopes up to 5%.

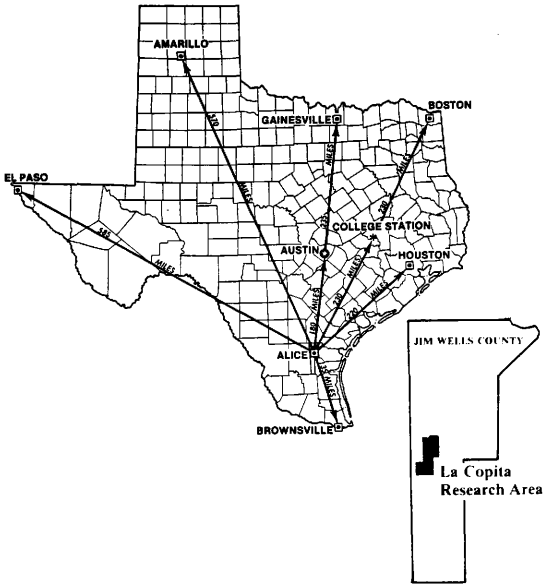

Figure 1. Location of the La Copita Research Area.

Adapted from Minzenmayer (1979)

Climate

The climate of Jim Wells County is characterized by hot summers and relatively warm winters with a growing season of approximately 290 days. The first freeze can be expected about the end of November while the last freeze can be expected about the first of March. The mean annual temperature is 72.4° F (22.4° C) while the mean winter daily minimum is 45° F (7.2° C) and the mean summer daily maximum is 96° F (35.5° C) (Minzenmayer, 1979).

Average annual precipitation is 26.6 inches (67.6 centimeters) with the heaviest rains occurring in late spring and early fall. Early morning dew is common due to humid, prevailing, southeasterly winds which originate over the Gulf of Mexico. The average relative humidity in mid afternoon is 65% while the average humidity at dawn is 90% (Minzenmayer, 1979).

Geology and Soils

The soils of the La Copita Research Area are primarily composed of Pleistocene deposits of the Lissie Formation (Figure 2) which outcrops in a belt approximately 30 miles wide at a distance of about 50 miles from the coast entending from the Sabine River to the Rio Grande River. These Pleistocene deposits of the Lissie Formation are composed of continental deposits laid down along river flood plains and delta sands, bottom silts, and muds laid down at the mouths of rivers (Shellards et al., 1932). The soils of the Lissie Formation are primarily composed of sand with lesser amounts of silt, clay, and

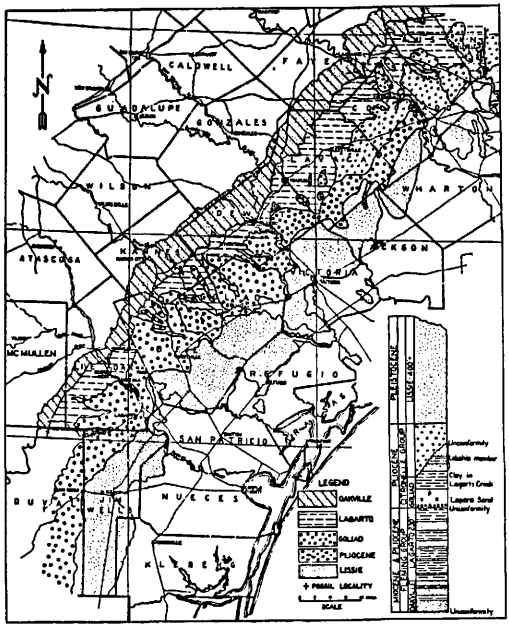

Figure 2. Geologic formations along the Gulf of Texas copied from Shellards et al. (1932). Permission to use this figure was granted by the University of Texas Press, Austin, Texas.

gravel. Iron oxide and iron manganese nodules are common in zones of weathering giving soils a red, orange, or mottled red and gray color. The surface is very gently rolling and featureless except for numerous shallow rounded depression. The Lissie Formation extends to a depth of about 200 feet in South Texas and is characterized by moderate permeability, moderate drainage, and high shear strength (Barnes, 1976).

The La Copita Research Area is made up of seven range sites (Figure 3), most of which are upland range sites (70%). The remaining 30% can be found along intermittant streams which flow during or immediately after heavy rainfall and in poorly drained depressional areas "lagunas" which appear to interconnect the intermittant streams. The succeeding description of soils, inclusive of the different range sites, follow the classification used by the Soil Conservation Service (Minzenmayer, 1979).

Due to the difficulty of differentiating between Sandy Loam and Tight Sandy Loam range sites, the two were lumped together. Sandy Loam range sites make up approximately 60% of the Research Area followed by Clay Loam (20%), Gray Sandy Loam (10%), Claypan Prairie (10%), Shallow Sandy Loam (1.4%), Lakebed (1%), and Shallow Ridge (0.2%). The major soils of the Sandy Loam range sites are Runge fine sandy loams. These soils are deep and well drained with medium runoff, moderate permeability, and high available water capacity. The minor soils are mostly Czar fine sandy loams. These soils are similar to the Runge soils but have a slow runoff and medium available water capacity. The potential for native range plant growth and wildlife habitat on Sandy

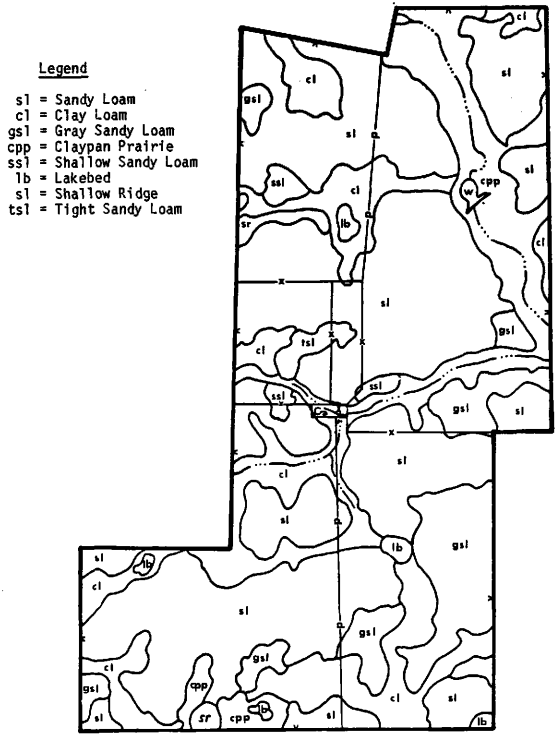

Figure 3. Range Sites within the La Copita Research Area.

Loam range sites is high. These sites provide adequate moisture for plant growth and support an array of heterogeneous vegetation, both understory and overstory.

The major soils of the Clay Loam range sites are Clareville loams and Racombes sandy clay loams. These soils are deep and well drained with slow runoff, moderate to moderately slow permeability, and high available water capacity. The potential for native range plant growth is high while the potential for wildlife habitat is medium due to the high density of shrubby vegetation occurring on these sites.

The major soils of the Gray Sandy Loam range sites are Pharr fine sandy loams. These soils are deep and well drained with slow runoff, moderate permeability, and medium available water capacity. The potential for native range plant growth on Gray Sandy Loam range sites is medium while the potential for wildlife habitat is high. The minor soils are Pernitas fine sandy loams, similar to the Pharr fine sandy loams but with medium runoff and medium wildlife habitat potential.

The major soils of the Claypan Prairie range sites are Opelika fine sandy loams. These soils are deep and poorly drained with slow runoff, very slow permeability, and medium available water capacity. Minor soils include Edroy clays which are similar to the Opelika soils but runoff is very slow. The potential for native range plant growth is high on Claypan Prairie range sites while the potential for wildlife habitat is medium.

The Shallow Sandy Loam range sites are composed of Parrita sandy clay loams and soils of the Lacoste-Olmos association, typically Lacoste soils. These soils are shallow and well drained with medium

runoff, moderately slow to moderate permeability, and very low available water capacity. The potential for native range plant growth and wildlife habitat on Shallow Sandy Loam range sites is medium.

The major soils of the Lakebed range sites are depressional Edroy clays. These soils are deep and poorly drained with ponded runoff, very slow permeability, and medium available water capacity. During periods of abundant rainfall, water stands above the surface soil for several days creating small ponds. The potential for native range plant growth on Lakebed range sites is high while the potential for wildlife habitat is low due to the high density and homogeneity of understory vegetation during periods of active growth.

The major soils of the Shallow Ridge range sites are part of the Lacoste-Olmos association, typically Olmos soils. These soils are shallow and well drained with medium runoff, moderate permeability, and very low available water capacity. The potential for native range plant growth and wildlife habitat on Shallow Ridge range sites is low.

Vegetation

The vegetational composition of the Research Area significantly differs between some range sites while others are difficult to differentiate. The Sandy Loam range sites support 57% of the total species found on the Research Area followed by Gray Sandy Loam (53%), Claypan Prairie (45%), Clay Loam (40%), Lakebed (33%), Shallow Ridge (30%), and Shallow Sandy Loam (24%).

Sandy Loam range sites, dominated by a mixed grass-shrub component, are relatively high in species diversity. The woody

dominants include Celtis pallida, Colubrina texensis, Condalia hookeri, Diospyros texana, Prosopis glandulosa, Salvia ballotaeflora, Schaefferia cuneifolia, and Zanthoxylum fagara, while the dominant grass genera include Aristida, Bouteloua, Cenchrus, Chloris, Eragrostis, Panicum, Setaria, and Tridens. Similar to the Sandy Loam range sites in vegetational composition are the Gray Sandy Loam range sites. These sites tend to support a less dense cover of vegetation, both woody and herbaceous. For this reason, species of Xanthoxylum, Ericameria, Thamnosma, and Croton tend to significantly increase in abundance on Gray Sandy Loam range sites.

Shallow Ridge range sites are infrequent on the Research Area but quite distinct in terms of vegetational composition. The woody dominants are almost exclusively Acacia berlandieri, A. rigidula, and Salvia ballotaeflora, while the dominant grass genera include Aristida, Bouteloua, Eragrostis, Erioneuron, Setaria, and Tridens. Acacia berlandieri is a primary indicator of Shallow Ridge range sites since it seldom occurs on other range sites and when it does, it is not a dominant species. Shallow Sandy Loam range sites are somewhat intermediate between Sandy Loam and Shallow Ridge range sites. Plant cover is less dense than on Sandy Loam range sites but the species composition is somewhat similar. Soils are shallow as in Shallow Ridge range sites but much lighter in color and sandier in texture. The dominant woody species on Shallow Sandy Loam range sites include Colubrina texensis, Condalia hookeri, Eysenhardtia texana, and Salvia balloteaflora while the dominant grass genera include Aristida, Bouteloua, Eragrostis, Paspalum, and Tridens. Bare ground is

exposed allowing species such as Xanthocephalum dracunculoides, X. sarothrae, and Ericameria austrotexana to become abundant during drier years.

The three remaining range sites, Clay Loam, Claypan Prairie, and Lakebed, are not typically upland sites as were the preceeding. These sites generally occur along intermittant streams or in low-lying depressional areas and accumulate greater amounts of moisture; thus, supporting dense stands of vegetation. Lakebed range sites "lagunas" are composed of heavy clay soils which restrict the percolation of water through the soil resulting in standing ponds of water after heavy rains. The dominant woody vegetation of these sites include Acacia smallii, Celtis pallida, Diospyros texana, Parkinsonia aculeata, and Prosopis glandulosa. The dominant grass genera include Panicum, Paspalum, Setaria, and Stipa.

Clay Loam range sites are usually quite conspicuous due to the consistency of vegetation throughout these sites. The dominant woody vegetation includes Aloysia gratissima, Celtis pallida, Condalia hookeri, and Prosopis glandulosa. The dominant grass genera include Aristida, Chloris, Setaria, and Tridens. Claypan Prairie range sites are somewhat similar to Clay Loam range sites but with less dense vegetation, especially the shrub Aloysia gratissima. These sites mostly occur along intermittant streams and support such woody species as Acacia smallii, Celtis pallida, Condalia hookeri, and Prosopis glandulosa. The dominant grass genera include Aristida, Chloris, Paspalum, Setaria, and Tridens with Bothriochloa and Stipa occurring to a lesser extent.

CHAPTER III

METHODS

Vascular plant species were collected on the La Copita Research Area from March, 1984 through December, 1985. Specimens were primarily collected from twenty-two permanent sampling transects representing each of the seven range sites; however, collections were not restricted to the sampling transects. These permanent transects were established prior to the beginning of this study to monitor the vegetation of the Research Area on a seasonal basis and determine the frequency, cover, and phenology of plant species throughout the year. Each transect is marked with a stamped metal post and encompasses a 250 feet radius. Located within this 250 feet radius are five exclosures. Each plant species was collected in triplicate, when possible, from the different range sites. One set of specimens is housed in a herbarium at the La Copita Research Area for the purpose of verifying the identification of plants on the station. The voucher specimens are housed in the S. M. Tracy Herbarium (TAES) at Texas A&M University, College Station, Texas. The remainder of the specimens will be distributed to other herbariums.

The collected plants were pressed and dried, identified using taxonomic keys, verified with specimens housed in the S. M. Tracy Herbarium, and mounted on herbarium mounting paper. Each specimen has an attached label which supplies the following data; family name, scientific name, authority, collection location, associated species, collector, collection number, and date of collection. Scientific names

of non-grasses follow the nomenclature used by Correll and Johnston (1970) while scientific names of grasses follow the nomenclature used by Gould (1975).

Plant species which occurred on more than one range site were collected from each site to establish an ecological checklist of the Research Area. This checklist is arranged in alphabetical order by family, genus, and species, and includes such information as common names, origin of species (native or introduced), species longevity (annual or perennial), season of growth (warm or cool), growth habits, and relative abundance within each range site. Abundance statements were mostly qualitative and recorded as follows: common = a species frequently encountered; infrequent = a species seldom encountered; rare = a species encountered twice or less with little evidence of its prominence within a particular range site. The ecological information is listed beneath each species. If a species did not fall within one or more of the frequency statement categories, that category was omitted for that particular species.

A vegetative key to the woody species of the La Copita Research Area was written using such characters as leaf arrangement, size and shape of leaves, number of leaflets per leaf, leaf margins, presence or absence of stipules, presence or absence of prickles or thorns, and pubescence. An artificial key to the herbaceous vascular plant families was written using both vegetative and floral characteristics. Some floral characteristics included ovary position, presence or absence of perianth parts, number of perianth parts, stamen number and arrangement, stigmas number and carpel number, ovules within each

carpel, and fruit type. Following the key to family is an artificial key to the genera of vascular plants within each family. The families are arranged in alphabetical order. Woody species are not included in this key but are listed beneath generic keys within the family. If only one genus is present within a particular family, it is simply listed with that family. Suffrutescent species can usually be found in either the woody key or the generic key. All of these keys are numbered dichotomous keys following the format used by Correll and Johnston (1970). Couplets are numbered in sequence, followed by a number in parenthesis which represents where the couplet in question originated. The key to the woody plants of the Research Area keys directly to species while the key to the herbaceous vascular plants keys first to family followed by a key to the genus.

CHAPTER IV

RESULTS

Three-hundred thirty-four vascular plant species representing 68 families were collected on the La Copita Research Area from March, 1984 through December, 1985. A summary of the number of species and genera within each family (Table 1) shows Poaceae with the greatest number of species (73 species) followed by Asteraceae (56 species) and Fabaceae (25 species). Asteraceae has the greatest number of genera (44 genera) followed by Poaceae (35 genera) and Fabaceae (15 genera). These three families combined represent 46% of the total species collected.

Non-grass herbs represent 62% of the total number of species collected on the Research Area (Table 2) followed by grasses (22%), trees and shrubs (12%), suffrutescent herbs (3%), parasites and epiphytes (1%), and woody vines (0.6%). The Research Area supports 39 species of trees and shrubs from which the most dominant genera are Acacia, Aloysia, Celtis, Colubrina, Condalia, Diospyros, Prosopis, Salvia, and Zanthoxylum. Of the 73 species of grasses represented, the most dominant genera are Aristida, Bouteloua, Cenchrus, Chloris, Eragrostis, Panicum, Paspalum, Setaria, and Tridens.

Table 1. Summary of the number of genera, species, and percent of total species for each family found on the La Copita Research Area.

Family	No. of Genera	No. of Species	% of Total Species
Acanthaceae	3	5	1.5
Aizoaceae	1	1	0.3
Amaranthaceae	2	2	0.6
Amaryllidaceae	3	3	0.9
Apiaceae	5	5	1.5
Apocynaceae	1	1	0.3
Aristolochiaceae	1	1	0.3
Asclepiadaceae	2	3	0.9
Asteraceae	44	56	16.8
Berberidaceae	1	1	0.3
Bignoniaceae	1	1	0.3
Boraginaceae	4	6	1.8
Brassicaceae	5	9	2.7
Bromeliaceae	1	1	0.3
Cactaceae	3	4	1.2
Campanulaceae	1	1	0.3
Celastraceae	1	1	0.3
Chenopodiaceae	1	1	0.3
Commelinaceae	2	2	0.6
Convolvulaceae	4	6	1.8
Cucurbitaceae	2	2	0.6
Cyperaceae	2	7	2.1
Ebenaceae	1	1	0.3
Ephedraceae	1	1	0.3
Euphorbiaceae	7	12	3.6
Fabaceae	15	25	7.5
Gentianaceae	1	1	0.3
Geraniaceae	2	2	0.6
Hydrophyllaceae	1	2	0.6
Hypericaceae	1	1	0.3
Iridaceae	2	3	0.9
Krameriaceae	1	1	0.3
Lamiaceae	5	6	1.8
Liliaceae	4	4	1.2
Linaceae	1	2	0.6
Malpighiaceae	1	1	0.3
Malvaceae	4	8	2.4
Marsileaceae	1	1	0.3
Menispermaceae	1	1	0.3
Nyctaginaceae	2	3	0.9
Oleaceae	2	2	0.6
Onagraceae	3	6	1.8
Orobanchaceae	1	1	0.3
Oxalidaceae	1	2	0.6
Papaveraceae	1	1	0.3

Table 1. (continued)

Family	No. of Genera	No. of Species	% of Total Species
Passifloraceae	1	2	0.6
Phytolaccaceae	1	1	0.3
Plantaginaceae	1	2	0.6
Poaceae	35	73	21.9
Polmoniaceae	1	1	0.3
Polygalaceae	1	1	0.3
Polygonaceae	1	1	0.3
Portulacaceae	2	2	0.6
Ranunculaceae	2	2	0.6
Rhamnaceae	4	4	1.2
Rubiaceae	3	5	1.5
Rutaceae	2	2	0.6
Sapotaceae	1	1	0.3
Scrophulariaceae	4	4	1.2
Simaroubaceae	1	1	0.3
Solonaceae	6	8	2.4
Sterculiaceae	3	3	0.9
Tamaricaceae	1	1	0.3
Ulmaceae	1	2	0.6
Urticaceae	2	2	0.6
Verbenaceae	4	8	2.4
Vitaceae	1	1	0.3
Zygophyllaceae	1	1	0.3
TOTAL 68 families	228	334	100.0

Table 2. Summary of the growth habits of species found on the La Copita Research Area

Growth Habit	No. of Species	% of Total Species
Non grass herbs	207	62.0
Grasses	73	21.8
Trees & Shrubs	39	11.7
Suffrutescent herbs	10	3.0
Parasites & Epiphytes	3	0.9
Woody vines	2	0.6

Ecological Checklist

The following is an ecological checklist of the vascular plants arranged in alphabetical order by family, genus, and species. Information regarding longevity, season of growth, whether or not a species is native or introduced, growth habit, and frequency of occurrence within range sites is provided for each species.

Legend

Origin
- N = Native
- I = Introduced

Longevity
- P = Perennial
- A = Annual

Season of Growth
- W = Warm season
- C = Cool season

Growth Habit
- T = Tree
- S = Shrub
- H = Herb
- R = Suffrutescent herb
- V = Woody vine
- O = Parasite
- E = Epiphyte

Range Site
- SL = Sandy Loam Range Site
- CL = Clay Loam Range Site
- GSL = Gray Sandy Loam Range Site
- CPP = Claypan Prairie Range Site
- SSL = Shallow Sandy Loam Range Site
- LB = Lakebed Range Site
- SR = Shallow Ridge Range Site

Acanthaceae

Dyschoriste linearis (T. & G.) O. Ktze. - Narrowleaf dyschoriste

NPW / H Infrequent - SL,GSL

Ruellia nudiflora (Gray) Urban

NPW / H Common - SL,GSL,SR

Ruellia runyonii Tharp & Barkl. var. berlandieri Tharp & Barkl.

NPW / H Common - SL

Ruellia runyonii Tharp & Barkl. var. runyonii

NPW / H Common - SL,CPP,LB

Ruellia yucatana (Leonard) Tharp & Barkl.

NPW / H Common - CL,SSL

Siphonoglossa pilosella (Nees) Torr. - Tube tongue

NPW / H Common - SL,GSL,CPP

Aizoaceae

Mollugo verticillata L. - Indian chickweed

IAW / H Infrequent - SL

Amaranthaceae

Froelichia gracilis (Hook.) Moq. - Slender snake cotton

NAW / H Common - SL,GSL

Gomphrena nealleyi Coult. & Fish. - Nealley globe-amaranth

NPW / H Common - CPP
Infrequent - SL

Amaryllidaceae

Agave americana L. - Century plant

NPW / H Infrequent - GSL

Cooperia drummondii Herb. - Rain lily

NPW / H Common - SL,CL,GSL,CPP

Zephyranthes pulchella J.G. Sm. - Showy zephyranthes

NPW / H Infrequent - SL,CPP

Apiaceae

Ammoselinum popei T. & G. - Sand parsley

NAC / H Common - SL,GSL

Bowlesia incana R. & P. - Rabbit lettuce

NAC / H Common - CL,LB

Daucus pusillus Michx. - Rattlesnake-weed

NAC / H Common - SL,CL
Infrequent - SR

Eryngium hookeri Walp. - Eryngo

NAW / H Common - SL,GSL

Limnosciadium pumilum (Engelm. & Gray) Math. & Const.

NAC / H Common - CPP,LB

Apocynaceae

Macrosiphonia macrosiphon (Torr.) Heller

NPW / R Infrequent - SR

Aristolochiaceae

Aristolochia longiflora Engelm. & Gray - Swan-flower

NPW / H Infrequent - SL

Asclepiadaceae

Asclepias emoryi (Greene) Small - Milkweed

NPW / H Rare - GSL

Cynanchum barbigerum (Scheele) Shinners var. breviflorum Shinners

NPW / H Common - SL,GSL,SR

Cynanchum unifarium (Scheele) Woods

NPW / H Infrequent - CPP

Asteraceae

Amblyolepis setigera DC. - Huisache daisy

NAC / H Infrequent - CL

Ambrosia confertiflora DC. - Ragweed

NPW / H Common - SL,CL

Aphanostephus riddellii T. & G. - Lazy daisy

NPW / H Common - SL,CL,GSL,SSL

Aster spinosus Benth. - Mexican devil-weed, spiny aster

NPW / H Common - CPP

Aster subulatus Michx. - Saltmarsh aster

IPW / H Infrequent - CPP

Baccharis texana (T. & G.) Gray

NPW / S Common - SL,GSL

Calyptocarpus vialis Less. - Straggler daisy

NPW / H Common - CL,CPP,LB
Infrequent - SL

Chaptalia nutans (L.) Polak var. texana (Greene) Burk. - Silverpuff

NPW / H Common - CL,CPP,LB
Infrequent - SL,SR

Circium texanum Buckl. - Texas thistle

NPW / H Common - SL,CPP,LB

Conyza canadensis (L.) Cronq. - Horseweed

NAW / H Infrequent - SL,GSL

Coreopsis basilis (Otto & Dietr.) Blake

NAW / H Infrequent - LB

Coreopsis tinctoria Nutt. - Golden wave

NAC / H Common - LB

Croptilon divarcatum (Nutt.) Raf. - Scratch daisy

NAW / H Rare - LB

Dyssodia pentachaeta (DC.) Robins - Common dogweed

NAW / H Common - SL,GSL,SSL,SR

Dyssodia tenuiloba (DC.) Robins var. tenuiloba - Bristleleaf dogweed

NAW / H Common - GSL,CPP,SSL

Ericameria austrotexana M.C. Johnst. - False broomweed

NPW / R Common - SL,CL,GSL,SSL,SR
Infrequent - CPP

Eupatorium greggii Gray - Palmleaf eupatorium

NPW / H Common - CPP,LB
Infrequent - SL

Eupatorium incarnatum Walt. - Pink eupatorium

NPW / H Common - SL,GSL,CPP,LB

Eupatorium odoratum L. - Crucita

NPW / H Common - SL,CPP

Eupatorium serotinum Michx.

NPW / H Infrequent - LB

Evax verna Raf. - Rabbit tobacco

NAC / H Common - SL,CL,GSL,CPP,SSL,LB,SR

Florestina tripteris DC.

NAW / H Common - SL,SSL
Infrequent - LB

Gaillardia pulchella Foug. - Indian blanket

NPW / H Common - SL,GSL,CPP,SSL

Gnaphalium obtusifolium L. - Fragrant cudweed

NAW / H Common - SL,CL,GSL
Infrequent - SSL

Gnaphalium pensilvanicum Willd. - Cudweed

NAW / H Common - SL,CL,GSL,CPP,SSL,LB,SR

Gymnosperma glutinosum (Spreng.) Less.

NPW / H,R Common - SL,GSL,SSL
Infrequent - SR

Helenium linifolium Rydb. - Sneezeweed

NAW / H Infrequent - CPP

Helenium microcephalum DC. - Sneezeweed

NAW / H Common - CPP,LB

Helianthus annuus L. - Common sunflower

NAW / H Infrequent - SL

Heterotheca pilosa (Nutt.) Shinners - Camphorweed

NAW / H Common - SL,GSL

Krigia occidentalis Nutt. - Dwarf dandelion

NAC / H Infrequent - GSL

Liatris elegans (Walt.) Michx. - Pinkscale gayfeather

NPW / H Infrequent - SL

Lygodesmia texana (T. & G.) Greene - Skeleton plant

NPW / H Common - SL,GSL

Machaeranthera texensis (R.C. Jackson) Shinners

NPW / H Infrequent - GSL

Melampodium cinereum DC. - Rock daisy

NPW / H Common - SL,CL,GSL,SSL,SR

Palafoxia texana DC. - Texas palafoxia

NAW / H Common - SL,GSL,CPP,LB

Parthenium confertum Gray

NPW / H Common - CL,CPP

Parthenium hysterophorus L. - False ragweed

NAW / H Common - SL,CL,GSL,CPP,SSL,LB,SR

Perezia wrightii Gray

NPW / H Rare - CL

Pterocaulon virgatum (L.) DC. - Blackroot

NPW / H Infrequent - SL,LB

Pyrrhopappus multicaulis DC. - False dandelion

NAC / H Common - SL,CL,GSL,CPP,LB

Ratibida columnaris (Sims) D. Don - Upright prairie coneflower

NPW / H Infrequent - SL,CL

Rudbeckia hirta L. - Brown-eyed Susan, black-eyed Susan

NPW / H Infrequent - LB

Senecio ampullaceus Hook. - Ragwort

NAW / H Infrequent - SL,GSL,LB

Senecio imparipinnatus Klatt. - Groundsel

NAC / H Rare - CPP

Simsia calva (Engelm. & Gray) Gray - Bush sunflower

NPW / H Common - SL,GSL,SR

Soliva mutisii H.B.K. - Burweed

IAW / H Common - CL,LB

Sonchus asper (L.) Hill - Sow thistle

IAW / H Common - LB

Thelesperma filifolium (Hook.) Gray - Green thread

NPW / H Common - SL,GSL

Verbesina encelioides (Cav.) Gray - Cowpen daisy

NAW / H Common - SL,CL,GSL,CPP

Verbesina virginica L. - Frostweed

NPW / H Common - SL,CL,GSL,CPP,SSL,LB

Xanthisma texanum DC. - Sleepy daisy

NAW / H Common - SL,GSL
Infrequent - LB

Xanthium strumarium L. - Cocklebur

NAW / H Infrequent - CPP

Xanthocephalum dracunculoides (DC.) Shinners - Annual broomweed

NAW / H Common - SL,CL,GSL,CPP,SSL,SR

Xanthocephalum sarothrae (Pursh) Shinners - Broom snakeweed

NPW / R Common - SL,GSL,SSL
Infrequent - CPP

Zexmania hispida (H.B.K.) Gray - Orange zexmania

NPW / R Common - SL,CL,GSL,CPP,SSL,SR

Berberidaceae

Berberis trifoliolata Moric. - Agarito

NPC / S Common - SL,CL,GSL,CPP,SSL,SR

Bignoniaceae

Tecoma stans (L.) Juss. - Esperanza

NPW / S Rare - SL

Boraginaceae

Coldenia canescens DC. - Gray coldenia

NPW / R Rare - GSL

Ehretia anacua (Teran & Berl.) I.M. Johnst. - Anacua

NPW / T Rare - GSL

Heliotropium angiospermum Murr. - Taperleaf heliotrope

NAW / H Infrequent - GSL

Heliotropium procumbens Mill. - Four-spike heliotrope

NAW / H Infrequent - CPP

Heliotropium texanum I.M. Johnst.

NAW / H Infrequent - SL

Lithospermum mirabile Small - Puccoon

NPC / H Infrequent - SL

Brassicaceae

Descurainia pinnata (Walt.) Britt. - Tansy mustard

NAC / H Infrequent - CPP

Lepidium austrinum Small - Peppergrass

NAC / H Common - CL,LB

Lepidium densiflorum Schrad. - Peppergrass

NAC / H Infrequent - LB

Lepidium lasiocarpum Nutt. - Peppergrass

NAC / H Infrequent - SL

Lepidium virginicum L. var. virginicum - Peppergrass

NAC / H Common - SL,GSL,CPP,LB,SR

Lesquerella lasiopcarpa (Gray) Wats. - Rough bladderpod

NAC / H Common - SL,CL,GSL,CPP,LB

Lesquerella lindheimeri (Gray) Wats. - Lindheimer bladderpod

NAC / H Common - SL,GSL,CPP,SR

Rorippa teres (Michx.) Stuckey - Yellow cress

NAC / H Infrequent - LB

Sibara virginica (L.) Roll.

NAC / H Infrequent - LB

Bromeliaceae

Tillandsia recurvata L. - Ballmoss

NPW / E Common - Growing on Prosopis

Cactaceae

Echinocactus texensis Hopffer - Horse crippler

NPC / H Infrequent - GSL,CPP

Mammillaria grahamii Engelm. - Pin cushion

NPC / H Infrequent - GSL

Opuntia leptocaulis DC. - Tasajillo

NPW / H Common - SL,GSL,SSL,SR
Infrequent - CL

Opuntia lindheimeri Engelm. - Texas prickly-pear

NPC / H Common - SL,CL,GSL,CPP,SSL,SR
Infrequent - LB

Campanulaceae

Triodanis perfoliata (L.) Nieuw. - Venus' looking-glass

NAC / H Common - LB

Celastraceae

Schaefferia cuneifolia Gray - Desert yaupon

NPW / S Common - SL,CL,GSL,CPP,SSL,SR

Chenopodiaceae

Chenopodium berlandieri Moq. - Pitseed goosefoot

NAW / H Common - CL,CPP,LB

Commelinaceae

Commelina erecta L. var. angustifolia (Michx.) Fern. - Dayflower

NPW / H Common - SL,CL,GSL,CPP,LB

Tradescantia micrantha Torr. - Spiderwort

NPW / H Rare - LB

Convolvulaceae

Convolvulus arvensis L.

IPW / H Infrequent - GSL

Convolvulus equitans Benth.

NPW / H Infrequent - CL

Cuscuta runyonii Yunck. - Dodder

NAW / O Infrequent - GSL,SR

Dichondra micrantha Urban - Ponyfoot

NPW / H Common - SL,CL,GSL,CPP,LB

Evolvulus alsinoides L. - Slender evolvulus

NPW / H Common - SL,GSL,CPP,SSL,SR

Evolvulus sericeus Sw. - Silky evolvulus

NPW / H Common - SL,CL,GSL,CPP,SSL,SR

Cucurbitaceae

Citrullus vulgaris Schrad. - Watermelon

IAW / H Rare - SL

Ibervillea lindheimeri (Gray) Greene - Globeberry

NPW / H Infrequent - CL,GSL,SR

Cyperaceae

Carex brittoniana Bailey

NPC / H Common - CPP

Cyperus articulatus L. - Jointed flatsedge

NPW / H Common - LB

Cyperus odoratus L. - Fragrant flatsedge

NAW / H Infrequent - CPP

Cyperus ovularis (Michx.) Torr. - Cylinder flatsedge

NPW / H Infrequent - CPP

Cyperus surinamensis Rottb. - Tropical flatsedge

NPW / H Common - CPP,LB

Cyperus uniflorus T. & H. - Oneflower flatsedge

NPW / H Common - SL

Cyperus virens Michx. - Green flatsedge

NPW / H Common - CPP

Ebenaceae

Diospyros texana Scheele - Texas persimmon

NPW / S,T Common - SL,CL,GSL,CPP,SSL,LB,SR

Ephedraceae

Ephedra antisyphilitica C.A. Mey - Clapweed

NPW / S Common - SL,CL,GSL,SSL,SR

Euphorbiaceae

Acalypha radians Torr. - Cardinal feather

NPW / H Common - GSL,SR

Argythamnia humilis (Engelm. & Gray) Muell. Arg. var. humilis - Wild mercury

NPW / H Infrequent - GSL

Bernardia myricaefolia (Scheele) Wats. - Brush myrtlecroton

NPW / S Common - CL
Infrequent - SL

Croton capitatus Michx. var. lindheimeri (Engelm. & Gray) Muell. Arg. - Wolly croton

NAW / H Common - SL,GSL,CPP,SSL

Croton glandulosus L. var. lindheimeri Muell. Arg. - Tropic croton

NAW / H Common - SL,GSL

Croton lindheimerianus Scheele var. lindheimerianus - Three-seeded croton

NAW / H Infrequent - GSL,SSL

Croton monanthogynus Michx. - One-seeded croton

NAW / H Infrequent - CL,GSL

Euphorbia peplidion Engelm. - Low euphorb

NAW / H Common - CPP

Euphorbia serpens H.B.K. - Mat euphorb

NAW / H Common - SL

Phyllanthus polygonoides Spreng. - Knotweed leaf-flower

NPW / H Common - SSL,SR

Tragia brevispica Engelm. & Gray - Noseburn

NPW / H Infrequent - CL,GSL

Tragia ramosa Torr. - Stinging nettle

NPW / H Common - SR
Infrequent - SL

Fabaceae

Acacia berlandieri Benth. - Guajillo

NPW / S Common - SR
Infrequent - SSL

Acacia greggii Gray - Catclaw

NPW / S Common - SL,CL,GSL,CPP,SSL

Acacia rigidula Benth. - Blackbrush

NPC / S Common - GSL,SSL,SR
Infrequent - SL,CPP

Acacia shaffneri (Walt.) Herm. - Twisted acacia

NPW / S,T Infrequent - SL

Acacia smallii Isely - Huisache

NPC / T,S Common - SL,CL,GSL,CPP,SSL,LB

Astragalus nuttallianus A. DC. var. trichocarpus T. & G. - Milk vetch

NAC / H Common - SR
Infrequent - SL

Cassia bauhinioides Gray - Two-leaved senna

NPW / H Infrequent - SSL

Cassia texana Buckl. - Texas senna

NPW / H Common - SL,GSL

Dalea nana Torr. - Dwarf dalea

NPW / H Common - SL,GSL,SSL,SR

Dalea pogonathera Gray - Bearded dalea

NPW / H Common - CPP,SR

Desmanthus virgatus (L.) Willd. var. depressus (Willd.) B.L. Turner - Bundleflower

NPW / H Rare - LB

Eysenhardtia texana Scheele - Kidneywood

NPW / S Common - SL,GSL,SSL,SR
Infrequent - CL

Galactia heterophylla Gray - Milkpea

NPW / H Common - SL,CL,GSL,CPP,SSL

Galactia marginalis Benth.

NPW / H Rare - SL

Indigofera miniata Ort. var. miniata - Scarlet pea

NPC / H Common - SL,GSL,CPP

Parkinsonia aculeata L. - Retama

IPW / T Common - LB
Infrequent - CL

Pithecellobium flexicaule (Benth.) Coult. - Texas ebony

NPW / T,S Rare - CL,GSL

Pithecellobium pallens (Benth.) Standl. - Tanaza

NPW / S,T Rare - GSL

Prosopis glandulosa Torr. - Honey mesquite

NPW / T,S Common - SL,CL,GSL,CPP,SSL,LB

Prosopis reptans Benth. var. cinerascens (Gray) Burk. - Creeping mesquite

NPW / S Infrequent - CPP

Schrankia latidens (Small) K. Schum. - Sensitive-brier

NPW / H Common - SL,GSL

Sesbania drummondii (Rydb.) Cory - Rattlebush

NPW / S Common - CPP,LB

Sesbania macrocarpa Muhl. - Coffee bean

NAW / H Infrequent - CPP

Vicia leavenworthii T. & G. - Vetch

NAC / H Infrequent - CPP
Rare - SR

Zornia gemella (Willd.) Vog.

NPW / H Common - SL,CPP

Gentianaceae

Sabatia campestris Nutt. - Meadow pink

NAW / H Infrequent - SL

Geraniaceae

Erodium texanum Gray - Stork's bill

NPC / H Infrequent - SR

Geranium texanum (Trel.) Heller - Texas geranium

NAC / H Common - CPP,LB

Hydrophyllaceae

Nama hispidum Gray - Sandbell

NAW / H Common - SL,GSL,SSL,SR
Infrequent - CL

Nama jamaicense L.

NAW / H Common - SL,CL,GSL
Infrequent - SSL

Hypericaceae

Hypericum pauciflorum H.B.K. - St. John's-wort

NPW / H Infrequent - SL,GSL

Iridaceae

Eustylis purpurea (Herb.) Engelm. & Gray - Purple pleat-leaf

NPW / H Common - SL,GSL

Sisyrinchium minus Engelm. & Gray - Blue-eyed grass

NAC / H Infrequent - LB

Sisyrinchium pruinosum Bickn. - Blue-eyed grass

NPC / H Infrequent - SL

Krameriaceae

Krameria lanceolata Torr. - Prairiebur, Range ratany

NPW / H Common - SL,GSL,SSL

Lamiaceae

Hedeoma drummondii Benth. - Mock pennyroyal

NPW / H Common - SR

Monarda punctata L. var. coryi (McCl. & Epl.) Cory - Spotted beebalm

NAC / H Common - CL
Infrequent - SL

Salvia ballotaeflora Benth. - Shrubby blue sage

NPW / S Common - SL,CL,GSL,SSL,SR
Rare - LB

Salvia texana (Scheele) Torr.

NPC / H Common - GSL,SR
Infrequent - SL

Scutellaria drummondii Benth. - Scullcap

NPC / H Common - SL,CL,GSL,SSL,SR
Infrequent - CPP,LB

Stachys crenata Raf. - Hedge nettle

NAC / H Common - CPP,LB

Liliaceae

Allium drummondii Regel. - Wild onion

NPC / H Common - SL,GSL,CPP,SR

Nothoscordum bivalve (L.) Britt. - Crow-poison

NPC / H Common - SL,CL,GSL,CPP,SSL,LB,SR

Schoenocaulon drummondii Gray - Green lily

NPW / H Common - SL,CL,GSL

Yucca treculeana Carr.

NPC / H Common - SL,CL,GSL,SSL,SR

Linaceae

Linum puberulum (Engelm.) Heller - Plains flax

NAW / H Common - SL,CL,CPP,LB

Linum rigidum Pursh var. filifolium Shinners - Stiffstem flax

NPW / H Common - SL,GSL,SSL,SR

Malpighiaceae

Thryallis angustifolia (Benth.) O. Ktze.

NPW / H,R Common - GSL,SR

Malvaceae

Abutilon incanum (Link.) Sweet - Indian mallow

NPW / H Common - SL,CL,GSL,CPP,SSL,LB,SR

Abutilon lignosum (Cav.) D. Don

NPW / H Infrequent - SL,LB

Abutilon wrightii Gray - Indian mallow

NPW / H Common - SR
Infrequent - SL

Malvastrum coromandelianum (L.) Gke.

NPW / H Common - GSL,CPP
Infrequent - SSL,LB

Sida ciliaris L. var. mexicana (Moric.) Shinners - Bracted sida

NPW / H Common - SL,CL,GSL,CPP,SSL,LB,SR

Sida physocalyx Gray

NPW / H Rare - LB

Sida spinosa L. - Prickly mallow

NAW / H Infrequent - LB

Sphaeralcea pedatifida Gray - Globemallow

NPW / H Common - SL,CL,GSL,CPP,LB

Marsileaceae

Marsilea macropoda Engelm. ex A. Br. - Water clover

NPW / H Common - LB

Menispermaceae

Cocculus diversifolius DC. - Orientvine

NPW / H Infrequent - CL,CPP

Nyctaginaceae

Acleisanthes longiflora Gray - Angel trumpet

NPW / H Common - SL,CL,CPP

Acleisanthes obtusa (Choisy) Standl. - Vine four-o'clock

NPW / H Common - SL,GSL,LB

Allionia incarnata L. - Trailing allionia

NPW / H Rare - SL

Oleaceae

Forestiera angustifolia Torr. - Tanglewood

NPW / S Infrequent - SL,GSL,SR

Menodora heterophylla Moric.

NPW / H Infrequent - CL,GSL,CPP,SR

Onagraceae

Calylophus hartwegii (Benth.) Raven

NPW / H Infrequent - SL,GSL

Gaura brachycarpa Small

NAC / H Common - CL,GSL,CPP,SR

Gaura mckelveyae (Munz) Raven & Gregory

NPW / H Common - SR

Oenothera kunthiana (Spach) Munz

NPW / H Common - CL,CPP
Infrequent - SL,GSL

Oenothera laciniata Hill - Cut-leaved evening primrose

NPC / H Common - SL,GSL,CPP
Infrequent - SR

Oenothera speciosa Nutt. - Evening primrose

NPW / H Common - CL,GSL,CPP,LB

Orobanchaceae

Orobanche multiflora Nutt. - Broomrape

NPW / O Infrequent - SL,GSL

Oxalidaceae

Oxalis corniculata L. - Woodsorrel

NAC / H Common - GSL,CPP,LB

Oxalis dichondraefolia Gray - Agrito

NPW / H Common - SL,GSL
Infrequent - CPP

Papaveraceae

Argemone sanguinea Greene - Red poppy

NAW / H Common - CL,CPP

Passifloraceae

Passiflora foetida L. var. gossypifolia (Hamilt.) Mast.

NAW / H Rare - CL

Passiflora tenuiloba Engelm. - Spreadlobe passiflora

NPW / H Rare - CL

Phytolaccaceae

Rivina humilis L. - Pigeonberry

NPW / H Common - SL,GSL

Plantaginaceae

Plantago hookeriana Fisch. & Mey. - Tallow-weed

NAC / H Common - SL,CPP

Plantago virginica L. - Pale-seed plantain

NAC / H Common - SL,CL,GSL,CPP,SSL,LB,SR

Poaceae

Agrostis hiemalis (Walt.) B.S.P. - Winter bentgrass

NPC / H Infrequent - LB

Aristida longespica Poir. var. geniculata (Raf.) Fern. - Slimspike 3-awn

NAW / H Common - SL,GSL,CPP,SSL

Aristida purpurea Nutt. - Purple 3-awn

NPW / H Common - SL,CL,GSL,CPP,SSL,SR

Aristida roemeriana Scheele - Roemer 3-awn

NPW / H Common - SL,GSL,SR

Aristida wrightii Nash - Wright's threeawn

NPW / H Infrequent - CL

Bothriochloa barbinodis (Lag.) Herter var. barbinodis - Cane bluestem

NPW / H Infrequent - SL,CL,GSL,SR

Bothriochloa ischaemum (L.) Keng var. songarica (Rupr.) Celerier & Harlan - King Ranch bluestem, K. R. bluestem

IPW / H Common - CPP,LB

Bothriochloa saccharoides (Swartz) Rydb. var. torreyana (Steud.) Gould - Silver bluestem

NPW / H Infrequent - CPP

Bouteloua curtipendula (Michx.) Torr. - Sideoats grama

NPW / H Infrequent - CL

Bouteloua hirsuta Lag. - Hairy grama

NPW / H Common - SL,GSL

Bouteloua repens (H.B.K.) Scribn. & Merr. - Slender grama

NPW / H Infrequent - SL,CL,GSL

Bouteloua rigidiseta (Steud.) Hitchc.- Texas grama

NPW / H Common - SL,CL,GSL,CPP,SSL,SR
Infrequent - LB

Bouteloua trifida Thurb. - Red grama

NPW / H Common - SL,CL,GSL,CPP,SSL,SR
Infrequent - LB

Brachiaria ciliatissima (Buckl.) Chase - Fringed signalgrass

NPW / H Common - SL,CL,GSL,SR

Brachiaria platyphylla (Griseb.) Nash - Broadleaf signalgrass

NAW / H Infrequent - CPP

Brachiaria texanum (Buckl.) S.T. Blake - Coloradograss, sourgrass

NAW / H Infrequent - SL,CPP,LB

Bromus unioloides (Willd.) H.B.K. - Rescuegrass

IAC / H Infrequent - SL,CL,LB

Buchloe dactyloides (Nutt.) Engelm. - Buffalograss

NPW / H Common - GSL,CPP,LB

Cenchrus ciliaris L. - Buffelgrass

IPW / H Common - SL,CL,GSL,CPP,SR

Cenchrus incertus M. A. Curtis - Common grassbur

NPW / H Common - SL,CL,GSL,CPP,SSL,SR

Chloris ciliata Swartz - Fringed chloris

NPW / H Common - CPP,LB
Infrequent - SL

Chloris cucullata Bisch. - Hooded windmillgrass

NPW / H Common - SL,CL,GSL,CPP,SSL,LB,SR

Chloris divaricata R. Br.

IPW / H Infrequent - LB

Chloris pluriflora (Fourn.) Clayton - Multiflowered false-rhodesgrass

NPW / H Common - SL,CL,GSL,CPP,LB

Chloris subdolichostachya Muller - Shortspike windmillgrass

NPW / H Infrequent - CL,CPP,LB

Cynodon dactylon (L.) Pers. - Bermudagrass

IPW / H Common - CPP,LB

Dactyloctenium aegyptium (L.) Beauv. - Durban crowfootgrass

IAW / H Common - CPP

Dichanthelium oligosanthes (Schult.) Gould var. scribnerianum (Nash) Gould- Scribner panicum, rosettegrass

NPW / H Infrequent - SL,CPP

Dichanthium annulatum Stapf - Kleberg bluestem

IPW / H Common - SL,GSL,SSL,LB

Digitaria californica (Benth.) Henr. - Arizona cottontop

NPW / H Common - SL,GSL,SR

Digitaria ciliaris (Retz.) Koel. - Southern crabgrass

IAW / H Infrequent - CL,CPP

Digitaria insularis (L.) Mez ex Eckmann - Sourgrass

NPW / H Infrequent - SL

Digitaria patens (Swallen) Henr. - Texas cottontop

NPW / H Common - GSL,CL

Echinochloa colona (L.) Link - Junglerice

IAW / H Common - CPP

Eleusine indica (L.) Gaertn. - Goosegrass

IAW / H Infrequent - CL

Eragrostis curtipedicillata Buckl. - Gummy lovegrass

NPW / H Common - SL,CL,GSL,CPP,SR

Eragrostis intermedia Hitchc. - Plains lovegrass

NPW / H Infrequent - CPP

Eragrostis lugens Nees - Mourning lovegrass

NPW / H Common - SL,GSL,SSL

Eragrostis secundiflora Presl - Red lovegrass

NPW / H Common - SL,CL,GSL,SSL,SR

Eragrostis sessilispica Buckl. - Tumble lovegrass

NPW / H Common - SL,CL,GSL,SSL,SR

Erioneuron pilosum (Buckl.) Nash - Hairy tridens

NPW / H Common - SSL,SR
Infrequent - GSL

Heteropogon contortus (L.) Beauv. ex R. & S. - Tanglehead

NPW / H Rare - SL

Hilaria belangeri (Steud.) Nash - Common curlymesquite

NPW / H Common - GSL
Infrequent - CL

Leptochloa dubia (H.B.K.) Nees - Green sprangletop

NPW / H Common - SL,GSL

Leptochloa nealleyi Vasey - Nealley sprangletop

NAW / H Common - CPP,LB

Leptochloa virgata (L.) Beauv. - Tropic sprangletop

NPW / H Infrequent - CPP,SSL

Leptoloma cognatum (Schult.) Chase var. arenicola (Swallen) Gould - Sand witchgrass

NPW / H Rare - SL

Leptoloma cognatum (Schult.) Chase var. cognatum - Fall witchgrass

NPW / H Common - SL,CL,GSL,CPP,SSL,SR

Limnodia arkansana (Nutt.) L.H. Dewey - Ozarkgrass

NAC / H Infrequent - CPP

Lolium perenne L. - Ryegrass

IPC / H Rare - LB

Neeragrostis reptans (Michx.) Nicora - Creeping lovegrass

NAW / H Common - CPP

Panicum capillarioides Vasey - Southern witchgrass

NPW / H Common - SL,CL,GSL,CPP,SSL,SR

Panicum coloratum L. - Kleingrass

IPW / H Common - CL,LB

Panicum hallii Vasey var. filipes (Scribn.) Waller - Filly panicum

NPW / H Infrequent - LB

Panicum hallii Vasey var. hallii - Halls panicum

NPW / H Common - SL,CL,GSL,CPP,SSL,SR

Panicum hians Ell. - Gaping panicum

NPW / H Common - CPP,LB

Pappophorum bicolor Fourn. - Pink pappusgrass

NPW / H Common - SL,GSL,LB

Pappophorum vaginatum Buckl. - Whiplash pappusgrass

NPW / H Infrequent - GSL,CPP

Paspalum pubiflorum Rupr. & Fourn. var. pubiflorum - Hairyseed paspalum

NPW / H Common - CL,CPP,LB
Infrequent - SL

Paspalum setaceum Michx. var. stramineum (Nash) D. Banks- Thin paspalum

NPW / H Common - SL,CL,GSL,SSL
Infrequent - CPP,LB

Setaria firmula (Hitchc. & Chase) Pilger - Knotgrass

NPW / H Common - SL,SSL

Setaria geniculata (Lam.) Beauv. - Knotroot bristlegrass

NPW / H Common - CPP,LB

Setaria leucopila (Scribn. & Merr.) K. Schum. - Plains bristlegrass

NPW / H Common - CL,CPP,LB

Setaria macrostachya H.B.K. - Plains bristlegrass

NPW / H Infrequent - GSL

Setaria ramiseta (Scribn.) Pilger

NPW / H Infrequent - CL

Setaria texana W.H.P. Emery - Texas bristlegrass

NPW / H Common - SL,CL,GSL,CPP,SR

Sorghum halepense (L.) Pers. - Johnsongrass

IPW / H Rare - CL,LB

Sporobolus cryptandrus (Torr.) A. Gray - Sand dropseed

NPW / H Common - SL,CL,GSL,SSL,SR
Infrequent - LB

Stipa leucotricha Trin. & Rupr. - Texas wintergrass

NPC / H Common - SL,CL,GSL,CPP,SSL,LB,SR

Tragus berteronianus Schult. - Spike burgrass

IAW / H Infrequent - SL

Tridens albescens (Vasey) Woot. & Standl. - White tridens

NPW / H Common - LB

Tridens eragrostoides (Vasey & Scribn.) Nash - Lovegrass tridens

NPW / H Common - SL,CL,GSL
Infrequent - SR

Tridens muticus (Torr.) Nash var. muticus - Slim tridens

NPW / H Common - CL,GSL,SR

Tridens texanus (S. Wats.) Nash - Texas tridens

NPW / H Common - SL,CL,GSL,CPP,SSL,LB,SR

Trisetum interruptum Buckl. - Prairie trisetum

NAC / H Infrequent - SR

Polemoniaceae

Gilia rigidula Benth.

NAW / H Common - SL,GSL

Polygalaceae

Polygala alba Nutt. var. gnaphalioides (Nutt.) Gray - Milkwort

NPW / H Common - SL,GSL

Polygonaceae

Rumex pulcher L. - Fiddle dock

IPC / H Infrequent - CPP

Portulacaceae

Portulaca mundula I.M. Johnst. - Chisme

NAW / H Infrequent - LB

Talinum angustissimum (Gray) Woot. & Standl. - Flame flower

NPW / H Common - SL,GSL,CPP

Ranunculaceae

Anemone heterophylla Nutt.

NPC / H Rare - CL

Clematis drummondii T. & G. - Old man's beard

NPW / V Common - GSL,SR

Rhamnaceae

Colubrina texensis (T. & G.) Gray - Hogplum

NPC / S Common - SL,CL,GSL,CPP,SSL,SR
Infrequent - LB

Condalia hookeri M.C. Johnst. - Brasil

NPW / S Common - SL,CL,GSL,CPP,SSL,SR
Infrequent - LB

Karwinskia humboldtiana (R. & S.) Zucc. - Coyotillo

NPW / S Common - SL,SSL,SR
Infrequent - CPP
Rare - CL

Ziziphus obtusifolia (T. & G.) Gray - Lotebush

NPW / S Common - SL,CL,GSL
Infrequent - CPP
Rare - LB

Rubiaceae

Diodia teres Walt. - Rough buttonweed

NAW / H Infrequent - SL

Diodia tricocca T. & G. - Prairie buttonweed

NAW / H Common - GSL,LB

Galium aparine L. - Catchweed bedstraw

NAC / H Infrequent - CL

Galium virgatum Nutt. - Southwest bedstraw

NAC / H Common - SL,CL,GSL,SR

Hedyotis nigricans (Lam.) Fosb. - Bluet

NPW / H Common - SSL,SR
Infrequent - SL

Rutaceae

Thamnosma texana (Gray) Torr. - Dutchman's breeches

NPW / H Common - GSL,SR

Zanthoxylum fagara (L.) Sarg. - Lime pricklyash

NPC / S Common - SL,CL,GSL,CPP,SSL,SR
Infrequent - LB

Sapotaceae

Bumelia celastrina H.B.K. - Coma

NPW / T Infrequent - GSL,CPP
Rare - SL,SSL

Scrophulariaceae

Agalinis strictifolia (Benth.) Penn. - Gerardia

NAW / H Infrequent - SL

Leucophyllum frutescens (Berl.) I.M. Johnst. - Ceniza, Purple sage

NPC / S Rare - SL

Linaria texana Scheele - Texas toad-flax

NAC / H Common - GSL,CPP,LB,SR

Veronica peregrina L. - Purslane speedwell

NAC / H Infrequent - LB

Simaroubaceae

Castela texana (T. & G.) Rose - Amargosa, Allthorn

NPW / S Infrequent - SL,GSL
Rare - CL,CPP

Solanaceae

Capsicum annuum L. var. minus (Fing.) Shinners - Cayenne pepper

NPW / S Infrequent - CL,GSL

Chamaesaracha sordida (Dun.) Gray - False nightshade

NPW / H Common - SL,GSL

Lycium berlandieri Dun. var. berlandieri - Wolfberry

NPW / S Common - SL,GSL,SSL
Infrequent - CL,CPP

Nicotiana repanda Willd. - Wild tobacco

NAC / H Common - GSL,CPP,LB

Physalis viscosa L. var. cinerascens (Dun.) Waterfall - Ground cherry

NPW / H Common - SL,CL,GSL
Infrequent - LB

Solanum americanum Mill. - American nightshade

NAW / H Infrequent - CPP

Solanum elaeagnifolium Cav. - Silverleaf nightshade

NPW / H Common - CPP,LB

Solanum triquetrum Cav. - Texas nightshade

NPW / H Infrequent - CL

Sterculiaceae

Hermannia texana Gray - Texas hermannia

NPW / R Common - SL,CL,GSL

Melochia pyramidata L. - Broomwood

NPW / R Common - CL,CPP,LB
Infrequent - SL

Waltheria indica L.

NPW / R Rare - GSL

Tamaricaceae

Tamarix aphylla (L.) Karst. - Salt cedar

IPW / T Rare - CL

Ulmaceae

Celtis laevigata Willd. - Texas sugarberry

NPC / T Infrequent - CPP,LB

Celtis pallida Torr. - Spiny hackberry, Granjeno

NPC / S Common - SL,CL,GSL,CPP,LB,SR
Infrequent - SSL

Urticaceae

Parietaria pensylvanica Muhl. - Hammerwort

NAW / H Common - SL,CL,GSL,CPP,LB,SR

Urtica chamaedryoides Pursh - Nettle

NAC / H Common - CL
Infrequent - LB

Verbenaceae

Aloysia gratissima (Gill. & Hook.) Troncoso - Whitebrush

NPW / S Common - SL,CL,GSL,CPP
Infrequent - LB,SR
Rare - SSL

Lantana horrida H.B.K. - Texas lantana

NPW / S Common - SL,GSL,SSL,SR
Infrequent - CPP

Lantana macropoda Torr. - Desert lantana

NPW / S Infrequent - CL,SR

Phyla incisa Small - Frog fruit

NPW / H Common - CPP,LB

Verbena canescens H.B.K. - Gray vervain

NPW / H Common - GSL,SR

Verbena halei Small - Texas vervain

NPW / H Common - SL,CL,GSL,CPP,SSL,LB,SR

Verbena plicata Greene - Fanleaf vervain

NPW / H Infrequent - SL,CL,GSL

Verbena quadrangulata Heller - Beaked vervain

NAW / H Common - CL,CPP,LB
Infrequent - GSL,SR

Vitaceae

Cissus incisa (Nutt.) Des Moul. - Possum grape

NPW / V Infrequent - SL,CPP

Zygophyllaceae

Porliera angustifolia (Engelm.) Gray - Guayacan

NPC / S Infrequent - SL,GSL,CPP,SR
Rare - CL,SSL

Vegetative Key to the Woody Species

1. Plants climbing.....2

1. Plants not climbing.....4

2(1). Leaves opposite.....*Clematis drummondii*

2(1). Leaves alternate.....3

3(2). Plants with tendrils; leaves succulent.....*Cissus incisa*

3(2). Plants without tendrils; leaves not succulent.....
.....*Cocculus diversifolius*

4(1). Leaves scalelike, awl-shaped, or inconspicuous.....5

4(1). Leaves not scalelike, not awl-shaped, and not inconspicuous...6

5(4). Leaves not obvious; branches jointed; shrubs under 2 m tall.....
.....*Ephedra antisyphilitica*

5(4). Leaves awl-shaped or scalelike; branches not jointed; trees over 2 m tall.....*Tamarix aphylla*

6(4). Leaves compound.....7

6(4). Leaves simple.....23

7(6). Leaves trifoliolate and 3- to 7-lobed, each lobe terminating in spinescent tips.....*Berberis trifoliolata*

7(6). Leaves pinnately compound, not trifoliolate or spinescent.....8

8(7). Leaves opposite or fascicled.....9

8(7). Leaves alternate.....10

9(8). Leaflets more than 1 cm wide.....*Tecoma stans*

9(8). Leaflets less than 1 cm wide.....*Porliera angustifolia*

10(8). Leaves once pinnately compound.....11

10(8). Leaves twice or more pinnately compound.....14

11(10). Branches armed with curved prickles.....Zanthoxylum fagara

11(10). Branches not armed.....12

12(11). Leaves odd pinnately compound , glandular dotted.....

.....Eysenhardtia texana

12(11). Leaves even pinnately compound, not glandular dotted.....13

13(12). Plants perennial; pods short, thickened, 4-winged.....

.....Sesbania drummondii

13(12). Plants annual; pods elongate, linear, not winged.....

.....Sesbania macrocarpa

14(10). Leaves with a flattened green rachis.....Parkinsonia aculeata

14(10). Leaves with a terete rachis.....15

15(14). Branches armed with recurved prickles.....Acacia greggii

15(14) Branches armed but not with recurved prickles or if so, then leaves with 8 or more pairs of pinnae.....16

16(15). Leaves with 8 or more pairs of pinnae; leaflets 30-50 per pinnae.....Acacia berlandieri

16(15). Leaves with less than 8 pairs of pinnae; leaflets less than 30 per pinnae.....17

17(16). Leaves with usually only 1 pair of pinnae (sometimes 2 in A. rigidula).....18

17(16). Leaves with 2 or more pairs of pinnae.....20

18(17). Leaflets less than 5 pairs per pinnae.....Acacia rigidula

18(17). Leaflets more than 5 pairs per pinnae.....19

19(18). Shrub usually less than 5 dm tall.....Prosopis reptans

19(18). Shrub or tree usually greater than 1 m tall.....

.....Prosopis glandulosa

20(17). Largest leaflets greater than 1.5 mm wide.....21

20(17). Largest leaflets less than 1.5 mm wide.....22

21(20). Petiolar gland depressed and situated below lowermost pair of pinnae; pinnae with 10 or more leaflets.....
.....*Pithecellobium pallens*

21(20). Petiolar gland elevated and situated between lowermost pair of pinnae; pinnae with 9 or less leaflets.....
.....*Pithecellobium flexicaule*

22(20). Petiolar gland borne below lowermost pinnae; fruits glabrous.....*Acacia smallii*

22(20). Petiolar gland usually borne between the two lowermost pinnae; fruits pubescent.....*Acacia shaffneri*

23(6). Leaves opposite.....24

23(6). Leaves alternate or fascicled.....34

24(23). Margins of leaf entire.....25

24(23). Margins of leaf not entire.....29

25(24). Leaves densely tomentose above and beneath, to 4.5 cm wide,
.....*Macrosiphonia macrosiphon*

25(24). Leaves glabrous or pubescent but not densely tomentose above and beneath.....26

26(25). Leaves oblong or elliptic-oblong, greater than 1 cm wide; secondary leaf veins very prominent...*Karwinskia humboldtiana*

26(25). Leaves mostly less than 1 cm wide or if greater, then secondary veins not prominent.....27

27(26). Leaves punctate and densely pubescent on the lower surface.....
.....Aloysia gratissima

27(26). Leaves glabrous or only slightly pubescent, not punctate.....28

28(27). Stipules absent; leaf blades linear, 3-6 mm wide; plants greater than 5 dm tall.....Forestiera angustifolia

28(27). Stipules present; leaf blades linear to lanceolate to 13 mm wide; plants less than 5 dm tall.....Thryallis angustifolia

29(24). Leaves glabrous, margins only slightly crenate.....
.....Karwinskia humboldtiana

29(24). Leaves pubescent.....30

30(29). Leaves densely white tomentose on lower surface.....31

30(29). Leaves pubescent on upper and/or lower surfaces but not densely white tomentose beneath.....32

31(30). Margins of leaves only slightly crenate; leaves densely tomentose on upper and lower surfaces, to 4.5 cm wide.....
.....Macrosiphonia macrosiphon

31(30). Margins of larger leaves coarsely dentate; leaves green above and white stellate tomentose beneath, reticulate-veined and glandular dotted beneath, less than 2 cm wide; plants very aromatic.....Salvia ballotaeflora

32(30). Leaves sessile, sparingly dentate, acute at base; stems and leaves strigose-hispid.....Zexmania hispida

32(30). Leaves petiolate and serrate; pubescence variable.....33

33(32). Leaves ovate or subrotund-ovate, 3-5 cm long and 2-4 cm wide, coarsely serrate.....Lantana horrida

33(32). Leaves ovate or lanceolate, 5-35 mm long and usually 6-15 mm wide, sharply serrate.....Lantana macropoda

34(23). Plants armed with spines or spinescent branches.....35

34(23). Plants unarmed.....41

35(34). Leaves canescent on lower surface.....Castela texana

35(34). Leaves glabrous or only slightly pubescent on lower surface..36

36(35). Plant branches armed with paired spines; leaves crenate-dentate or sometimes entire.....Celtis pallida

36(35). Plant branches terminating in spinescent tips; leaves mostly entire or serrate in upper half.....37

37(36). Leaves linear to elliptic-spatulate, to 25 mm long and 2.5 mm wide.....Lycium berlandieri

37(36). Leaves usually wider, not linear.....38

38(37). Leaves, at least the upper half, usually serrate; branches covered with a grayish or whitish wax-like bloom.....Ziziphus obtusifolia

38(37). Leaves mostly entire; branches without a wax-like bloom or sometimes with a wax-like bloom in Condalia.....39

39(38). Leaves usually greater than 1 cm wide and 2 cm long, apex broadly rounded.....Bumelia celastrina

39(38). Leaves usually smaller, apex shallowly emarginate or mucronate.....40

40(39). Apex of leaf mucronate; branches mostly terminating in stout thorns.....*Condalia hookeri*

40(39). Apex of leaf shallowly emarginate; twigs only slightly spinescent.....*Schaefferia cuneifolia*

41(34). Largest leaves greater than 6 mm wide.....42

41(34). Largest leaves 6 mm wide or less.....53

42(41). Upper surface of leaves bearing abundant mineralized disks from which arise short, rigid, appressed hairs feeling like sandpaper.....*Ehretia anacua*

42(41). Upper surface of leaves not bearing abundant mineralized disks.....43

43(42). Tree over 10 m tall.....*Celtis laevigata*

43(42). Tree or shrub less than 10 m tall.....44

44(43). Margins of leaves entire.....45

44(43). Margins of leaves not entire.....49

45(44). Leaves glabrous on both surfaces.....46

45(44). Leaves pubescent on one or both surfaces.....47

46(45). Leaves ovate to elliptic-lanceolate, apex acute to acuminate.....*Capsicum annuum*

46(45). Leaves obovate to oblanceolate, apex shallowly emarginate.....*Schaefferia cuneifolia*

47(45). Plant densely tomentose throughout; leaves canescent on upper and lower surface.....48

47(45). Plants not densely tomentose; leaves pubescent on lower surface only, margins revolute.....*Diospyros texana*

48(47). Vestiture of stellate hairs; plants definitely woody.....
.....*Leucophyllum frutescens*

48(47). Vestiture of simple hairs; plants suffrutescent.....
.....*Coldenia canescens*

49(44). Leaves, at least some, greater than 2 cm broad, suborbicular, base rounded to truncate or cordate; plant densely stellate-pubescent throughout.....*Hermannia texana*

49(44). Leaves 2 cm broad or less, base not cordate; pubescence variable.....49

50(49). Leaves glabrous to sparsely pubescent, serrate, base rounded to broadly cuneate.....*Melochia pyramidata*

50(49). Leaves thinly tomentose to stellate pubescent, crenate to dentate, base rounded.....51

51(50). Lower surface of leaves sparsely tomentose; leaves ovate.....
.....*Colubrina texensis*

51(50). Lower surface of leaves with stellate pubescence; leaves ovate to elliptic.....52

52(51). Petioles less than 5 mm long; leaves crenate, often appearing fascicled.....*Bernardia myricaefolia*

52(51). Petioles greater than 5 mm long; leaves crenate to dentate, not appearing fascicled.....*Waltheria indica*

53(41). Margin of leaves minutely undulate; plant a shrub or subshrub to 6 dm tall; leaves 2-4 cm long and 2-4 mm wide, lower ones punctate.....Baccharis texana

53(41). Margins leaves entire, punctate, glutinous, resinous, or without glands; plant a shrub or subshrub; leaves to 70 mm long and 6 mm wide.....54

54(53). Leaves without glands, to 2.5 cm long and 2.5 mm wide, usually fascicled; plant a definite shrub.....Lycium berlandieri

54(53). Leaves punctate, glutinous, or resinous, not fascicled to 70 mm long and 6 mm wide; plant a subshrub.....54

55(54). Largest leaves 3-6 mm wide and 2-5 cm long; plant 5-20 dm tall, conspicuously glutinous and punctate.....Gymnosperma glutinosum

55(54). Largest leaves less than 3 mm wide; plant resinous or dotted with glands.....56

56(55). Subshrub, much branched at base and above; entire plant corymbiform 1.5-9 dm. tall; leaves 5-70 mm. long and 1-3 mm. wide, resinous.....Xanthocephalum sarothrae

56(55). Subshrub, much branched above; not or only slightly corymbiform, 5-15 dm. tall; leaves 1-2.5 cm. long and 1-2 mm. wide, glands visible only under strong magnification.....Ericameria austrotexana

Artificial Key to Families of Herbaceous Plants

1. Plant reproducing by spores; leaves quadrifoliate.....MARSILEACEAE

1. Plant reproducing by seeds; leaves not quadrifoliate.....2

2(1). Flower parts in whorls of 3's or multiples thereof; leaves parallel veined; cotyledon 1.....3

2(1). Flower parts in whorls of 4's or 5's or multiples thereof; leaves reticulate veined; cotyledons 2.....9

3(2). Plants epiphytic; leaves gray.....BROMELIACEAE

3(2). Plants not epiphytic.....4

4(3). Perianth lacking or reduced, inconspicuous.....5

4(3). Perianth present, conspicuous, usually showy.....6

5(4). Leaves distichous; each flower usually subtended by 2 bracts (lemma and palea).....POACEAE

5(4). Leaves tristichous; each flower subtended by a single bract or surrounded by a perigynium.....CYPERACEAE

6(4). Ovary inferior.....7

6(4). Ovary superior.....8

7(6). Stamens 3; leaves equitant.....IRIDACEAE

7(6). Stamens 6; leaves not equitant.....AMARYLLIDACEAE

8(6). The 3 inner perianth parts clearly differentiated from the outer whorl.....COMMELINACEAE

8(6). The 3 inner perianth parts similar to the outer whorl.....LILIACEAE

9(2). Plants with fleshy stems and spines, cactus-like.....CACTACEAE

9(2). Plants without fleshy stems or spines, not cactus-like.....10

10(9). Plants with climbing or trailing stems, vine-like.....11

10(9). Plants not vine-like.....20

11(10). Leaves opposite.....12

11(10). Leaves alternate.....15

12(11). Flowers in involucrate heads.....ASTERACEAE

12(11). Flowers not in involucrate heads.....13

13(12). Leaves compound.....RANUNCULACEAE

13(12). Leaves simple.....14

14(13). Stamens united; corolla present; stems with milky latex.....ASCLEPIADACEAE

14(13). Stamens free; corolla absent; flowers with petaloid sepals.....NYCTAGINACEAE

15(11). Stems with stinging hairs.....EUPHORBIACEAE

15(11). Stems without stinging hairs.....16

16(15). Flowers unisexual.....17

16(15). Flowers perfect.....18

17(16). Stems climbing by tendrils; petals united.....CUCURBITACEAE

17(16). Stems without tendrils; petals distinct.....MENISPERMACEAE

18(16). Petals, all of them, united along margins.....CONVOLVULACEAE

18(16). Petals mostly distinct, at least above.....19

19(18). Stems climbing by tendrils; leaves simple.....PASSIFLORACEAE

19(18). Stems without tendrils or if with tendrils, then leaves compound.....FABACEAE

20(10). Flowers with all the petals united (at least near base)....21

20(10). Flowers with at least some distinct petals or petals absent.....44

21(20). Plants lacking chlorophyll, parasitic on roots of other plants.....OROBANCHACEAE

21(20). Plants with chlorophyll, not parasitic.....22

22(21). Ovary inferior.....23

22(21). Ovary superior.....26

23(22). Flowers in involucrate heads; fruit an achene.....ASTERACEAE

23(22). Flowers not in involucrate heads; fruit a capsule, berry, or follicle.....24

24(23). Leaves alternate.....CAMPANULACEAE

24(23). Leaves opposite, whorled, or verticillate.....25

25(24). Fruit a follicle; stigma massive.....APOCYNACEAE

25(24). Fruit not a follicle; stigma not massive.....RUBIACEAE

26(22). Stigma massive; ovary 2-lobed with a single style; stamens 5; fruit a follicle; stems usually with milky juice.....27

26(22). Stigma not massive; fruit not a follicle.....28

27(26). Calyx gamosepalous; stigma mostly free from anther and/or corolla tissue.....APOCYNACEAE

27(26). Calyx deeply lobed; stigma united to anther tissue forming corona or gynostegium.....ASCLEPIADACEAE

28(26). Plants acaulescent; inflorescence a terminal spike; calyx and corolla 4-parted.....PLANTAGINACEAE

28(26). Plants caulescent or if not, then corolla 5-parted.....29

29(28). Leaves opposite.....30

29(28). Leaves alternate or fascicled.....37

30(29). Stems typically square.....31

30(29). Stems typically terete.....32

31(30). Corolla distinctly irregular or 2-lipped; herbage aromatic; gynobasic style attachment.....LAMIACEAE

31(30). Corolla slightly irregular to regular; herbage not usually aromatic; terminal style attachment.....VERBENACEAE

32(30). Stamens 2 or 4; corolla regular or irregular.....33

32(30). Stamens 5; corolla regular.....35

33(32). Ovules 10 or less in each cell.....34

33(32). Ovules 11 or more per cell.....SCROPHULARIACEAE

34(33). Corolla regular; calyx parts greater than 5; stamens 2.....OLEACEAE

34(33). Corolla irregular to somewhat regular; calyx parts 5; stamens 4 or sometimes 2.....ACANTHACEAE

35(32). Stigmas 3.....POLEMONIACEAE

35(32). Stigmas 2.....36

36(35). Plants glabrous; calyx fused to well above base; flowers pink.....GENTIANACEAE

36(35). Plants pubescent or glabrous; calyx deeply divided; flowers not pink.....HYDROPHYLLACEAE

37(29). Stamens monadelphous.....MALVACEAE

37(29). Stamens free or diadelphous.....38

38(37). Fruit a legume; leaves compound or if simple, then flowers papilionaceous.....FABACEAE

38(37). Fruit not a legume; leaves simply or if appearing compound, then flowers not papilionaceous.....39

39(38). Stamens 4 or 2; corolla usually irregular.....SCROPHULARIACEAE

39(38). Stamens 5; corolla regular.....40

40(39). Ovary 3-celled; stigmas 3.....POLEMONIACEAE

40(39). Ovary 1-, 2-, or 4-celled, but not 3-celled; stigmas seldom 3, mostly 1, 2, or 4.....41

41(40). Fruit drupe-like or a deeply lobed schizocarp of 2-4 achene-like mericarps.....BORAGINACEAE

41(40). Fruit a berry or capsule.....42

42(41). Flowers with a single stigma.....SOLANACEAE

42(41). Flowers with 1 or 2 styles but at least 2 stigmas.....43

43(42). Flowers usually solitary in leaf axils; plants with creeping rhizomes or stolons or if upright, then styles 2, each with 2 linear branches and capsule 1-4 seeded; ovary 2 or more celled.....CONVOLVULACEAE

43(42). Flowers usually in cymes; plants not creeping; ovary 1-celled (2-celled in Nama and many seeded).....HYDROPHYLLACEAE

44(20). Fruit apocarpus.....RANUNCULACEAE

44(20). Fruit not apocarpus.....45

45(44). Petals absent; calyx sometimes appearing corolla-like.....46

45(44). Petals present.....57

46(45). Calyx tube S-shaped or U-shaped; leaves mostly basal.....ARISTOLOCHIACEAE

46(45). Calyx not S or U-shaped; plants caulescent.....47

47(46). Leaves opposite or whorled.....48

47(46). Leaves alternate or appearing fascicled on immature stems....52

48(47). Plants with stinging hairs.....URTICACEAE

48(47). Plants without stinging hairs.....49

49(48). Ovules numerous; leaves often whorled.....AIZOACEAE

49(48). Ovules few, 3 or less.....50

50(49). Seeds 3, one in each cell of the 3-celled ovary; flowers always unisexual.....EUPHORBIACEAE

50(49). Seeds solitary or flowers perfect.....51

51(50). Calyx scale-like or scarious in texture.....AMARANTHACEAE

51(50). Calyx herbaceous or corolla-like.....NYCTAGINACEAE

52(47). Fruit a small berry, red to dark purple.....PHYTOLACCACEAE

52(47). Fruit not a berry.....53

53(52). Ovules 3, one in each cell of the 3-celled ovary or if not, then plant with stellate pubescence; flowers always unisexual.. .....EUPHORBIACEAE

53(52). Ovules solitary; flowers perfect or unisexual.....54

54(53). Stipules present and usually sheathing the nodes or if not, then perianth 6-merous.....POLYGONACEAE

54(53). Stipules absent; perianth 4- to 5-merous.....55

55(54). Calyx scale-like or scarious in texture.....AMARANTHACEAE

55(54). Calyx herbaceous in texture.....56

56(55). Perianth usually 5-parted; embryo coiled or spiraled around the endosperm.....CHENOPODIACEAE

56(55). Perianth 4-parted; embryo otherwise.....URTICACEAE

57(45). Sepals 2, enclosing the bud; leaves usually succulent..... .....PORTULACACEAE

57(45). Sepals more than 2; leaves seldom succulent.....58

58(57). Ovary partially or wholly inferior.....59

58(57). Ovary superior.....60

59(58). Fruit a schizocarp with 2 achene-like mericarps which separate at maturity; petals 5; flowers in umbels or heads.....APIACEAE

59(58). Fruit a capsule; petals typically 4; sepals often reflexed; flowers not in umbels.....ONAGRACEAE

60(58). Corolla strongly irregular.....61

60(58). Corolla regular to slightly irregular.....63

61(60). Ovary 1-celled; stigma 1; fruit a legume or a 1-seeded pod with prickles.....62

61(60). Ovary 2-celled with 1 ovule per cell; stigma 2-lobed; fruit a capsule.....POLYGALACEAE

62(61). Fruit a 1-seeded pod with prickles; upper 3 petals united at base; lower 2 petals separate; stamens 4; leaves simple.....KRAMERIACEAE

62(61). Fruit a legume; flowers otherwise; leaves usually compound.....FABACEAE

63(60). Leaves opposite throughout.....64

63(60). Leaves alternate, or only the lowermost opposite, or basal...65

64(63). Petals narrowed to a petiole-like base "claw"; leaves not gland-dotted.....MALPIGHIACEAE

64(63). Petals not clawed; leaves gland-dotted.....HYPERICACEAE

65(63). Leaves with prickly teeth; plants with colored latex.....PAPAVERACEAE

65(63). Leaves not prickly; latex not colored.....66

66(65). Petals 4; sepals 4.....67

66(65). Petals 5 or more; sepals usually 5.....68

67(66). Fruit a silique or silicle; stamens tetradynamous (4 long and 2 short).....BRASSICACEAE

67(66). Fruit strongly 2-lobed; stamens 8; leaves distinctly gland-dotted.....RUTACEAE

68(66). Flowers manifestly unisexual.....EUPHORBIACEAE

68(66). Flowers mostly perfect.....69

69(68). Filaments united into a tube around the style.....70

69(68). Filaments free or united only at base.....71

70(69). Stamens 5.....STERCULIACEAE

70(69). Stamens numerous.....MALVACEAE

71(70). Leaves palmately (sometimes pinnately) lobed or compound.....72

71(70). Leaves entire or toothed, simple.....74

72(71). Leaves palmately or pinnately lobed.....GERANIACEAE

72(71). Leaves compound.....73

73(72). Style 1.....FABACEAE

73(72). Styles 5.....OXALIDACEAE

74(71). Leaves toothed, not entire.....STERCULIACEAE

74(71). Leaves entire.....75

75(74). Stamens 10.....OXALIDACEAE

75(74). Stamens 5.....LINACEAE

Artificial Key to Genera of Herbaceous Plants

Woody plant species are keyed in the vegetative key to woody plants; however, genera are noted at the end of these family keys.

Acanthaceae

1. Stamens 2.....Siphonoglossa
1. Stamens 4.....2
   2. Leaves mostly linear; flowers mostly axillary.....Dyschoriste
   2. Leaves not linear; flowers mostly terminal.....Ruellia

Aizoaceae

Mollugo

Amaranthaceae

1. Stigma 1, capitate or bilobed; perianth not pink.....Froelichia
1. Stigmas usually 2; perianth pinkish.....Gomphrena

Amaryllidaceae

1. Flowers in numerous spicate racemes or panicles.....Agave
1. Flowers solitary.....2
   2. Flowers white.....Cooperia
   2. Flowers yellow.....Zephyranthes

Apiaceae

1. Flowers and fruits in spiny heads; leaves spine-tipped.....Eryngium
1. Flowers and fruits not in spiny heads; leaves not spine-tipped.....2
   2. Leaves with parallel veination.....Limnosciadium
   2. Leaves net-veined.....3

3. Leaves simple with stellate pubescence.....Bowlesia

3. Leaves compound or deeply dissected, without stellate pubescence...4

4. Fruits with bristles.....Daucus

4. Fruits without bristles.....Ammoselinum

Apocynaceae

Macrosiphonia

Aristolochiaceae

Aristolochia

Asclepiadaceae

1. Stems climbing or trailing.....Cynanchum

1. Stems upright.....Asclepias

Asteraceae

1. Heads bilabiate.....2

1. Heads not bilabiate.....3

2(1). Leaves all basal, silky-pubescent beneath.....Chaptalia

2(1). Leaves not all basal, essentially glabrous with spine-tipped teeth.....Perezia

3(1). Heads discoid.....4

3(1). Heads not discoid.....14

4(3). Pappus of bristles.....5

4(3). Pappus of scales, awns, or absent.....9

5(4). Leaves opposite.....Eupatorium

5(4). Leaves alternate.....6

6(5). Pappus bristles plumose.....7

6(5). Pappus bristles not plumose.....8

7(6). Leaves spiny.....Circium

7(6). Leaves not spiny.....Liatris

8(6). Stems winged by decurrent leaves; phyllaries not scarious.....Pterocaulon

8(6). Stems not obviously winged; phyllaries scarious.....Gnaphalium

9(4). Pappus of scales.....10

9(4). Pappus absent.....11

10(9). Corollas pinkish-purple; upper leaves simple.....Palafoxia

10(9). Corollas whitish; upper leaves 3-foliate.....Florestina

11(9). Plants less than 20 cm tall.....12

11(9). Plants more than 20 cm tall.....13

12(11). Leaves white-woolly, entire.....Evax

12(11). Leaves green, strongly dissected.....Soliva

13(11). Heads unisexual; leaves dissected.....Ambrosia

13(11). Heads bisexual; leaves not dissected.....Xanthium

14(3). Heads ligulate.....15

14(3). Heads radiate.....18

15(14). Corollas white to lavender.....Lygodesmia

15(14). Corollas yellowish.....16

16(15). Achenes beaked.....Pyrrhopappus

16(15). Achenes not beaked.....17

17(16). Leaves spinose-dentate; pappus of over 50 bristles.....Sonchus

17(16). Leaves not spinose-dentate; pappus of 5 bristles and 5 scales.....Krigia

18(14). Leaves, at least the lower ones, opposite.....19

18(14). Leaves alternate.....27

19(18). Rays white.....Melampodium

19(18). Rays not white.....20

20(19). Leaves deeply dissected, lobed, or compound.....21

20(19). Leaves entire or toothed.....23

21(20). Receptacle naked.....Dyssodia

21(20). Receptacle chaffy.....22

22(21). Inner phyllaries united for 1/3 to 1/2 their lengths; pappus awns, if present, retrorsely barbed.....Thelesperma

22(21). Inner phyllaries united less than 1/4 their lengths; pappus awns, if present, antrorsely barbed.....Coreopsis

23(20). Heads less than 8 mm wide.....Calyptocarpus

23(20). Heads wider than 10 mm.....24

24(23). Petioles appendaged at base.....25

24(23). Petioles not basally appendaged.....26

25(24). Achenes winged.....Verbesina

25(24). Achenes wingless.....Simsia

26(24). Leaves sessile; ray flowers orange colored.....Zexmania

26(24). Leaves petiolate; ray flowers yellow.....Helianthus

27(18). Rays white, creamy, or lavender.....28

27(18). Rays yellow, orange, red, or brown.....32

28(27). Pappus of numerous bristles.....29

28(27). Pappus of scales, teeth, 2-4 awns, or absent.....30

29(28). Rays cream-colored, 2-4 mm long; phyllaries in 1 or 2 series... ....Conyza

29(28). Rays purple-tinged, 6 mm or more long; phyllaries in 3 or more series....Aster

30(28). Stems winged by decurrent leaves....Verbesina

30(28). Stems not winged....31

31(30). Heads less than 1 cm wide....Parthenium

31(30). Heads greater than 1 cm wide....Aphanostephus

32(27). Receptacle paleate or with chaffy scales....33

32(27). Receptacle essentially naked....36

33(32). Receptacle conical or columnar....34

33(32). Receptacle flat or convex....35

34(33). Leaves 1-2-pinnatifid; receptacle columnar....Ratibida

34(33). Leaves not pinnatifid; receptacle conical....Rudbeckia

35(33). Pappus of scales in 2 series; leaves essentially sessile..... ....Xanthisma

35(33). Pappus of 2 awns; leaves petiolate....Helianthus

36(32). Pappus partially or wholly of bristles....37

36(32). Pappus partially or wholly of awns or scales, or absent....41

37(36). Phyllaries in a single series, equal, with tiny bracts at base....Senecio

37(36). Phyllaries in 2 or more series, unequal....38

38(37). Pappus double, the outer series shorter than the inner series....Heterotheca

38(37). Pappus not double....39

39(38). Leaves pinnatifid, with spine-tipped teeth.....Machaeranthera

39(38). Leaves entire to toothed, without spine-tipped teeth.....40

40(39). Plants annual with bristly-stiff pubescence.....Croptilon

40(39). Plants perennial, essentially glabrous.....Ericameria

41(39). Translucent oil glands present on phyllaries.....Dyssodia

41(39). Translucent oil glands absent on phyllaries.....42

42(41). Disk corolla lobes pubescent.....43

42(41). Disk corolla lobes glabrous.....44

43(42). Stems winged by decurrent leaves.....Helenium

43(42). Stems not winged.....Gaillardia

44(42). Ray flowers 1-2 cm long.....Amblyolepis

44(42). Ray flowers less than 1 cm long.....45

45(44). Pappus reduced to a minute ring or absent; leaves 2-6 mm wide; straggly shrubs.....Gymnosperma

45(44). Pappus usually of well-developed scales; leaves less than 3 mm wide; herbs or subshrubs.....Xanthocephalum

Baccharis

Berberidaceae

Berberis

Bignoniaceae

Tecoma

Boraginaceae

1. Flowers lavender.....Coldenia

1. Flowers white or yellow.....2

2. Corolla 2-4 mm wide.....Heliotropium

2. Corolla 8 mm or more wide.....Lithospermum

Ehretia

Brassicaceae

1. Fruits linear, at least 3 times longer than wide.....2

1. Fruits not linear.....4

2. Petals white.....Sibara

2. Petals yellow or sometimes creamy.....3

3. Plants pubescent with branched trichomes.....Descurainia

3. Plants usually pubescent with simple trichomes.....Rorippa

4. Petals white or greenish; fruits strongly flattened;.....Lepidium

4. Petals yellow; fruits globose or flattened.....Lesquerella

Bromeliaceae

Tillandsia

Cactaceae

1. Areoles bearing glochids.....Opuntia

1. Areoles not bearing glochids.....2

2. Stems ribbed.....Echinocactus

2. Stems not ribbed, tubercled.....Mammillaria

Campanulaceae

Triodanis

Celastraceae

Schaefferia

Chenopodiaceae

Chenopodium

Commelinaceae

1. Petals unequal.....Commelina
1. Petals equal.....Tradescantia

Convolvulaceae

1. Plants parasitic; leafless.....Cuscuta
1. Plants not parasitic; leaves evident.....2
   2. Leaf blades orbicular-ovate to orbicular-reniform, entire.....
      .....Dichondra
   2. Leaf blades otherwise.....3
3. Styles 2; stigmas 4.....Evolvulus
3. Style 1; stigmas 2.....Convolvulus

Cucurbitaceae

1. Stems pubescent.....Citrullus
1. Stems glabrous.....Ibervillea

Cyperaceae

1. Achenes enclosed in a sac (perigynium).....Carex
1. Achenes not enclosed in a sac.....Cyperus

Ebenaceae

Diospyros

Ephedraceae

Ephedra

Euphorbiaceae

1. Flowers with a cup-like involucre (cyathium).....Euphorbia
1. Flowers with a calyx; manifestly unisexual.....2
  2. Plants glabrous.....Phyllanthus
  2. Plants pubescent.....3
3. Vestiture of stellate hairs.....Croton
3. Vestiture of simple or malpighiaceous hairs.....4
  4. Stems and leaves with stinging hairs or bristles.....Tragia
  4. Stems and leaves not stinging.....5
5. Leaves entire.....Argythamnia
5. Leaves toothed.....Acalypha

Bernardia

Fabaceae

1. Leaves simple.....Galactia
1. Leaves compound.....2
  2. Leaves twice-pinnately compound.....3
  2. Leaves once-pinnately compound or palmate.....4
3. Plants armed with numerous recurved prickles.....Schrankia
3. Plants not armed.....Desmanthus
  4. Sepals separate; flowers only slightly zygomorphic.....Cassia
  4. Sepals united; flowers strongly zygomorphic.....5
5. Most leaves with only 2 or 3 leaflets.....Zornia
5. Most leaves with 4 or more leaflets.....6
  6. Leaves palmate or digitate.....Galactia
  6. Leaves pinnate.....7

7. Flowers in dense spikes.....Dalea

7. Flowers not in dense spikes.....8

8. Flowers yellow.....Sesbania

8. Flowers not yellow.....9

9. Leaves with tendrils.....Vicia

9. Leaves without tendrils.....10

10. Pubescence of medifixed hairs; flowers salmon.....Indigofera

10. Pubescence not of medifixed hairs; flowers violet.....Astragalus

Acacia

Eysenhardtia

Parkinsonia

Pithecellobium

Prosopis

Gentianaceae

Sabatia

Geraniaceae

1. Petals 5 mm or less long.....Geranium

1. Petals greater than 5 mm long.....Erodium

Hydrophyllaceae

Nama

Hypericaceae

Hypericum

Iridaceae

1. Rootstock a bulb or corm; corolla purple with spots.....Eustylis
1. Rootstock not a bulb or corm; corolla blue without spots.....
.....Sisyrinchium

Krameriaceae

Krameria

Lamiaceae

1. Calyx 2-lipped, the lips entire.....Scutellaria
1. Calyx 5-toothed, sometimes with 3 upper teeth and 2 lower teeth....2
  2. Stamens 4.....Stachys
  2. Stamens 2.....3
3. Flowers in leafy bracted whorls.....Monarda
3. Flowers not in leafy whorls.....4
  4. Flowers in terminal racemes.....Salvia
  4. Flowers axillary.....Hedeoma

Liliaceae

1. Flowers in umbels.....2
1. Flowers not in umbels.....3
  2. Tepals pink to purple; plants onion scented.....Allium
  2. Tepals white; plants not onion scented.....Nothoscordum
3. Leaves spine-tipped.....Yucca
3. Leaves not spine-tipped.....Schoenocaulon

Linaceae

Linum

Malpighiaceae

Thryallis

Malvaceae

1. Calyx subtended by bracts.....2
1. Calyx not subtended by bracts.....3
  2. Carpels 1-seeded.....Malvastrum
  2. Carpels 2-several-seeded.....Sphaeralcea
3. Seeds 2-several per carpel.....Abutilon
3. Seed 1 per carpel.....Sida

Marsileaceae

Marsilea

Menispermaceae

Cocculus

Nyctaginaceae

1. Perianth 3 cm or more long.....Acleisanthes
1. Perianth much shorter than 3 cm.....Allionia

Oleaceae

Forestiera

Menodora

Onagraceae

1. Stigma entire.....Calylophus
1. Stigma 4-lobed.....2

2. Petals unequal; flowers in leafless spikes or racemes.....Gaura

2. Petals equal; flowers axillary.....Oenothera

Orobanchaceae

Orobanche

Oxalidaceae

Oxalis

Papaveraceae

Argemone

Passifloraceae

Passiflora

Phytolaccaceae

Phytolacca

Plantaginaceae

Plantago

Poaceae

1. Spikelets in involucres of 1-several bristles or spines.....2

1. Spikelets not in involucres of bristles or spines.....3

2(1). Bristles and spines disarticulating with the spikelet .....Cenchrus

2(1). Bristles persistent; spines absent.....Setaria

3(2). Inflorescence a spike, raceme, or spicate raceme.....4

3(2). Inflorescence a panicle.....6

4(3). Plants stoloniferous.....Hilaria

4(3). Plants caespitose.....5

5(4). Spikelets arranged edgewise to the rachis, each with 2 or more perfect florets.....Lolium

5(4). Spikelets not arranged edgewise to the rachis, each with a single perfect floret.....Heteropogon

6(3). Inflorescence an open or contracted panicle, with rebranched primary branches and no spicate racemes.....7

6(3). Inflorescence a panicle of unbranched primary branches, spicate primary unilateral branches, or racemose branches.....22

7(6). Florets unisexual; plants stoloniferous.....Neeragrostis

7(6). Florets, at least some, bisexual; plants seldom stoloniferous...8

8(7). Spikelets with a single perfect floret.....9

8(7). Spikelets 2 or more perfect florets.....17

9(8). Lemmas, at least some, awned.....10

9(8). Lemmas awnless.....13

10(9). Awn of lemma 3-branched.....Aristida

10(9). Awn of lemma unbranched.....11

11(10). Lemma awn greater than 2 cm long.....Stipa

11(10). Lemma awn less than 2 cm long.....12

12(11). Plants perennial and warm season; spikelets in pairs of one sessile and one pediceled; florets 2 per spikelet.....Sorghum

12(11). Plants annual and cool season; spikelets not in pairs of one sessile and one pediceled; florets 1 per spikelet.....Limnodia

13(9). Spikelets with a sterile floret below the fertile floret.....14

13(9). Spikelets without sterile florets.....16

14(13). First glume absent or vestigal.....Leptoloma

14(13). First glume present, usually reduced in size.....15

15(14). Plants with a basal rosette of short, broad leaves during the cool season.....Dichanthelium

15(14). Plants without a basal rosette.....Panicum

16(13). Glumes, at least the first, shorter than the floret.....Sporobolus

16(13). Glumes exceeding the floret.....Agrostis

17(8). Lemmas conspicuously 3-nerved.....18

17(8). Lemmas with 5 or more nerves.....20

18(17). Nerves of lemma pubescent, at least near base.....19

18(17). Nerves of lemma glabrous.....Eragrostis

19(18). Leaf blades with obvious white margins.....Erioneuron

19(18). Leaf blades without obvious white margins.....Tridens

20(17). Lemma with 11 or more awns.....Pappophorum

20(17). Lemma with a single awn or awnless.....21

21(20). Spikelets with 2-3 florets; palea not adhering to caryopsis.....Trisetum

21(20). Spikelets with 4 or more florets; palea adheres to caryopsis.....Bromus

22(6). Plants dioecious and stoloniferous.....Buchloe

22(6). Plants not dioecious.....23

23(22). First glume firm or indurate; spikelets in pairs of one sessile and one pediceled; lemma membranous.....24

23(22). First glume herbaceous or absent; spikelets paired or not....25

24(23). Pedicels, at least the uppermost, with a central groove..... .....Bothriochloa

24(23). Pedicels without a central groove.....Dichanthium

25(23). Reduced floret 1, present below fertile floret.....26

25(23). Reduced floret or florets, if present, above fertile floret or florets.....29

26(25). Ligule absent.....Echinochloa

26(25). Ligule present.....27

27(26). First glume absent or minute.....28

27(26). First glume present (1/3 of the spikelet length).....Brachiaria

28(27). Lemma of upper fertile floret thin and flexible, margins flat and folded over the palea.....Digitaria

28(27). Lemma of upper fertile floret indurate, margins inrolled and clasping the palea.....Paspalum

29(25). Glumes with hooked spines.....Tragus

29(25). Glumes without hooked spines.....30

30(29). Inflorescence branches paired, verticillate, digitate, or subdigitate.....31

30(29). Inflorescence branches not paired, verticillate, digitate, or subdigitate.....34

31(30). Glumes or lemmas awned.....32

31(30). Glumes and lemmas awnless.....33

32(31). Inflorescence branch extending beyond terminal spikelet; second glume awned.....Dactyloctenium

32(31). Inflorescence branch not extending beyond terminal spikelet; second glume awnless.....Chloris

33(31). Plants stoloniferous and rhizomatous.....Cynodon

33(31). Plants caespitose.....Eleusine

34(30). Spikelets with a single perfect floret.....Bouteloua

34(30). Spikelets with numerous perfect florets.....35

35(34). Spikelets, most of them, not overlapping; panicle of bilateral primary branches.....Eragrostis

35(34). Spikelets overlapping; panicle of spicate primary unilateral branches.....Leptochloa

Polemoniaceae

Gilia

Polygalaceae

Polygala

Polygonaceae

Rumex

Portulacaceae

1. Ovary partially inferior; plants succulent.....Portulaca

1. Ovary superior; plants not succulent.....Talinum

Ranunculaceae

1. Plants vines.....Clematis

1. Plants not vines.....Anemone

Rhamnaceae

Colubrina

Condalia

Karwinskia

Ziziphus

Rubiaceae

1. Leaves whorled.....Galium

1. Leaves opposite.....2

  2. Seeds more than 1 in each cell of ovary.....Hedyotis

  2. Seed solitary in each cell of ovary.....Diodia

Rutaceae

Thamnosma

Zanthoxylum

Sapotaceae

Bumelia

Scrophulariaceae

1. Corolla with a slender spur at base.....Linaria

1. Corolla without a spur.....2

  2. Calyx segments fused more than half their length.....Agalinis

  2. Calyx segments nearly separate.....Veronica

Leucophyllum

Simaroubaceae

Castela

Solanaceae

1. Corolla over 4 cm long.....Nicotiana
1. Corolla shorter than 4 cm.....2
  2. Fruiting calyx inflated, wholly enclosing fruit.....Physalis
  2. Fruiting calyx not inflated.....3
3. Corolla yellow; plants not spiny.....Chamaesaracha
3. Corolla not yellow or if so, then plants spiny.....4
  4. Anthers yellow.....Solanum
  4. Anthers bluish.....Capsicum

Lycium

Sterculiaceae

1. Fruits with numerous pubescent processes.....Hermannia
1. Fruits without pubescent processes.....2
  2. Petals purple.....Melochia
  2. Petals yellow.....Waltheria

Tamaricaceae

Tamarix

Ulmaceae

Celtis

Urticaceae

1. Leaves opposite; stems with stinging hairs.....Urtica
1. Leaves alternate; stems without stinging hairs.....Parietaria

Verbenaceae

1. Inflorescences terminal; fruits composed of 4 one-seeded pyrenes; plants upright, decumbent, or procumbent.....Verbena
1. Inflorescences axillary; fruits not composed of 4 one-seeded pyrenes; plants prostrate.....Phyla

Aloysia

Lantana

Vitaceae

Cissus

Zygophyllaceae

Porliera

CHAPTER V

DISCUSSION

The vascular flora of the La Copita Research Area was surveyed during a two year period resulting in over 1000 collected specimens. A total of 334 species representing 228 genera and 68 families were compiled in an ecological checklist and keys were written to the families and genera of herbaceous vascular plants and to the species of woody plants. Five species, Eupatorium greggii, Linum puberulum, Macrosiphonia macrosiphon, Tecoma stans, and Waltheria indica, not recorded in Jones (1982) were collected and should be noted as occurring along the Texas Coastal Bend.

Although the La Copita Research Area occurs along a transitional area between the South Texas Plains and the Gulf Prairies and Marshes vegetational regions of Texas, it tends to support vegetation more similar to that of the South Texas Plains. As compared to the Welder Wildlife Refuge located in the Gulf Prairies and Marshes near Sinton, Texas in San Patricio County, the La Copita Research Area supports approximately 40 woody species whereas the Welder Refuge supports approximately 60 woody species (Gould, 1963). About 27 species of trees and shrubs are common to both of these areas (Table 3). Much of the herbaceous vegetation found on the La Copita Research Area can also be found on the Welder Refuge; however, the more mesic species of the Welder Refuge are not common on the La Copita Research Area. These differences and similarities are primarily due to differences in precipitation amounts and annual climatic extremes. The La Copita

Table 3. Woody species common to both the La Copita Research Area and the Welder Wildlife Refuge.

Acacia greggii	Ehretia anacua
Acacia rigidula	Eysenhaedtia texana
Acacia shaffneri	Forestiera angustifolia
Acacia smallii	Karwinskia humboldtiana
Aloysia gratissima	Lantana horrida
Baccharis texana	Lycium berlandieri
Berberis trifoliolata	Parkinsonia aculeata
Castela texana	Pithecellobium flexicaule
Celtis laevigata	Porlieria angustifolia
Celtis pallida	Prosopis glandulosa
Cissus incisa	Prosopis reptans
Colubrina texensis	Zanthoxylum fagara
Condalia hookeri	Ziziphus obtusifolia
Diospyros texana	

Research Area receives approximately 26.6 inches (67.6 centimeters) of annual precipitation while the Welder Refuge receives in excess of 30 inches (76 centimeters) with an average of 35 inches (89 centimeters) (Drawe et al., 1978). This additional moisture results in the Welder Refuge supporting more mesic habitats than the La Copita Research Area. Also, the La Copita Research Area lacks many riparian species that can be found along waterways on the Welder Refuge. Similar vegetation, mostly xerophytic, of the two areas can be accounted for by annual climatic extremes. Extended droughts along with hot, dry summer months results in the Welder Refuge supporting many xerophytic species common to the La Copita Research Area.

The vegetation of the La Copita Research Area includes an array of species, both woody and herbaceous, capable of supporting moderate livestock densities and an abundance of wildlife with proper management and land use.

REFERENCES

BARNES, V. (ed.) 1976. Geologic atlas of Texas, Laredo Sheet. Bur. Eco. Geol. The Univ. of Texas, Austin, Texas.

CORRELL, D. S. and M. C. JOHNSTON. 1970. Manual of the vascular plants of Texas. Texas Research Foundation, Renner, Texas.

DRAWE, D. L., T. W. BOX, and A. D. CHAMRAD. 1978. Plant communities of the Welder Wildlife Refuge. Contribution no. 5, Series B, Revised. Rob and Bessie Welder Wildlife Foundation, Sinton, Texas.

GOULD, F. W. 1963. Woody plants of the Rob and Bessie Welder Wildlife Refuge. Contribution no. 85, WWF. Rob and Bessie Welder Wildlife Foundation, Sinton, Texas.

GOULD, F. W. 1975. The grasses of Texas. Texas A&M Univ. Press, College Station, Texas.

GOULD, F. W. and T. W. BOX. 1965. Grasses of the Texas Coastal Bend. Texas A&M Univ. Press, College Station, Texas.

JONES, F. B. 1982. Flora of the Texas Coastal Bend. Mission Press, Corpus Christi, Texas.

JONES, F. B., C. M. ROWELL, and M. C. JOHNSTON. 1961. Flowering plants and ferns of the Texas Coastal Bend Counties. Rob and Bessie Welder Wildlife Foundation, Sinton, Texas.

MINZENMAYER, F. E. 1979. Soil survey of Jim Wells County, Texas. U.S.D.A., Government Printing Office, Washington, D.C.

NDEGWA, W. N. 1983. Vascular plant flora of Kiboka Range Research Station, Kenya. M.S. thesis, Texas A&M Univ., College Station Texas.

RADFORD, A. E., W. C. DICKISON, J. R. MASSEY, and R. C. BELL. 1974. Vascular plant systematics. Harper and Row Publ., New York.

SHELLARDS, E. H., W. S. ADKINS, and F. E. PLUMMER. 1932. The geology of Texas. Bur. Eco. Geol. vol. 1 no. 3232, Univ. of Texas,

APPENDIX

PLANT CHECKLIST OF THE LA COPITA RESEARCH AREA

Acanthaceae

Dyschoriste linearis (T. & G.) O. Ktze. - Narrowleaf dyschoriste	NPW
Ruellia nudiflora (Gray) Urban	NPW
Ruellia runyonii Tharp & Barkl. var. berlandieri Tharp & Barkl.	NPW
Ruellia runyonii Tharp & Barkl. var. runyonii	NPW
Ruellia yucatana (Leonard) Tharp & Barkl.	NPW
Siphonoglossa pilosella (Nees) Torr. - Tube tongue	NPW

Aizoaceae

Mollugo verticillata L. - Indian chickweed	IAW

Amaranthaceae

Froelichia gracilis (Hook.) Moq. - Slender snake cotton	NAW
Gomphrena nealleyi Coult. & Fish. - Nealley globe-amaranth	NPW

Amaryllidaceae

Agave americana L. - Century plant	NPW
Cooperia drummondii Herb. - Rain lily	NPW
Zephyranthes pulchella J.G. Sm. - Showy zephyranthes	NPW

Apiaceae

Ammoselinum popei T. & G. - Sand parsley	NAC
Bowlesia incana R. & P. - Rabbit lettuce	NAC
Daucus pusillus Michx. - Rattlesnake-weed	NAC
Eryngium hookeri Walp. - Eryngo	NAW
Limnosciadium pumilum (Engelm. & Gray) Math. & Const.	NAC

Apocynaceae

Macrosiphonia macrosiphon (Torr.) Heller - Rocktrumpet	NPW

Aristolochiaceae

Aristolochia longiflora Engelm. & Gray - Swan flower	NPW

Asclepiadaceae

Asclepias emoryi (Greene) Small - Milkweed	NPW
Cynanchum barbigerum (Scheele) Shinners var. breviflorum Shinners	NPW
Cynanchum unifarium (Scheele) Woods	NPW

Asteraceae

Amblyolepis setigera DC. - Huisache daisy	NAC
Ambrosia confertiflora DC. - Ragweed	NPW
Aphanostephus riddellii T. & G. - Lazy daisy	NPW
Aster spinosus Benth. - Mexican devil-weed	NPW
Aster subulatus Michx.	IPW
Baccharis texana (T. & G.) Gray	NPW
Calyptocarpus vialis Less. - Straggler daisy	NPW
Chaptalia nutans (L.) Polak var. texana (Greene) Burk. - Silverpuff	NPW
Cirsium texanum Buckl. - Texas thistle	NPW
Conyza canadensis (L.) Cronq. - Horseweed	NAW
Coreopsis basilis (Otto & Dietr.) Blake	NAW
Coreopsis tinctoria Nutt. - Golden wave	NAC
Croptilon divaricatum (Nutt.) Raf. - Scratch-daisy	NAW
Dyssodia pentachaeta (DC.) Robins - Common dogweed	NAW
Dyssodia tenuiloba (DC.) Robins var. tenuiloba - Bristleleaf dogweed	NAW
Ericameria austrotexana M.C. Johnst. - False broomweed	NPW
Eupatorium greggii Gray - Palmleaf eupatorium	NPW
Eupatorium incarnatum Walt. - Pink eupatorium	NPW
Eupatorium odoratum L. - Crucita	NPW
Eupatorium serotinum Michx.	NPW
Evax verna Raf. - Rabbit tobacco	NAC
Florestina tripteris DC.	NAW
Gaillardia pulchella Foug. - Indian blanket	NPW
Gnaphalium obtusifolium L. - Fragrant cudweed	NAW
Gnaphalium pensilvanicum Willd. - Cudweed	NAW
Gymnosperma glutinosum (Spreng.) Less.	NPW
Helenium linifolium Rydb. - Sneezeweed	NAW
Helenium microcephalum DC. - Sneezeweed	NAW
Helianthus annuus L. - Common sunflower	NAW
Heterotheca pilosa (Nutt.) Shinners - Camphorweed	NAW
Krigia occidentalis Nutt. - Dwarf dandelion	NAC
Liatris elegans (Walt.) Michx. - Pinkscale gayfeather	NPW
Lygodesmia texana (T. & G.) Greene - Skeleton plant	NPW
Machaeranthera texensis (R.C. Jackson) Shinners	NPW
Melampodium cinereum DC. - Rock daisy	NPW
Palafoxia texana DC. - Texas palafoxia	NAW
Parthenium confertum Gray	NPW
Parthenium hysterophorus L. - False ragweed	NAW
Perezia wrightii Gray	NPW
Pterocaulon virgatum (L.) DC. - Blackroot	NPW
Pyrrhopappus multicaulis DC. - False dandelion	NAC
Ratibida columnaris (Sims) D. Don - Upright prairie coneflower	NPW
Rudbeckia hirta L. - Brown-eyed Susan	NPW
Senecio ampullaceus Hook. - Ragwort	NAW
Senecio imparipinnatus Klatt. - Groundsel	NAC
Simsia calva (Engelm. & Gray) Gray - Bush sunflower	NPW
Soliva mutisii H.B.K. - Burweed	IAW
Sonchus asper (L.) Hill - Sow thistle	IAW
Thelesperma filifolium (Hook.) Gray - Green thread	NPW

Verbesina encelioides (Cav.) Gray - Cowpen daisy NAW
Verbesina virginica L. - Frostweed NPW
Xanthisma texanum DC. - Sleepy-daisy NAW
Xanthium strumarium L. - Cocklebur NAW
Xanthocephalum dracunculoides (DC.) Shinners - Broomweed NAW
Xanthocephalum sarothrae (Pursh) Shinners - Broom snakeweed NPW
Zexmania hispida (H.B.K.) Gray - Orange zexmania NPW

Berberidaceae

Berberis trifoliolata Moric. - Agarito NPC

Bignoniaceae

Tecoma stans (L.) Juss. - Esperanza NPW

Boraginaceae

Coldenia canescens DC. - Gray coldenia NPW
Ehretia anacua (Teran & Berl.) I.M. Johnst. - Anacua NPW
Heliotropium angiospermum Murr. - Taperleaf heliotrope NAW
Heliotropium procumbens Mill. - Four-spike heliotrope NAW
Heliotropium texanum I.M. Johnst. NAW
Lithospermum mirabile Small - Puccoon NPC

Brassicaceae

Descurainia pinnata (Walt.) Britt. - Tansy mustard NAC
Lepidium austrinum Small - Southern peppergrass NAC
Lepidium densiflorum Schrad. - Prairie peppergrass NAC
Lepidium lasiocarpum Nutt. - Hairypod peppergrass NAC
Lepidium virginicum L. var. virginicum - Virginia peppergrass NAC
Lesquerella lasiopcarpa (Gray) Wats. - Rough bladderpod NAC
Lesquerella lindheimeri (Gray) Wats. - Lindheimer Bladderpod NAC
Rorippa teres (Michx.) Stuckey - Yellow-cress NAC
Sibara virginica (L.) Roll. NAC

Bromeliaceae

Tillandsia recurvata L. - Ball moss NPW

Cactaceae

Echinocactus texensis Hopffer - Horse crippler NPC
Mammillaria grahamii Engelm. - Pin cushion NPC
Opuntia leptocaulis DC. - Tasajillo NPW
Opuntia lindheimeri Engelm. - Texas prickly-pear NPC

Campanulaceae

Triodanis perfoliata (L.) Nieuw. - Venus' looking-glass NAC

Celastraceae

Schaefferia cuneifolia Gray - Desert yaupon NPW

Chenopodiaceae

Chenopodium berlandieri Moq. - Pitseed goosefoot NAW

Commelinaceae

Commelina erecta L. var. angustifolia (Michx.) Fern. - Dayflower NPW
Tradescantia micrantha Torr. - Spiderwort NPW

Convolvulaceae

Convolvulus arvensis L. IPW
Convolvulus equitans Benth. NPW
Cuscuta runyonii Yunck. - Dodder NAW
Dichondra micrantha Urban - Pony-foot NPW
Evolvulus alsinoides L. - Slender evolvulus NPW
Evolvulus sericeus Sw. - Silky evolvulus NPW

Cucurbitaceae

Citrullus vulgaris Schrad. - Watermelon IAW
Ibervillea lindheimeri (Gray) Greene - Globe-berry NPW

Cyperaceae

Carex brittoniana Bailey - Britton sedge NPC
Cyperus articulatus L. - Jointed flatsedge NPW
Cyperus odoratus L. - Fragrant flatsedge NAW
Cyperus ovularis (Michx.) Torr. - Cylinder flatsedge NPW
Cyperus surinamensis Rottb. - Tropical flatsedge NPW
Cyperus uniflorus T. & H. - Oneflower flatsedge NPW
Cyperus virens Michx. - Green flatsedge NPW

Ebenaceae

Diospyros texana Scheele - Texas persimmon NPW

Ephedraceae

Ephedra antisyphilitica C.A. Mey - Clapweed NPW

Euphorbiaceae

Acalypha radians Torr. - Cardinal feather NPW
Argythamnia humilis (Engelm. & Gray) Muell. Arg. var. humilis - Wild mercury NPW
Bernardia myricaefolia (Scheele) Wats. - Brush myrtlecroton NPW
Croton capitatus Michx. var. lindheimeri (Engelm. & Gray) Muell. Arg. - Wolly croton NAW
Croton glandulosus L. var. lindheimeri Muell. Arg. - Tropic croton NAW
Croton lindheimerianus Scheele var. lindheimerianus - 3-seed croton NAW
Croton monanthogynous Michx. - One-seeded croton NAW
Euphorbia peplidion Engelm. - Low euphorb NAW
Euphorbia serpens H.B.K. - Mat euphorb NAW
Phyllanthus polygonoides Spreng. - Knotweed leafflower NPW
Tragia brevispica Engelm. & Gray - Noseburn NPW
Tragia ramosa Torr. - Stinging nettle NPW

Fabaceae

Acacia berlandieri Benth. - Guajillo NPW
Acacia greggii Gray - Catclaw NPW
Acacia rigidula Benth. - Blackbrush NPC
Acacia shaffneri (Walt.) Herm. - Twisted acacia NPW
Acacia smallii Isely - Huisache NPC
Astragalus nuttallianus A. DC. var. trichocarpus T. & G. - Milk vetch NAC
Cassia bauhinioides Gray - Two-leaved senna NPW
Cassia texana Buckl. - Texas senna NPW
Dalea nana Torr. - Dwarf dalea NPW
Dalea pogonathera Gray - Bearded dalea NPW
Desmanthus virgatus (L.) Willd. var. depressus (Willd.) B.L. Turner - Bundleflower NPW
Eysenhardtia texana Scheele - Kidney wood NPW
Galactia heterophylla Gray - Milkpea NPW
Galactia marginalis Benth. NPW
Indigofera miniata Ort. var. miniata - Scarlet pea NPC
Parkinsonia aculeata L. - Retama IPW
Pithecellobium flexicaule (Benth.) Coult. - Texas ebony NPW
Pithecellobium pallens (Benth.) Standl. - Tanaza NPW
Prosopis glandulosa Torr. - Honey mesquite NPW
Prosopis reptans Benth. var. cinerascens (Gray) Burk. - Creeping mesquite NPW
Schrankia latidens (Small) K. Schum. - Sensitive-brier NPW
Sesbania drummondii (Rydb.) Cory - Rattlebush NPW
Sesbania macrocarpa Muhl. - Coffee bean NAW
Vicia leavenworthii T. & G. - Vetch NAC
Zornia gemella (Willd.) Vog. NPW

Gentianaceae

Sabatia campestris Nutt. - Meadow pink NAW

Geraniaceae

Erodium texanum Gray - Stork's bill	NPC
Geranium texanum (Trel.) Heller - Texas geranium	NAC

Hydrophyllaceae

Nama hispidum Gray - Sandbell	NAW
Nama jamaicense L.	NAW

Hypericaceae

Hypericum pauciflorum H.B.K. - St. John's-wort	NPW

Iridaceae

Eustylis purpurea (Herb.) Engelm. & Gray - Purple pleat-leaf	NPW
Sisyrinchium minus Engelm. & Gray - Blue-eyed grass	NAC
Sisyrinchium pruinosum Bickn. - Blue-eyed grass	NPC

Krameriaceae

Krameria lanceolata Torr. - Prairiebur	NPW

Lamiaceae

Hedeoma drummondii Benth. - Mock pennyroyal	NPW
Monarda punctata L. var. coryi (McCl. & Epl.) Cory - Spotted beebalm	NAC
Salvia ballotaeflora Benth. - Shrubby blue sage	NPW
Salvia texana (Scheele) Torr.	NPC
Scutellaria drummondii Benth. - Scullcap	NPC
Stachys crenata Raf. - Hedge nettle	NAC

Liliaceae

Allium drummondii Regel. - Wild onion	NPC
Nothoscordum bivalve (L.) Britt. - Crow-poison	NPC
Schoenocaulon drummondii Gray - Green lily	NPW
Yucca treculeana Carr.	NPC

Linaceae

Linum puberulum (Engelm.) Heller - Plains flax	NAW
Linum rigidum Pursh var. filifolium Shinners - Stiffstem flax	NPW

Malpighiaceae

Thryallis angustifolia (Benth.) O. Ktze.	NPW

Malvaceae

Abutilon incanum (Link.) Sweet - Indian mallow	NPW
Abutilon lignosum (Cav.) D. Don	NPW
Abutilon wrightii Gray - Indian mallow	NPW
Malvastrum coromandelianum (L.) Gke.	NPW
Sida ciliaris L. var. mexicana (Moric.) Shinners - Bracted sida	NPW
Sida physocalyx Gray	NPW
Sida spinosa L. - Prickly mallow	NAW
Sphaeralcea pedatifida Gray - Globe mallow	NPW

Marsileaceae

Marsilea macropoda Engelm. ex A. Br. - Water clover	NPW

Menispermaceae

Cocculus diversifolius DC. - Orientvine	NPW

Nyctaginaceae

Acleisanthes longiflora Gray - Angel trumpet	NPW
Acleisanthes obtusa (Choisy) Standl. - Vine four-o'clock	NPW
Allionia incarnata L. - Trailing allionia	NPW

Oleaceae

Forestiera angustifolia Torr. - Tanglewood	NPW
Menodora heterophylla Moric.	NPW

Onagraceae

Calylophus hartwegii (Benth.) Raven	NPW
Gaura brachycarpa Small	NAC
Gaura mckelveyae (Munz) Raven & Gregory	NPW
Oenothera kunthiana (Spach) Munz	NPW
Oenothera laciniata Hill - Cut-leaved evening primrose	NPC
Oenothera speciosa Nutt. - Evening primrose	NPW

Orobanchaceae

Orobanche multiflora Nutt. - Broomrape	NPW

Oxalidaceae

Oxalis corniculata L. - Woodsorrel	NAC
Oxalis dichondraefolia Gray - Agrito	NPW

Papaveraceae

Argemone sanguinea Greene - Red poppy	NAW

Passifloraceae

Passiflora foetida L. var. gossypifolia (Hamilt.) Mast. NAW
Passiflora tenuiloba Engelm. - Spreadlobe passiflora NPW

Phytolaccaceae

Rivina humilis L. - Pigeon-berry NPW

Plantaginaceae

Plantago hookeriana Fisch. & Mey. - Tallow-weed NAC
Plantago virginica L. - Pale-seed plantain NAC

Poaceae

Agrostis hiemalis (Walt.) B.S.P. - Winter bentgrass NPC
Aristida longespica Poir. var. geniculata (Raf.) Fern. - Slimspike 3-awn NAW
Aristida purpurea Nutt. - Purple 3-awn NPW
Aristida roemeriana Scheele - Roemer 3-awn NPW
Aristida wrightii Nash. - Wright's threeawn NPW
Bothriochloa barbinodis (Lag.) Herter var. barbinodis - Cane bluestem NPW
Bothriochloa ischaemum (L.) Keng var. songarica (Rupr.) Celerier & Harlan - K.R. bluestem IPW
Bothriochloa saccharoides (Swartz) Rydb. var. torreyana (Steud.) Gould - Silver bluestem NPW
Bouteloua curtipendula (Michx.) Torr. - Sideoats grama NPW
Bouteloua hirsuta Lag. - Hairy grama NPW
Bouteloua repens (H.B.K.) Scribn. & Merr. - Slender grama NPW
Bouteloua rigidiseta (Steud.) Hitchc.- Texas grama NPW
Bouteloua trifida Thurb. - Red grama NPW
Brachiaria ciliatissima (Buckl.) Chase - Fringed signalgrass NPW
Brachiaria platyphylla (Griseb.) Nash - Broadleaf signalgrass NAW
Brachiaria texanum (Buckl.) S.T. Blake - Coloradograss NAW
Bromus unioloides (Willd.) H.B.K. - Rescuegrass IAC
Buchloe dactyloides (Nutt.) Engelm. - Buffalograss NPW
Cenchrus ciliaris L. - Buffelgrass IPW
Cenchrus incertus M.A. Curtis - Common grassbur NPW
Chloris ciliata Swartz - Fringed chloris NPW
Chloris cucullata Bisch. - Hooded windmillgrass NPW
Chloris divaricata R. Br. IPW
Chloris pluriflora (Fourn.) Clayton - Multiflowered false-rhodesgrass NPW
Chloris subdolichostachya Muller - Shortspike windmillgrass NPW
Cynodon dactylon (L.) Pers. - Bermudagrass IPW
Dactyloctenium aegyptium (L.) Beauv. - Durban crowfootgrass IAW
Dichanthelium oligosanthes (Schult.) Gould var. scribneranium (Nash) Gould- Scribner panicum NPW
Dichanthium annulatum Stapf - Kleberg bluestem IPW
Digitaria californica (Benth.) Henr. - Arizona cottontop NPW

Digitaria ciliaris (Retz.) Koel. - Southern crabgrass IAW
Digitaria insularis (L.) Mez ex Eckmann - Sourgrass NPW
Digitaria patens (Swallen) Henr. - Texas cottontop NPW
Echinochloa colona (L.) Link - Junglerice IAW
Eleusine indica (L.) Gaertn. - Goosegrass IAW
Eragrostis curtipedicillata Buckl. - Gummy lovegrass NPW
Eragrostis intermedia Hitchc. - Plains lovegrass NPW
Eragrostis lugens Nees - Mourning lovegrass NPW
Eragrostis secundiflora Presl - Red lovegrass NPW
Eragrostis sessilispica Buckl. - Tumble lovegrass NPW
Erioneuron pilosum (Buckl.) Nash - Hairy tridens NPW
Heteropogon contortus (L.) Beauv. ex R. & S. - Tanglehead NPW
Hilaria belangeri (Steud.) Nash - Common curlymesquite NPW
Leptochloa dubia (H.B.K.) Nees - Green sprangletop NPW
Leptochloa nealleyi Vasey - Nealley sprangletop NAW
Leptochloa virgata (L.) Beauv. - Tropic sprangletop NPW
Leptoloma cognatum (Schult.) Chase var. arenicola (Swallen) Gould - Sand witchgrass NPW
Leptoloma cognatum (Schult.) Chase var. cognatum - Fall witchgrass NPW
Limnodia arkansana (Nutt.) L.H. Dewey - Ozarkgrass NAC
Lolium perenne L. - Ryegrass IPC
Neeragrostis reptans (Michx.) Nicora - Creeping lovegrass NAW
Panicum capillarioides Vasey - Southern witchgrass NPW
Panicum coloratum L. - Kleingrass IPW
Panicum hallii Vasey var. filipes (Scribn.) Waller - Filly panicum NPW
Panicum hallii Vasey var. hallii - Halls panicum NPW
Panicum hians Ell. - Gaping panicum NPW
Pappophorum bicolor Fourn. - Pink pappusgrass NPW
Pappophorum vaginatum Buckl. - Whiplash pappusgrass NPW
Paspalum pubiflorum Rupr. & Fourn. var. pubiflorum - Hairyseed paspalum NPW
Paspalum setaceum Michx. var. stramineum (Nash) D. Banks - Thin paspalum NPW
Setaria firmula (Hitchc. & Chase) Pilger - Knotgrass NPW
Setaria geniculata (Lam.) Beauv. - Knotroot bristlegrass NPW
Setaria leucopila (Scribn. & Merr.) K. Schum. - Plains bristlegrass NPW
Setaria macrostachya H.B.K. NPW
Setaria ramiseta (Scribn.) Pilger NPW
Setaria texana W.H.P. Emery - Texas bristlegrass NPW
Sorghum halepense (L.) Pers. - Johnsongrass IPW
Sporobolus cryptandrus (Torr.) A. Gray - Sand dropseed NPW
Stipa leucotricha Trin. & Rupr. - Texas wintergrass NPC
Tragus berteronianus Schult. - Spike burgrass IAW
Tridens albescens (Vasey) Woot. & Standl. - White tridens NPW
Tridens eragrostoides (Vasey & Scribn.) Nash - Lovegrass tridens NPW
Tridens muticus (Torr.) Nash var. muticus - Slim tridens NPW
Tridens texanus (S. Wats.) Nash - Texas tridens NPW
Trisetum interruptum Buckl. - Prairie trisetum NAC

Polemoniaceae

Gilia rigidula Benth. NAW

Polygalaceae

Polygala alba Nutt. var. gnaphalioides (Nutt.) Gray - Milkwort NPW

Polygonaceae

Rumex pulcher L. - Fiddle dock IPC

Portulacaceae

Portulaca mundula I.M. Johnst. - Chisme NAW
Talinum angustissimum (Gray) Woot. & Standl. - Flame flower NPW

Ranunculaceae

Anemone heterophylla Nutt. NPC
Clematis drummondii T. & G. - Old man's beard NPW

Rhamnaceae

Colubrina texensis (T. & G.) Gray - Hog plum NPC
Condalia hookeri M.C. Johnst. - Brasil NPW
Karwinskia humboldtiana (R. & S.) Zucc. - Coyotillo NPW
Ziziphus obtusifolia (T. & G.) Gray - Lotebush NPW

Rubiaceae

Diodia teres Walt. - Rough buttonweed NAW
Diodia tricocca T. & G. - Prairie buttonweed NAW
Galium aparine L. - Catchweed bedstraw NAC
Galium virgatum Nutt. - Southwest bedstraw NAC
Hedyotis nigricans (Lam.) Fosb. - Bluet NPW

Rutaceae

Thamnosma texana (Gray) Torr. - Dutchman's breeches NPW
Zanthoxylum fagara (L.) Sarg. - Lime pricklyash NPC

Sapotaceae

Bumelia celastrina H.B.K. - Coma NPW

Scrophulariaceae

Agalinis strictifolia (Benth.) Penn. - Gerardia NAW
Leucophyllum frutescens (Berl.) I.M. Johnst. - Ceniza, Purple sage NPC
Linaria texana Scheele. - Texas toad-flax NAC
Veronica peregrina L. - Purslane speedwell NAC

Simaroubaceae

Castela texana (T. & G.) Rose - Amargosa, Allthorn, Goatbush NPW

Solanaceae

Capsicum annuum L. var. minus (Fing.) Shinners - Cayenne pepper	NAW
Chamaesaracha sordida (Dun.) Gray - False nightshade	NPW
Lycium berlandieri Dun. var. berlandieri - Wolfberry	NPW
Nicotiana repanda Willd. - Wild tobacco	NAC
Physalis viscosa L. var. cinerascens (Dun.) Waterfall - Ground cherry	NPW
Solanum americanum Mill. - American nightshade	NAW
Solanum elaeagnifolium Cav. - Silverleaf nightshade	NPW
Solanum triquetrum Cav. - Texas nightshade	NPW

Sterculiaceae

Hermannia texana Gray - Texas hermannia	NPW
Melochia pyramidata L. - Broomwood	NPW
Waltheria indica L.	NPW

Tamaricaceae

Tamarix aphylla (L.) Karst. - Salt cedar	IPW

Ulmaceae

Celtis laevigata Willd. - Texas sugarberry	NPC
Celtis pallida Torr. - Spiny hackberry; Granjeno	NPC

Urticaceae

Parietaria pensylvanica Muhl. - Hammerwort	NAW
Urtica chamaedryoides Pursh - Nettle	NAC

Verbenaceae

Aloysia gratissima (Gill. & Hook.) Troncoso - Whitebrush	NPW
Lantana horrida H.B.K. - Texas lantana	NPW
Lantana macropoda Torr. - Desert lantana	NPW
Phyla incisa Small - Frog fruit	NPW
Verbena canescens H.B.K. - Gray vervain	NPW
Verbena halei Small - Texas vervain	NPW
Verbena plicata Greene - Fanleaf vervain	NPW
Verbena quadrangulata Heller - Beaked vervain	NAW

Vitaceae

Cissus incisa (Nutt.) Des Moul. - Possum grape	NPW

Zygophyllaceae

Porliera angustifolia (Engelm.) Gray - Guayacan	NPC

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