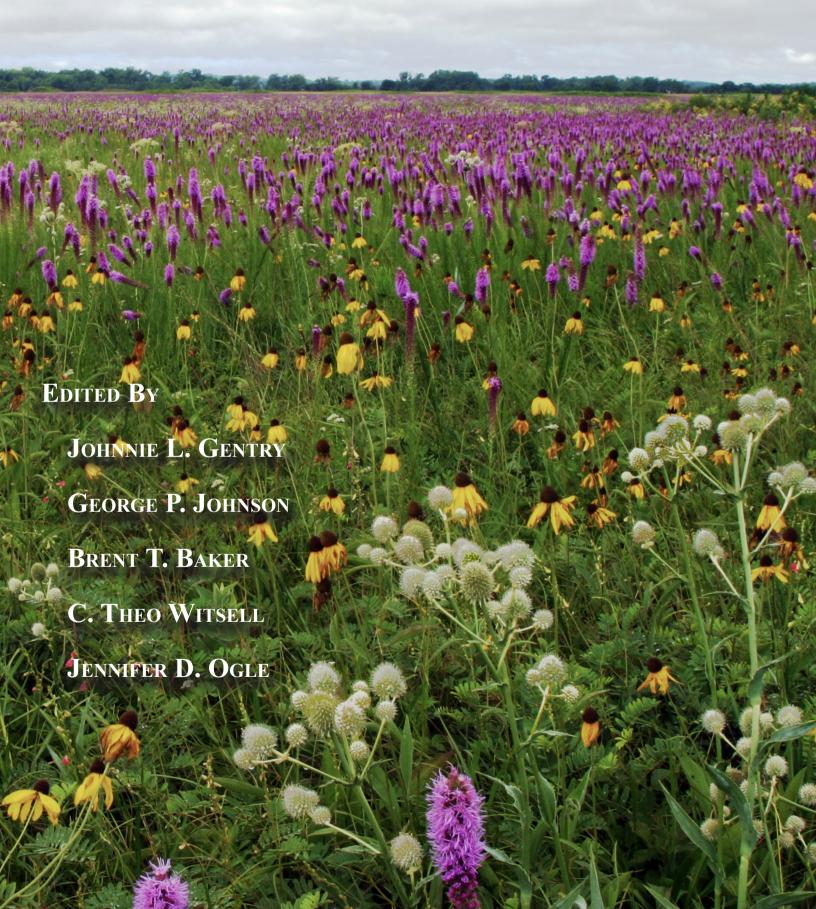
ATLAS OF THE VASCULAR PLANTS OF ARKANSAS





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A Publication of the Arkansas Vascular Flora Project

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GENERAL INTRODUCTION

The Atlas of the Vascular Plants of Arkansas is the second publication of the Arkansas Vascular Flora Committee (AVFC); the first was a Checklist of the Vascular Plants of Arkansas (AVFC 2006). The AVFC was organized on September 17, 1999, to provide direction and coordination for the Arkansas Vascular Flora Project. The AVFC includes personnel from many of the state's institutions of higher education, a state agency, and private industry. The ultimate goal of the AVFC is to publish a definitive treatment of the vascular flora of Arkansas. The Atlas is the second step toward accomplishing that goal and is intended to provide the most up-to-date knowledge of the geographic distribution of native and naturalized vascular plants in the state.

The *Atlas* contains a general history of botanical exploration and investigations in Arkansas, as well as an explanation of the geology and natural divisions of the state and how each relates to the state's vegetation. Also included is a summary of Arkansas' known flora.

This introductory material is followed by the main body of the Atlas, which consists of county-level distribution maps of the 2,892 native and naturalized taxa (species, subspecies, varieties, and a few widely recognized hybrids) of vascular plants known to occur outside of cultivation in Arkansas, representing 2,715 species, 936 genera, and 187 families. The main body of the Atlas is organized into four major sections: Pteridophytes (ferns and fern allies), Gymnosperms (conifers), Angiosperm Dicots, and Angiosperm Monocots. Within each of these sections, the maps are further arranged hierarchically and alphabetically by the scientific name of the family, genus, species, subspecies, variety, and a few selected putative hybrids (denoted with a multiplication symbol [×]). To aid the user, each map page has a heading that consists of the family and genus names corresponding to the top, left map of each page.

Each map is presented with county dots representing one or more voucher specimens deposited at an herbarium and authenticated by a member of the AVFC or by botanists at herbaria outside of Arkansas. In a few instances, taxa listed in the *Atlas* are supported by literature citations that specifically reference a voucher specimen and the herbarium at which it is deposited. There are numerous reports, not included in the maps, of additional taxa for the state, as well as a multitude of additional county reports for included taxa, for which a voucher specimen either does not exist or cannot be located for confirmation. Additionally, the absence of a dot in a county does not imply the absence of that particular taxon but merely that a voucher specimen has not been located or confirmed at any of the reviewed herbaria. It is the hope of the AVFC

that some of these distribution gaps will continue to be filled as botanists are spurred by this new *Atlas* to seek out and collect appropriate voucher specimens. The AVFC requests that botanists or herbarium curators send appropriate data (taxon name, collector name, collection number, and herbarium of deposit) on such county record voucher specimens to the coordinating office of the Arkansas Vascular Flora Project for inclusion in future updates of the *Atlas* and in an online version that will be available within a couple years.

Below each map, the family name, the taxon's scientific name, and the authority are listed. The standard forms and abbreviations for the authorities of scientific names follow those recommended by Brummitt and Powell (1992), when available.

Common names for each taxon are listed below the scientific names. An effort has been made to provide the most common vernacular names within Arkansas or the region. In many cases, more than one name is listed for a taxon; however, the lists are by no means comprehensive. An effort has also been made to somewhat standardize the use and application of common names for Arkansas plants, roughly following the guidelines set forth by Kartesz and Thieret (1991). It should be noted that multiple and sometimes unrelated taxa may share the same common name.

To the right of some maps is a numerical code indicating special status for that taxon. Special status can include the following:

- 1 introduced (non-native) to Arkansas;
- 2 endemic to Arkansas;
- 3 non-native invasive; and/or
- 4 of special conservation concern in Arkansas.

All taxa without a "1" designation are herein considered native to Arkansas; in other words, these plants are believed to have occurred in the state prior to European settlement. Taxa with a "1" designation are considered introduced, or non-native, to Arkansas, regardless of continent, country, or state(s) of origin. Some such plants have been naturalized as a direct result of cultivation, such as the planting of Japanese honeysuckle (*Lonicera japonica*) for ornamental purposes. Others have been passively or accidentally introduced, often as a result of human alteration of the environment; this has sometimes been followed by naturalization, as in the case of Japanese stilt grass (*Microstegium vimineum*).

The designation of plants as native to Arkansas is based on the best available data and information reviewed while researching and preparing the *Atlas*. There

are, however, a number of taxa for which data are insufficient to make a definitive call on native status within the state—or even, occasionally, within the country. One such example is saltbush (Baccharis halimifolia), also called groundsel-tree or sea-myrtle. Saltbush, which tolerates brackish water, is native to the Atlantic and Gulf Coastal Plain of the United States, primarily to wet habitats such as marshes and stream banks. In the 1930s (the dates of the oldest Arkansas herbarium specimens), saltbush was known in only a few extreme southern counties of Arkansas, often in association with brine and disturbances near oil wells, which had only been in place since the early 1920s. The species has subsequently expanded its range northward, often following avenues of disturbance such as highway and railway ditches. It is now frequently encountered throughout the southern two-thirds of the state, and scattered occurrences have been documented in the Ozark Plateaus. Saltbush very well may have naturally occurred in marshes or along rivers in the Coastal Plain of extreme southern Arkansas, but it is just as possible that it did not spread to the state until the advent of the Arkansas oil industry, initially occupying the brackish waters in disturbed areas around wells and then spreading to semi-natural and natural areas from there. Saltbush is given the benefit of the doubt in the Atlas and is assumed to be native to extreme southern Arkansas. This and other ambiguously native taxa are not explicitly indicated as such in the Atlas and may currently be treated as either native or introduced by the AVFC. Further research may help elucidate their true status, but a definitive answer will likely not be forthcoming for some taxa.

It should be noted that in most cases, introduced taxa have been included in the Atlas—and, therefore, formally recognized as members of the Arkansas floraonly if they are naturalized, which we somewhat simply define as "spontaneously reproducing without human assistance." Although it is not strictly followed in the present work, Nesom (2000) provided a more detailed definition that includes the additional qualifier that such taxa not only reproduce without human assistance but also "[maintain] viable populations from year to year (more than just one or a few seasons), and [disperse] without deliberate human assistance beyond the population or populations of original establishment." A few taxa that have been included in the Atlas might be better classified as "waifs" or "persisting" following Nesom's (2000) definition. Demonstrably "cultivated" taxa have not been included and are not considered members of the Arkansas flora.

The eleven taxa with a special status designation of "2" are those that are currently known to occur only within the borders of Arkansas (see also Appendix II for a list of Arkansas endemic taxa). A few of these are

known from border counties and even from localities very near the state line; thus, they may eventually be found in neighboring states.

A special status designation of "3" indicates that the taxon is both non-native and considered invasive to the point of ecological and/or economic concern. Although Arkansas does not have an officially recognized invasivespecies list that ranks the most problematic or potentially problematic plants in the state, various federal, regional, and state lists were consulted by the AVFC in order to establish a working list that was originally presented in the Checklist. Many of the "invasive" designations in the Atlas are based on that list, and they are applied only to taxa that are non-native to North America. It is important to note, however, that some native taxa, such as eastern red-cedar (Juniperus virginiana var. virginiana), can be quite invasive under certain circumstances, often with ecological consequences similar to those of some nonnative invasive plants (see discussion on page 25).

A special status designation of "4" indicates that a taxon is of conservation concern at the state and/or global level on the basis of its rarity or restricted range, as designated by the Arkansas Natural Heritage Commission (see Appendix VI for a consolidated list of Arkansas vascular plant taxa of conservation concern).

Classification and nomenclature in the *Atlas* generally follow published treatments in *Flora of North America North of Mexico* (Flora of North America Editorial Committee 1993+) and recent floras of adjacent states (e.g., Diggs et al. 1999, 2006; Yatskievych 1999, 2006) and regions (e.g., Weakley 2008), as well as national electronic checklists and databases (e.g., Kartesz 2009; PLANTS Database [USDA 2008]; Tropicos 2008) but also reflect more recently published and scientifically sound taxonomic and nomenclatural changes.

Results of phylogenetic analyses using molecular techniques have led to the realignment of many once established taxonomic groups. The AVFC has accepted a number of these recent realignments for the Atlas; some differ significantly from the traditional alignments accepted by Smith (1988, 1994). A few of the most notable changes since Smith are as follows. Many members of the traditional Polypodiaceae have been segregated into the families Aspleniaceae, Blechnaceae, Dennstaedtiaceae, Dryopteridaceae (of which some members have been further divided into Lomariopsidaceae, Onocleaceae, and Woodsiaceae), Pteridaceae, and Thelypteridaceae. Within the Asteraceae, all Arkansas members of the genus Aster are segregated into four additional genera: Doellingeria, Eurybia, Ionactis, and Symphyotrichum. The genus Aster, being primarily a genus of the Old World in its strictest circumscription, is no longer recognized as a member of the state flora. Additionally, several species formerly placed within the genus Senecio are now treated in Packera, while some species formerly placed within the genus Eupatorium are segregated into four additional genera: Ageratina, Conoclinium, Eutrochium, and Fleischmannia. The members of the traditional families Aceraceae and Hippocastanaceae are now treated within Sapindaceae. Hydrocotyle has been transferred from Apiaceae to Araliaceae. The traditional Asclepiadaceae is now being treated in Apocynaceae. Polypremum is now recognized in Tetrachondraceae; thus, Buddlejaceae is now excluded from the Arkansas flora. Some members of Caprifoliaceae have now been placed in Adoxaceae. The genera Cleome and Polanisia, traditionally treated in Capparaceae, are now segregated into Cleomaceae. The genera Leptopus (Andrachne) and Phyllanthus, traditionally treated in Euphorbiaceae, are now separated into Phyllanthaceae. Fumariaceae is now treated within Papaveraceae. Hydrophyllaceae is now treated within Boraginaceae, with the exception of Hydrolea, now treated in Hydroleaceae. Leitneria is now treated as a member of Simaroubaceae. Within Polygonaceae, many members of the genus Polygonum are now segregated into the genera Fallopia and Persicaria. Some members of Primulaceae are now treated in Myrsinaceae and Theophrastaceae. Some members of Saxifragaceae are now separated into four additional families: Grossulariaceae, Hydrangeaceae, Iteaceae, and Penthoraceae. Many members of the traditionally transcribed Scrophulariaceae are now segregated into Linderniaceae, Orobanchaceae, Phrymaceae, and Plantaginaceae. The families Sterculiaceae and Tiliaceae are now treated within Malvaceae. The genus Celtis, traditionally treated within Ulmaceae, is now treated within Cannabaceae. Some members of Liliaceae and Amaryllidaceae are now classified within 13 additional families: Agavaceae, Alliaceae, Asparagaceae, Colchicaceae, Hemerocallidaceae, Hyacinthaceae, Hypoxidaceae, Melanthiaceae. Nartheciaceae. Ruscaceae, Smilacaceae, Themidaceae, and Trilliaceae. Lemnaceae is now treated within Araceae. Within Poaceae, 12 additional generic names are recognized: Bothriochloa, Coelorachis, Dichanthelium, Luziola, Pascopyrum, Phanopyrum, Piptochaetium, Saccharum, Schedonorus, Schizachyrium, Steinchisma, and Urochloa. Sparganiaceae is now treated within Typhaceae.

Nomenclatural and family alignment changes are continually occurring as new research is conducted and new literature is published. This *Atlas* represents a mere snapshot in time and the most prudent judgment on the part of the editors with regard to recognized nomenclature and family alignments. Changes were incorporated until a certain stage of the compiling and editing process. Subsequent updates and future publications will certainly reflect additional changes.

In some cases, infraspecific taxa that are recognized by some botanists within certain species have been reported for Arkansas. However, because of inconsistencies in their recognition or inadequate understanding of their delimitations in the state, such infraspecific taxa are not currently recognized in this treatment. Perhaps, with more research and a more detailed review of Arkansas specimens, some of these infraspecific taxa may be added to the state flora list in the future.

Additionally, because of uncertainty about the exact distributions within Arkansas of some other, recognized infraspecific taxa of certain species, it was necessary to combine such taxa for mapping purposes. Complete scientific names, common names, and status codes for the infraspecific taxa of the combined maps are provided in Appendix I.

In the taxonomically challenging and perplexing genus *Rubus*, additional maps are required for subgenus *Rubus* sections *Arguti* (high-bush blackberries) and *Flagellares* (dewberries). To aid in the identification of these brambles, it is necessary to make proper collections of both floricane and primocane from the same rootstock (Bailey 1932, 1941). Although at least usually identifiable to section, because many of our *Rubus* specimens do not represent the aforementioned collection method, they are, unfortunately, not identifiable to species. In order to at least partially represent the geographic distribution of these Rubi within Arkansas, it is necessary to include two additional maps based on those collections only identifiable to section. These section maps can be found following the *Rubus* species maps.

Following the appendix of combined infraspecific taxa are a list of Arkansas endemic taxa (Appendix II) and an index of all vascular plant families treated in this *Atlas*, along with their common names (Appendix III). Appendix IV is an annotated list of additional taxa that are reported for the state by various sources but for which voucher specimens have yet to be located and/or reviewed for confirmation. Appendix V consists of an annotated list of taxa that have either been erroneously attributed to Arkansas or are not currently recognized as valid taxa. Appendix VI consists of a list of Arkansas vascular plants of conservation concern as designated by the Arkansas Natural Heritage Commission.

The appendices are followed by a complete list of literature cited or otherwise referenced in the *Atlas* and a full index. The index includes accepted scientific names and common names for all families and taxa, as well as synonyms used by Smith (1988, 1994) or in the *Checklist* (AVFC 2006), with direction as to the currently accepted name. However, given the more limited scope of the *Atlas*, complete synonymy is not provided. Smith (1988) and other state and regional manuals and databases should be consulted for more complete synonymy.

The *Checklist* and *Atlas* serve as a foundation for the planned definitive treatment of Arkansas' vascular flora, the *Manual of the Vascular Plants of Arkansas*. The

Manual will include keys to plant families, genera, and species; morphological descriptions; habitat information; geographic distribution maps; pertinent synonymy; and illustrations for the nearly 2,900 Arkansas vascular plant taxa, including color photographs of about 250 species. In addition, the Manual will include a comprehensive introduction to the natural divisions, geology, soils, climate, vegetation, and botanical history of Arkansas. Species status (native and introduced, invasive, special

concern, endemic, and poisonous) will also be presented.

The AVFC actively solicits information concerning additions, deletions, or corrections to the *Atlas*, as well as general comments about the publication. Send comments to Johnnie L. Gentry at the coordinating office of the Arkansas Vascular Flora Project. Contact information is available on the Flora Project's website (www. uark.edu/~arkflora).

HISTORY OF BOTANICAL EXPLORATION IN ARKANSAS

By Gary E. Tucker

Arkansas has six major river systems: the Arkansas, Mississippi, Ouachita (including the Saline), Red, St. Francis, and White. Each system has numerous tributaries, some of which are quite large. From the beginning of historical times, many of these larger streams were navigable, and they served as roads for the early explorers of our region. Hernando de Soto (ca. 1500-1542) is believed to have been the first European explorer to reach Arkansas. His exact route is unknown, and often contested, but de Soto and approximately 400 Spanish troops apparently reached the Mississippi River at a site near present-day Memphis, Tennessee, in the spring of 1541. The expedition crossed the river and continued its travels westward into parts of the present states of Arkansas, Oklahoma, and Texas, exploring northeastern Arkansas, the Arkansas River and Arkansas River Valley, the Caddo River, and the area of present-day Hot Springs. De Soto is believed to have died in May 1542 near the Mississippi River in southeastern Arkansas.

Spanish conquistadors were followed, well over a century later, by French explorers in the Mississippi River Valley searching for minerals and furs. Early explorers established settlements along the Mississippi River at the confluence of large tributaries, including the Arkansas River. Jacques Marquette (1637-1675) and Louis Joliet (1645-1700) reached the mouth of the Arkansas River in the fall of 1673, and Henri de Tonti (1649-1704) established Arkansas Post, known as "Poste de Arkansea," a trading post at the Quapaw village of Osotouy, in 1686. That early settlement near the confluence of the White and Arkansas rivers was the first semi-permanent non-Native American settlement in the lower Mississippi River Valley. Jean-Baptiste Bénard de La Harpe (1683-1765), after stopping at Arkansas Post in February 1722, was among the first Europeans to ascend and explore the Arkansas River, founding a trading post near "La Petite Roche," the site of present-day Little Rock. Arkansas Post played an important role in the long struggle between France, Spain, and England over which country would control the interior of the North American continent.

The Spanish government took control of Louisiana, which at the time included the area of present-day Arkansas, from the French in 1762 with the Treaty of Fontainebleau. The French regained Louisiana in 1800 with the Treaty of San Ildefonso. The United States acquired Arkansas Post as a part of the Louisiana Purchase in 1803. Because Arkansas Post was a thriving port on the Arkansas River and the largest city in the region, it was selected as the first capital of Arkansas Territory in 1819.

By the time the territorial capital was established at Arkansas Post, explorers had entered other areas of what is now Arkansas. Thomas Jefferson, wanting to know more about the lands acquired through the Louisiana Purchase, encouraged explorations throughout the former Louisiana Territory. William Dunbar (1749–1810) and George Hunter (1755–1823) ascended the Red River and the "Washita" (Ouachita) River and explored the area of "the hot springs" in late 1804 and early 1805. Thomas Freeman (died 1821) and Peter Custis (1781–1842), the first trained naturalist appointed to a United States government exploring party, led an additional expedition up the Red River in 1806. Both expeditions made notes on the plants, habitats, and geologic features that were observed, which serve as the earliest botanical accounts for the state.

Some of the bounty lands awarded for military service in the War of 1812 were located in Arkansas, and that brought settlers from eastern states and a need for surveyed lands. The Government Land Office surveys initiated in 1815 for the lands of the Louisiana Purchase opened the territory for more widespread population growth and development. Arkansas Territory existed from July 1819 until June 1836, when Arkansas became the 25th state. The establishment of territorial government may have served as a stimulus for visits by a number of talented observers of natural history.

Henry Rowe Schoolcraft (1793–1864) was a geologist who visited the Ozark region of the Missouri and Arkansas territories in 1818–1819. In his *Journal of a Tour into the Interior of Missouri and Arkansaw* (1821), he wrote excellent descriptive accounts of the landscape, including some of the earliest descriptions of the prairies of the White River country of the Ozark Plateaus.

Thomas Nuttall (1786–1859) came to Arkansas Territory at approximately the same time as Schoolcraft. Nuttall was an Englishman who traveled up the Arkansas River from Arkansas Post to eastern Oklahoma in 1818–1819. His A Journal of Travels into the Arkansa Territory during the Year 1819, with Occasional Observations on the Manners of the Aborigines (1821) provides great insight into the vegetation of the area prior to extensive European settlement. One of the first trained botanists to visit the region, Nuttall described many species new to science from what is now Arkansas. Many of the plants he lists for the Arkansas Territory (Nuttall 1835) were observed or collected in the present state of the same name.

In 1820, Major Stephen H. Long (1784–1864) was commissioned to explore the West in search of headwaters of the Red and Arkansas rivers. The botanist Edwin James (1797–1861) was a member of that expedition, which ended without meeting its objectives, though it greatly increased knowledge of the geography of the West. James and other members of that expedition returned from the West through Oklahoma, entered Arkansas Territory at Fort Smith, and continued to Hot Springs. James kept a detailed journal of the plants and habitats they encountered on their trek, increasing our botanical knowledge of

Arkansas at the time of early European settlement (James 1823). Near Hot Springs, James and his traveling companions picked up the Southwest Trail for the final leg of their trip to Cape Girardeau, Missouri. The Southwest Trail stretched from Illinois to Texas, with the Arkansas portion closely following the geologic fall line along an old Native American trail that ran from Randolph County south to modern-day Searcy and on to Little Rock, Benton, Old Washington, and Fulton on the Red River.

The English geologist George William Featherstonhaugh (pronounced "Fanshaw") (1780–1866) made his way through Arkansas in 1835 along the Military Road, which generally followed the path of the Southwest Trail. He made a side trip to visit Magnet Cove and Hot Springs, where he made observations on relationships between vegetation and rock types.

A resident botanist and physician of St. Louis, George Engelmann (1809–1884) played an important role in the layout and development of the Missouri Botanical Garden at St. Louis. Engelmann visited and made plant collections in central Arkansas, including Hot Springs, during 1835–1837.

Another St. Louis botanist of approximately the same period who had ties to Arkansas was the Prussian botanist Augustus Fendler (1813–1883). Having first moved to St. Louis in 1839, Fendler moved between Missouri and other areas to the south and southwest numerous times in the following years. He made a significant discovery at Camden in 1850 with his collection of the rare silky-camellia (*Stewartia malacodendron*).

By the time of Arkansas statehood in 1836, its infrastructure included several well-traveled roads. The most important was the previously discussed Military Road (or Southwest Trail) used in movements of military personnel. Other well-used routes during the territorial period included roads extending from Memphis to Little Rock, from Little Rock to Fort Smith, from present-day Chicot County to Camden to Washington, and from Jackson, near present-day Imboden, to Fayetteville to Fort Smith. The years leading up to the Civil War and then the period of Reconstruction brought prolonged difficulties to Arkansas and were a period of few improvements in infrastructure. A train ride across the generally swampy landscape from Little Rock to Memphis in 1862 averaged 32 hours for a distance of about 140 miles. Rail lines from St. Louis to Texarkana and from Little Rock to Fort Smith were completed by 1874, but most travel at that time was still by horseback or stagecoach.

By the time of the Civil War, many explorers from outside Arkansas had visited the state. With the exception of Thomas Nuttall and Edwin James, however, few of those visitors were trained botanists. Moreover, almost none of the numerous early expeditions focused primarily or even secondarily on accurate descriptive accounts of vegetation or plant species.

Arkansas Industrial University (now the University

of Arkansas) was established at Fayetteville in 1871. In 1875, Francis LeRoy Harvey (1850-1900) came from Iowa to join the Natural Sciences faculty. He established the herbarium at the university in 1875, and his specimen labels provide ample evidence of his many visits to numerous regions of the state. University faculty members traveled on a pass from the railroad, which Harvey used to reach areas far from Fayetteville. He published widely in the recognized scientific journals of his day and maintained active correspondence with many of the country's leading botanists, including Asa Gray at Harvard University. Harvey remained at Fayetteville until 1885, when the state legislature removed all faculty members from the institution. After leaving, he moved to Maine and worked at what is now the University of Maine at Orono, where he served as an entomologist until his death at the age of 50. The University of Arkansas awarded its first Ph.D. to Harvey in 1890.

Although Harvey made extensive collections and published numerous papers, he did not attempt a checklist of the entire flora of the state. The earliest checklist of Arkansas plant species is the 1860 work of government scientist Leo Lesquereux (1806–1889), who visited parts of the Ozark region in the winter of 1859. Although employed primarily as a geologist, Lesquereux was a trained bryologist and paleobotanist. While in Arkansas, he studied both the fossilized and living floras. However, Lesquereux's checklist is meager and, because his field work was performed during the dormant season, heavily biased toward woody species.

The first attempt at a comprehensive, statewide checklist is the 1891 work of Branner and Coville. John Casper Branner (1850–1922), State Geologist, discovered bauxite in Arkansas in 1887. Frederick Vernon Coville (1867–1937) was a longtime U.S. Department of Agriculture botanist. Their list, like Lesquereux's and those of some subsequent authors, contained a fair number of erroneous reports for the state but nonetheless was a milestone in Arkansas botany. In 1926, John T. Buchholz and Ernest Jesse Palmer (see full discussion of these two men below) published a long list of additions to Branner and Coville's checklist.

Delzie Demaree (1889–1987) began studying the Arkansas flora in the 1920s and published a checklist of the woody flora of the state in 1932. He had come from Ohio to join the faculty of Hendrix College in Conway in 1922. He remained at Hendrix until 1926, when he became a faculty member at the University of Arkansas at Fayetteville. Demaree then left Arkansas in 1930 to attend Stanford University, where he completed his Ph.D. in plant physiology in 1932. He returned to Arkansas in 1936 as a faculty member of the Arkansas Agricultural and Mechanical College at Monticello (now the University of Arkansas at Monticello), where he stayed until 1946. He then moved to Arkansas State College at Jonesboro (now Arkansas State University). Following retirement from

Arkansas State College in 1953, he learned that his employment history was inadequate to qualify him for Social Security benefits. He enrolled at Henderson State Teachers College in Arkadelphia (now Henderson State University) and completed teacher certification requirements, which enabled him to teach on a Navajo Indian reservation in Arizona long enough to complete the Social Security requirements. He then returned to his home in Hot Springs, where he lived until not long before his death. Demaree's 1943 catalogue of the vascular plants of Arkansas was self-published as the first and only issue of his journal Taxodium, distributed primarily among friends. That checklist was based on determinations he had received from botanical specialists to whom he had sent specimens. Demaree's work was sometimes controversial, with some botanists charging that his reliance on public transportation instead of driving his own car meant that he failed to collect many species. Others decried his habit of giving the location of the nearest post office as adequate location data for herbarium specimen labels. Despite those shortcomings, however, the fact remains that no other worker has come close to matching his Arkansas plant collections in terms of specimen numbers. It has been estimated that he distributed approximately 300,000 specimens to numerous herbaria.

Dwight Munson Moore (1891–1985), an Ohio native and holder of a Ph.D. in plant physiology from Ohio State University, came to the University of Arkansas as a faculty member in 1924. Although trained as a plant physiologist, he began collecting botanical specimens for the university herbarium soon after arriving in Arkansas. He was especially interested in woody flora, and his collections include many rare or otherwise unusual members of the state's flora. Moore published a number of papers on Arkansas' flora, including checklists of the woody plants (1941) and grasses (1961) of the state. After retiring from the University of Arkansas in 1950, Moore taught forestry at the Arkansas Agricultural and Mechanical College at Monticello (now the University of Arkansas at Monticello). He was a visiting professor at universities in Saigon and Hue, South Vietnam, in 1958-1959. During 1961-1967, he was a Biology Department chairman and botany teacher at Arkansas Polytechnic College in Russellville (now Arkansas Tech University). He worked at establishing the South Arkansas Arboretum at El Dorado during 1967-1970. Finally, he retired with his second wife, Clementine, to her home in Rudy until his death in 1985. During his long career, Moore provided botanical training to many individuals who either became professional botanists or served as state and federal agency personnel. He was extremely active in the garden club movement and was very effective at taking botany to many segments of the lay public. He revised *Trees of* Arkansas (1960), a book that made his name familiar to schoolchildren throughout the state; it is still widely distributed by the Arkansas Forestry Commission. Moore

also described *Delphinium newtonianum* (Moore's delphinium), an Arkansas endemic species.

Ernest Jesse Palmer (1875-1962) was a self-trained botanist, born in England but a long-time resident of Webb City, Missouri. During his long career, he made many botanical field trips to Arkansas and published numerous papers related to the Arkansas flora. He was first employed by the Arnold Arboretum at Harvard University in 1915 as a plant collector working throughout the South and Southwest from his Missouri home base. In 1921, Palmer moved to the Arnold Arboretum to assume a resident botanist position. After his retirement in 1948, he returned to Webb City. He co-authored with John T. Buchholz a major paper in 1926 that added numerous species to the Branner and Coville 1891 checklist of Arkansas' flora. Palmer was a mentor of Julian Alfred Stevermark (1909–1988). with whom he collaborated on various botanical projects, many of which were related to the Missouri flora. An extremely talented floristic botanist, Palmer also worked on more traditional monographic studies of certain woody plant groups considered difficult by many botanists (e.g., Crataegus [hawthorns] and Quercus [oaks]). He was a contemporary of several other plant collectors active in Arkansas and Missouri.

George W. Letterman (1841–1913), a public school teacher at Allenton, Missouri, made many collecting trips into Arkansas. He discovered the rare two-wing silverbell (*Halesia diptera*) in the state in Nevada County in 1887.

Benjamin Franklin Bush (1858–1937) was an early collector for the Arnold Arboretum. He studied the genus *Crataegus* and made numerous early collections in Arkansas and neighboring Missouri. Bush was older than Palmer and had begun his plant collecting in 1882. He encouraged Palmer to study many of the same difficult genera on which he himself had worked, and he probably played a role in the employment of Palmer at Harvard University.

William Trelease (1857–1945) was another botanist of Palmer's time who extensively collected plants in the Ozarks region of Arkansas and Missouri. During his earlier years, he served as Director of the Missouri Botanical Garden in St. Louis, a location that allowed him to make many trips into Arkansas.

William Willard Ashe (1872–1932) frequently visited Arkansas during a professional career that spanned the years from 1892 to 1932. He began work with the U.S. Forest Service in 1905. One of Ashe's largest contributions to forest conservation was his field work toward, and coordination of, national forest land acquisitions in the eastern United States, from before the passage of the Weeks Act in 1911 until the time of his death in 1932. Ashe made significant contributions to botany, dendrology, and ecology in the eastern United States. During his years of Forest Service employment, he made collections over much of northern Arkansas and was particularly interested in woody flora. In 1923 he described the Ozark chinquapin (as *Castanea ozarkensis*, herein treated as *C*.

pumila var. ozarkensis), which was new to science.

John Theodore Buchholz (1888–1951), a collaborator of Palmer's on the 1926 additions to Branner and Coville's checklist, came to Arkansas in 1909 as one of the original faculty members at Arkansas State Normal School in Conway (now the University of Central Arkansas). He remained in Conway until 1918, when he moved to Fayetteville, where he served as a botany faculty member at the University of Arkansas until 1926. Buchholz is perhaps best remembered as an outstanding plant morphologist with a major expertise in gymnosperms. During his years in Arkansas, he conducted extensive field work and described Ashe's juniper, or Ozark white-cedar (Juniperus ashei), as a new species. He had a major interest in woody plants and was co-author of Common Forest Trees of Arkansas with Wilbur R. Mattoon (1875-1941), extension forester with the U.S. Forest Service, in 1924.

Flora A. Haas came to Arkansas State Teachers College in Conway (now the University of Central Arkansas) in 1930 and remained active as a field botanist until her departure in 1945.

In the years following World War II, several veteran botanists long associated with the Arkansas flora retired, and a new generation began botany investigations in the state. Ernest Jesse Palmer retired from Harvard in 1948, Dwight Moore from the University of Arkansas in 1950. and Delzie Demaree from the Arkansas State College in 1953. Jewel E. Moore (born 1918) came to Arkansas State Teachers College in Conway as a botanist and ecologist in 1947, when she became a member of the tiny cadre of the state's resident botanists. The community ecologist Edward Everett Dale, Jr. (1920-2009), and plant taxonomist Hugh Hellmut Iltis (born 1925) came to the University of Arkansas in the period following Dwight Moore's retirement, and Dale served as an interim herbarium curator. Few Arkansas botanists have matched Dale in terms of publications on the state's flora and on community structure and composition.

Edwin Burnell Smith (born 1936) came to the University of Arkansas in 1966 and remained there until his retirement in 1998. During that period, he published widely on *Coreopsis* (tickseeds), the subject of his doctoral dissertation at the University of Kansas. Smith did not personally conduct many floristic field studies, but he made huge contributions to Arkansas botany when he published two editions of *An Atlas and Annotated List of the Vascular Plants of Arkansas* (1979 & 1988) as well as *Keys to the Flora of Arkansas* (1994). He served as herbarium curator and directed thesis studies of numerous graduate students until his retirement in 1998, when he was succeeded in that position by Johnnie L. Gentry (born 1939), who later initiated and became the director of the Arkansas Vascular Flora Project.

The Arkansas Natural Heritage Commission was formed in 1973 and has played an important role in discovering

and tracking rare species and in purchasing and protecting natural areas. Some of the state's most significant habitats for rare plant species have been preserved by the commission's efforts. Commission botanists and plant ecologists have made important contributions toward improved knowledge of Arkansas' vascular flora, with commission botanists finding numerous species that were new to the state and several that were new to science.

Working on his doctoral dissertation at Southern Illinois University, W. Carl Taylor (born 1946) investigated the pteridophytes of Arkansas in the mid-1970s. That work resulted in *Arkansas Ferns and Fern Allies*, which was published in 1984.

The Arkansas Native Plant Society was organized in 1980 to promote preservation, conservation, and study of the wild plants and vegetation of Arkansas; to educate the public about the value of the native flora and its habitats; and to publish related information. The society serves as a bridge between the professional botanist and the nonprofessional with intense botanical interests. In several instances, nonprofessionals have developed their talents to a high level of excellence. Perhaps foremost among those individuals was Carl Glenn Hunter (1923–2005), a former assistant director of the Arkansas Game and Fish Commission. Hunter published three widely distributed works, all illustrated with his superb photography: Wildflowers of Arkansas (six editions); Trees, Shrubs, and Vines of Arkansas (three editions); and Autumn Leaves and Winter Berries in Arkansas.

Robert Kral (born 1926), botanist at Vanderbilt University for many years until his retirement, has long been involved with investigations related to the Arkansas flora. Many of his studies have concentrated on taxonomically difficult monocot families (e.g., Xyridaceae, Cyperaceae, and Juncaceae).

Another out-of-state botanist who has studied Arkansas flora for many years is R. Dale Thomas (born 1936). Through the years, Thomas has made extensive collections in Arkansas, especially in the southern part of the state. His personal collections total more than 175,000 specimens, including some 52,000 collected in Arkansas. Before retiring from the University of Louisiana at Monroe (formerly Northeast Louisiana University) in 2003, he directed the work of several graduate students who completed county flora projects in southern Arkansas.

Currently, a new group of Arkansas botanists, including the members of the Arkansas Vascular Flora Committee, are carrying on the botanical endeavors and investigations of the many explorers, botanists, ecologists, and plant enthusiasts who have preceded them. The *Checklist* (AVFC 2006) and this *Atlas*, as well as the future *Manual*, are the culmination of the efforts of all these people. These works will certainly not be the end of Arkansas' botanical history but merely a stepping-stone to the next chapter of botanical exploration, investigation, and conservation.

AN OVERVIEW OF THE GEOLOGY OF ARKANSAS

By Curtis L. Nunn

Arkansas is known as "The Natural State" in no small part because of its diverse geology. From the towering bluffs that line the rivers of the Ozark Plateaus to the expansive flatlands of the Mississippi Alluvial Plain, Arkansas' geology comprises rocks and landforms created by a wide variety of geologic processes acting over hundreds of millions of years. In turn, this geologic diversity, in association with variations in soil and climate, influences the diversity of plants and vegetation communities in the state.

Geologic Time

The geologic history of Arkansas can best be understood in terms of geologic time. Geologic time encompasses the entire history of the Earth, from its formation approximately 4.5 billion years ago to the present. With the advent of modern scientific techniques capable of identifying chronological ages of rock samples, geologic time is now commonly discussed in terms of years (e.g., the aforementioned age of the Earth). However, the original concept of geologic time was indefinite, known only to include the vast amounts of time necessary to shape Earth's landscapes as we see them today. Geologic time in this sense was developed by establishing an order of events necessary to create these landscapes, an order of events deciphered by analyzing relative age relationships within the "rock record." The rock record is a comprehensive inventory of all rocks on Earth that belong to one of three principal classes: igneous, sedimentary, and metamorphic. Igneous rocks form from molten material either on the Earth's surface or beneath it. Sedimentary rocks form from loose sediments deposited in layers, or strata, which are compacted and cemented together over time to form new rocks. Metamorphic rocks are derived from igneous or sedimentary rocks subjected to intense heat, pressure, or chemical influences that physically or mineralogically alter the rock.

The geologic time scale (Figure 1) organizes the rock record into divisions of geologic time based on relative ages of rocks. Relative ages of rocks are established by studying their physical relationships and compositional characteristics. While relationships among rocks of all types are useful to some degree in establishing relative ages, the study of sedimentary rock strata, called stratigraphy, provides the organizational framework of the geologic time scale. Sedimentary rocks are the key to organizing geologic time for a number of reasons: sedimentary rocks cover approximately 80 percent of

Earth's land surface (Blatt 1994), which makes them relatively easily to study; their strata are layered younger upon older, which makes their relative physical positions equivalent to relative age; and geographically separated sedimentary rock units can be correlated across great distances based on similar rock composition or fossil content. These characteristics provide a means to categorize sedimentary rocks into packages called "stratigraphic units," each of which represents a particular period of geologic time during which the sediments that compose the rocks were deposited.

| Eon | Era | Period | Age ¹ |
|-------------|-------------|---------------|---------------------------|
| Phanerozoic | Cenozoic | Quaternary | 0.0 |
| | | Tertiary | 2.6 |
| | Mesozoic | Cretaceous | 66 — |
| | | Jurassic | 146 — |
| | | Triassic | 202 |
| | Paleozoic | Permian | 251 — |
| | | Pennsylvanian | — 290 — |
| | | Mississippian | 318 |
| | | Devonian | 359 — |
| | | Silurian | 416 |
| | | Ordovician | 444 — |
| | | Cambrian | — 488 — — 542 — |
| | Precambrian | | |

¹ Millions of years before present

FIGURE 1. GEOLOGIC TIME SCALE. MODIFIED FROM WALKER AND GEISSMAN 2009.

The most common types of sedimentary rocks are sandstone and shale, which are silicate rocks composed of material eroded from preexisting rocks; and limestone, dolomite, and chalk, which are carbonate rocks formed from the accumulation of calcareous sediments in ocean waters. With only minor exceptions, rocks in Arkansas are sedimentary. They range in age from the late Ordovician Period of the Paleozoic Era to the present, spanning a period of more than 400 million years. The geologic map of Arkansas displays the distribution of surficial rocks in the state according to geologic age (Figure 2; see also map in Haley et al. 1993).

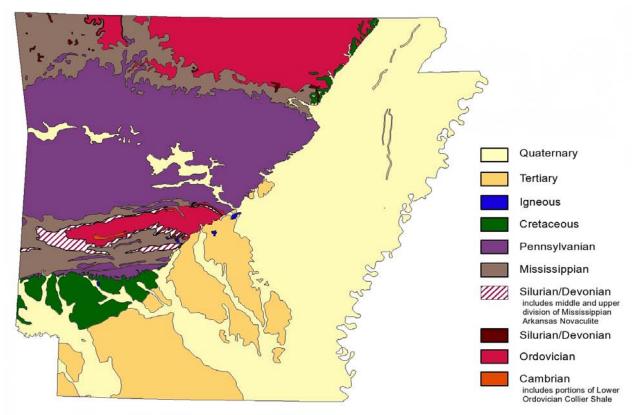


FIGURE 2. GEOLOGIC MAP OF ARKANSAS. MODIFIED FROM CHANDLER 2009. USED WITH PERMISSION.

Plate Tectonics

Study of the rock record has revealed evidence of numerous geologic processes that have worked to shape the rocks on Earth's surface into the landscapes we see today. Foremost among those processes is plate tectonics. In the early 1900s, Alfred Wegener, a German meteorologist, correlated sedimentary rocks between continents and noted that the shapes of the continents fit together like pieces of a jigsaw puzzle. He hypothesized that all continents were at one time part of a single supercontinent he called "Pangaea," which broke apart, leaving each individual continent to move independently across the surface of the Earth in a process termed "continental drift" (Hallam 1975). Wegener was not able to accurately describe a driving force for continental drift, but in the 1960s, geologists developed the theory of plate tectonics to explain his early observations (Frankel 1988).

Plate tectonics describes the movement of discrete sections of Earth's crust, or plates, in response to convective heat flow within the mantle of the Earth. Some tectonic plates contain continental masses, whereas others are composed only of oceanic crust. Arkansas resides on the continental mass of the North American Plate. Driven relentlessly by the mantle's convective patterns, plates are shuffled and rotated until eventually continen-

tal masses collide and unite as a single supercontinent. Tectonic forces then tear the supercontinent apart, creating multiple smaller continents that migrate over the surface of the Earth until they again converge and collide to form another supercontinent, at which point the cycle begins again. Geologic evidence has shown that this supercontinent cycle has been completed several times over the history of the Earth, operating on the order of hundreds of millions of years (Rogers 1996). Plate tectonics is the accepted mechanism for a wide variety of geologic processes, including mountain building, continental rifting, and most seismic activity. Because plate tectonics shifts continents around and pushes them up and down, it also controls where various depositional environments are created and the types of rocks that will form within them.

Physiographic Divisions

Demarcated by overall patterns of topographic relief, Arkansas can be divided into two broad physiographic regions, the Interior Highlands and the Gulf Coastal Plain (Figure 3). The Interior Highlands generally comprise the northwestern half of the state. Paleozoic rocks in this region have been exposed to weathering and erosion processes since the end of the Pennsylvanian

Period, producing significant topographic relief. The Gulf Coastal Plain generally comprises the southeastern half of the state. Paleozoic rocks of the Interior Highlands extend beneath Mesozoic and Cenozoic rocks of this region. Rocks of the Gulf Coastal Plain have been exposed to weathering and erosion processes for a much shorter period; thus, the region is characterized by relatively flat topography. The two physiographic regions are separated by the Fall Line (Figure 3), an abrupt contact between Paleozoic and younger strata (Chandler 2009) as seen on the geologic map of Arkansas (Figure 2). The Fall Line corresponds to the western margin of a buried rift valley, the Reelfoot Rift, which formed beneath eastern Arkansas during the late Precambrian and early Phanerozoic eons. At that time all land masses were united as the supercontinent Rodinia. Tectonic forces initiated breakup of the supercontinent, and, as the North American and South American plates were forced apart, rifting spread briefly toward the center of the North American Plate, creating the rift valley (Burke & Dewey 1973).

Each physiographic region in Arkansas is divided into three physiographic provinces based on stratigraphic content and landscape morphology (Figure 3). Physiographic provinces of the Interior Highlands region include the Ouachita Mountains, Arkansas Valley, and Ozark Plateaus. Paleozoic rocks that dominate the region are divided into these separate physiographic provinces based on landscapes that have been folded and faulted, depressed, or uplifted and tilted, respectively, in response to continental collision and the formation of the supercontinent Pangaea during the late Paleozoic Era. Physiographic provinces of the Gulf Coastal Plain region include the West Gulf Coastal Plain, Mississippi Alluvial Plain, and Crowley's Ridge. Relatively young rocks of this region are divided into separate provinces based on landscapes characterized by rolling hills, flat topography, or a prominent ridge, respectively, that were formed by more geologically recent erosional processes.

Geologic differences among Arkansas' physiographic provinces provide a variety of foundations upon

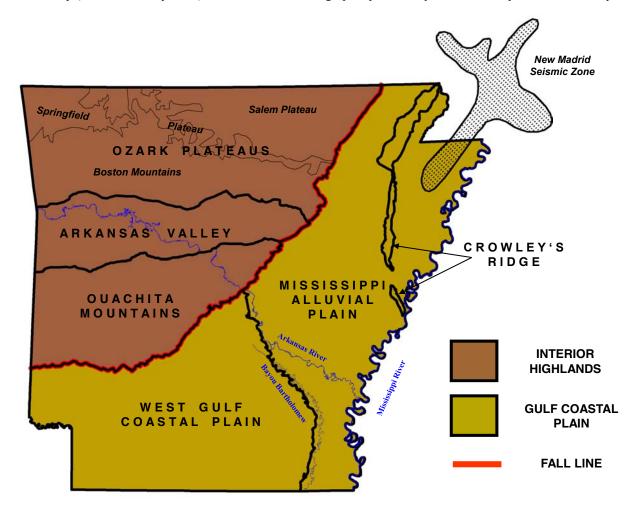


FIGURE 3. PHYSIOGRAPHIC REGIONS AND SIX PROVINCES (NATURAL DIVISIONS) WITHIN ARKANSAS.

which diverse modern environments have developed. In the same way that geologic differences define physiographic provinces, environmental differences across the state define natural divisions. Despite minor differences in nomenclature, Arkansas' physiographic provinces and natural divisions describe the same geographic areas. The following sections provide summarized geologic histories of Arkansas' physiographic divisions.

INTERIOR HIGHLANDS PHYSIOGRAPHIC REGION

At the end of the Precambrian, rising heat from the Earth's mantle was confined beneath the supercontinent Rodinia with no means of escape. The mantle continued to warm and expand, causing overlying continental rock to bulge above it. Eventually, the bulging crust fractured, and mantle heat was released through continental rifts. Dispersing continents settled as the cooling mantle contracted, and relative sea levels began to rise on the continental masses. By the Ordovician Period, more of the North American continent was covered by seas than at any other time in Earth's geologic history, and the entire area of present-day Arkansas was submerged. The northern half of the state was covered by warm, shallow seas in a continental shelf setting. The southern half of the state was located in a deep ocean basin separated from the shelf by a steep continental slope.

Ouachita Mountains Physiographic Province

The Ouachita Mountains physiographic province comprises west-central and central portions of the state between the Arkansas Valley and the West Gulf Coastal Plain (Figure 3). The Ouachitas are a highly eroded and largely buried mountain chain extending more than 2,400 kilometers (1,500 miles) from Mexico across Texas, Oklahoma, Arkansas, and Mississippi, where it links to the Appalachian Mountain chain in the subsurface. Less than 20 percent of this distance is visible in outcrops of the Marathon Mountains in Texas and the Ouachita Mountains of eastern Oklahoma and Arkansas (Viele 1989).

Rocks of the Arkansas Ouachitas are dominated by silica-rich sandstones, cherts, and shales that were deposited in the deep ocean basin extending across the southern half of Arkansas during the Paleozoic Era. Deposits in the basin produced sedimentary rock thicknesses of about 8,200 meters (27,000 feet) (Thornbury 1965). Sandstone and shale sediments were eroded from elevated regions and transported to the basin, where they were deposited along massive slopes. The slopes fre-

quently became unstable under their own weight and repeatedly collapsed, producing underwater landslides that flowed onto the flat bottom of the basin. Sediments were reorganized during transport, producing a series of thin, alternating sandstone and shale strata termed "flysh" (Morris 1974).

As tectonic forces again shifted and the continental masses of North and South America began to converge, the southern edge of the North American Plate was forced beneath the overriding South American Plate. The subducted crust was pushed into the mantle where it heated up, melted, and rose to the surface to create volcanoes on the South American Plate. The volcanoes ejected silicate ash that settled to form layers of chert at the bottom of the ocean basin. The basin continued to narrow, and the South American Plate scraped rocks off the bottom of the basin and pushed them inland. The rocks were compressed tightly, raising them up above the shallow seas and producing the complex east—west oriented folds and faults of the Ouachita Mountains. During this process, increased temperatures caused some chert strata to partially recrystallize, forming novaculite, a rare sedimentary rock commonly referred to as "whetstone" that is found almost exclusively in the Ouachitas. Heated, silica-rich fluids were also forced along faults in the Ouachitas, forming veins of quartz (the state mineral of Arkansas) throughout the mountains. Faults in the Garland County area of the Ouachitas also provide avenues for infiltrated surface water to descend to great depths, where it is heated by surrounding rock and then circulated quickly back to the surface, where it emerges as hot springs.

As the ocean basin closed and the North American and South American continental masses were united in the supercontinent Pangaea at the end of the Pennsylvanian Period, the Ouachitas may have reached heights rivaling parts of the Rocky Mountains. Today, after hundreds of millions of years of erosion, the Ouachitas are a shadow of their former grandeur. A mountainous topography still remains, however, as rocks resistant to erosion (sandstone, chert, and novaculite) form ridges between valleys underlain by more easily eroded shale (Figure 4).

Arkansas Valley Physiographic Province

The Arkansas Valley physiographic province lies west of the Fall Line, between the Ozark Plateaus and Ouachita Mountains (Figure 3). As the Ouachitas are characterized by multiple east—west trending folds and faults in an overall uplift, the Arkansas Valley is characterized by less intense east—west folds in an overall depression. Paleozoic rocks of the valley are slightly



FIGURE 4. THE OUACHITA MOUNTAINS NATURAL DIVISION IS CHARACTERIZED BY EAST-WEST TRENDING RIDGES AND VALLEYS. THE RIDGES OFTEN CONSIST OF MORE RESISTANT ROCKS SUCH AS CHERT, NOVACULITE, OR SANDSTONE, AS SEEN HERE ON NORTH FORK PINNACLE NEAR THE SALINE/PERRY COUNTY LINE, THE LAYERS OF WHICH ARE SOMETIMES NEARLY VERTICAL DUE TO THE INTENSE FOLDING DURING FORMATION OF THE OUACHITA MOUNTAINS. PINE AND PINE-HARD-WOOD FORESTS TYPICALLY DOMINATE THE SOUTH-FACING SLOPES, GRADING INTO DRY HARDWOOD WOODLANDS ON THE UPPER SOUTH-FACING SLOPES AND RIDGE TOPS.

younger than those exposed in the Ouachitas. These rocks are equivalent to rocks that had been present in the Ouachitas before being eroded away at higher elevations. The province is heavily influenced by the Arkansas River, which flows generally west to east through the valley.

As continental collision thrust the Ouachitas upward, ocean-basin and continental-margin rocks north

of the mountains were bowed downward in front of the continental shelf extending across northern Arkansas, forming the Arkoma Basin (Manger 1983). The basin continued to receive sediments eroded from the rising Ouachitas and exposed rocks of the shelf, accumulating additional thicknesses of sandstone and shale strata and adding greater weight to the basin. The basin sank under the increased weight, and extensional faults formed along its northern margin, creating the boundary with the Ozark Plateaus. The Arkoma Basin closed with the formation of Pangaea, and since that time the valley province has been above sea level and exposed to erosional processes that have removed thousands of feet of rocks across the valley. Some isolated ridges of resistant sandstones have remained topographically elevated, including Mount

Nebo, Petit Jean Mountain, and Magazine Mountain, Arkansas' highest point.

Over time the Arkansas River has carved its course through a section of the valley, draining portions of the Rocky Mountains and High Plains before traversing Oklahoma and Arkansas on the way to its confluence with the Mississippi River. Sandstone outcrops tightly constrict the river's course through much of the valley; however, in areas where the river's course flows through outcrops of softer shale, the river can meander more freely and the valley is wider (Figure 5).

Ozark Plateaus Physiographic Province

The Ozark Plateaus physiographic province comprises northwestern and north-central Arkansas (Figure 3). Rocks of the Ozarks are dominated by three main periods of continental-shelf deposition in the Paleozoic Era, which produced three distinct, slightly tilted plateaus: the

Salem Plateau, the Springfield Plateau, and the Boston Mountains Plateau (McFarland 1998). The exposed surface of each plateau corresponds to a dominant stratigraphic unit deposited on the continental shelf of northern Arkansas during a particular period of the Paleozoic Era.

As sediments of the Ouachitas and Arkansas Valley were accumulating in the deep ocean basin and con-



FIGURE 5. THE BROAD VALLEY OF THE ARKANSAS RIVER, AS SEEN HERE FROM PETIT JEAN MOUNTAIN IN CONWAY COUNTY, WAS CREATED AS THE RIVER MEANDERED THROUGH AND ERODED SOFTER ROCKS IN A PORTION OF THE ARKANSAS VALLEY NATURAL DIVISION. HILLS AND RIDGES OF THIS NATURAL DIVISION, SUCH AS PETIT JEAN MOUNTAIN, ARE CAPPED BY SANDSTONES (FOREGROUND) THAT ARE MORE RESISTANT TO EROSION.

tinental slope areas of southern Arkansas during the Ordovician Period, dolomite rocks of the Salem Plateau were forming in the warm, shallow waters of the continental-shelf region of northern Arkansas. Seas withdrew and then returned, and calcareous sediments again began to accumulate during the Mississippian Period, forming the limestone rocks of the Springfield Plateau.

Similar to strata in the Ouachitas, chert layers interbedded with limestone rock of the Springfield Plateau were produced by deposition of ash erupted from volcanoes on the South American Plate. Other chert layers and the elaborate cave systems typical of the plateau are products of groundwater interactions with limestone rock. As sea level retreated in the Pennsylvanian Period, sediment delivered to the Ozarks was primarily derived from weathering and erosion of exposed continental rocks to the north. These siliceous sediments accumulated on top of the Mississippian limestone in alternating layers of Pennsylvanian sandstones and shales that form the Boston Mountains Plateau.

As continental collision produced the Ouachita Mountains, compressive forces caused igneous bedrock beneath

the Ozarks to bulge ahead of the collision zone, forming the Ozark Dome (Hudson 2000). The dome consists of a core of uplifted igneous rocks that are exposed in the St. Francis Mountains of southern Missouri and slightly tilted rocks of the Ozarks that accumulated along the flanks of the dome. With the completion of Pangaea, weathering and erosional processes began to wear away the higher elevations of the Ozarks. Eventually the Ozarks were worn flat, exposing a south-to-north gradient of increasingly older strata, with the principal strata composing the three recognized plateaus. Intricate drainage systems were carved into the horizontal plateau surfaces, creating the Ozarks we see today (Figure 6).

GULF COASTAL PLAIN PHYSIOGRAPHIC REGION

After the formation of Pangaea, Arkansas remained above sea level through the end of the Permian Period, and erosion continued to wear away exposed Paleozoic rocks. Beneath the massive lid of the supercontinent, heat trapped within the mantle caused it to expand, causing the overlying land mass to bulge until it began to split apart at the beginning of the Triassic Period. As the supercontinent rifted and confined heat was released, land masses subsided into a cooling mantle. During the

Cretaceous Period, the new southern margin of the North American continent was submerged beneath waters of the Gulf of Mexico, and Arkansas was flooded south of the Ouachitas. Advancing waters also filled the trough of the Reelfoot Rift valley, forming a marine protrusion into the North American continent called the Mississippi Embayment (Manger 1983). These inundated areas



FIGURE 6. THE OZARK PLATEAUS NATURAL DIVISION CONSISTS OF UPLIFTED, HORIZON-TAL PLATEAUS, DISSECTED BY INTRICATE STREAM SYSTEMS CARVED INTO THE PLATEAU SURFACES, AS SEEN NEAR JASPER IN NEWTON COUNTY.

of eastern and southern Arkansas today constitute the Gulf Coastal Plain physiographic region. Rocks of the Interior Highlands remained above sea level and served as a source of eroded sediments that were deposited atop submerged Paleozoic strata of the region.

West Gulf Coastal Plain Physiographic Province

The West Gulf Coastal Plain physiographic province comprises the western and central portions of southern Arkansas. It borders the Mississippi Alluvial Plain to the east and the Ouachita Mountains to the north. The region is generally characterized by low rolling hills between wide river valleys that drain to the Mississippi River.

As Cretaceous seas flooded the southern and eastern parts of Arkansas, the elevated area of the coastal plain in the southwestern corner of the state was submerged beneath shallow ocean waters. This environment was conducive to the precipitation of carbonate sediments and formation of calcareous sedimentary rocks. As Arkansas transitioned into the Tertiary Period, shallower seas left these Cretaceous deposits exposed to erosion. Waters in the remaining parts of the West Gulf Coastal Plain continued to receive eroded gravel, sand, silt, and clay sediments from the Interior Highlands, and siliceous marine

deposits accumulated to levels approximating today's landscape. The Gulf of Mexico receded southward to its present extent at the end of the Tertiary, and unconsolidated marine deposits were easily eroded by Quaternary streams, creating a network of wide, terraced valleys filled with alluvial deposits and separated by low rolling hills (Figure 7).



FIGURE 7. THE WEST GULF COASTAL PLAIN NATURAL DIVISION IS GENERALLY CHARACTERIZED BY LOW, ROLLING HILLS, AS SEEN NEAR CHIDESTER IN OUACHITA COUNTY, BETWEEN WIDE, TERRACED RIVER VALLEYS. PINE AND PINE-HARDWOOD FORESTS ARE PREDOMINANT THROUGHOUT MUCH OF THIS NATURAL DIVISION OUTSIDE OF THE WIDE BOTTOMLANDS ALONG THE RIVERS.

As tectonic forces continued to spread continental masses apart in the Cretaceous Period, faults of the Reelfoot Rift along the Fall Line were reactivated, pro-

viding pathways for molten masses from the mantle to rise and emplace themselves in the overlying rocks. Today, small areas of the West Gulf Coastal Plain and Ouachita Mountains display isolated outcrops of rare igneous rocks like nepheline syenite (Pulaski and Saline counties), carbonatite (Hot Spring County), and lamproite (Pike County) that have been exposed by erosion (McFarland 1998). Intense weathering chemically converted some nepheline syenite into bauxite, a very important ore of aluminum and Arkansas' state rock. Carbonatite is unusual in that it is the only igneous rock with a chemical composition typical of calcareous sedimentary rocks like limestone and chalk. Lamproite exposures in Arkansas are home to the only active mines for diamonds, the state gem of Arkansas, open to the public in the world (Howard & Hanson 2008).

Mississippi Alluvial Plain Physiographic Province

The Mississippi Alluvial Plain physiographic province comprises much of the eastern third of Arkansas. It borders the Ozark Plateaus, Arkansas Valley, and Ouachita Mountains along the Fall Line and is separated from the West Gulf Coastal Plain by the Arkansas

River and Bayou Bartholomew (Figure 3). This region is commonly referred to as "The Delta," though that description is a geological misnomer. Sediments of a plain are deposited within a river valley; sediments of a delta are deposited at the mouth of a river. Tertiary marine sediments accumulated in the province along with those of the West Gulf Coastal Plain. They too were exposed to erosion by numerous river systems, most notably the Ohio and Mississippi, when sea levels dropped at the end of the period. The region is essentially flat and contains numerous tributaries of the Mississippi River (Figure 8).

In the early Quaternary Period, North America entered an ice age, during which glaciers extended southward from polar regions into the heart of the continent in a series of advances and retreats. Ice sheets reached as far south as central Missouri, but Arkansas was never directly glaciated. During glacial times, the Mississippi and Ohio rivers flowed

as broad, shallow, braided-stream systems draining glacial meltwater from the north, across the alluvial plain, and southward to the Gulf of Mexico (Saucier 1994).



FIGURE 8. THE MISSISSIPPI ALLUVIAL PLAIN NATURAL DIVISION IS CHARACTERIZED BY A RELATIVELY FLAT SURFACE WITH NUMEROUS MEANDERING STREAMS AND RIVERS SUCH AS THE WHITE RIVER, SHOWN HERE AT FLOOD STAGE NEAR DE VALLS BLUFF IN PRAIRIE COUNTY. LAND ALONG THESE STREAMS AND RIVERS NOT CLEARED FOR CULTIVATION OFTEN SUPPORTS BOTTOMLAND HARDWOOD FORESTS.

Braided-stream courses changed rapidly, and the rivers migrated throughout the plain, eroding Tertiary sediments and depositing enormous volumes of sand and gravel in a series of glacial outwash terraces (Fisk 1944).

About 10,000 years ago, glaciation of North America ceased. In response, the Mississippi and Ohio rivers changed from braided-stream glacial outwash systems to contemporary meandering-stream systems. Their paths also settled into their current configuration, with the Ohio entering the Mississippi north of Arkansas (Blum et al. 2000). The modern Mississippi River has wandered along the eastern border of Arkansas, depositing sand and gravel in the river channel and silt and clay across the plain during flood events (Autin et al. 1991). The river is constantly reshaping itself as it reacts to rising flood waters by diverting flow through cut-off channels, creating oxbow lakes, and inundating adjacent flatlands.

Along with portions of southeastern Missouri, western Kentucky, and western Tennessee, the extreme northeastern part of the Mississippi Alluvial Plain of Arkansas lies within the New Madrid Seismic Zone (NMSZ) (Stauder 1982; Figure 3). The NMSZ is the most seismically active region in the United States east of the Rocky Mountains (Schweig & Van Arsdale 1996), and small movements within the zone are recorded almost

daily. Geological evidence shows a past characterized by numerable large earth-quakes, including some of the strongest earthquakes ever noted in North America (Jackson 1979). Contemporary seismic activity in the NMSZ is a product of modern compressive tectonic stresses across central North America and the New Madrid region (Zoback & Zoback 1981) acting on buried faults of the Reelfoot Rift (Hildenbrand & Hendricks 1995).

Crowley's Ridge Physiographic Province

Crowley's Ridge is a narrow, elevated strip of land extending from southeastern Missouri through the Mississippi Alluvial Plain of eastern Arkansas to the Mississippi River in Phillips County (Figure 3). The ridge stands about 30 to 60 meters (100 to 200 feet) higher than the surrounding ter-

rain (Figure 9) and is no wider than 18 kilometers (11 miles) at any point along its 300-kilometer (186-mile) length (Guccione et al. 1986). The ridge formed during the early Quaternary Period as braided-stream systems of the Mississippi and Ohio rivers flowed on the west and east sides of the ridge, respectively, carrying glacial meltwater to the Gulf of Mexico. As the rivers reworked Tertiary deposits of the alluvial plain and created terraces on the surrounding terrain, sediments composing the ridge remained undisturbed. Faults of the Reelfoot Rift have been linked to seismic uplift of the ridge concurrent with erosional activity (Van Arsdale et al. 1995), though this is not generally accepted at present.

Rocks of Crowley's Ridge comprise Tertiary marine deposits exposed at its base and capped by early Quaternary, braided-stream sands and gravels. On the southern part of the ridge, braided-stream sediments are blanketed by loess, a very fine silt transported and deposited by wind and, in the case of Crowley's Ridge, derived from pulverized rocks at the leading edges of ice sheets. Although loess deposits are capable of maintaining relatively steep stabile slopes, outcrops of unconsolidated ridge deposits have been heavily modified by erosion and landslides (McFarland 1992).



Figure 9. Crowley's Ridge, as shown here near Harrisburg in Poinsett County, is a relatively narrow, elevated strip of land rising from 30 to 60 meters (100 to 200 feet) above the flat Mississippi Alluvial Plain and extends from southeastern Missouri to Phillips County, Arkansas. It is comprised variously of Tertiary marine deposits and loess.

EFFECTS OF PHYSICAL FACTORS ON THE DISTRIBUTION OF NATIVE FLORA AND VEGETATION IN THE NATURAL DIVISIONS OF ARKANSAS

By Thomas Foti and C. Theo Witsell

Physical Factors Important to Arkansas Flora and Vegetation

Maps and descriptions of the natural divisions or ecoregions of Arkansas provide context for understanding the distribution of plant species in the state. Although county dot maps are very helpful in demonstrating documented distribution at a fairly fine spatial scale, knowledge of the relationships of species to natural divisions or ecoregions can provide insight into distribution both within counties and on a broader regional scale. It can also help predict presently undocumented occurrences of species and plant communities.

The presence of particular plants and plant communities in a given place depends on many factors, including physical conditions, disturbances of several kinds, interactions with other organisms, and changes in these factors over time. This discussion concentrates on the effects of varying physical conditions, specifically geology, geomorphology (sometimes referred to as physiography), soil, and climate, on the distribution of plant communities in Arkansas. Studies over the past several decades have demonstrated that such variations are organized into distinct geographic regions that have been referred to as "natural divisions" (Foti 1974, 1976, 1978) or "ecoregions" (Omernik 1987; Woods et al. 2004). This section will examine the distribution of plants and plant communities within the state in relation to these natural divisions. Terminology will follow Foti (1978) but will often refer to the more detailed regions mapped by Woods et al. (2004; Figure 10).

Climate and geology are the two fundamental physical factors that determine the nature and distribution of vegetation. The term "climate" generally refers to longterm (decades to centuries) patterns of annual and seasonal temperature, precipitation, and related phenomena, whereas "weather" emphasizes shorter-term conditions. Effects of extreme events, such as droughts or ice storms, on vegetation might be considered either as disturbances (when thought of in terms of weather) or as climate (if considered as an event expected to occur at a given frequency). Arkansas has a humid subtropical climate, with ranges of temperature and precipitation typical of that zone (Figures 11 & 12). Considering climate alone, one might suppose that the vegetation of the state would be relatively uniform, but that is certainly not the case. Some areas are covered with upland hardwood forest and woodland (i.e., thinly wooded areas with an open tree canopy and a diverse, prairie-derived herbaceous

ground layer). Others support bottomland hardwood forest, prairie, pine forest, or some other characteristic vegetation. In many cases these differences are caused primarily by variations in geology, geomorphology, or soil, as influenced by climatic and vegetational history.

As explained in a previous section, geology is the rock or sediment that underlies a place. This discussion will emphasize the influence of geology on vegetation, primarily with respect to its acidity and its texture, which in turn influences moisture. Most plants occur in a specific range of soil acidity, usually expressed as pH, with 7 being neutral, smaller values being acidic, and larger values being alkaline.

Geomorphology, or physiography, in simplest terms, is the shape of the land (landform) and the processes that shape it. Flat sites affect plants differently than rolling or hilly or mountainous sites; south-facing and west-facing slopes are drier and warmer than northfacing and east-facing slopes (Figure 13). Elevation exerts an important influence as well, with 305 meters (1,000 feet) of elevation equating to 1.66° C (3° F) or 965 kilometers (600 miles) of north-south distance. In Arkansas, Newton County is 322 kilometers (200 miles) north of the Louisiana state line and is up to 762 meters (2,500 feet) higher. This equates to over 4.44° C (8° F) average temperature difference. Such differences in elevation also affect precipitation by forcing moisture-laden air to rise and cool, which increases precipitation in areas with higher elevations. This occurs because warm air can retain more moisture than cool air. In contrast, as air descends to lower elevations it warms, decreasing precipitation.

Soil is composed of weathered geologic parent material, usually also with organic remains incorporated. It is usually distinctively different from the parent material in more mature soils, whereas in younger soils (such as recently deposited riverine soils) there may be little difference. Soil is often considered to exert an overriding influence on vegetation, but, in fact, it is as much a product of vegetation as a physical determinant of it. Soil combines the erosional remnants of the geologic substrate weathered by climate with organic remains from plants and animals. Therefore, it can be thought of as a product of local or regional ecological processes rather than an independent entity.

In a broader sense, all physical and biotic features are interrelated. Climate affects geology and geomorphology, for example, as it wears away mountains. Plants and plant communities affect climate by shading

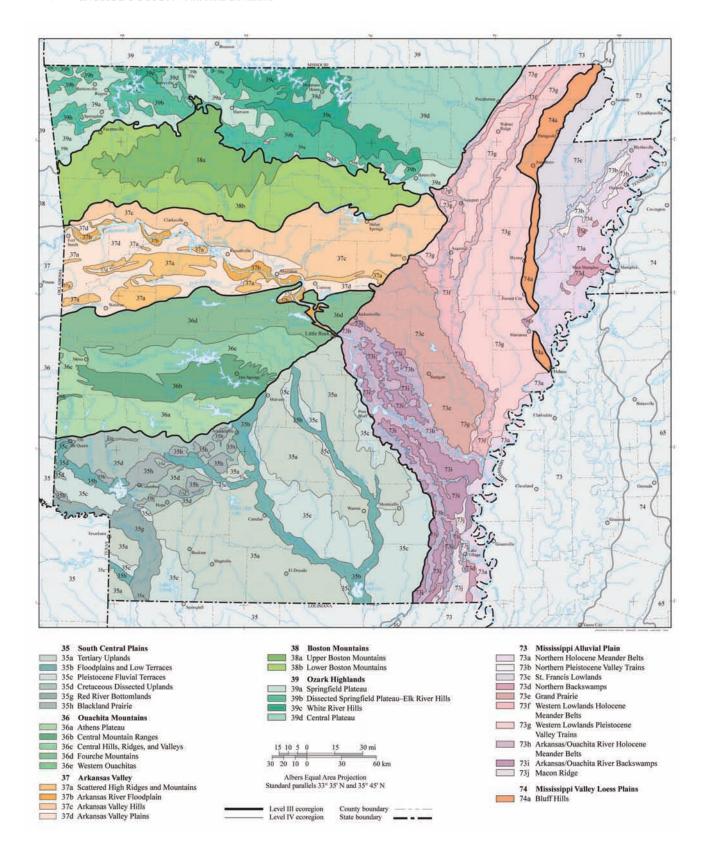


FIGURE 10. EPA LEVEL IV ECOREGIONS OF ARKANSAS. FROM WOODS ET AL. 2004.

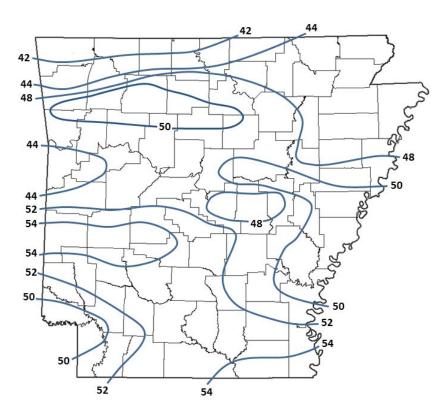


FIGURE 11. AVERAGE ANNUAL PRECIPITATION (IN INCHES). MODIFIED FROM FERGUSON 1984. USED WITH PERMISSION.

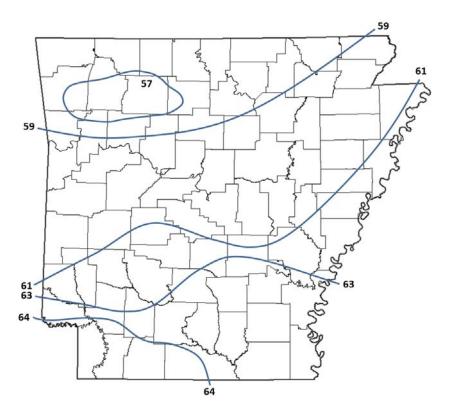
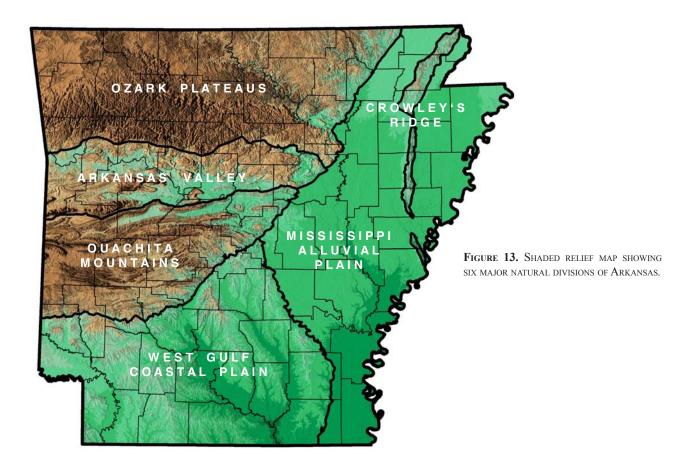


Figure 12. Average annual temperature (in °F). Modified from Ferguson 1984. Used with Permission.



the land surface and affect geology and soil by, for example, slowing erosion and transpiring water from the ground.

Changes in Arkansas Flora and Vegetation over Time

It is impossible to understand some features of the current natural flora and vegetation of Arkansas without knowledge of the variation in its past climate and vegetation. For instance, fire and droughty sites can maintain prairies indefinitely, but how did these prairies become established in our area with its 127 centimeters (50 inches) of average annual precipitation? The simple answer is that they became established during a drier interval in the past that allowed the Midwestern prairies to move eastward. The natural vegetation of Arkansas is a product of environmental and genetic change occurring over thousands to millions of years. The numerous different habitats provided by mountains, valleys, and bottomlands support a rich and diverse flora whose origins go back in time and to distant places. Both ancient and more recent changes in climate have caused waves of different vegetation types to successively blanket the state. During these changes, some species and communities were altogether eliminated and replaced by others, while a few elements of older floras persisted in isolated habitats such as glades (naturally treeless openings in a forested matrix where bedrock outcrops or comes near to the surface of the ground), prairies, seeps, protected ravines, and upland depression wetlands. Because of its floristic diversity, Arkansas has been referred to as a meeting ground of both ancient and recent plant assemblages originating from north, south, east, and west.

It is difficult to obtain definitive information about vegetation of the past (paleovegetation). The nature of paleovegetation can only be deduced by specialized studies of such indicators as pollen, fossils, radiocarbon ratios, tree ring widths, fire scars in ancient trees, plant and animal remains, and sediments. Insight into past vegetation can be inferred by comparing past conditions with vegetation types present today and noting similarities or differences in conditions and presumably vegetation.

Very few studies have been made in Arkansas on paleovegetation. Most of what we know is inferred from studies of similar areas in Missouri, Tennessee, Oklahoma, and other nearby places. An exception is a study of microfossils in an Arkansas peat deposit lo-

cated in a former swamp in North Little Rock (Sears & Couch 1932). A review of the work of Mehringer et al. (1968), Cole (1971), King (1973), Delcourt et al. (1980), Delcourt and Delcourt (1981), and others suggests that most of the vegetation assemblages in the Mississippi Alluvial Plain of Missouri and Arkansas have been extant here for less than 20,000 years, although important elements may have been present for at least 40,000 years or much longer.

A series of paleovegetation maps by Delcourt and Delcourt (1981) show that 40,000 years ago Arkansas was occupied mostly by oak savanna with oak–hickory–pine in the central and western part of the state and with mixed hardwoods bordering "cypress–gum" forest along the Mississippi River. This reference to gum probably refers to "tupelo gum" (*Nyssa aquatica*), more commonly called water tupelo or just tupelo. These conditions lasted until ca. 18,000 years ago, when, at the peak of the Late Wisconsin Continental Glaciation, the climate became cooler and much of western and central Arkansas was dominated by a spruce–jack pine forest. A white spruce (*Picea glauca*) forest with associated northern hardwoods extended even farther south in the Mississippi Alluvial Plain at that time.

Between about 14,000 and 10,000 years ago the climate became warmer, the spruce forest declined, and most of Arkansas was again dominated by oak-hickory forest or woodland, with oak-hickory and "southern pine" [short-leaf pine (Pinus echinata) and loblolly pine (P. taeda)] in the southern part of the state. The presentday oak-hickory forest developed after the decline of the spruce forest and, thus, is no older than the end of the last glacial period (King 1973). However, important elements from earlier forests no doubt remained, both in cool, moist, protected sites during dry times and in warm, dry, exposed sites during more moist times. These sites served as refugia, probably helping to account for the endemic species that are present in the Interior Highlands of northwestern Arkansas and adjacent states. The Mississippi Alluvial Plain of eastern Arkansas became dominated by cypress-tupelo forests in the wettest sites, with mixed bottomland hardwoods along the edges of swamps.

Major vegetation changes occurred between 8,000 and 5,000 years ago when the climate became warmer and drier, a period known as the mid-Holocene warm interval or the Hypsithermal Period. Prairie, oak savanna, and oak-hickory forest, characteristic of today's Oklahoma, shifted eastward, replacing the mixed hardwood forests that occupied the region before that time (except for the cool, moist refugia mentioned before). Droughty sites within Arkansas—flat and exposed to the wind, especially those with thin soil over clay subsoil or rock—became desert-like, with scattered clumps of veg-

etation providing the only groundcover. Wind removed (deflated) soil between the clumps and accumulated it within and under them, creating a mounded surface that remains in such sites today. These mounds have been called "nebkhas" (Seifert et al. 2009) but are often referred to as "pimple mounds" or "prairie pimples."

During or immediately after the Hypsithermal Period, "southern pine" moved northward from the West Gulf Coastal Plain into the Ozark and Ouachita mountains. After that, the climate ameliorated, becoming moister, and eventually developed into the climate of today. However, even during this most recent period, severe droughts have periodically occurred, creating desert-like areas of bare soil on particularly droughty sites such as glades, prairies, and barrens, and allowing western elements of the biota to reoccupy favorable areas (Seifert et al. 2009). Recent research has demonstrated that there were intervals xeric enough to reduce vegetative land cover and destabilize soils on droughty sites as recently as 700 years ago (Seifert et al. 2009).

Persistence of western and xerophytic species and communities during the intervening moister intervals has been facilitated through fires ignited by lightning or by humans. These fires have maintained prairie and woodland communities and the species dependent on their more open structure. Such fires have also maintained elements of both western and southeastern flora in Arkansas. It is interesting and important to realize that, because of the importance of the Hypsithermal, the plant communities of the present and recent past only assembled within the last ca. 5,000 years (though some elements were already present as discussed above), and that humans and human-set fires have been an important factor in this assembly process. It may reasonably be concluded therefore that it is not possible to consider Arkansas vegetation in the absence of people. However, during most of this time, the tools available to people for manipulating vegetation were limited and therefore they were, in a real sense, operating as a part of the system, not dominating and disrupting it as they often do today.

Only recently has the importance of fire (frequent and relatively low-intensity, in general) in the maintenance of many plant species and communities in Arkansas and surrounding states been recognized. Today, public and private conservation land managers frequently employ prescribed (intentionally set and managed) fires to restore and maintain composition and structure of plant communities that represent what has existed over the past several thousand years.

Arkansas Vegetation Today

The vegetation of Arkansas today reflects these past changes in climate as well as more recent and current conditions and processes. Most of the upland areas are covered with oak-hickory or oak-hickory-pine forests and woodlands. Lowland areas of the Mississippi Alluvial Plain, West Gulf Coastal Plain, and Arkansas Valley are covered with bottomland hardwood forest. Prairie vegetation persists in patches on drier, frequently burned areas, as remnants of the western prairies that became dominant during past dry periods. By contrast, relict stands of sugar maple (Acer saccharum), beech (Fagus grandifolia), white oak (Quercus alba), northern red oak (O. rubra), and basswood (Tilia americana) forests similar to those found in New England are present in moist coves, protected places, and some high elevation sites, particularly in the Interior Highlands and on Crowley's Ridge. These are remnants of the more northern, cooler forests that once covered much of Arkansas and retreated to these refugia during the dry periods.

The community types mentioned in this section are meant to indicate the general vegetation of the state, rather than to present a rigorous classification and description of Arkansas plant communities. Such a classification is underway, being led by NatureServe, a private, nonprofit organization formed to identify and develop data on species and communities of conservation concern worldwide. In Arkansas, NatureServe is working with state and federal agencies as well as private organizations to develop a detailed classification of plant communities and to assist in locating and protecting exemplary occurrences of each. For more information on this classification process, visit www.natureserve.org/explorer/classeco.htm.

The Natural Divisions of Arkansas and Related Maps of Natural Regions

In a specific area like Arkansas, physical factors affect flora and vegetation in microsites that may occur in characteristic repeating patterns within geographic regions. In Arkansas these geographic regions have been called "natural divisions" (Foti 1974, 1976, 1978) or "ecoregions" (Woods et al. 2004). Within a given natural division, the physical sites and the resulting vegetation are generally consistent or predictable, whereas the patterns are consistently different between two divisions.

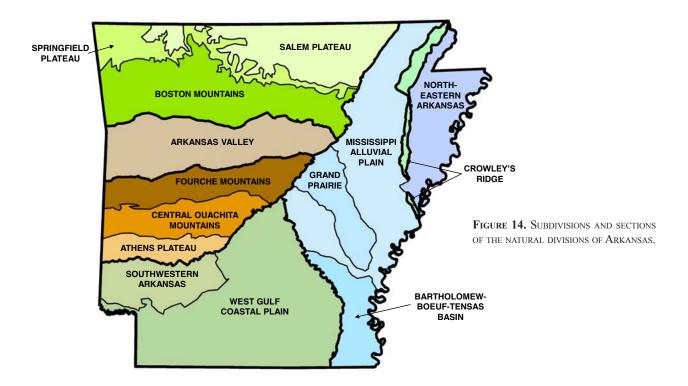
There are six major natural divisions of Arkansas: the Ozark Mountains*, the Ouachita Mountains, the Arkansas Valley, the West Gulf Coastal Plain, the Mississippi Alluvial Plain, and Crowley's Ridge (Foti 1976, 1978; Pell 1983; Figure 3). The first three of

these are part of the Interior Highlands Physiographic Region, and the latter three are part of the Gulf Coastal Plain Physiographic Region. Even though the natural divisions often occupy areas that have previously been defined by geologists as physiographic regions, the natural divisions were categorized on the basis of characteristic biotic patterns. They are thus ecological regions, or ecoregions, not merely geologic or physiographic regions. Originally, the Ouachita Mountains and the Arkansas Valley were considered one natural division, following classical geological maps (Foti 1974), but these were later recognized as separate divisions because of ecological differences described below (Foti 1976, 1978). Later classifications, (e.g., Omernik 1987; Keys et al. 1995; Woods et al. 2004) recognized generally the same regions as Foti (1976, 1978) but separated the Ozark Mountains into two major ecoregions, the Ozark Plateaus and the Boston Mountains. Omernik and Woods et al. termed these 7 regions "Level III Ecoregions" and Woods et al. subdivided these Level III Ecoregions into 32 "Level IV Ecoregions" (Figure 10). Similarly, Foti (1978) subdivided the Natural Divisions into Subdivisions and Sections (Figure 14), which are similar to but not identical with the Level IV Ecoregions and far fewer. In this discussion, we will describe the natural divisions and subdivisions of Foti (1978), slightly modified, but will often refer to Woods et al. (2004) where the additional detail provides improved understanding of vegetation patterns.

At a more general scale, the Interior Highlands Region has long been recognized as a distinct physiographic and natural region (Fenneman 1938; Braun 1950; Thornbury 1965). It is generally characterized by hilly to mountainous topography on Paleozoic rock substrates dominated by upland hardwood and upland pine—hardwood forests and woodlands, with extensive prairies in the north. It includes portions of Missouri, Arkansas, Oklahoma, and Kansas, and a small disjunct area occurs in southern Illinois. It is surrounded by plains that are lower in elevation, have more recent geologic substrates, and have distinctively different vegetation.

The Gulf Coastal Plain Physiographic Region (Figure 3) is a belt of land up to about 970 kilometers (ca. 600 miles) wide extending from Texas to Florida. The portion of the Gulf Coastal Plain laying to the west of the Mississippi River, including a portion of Arkansas, is known as the West Gulf Coastal Plain. It was inundated by the Gulf of Mexico since the Cretaceous Period (ca. 145–65 million years ago), most of it during the Cenozoic (Tertiary) Era (ca. 65–2.5 million years ago) or more recently (Fenneman 1938). The surficial geology includes areas of hard rocks (sandstone, limestone, chalk) but is more typically unconsolidated sand, gravel, or clay, sloping gently from its northern, inland boundary

^{*} Editors' note: While also referred to as the Ozark Plateaus, this natural division is commonly called the Ozark Mountains. These terms are synonymous for the purposes of this discussion.



to the gulf. Typical plant cover is pine or pine—hardwood forest on sandy hills and bottomland hardwood forest along streams and rivers (Braun 1950). It is bounded to the north by older deposits not derived from the ancient Gulf of Mexico.

The definitions of the original divisions of the Interior Highlands (Foti 1974) followed those of Croneis (1930; Figure 15), and therefore the Arkansas Valley was considered a subdivision of the Ouachita Mountains. Its status was later elevated to that of a natural division because it contained features and natural communities characteristic of both the Ouachitas and the Ozarks, as well as some unique to it (Foti 1976, 1978; Pell 1983). In a similar vein, both the West Gulf Coastal Plain and the Mississippi Alluvial Plain have traditionally been considered distinct physiographic regions within the Gulf Coastal Plain Physiographic Region, but Crowley's Ridge was not recognized as a separate region. However, because of its distinctive flora and vegetation, Crowley's Ridge was also elevated to the status of natural division (Foti 1974).

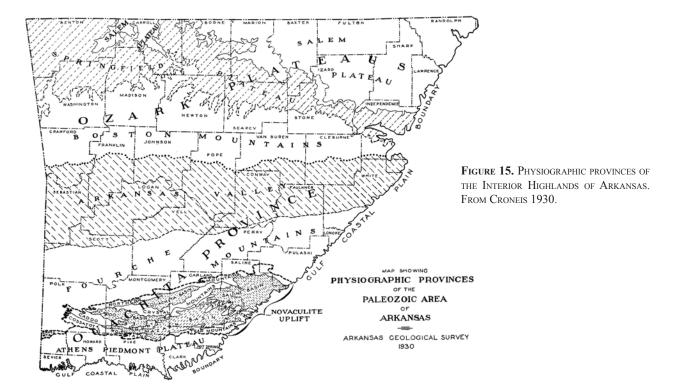
The U.S. Forest Service developed a new national regionalization (Keys et al. 1995) as an extension of a map of ecosystems of North America by Bailey et al. (1994). As part of a Forest Service Ozark–Ouachita Highlands Assessment, the Keys et al. (1995) map was revised (Foti & Bukenhofer 1998) to correct several errors and omissions in the Arkansas portion of the Interior Highlands. A somewhat different national map was developed by the Environmental Protection Agency

(Omernik 1987), and more detailed levels have been developed for Arkansas (Woods et al. 2004; Figure 10). These new maps are hierarchical like earlier efforts but are based on a more holistic consideration of landscape properties than some earlier maps, with climate and soil playing prominent roles along with geomorphology. The new maps have been subdivided to more detailed lower levels than older maps.

Through these decades of development of definition and description of the natural regions of Arkansas, basic boundaries and concepts have changed little. The six natural divisions first defined (Foti 1976) are still often recognized as the basic natural regions of Arkansas, although, as discussed before, one of these has been split into two. Details have been added to allow more precise understanding of Arkansas' natural geography. Finer regions have been recognized to provide greater understanding where needed, and in some maps a particular region is placed higher or lower in the hierarchy than in others. Some of this additional detail will be referred to in the discussions of the natural divisions of Arkansas that follow.

The Ozark Mountains Natural Division

The Ozark Mountains Natural Division (Figures 3 & 6) is formed from uplifted plateaus composed of Paleozoic rocks (Croneis 1930). Streams have incised valleys into these plateaus, and in some cases the plateau surface is only visible as the flat tops of the mountains at



equal elevations (Figure 6). Three distinct plateaus differ in topography, geology, and vegetation.

The Boston Plateau Subdivision (Figure 14), universally referred to as the Boston Mountains because of its dissected ruggedness, is the highest at about 790 meters (ca. 2,600 feet). It extends as a belt across the southernmost Ozarks from Oklahoma to the Mississippi Alluvial Plain. It is usually composed of sandstone and shale. Steep south-facing sandstone slopes are occupied by the most extensive short-leaf pine-upland hardwood forests and woodlands of the Ozarks. Elsewhere, upland hardwood forests and woodlands dominate, varying according to soil moisture. Although considered here a subdivision of the Ozark Mountains Natural Division, in some ecoregional maps it is placed at the same level in the hierarchy as the Ozark Plateaus (Level III) Ecoregion (Omernik 1987; Keys et al. 1995; Woods et al. 2004; Figure 10).

Although the tops of the mountains within any given locality are at nearly the same elevation, the highest mountains are in the vicinity of Newton County and are high enough to cause higher precipitation and lower temperatures than elsewhere in the Ozarks (Figures 11 & 12). This area appears to create a rain-shadow effect to its north by forcing moisture from air brought northward by south winds from the Gulf of Mexico through the process of orographic lifting. As this air continues to the north of the Boston Plateau, it drops to a lower elevation over the Springfield and Salem plateaus and warms, causing reduced precipitation (Figure 11). This more

elevated and rugged area centered on Newton County has been termed the Upper Boston Mountains (Level IV) Ecoregion, while the rest of the ecoregion is termed the Lower Boston Mountains (Level IV) Ecoregion (Foti & Bukenhofer 1998; Woods et al. 2004; Figure 10). As a result of the high elevation and abundant precipitation, the headwaters of many rivers are located here, including the White, Buffalo, Mulberry, Big Piney, and Kings. The cool, moist conditions of the Upper Boston Mountains support mesic upland hardwood forests, such as beech-oak forest and sugar maple-oak forest, which are of limited extent elsewhere in the Ozarks (Figure 16). These mesic forests, especially those in protected ravines and canyons, support a number of notable rare species including yellow mandarin (*Prosartes lanuginosa*), sharp-lobe hepatica (Anemone acutiloba), hairy wood mint (Blephilia hirsuta), Hitchcock's sedge (Carex hitchcockiana), blue cohosh (Caulophyllum thalictroides), blue-eyed Mary (Collinsia verna), butternut (Juglans cinerea), Ozark spiderwort (Tradescantia ozarkana), celandinepoppy (Stylophorum diphyllum), Canadian white violet (Viola canadensis var. canadensis) and the Arkansas endemic Moore's delphinium (*Delphinium newtonianum*). Glades (usually occurring on sandstone) are relatively limited in this subdivision but often include seasonally wet areas that support rare wetland plants such as small-head pipewort (Eriocaulon koernickianum) and zigzag bladderwort (*Utricularia subulata*). Oak woodlands (Figure 17), savannas, and barrens were once common, though they are usually degraded today because of



FIGURE 16. MESIC FORESTS OCCUR IN MOIST, PROTECTED SITES IN THE INTERIOR HIGHLANDS, SUCH AS THIS BOX CANYON AT SWEDEN CREEK FALLS NATURAL AREA IN MADISON COUNTY IN THE UPPER BOSTON MOUNTAINS ECOREGION

a recent history of fire suppression. As a result of lower precipitation, woodlands were more extensive in the Lower Boston Mountains in the early nineteenth century, prior to extensive alteration and development, and shortleaf pine forests and woodlands were restricted to the Lower Boston Mountains (Foti 2004). Sandstone bluffs in the Boston Mountains and adjacent mountainous parts of the Arkansas Valley support a number of rare plants such as Arkansas alumroot (*Heuchera villosa* var. *arkansana*), hairy mock orange (*Philadelphus hirsutus*), Alabama snow-wreath (*Neviusia alabamensis*), ovate-leaf catchfly (*Silene ovata*), and Ozark spring-beauty (*Claytonia ozarkensis*). One very notable western species found in



FIGURE 17. OPEN POST OAK WOODLAND IN THE BOSTON MOUNTAINS ECOREGION WITH A DIVERSE HERBACEOUS LAYER INCLUDING BIG BLUESTEM (ANDROPOGON GERARDII), BALDWIN'S IRONWEED (VERNONIA BALDWINII), AND HAIRY WOODLAND SUNFLOWER (HELIANTHUS HIRSUTUS).

somewhat moist microsites on some bluffs in the Boston Mountains is yellow monkeyflower (Mimulus floribundus), which is otherwise disjunct from the Rocky Mountains. Sandstone overhangs, commonly called rock-houses or bluff shelters, provide habitat for a few highly specialized species such as French's shooting-star (Primula frenchii), dwarf bristle fern (Trichomanes petersii), and Appalachian filmy fern (T. boschianum). Uncommon and localized depressions in sandstone caps of mountains form unusual upland depression wetlands dominated by overcup oak (Quercus lyrata), willow oak (Q. phellos), or pin oak (O. palustris) and contain other plant species more typically found in the lowland forests and swamps of the West Gulf Coastal Plain, Arkansas Valley, and Mississippi Alluvial Plain natural divisions.

The Springfield Plateau Subdivision is usually separated by an abrupt escarpment from the Boston Plateau (Figure 18). In many areas the plateau surface, at an elevation of about 550 meters (ca. 1,800 feet), is extensive rather than simply consisting of mountaintops at concordant elevations as with the Boston Plateau. In the Springfield Plateau, as in the rest of the Ozarks, hills are below the plateau surface, cut down by streams and rivers. Some prominent hilly areas include the Elk River Hills around Bella Vista and the Dissected Springfield Plateau east of Rogers, both included within the Dissected Springfield Plateau – Elk River Hills (Level IV) Ecoregion (Woods et al. 2004; Figure 10). The Springfield Plateau is underlain by limestone and

chert. South-facing, cherty (acidic) slopes are occupied by short-leaf pine-hardwood forests and woodlands, whereas areas underlain by limestone (calcareous) rock are occupied by dry to mesic hardwood forests and woodlands. With limestone common throughout the subdivision, cave and solution (karst) features are prominent (Figure 19). Glades with exposed limestone or chert are extensive and characteristic, though today many are nearly covered by eastern red-cedar (Juniperus virginiana var. virginiana) as a result of widespread fire suppression. Prairies on thin soils over these substrates were also once extensive but have been decimated by human development, making many grassland species and communities that were once common very rare today (Figure 20).

Remaining prairies and open glades in



FIGURE 18. ESCARPMENT BETWEEN THE BOSTON PLATEAU SUBDIVISION (BACKGROUND) AND SPRINGFIELD PLATEAU SUBDIVISION (FOREGROUND) NEAR JASPER.

FIGURE 19. AERIAL VIEW (LOOKING SOUTH) OF THE SPRINGFIELD PLATEAU SUBDIVISION OF THE OZARKS SOUTHEAST OF HARRISON, NEAR THE JUNCTION OF BOONE, NEWTON, AND MARION COUNTIES. THE OPEN FIELDS IN THE FOREGROUND WERE HISTORICALLY PRAIRIE AND SAVANNA. NOTE THE PRESENCE OF SEVERAL UPLAND SINKHOLE PONDS. THE FORESTED BAND IN THE CENTER MARKS THE DISSECTED SPRINGFIELD PLATEAU ECOREGION AND THE HILLS IN THE DISTANCE ARE THE BOSTON MOUNTAINS. EACH ECOREGION SUPPORTS DISTINCT PLANT COMMUNITIES AND SPECIES.





FIGURE 20. BAKER PRAIRIE NATURAL AREA NEAR HARRISON IN BOONE COUNTY PROTECTS ONE OF THE FEW SURVIVING REMNANTS OF THE ONCE EXTENSIVE TALLGRASS PRAIRIES OF THE SPRINGFIELD PLATEAU SUBDIVISION OF THE OZARKS.

the Springfield Plateau are rich in plant species, including many found in few, if any, other ecoregions in the state. These species include naked-stem sunflower (Helianthus occidentalis subsp. occidentalis), prairie sunflower (H. pauciflorus subsp. pauciflorus), royal catchfly (Silene regia), lead-plant (Amorpha canescens), Illinois tick-trefoil (Desmodium illinoense), Skinner's false foxglove (Agalinis skinneriana), prairie violet (Viola pedatifida), Bicknell's sedge (Carex bicknellii), brown bog sedge (C. buxbaumii), open-field sedge (C. conoidea) and pointed broom sedge (C. scoparia var. scoparia).

The Salem Plateau Subdivision is often separated by an abrupt escarpment from the Springfield Plateau. Like the Springfield Plateau, the Salem Plateau surface, at an elevation of about 460 meters (ca. 1,500 feet), is extensive. Several distinct areas of hills have been cut into the plateau by rivers, most prominently the White River Hills (Level IV) Ecoregion along that river (Woods et al. 2004; Figure 10). The Salem Plateau is primarily underlain by dolomite with clay residuum and is covered with open oak woodlands and dry—mesic oak forests, prairies, and calcareous glades. Extensive areas were described in the nineteenth century as "barrens," a term that implied rock exposures with thin soil and some herbaceous and scattered woody plant cover.

Bluffs of the Salem and Springfield Plateaus (Figure 21), especially those in the White River Hills, support a distinct flora and appear to have served as refugia for many species at various times in the past. These bluffs range from very dry to permanently wet, depending on



FIGURE 21. CALCAREOUS BLUFFS IN THE SALEM PLATEAU SUBDIVISION OF THE OZARKS IN STONE COUNTY.

aspect, exposure, landscape position, and the presence or absence of groundwater. A number of uncommon species typically found in arid habitats farther west and/or southwest are known in Arkansas primarily from dry bluffs in the Ozarks. Such species include Texas Indianmallow (Abutilon fruticosum), tassel-flower (Brickellia grandiflora), stick-leaf (Mentzelia oligosperma), cedar sedge (Carex planostachys), Ashe's juniper (Juniperus ashei), Eaton's lip fern (Cheilanthes eatonii), slender lip fern (C. feei), golden currant (Ribes aureum var. villosum), American smoke-tree (Cotinus obovatus), plains muhly (Muhlenbergia cuspidata), western prickly-pear (Opuntia macrorhiza), and powdery cloak fern (Argyrochosma dealbata). Other unusual plants of dry bluffs are typically found farther north, such as velvety chickweed (Cerastium velutinum var. velutinum), or farther south, such as Ozark grass (Limnodea arkansana). Still others are endemic to the Interior Highlands, such as Church's wild rye (Elymus churchii) and MacKenzie's blue wild rye (E. glaucus subsp. mackenzii). Mesic, protected bluffs also appear to have served as refugia for a more northern and eastern flora. Examples of such northern and eastern species found on these sites include shining fir-moss (Huperzia lucidula), Hitchcock's sedge, running strawberry-bush (Euonymus obovatus), large-leaf grass-of-Parnassus (Parnassia grandifolia), showy lady's-slipper (Cypripedium reginae), miterwort (Mitella diphylla), hay-scented fern (Dennstaedtia punctilobula), pale gentian (Gentiana alba), celandine-poppy, hairy mock orange, and barren-strawberry (Waldsteinia fragarioides).

Calcareous glades of the Salem and Springfield Plateaus also provide habitat to a number of restricted species that are well adapted to the high pH and des-

> ert-like conditions of these communities. Several of these glade species are endemic to the Ozarks, including yellow coneflower (Echinacea paradoxa var. paradoxa), Bush's skullcap (Scutellaria bushii), and Trelease's larkspur (Delphinium treleasei). Others not endemic to the Ozarks but restricted or nearly restricted to Ozark glades in Arkansas include narrow-leaf milkweed (Asclepias stenophylla), Gattinger's goldenrod (Solidago gattingeri), glade cress (Leavenworthia uniflora), rock sandwort (Minuartia michauxii), Gattinger's prairieclover (Dalea gattingeri), prairie-turnip (Pediomelum esculentum), Missouriprimrose (Oenothera macrocarpa subsp. macrocarpa), knotweed leaf-flower (Phyllanthus polygonoides), and sand phlox (Phlox bifida). Other calcareous glade and prairie species such as false gaura

(Stenosiphon linifolius), showy beardtongue (Penstemon cobaea), big-head rabbit-tobacco (Diaperia prolifera var. prolifera), ear-leaf gerardia (Agalinis auriculata), celestial-lily (Nemastylis geminiflora), yellow false mallow

(Malvastrum hispidum), fringed puccoon (Lithospermum incisum), Nuttall's milk-vetch (Astragalus nuttallianus var. nuttallianus), cedar sedge (Carex planostachys), shaggy dwarf morning-glory (Evolvulus nuttallianus), and crested-coralroot (Hexalectris spicata var. spicata) occur in both the Ozarks and in the calcareous prairies and glades of the Blackland Prairie (Level IV) Ecoregion (Figure 10) in the West Gulf Coastal Plain of southwestern Arkansas, which has similar dry calcareous soils.

Calcareous, groundwater-fed wet meadows, or fens (Figure 22), are occasionally found in the Salem and Springfield Plateau subdivisions, often along seepy streambanks, and are the only sites in Arkansas for a number of plant species typically found to the north. Such species include Riddell's goldenrod (Solidago riddellii), Virginia mountain-mint (Pycnanthemum virginianum), linear-leaf yellow-loosestrife (Lysimachia quadriflora), swamp lousewort (Pedicularis lanceolata), Allegheny monkey-flower (Mimulus ringens var. ringens), silky willow (Salix sericea), porcupine sedge (Carex hystericina), inland star sedge (C.interior), bristly-stalksedge(C.leptalea), tussocksedge (C. stricta), prairie straw sedge (C. suberecta), capillary beaksedge (Rhynchospora capillacea), fen rush (Juncus subcaudatus), and shining ladies'-tresses (Spiranthes lucida). Other rare species confined or nearly confined



FIGURE 22. THIS MARION COUNTY FEN, IN THE SALEM PLATEAU SUBDIVISION OF THE OZARKS, IS DOMINATED BY ORANGE CONEFLOWER (*RUDBECKIA FULGIDA* VAR. *UMBROSA*) AND LARGE-LEAF GRASS-OF-PARNASSUS (*PARNASSIA GRANDIFOLIA*) WITH SCATTERED CLUMPS OF BRISTLY-STALK SEDGE (*CAREX LEPTALEA*), CAPILLARY BEAKSEDGE (*RHYNCHOSPORA CAPILLACEA*), AND FEN RUSH (*JUNCUS SUBCAUDATUS*).

to Ozark fens in Arkansas are disjunct from other regions including small-fruit primrose-willow (*Ludwigia microcarpa*), from the southeast, and creeping western umbrella sedge (*Fuirena simplex* var. *simplex*), from the southwest. Upland sinkhole ponds, natural karst features

formed by solution of bedrock or by the past collapse of subterranean caverns, are another important habitat for rare plants in these ecoregions. Plants restricted in Arkansas to these isolated upland wetlands include low-land yellow-loosestrife (*Lysimachia hybrida*) and creeping manna grass (*Glyceria acutiflora*). Sinkhole ponds also contain a number of wetland plant species more typically found in the Mississippi Alluvial Plain or West Gulf Coastal Plain natural divisions.

The Ouachita Mountains Natural Division

The Ouachita Mountains Natural Division (Figures 3 & 4) is an area of folded rock formed by tectonic compression from south to north (Croneis 1930). In contrast to the Ozarks, streams of the Ouachitas generally flow in structural valleys within folds, rather than having created the valleys by erosion. Consequently, the valleys are often wider than those of Ozark streams and trend east—west rather than in the dendritic pattern typical of streams in the Ozarks. Sandstone and shale are the ubiquitous rocks of the division, which weather into sandy soils that support the short-leaf pine that is the characteristic dominant species of the division.

The Fourche Mountains Subdivision, the northernmost subdivision of the Ouachitas (Figures 10, 14 &

> 15), is also the most typical; one ridge extends with few breaks from Oklahoma east to near Searcy. The characteristic pattern of vegetation in the Ouachitas is clearest here as well, with pine and pine-hardwood forests dominant on lower south-facing slopes, grading to dry post oak-blackjack oak forest or woodland on upper southfacing slopes (Figures 4 & 23). Dry-mesic hardwood forests dominated by white oak and northern red oak occur on northfacing slopes. Sometimes there is another belt of pine on lower, gentle, north-facing slopes that get considerable sun. Some very protected, generally steeper, moist areas on north-facing slopes, such as on Rich Mountain and Blackfork Mountain, may have mesic forests of sugar maple, umbrella magnolia (Magnolia tripetala), cucumber magnolia (M. acuminata), and basswood, sometimes with beech. One of the most interesting features of the vegetation of this region is the prominence of

the "Pine-Bluestem Ecosystem," plant communities on gentle slopes heavily influenced by fire, where short-leaf pines are widely spaced enough to allow a groundcover of grasses and forbs typical of prairies. A federally endangered bird species, the Red-cockaded Woodpecker



FIGURE 23. AERIAL VIEW (LOOKING WEST) OF NORTH FORK PINNACLE NEAR THE SALINE/PERRY COUNTY LINE, SHOWING TYPICAL VEGETATION OF THE FOURCHE MOUNTAINS SUBDIVISION OF THE OUACHITA MOUNTAINS – SHORT-LEAF PINE-HARDWOOD FOREST AND WOODLAND ON SOUTHFACING SLOPES AND HARDWOOD FOREST AND WOODLAND ON NORTH-FACING SLOPES.

(Picoides borealis), occurs in these open woodlands.

The Central Ouachita Mountains Subdivision (Figure 14) is more complex than the Fourche Mountains in that the mountains are not always oriented east—west (the appropriately named Zig-Zag Mountains near Hot Springs are certainly not). In fact, there are several distinct basins and mountain ranges within this subdivision (Croneis 1930; Foti 1974; Figure 15). Woods et al. (2004) divide this subdivision into the Central Mountain Ranges, Western Ouachitas, and Central Hills, Ridges, and Valleys (Level IV) ecoregions (Figure 10). Geologically, the subdivision is bounded by, and includes within it, novaculite, a flint-like rock, in addition to the typical sandstone

and shale. Glades and woodlands occur on all three substrates. The lowlands along the Ouachita River, by far the largest river of this division, once added distinctiveness, including the most extensive natural loblolly pine stands of the division, but large reservoirs have drowned most of these, making natural stands of loblolly pine very rare in the Ouachitas. Vegetation of this subdivision displays the patterns typical of the Fourche Mountains, but glades occurring on novaculite and shale (Figures 24 & 25) add greatly to the diversity of the flora and vegetation. Both of these substrates can be either acidic or calcareous, leading to substantial floristic diversity even within one general kind of glade. Both of these glade types contain a number of plant species endemic to the Ouachita Mountains. West of Hot Springs, groundwater seepage areas are

numerous, with diverse plant communities rich in orchids, ferns, sedges, grasses, and many other species otherwise uncommon in the region, many of which have their main ranges to the north and/or east of Arkansas today and are considered relicts of cooler climatic periods in the past. Such species include log fern (Dryopteris celsa), swamp thistle (Cirsium muticum), false bugbane (Trautvetteria caroliniensis), tussock sedge (Carex stricta), bristly-stalk (C. leptalea), brome sedge (C. bromoides subsp. bromides), smooth-sheath sedge (C. laevivaginata), prickly bog sedge (C. atlantica subsp. atlantica), leafy bulrush (Scirpus polyphyllus), New York fern (Thelypteris noveboracensis) and fen orchid (Liparis loeselii).

The Athens Plateau Subdivision, often called the Athens Piedmont (Figures 10 & 14), is the southernmost subdivision of the

Ouachita Mountains. This region displays the simple east—west ridge structure of the Fourche Mountains but with a distinctive feature: in this subdivision the rivers, such as the Cossatot and Little Missouri, typically flow north to south, crossing each ridge, a phenomenon that occurs only rarely in the other subdivisions. At some point in time these ridges may have dropped below ocean level, the valleys filled with sediment, and when they rose again with a gentle north-to-south slope, southward-flowing rivers were able to continue their direction of flow by cutting through the ridges they encountered. At each crossing, a steep rapids or series of waterfalls occurs, most notably Cossatot Falls on the Cossatot



Figure 24. Novaculite glade and adjacent short-leaf pine-oak woodland in the Central Ouachita Mountains Subdivision of the Ouachita Mountains at the Simpson Preserve at Trap Mountain near the Hot Spring/Garland county border.



FIGURE 25. SHALE BARRENS IN THE CENTRAL OUACHITA MOUNTAINS SUBDIVISION OF THE OUACHITA MOUNTAINS IN GARLAND COUNTY. THIS COMMUNITY SUPPORTS A HIGH NUMBER OF RARE PLANT SPECIES, INCLUDING MORE ENDEMIC SPECIES THAN ANY OTHER HABITAT IN THE STATE.

River (Figure 26) and Little Missouri Falls on the Little Missouri River. Ridges here are lower than those elsewhere in the Ouachitas. Vegetation patterns are similar to those of the Fourche Mountains, except that conversion of natural forests to pine plantations has been much more extensive in the Athens Piedmont Plateau than in the rest of the Ouachitas.



FIGURE 26. COSSATOT FALLS AT THE COSSATOT RIVER STATE PARK-NATURAL AREA IN HOWARD COUNTY.

The Ouachita Mountains are notable for a number of endemic or near-endemic plant species. Most (though not all) of these are restricted to glades, barrens, open woodlands, or "scour-prairies" (rocky prairie-like areas along high-energy mountain streams).

Examples of such endemic or near-endemic species include Ouachita bluestar (Amsonia hubrichtii), Ouachita blazing-star (Liatris compacta), Cossatot leafcup (Polymnia cossatotensis), Ouachita goldenrod (Solidago ouachitensis), Letterman's ironweed (Vernonia lettermannii), Browne's waterleaf (Hydrophyllum brownei), twistflower Arkansas (Streptanthus maculatus subsp. obtusifolius), Ouachita twistflower (S. squamiformis), Ouachita indigo-bush (Amorpha ouachitensis), beebalm (Monarda fistulosa Ouachita var. stipitatoglandulosa), Ouachita hedgenettle (Stachys iltisii), Church's wild rye (Elymus churchii), hairy-flower Arkansas bedstraw (Galium arkansanum pubiflorum), Ouachita bluet (Houstonia ouachitana), Nuttall's cornsalad (Valerianella nuttallii), Palmer's cornsalad (V. palmeri), and Waterfall's sedge (Carex latebracteata).

Shale barrens in the eastern part of the Ouachitas (Saline County) contain Pelton's rose-gentian (Sabatia arkansana), a species also known from nearby igneous glades in the northern West Gulf Coastal Plain, but apparently endemic to Saline County. The Ouachita Mountains are also notable for a number of rare species (from north, south, east, and west) that have disjunct occurrences in

the Ouachitas. Many of these species are found in specific, and often rare, patch communities. Many northern and eastern species occur in wooded seeps and are described above. Other significantly disjunct species are found in rocky upland woods, often at high elevation. These include Georgia holly (*Ilex longipes*) and rayless crownbeard (Verbesina walteri), disjunct from the south and east, and black huckleberry (Gaylussacia baccata) and Porter's reed grass (Calamagrostis porteri subsp. insperata), disjunct from the north and east. Still others occur in rocky stream channels and associated scour-prairies along streams. These include the federally endangered harperella (Ptilimnium nodosum), as well as plantain-leaf sunflower (Helianthus occidentalis subsp. plantagineus)

and Cumberland sand-reed (*Calamovilfa arcuata*). Still others, such as three-flower hawthorn (*Crataegus triflora*) and dwarf spiderwort (*Tradescantia longipes*), are found in shale barrens.

The Arkansas Valley Natural Division

The Arkansas Valley Natural Division (Figures 3 & 5) is defined as a structural synclinorium (trough) lying between the anticlinorium (hump) of the Ouachitas and the uplifted plateaus of the Ozarks. As such, there is no clearly defined boundary at the surface between the Valley and the Ouachitas; the definitional distinction occurs underground. The identity of the Valley is further confused by the presence within it of features that are characteristic of both the Ouachitas and the Ozarks, such as folded ridges and uplifted plateaus. Croneis (1930) considered the Arkansas Valley a subdivision of the Ouachita Physiographic Region, but it was elevated to a full natural division (Foti 1976; Pell 1983; Figure 3) because of its transitional character between the Ouachitas and Ozarks and because it has features within it that are unique to it, such as isolated mountains that are erosional remnants of an older, higher land surface, once probably continuous with the Boston Mountains. In general, such remnants are known as "monadnocks," but those of a particular shape—flat-topped and steep-sided—are

mesas, like Magazine Mountain. The fact that the Arkansas River passes through, not around, the only mountainous region between its source and the Gulf of Mexico gives a hint of an interesting geologic history. The Arkansas River played a dominant role in shaping the surface features of the valley, directly or indirectly, and caused Foti (1974) to call it the "Arkansas River Valley." However, most subsequent discussions have referred to it as the "Arkansas Valley," and that term is used here.

Although the earlier maps of the Arkansas Valley (Foti 1976) did not subdivide it, it has considerable landscape diversity, and several distinct Level IV Ecoregions have been recognized (Woods et al. 2004; see also Keys et al. 1995; Foti & Bukenhofer 1998; Figure 10). The characteristics of these Level IV Ecoregions are described below.

The Arkansas Valley Plains (Level IV) Ecoregion (Woods et al. 2004) includes flat Pleistocene terraces, rolling uplands, and isolated, generally small, ridges. Vegetation of this ecoregion is diverse. The rolling uplands are generally dominated by hardwood communities with poorly drained flats occupied by willow oak flatwoods. Ridges and monadnocks are covered with upland pine and hardwood forests and woodlands in the same patterns described for the Fourche Mountains. Prior to European settlement, extensive tallgrass prairies occurred in Franklin and Sebastian counties and

graded into oak savannas and woodlands (Figure 27). Floristically, these prairies are similar in many respects to those of the midwestern United States but they also contain a number of Coastal Plain elements such as short-leaf skeleton grass (Gymnopogon brevifolius), Muhlenberg's nut-rush (Scleria muehlenbergii), sundew (Drosera brevifolia), zigzag bladderwort, big carpet grass (Axonopus furcatus), and twist-leaf goldenrod (Solidago tortifolia). In some areas these prairies contain inclusions of saline soils which have developed a unique saline barrens community (Figure 27) with a number of salt-tolerant rare plants that are restricted or nearly restricted to this community type in Arkansas. Examples of such species found in Arkansas Valley saline barrens include woolly cotton-flower (Gossypianthus lanuginosus tenuiflorus), tumble grass (Schedonnardus paniculatus), purple three-awn (Aristida purpurea var. purpurea), geocarpon (Geocarpon minimum), and whorled dropseed (Sporobolus pyramidatus). The juxtaposition of these prairies, post oak woodlands, and savannas demonstrates that this area is related to the Cross Timbers of Oklahoma and Texas.



FIGURE 27. SALINE SOIL BARRENS (FOREGROUND) SURROUNDED BY TALLGRASS PRAIRIE AND OAK SAVANNA ON FORT CHAFFEE IN THE ARKANSAS VALLEY PLAINS ECOREGION NEAR THE FRANKLIN/SEBASTIAN COUNTY LINE.

The Arkansas Valley Hills (Level IV) Ecoregion (Figure 10) is very different from the Plains. Flat to rolling uplands are less extensive, and the landscape is typically characterized by hills and small mountains. In many areas it is difficult to decide where the Arkansas Valley ends and the Boston Mountains begin. The differences between the Arkansas Valley Hills and Plains exist because the Arkansas River has not shaped the Hills Ecoregion but rather cuts southward through the eastern Ouachita Mountains from about Conway. Forests and woodlands of this subdivision are typically the hard-

wood and pine-hardwood communities that are typical of the southern Ozarks and Ouachitas.

The Scattered High Ridges and Mountains (Level IV) Ecoregion (Woods et al. 2004; Figure 10) includes the highest mountain and greatest local relief in Arkansas at Magazine Mountain in Logan County (Figure 28). Although the mountains are sometimes high, their underlying strata are warped down into a trough; these are synclinal mountains. Within this subdivision are both folded ridges and monadnocks or mesas such as Petit Jean Mountain. The upland hardwood and pine—hardwood communities are like those of the adjacent Fourche Mountains. Magazine Mountain is an especially unique and floristically important feature of the Arkansas Valley and supports a number of notable plant

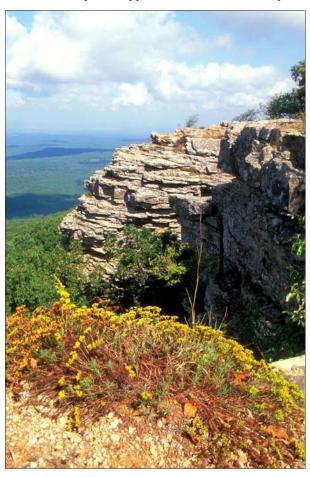


FIGURE 28. A CLUMP OF YELLOW NAILWORT (*PARONYCHIA VIRGINICA*) GROWING ON A BLUFFTOP GLADE ALONG THE NORTH RIM OF MAGAZINE MOUNTAIN IN LOGAN COUNTY.

species, including several that are significantly disjunct from the north, east, and west. Examples of more northern elements on Magazine Mountain include spreading dogbane (*Apocynum androsaemifolium*), Pennsylvania sedge (*Carex pensylvanica*), blue cohosh, hay-scented fern (*Dennstaedtia punctilobula*), spinulose wood fern

(Dryopteris carthusiana), wavy hair grass (Deschampsia flexuosa), northern blazing-star (Liatris scariosa var. nieuwlandii), prickly gooseberry (Ribes cynosbati), and red-fruit horse-gentian (Triosteum aurantiacum var. illinoense). In xeric habitats on the top of the mountain are several western and southwestern species including Ashe's juniper (Juniperus ashei), western wallflower (Erysimum capitatum var. capitatum), and yellow nailwort (Paronychia virginica). Eastern elements include button sedge (Carex bullata), Turk'scap lily (Lilium superbum), and perhaps most notably Appalachian cliff fern (Woodsia appalachiana), which is a long-range disjunct from the Blue Ridge Mountains in the southern Appalachians.

Some of the most interesting plants in the Arkansas Valley Natural Division are found within the Arkansas River Floodplain (Level IV) Ecoregion (Woods et al. 2004; Figure 10). Prior to the navigation project that created a series of dams on the Arkansas River (there are 13 within Arkansas' borders), there were extensive sandbar areas along the river that collectively supported a distinctive flora. Most of this habitat was flooded by impoundments behind these dams, but remaining sandbar areas, usually occurring just downstream from the dams, provide refuge for a number of plant species dependent on this habitat type and not known from other areas of the state. Examples include Hooker's scratch-daisy (Croptilon hookerianum var. validum), phlox heliotrope (Heliotropium convolvulaceum), six-angle spurge (Euphorbia hexagona), woolly prairie-clover (Dalea lanata var. lanata), catchfly prairie-gentian (Eustoma exaltatum), and four-point evening-primrose (Oenothera rhombipetala).

The West Gulf Coastal Plain Natural Division

The West Gulf Coastal Plain Natural Division, or simply Coastal Plain (Figures 3 & 7), is often referred to as "The Pineywoods" since that is its dominant character. Omernik (1987) and Woods et al. (2004) referred to it as the South Central Plains (Level III) Ecoregion (Figure 10). Pine, usually loblolly, with short-leaf pine on drier sites, is ubiquitous, except in the wide bottomlands along streams. The upland geology here, most often sand and gravel, is often derived from beaches, shores, and bottoms of the ancient Gulf of Mexico, laid down since the Cretaceous Period. There is a high degree of biological diversity in the Coastal Plain, but it has been greatly reduced by human activity in the past century. All forests in the division are accessible and have been heavily cut over or managed. Fire, which was an important source of the region's diversity, has generally been suppressed. Pines were naturally dominant here because of frequent fire, and those fires sustained other communities as well, including prairies, pine savannas, sand barrens, glades, herbaceous seepage wetlands (seeps), marshes, and saline soil barrens. The Coastal Plain may have had, prior to European settlement, the greatest landscape diversity of any of the natural divisions, but that has been reduced to limited areas of natural vegetation scattered across an expanse of pine plantations, pastures, and other developed land cover types. Subdivisions of the Coastal Plain that are described here generally follow Woods et al. (2004).

The Tertiary Uplands (Level IV) Ecoregion is the most typical part of the Coastal Plain (Woods et al. 2004; Figure 10). It occupies the areas throughout the Coastal Plain that are derived from marine sediments of Tertiary age deposited by the Gulf of Mexico. This and adjacent portions of Louisiana are the typical piney hills and are the heart of the loblolly pine range west of the Mississippi River. This species dominated the natural forests in this part of the state, particularly on north-facing slopes, lower slopes, and in well-drained bottoms. Short-leaf pine dominated on drier sites (generally south-facing sandy slopes). Short-leaf pine may have replaced loblolly in natural succession as well; that is, there may have been a loblolly-to-short-leaf pine succession as well as the more often described pine-to-hardwood succession, given that short-leaf pine is longer-lived and more fire-tolerant than loblolly. It is impossible to think of the vegetation of the Coastal Plain in the absence of fire. In the 1720s, Le Page du Pratz (1774) described the Coastal Plain, in areas of present-day Louisiana and Arkansas, in detail, noting the importance of annual fall burning by Native Americans. In many cases the distinctive vegetation found on both typical and unusual physical sites is unrecognizable in the absence of fire. Suppression of fire has had impacts comparable to those of human conversion of natural forests to a loblolly pine monoculture.

These piney hills are, in general, among the least species-rich communities of the Coastal Plain, with few

rare species. However, within the general matrix of sandy hills dominated by pinehardwood forests are sites with special conditions that greatly add to the diversity of this region. Extremely sandy sites, or sandhills, have excessive drainage of precipitation and unique sand barrens vegetation that is typified by scattered scrubby oaks and pines, with an herbaceous ground layer rich in rare or uncommon plant species (Figure 29). These sandhill communities are best developed in Ouachita, Nevada, and Miller counties but are found scattered in other areas of the Tertiary Uplands Ecoregion. Within both the overstory and understory are dozens of species that occur in Arkansas only in these communities. These include dwarf pawpaw

(Asimina parviflora), silver rabbit-tobacco (Diaperia candida), woolly-white (Hymenopappus artemisiifolius var. artemisiifolius), Robbins' prairie scorpion-weed (Phacelia strictiflora var. robbinsii), sandhill twistflower (Streptanthus hyacinthoides), Georgia rock-rose (Crocanthemum georgianum), sandhill clammy-weed (Polanisia erosa subsp. erosa), Patterson's dawnflower (Stylisma pickeringii var. pattersonii), narrow-leaf rushfoil (Croton michauxii), heart-leaf spurge (Euphorbia cordifolia), slim-pod milk-vetch (Astragalus leptocarpus), Soxman's milk-vetch (Astragalus soxmaniorum), buried Indian-breadroot (Pediomelum hypogaeum var. subulatum), Arkansas oak (Quercus arkansana), bluejack oak (Q. incana), eastern sandhill evening-primrose (Oenothera heterophylla subsp. orientalis), sand blue toadflax (Nuttallanthus canadensis), scarlet beardtongue (Penstemon murrayanus), many-flower wild buckwheat (Eriogonum multiflorum var. multiflorum), pinewoods larkspur (Delphinium carolinianum subsp. vimineum), squirrel-tail six-weeks grass (Vulpia sciurea), Louisiana yucca (Yucca louisianensis), Reverchon's spiderwort (Tradescantia reverchonii), fringe-leaf hairsedge (Bulbostylis ciliatifolia var. coarctata), Illinois flatsedge (Cyperus grayoides), bristly flatsedge (C. hystricinus), curly three-awn (Aristida desmantha), and downy oat grass (Danthonia sericea). An area of sandhill habitat in Miller County south of Texarkana has a number of rare sandhill plants typically found in Texas and restricted in Arkansas only to this western-most area of sand barrens. These species include milkvine (Matelea cynanchoides), sandhill green-eyes (Berlandiera pumila var. pumila), golden-wave tickseed (Coreopsis intermedia), sanguine purple coneflower (Echinacea sanguinea), Oklahoma plum (Prunus gracilis), Texas ragwort (Senecio ampullaceus), Louisiana squarehead (Tetragonotheca ludoviciana), yellow-disk greenthread (Thelesperma



FIGURE 29. SANDHILL BARRENS AT MILLER COUNTY SANDHILLS NATURAL AREA.

flavodiscum), spreading pygmyleaf (Loeflingia squarrosa), Small's noseburn (Tragia smallii), little-leaf prairie-clover (Dalea phleoides var. microphylla), silky prairie-clover (D. villosa var. grisea), palm-leaf scurfpea (Pediomelum digitatum), sandhill evening-primrose (Oenothera heterophylla subsp. heterophylla), and hairy grama (Bouteloua hirsuta subsp. hirsuta).

As water draining through subsurface sands reaches a layer of tighter silt or clay, it is forced to travel laterally and exit at the base of the hills as springs or, more interestingly, as broad areas of groundwater seepage. The vegetation of these "seeps" can take several forms, including herbaceous-dominated communities with orchids and scattered overstory pines and hardwoods, or, more commonly in the Tertiary Uplands, as forested seeps dominated by ferns and sweet-bay magnolia (Magnolia virginiana), a northern extension of the "bayhead" or "baygall" community of Louisiana and Texas. Species found almost exclusively in these forested seeps and groundwater-fed seepage swamps in Arkansas include the Louisiana wood fern (Dryopteris ludoviciana), kidney-leaf grass-of-Parnassus (Parnassia asarifolia), black chokeberry (Photinia melanocarpa), swamp goldenrod (Solidago patula subsp. strictula), and coral greenbrier (Smilax walteri).

Sandy, moist ravines and occasionally flooded bottomlands within the Tertiary Uplands Ecoregion have a beech-holly dominated community (Figure 30) that is probably a northern extension of the beech-magnolia community of Louisiana.



FIGURE 30. MATURE BEECH-HOLLY FOREST ALONG A SMALL STREAM IN THE TERTIARY UPLANDS ECOREGION OF THE GULF COASTAL PLAIN IN DALLAS COUNTY.

The Pleistocene Fluvial Terraces (Level IV) Ecoregion (Figure 10) was probably the region within the Coastal Plain that was naturally most heavily dominated by loblolly pine. These terraces, up to about 32 ki-

lometers (20 miles) wide on either side of the Ouachita, Saline, and Red rivers, were formed within the past 100,000 years but are now generally above the current floodplain and receive their primary hydrologic input from precipitation rather than overbank flooding of streams. The topography is flat, and the substrate is poorly drained silt or clay. These terraces typically consist of pine flatwoods, sometimes with a forest (closed canopy) structure but often with an open woodland structure with an herbaceous ground layer (Figure 31). Often these areas, while not flooded, are poorly drained enough to be wetlands, and embedded depressions as well as larger, very poorly drained flats may be occupied by hardwood flatwoods (Figure 32). Because they have poor external drainage due to their flatness and poor internal drainage due to a tight clay subsoil, soil moisture varies within a typical year from very wet in the winter and spring to very dry in the summer and fall. This "hydroxeric" moisture regime has important implications for the distribution of species, both directly through the effects of wetness or dryness of a particular microsite, and indirectly through its influence on the fire regime of such areas. Because these sites are very dry during the summer-fall dry season, they burn with high frequency and intensity. However, low flats and vernal pools may remain moist even during the typical dry season, causing fire to burn around or with lower intensity through these moist areas. Therefore, fire intensity is regulated by edaphic conditions in these terraces, rather than by slope and aspect as in more rolling or hilly areas. These conditions fa-

vored plant communities dominated by open stands of pine with a diverse, prairie-like herbaceous ground layer (Figure 31).

The Pleistocene Terraces have their own characteristic patch communities that increase plant diversity in the overall landscape of the ecoregion. These communities include seeps, tallgrass prairies, lowland sand prairies, and saline barrens. Where a higher terrace abuts a lower one, groundwater may move laterally and exit in seeps where uncommon species are concentrated. These are similar to the seepage communities described for the Tertiary Uplands but were, at least historically, generally more open due to the higher incidence of fire in the Pleistocene Terraces. These open, herbaceous-dominated seeps (Figure 33) are typically richer in rare species than forested ones and provide habitat

for a number of rare or restricted plants, including blueflower eryngo (*Eryngium integrifolium*), pink sundew (*Drosera capillaris*), Virginia marsh-St. John's-wort (*Triadenum virginicum*), horned bladderwort (*Utricularia*



FIGURE 31. OPEN PINE FLATWOODS WITH A DIVERSE UNDERSTORY CHARACTERISTIC OF THE PLEISTOCENE FLUVIAL TERRACES ECOREGION OF THE WEST GULF COASTAL PLAIN. WARREN PRAIRIE NATURAL AREA. DREW AND BRADLEY COUNTIES.



FIGURE 32. WET HARDWOOD FLATWOODS WITH DWARF PALMETTO (*SABAL MINOR*) UNDERSTORY ON A PLEISTOCENE TERRACE OF THE RED RIVER AT PALMETTO FLATS NATURAL AREA IN LITTLE RIVER COUNTY.



FIGURE 33. HERBACEOUS SEEPAGE WETLAND AT THE CONTACT BETWEEN THE TERTIARY UPLANDS ECOREGION AND THE PLEISTOCENE FLUVIAL TERRACES ECOREGION NEAR HARDIN IN JEFFERSON COUNTY.

cornuta), swamp hornpod (Mitreola sessilifolia), twisted spike-rush (Eleocharis tortilis). Bush's umbrella sedge (Fuirena bushii), slenbeaksedge (Rhynchospora gracilenta), few-flower beaksedge (R. rariflora), plumed beaksedge (R. plumosa), large-head pipewort or hatpins (Eriocaulon decangulare), rose pogonia (Pogonia ophioglossoides), tuberous grass-pink (Calopogon tuberosus var. tuberosus), crested fringed orchid (Platanthera cristata), tall swamp panic grass (Dichanthelium scabriusculum), and three species of yelloweyed-grass (Xyris ambigua, X. baldwiniana, and X. difformis).

Additionally, within the past 20,000 years, a blockage of the Ouachita River near present-day Monroe, Louisiana, created a lake that extended into the area of present-day southern Arkansas. Sandy deposits within the Ouachita River floodplain that may have been beaches along the former shores of this lake (Lake Monroe) support a lowland sand "prairie" community dominated by switch grass (*Panicum virgatum*), but the community lacks most species typical of tallgrass prairies and is more like barrens than true prairies. Water dawnflower (*Stylisma aquatica*) is a species more or less restricted to this habitat in Arkansas.

Some of the terraces are capped with loess, which gives them the character of the Pleistocene Terraces of the Mississippi Alluvial Plain. Indeed, there historically were prairies on these terraces similar to the Grand Prairie and other prairies of the Mississippi Alluvial Plain. These and other areas with calcareous soils had either herbaceous prairie groundcover, with a thin woody overstory, sometimes referred to as barrens, or were small, relatively treeless prairies. In the West Gulf Coastal Plain, these prairies were best developed in Drew and Ashley counties but have been almost entirely destroyed since the time of European settlement.

Another distinctive feature of the Pleistocene Terraces is the presence of saline soil areas with a distinctive prairie or barrens vegetation. Although these areas have a few species in common with the true tallgrass prairies of Arkansas, they are not prairies as typically meant by the term. Generally, they are difficult areas for plants to survive in; there are areas within them that are so salty that patches of bare soil, called "slicks" occur. The dominant species around these slicks may in fact be "weeds," such as poor-Joe (*Diodia teres*) and three-awn grasses (*Aristida oligantha* and *A. dichotoma*), that are tolerant of the extreme salinity of these areas, a condition toxic to many

plants. A number of rare species, however, occur in Arkansas only on these sites, including silver dwarf morning-glory (*Evolvulus sericeus*), barrens silky aster (*Symphyotrichum pratense*) Texas sunnybell (*Schoenolirion wrightii*), and the federally threatened species geocarpon (*Geocarpon minimum*). In situations where the soil is a bit thicker, species such as little bluestem (*Schizachyrium scoparium*) may dominate, sometimes with a scattering of shrubby post oaks, often delta post oak (*Quercus similis*), and dwarf palmetto (*Sabal minor*).

The Blackland Prairie (Level IV) Ecoregion (Figure 10), also referred to as the Blackland Prairie Section (Foti 1976), is quite different from the rest of the Coastal Plain. The geologic parent material is older and is often calcareous, in contrast to the acidic sands and gravels found elsewhere. The parent material is often calcareous clay or chalk, but there are also two narrow belts of limestone within the region. Typical Coastal Plain sands and gravels also occur here, but short-leaf pine is more abundant within the pine-hardwood forests on such sites than in the rest of the Coastal Plain. The sites here tend to be higher and drier than prairies farther east in Arkansas, and the climate here is more influenced by dry winds from Texas and Oklahoma. On calcareous substrates, distinctive prairies, forests, and woodlands are found (Figure 34). The blackland prairies themselves are on shallow soils over chalk or marl (calcareous clay). Because they are drier than other prairies in Arkansas, they are dominated by Indian grass (Sorghastrum nutans) and little bluestem (Schizachyrium scoparium) rather than big bluestem (Andropogon gerardii) and switch grass (Panicum virgatum). There are a number of species that are restricted, or



FIGURE 34. THE BLACKLAND PRAIRIE ECOREGION HISTORICALLY SUPPORTED A DIVERSE MOSAIC OF CALCAREOUS PRAIRIES, SAVANNAS, AND OPEN WOODLANDS LIKE THIS ONE AT TERRE NOIRE NATURAL AREA IN CLARK COUNTY.

nearly so, in Arkansas to the blackland prairies. These include little-tooth sedge (Carex microdonta), which may be locally very abundant, slender bladderpod (Physaria gracilis subsp. gracilis), Great Plains ladies'-tresses (Spiranthes magnicamporum), false gaura (Stenosiphon linifolius), Dakota vervain (Glandularia bipinnatifida var. bipinnatifida), purple ground-plum (Astragalus crassicarpus var. crassicarpus), big-head rabbit-tobacco (Diaperia prolifera var. prolifera), Drummond's wild onion (Allium drummondii), plains larkspur (Delphinium carolinianum subsp. virescens), Reverchon's false pennyroyal (Hedeoma reverchonii), few-flower false dandelion (Pyrrhopappus pauciflorus), and hairy cornsalad (Valerianella amarella). On outcrops of chalk with even thinner soil are glades and woodlands dominated by Ashe's juniper (Juniperus ashei) and Durand's white oak (Quercus sinuata), a community similar to that of the Edwards Plateau in Texas. These chalk glades are the only sites in Arkansas for a number of plants such as bluewood (Condalia hookeri), scarlet-pea (Indigofera miniata), Texas grama (Bouteloua rigidiseta), annual wild buckwheat (Eriogonum annuum), Texas bindweed (Convolvulus equitans), compact prairie-clover (Dalea compacta var. compacta), Engelmann's daisy (Engelmannia peristenia), and skunk-bush sumac (Rhus trilobata var. trilobata). On deeper calcareous soils occur upland hardwood forests that may include bluff oak (Quercus austrina) and Durand's white oak as well as other species unusual in Arkansas. The Red River bottomlands and terraces also may have forests dominated by Durand's white oak and may have an open structure with a sedge and palmetto understory that is very distinctive.

> sive bottomlands; even small streams have bottomlands that are often up to 3 kilometers (1 to 2 miles) wide. These areas are substantial enough to be considered another Level IV Ecoregion, the Floodplains and Low Terraces Ecoregion (Woods et al. 2004; Figure 10). Major rivers like the Red and Ouachita have bottomlands several kilometers wide. The unconsolidated deposits along these streams are easy to remove and rework even by small streams. Woods et al. (2004) distinguished the Red River Bottomlands (Level IV) Ecoregion from all others in the Coastal Plain because of its width, the fact that the soils here are transported from the west rather than being derived from within the Coastal Plain or Ouachita Mountains, and the fact that the land use here today is predominantly rowcrop agriculture, the only large area within the region where that is the case.

Along watercourses in the Coastal Plain are expan-

The Mississippi Alluvial Plain Natural Division

The Mississippi Alluvial Plain Natural Division, often referred to as the Lower Mississippi Valley, Mississippi Alluvial Valley, or Delta, is a region where the surface layers of Gulf of Mexico deposits have been removed and replaced by alluvial deposits of the rivers that traverse it (Figures 3 & 8). Although the typical vegetation is bottomland hardwood forest, there is much greater community diversity here than is often assumed, including upland hardwood forest, oak flatwoods, prairie, woodland or savanna, and pine flatwoods. In the floodplains of the rivers, seasonal inundation is the dominant physical factor influencing the composition and structure of vegetation. Whether in the floodplains or not, the rivers have played pre-eminent roles in shaping the land and developing its physical properties (Saucier 1994). As a result, fluvial geomorphic settings (landforms created by past actions of the rivers) provide a framework for understanding the geographic biological diversity of the Mississippi Alluvial Plain (Klimas et al. 2004). The geomorphology of the Mississippi Alluvial Plain has been well delineated (Saucier 1994) and played a major part in the development of that section of the Woods et al. (2004) map (Figure 10).

That portion of the St. Francis Basin (referred to by Foti (1976) as the Northeast Arkansas Section) east of Crowley's Ridge, fits most people's conception of the Mississippi Alluvial Plain. Before levees were built, almost all of this region was inundated by the Mississippi River during extreme flood events. The underlying geomorphology caused Woods et al. (2004) to divide it into several ecoregions. Most of the basin is composed of point bars and backswamps created by meanderings of the Mississippi River within the last 10,000 years and is mapped by Woods et al. (2004) as the Northern Holocene Meander Belts and Northern Backswamps (Level IV) ecoregions (Figure 10). The area along the St. Francis River north of Marked Tree was also laid down by the Mississippi River, but as a braided stream carrying glacial outwash 20,000 years ago. Woods et al. (2004) mapped this area as the St. Francis Lowlands (Level IV) Ecoregion (Figure 10). One of the areas within the Mississippi Alluvial Plain most altered by human activity, the St. Francis Basin was once almost entirely covered with bottomland hardwood forest but is now almost completely drained and cleared for cropland. Former braided-stream channels in the St. Francis Lowlands Ecoregion remain very wet and contain much of the remaining forest in the basin, along with swamps and lakes in more recent channels and meander scars in the Northern Holocene Meander Belts Ecoregion. Other notable forested areas include swamps like Big Lake, which was created or expanded by the New Madrid earthquakes of 1811–1812.

The Grand Prairie (Level IV) Ecoregion (Figure 10), also referred to as the Grand Prairie Section (Foti 1976), is an anomaly within the Mississippi Alluvial Plain: it is older, higher, flatter, and much of it was covered with different vegetation (grassland) than the rest. In contrast to the bulk of the Mississippi Alluvial Plain, where alluvium has been deposited within the past 20,000 years or so, and often much more recently, the Grand Prairie has not been reworked by rivers within the past 100,000 years (Saucier 1994). It is a high, flat terrace underlain by deep deposits of clay built by the Arkansas River. Its western border is typically about 3 to 9 meters (ca. 10 to 30 feet) higher than the adjacent Bayou Meto bottomlands, but its eastern border is up to about 30 meters (100 feet) higher than the adjacent White River bottomlands. Tributary streams, in cutting down to the White River, have in places dissected the terrace into a series of hills up to 16 kilometers (10 miles) wide. In some areas the White River cuts into the Grand Prairie terrace and forms notable bluffs. A thin layer of loess caps the terrace and provides its fertile topsoil, and the thick, impermeable clay layer provides a waterproof bottom for irrigated fields that make this the center of rice production in Arkansas and one of the leading rice-producing areas in the country. As a result of the conversion of prairie to agricultural fields, 99.9 percent of the prairie within the Grand Prairie has been lost.

The vegetation of the Grand Prairie terrace is highly diverse, reflecting its physical character. The broad expanses of the flat terrace surface, with thin soil over clay subsoil, cause droughty conditions that favored prairie grasses and forbs over trees (Figure 35). At the same time, these large contiguous areas of terrace surface covered with grasses ensured that a fire started by lightning or humans could burn thousands to tens of thousands of acres. Therefore the frequency of fire at any point was increased, and these fires could help maintain the prairie. The prairie probably originated during the hot, dry Hypsithermal Period, about 8,000 to 5,000 years ago. The droughty soils and frequent fire allowed the prairie to persist even under the moister conditions of more recent times.

In the Grand Prairie, with its extremes of wetness and drought, switch grass (*Panicum virgatum*) is often the dominant prairie species. However, Indian grass (*Sorghastrum nutans*), little bluestem (*Schizachyrium scoparium*), and big bluestem (*Andropogon gerardii*) are abundant as well. Wet prairie communities occur in poorly drained areas of the prairie, dominated by prairie cord grass (*Spartina pectinata*) and eastern gama grass (*Tripsacum dactyloides*) or even cat-tail—sedge marshes. In extensive areas slightly lower than the terrace surface, generally along moderate-sized drainages (often ancient



FIGURE 35. INDIAN-PAINTBRUSH (*CASTILLEJA COCCINEA*) IN BLOOM AT DOWNS PRAIRIE NATURAL AREA NEAR DE VALLS BLUFF IN PRAIRIE COUNTY. NATIVE GRASSLANDS IN THE GRAND PRAIRIE ECOREGION OF THE MISSISSIPPI ALLUVIAL PLAIN OCCUPIED APPROXIMATELY 400,000 ACRES AT THE TIME OF EUROPEAN SETTLEMENT, BUT ONLY ABOUT 400 ACRES REMAIN TODAY.

channels of the Arkansas River that formed the terrace), water accumulates by sheet flow from the adjacent higher prairie land and supports flatwoods often dominated by delta post oak, cherrybark oak (Quercus pagoda) and willow oak but also with many other upland and bottomland species present in response to slight differences in elevation (Heitmeyer et al. 2000). These flatwoods are in many ways similar to those of the West Gulf Coastal Plain and of those elsewhere in the Mississippi Alluvial Plain to the east. Where slope is greater, along streams that have cut deeply into the terrace, there is an upland hardwood (white oak-black oak-southern red oak) forest. Within the relatively narrow floodplain of the streams are true bottomland hardwood forests. Where fires burned from the prairies into the surrounding flatwoods or upland forest, trees would be thinned, allowing the prairie vegetation to occur under a scattering of trees, creating woodland or post oak savanna. Of the 500,000 acres of Grand Prairie terrace, approximately 80 percent was prairie grassland at the time of European settlement; most of the rest was open flatwoods.

The grasslands of the Grand Prairie support a rich diversity of prairie grasses and forbs, including many rare and uncommon species, some disjunct from larger prairie regions in both the Ozark Plateaus and Gulf Coastal Plain. It is the only region of the state known to support some species, such as sand cherry (*Prunus pumila* var. *susquehanae*) and Stern's medlar (*Crataegus ×canescens*). Historically, the wet prairies of the Grand Prairie region were known to support the snowy orchid (*Platanthera nivea*), a species not documented from Arkansas since the early 1880s.

The Western Lowlands Pleistocene Valley Trains (Level IV) Ecoregion lies between Crowley's Ridge to the east and the Ozarks, Arkansas Valley, and Grand Prairie terrace to the west (Figure 10). In this area, glacial deposits were moved as a mass by multiple channels or large overflows of the Mississippi—hence the term "valley train." Much of the land surface is terraces, similar to those of the Grand Prairie but are younger, about 20,000 years old, smaller, and not as high. The same combination of prairie, savanna, flatwoods, upland hardwood forest, and bottomland hardwood forest covers this region, but the prairies were not as extensive as those on the Grand Prairie terrace and have been almost entirely destroyed. Furthermore, it has a few distinctive geomorphic and vegetational features. The most unique is a set of Pleistocene sand dunes that occur from the Missouri state line south to Holly Grove, east of the Black

and White rivers. These accumulated during the late Wisconsin glacial advance when the Mississippi River was flowing where the White and Black rivers do today. At present, these sand dunes are usually not extremely sandy; enough fine material has been added to create fairly productive soils. In some cases, though, the sands were pure enough to support barrens with scattered post oaks over sparse groundcover. Apparently all of these in Arkansas have been destroyed, but a few examples remain in Missouri. Between the dunes are perched depression wetlands that collect surface water from small areas. These wetlands are often dominated by overcup oak, willow oak, and other water-tolerant tree species and provide habitat for rare shrubs such as corkwood (Leitneria floridana) and the federally endangered pondberry (Lindera melissifolia). Wetlands in these areas historically supported populations of other rare plants such as spreading bulrush (Scirpus divaricatus), which has not been documented from Arkansas since the early twentieth century. This species and perhaps others may have been extirpated from the state as sandponds were cleared, filled, and converted to agriculture—a process that continues today.

The Bartholomew-Boeuf-Tensas Basin (Figure 14) of southeastern Arkansas (not generally recognized as a separate subdivision or ecoregion) is composed principally of recent (Holocene) alluvial deposits. As a consequence, the surficial deposits of the basin are almost entirely point bar ridge and swale, with extensive areas of poorly drained backswamp flats. There is a substantial area along the Mississippi River in the eastern part of the basin that Woods et al. (2004) mapped as the Northern

Holocene Meander Belts (Level IV) Ecoregion, the same ecoregion that occupies much of the St. Francis Lowlands (Figure 10). There is a large area in the western part of the basin along Bayou Bartholomew and its tributaries that was laid down by the Arkansas River at a time when it did not join the Mississippi until farther south, in present-day Louisiana. Woods et al. (2004) mapped this area as the Arkansas/Ouachita River Holocene Meander Belts (Level IV) Ecoregion and the Arkansas/Ouachita River Backswamps (Level IV) Ecoregion (Figure 10). The reference to the Ouachita River in the names above is because Bayou Bartholomew now drains this area into the Ouachita. Pleistocene valley outwash deposits are uncommon in the Bartholomew-Boeuf-Tensas Basin, limited to the Macon Ridge (Level IV) Ecoregion and its outliers (Figure 10). Macon Ridge is extensive in Louisiana, but only its northern tip reaches Arkansas. There are loess deposits on its slopes that give small portions the character of Crowley's Ridge, but in general it is more like the Western Lowlands Pleistocene Valley Trains Ecoregion but higher and more distinctively different from the surrounding landscape. Abandoned channels of the Mississippi and Arkansas rivers form common natural lakes (Figure 36) of the Bartholomew-Boeuf-Tensas Basin. Almost all of its forest has been cleared, and virtually every watercourse other than Bayou Bartholomew and its major tributary, Cutoff Creek, has been channelized. Only along Cutoff Creek do extensive bottomland forest areas remain.



FIGURE 36. SCATTERED BALD-CYPRESS (*TAXODIUM DISTICHUM*) VAR. *DISTICHUM*) AND TUPELO (*NYSSA AQUATICA*) WITH FLOATING MATS OF SMOOTH BUR-MARIGOLD (*BIDENS LAEVIS*) IN HILL LAKE NEAR GALLOWAY IN EASTERN PULASKI COUNTY. OXBOW LAKES, LIKE THIS ONE IN THE BARTHOLOMEW-BOEUF-TENSAS BASIN, ARE TYPICAL OF THE ARKANSAS/OUACHITA RIVER HOLOCENE MEANDER BELTS ECOREGION.

Crowley's Ridge Natural Division

Crowley's Ridge Natural Division (Figures 3 & 9) is the exception to the character of eastern Arkansas in that it is an upland area, though only a series of low hills, seldom more than about 30 meters (ca. 100 feet) above the surrounding Mississippi Alluvial Plain. In addition, because of its eastern location, it has some native species, such as tulip-tree (*Liriodendron tulipifera*), that typically occur farther east and occur naturally nowhere else in Arkansas. It was formed in two stages: first, the rivers that reshaped the rest of the Mississippi Alluvial Plain did not remove the Tertiary marine deposits from this area; second, winds deposited glacier-ground silt (loess) primarily on the southern half of the ridge, giving it its rugged, hilly upland character (Figure 9).

Although neither Foti (1976) nor Woods et al. (2004) subdivided Crowley's Ridge into smaller ecoregions or divisions, it does have two geographic areas with distinct differences. The southern ridge, from about Jonesboro southward, fits the general description better, in that it stands higher than the surrounding Mississippi Alluvial Plain, has deep loess deposits, and is highly dissected. Mesic forests, dominated by beech, basswood, cucumber magnolia, and white oak, are numerous and fairly extensive (Figure 37). Tulip-tree successional forests are established when later-successional oak or beech forests are cleared by humans, wind, or other stand-replacing agents. Climbing-magnolia (*Schisandra glabra*)

and Virginia pennywort (*Obolaria virginica*) occur in Arkansas only in this region. Historically, butternut trees were probably widespread on southern Crowley's Ridge but have all but disappeared in recent decades following the arrival of butternut canker (*Sirococcus clavigignenti-jugladacearum*), an introduced fungal pathogen which kills the trees.

The northern ridge lacks the deep loess of the southern ridge and some of its distinct characteristics but has others of its own. Instead of loess, this subdivision is sometimes capped with alluvial deposits of sand, gravel, and silt, with an occasional outcrop of Tertiary substrate, such as sandstone. On these sandy soils occur the only natural short-leaf pine forests in eastern Arkansas. These forests include a few species, such as small woodland sunflower (*Helianthus microcephalus*) not known from elsewhere in the state. At the bases of

some of these sandy deposits are ground-water seepage areas that have high plant diversity. These seeps and adjacent forests on the northern part of the ridge are the principal habitat in the state for rare species such as white turtlehead (*Chelone glabra*), and once supported rose turtlehead (*C. obliqua* var. *speciosa*) and bigleaf magnolia (*Magnolia macrophylla*), two species no longer known to occur in the region.



FIGURE 37. LOESS SOILS, HARDWOOD FORESTS, AND DEEPLY DISSECTED TERRAIN TYPIFY SOUTHERN CROWLEY'S RIDGE, AS SHOWN IN THIS PHOTO FROM WITTSBURG NATURAL AREA IN CROSS COUNTY.

FLORISTIC SUMMARY

Table 1. Number of genera, species, additional infraspecific taxa (subspecies and varieties), hybrids, total taxa (species, infraspecific taxa, and hybrids), taxa of special concern, Arkansas endemic taxa, introduced taxa, and invasive taxa by family within each major group.

Pteridophytes

| Families | Genera | Species | Additional Infraspecific | Hybrids | Total | Special Concern | Endemic | Introduced | Invasive |
|------------------|--------|---------|-----------------------------|---------|-------|--------------------|---------|------------|----------|
| | | | | | | | | | |
| Aspleniaceae | 1 | 6 | 0 | 3 | 9 | 4 | 0 | 0 | 0 |
| Azollaceae | 1 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Blechnaceae | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Dennstaedtiaceae | 2 | 2 | 1 | 0 | 3 | 1 | 0 | 0 | 0 |
| Dryopteridaceae | 4 | 9 | 0 | 3 | 12 | 6 | 0 | 3 | 0 |
| Equisetaceae | 1 | 3 | 0 | 1 | 4 | 1 | 0 | 0 | 0 |
| Hymenophyllaceae | 1 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 |
| Isoetaceae | 1 | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 0 |
| Lomariopsidaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Lycopodiaceae | 5 | 7 | 0 | 3 | 10 | 5 | 0 | 0 | 0 |
| Lygodiaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| Marsileaceae | 2 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 1 |
| Onocleaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Ophioglossaceae | 2 | 9 | 0 | 0 | 9 | 0 | 0 | 1 | 0 |
| Osmundaceae | 2 | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 0 |
| Polypodiaceae | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Psilotaceae | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| Pteridaceae | 5 | 11 | 0 | 0 | 11 | 2 | 0 | 1 | 0 |
| Saliviniaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Selaginellaceae | 1 | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 0 |
| Thelypteridaceae | 3 | 5 | 0 | 0 | 5 | 0 | 0 | 1 | 1 |
| Woodsiaceae | 5 | 9 | 1 | 0 | 10 | 1 | 0 | 0 | 0 |
| Subtotal: | 44 | 87 | 2 | 10 | 99 | 27 | 0 | 10 | 3 |

Gymnosperms

| Families | Genera | Species | Additional Infraspecific | Hybrids | Total | Special Concern | Endemic | Introduced | Invasive |
|--------------|--------|---------|-----------------------------|---------|-------|--------------------|---------|------------|----------|
| Cupressaceae | 2 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Pinaceae | 1 | 6 | 0 | 0 | 6 | 0 | 0 | 3 | 0 |
| Subtotal: | 3 | 9 | 0 | 0 | 9 | 0 | 0 | 3 | 0 |

Angiosperm Dicots

| Families | Genera | Species | Additional Infraspecific | Hybrids | Total | Special Concern | Endemic | Introduced | Invasive |
|------------------|--------|---------|-----------------------------|---------|---------|--------------------|---------|------------|----------|
| Acanthaceae | 3 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |
| Adoxaceae | 2 | 10 | 1 | 0 | 11 | 4 | 0 | 0 | 0 |
| Aizoaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Altingiaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Amaranthaceae | 6 | 18 | 0 | 0 | 18 | 1 | 0 | 9 | 2 |
| Anacardiaceae | 3 | 7 | 1 | 0 | 8 | 1 | 0 | 0 | 0 |
| Annonaceae | 1 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Apiaceae | 35 | 54 | 1 | 0 | 55 | 12 | 0 | 12 | 2 |
| - | 9 | 30 | 0 | 1 | 31 | 6 | 0 | 3 | 2 |
| Apocynaceae | 1 | | 0 | 0 | 31 7 | 2 | 0 | 1 | 0 |
| Aquifoliaceae | | 7 | | | - | 1 | | | |
| Araliaceae | 4 | 11 | 0 | 0 | 11 | | 0 | 3 | 1 |
| Aristolochiaceae | 2 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Asteraceae | 103 | 321 | 38 | 2 | 361 | 56 | 2 | 62 | 7 |
| Balsaminaceae | 1 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 |
| Berberidaceae | 4 | 5 | 0 | 0 | 5 | 1 | 0 | 3 | 1 |
| Betulaceae | 5 | 5 | 1 | 0 | 6 | 0 | 0 | 0 | 0 |
| Bignoniaceae | 3 | 4 | 0 | 0 | 4 | 0 | 0 | 1 | 0 |
| Boraginaceae | 17 | 40 | 2 | 0 | 42 | 7 | 1 | 14 | 0 |
| Brassicaceae | 35 | 71 | 1 | 0 | 72 | 11 | 1 | 37 | 2 |
| Cabombaceae | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Cactaceae | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Campanulaceae | 4 | 11 | 1 | 0 | 12 | 0 | 0 | 1 | 0 |
| Cannabaceae | 3 | 6 | 0 | 0 | 6 | 1 | 0 | 2 | 0 |
| Caprifoliaceae | 3 | 10 | 0 | 0 | 10 | 1 | 0 | 4 | 4 |
| Caryophyllaceae | 17 | 44 | 1 | 0 | 45 | 8 | 0 | 27 | 0 |
| Celastraceae | 2 | 7 | 0 | 0 | 7 | 1 | 0 | 3 | 3 |
| Ceratophyllaceae | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Chenopodiaceae | 6 | 14 | 1 | 0 | 15 | 0 | 0 | 8 | 0 |
| Cistaceae | 2 | 6 | 0 | 0 | 6 | 2 | 0 | 0 | 0 |
| Cleomaceae | 2 | 4 | 1 | 0 | 5 | 1 | 0 | 2 | 0 |
| Convolvulaceae | 8 | 29 | 1 | 0 | 30 | 8 | 0 | 7 | 0 |
| Cornaceae | 1 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| Crassulaceae | 3 | 6 | 0 | 0 | 6 | 1 | 0 | 2 | 0 |
| Cucurbitaceae | 6 | 8 | 1 | 0 | 9 | 0 | 0 | 3 | 0 |
| Dipsacaceae | 2 | 3 | 0 | 0 | 3 | 0 | 0 | 3 | 3 |
| Droseraceae | 1 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Ebenaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Elaeagnaceae | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 2 |
| Elatinaceae | 2 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Ericaceae | 5 | 14 | 0 | 0 | 14 | 1 | 0 | 0 | 0 |
| Euphorbiaceae | 12 | 47 | 0 | 0 | 47 | 8 | 0 | 12 | 1 |
| Fabaceae | 53 | 158 | 5 | 0 | 163 | 25 | 0 | 58 | 9 |
| Fagaceae | 3 | 33 | 3 | 0 | 36 | 5 | 1 | 3 | 0 |
| Gelsemiaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Gentianaceae | 7 | 14 | 0 | 0 | 14 | 6 | 1 | 0 | 0 |

Angiosperm Dicots

| Families | Genera | Species | Additional Infraspecific | Hybrids | Total | Special Concern | Endemic | Introduced | Invasive |
|---------------------------------|--------|---------|-----------------------------|---------|-------|--------------------|---------|------------|----------|
| | 2 | 0 | 0 | 0 | | , | 0 | - | 0 |
| Geraniaceae | 2 | 8 | 0 | 0 | 8 | 1 | 0 | 5 | 0 |
| Grossulariaceae | 1 | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 0 |
| Haloragaceae | 2 | 5 | 0 | 0 | 5 | 0 | 0 | 2 | 2 |
| Hamamelidaceae | 2 | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 0 |
| Hydrangeaceae | 4 | 7 | 0 | 0 | 7 | 2 | 0 | 2 | 0 |
| Hydroleaceae | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Hypericaceae | 2 | 19 | 1 | 0 | 20 | 4 | 0 | 2 | 0 |
| Iteaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Juglandaceae | 2 | 12 | 0 | 0 | 12 | 2 | 0 | 0 | 0 |
| Lamiaceae | 28 | 70 | 4 | 2 | 76 | 12 | 0 | 27 | 2 |
| Lauraceae | 3 | 4 | 0 | 0 | 4 | 2 | 0 | 0 | 0 |
| Lentibulariaceae | 1 | 7 | 0 | 0 | 7 | 4 | 0 | 1 | 0 |
| Linaceae | 1 | 5 | 0 | 0 | 5 | 0 | 0 | 2 | 0 |
| Linderniaceae | 2 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 |
| Loasaceae | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| Loganiaceae | 2 | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 0 |
| Lythraceae | 7 | 11 | 1 | 0 | 12 | 1 | 0 | 4 | 1 |
| Magnoliaceae | 2 | 6 | 0 | 0 | 6 | 1 | 0 | 1 | 0 |
| Malvaceae | 13 | 25 | 2 | 0 | 27 | 7 | 0 | 10 | 0 |
| Martyniaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Melastomataceae | 1 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 |
| Meliaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| Menispermaceae | 3 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Menyanthaceae | 2 | 2 | 0 | 0 | 2 | 1 | 0 | 1 | 1 |
| Molluginaceae | 2 | 3 | 0 | 0 | 3 | 0 | 0 | 3 | 0 |
| Moraceae | 4 | 5 | 0 | 0 | 5 | 0 | 0 | 3 | 2 |
| Myricaceae | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Myrsinaceae | 2 | 8 | 0 | 0 | 8 | 1 | 0 | 2 | 0 |
| Nelumbonaceae | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 |
| Nyctaginaceae | 2 | 4 | 0 | 0 | 4 | 0 | 0 | 2 | 0 |
| Nymphaeaceae | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Nyssaceae | 1 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Oleaceae | 4 | 12 | 0 | 0 | 12 | 0 | 0 | 5 | 4 |
| Onagraceae | 6 | 36 | 2 | 0 | 38 | 7 | 0 | 5 | 0 |
| Orobanchaceae | 10 | 22 | 0 | 0 | 22 | 5 | 0 | 1 | 0 |
| Oxalidaceae | 10 | 6 | 0 | 0 | 6 | 1 | 0 | 1 | 0 |
| Papaveraceae | 6 | 9 | 1 | 0 | 10 | 1 | 0 | 3 | 0 |
| Parnassiaceae | 2 | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 0 |
| Pariassiaceae Passifloraceae | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Paulowniaceae | 1 | 1 | | 0 | 1 | 0 | | 1 | 1 |
| | | | 0 | | | _ | 0 | | _ |
| Penthoraceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Phrymaceae | 3 | 5 | 0 | 0 | 5 | 2 | 0 | 1 | 0 |
| Phyllanthaceae | 2 | 6 | 0 | 0 | 6 | 1 | 0 | 3 | 0 |
| Phytolaccaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Plantaginaceae | 17 | 53 | 0 | 0 | 53 | 10 | 0 | 16 | 0 |

Angiosperm Dicots

| Families | Genera | Species | Additional Infraspecific | Hybrids | Total | Special Concern | Endemic | Introduced | Invasivo |
|------------------------|----------|---------|-----------------------------|---------|----------|--------------------|---------|------------|----------|
| Platanaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Podostemaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Polemoniaceae | 3 | 10 | 2 | 0 | 12 | 3 | 0 | 3 | 0 |
| Polygalaceae | 1 | 8 | 0 | 0 | 8 | 2 | 0 | 0 | 0 |
| Polygonaceae | 8 | 35 | 4 | 0 | 39 | 2 | 0 | 15 | 1 |
| Portulacaceae | 4 | 10 | 0 | 0 | 10 | 2 | 1 | 2 | 0 |
| Primulaceae | 3 | 4 | 0 | 0 | 4 | 2 | 0 | 0 | 0 |
| Ranunculaceae | 13 | 50 | 3 | 0 | 53 | 11 | 1 | 9 | 0 |
| Rhamnaceae | 5 | 6 | 0 | 0 | 6 | 1 | 0 | 0 | 0 |
| Rosaceae | 26 | 102 | 0 | | 0 104 | 16 | 1 | 28 | - |
| Rubiaceae | 26 11 | 37 | 2 | 2 | 39 | 4 | 1 | 10 | 6 |
| | | 4 | | | | 0 | _ | | 1 |
| Rutaceae Salicaceae | 3 | 11 | 0 | 0 | 4 12 | _ | 0 | 1 3 | 1 |
| | 2 | | 1 | 0 | | 1 | | | 0 |
| Santalaceae | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Sapindaceae | 5 | 11 | 6 | 0 | 17 | 2 | 0 | 4 | 0 |
| Sapotaceae | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Saururaceae | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 |
| Saxifragaceae | 3 | 7 | 1 | 0 | 8 | 3 | 1 | 0 | 0 |
| Schisandraceae | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| Scrophulariaceae | 2 | 4 | 0 | 0 | 4 | 0 | 0 | 3 | 0 |
| Simaroubaceae | 2 | 2 | 0 | 0 | 2 | 1 | 0 | 1 | 1 |
| Solanaceae | 6 | 23 | 1 | 1 | 25 | 3 | 0 | 10 | 0 |
| Sphenocleaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| Staphyleaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Styracaceae | 2 | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 0 |
| Symplocaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Tamaricaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| Tetrachondraceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Theaceae | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| Theophrastaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Thymelaeaceae | 1 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Ulmaceae | 2 | 8 | 0 | 0 | 8 | 1 | 0 | 1 | 0 |
| Urticaceae | 5 | 8 | 0 | 0 | 8 | 0 | 0 | 2 | 0 |
| Valerianaceae | 1 | 7 | 0 | 0 | 7 | 4 | 0 | 1 | 0 |
| Verbenaceae | 4 | 19 | 0 | 0 | 19 | 1 | 0 | 7 | 0 |
| Violaceae | 2 | 15 | 1 | 0 | 16 | 3 | 0 | 1 | 0 |
| Vitaceae | 4 | 12 | 0 | 0 | 12 | 1 | 0 | 1 | 1 |
| Zygophyllaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Subotal: | 674 | 1842 | 92 | 8 | 1942 | 310 | 11 | 496 | 65 |

Angiosperm Monocots

| Families | Genera | Species | Additional Infraspecific | Hybrids | Total | Special Concern | Endemic | Introduced | Invasive |
|-------------------|--------|---------|-----------------------------|---------|-------|--------------------|---------|------------|----------|
| Acoraceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Agavaceae | 4 | 8 | 0 | 0 | 8 | 2 | 0 | 2 | 0 |
| Alismataceae | 3 | 11 | 0 | 0 | 11 | 2 | 0 | 0 | 0 |
| Alliaceae | 3 | 11 | 2 | 0 | 13 | 3 | 0 | 6 | 0 |
| Amaryllidaceae | 6 | 10 | 1 | 4 | 15 | 1 | 0 | 11 | 0 |
| Araceae | 9 | 16 | 0 | 0 | 16 | 0 | 0 | 3 | 0 |
| Arecaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Asparagaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Bromeliaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Burmanniaceae | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| Colchicaceae | 1 | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 0 |
| Commelinaceae | 3 | 19 | 0 | 0 | 19 | 7 | 0 | 5 | 1 |
| Cyperaceae | 18 | 238 | 11 | 0 | 249 | 81 | 0 | 22 | 1 |
| Dioscoreaceae | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 1 |
| Eriocaulaceae | 1 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 |
| Hemerocallidaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Hyacinthaceae | 2 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Hydrocharitaceae | 7 | 9 | 0 | 0 | 9 | 1 | 0 | 4 | 3 |
| Hypoxidaceae | 1 | 3 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |
| Iridaceae | 5 | 21 | 0 | 0 | 21 | 6 | 0 | 4 | 1 |
| Juncaceae | 2 | 27 | 1 | 0 | 28 | 4 | 0 | 1 | 0 |
| Liliaceae | 3 | 8 | 0 | 0 | 8 | 3 | 0 | 2 | 0 |
| Marantaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Melanthiaceae | 5 | 7 | 0 | 0 | 7 | 3 | 0 | 0 | 0 |
| Nartheciaceae | 1 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Orchidaceae | 18 | 37 | 3 | 1 | 41 | 18 | 0 | 1 | 0 |
| Poaceae | 99 | 280 | 39 | 1 | 320 | 46 | 0 | 102 | 18 |
| Pontederiaceae | 3 | 7 | 0 | 0 | 7 | 0 | 0 | 1 | 1 |
| Potamogetonaceae | 3 | 10 | 1 | 0 | 11 | 1 | 0 | 1 | 0 |
| Ruscaceae | 4 | 5 | 0 | 0 | 5 | 1 | 0 | 2 | 0 |
| Smilacaceae | 1 | 12 | 0 | 0 | 12 | 2 | 0 | 0 | 0 |
| Themidaceae | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Trilliaceae | 1 | 5 | 0 | 0 | 5 | 2 | 0 | 0 | 0 |
| Typhaceae | 2 | 5 | 0 | 0 | 5 | 1 | 0 | 1 | 0 |
| Xyridaceae | 1 | 6 | 1 | 0 | 7 | 4 | 0 | 0 | 0 |
| Subtotal: | 215 | 777 | 59 | 6 | 842 | 195 | 0 | 178 | 26 |

Totals

| | Genera | Species | Additional Infraspecific | Hybrids | Total | Special Concern | Endemic | Introduced | Invasive |
|--------|--------|---------|-----------------------------|---------|-------|--------------------|---------|------------|----------|
| Total: | 936 | 2715 | 153 | 24 | 2892 | 532 | 11 | 687 | 94 |

Table 2. Number of families, genera, species, additional infraspecific taxa (subspecies and varieties), hybrids, total taxa (species, infraspecific taxa, and hybrids), taxa of special concern, Arkansas endemic taxa, introduced taxa, and invasive taxa by major group.

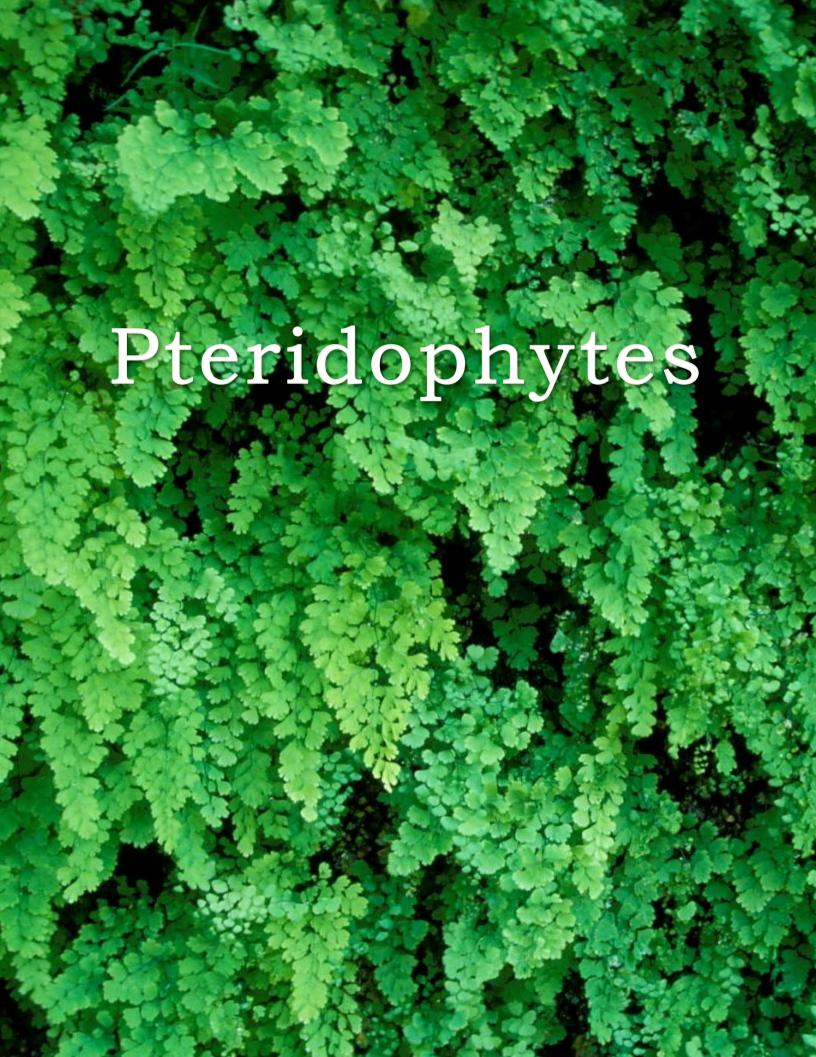
| Major Group | Families | Genera | Species | Additional Infraspecific | Hybrids | Total | Special Concern | Endemic | Introduced | Invasive |
|---------------|----------|--------|---------|-----------------------------|---------|-------|--------------------|---------|------------|----------|
| | | | | | | | | | | |
| Pteridophytes | 22 | 44 | 87 | 2 | 10 | 99 | 27 | 0 | 10 | 3 |
| Gymnosperms | 2 | 3 | 9 | 0 | 0 | 9 | 0 | 0 | 3 | 0 |
| Angiosperms: | | | | | | | | | | |
| Dicots | 128 | 674 | 1842 | 92 | 8 | 1942 | 310 | 11 | 496 | 65 |
| Monocots | 35 | 215 | 777 | 59 | 6 | 842 | 195 | 0 | 178 | 26 |
| TOTAL: | 187 | 936 | 2715 | 153 | 24 | 2892 | 532 | 11 | 687 | 94 |

Table 3. Total taxa documented from each county, arranged in order of decreasing totals; counties with tied totals are listed alphabetically.

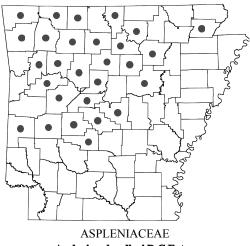
| Rank | County | Taxa | Rank | County | Taxa | Rank | County | Taxa |
|------|--------------|------|------|--------------|------|------|-------------|------|
| | | | | | | | | |
| 1 | Saline | 1519 | 26 | Madison | 927 | 51 | St. Francis | 769 |
| 2 | Washington | 1444 | 27 | Hot Spring | 925 | 52 | Prairie | 754 |
| 3 | Pulaski | 1435 | 28 | Searcy | 920 | 53 | Lafayette | 752 |
| 4 | Benton | 1239 | 29 | Izard | 918 | 54 | Lawrence | 738 |
| 5 | Montgomery | 1211 | 29 | Miller | 918 | 55 | Pike | 736 |
| 6 | Pope | 1209 | 31 | Logan | 915 | 56 | Clay | 727 |
| 7 | Faulkner | 1177 | 32 | Clark | 905 | 57 | Randolph | 716 |
| 8 | Baxter | 1173 | 33 | Conway | 903 | 58 | Greene | 711 |
| 9 | Union | 1172 | 34 | Carroll | 896 | 59 | Chicot | 705 |
| 10 | Franklin | 1160 | 35 | Howard | 880 | 60 | Nevada | 692 |
| 10 | Independence | 1160 | 36 | Perry | 875 | 61 | Lonoke | 665 |
| 12 | Stone | 1154 | 37 | Craighead | 864 | 62 | Cleveland | 654 |
| 13 | Yell | 1132 | 38 | Scott | 857 | 63 | Columbia | 643 |
| 14 | Ashley | 1116 | 39 | Sharp | 833 | 64 | Lee | 637 |
| 14 | Garland | 1116 | 40 | Lincoln | 829 | 65 | Grant | 611 |
| 16 | Drew | 1106 | 41 | Calhoun | 823 | 66 | Dallas | 597 |
| 17 | Cleburne | 1082 | 42 | Johnson | 821 | 67 | Jackson | 595 |
| 18 | Van Buren | 1075 | 43 | Arkansas | 813 | 68 | Phillips | 594 |
| 19 | Jefferson | 1072 | 44 | Boone | 802 | 69 | Poinsett | 584 |
| 20 | Polk | 1042 | 45 | Little River | 798 | 70 | Monroe | 583 |
| 21 | Ouachita | 1025 | 46 | Crawford | 797 | 71 | Cross | 578 |
| 22 | Bradley | 1020 | 46 | Sebastian | 797 | 72 | Desha | 555 |
| 23 | Newton | 1018 | 48 | Sevier | 793 | 73 | Mississippi | 487 |
| 24 | Hempstead | 1006 | 49 | White | 788 | 74 | Woodruff | 467 |
| 25 | Marion | 999 | 50 | Fulton | 770 | 75 | Crittenden | 349 |

Table 4. Total taxa documented from each county, arranged alphabetically.

| County | Taxa | Rank | County | Taxa | Rank | County | Taxa | Rank |
|------------|------|------|--------------|------|------|-------------|------|------|
| | | | | | | | | |
| Arkansas | 813 | 43 | Garland | 1116 | 14 | Newton | 1018 | 23 |
| Ashley | 1116 | 14 | Grant | 611 | 65 | Ouachita | 1025 | 21 |
| Baxter | 1173 | 8 | Greene | 711 | 58 | Perry | 875 | 36 |
| Benton | 1239 | 4 | Hempstead | 1006 | 24 | Phillips | 594 | 68 |
| Boone | 802 | 44 | Hot Spring | 925 | 27 | Pike | 736 | 55 |
| Bradley | 1020 | 22 | Howard | 880 | 35 | Poinsett | 584 | 69 |
| Calhoun | 823 | 41 | Independence | 1160 | 10 | Polk | 1042 | 20 |
| Carroll | 896 | 34 | Izard | 918 | 29 | Pope | 1209 | 6 |
| Chicot | 705 | 59 | Jackson | 595 | 67 | Prairie | 754 | 52 |
| Clark | 905 | 32 | Jefferson | 1072 | 19 | Pulaski | 1435 | 3 |
| Clay | 727 | 56 | Johnson | 821 | 42 | Randolph | 716 | 57 |
| Cleburne | 1082 | 17 | Lafayette | 752 | 53 | St. Francis | 769 | 51 |
| Cleveland | 654 | 62 | Lawrence | 738 | 54 | Saline | 1519 | 1 |
| Columbia | 643 | 63 | Lee | 637 | 64 | Scott | 857 | 38 |
| Conway | 903 | 33 | Lincoln | 829 | 40 | Searcy | 920 | 28 |
| Craighead | 864 | 37 | Little River | 798 | 45 | Sebastian | 797 | 46 |
| Crawford | 797 | 46 | Logan | 915 | 31 | Sevier | 793 | 48 |
| Crittenden | 349 | 75 | Lonoke | 665 | 61 | Sharp | 833 | 39 |
| Cross | 578 | 71 | Madison | 927 | 26 | Stone | 1154 | 12 |
| Dallas | 597 | 66 | Marion | 999 | 25 | Union | 1172 | 9 |
| Desha | 555 | 72 | Miller | 918 | 29 | Van Buren | 1075 | 18 |
| Drew | 1106 | 16 | Mississippi | 487 | 73 | Washington | 1444 | 2 |
| Faulkner | 1177 | 7 | Monroe | 583 | 70 | White | 788 | 49 |
| Franklin | 1160 | 10 | Montgomery | 1211 | 5 | Woodruff | 467 | 74 |
| Fulton | 770 | 50 | Nevada | 692 | 60 | Yell | 1132 | 13 |

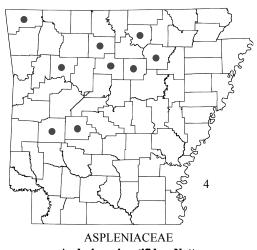






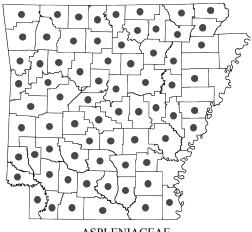
Asplenium bradleyi D.C.Eaton

Bradley's spleenwort

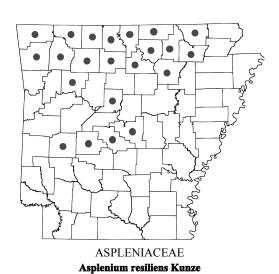


Asplenium pinnatifidum Nutt.

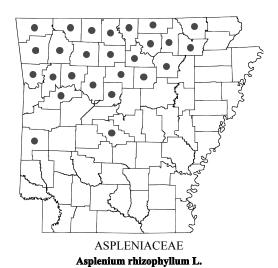
lobed spleenwort



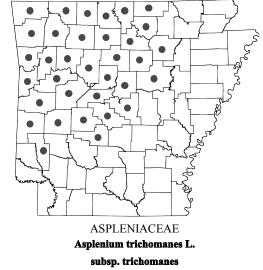
ASPLENIACEAE Asplenium platyneuron (L.) Britton, Sterns & Poggenb. ebony spleenwort



black-stem spleenwort, little ebony spleenwort



walking fern



maidenhair spleenwort



Asplenium ×ebenoides R.R.Scott

Scott's spleenwort



ASPLENIACEAE

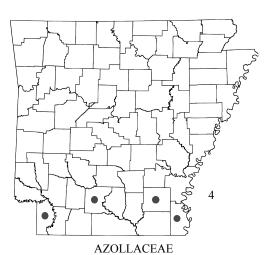
Asplenium ×gravesii Maxon

Graves' spleenwort



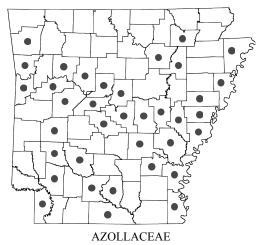
Asplenium ×kentuckiense T.N.McCoy

Kentucky spleenwort



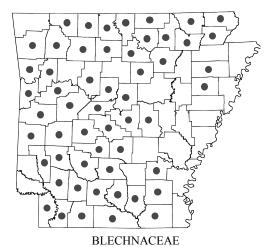
Azolla caroliniana Willd.

Carolina mosquito fern



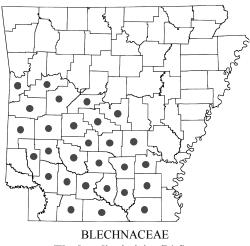
Azolla mexicana C.Presl

Mexican mosquito fern



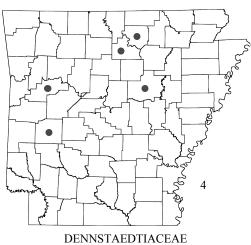
Woodwardia areolata (L.) T.Moore

netted chain fern



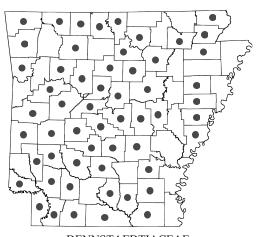
Woodwardia virginica (L.) Sm.

Virginia chain fern



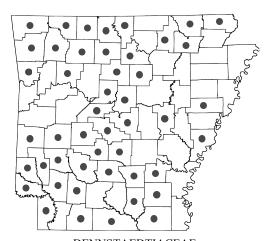
Dennstaedtia punctilobula (Michx.) T.Moore

hay-scented fern



DENNSTAEDTIACEAE Pteridium aquilinum (L.) Kuhn in Decken var. latiusculum (Desv.) Underw. ex A.Heller

eastern bracken fern



DENNSTAEDTIACEAE Pteridium aquilinum (L.) Kuhn in Decken var. pseudocaudatum (Clute) A.Heller

southern bracken fern

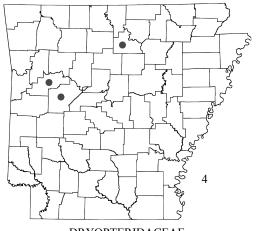


DRYOPTERIDACEAE Arachniodes simplicior (Makino) Ohwi simpler holly fern



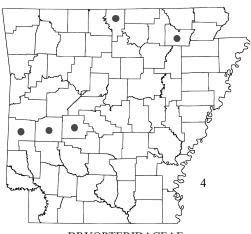
DRYOPTERIDACEAE Cyrtomium falcatum (L.f.) C.Presl net-vein holly fern

54 DRYOPTERIDACEAE / Dryopteris



DRYOPTERIDACEAE **Dryopteris carthusiana (Vill.) H.P.Fuchs**

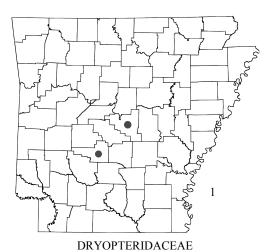
spinulose wood fern



DRYOPTERIDACEAE

Dryopteris celsa (W.Palmer) Knowlt., T.S.Palmer & Pollard

log fern



Dryopteris erythrosora (D.C.Eaton) Kuntze

autumn fern, Japanese shield fern



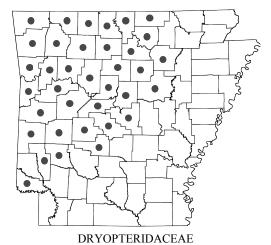
DRYOPTERIDACEAE **Dryopteris goldiana (Hook. ex Goldie) A.Gray**

Goldie's wood fern, giant wood fern



Dryopteris ludoviciana (Kunze) Small

southern wood fern, Louisiana wood fern



Dryopteris marginalis (L.) A.Gray

marginal wood fern



Dryopteris ×australis (Wherry) Small

Dixie wood fern



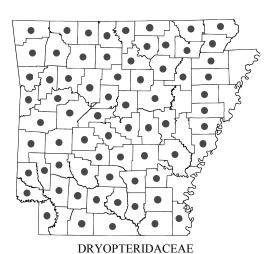
Dryopteris ×leedsii Wherry

Leed's wood fern



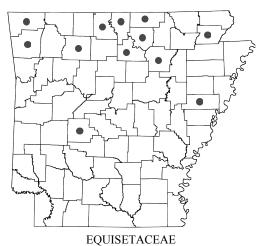
Dryopteris celsa (W.Palmer) Knowlt., T.S.Palmer & Pollard × D. goldiana (Hook. ex Goldie) A.Gray

hybrid wood fern



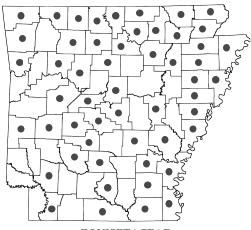
Polystichum acrostichoides (Michx.) Schott

Christmas fern



Equisetum arvense L.

field horsetail



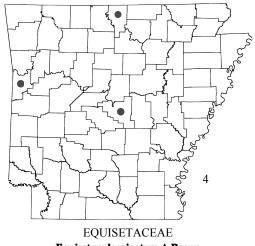
EQUISETACEAE

Equisetum hyemale L.

subsp. affine (Engelm.) Calder & Roy L.Taylor

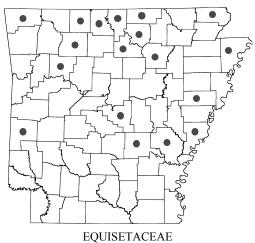
common scouring-rush

56 EQUISETACEAE / Equisetum



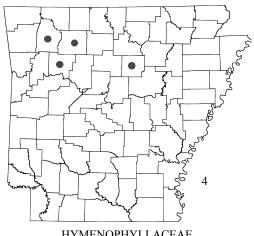
Equisetum laevigatum A.Braun

smooth scouring-rush



 $\textbf{Equisetum} \times \textbf{ferrissii} \ \textbf{Clute}$

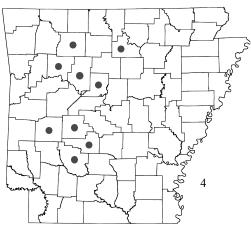
Ferriss' scouring-rush



HYMENOPHYLLACEAE

Trichomanes boschianum Sturm

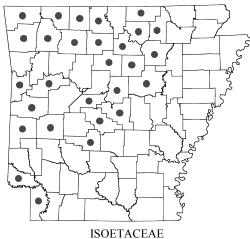
Appalachian filmy fern



HYMENOPHYLLACEAE

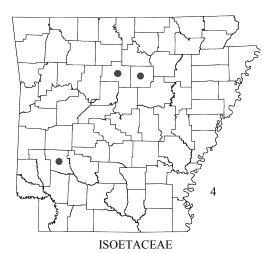
Trichomanes petersii A.Gray

dwarf bristle fern



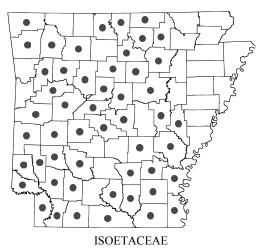
Isoetes butleri Engelm.

Butler's quillwort



Isoetes engelmannii A.Braun

Engelmann's quillwort



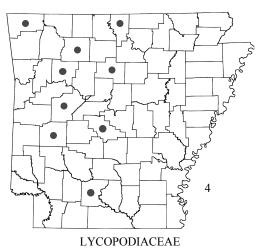
Isoetes melanopoda Gay & Durieu ex Durieu

black-foot quillwort



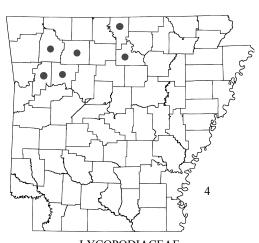
Nephrolepis exaltata (L.) Schott

Boston sword fern



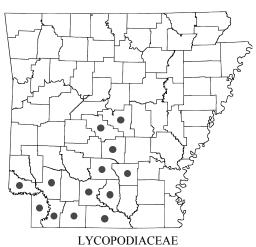
Diphasiastrum digitatum (Dill. ex A.Braun) Holub

southern running-pine, fan ground-pine



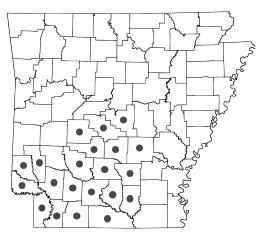
LYCOPODIACEAE Huperzia lucidula (Michx.) Trevis.

shining fir-moss



Lycopodiella alopecuroides (L.) Cranfill

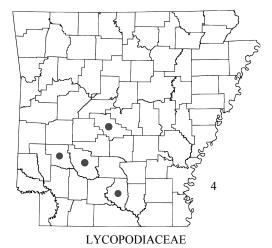
fox-tail bog club-moss



LYCOPODIACEAE

Lycopodiella appressa (Chapm.) Cranfill southern bog club-moss

58 LYCOPODIACEAE / Lycopodiella



Lycopodiella prostrata (R.M.Harper) Cranfill

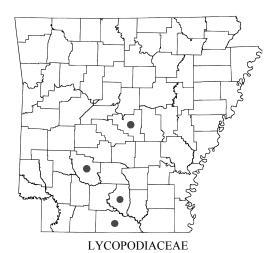
prostrate bog club-moss, feather-stem bog club-moss



LYCOPODIACEAE

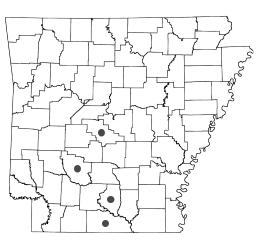
Lycopodiella ×brucei Cranfill

Bruce's bog club-moss



Lycopodiella ×copelandii (Eiger) Cranfill

Copeland's bog club-moss

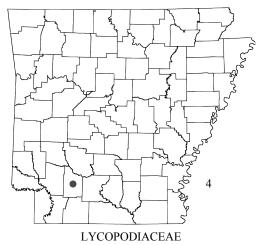


LYCOPODIACEAE

Lycopodiella alopecuroides (L.) Cranfill

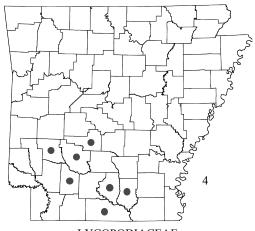
× L. prostrata (R.M.Harper) Cranfill

hybrid bog club-moss



Palhinhaea cernua (L.) Vasc. & Franco

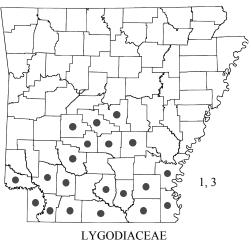
nodding club-moss



LYCOPODIACEAE

Pseudolycopodiella caroliniana (L.) Holub

slender bog club-moss

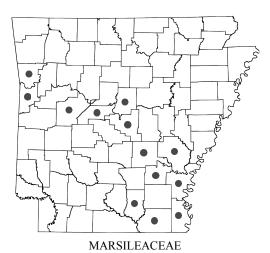


Lygodium japonicum (Thunb. ex Murray) Sw.

Japanese climbing fern

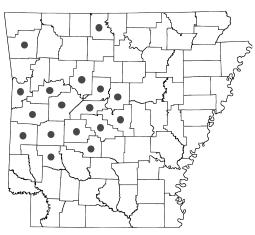


European water-clover



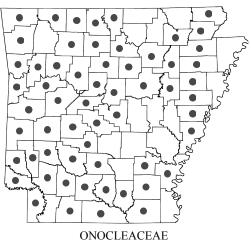
Marsilea vestita Hook. & Grev.

hairy water-clover



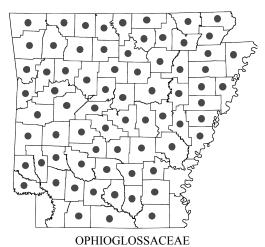
MARSILEACEAE

Pilularia americana A.Braun American pillwort



Onoclea sensibilis L.

sensitive fern



Botrychium biternatum (Savigny) Underw.

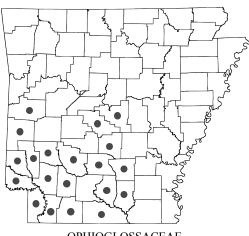
southern grape fern, sparse-lobe grape fern

60 OPHIOGLOSSACEAE / Botrychium



Botrychium dissectum Spreng.

cut-leaf grape fern, dissected grape fern



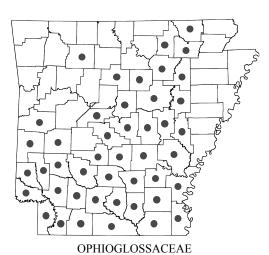
OPHIOGLOSSACEAE Botrychium lunarioides (Michx.) Sw.

winter grape fern



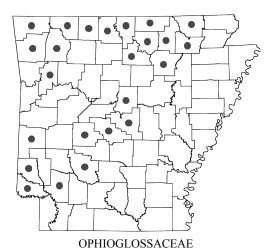
Botrychium virginianum (L.) Sw.

rattlesnake fern



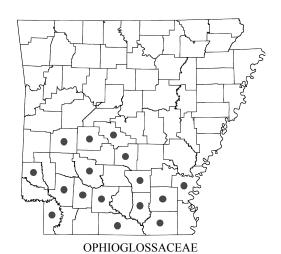
Ophioglossum crotalophoroides Walter

bulbous adder's-tongue fern



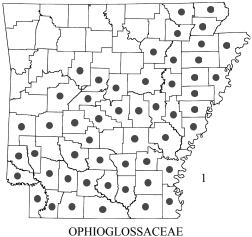
Ophioglossum engelmannii Prantl

limestone adder's-tongue fern



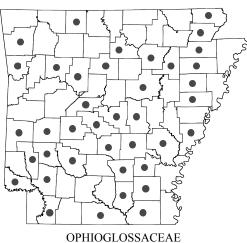
Ophioglossum nudicaule L.f.

least adder's-tongue fern



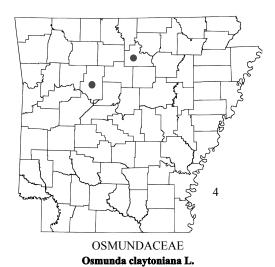
Ophioglossum petiolatum Hook.

stalked adder's-tongue fern

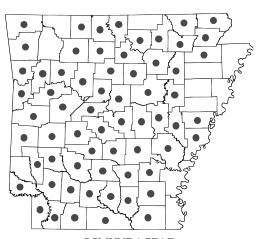


Ophioglossum pycnostichum (Fernald) Á.Löve & D.Löve

southern adder's-tongue fern



interrupted fern



OSMUNDACEAE

Osmunda regalis L.

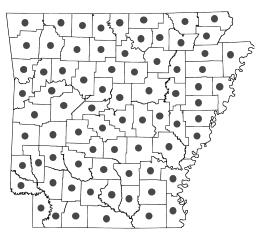
var. spectabilis (Willd.) A.Gray

royal fern



Osmundastrum cinnamomeum (L.) C.Presl

cinnamon fern

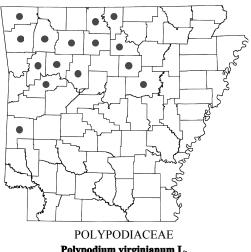


POLYPODIACEAE

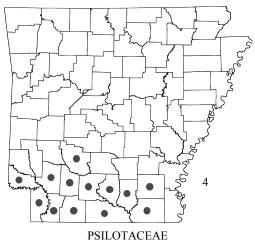
Pleopeltis polypodioides (L.) E.G.Andrews & Windham in Windham var. michauxiana (Weath.) E.G.Andrews & Windham in Windham

resurrection fern

62 POLYPODIACEAE / Polypodium

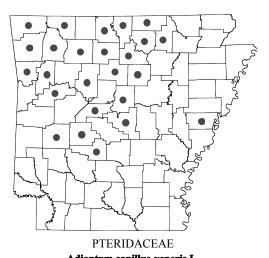


Polypodium virginianum L. rock polypody

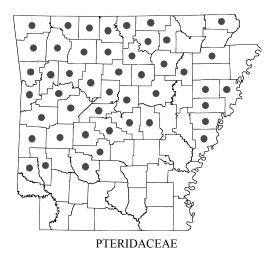


Psilotum nudum (L.) P.Beauv.

whisk fern



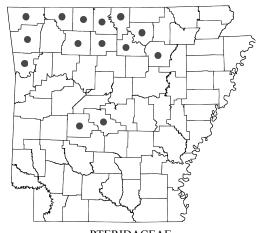
Adiantum capillus-veneris L. southern maidenhair fern, Venus'-hair fern



Adiantum pedatum L. northern maidenhair fern

PTERIDACEAE

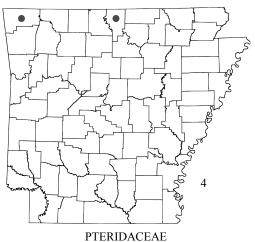
Argyrochosma dealbata (Pursh) Windham powdery cloak fern



PTERIDACEAE

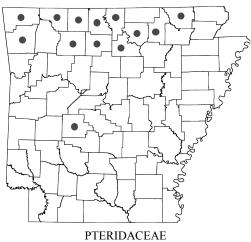
Cheilanthes alabamensis (Buckley) Kunze

Alabama lip fern



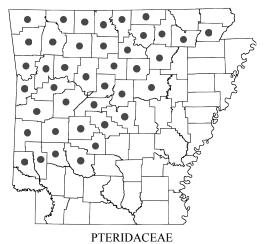
Cheilanthes eatonii Baker in Hook. & Baker

Eaton's lip fern



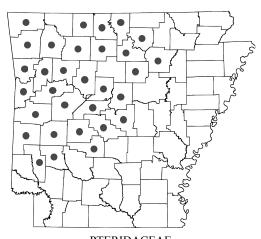
Cheilanthes feei T.Moore

slender lip fern, Fee's lip fern



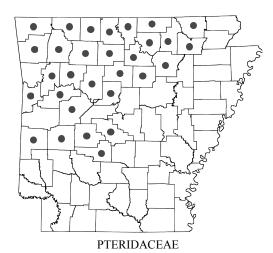
Cheilanthes lanosa (Michx.) D.C.Eaton in Emory

hairy lip fern



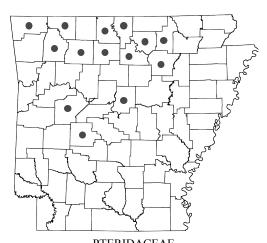
PTERIDACEAE Cheilanthes tomentosa Link

woolly lip fern



Pellaea atropurpurea (L.) Link

purple-stem cliff-brake



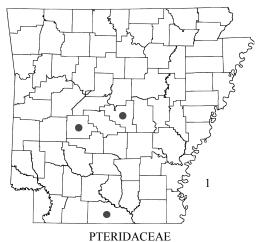
PTERIDACEAE

Pellaea glabella Mett. ex Kuhn

subsp. glabella

smooth cliff-brake

64 PTERIDACEAE / Pteris



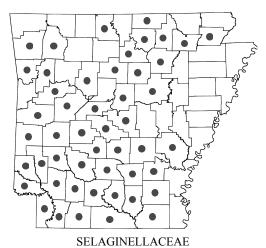
Pteris multifida Poir. in Lam. et al.

spider brake



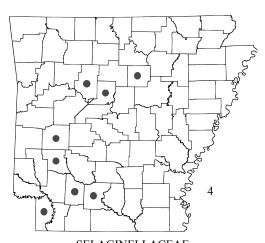
SALVINIACEAE
Salvinia minima Baker

water-spangles, floating fern



Selaginella apoda (L.) Spring in Mart. et al.

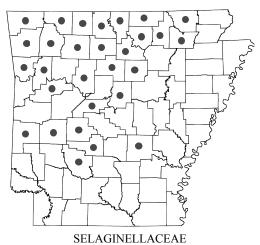
meadow spike-moss



SELAGINELLACEAE
Selaginella arenicola Underw.

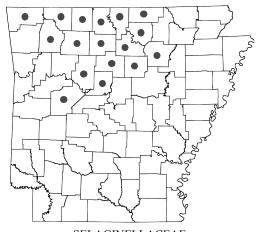
subsp. riddellii (Van Eselt.) R.M.Tryon

Riddell's spike-moss



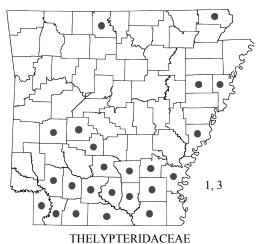
Selaginella eclipes W.R.Buck

hidden spike-moss



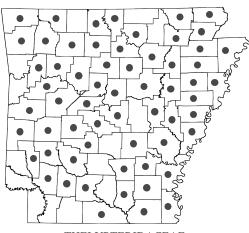
SELAGINELLACEAE
Selaginella rupestris (L.) Spring

rock spike-moss



Macrothelypteris torresiana (Gaudich.) Ching

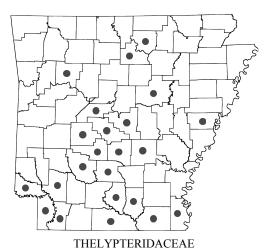
Mariana maiden fern



THELYPTERIDACEAE

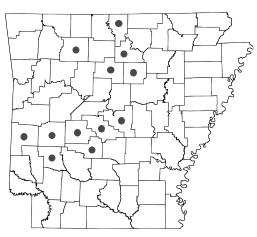
Phegopteris hexagonoptera (Michx.) Fée

broad beech fern, southern beech fern



Thelypteris kunthii (Desv.) C.V.Morton

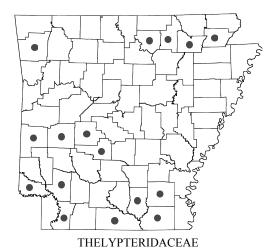
southern shield fern



THELYPTERIDACEAE

Thelypteris noveboracensis (L.) Nieuwl.

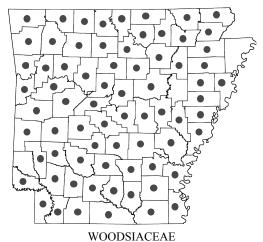
New York fern



Thelypteris palustris Schott

var. pubescens (Lawson) Fernald

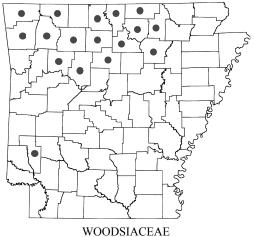
marsh fern



Athyrium filix-femina (L.) Roth ex Mertens subsp. asplenioides (Michx.) Hultén

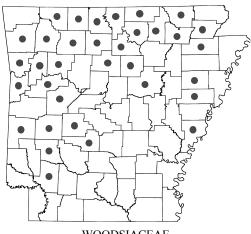
southern lady fern

66 WOODSIACEAE / Cystopteris



Cystopteris bulbifera (L.) Bernh.

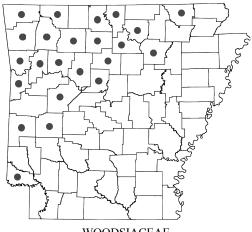
bulblet bladder fern



WOODSIACEAE

Cystopteris protrusa (Weath.) Blasdell

southern bladder fern, southern fragile fern



 $WOODSIACEAE \\ \textbf{Cystopteris tennesseensis Shaver}$

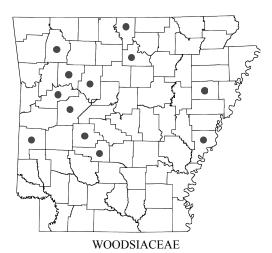
Tennessee bladder fern



WOODSIACEAE

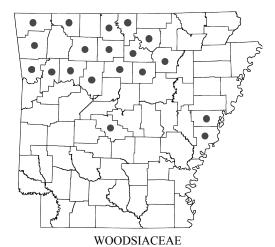
Cystopteris tenuis (Michx.) Desv.

Mackay's bladder fern, Mackay's fragile fern



Deparia acrostichoides (Sw.) M.Kato

silvery glade fern



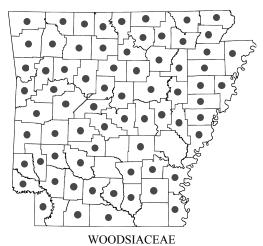
Diplazium pycnocarpon (Spreng.) M.Broun

glade fern



Woodsia appalachiana T.M.C.Taylor

Appalachian cliff fern

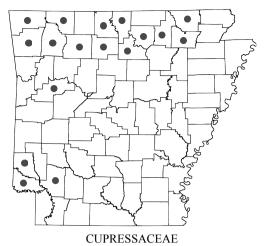


Woodsia obtusa (Spreng.) Torr.

blunt-lobe cliff fern See Appendix I for infraspecific taxa and species status.

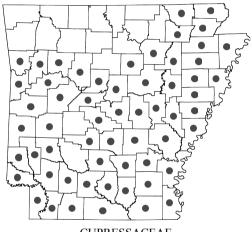






Juniperus ashei J.Buchholz

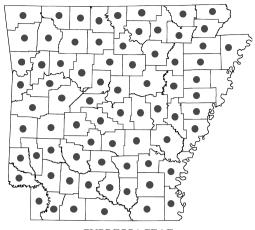
Ashe's juniper, rock-cedar, Ozark white-cedar



CUPRESSACEAE Taxodium distichum (L.) Rich. var. distichum

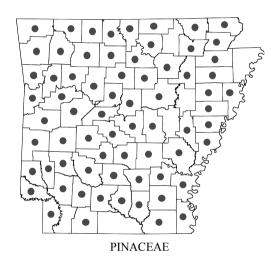
bald-cypress, cypress





CUPRESSACEAE Juniperus virginiana L. var. virginiana

eastern red-cedar, cedar

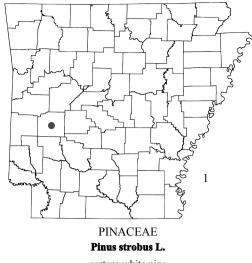


Pinus echinata Mill. short-leaf pine, yellow pine

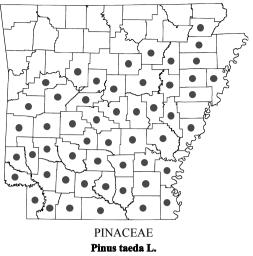
PINACEAE

Pinus palustris Mill. long-leaf pine

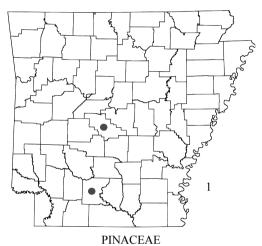
72 PINACEAE / Pinus



eastern white pine



loblolly pine

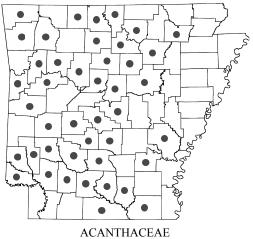


Pinus virginiana Mill.

Virginia pine

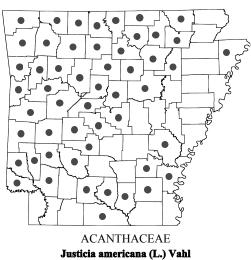




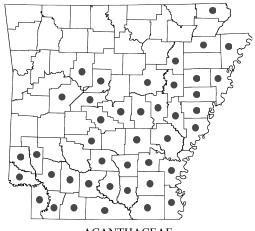


Dicliptera brachiata (Pursh) Spreng.

dicliptera, branched foldwing



water-willow

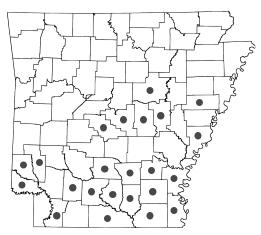


ACANTHACEAE

Justicia ovata (Walter) Lindau

var. lanceolata (Chapm.) R.W.Long

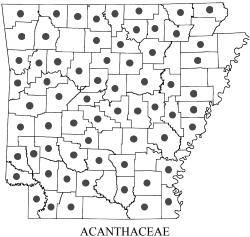
lance-leaf water-willow



ACANTHACEAE

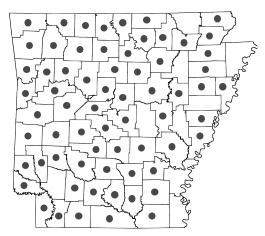
Ruellia caroliniensis (J.F.Gmel.) Steud.

Carolina wild petunia



Ruellia humilis Nutt.

hairy wild petunia

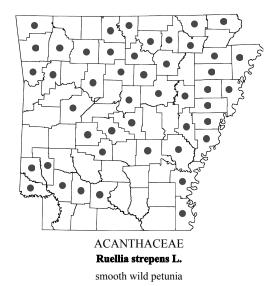


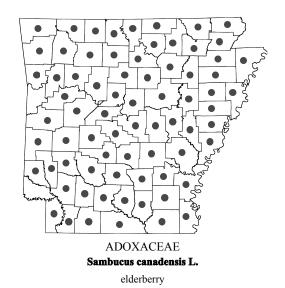
ACANTHACEAE

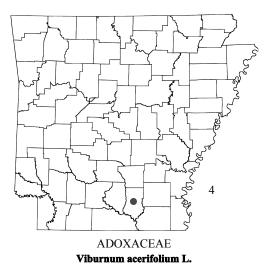
Ruellia pedunculata Torr. ex A.Gray

subsp. pedunculata

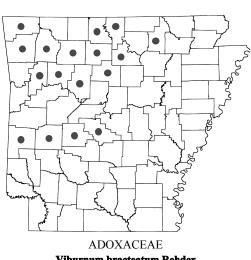
stalked wild petunia



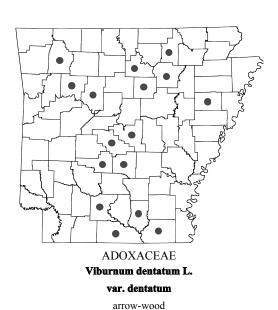


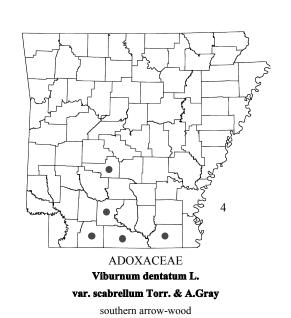


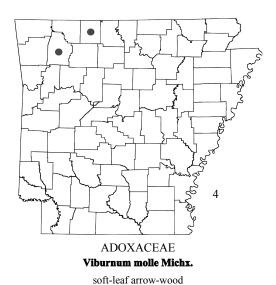
maple-leaf viburnum, maple-leaf arrow-wood



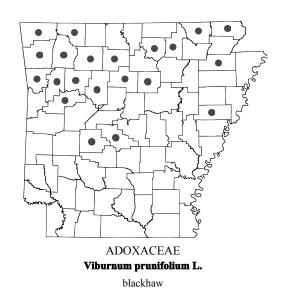
Viburnum bracteatum RehderOzark arrow-wood

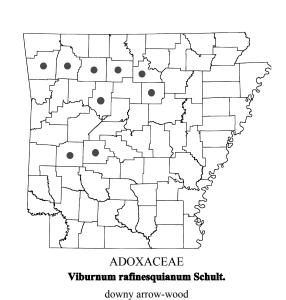


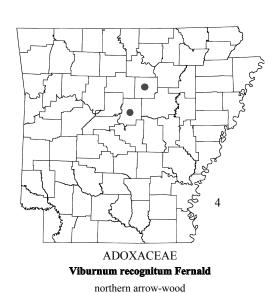


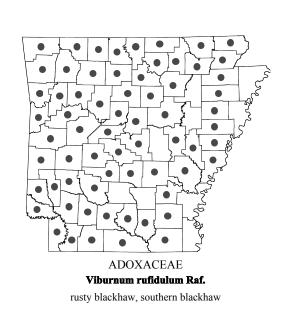


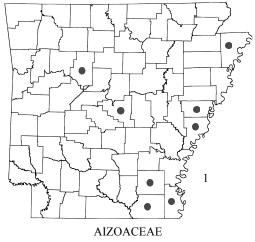






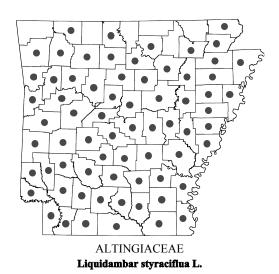




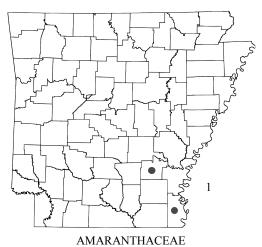


Trianthema portulacastrum L.

sea-purslane, horse-purslane

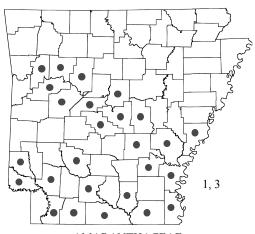


sweet-gum



Alternanthera paronychioides A.St.-Hil.

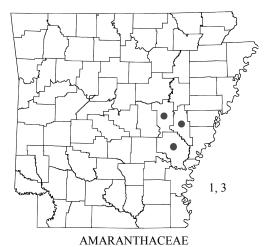
smooth joyweed



AMARANTHACEAE

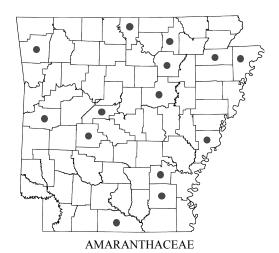
Alternanthera philoxeroides (Mart.) Griseb.

alligator-weed



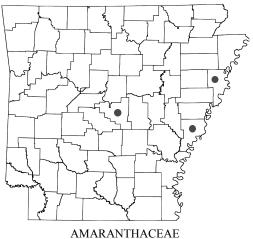
Alternanthera sessilis (L.) R.Br. ex DC.

sessile joyweed



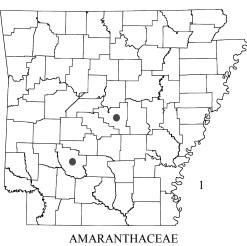
Amaranthus albus L.

tumbleweed, tumble pigweed



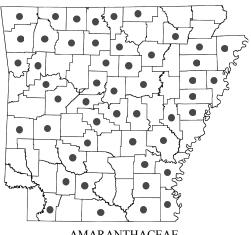
Amaranthus blitoides S.Watson

tumbleweed, prostrate amaranth, prostrate pigweed



Amaranthus blitum L.

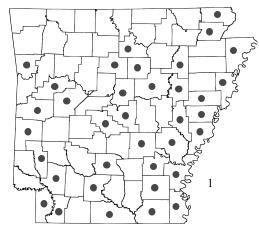
purple amaranth



AMARANTHACEAE

Amaranthus hybridus L.

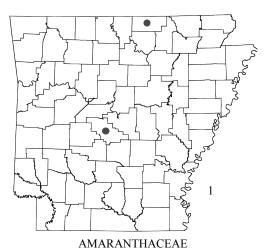
green amaranth, smooth pigweed



AMARANTHACEAE

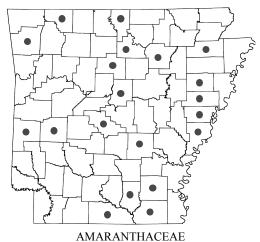
Amaranthus palmeri S.Watson

Palmer's amaranth, careless-weed



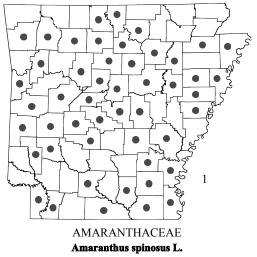
Amaranthus powellii S.Watson

Powell's amaranth

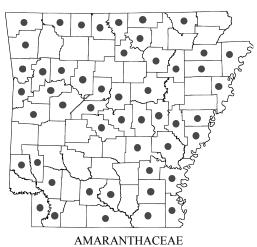


Amaranthus retroflexus L.

red-root pigweed, rough green amaranth

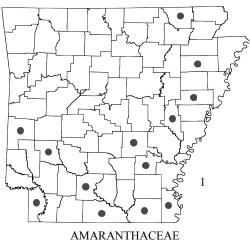


spiny amaranth



Amaranthus tuberculatus (Moq.) J.D.Sauer

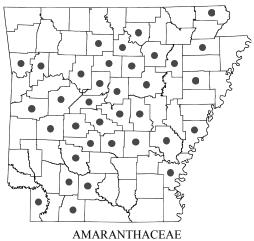
water-hemp, tall water-hemp



Amaranthus viridis L. slender amaranth

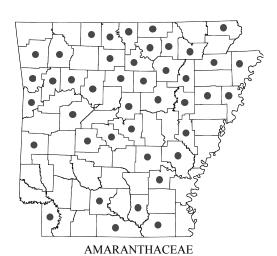
AMARANTHACEAE

Celosia argentea L. silver cock's-comb



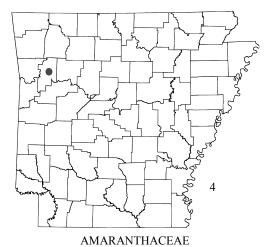
Froelichia floridana (Nutt.) Moq. in DC. & A.DC.

cotton-weed, plains snake-cotton



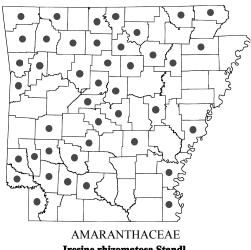
Froelichia gracilis (Hook.) Moq. in DC. & A.DC.

slender cotton-weed, slender snake-cotton



Gossypianthus lanuginosus (Poir.) Moq. in DC. & A.DC. var. tenuiflorus (Hook.) Henr.

woolly cotton-flower



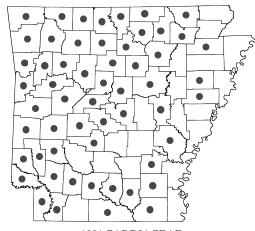
Iresine rhizomatosa Standl.

blood-leaf, Juda's-bush



Cotinus obovatus Raf.

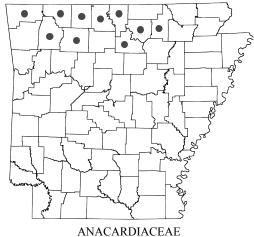
American smoke-tree



ANACARDIACEAE

Rhus aromatica Aiton

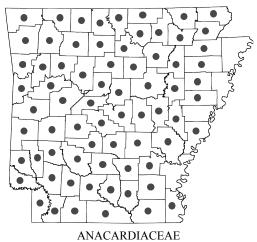
var. aromatica fragrant sumac



Rhus aromatica Aiton

var. serotina (Greene) Rehder

fragrant sumac



Rhus copallinum L.

winged sumac, dwarf sumac, shining sumac

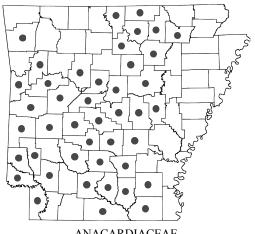


smooth sumac



ANACARDIACEAE Rhus trilobata Nutt. ex Torr. & A.Gray var. trilobata

skunk-bush sumac



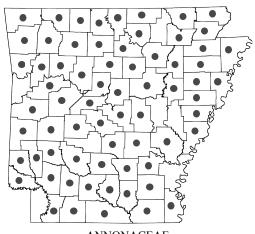
ANACARDIACEAE Toxicodendron pubescens Mill. poison-oak

ANACARDIACEAE Toxicodendron radicans (L.) Kuntze

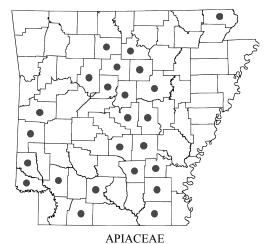
poison-ivy



Asimina parviflora (Michx.) Dunal dwarf pawpaw



ANNONACEAE Asimina triloba (L.) Dunal pawpaw



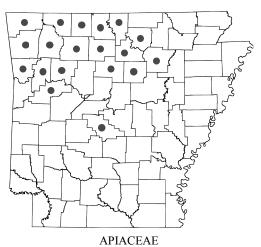
Ammoselinum butleri (Engelm. ex S.Watson) J.M.Coult. & Rose

Butler's sand-parsley



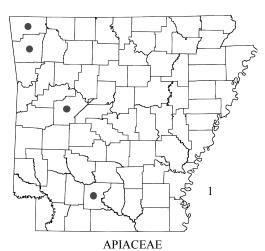
Anethum graveolens L.

dill



Angelica venenosa (Greenway) Fernald

hairy angelica



Anthriscus caucalis M.Bieb.

bur chervil



Bifora americana Benth. & Hook.f. ex S.Watson

prairie bishop



Bowlesia incana Ruiz & Pav.

hoary bowlesia

84 APIACEAE / Bupleurum



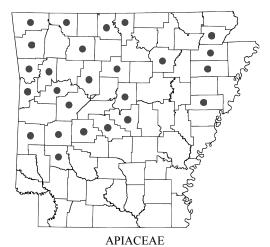
Bupleurum rotundifolium L.

thoroughwax, hare's-ear



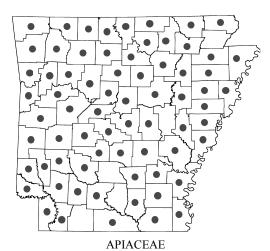
Centella erecta (L.f.) Fernald

stiff spadeleaf



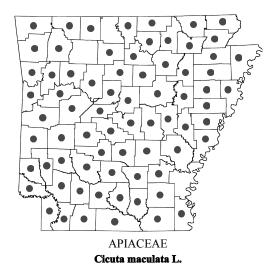
Chaerophyllum procumbens (L.) Crantz

spreading chervil

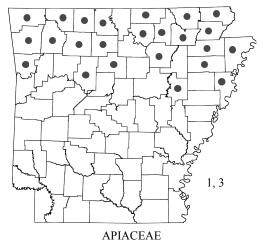


Chaerophyllum tainturieri Hook.

wild chervil



water-hemlock, spotted cowbane

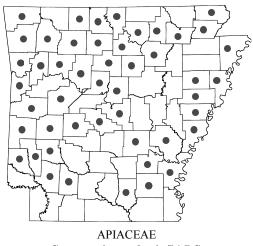


Conium maculatum L.

poison-hemlock

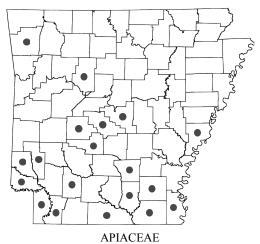


coriander, Chinese-parsley, cilantro

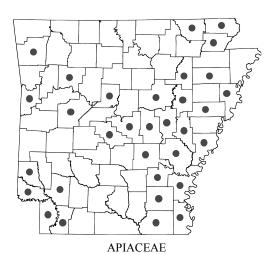


Cryptotaenia canadensis (L.) DC.

honewort

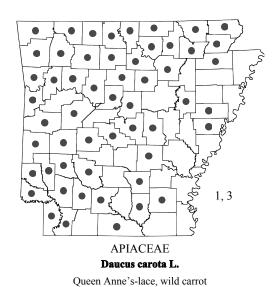


Cyclospermum leptophyllum (Pers.) Sprague ex Britton & P.Wilson marsh-parsley, wild celery



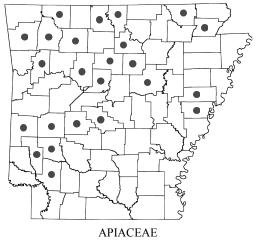
Cynosciadium digitatum DC.

dogshade



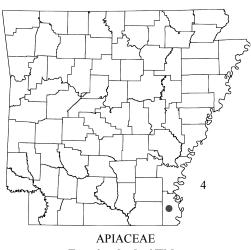
APIACEAE Daucus pusillus Michx.

rattlesnake-weed, wild carrot



Erigenia bulbosa (Michx.) Nutt.

harbinger-of-spring, pepper-and-salt



Eryngium hookeri Walp.

Hooker's eryngo



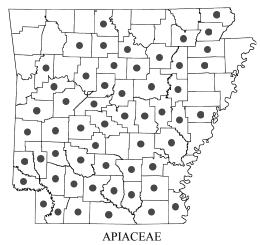
Eryngium integrifolium Walter

blue-flower eryngo, eryngo



Eryngium leavenworthii Torr. & A.Gray

Leavenworth's eryngo



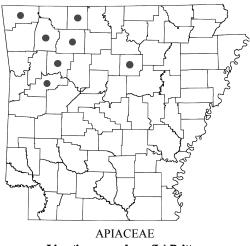
Eryngium prostratum Nutt. ex DC.

creeping eryngo

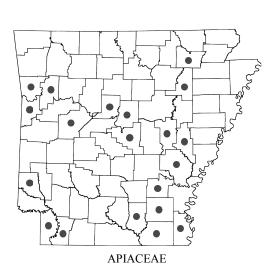


Eryngium yuccifolium Michx.

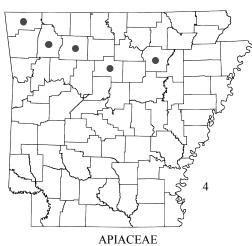
rattlesnake-master, button snakeroot



Ligusticum canadense (L.) Britton angelico



Limnosciadium pinnatum (DC.) Mathias & Constance Arkansas dogshade



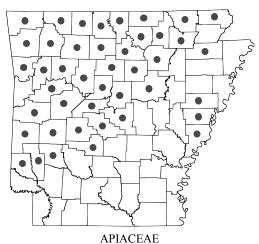
Osmorhiza claytonii (Michx.) C.B.Clarke hairy sweet-cicely



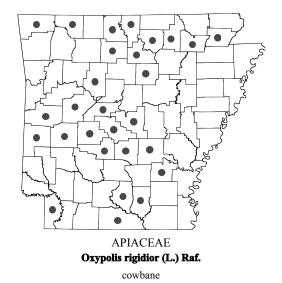
Lilaeopsis carolinensis J.M.Coult. & Rose Carolina grasswort



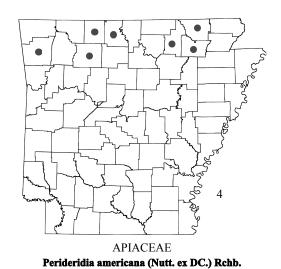
Limnosciadium pumilum (Engelm. & A.Gray) Mathias & Constance ricefield dogshade, prairie dogshade

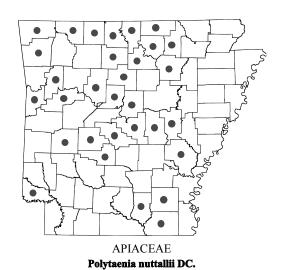


Osmorhiza longistylis (Torr.) DC. aniseroot, sweet anise



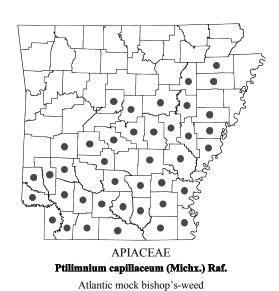


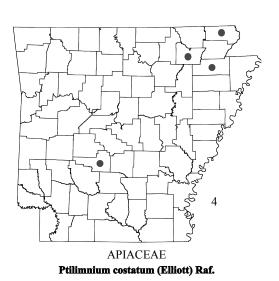


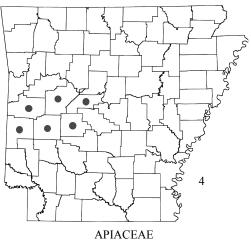


prairie-parsley

American squaw-root, eastern yampah

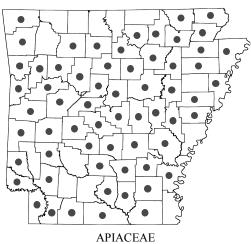






Ptilimnium nodosum (Rose) Mathias

harperella



Ptilimnium nuttallii (DC.) Britton

Nuttall's mock bishop's-weed



Ptilimnium texense J.M.Coult. & Rose

Texas mock bishop's-weed



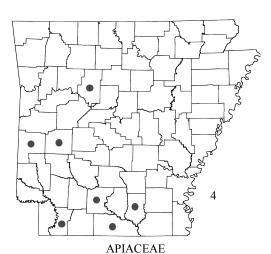
Sanicula canadensis L.

Canadian black-snakeroot



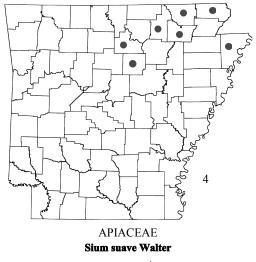
Sanicula odorata (Raf.) Pryer & Phillippe

clustered black-snakeroot

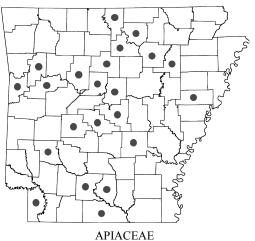


Sanicula smallii E.P.Bicknell

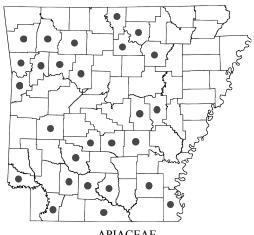
Small's black-snakeroot



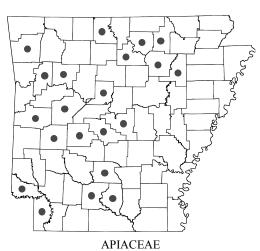
water-parsnip



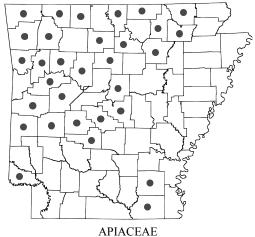
Spermolepis divaricata (Walter) Raf. ex Ser. rough-fruit scaleseed



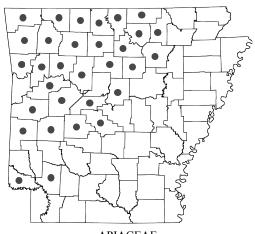
APIACEAE Spermolepis echinata (Nutt. ex DC.) A.Heller bristle-fruit scaleseed



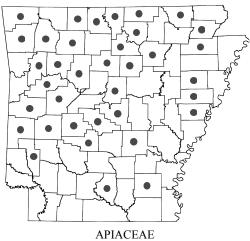
Spermolepis inermis (Nutt. ex DC.) Mathias & Constance western scaleseed



Taenidia integerrima (L.) Drude yellow pimpernel



APIACEAE Thaspium barbinode (Michx.) Nutt. meadow-parsnip



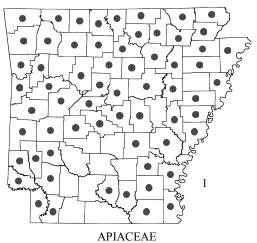
Thaspium trifoliatum (L.) A.Gray var. aureum (L.) Britton

meadow-parsnip



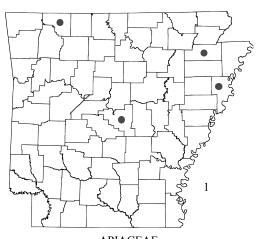
APIACEAE Thaspium trifoliatum (L.) A.Gray var. trifoliatum

purple meadow-parsnip



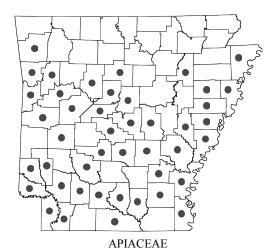
Torilis arvensis (Huds.) Link

field hedge-parsley



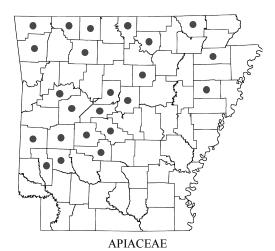
APIACEAE Torilis nodosa (L.) Gaertn.

knotted hedge-parsley



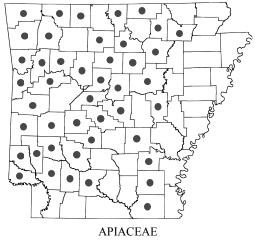
Trepocarpus aethusae Nutt. ex DC.

whitenymph



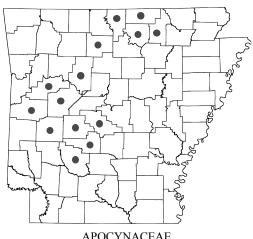
Zizia aptera (A.Gray) Fernald

heart-leaf golden Alexanders



Zizia aurea (L.) W.D.J.Koch

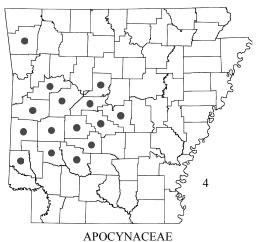
golden Alexanders



APOCYNACEAE Amsonia ciliata Walter

var. tenuifolia (Raf.) Woodson

bluestar

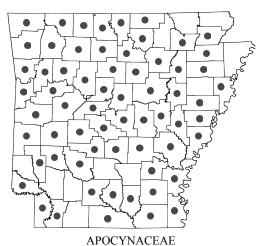


Amsonia hubrichtii Woodson Ouachita bluestar, Arkansas bluestar

APOCYNACEAE

Amsonia illustris Woodson

shining bluestar



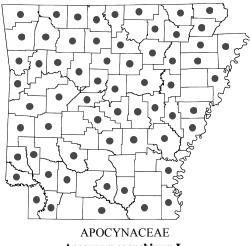
Amsonia tabernaemontana Walter

eastern bluestar



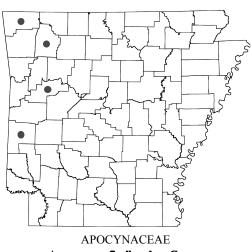
Apocynum androsaemifolium L.

spreading dogbane



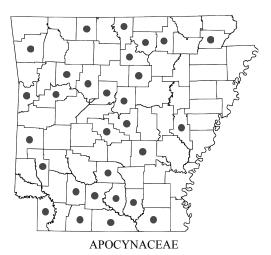
Apocynum cannabinum L.

dogbane, Indian-hemp



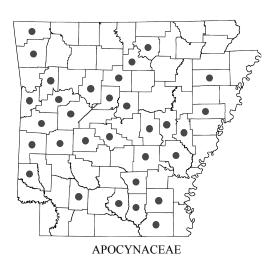
Apocynum ×floribundum Greene

hybrid dogbane



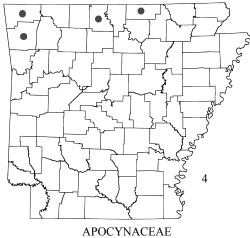
Asclepias amplexicaulis Sm.

curly milkweed, blunt-leaf milkweed



Asclepias hirtella (Pennell) Woodson

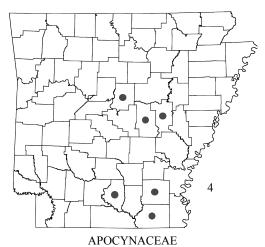
tall green milkweed



Asclepias incarnata L.

subsp. incarnata

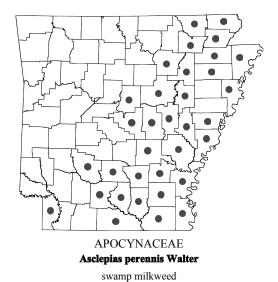
swamp milkweed

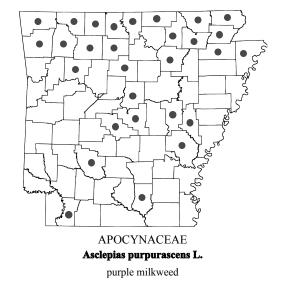


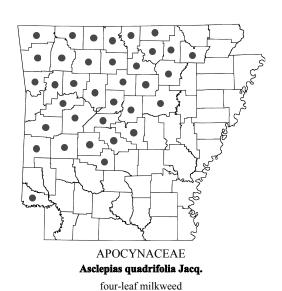
Asclepias obovata Elliott

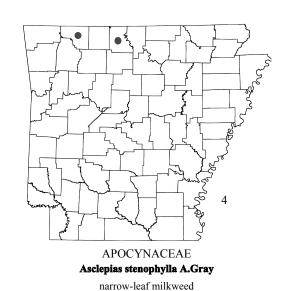
savannah milkweed, pineland milkweed

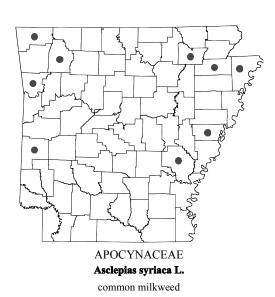
94 APOCYNACEAE / Asclepias

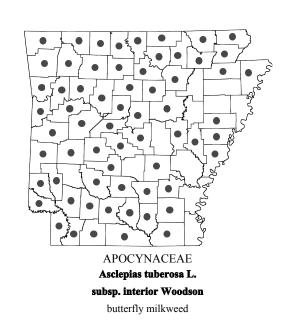


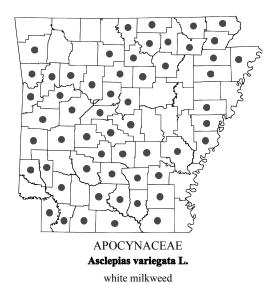


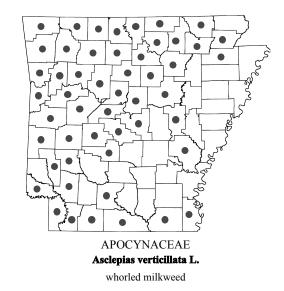


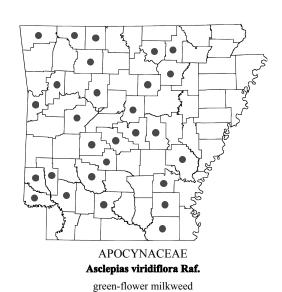


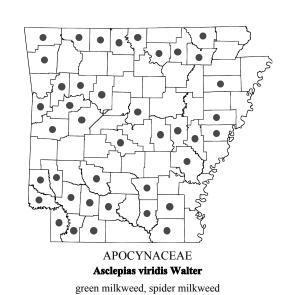


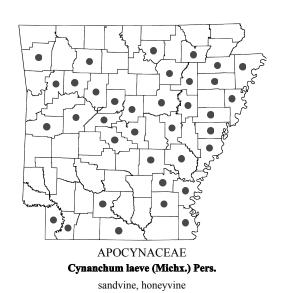


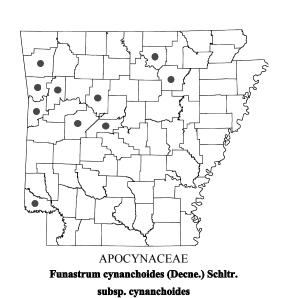




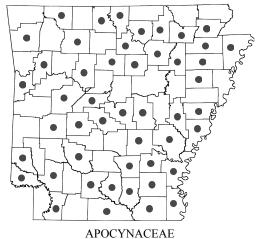






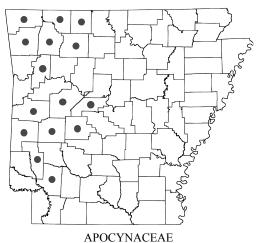


climbing-milkweed, twinevine



Gonolobus suberosus (L.) R.Br. ex Schult.

anglepod



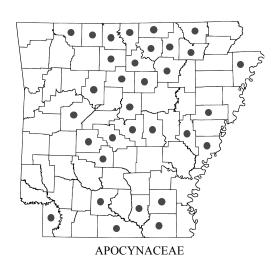
Matelea baldwyniana (Sweet) Woodson

climbing-milkweed



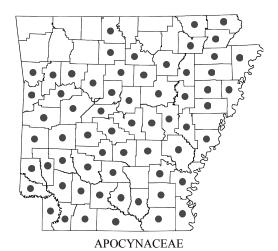
Matelea cynanchoides (Engelm.) Woodson

milkvine



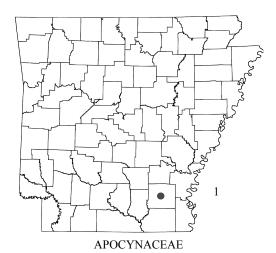
Matelea decipiens (Alexander) Woodson

climbing-milkweed



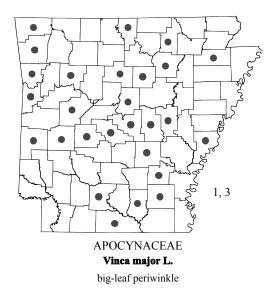
Trachelospermum difforme (Walter) A.Gray

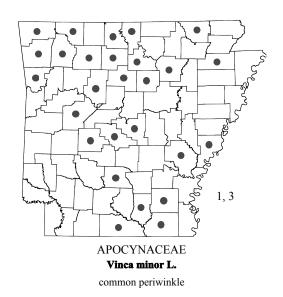
climbing-dogbane

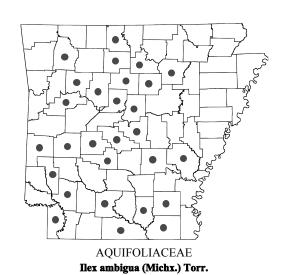


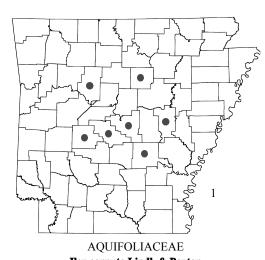
Trachelospermum jasminoides (Lindl.) Lem.

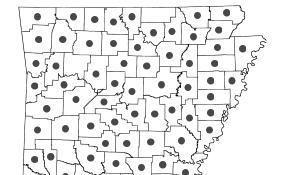
Confederate-jasmine, star-jasmine







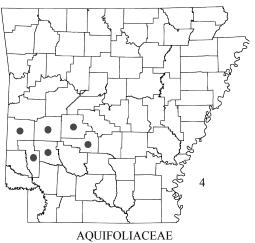




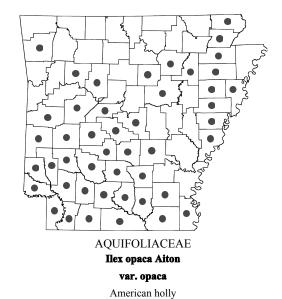
Carolina holly

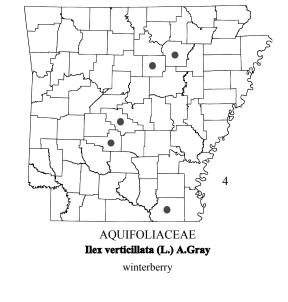
Ilex cornuta Lindl. & Paxton Chinese holly

AQUIFOLIACEAE Ilex decidua Walter deciduous holly, possumhaw

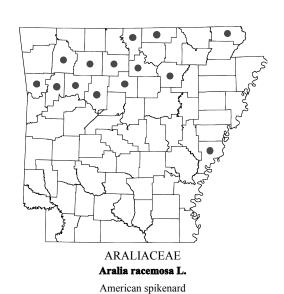


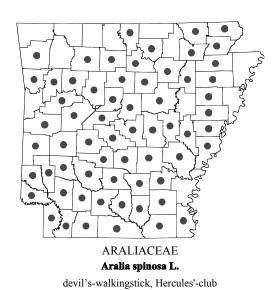
Ilex longipes Chapm. ex Trel. Georgia holly

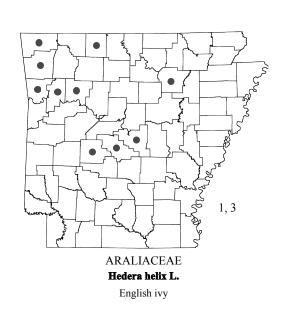




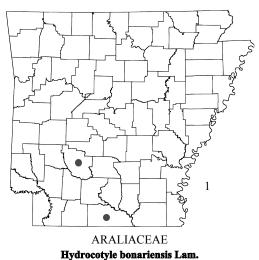






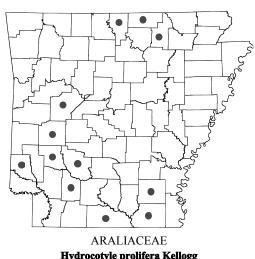


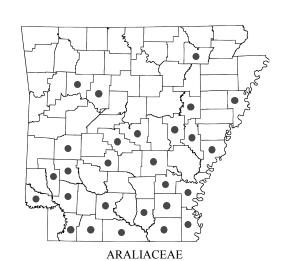




marsh pennywort

Hydrocotyle bonariensis Lam. coastal pennywort

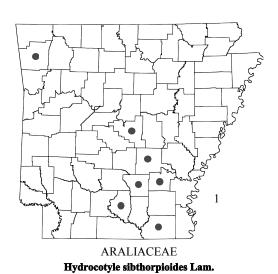




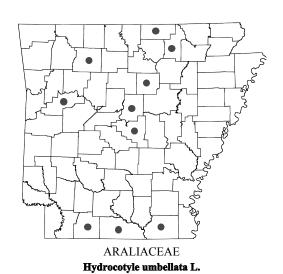
Hydrocotyle prolifera Kellogg

Hydrocotyle ranunculoides L.f. floating pennywort

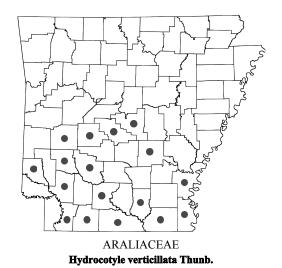
water pennywort



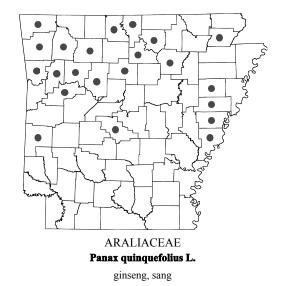
lawn pennywort

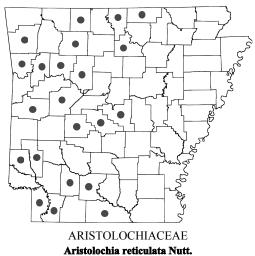


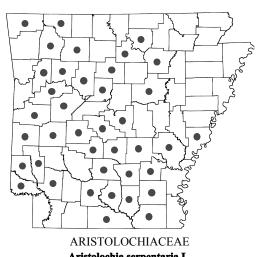
water pennywort



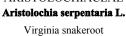
whorled pennywort

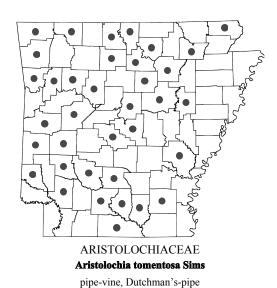






Texas Dutchman's-pipe



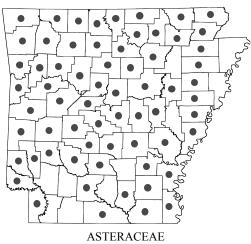






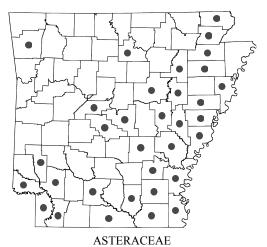
Acanthospermum australe (Loefl.) Kuntze

Paraguay starbur



Achillea millefolium L.

yarrow, common milfoil



Acmella repens (Walter) Rich. in Pers.

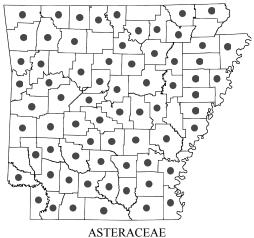
creeping spotflower



Ageratina altissima (L.) R.M.King & H.Rob.

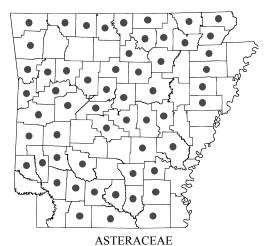
var. altissima

white snakeroot



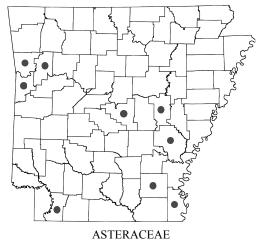
Ambrosia artemisiifolia L.

common ragweed



Ambrosia bidentata Michx.

lance-leaf ragweed

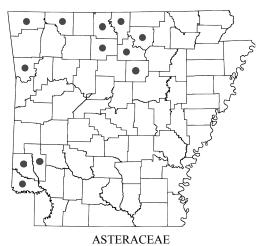


Ambrosia psilostachya DC. in DC. & A.DC.

western ragweed



giant ragweed



Amphiachyris dracunculoides (DC.) Nutt.

broomweed



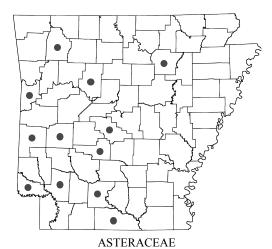
Antennaria neglecta Greene

field pussytoes



Antennaria parlinii Fernald subsp. fallax (Greene) R.J.Bayer & Stebbins

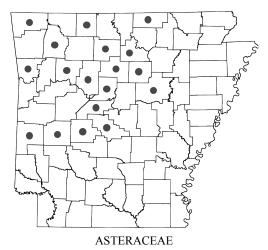
pussytoes, ladies'-tobacco



Antennaria parlinii Fernald

subsp. parlinii

pussytoes, ladies'-tobacco



Antennaria plantaginifolia (L.) Hook.

pussytoes, ladies'-tobacco



Anthemis cotula L.

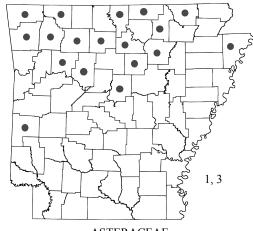
Mayweed, dog-fennel



Aphanostephus skirrhobasis (DC.) Trel.

var. skirrhobasis

Arkansas lazy daisy



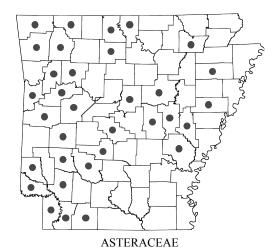
ASTERACEAE Arctium minus (Hill) Bernh.

common burdock, lesser burdock



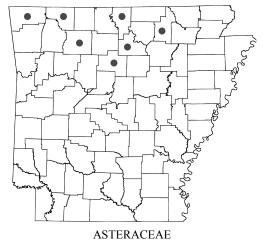
Arnoglossum atriplicifolium (L.) H.Rob.

pale Indian-plantain



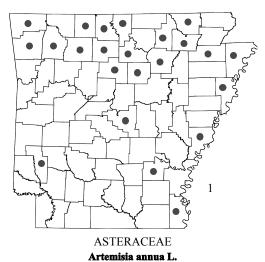
Arnoglossum plantagineum Raf.

Indian-plantain



Arnoglossum reniforme (Hook.) H.Rob.

great Indian-plantain



sweet wormwood



Artemisia campestris L. subsp. caudata (Michx.) H.M.Hall & Clem.

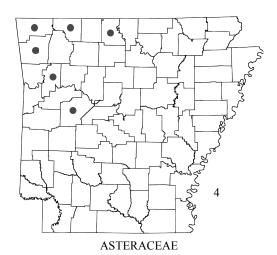
wild wormwood



Artemisia ludoviciana Nutt.

subsp. ludoviciana

white sagebrush, silver wormwood



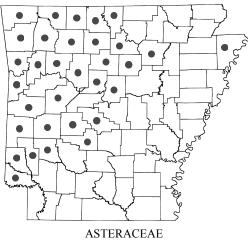
Artemisia ludoviciana Nutt. subsp. mexicana (Willd. ex Spreng.) D.D.Keck

white sagebrush, silver wormwood



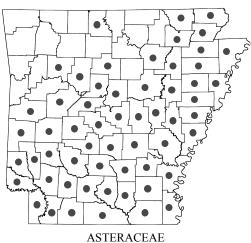
Artemisia vulgaris L.

mugwort, wormwood



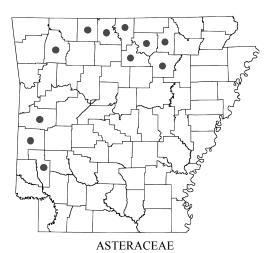
Astranthium ciliatum (Raf.) G.L.Nesom

western daisy



Baccharis halimifolia L.

saltbush, groundsel-tree, sea-myrtle



Berlandiera betonicifolia (Hook.) Small

green-eyes, berlandiera



ASTERACEAE

Berlandiera pumila (Michx.) Nutt.

var. pumila

sandhill green-eyes, berlandiera

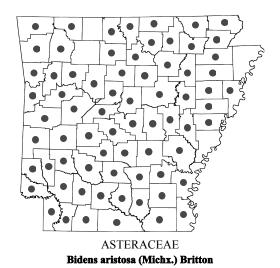


Berlandiera subacaulis (Nutt.) Nutt.

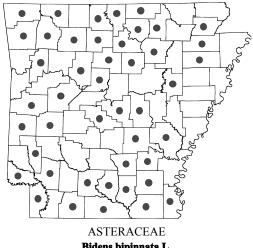
Florida green-eyes



Bidens alba (L.) DC. beggar-ticks

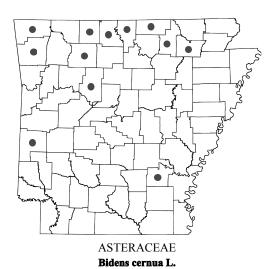


tickseed-sunflower

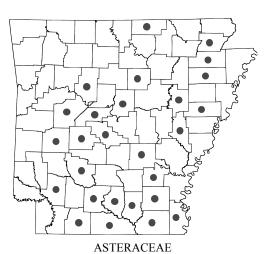


Bidens bipinnata L.

Spanish-needles



nodding bur-marigold



Bidens discoidea (Torr. & A.Gray) Britton

beggar-ticks, stick-tight



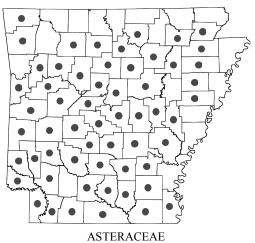
beggar-ticks, stick-tight

ASTERACEAE Bidens laevis (L.) Britton, Sterns & Poggenb. smooth bur-marigold, showy bur-marigold



Bidens vulgata Greene

beggar-ticks, stick-tight



Boltonia diffusa Elliott

small-head doll's daisy

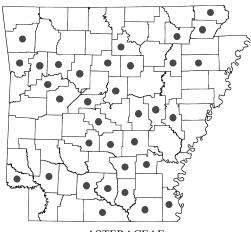
See Appendix I for infraspecific taxa and species status.



Brickellia eupatorioides (L.) Shinners

false boneset

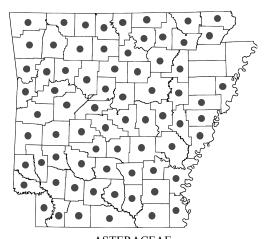
See Appendix I for infraspecific taxa and species status.



ASTERACEAE Boltonia asteroides (L.) L'Hér.

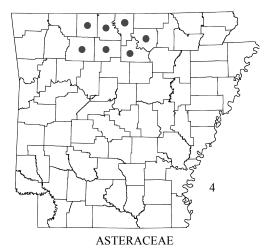
white doll's daisy

See Appendix I for infraspecific taxa and species status.



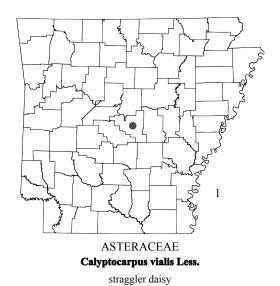
ASTERACEAE Bradburia pilosa (Nutt.) Semple

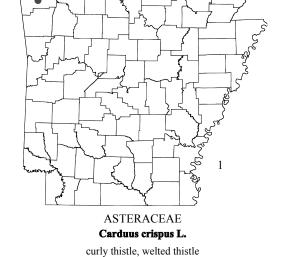
golden-aster

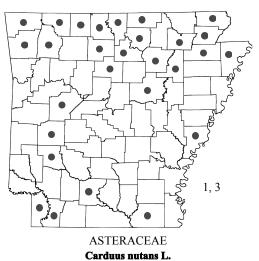


Brickellia grandiflora (Hook.) Nutt.

tassel-flower





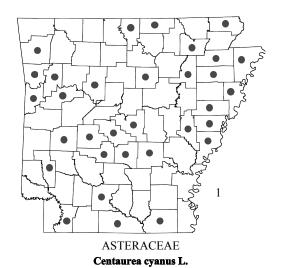




musk thistle, nodding thistle



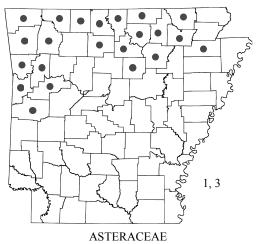




Centaurea benedicta (L.) L.

bachelor's-button, cornflower

blessed thistle



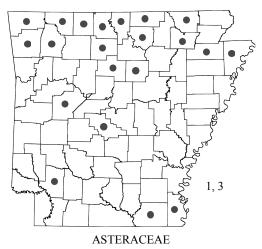
Centaurea stoebe L. subsp. micranthos (S.G.Gmel. ex Gugler) Hayek

spotted knapweed



ASTERACEAE Chaetopappa asteroides (Nutt.) DC. in DC. & A.DC. var. asteriodes

Arkansas least-daisy



Cichorium intybus L. chicory, blue sailors

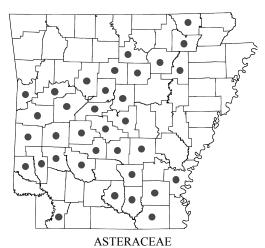


Cirsium altissimum (L.) Spreng.

tall thistle

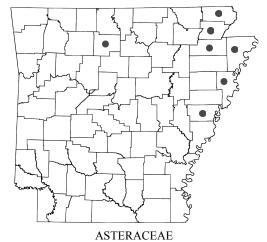


Canadian thistle



Cirsium carolinianum (Walter) Fernald & B.G.Schub.

Carolina thistle, soft thistle

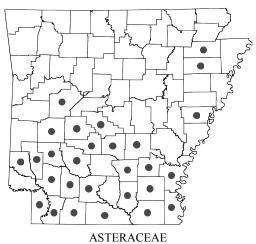


Cirsium discolor (Muhl. ex Willd.) Spreng.field thistle



Cirsium engelmannii Rydb.

Engelmann's thistle



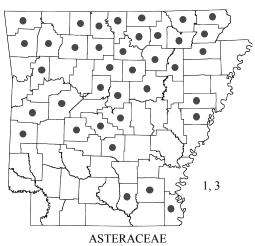
Cirsium horridulum Michx.
var. megacanthum (Nutt.) D.J.Keil
yellow thistle, big-spine thistle



Cirsium horridulum Michx. var. vittatum (Small) R.W.Long yellow thistle, Florida thistle



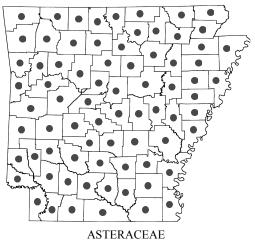
Cirsium muticum Michx.
swamp thistle



ASTERACEAE

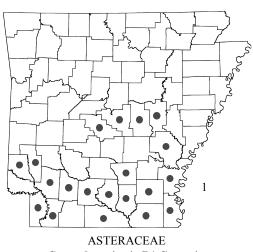
Cirsium vulgare (Savi) Ten.

bull thistle



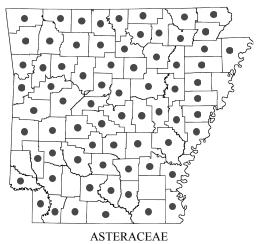
Conoclinium coelestinum (L.) DC. in DC. & A.DC.

mist-flower



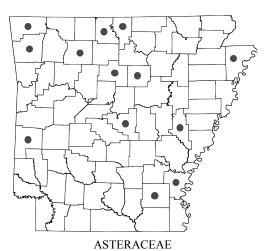
Conyza bonariensis (L.) Cronquist

asthma-weed



Conyza canadensis (L.) Cronquist

horseweed



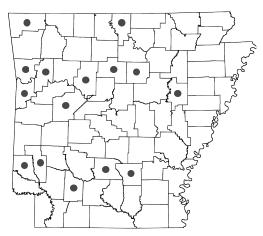
Conyza ramosissima Cronquist

dwarf fleabane, dwarf horseweed



Coreopsis basalis (A.Dietr.) Blake

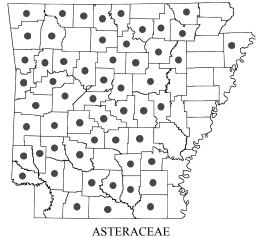
golden-mane tickseed



ASTERACEAE

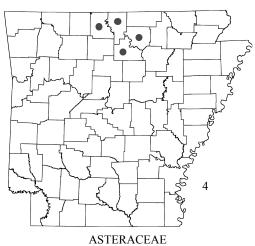
Coreopsis grandiflora Hogg ex Sweet var. grandiflora

large-flower tickseed



Coreopsis grandiflora Hogg ex Sweet var. harveyana (A.Gray) Sherff

large-flower tickseed



Coreopsis grandiflora Hogg ex Sweet var. saxicola (Alexander) E.B.Sm.

large-flower tickseed

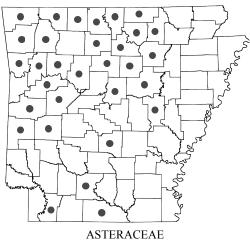


Coreopsis intermedia Sherff

golden-wave tickseed



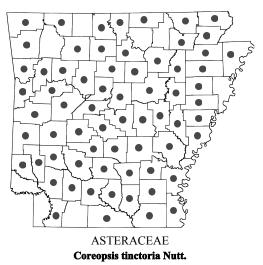
lance-leaf tickseed



Coreopsis palmata Nutt.

ASTERACEAE

Coreopsis pubescens Elliott star tickseed



Plains coreopsis, tickseed, calliopsis



tall tickseed



Cosmos bipinnatus Cav.

cosmos



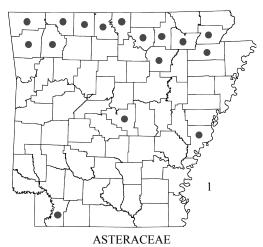
ASTERACEAE Cosmos sulphureus Cav.

cosmos



Cota tinctoria (L.) J.Gay ex Guss.

yellow chamomile



Crepis pulchra L.

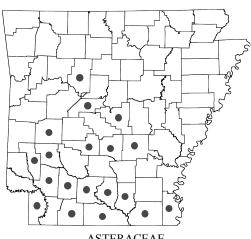
small-flower hawk's-beard

114 ASTERACEAE / Crepis



Crepis setosa Haller f.

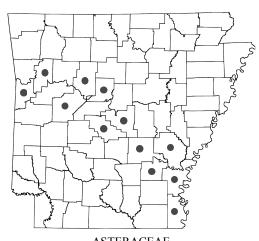
bristly hawk's-beard



ASTERACEAE

Croptilon divaricatum (Nutt.) Raf.

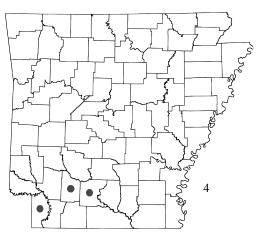
scratch-daisy



ASTERACEAE

Croptilon hookerianum (Torr. & A.Gray) House var. validum (Rydb.) E.B.Sm.

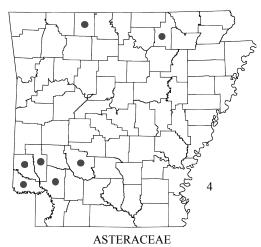
Hooker's scratch-daisy



ASTERACEAE

Diaperia candida (Torr. & A.Gray) Bentham & Hook.f.

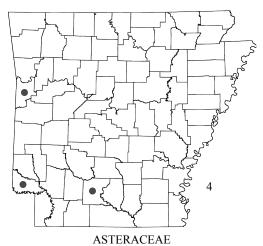
silver rabbit-tobacco



Diaperia prolifera (Nutt. ex DC.) Nutt.

var. prolifera

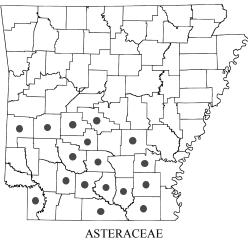
big-head rabbit-tobacco



Diaperia verna (Raf.) Morefield

var. verna

many-stem rabbit-tobacco, cotton-rose



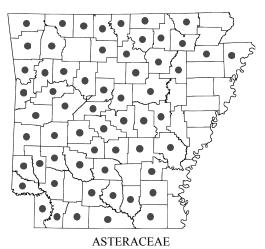
Doellingeria sericocarpoides Small

southern white-top aster



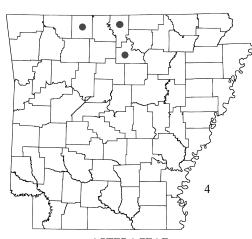
Dyssodia papposa (Vent.) Hitchc.

fetid-marigold



Echinacea pallida (Nutt.) Nutt.

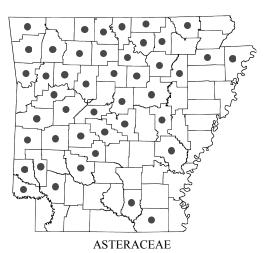
pale purple coneflower



ASTERACEAE

Echinacea paradoxa (Norton) Britton in Britton & Brown var. paradoxa

yellow coneflower



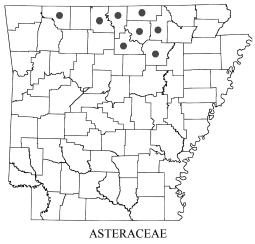
Echinacea purpurea (L.) Moench

purple coneflower



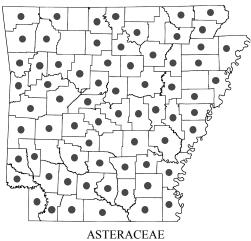
Echinacea sanguinea Nutt.

sanguine purple coneflower



Echinacea simulata McGregor

glade coneflower



ASTERACEAE

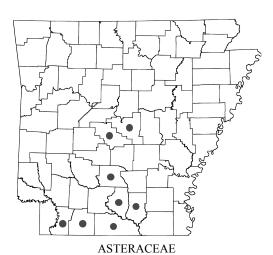
Eclipta prostrata (L.) L.

false daisy



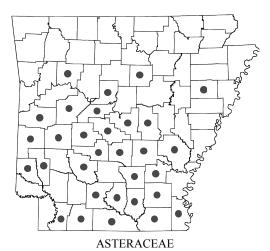
Elephantopus carolinianus Raeusch.

Carolina elephant's-foot



Elephantopus nudatus A.Gray

smooth elephant's-foot



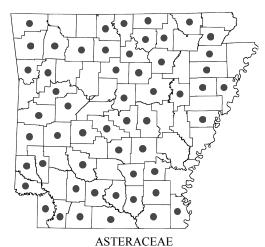
Elephantopus tomentosus L.

hairy elephant's-foot



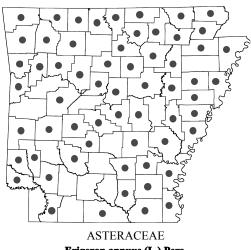
Engelmannia peristenia (Raf.) Goodman & C.A.Lawson

Engelmann's daisy



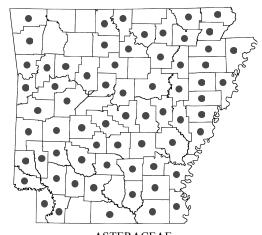
Erechtites hieraciifolius (L.) Raf. ex DC. in DC. & A.DC. var. hieraciifolius

fireweed, burnweed



Erigeron annuus (L.) Pers.

daisy fleabane



ASTERACEAE Erigeron philadelphicus L. var. philadelphicus

Philadelphia fleabane



Erigeron pulchellus Michx. var. pulchellus

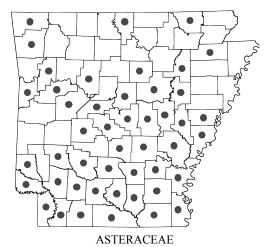
Robin's-plantain



Erigeron strigosus Muhl. ex Willd.

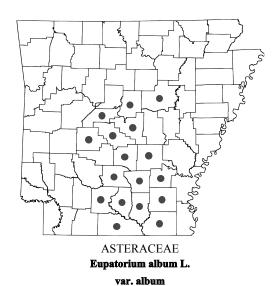
daisy fleabane

See Appendix I for infraspecific taxa and species status.

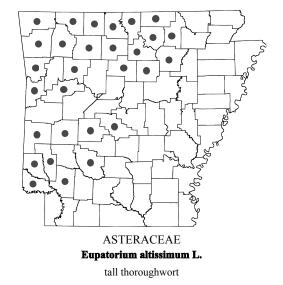


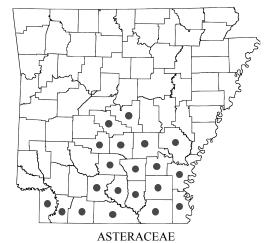
Erigeron tenuis Torr. & A.Gray

fleabane

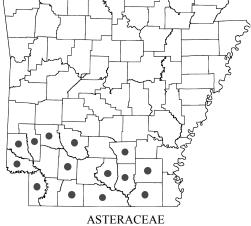


boneset, white thoroughwort





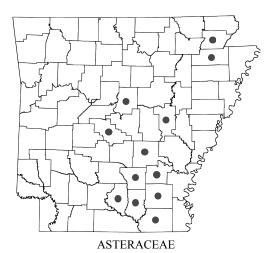
Eupatorium capillifolium (Lam.) Small



Eupatorium compositifolium Walter

dog-fennel

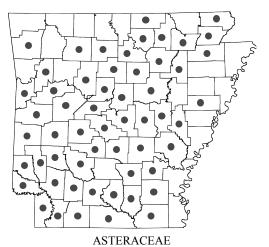
yankee-weed



Eupatorium hyssopifolium L.

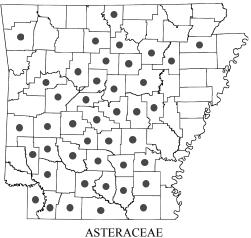
hyssop-leaf boneset

See Appendix I for infraspecific taxa and species status.



Eupatorium perfoliatum L.

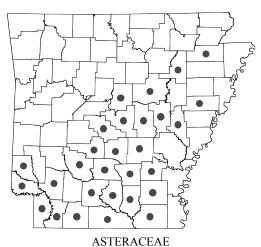
boneset, thoroughwort



Eupatorium rotundifolium L.

round-leaf boneset

See Appendix I for infraspecific taxa and species status.



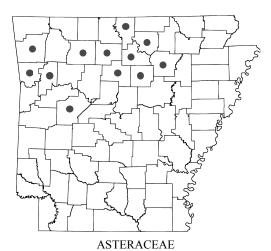
Eupatorium semiserratum DC. in DC. & A.DC.

small-flower boneset



Eupatorium serotinum Michx.

late boneset



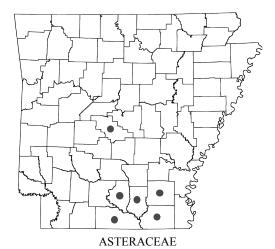
Eupatorium sessilifolium L.

upland boneset



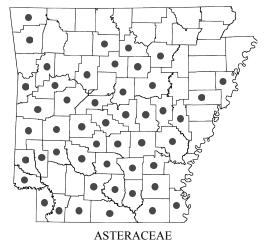
Eupatorium \times cordigerum (Fernald) Fernald

hybrid boneset



 $\textbf{Eupatorium} \times \textbf{pinnatifidum Elliott}$

hybrid boneset



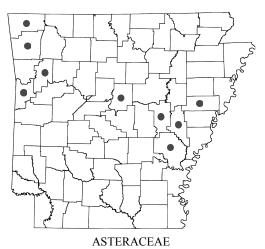
Eurybia hemispherica (Alexander) G.L.Nesom

southern prairie aster



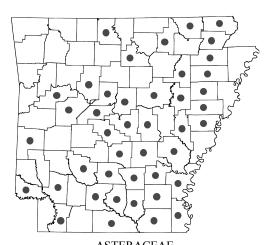
Eurybia macrophylla (L.) Cass in F.Cuvier

big-leaf aster



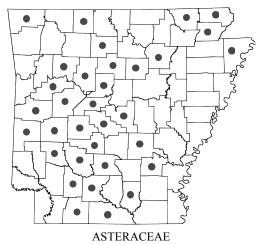
Euthamia gymnospermoides Greene

flat-top goldenrod



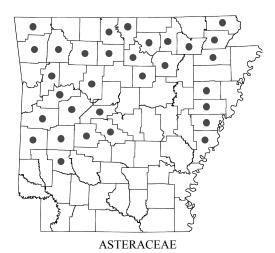
ASTERACEAE **Euthamia leptocephala (Torr. & A.Gray) Greene ex Porter & Britton**

flat-top goldenrod



Eutrochium fistulosum (Barratt) E.E.Lamont

Joe-pye-weed



Eutrochium purpureum (L.) E.E.Lamont

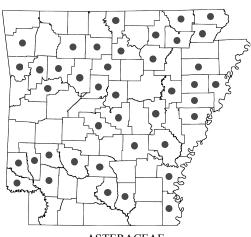
Joe-pye-weed

See Appendix I for infraspecific taxa and species status.



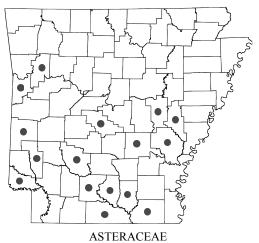
Facelis retusa (Lam.) Sch.Bip.

annual trampweed



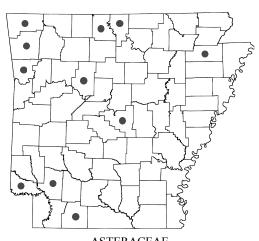
ASTERACEAE Fleischmannia incarnata (Walter) R.M.King & H.Rob.

pink thoroughwort



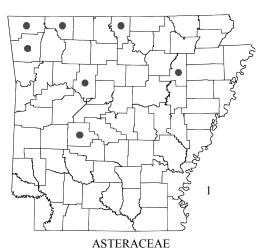
Gaillardia aestivalis (Walter) H.Rock

blanket-flower



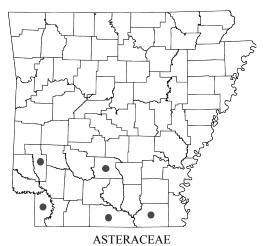
ASTERACEAE

Gaillardia pulchella Foug. Indian-blanket, fire-wheels



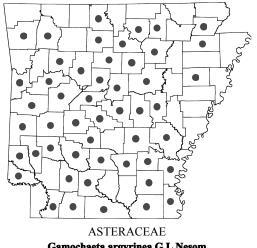
Galinsoga quadriradiata Ruiz & Pav.

quick-weed

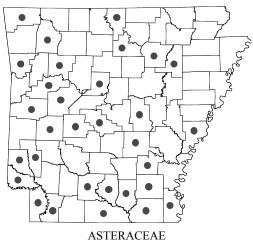


Gamochaeta antillana (Urban) Anderb.

cudweed, delicate everlasting



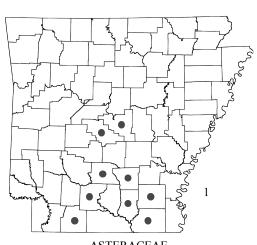
Gamochaeta argyrinea G.L.Nesom cudweed



Gamochaeta calviceps (Fernald) Cabrera cudweed



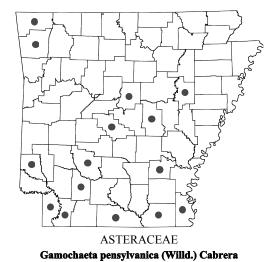
Gamochaeta chionesthes G.L.Nesom cudweed



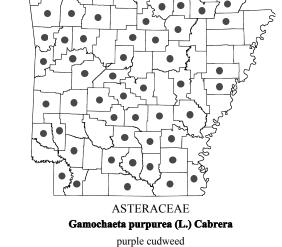
ASTERACEAE

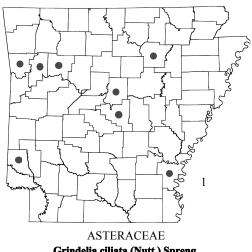
Gamochaeta coarctata (Willd.) Kerg.

cudweed



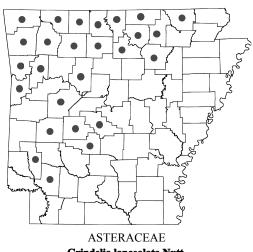
Pennsylvania cudweed





Grindelia ciliata (Nutt.) Spreng.

gum-plant, Spanish gold



Grindelia lanceolata Nutt.

gum-plant



Grindelia squarrosa (Pursh) Dunal gum-plant

ASTERACEAE Gutierrezia texana (DC.) Torr. & A.Gray

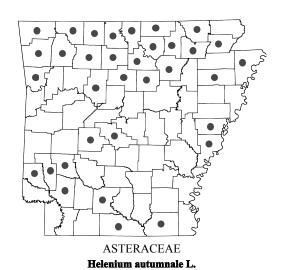
var. texana Texas snakeweed



Helenium amarum (Raf.) H.Rock

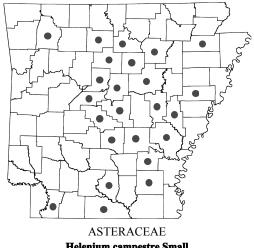
var. amarum

bitter sneezeweed, bitterweed



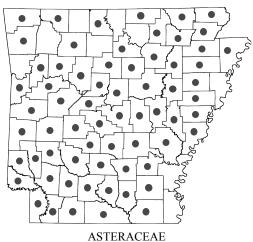
sneezeweed

124 ASTERACEAE / Helenium



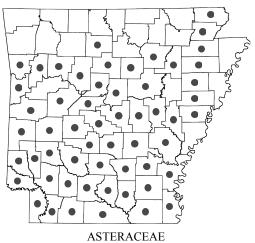
Helenium campestre Small

Arkansas sneezeweed



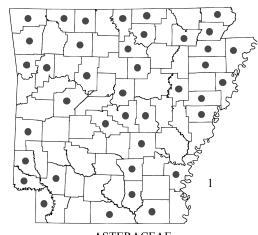
Helenium flexuosum Raf.

purple-head sneezeweed



Helianthus angustifolius L.

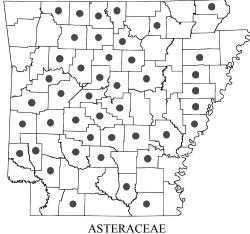
narrow-leaf sunflower



ASTERACEAE

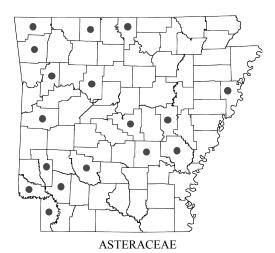
Helianthus annuus L.

common sunflower



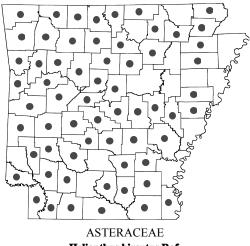
Helianthus divaricatus L.

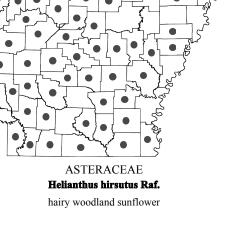
woodland sunflower

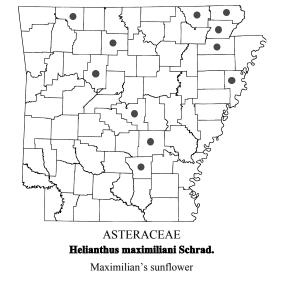


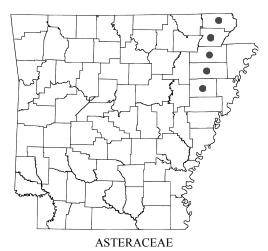
Helianthus grosseserratus M.Martens

saw-tooth sunflower

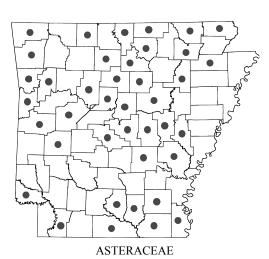




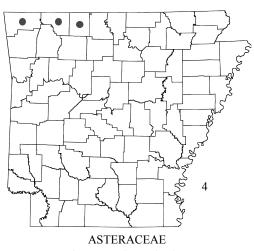




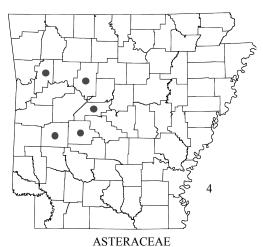
Helianthus microcephalus Torr. & A.Gray small woodland sunflower, small-head sunflower



Helianthus mollis Lam. in Lam. et al. ashy sunflower, hairy sunflower



Helianthus occidentalis Riddell subsp. occidentalis naked-stem sunflower



Helianthus occidentalis Riddell subsp. plantagineus (Torr. & A.Gray) Heiser plantain-leaf sunflower



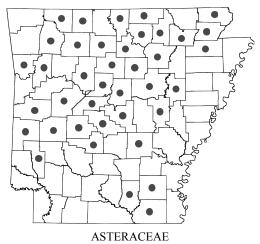
Helianthus pauciflorus Nutt.
subsp. pauciflorus

prairie sunflower, stiff sunflower



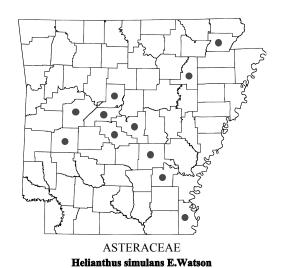
ASTERACEAE
Helianthus petiolaris Nutt.
subsp. petiolaris

prairie sunflower



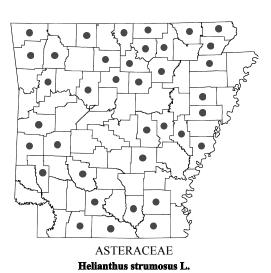
 ${\bf Helianthus\ silphioides\ Nutt.}$

rosinweed sunflower

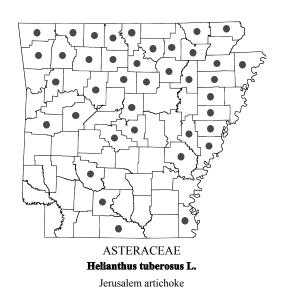


muck sunflower





woodland sunflower

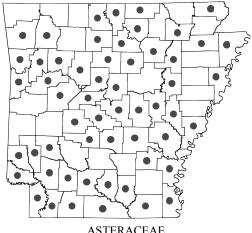




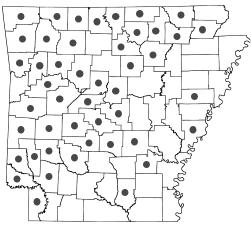
Heliopsis gracilis Nutt. pinewoods ox-eye



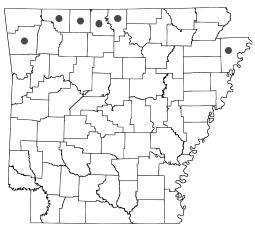
ASTERACEAE Heterotheca camporum (Greene) Shinners var. camporum golden-aster



ASTERACEAE Heterotheca subaxillaris (Lam.) Britton & Rusby subsp. latifolia (Buckley) Semple golden-aster, camphorweed



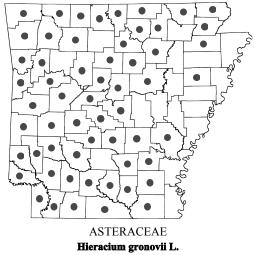
ASTERACEAE Heliopsis helianthoides (L.) Sweet var. scabra (Dunal) Fernald ox-eye, false sunflower



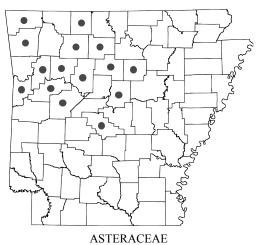
ASTERACEAE Heterotheca camporum (Greene) Shinners var. glandulissimum Semple golden-aster



Hieracium aurantiacum L. orange hawkweed, devil's-paintbrush

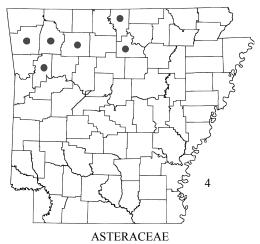






Hieracium longipilum Torr. ex Hook.

long-hair hawkweed



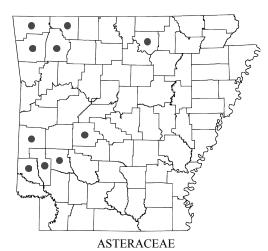
Hieracium scabrum Michx.

rough hawkweed



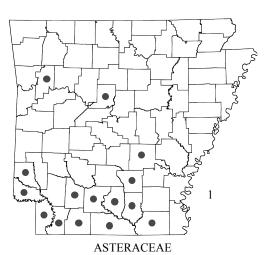
Hymenopappus artemisiifolius DC. in DC. & A.DC. var. artemisiifolius

woolly-white

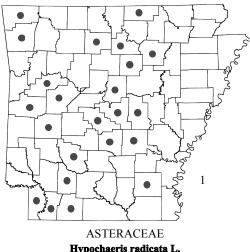


Hymenopappus scabiosaeus L'Hér.

var. scabiosaeus old-plainsman

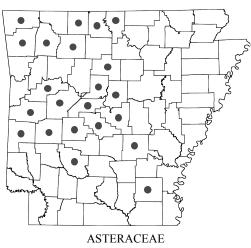


Hypochaeris glabra L. smooth cat's-ear



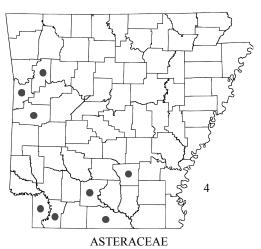
Hypochaeris radicata L.

cat's-ear, spotted cat's-ear



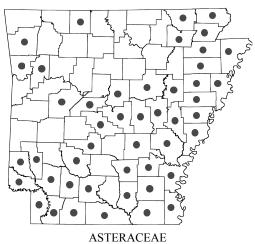
Ionactis linariifolia (L.) Greene

stiff-leaf aster



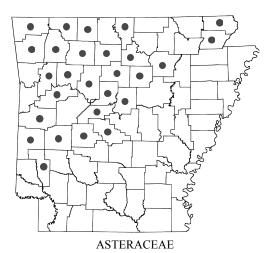
Iva angustifolia Nutt. ex DC. in DC. & A.DC.

slender marsh-elder



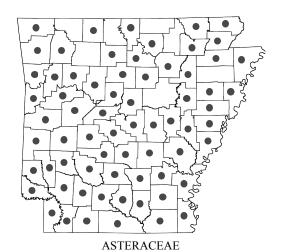
Iva annua L.

marsh-elder, sumpweed



Krigia biflora (Walter) S.F.Blake

two-flower dwarf-dandelion



Krigia cespitosa (Raf.) K.L.Chambers

var. cespitosa

dwarf-dandelion



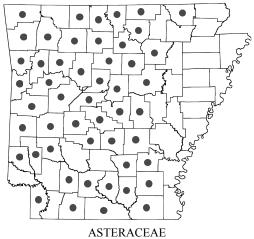
Krigia dandelion (L.) Nutt.

potato dwarf-dandelion



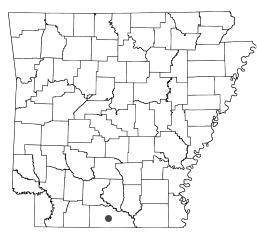
ASTERACEAE Krigia occidentalis Nutt.

western dwarf-dandelion



Krigia virginica (L.) Willd.

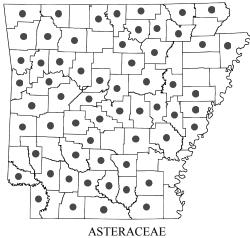
Virginia dwarf-dandelion



ASTERACEAE

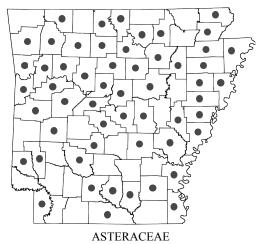
Krigia wrightii (A.Gray) K.L.Chambers ex K.J.Kim

Wright's dwarf-dandelion



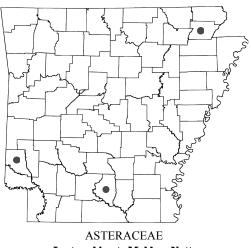
Lactuca canadensis L.

wild lettuce



Lactuca floridana (L.) Gaertn.

Florida wild lettuce



Lactuca hirsuta Muhl. ex Nutt.

hairy wild lettuce



Lactuca saligna L.

willow-leaf wild lettuce

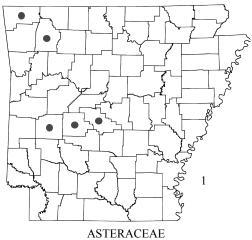


Lactuca sativa L. garden lettuce



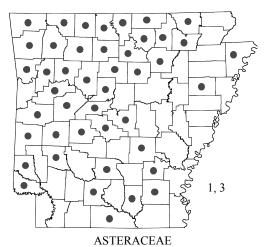
Lactuca serriola L.

prickly wild lettuce



Lapsana communis L.

nipplewort

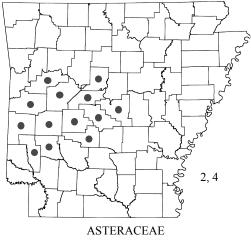


Leucanthemum vulgare Lam.

ox-eye daisy

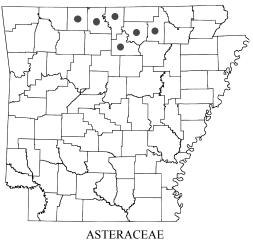


rough blazing-star, rough gayfeather



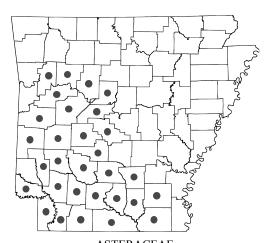
Liatris compacta (Torr. & A.Gray) Rydb.

Ouachita blazing-star



Liatris cylindracea Michx.

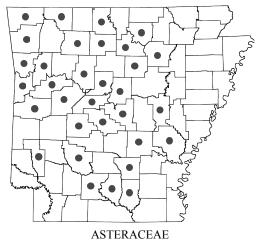
barrel-head gayfeather



ASTERACEAE
Liatris elegans (Walter) Michx.

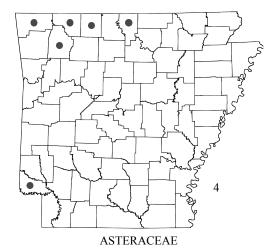
var. elegans

elegant gayfeather, pink-scale gayfeather



Liatris hirsuta Rydb.

hairy blazing-star, Rydberg's blazing-star



Liatris punctata Hook.

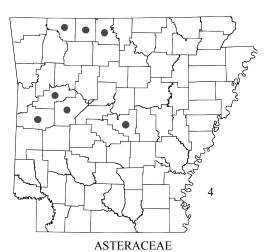
var. mucronata (DC.) B.L.Turner in B.L.Turner et al.

dotted gayfeather, dotted blazing-star



var. punctata

bottle-brush gayfeather, bottle-brush blazing-star



Liatris scariosa (L.) Willd. var. nieuwlandii (Lunell) E.G.Voss

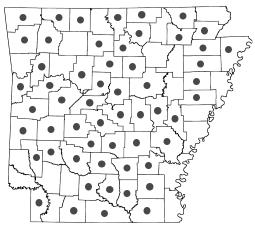
northern blazing-star



ASTERACEAE Liatris squarrosa (L.) Michx.

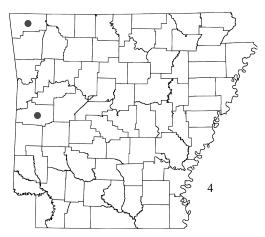
var. squarrosa

hairy scaly blazing-star



ASTERACEAE Liatris pycnostachya Michx. var. pycnostachya

prairie gayfeather, button snakeroot



ASTERACEAE Liatris squarrosa (L.) Michx. var. glabrata (Rydb.) Gaiser smooth scaly blazing-star

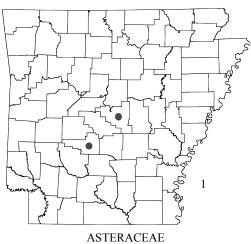
ASTERACEAE Liatris squarrulosa Michx. southern blazing-star

134 ASTERACEAE / Lindheimera



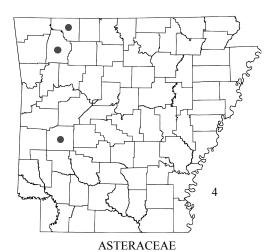
Lindheimera texana A.Gray & Engelm.

Texas yellowstar, Lindheimer's daisy



Lygodesmia juncea (Pursh) D.Don ex Hook.

skeleton-plant



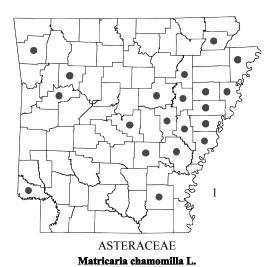
Marshallia caespitosa Nutt. ex DC. in DC. & A.DC. var. caespitosa

Barbara's-buttons



Marshallia caespitosa Nutt. ex DC. in DC. & A.DC. var. signata Beadle & F.E.Boynton

leafy Barbara's-buttons



wild chamomile, German chamomile

ASTERACEAE

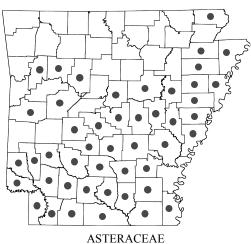
Matricaria discoidea DC. in DC. & A.DC.

pineapple-weed



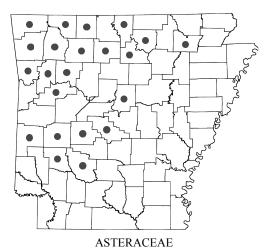
Melampodium divaricatum (Rich.) DC. in DC. & A.DC.

butter-daisy



Mikania scandens (L.) Willd.

climbing hempweed



Packera aurea (L.) Á.Löve & D.Löve

golden ragwort, golden groundsel



Packera glabella (Poir.) C.Jeffrey

cress-leaf groundsel, butter-weed



Packera obovata (Muhl. ex Willd.) W.A.Weber & Á.Löve

round-leaf ragwort, round-leaf groundsel

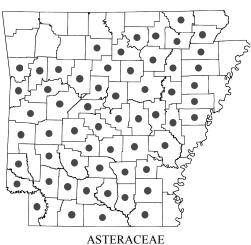


Packera plattensis (Nutt.) W.A.Weber & Á.Löve

prairie ragwort, prairie groundsel

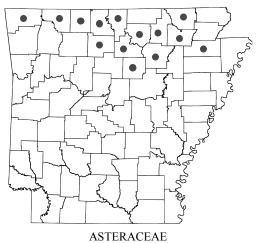


Great Plains ragwort, Great Plains groundsel



Packera tomentosa (Michx.) C.Jeffrey

woolly ragwort, woolly groundsel



Palafoxia callosa (Nutt.) Torr. & A.Gray

small palafoxia



Parthenium hysterophorus L.

Santa Maria feverfew



Parthenium integrifolium L.

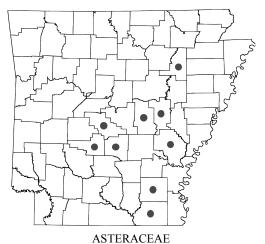
wild quinine, American feverfew



ASTERACEAE Pityopsis graminifolia (Michx.) Nutt.

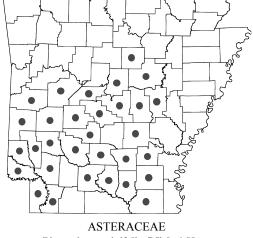
var. graminifolia

grass-leaf golden-aster



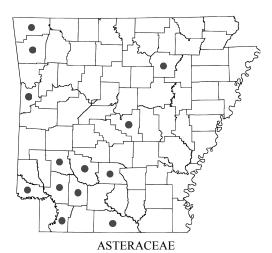
Pityopsis graminifolia (Michx.) Nutt. var. latifolia (Fernald) Semple & F.D.Bowers

grass-leaf golden-aster



Pityopsis graminifolia (Michx.) Nutt. var. tenuifolia (Torr.) Semple & F.D.Bowers

grass-leaf golden-aster



Plectocephalus americanus (Nutt.) D.Don in Sweet

American basket-flower



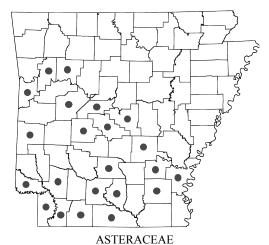
Pluchea camphorata (L.) DC. in DC. & A.DC.

camphorweed, stinkweed



Pluchea foetida (L.) DC. in DC. & A.DC.

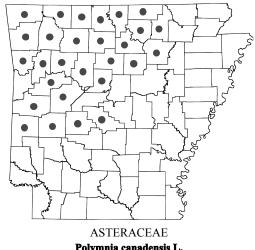
stinking camphorweed



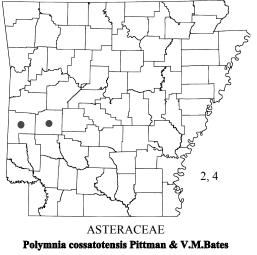
Pluchea odorata (L.) Cass. in F.Cuvier

var. odorata

sweetscent



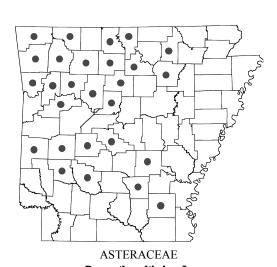
Polymnia canadensis L. leafcup, white leafcup



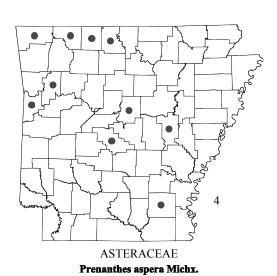
Cossatot leafcup



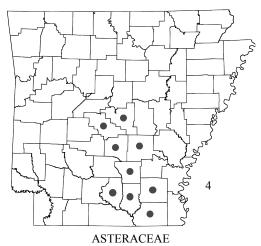
white rattlesnake-root



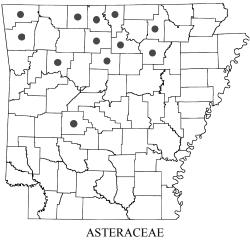
Prenanthes altissima L. tall rattlesnake-root



prairie rattlesnake-root, rough rattlesnake-root



Prenanthes barbata (Torr. & A.Gray) Milstead ex Cronquist barbed rattlesnake-root



Prenanthes crepidinea Michx.

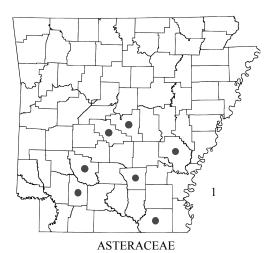
nodding rattlesnake-root



ASTERACEAE

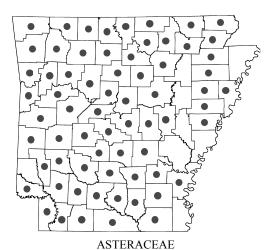
Pseudognaphalium helleri (Britton) Anderb.

rabbit-tobacco



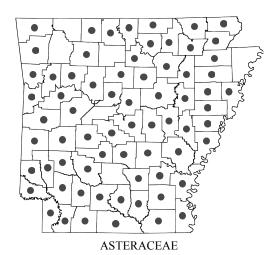
Pseudognaphalium luteoalbum (L.) Hilliard & B.L.Burtt

red-tip rabbit-tobacco



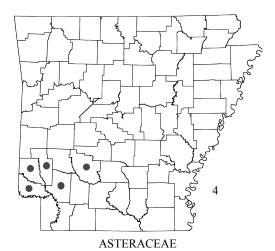
Pseudognaphalium obtusifolium (L.) Hilliard & B.L.Burtt

rabbit-tobacco, sweet everlasting



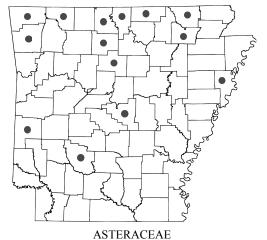
Pyrrhopappus carolinianus (Walter) DC. in DC. & A.DC.

false dandelion



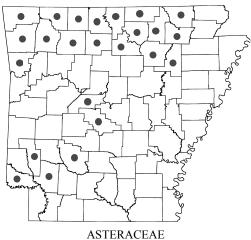
Pyrrhopappus pauciflorus (D. Don) DC. in DC. & A.DC.

few-flower false dandelion



Ratibida columnifera (Nutt.) Wooton & Standl.

Mexican-hat, long-head coneflower



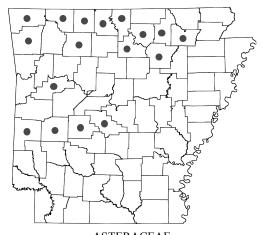
Ratibida pinnata (Vent.) Barnhart

gray-head coneflower, drooping coneflower



Rudbeckia amplexicaulis Vahl

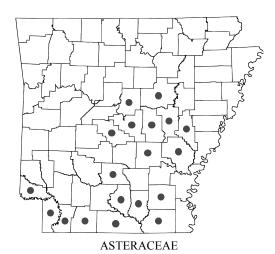
clasping coneflower



ASTERACEAE

Rudbeckia fulgida Aiton orange coneflower

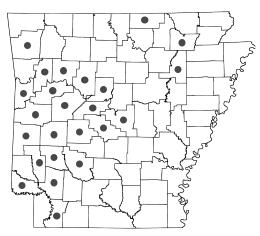
See Appendix I for infraspecific taxa and species status.



Rudbeckia grandiflora (Sweet) C.C.Gmel. ex DC. in DC. & A.DC.

var. alismifolia (Torr. & A.Gray) Cronquist

large coneflower, rough coneflower

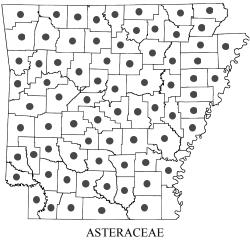


ASTERACEAE

Rudbeckia grandiflora (Sweet) C.C.Gmel. ex DC. in DC. & A.DC.

var. grandiflora

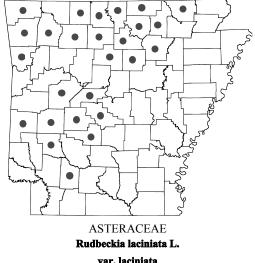
large coneflower, rough coneflower



Rudbeckia hirta L.

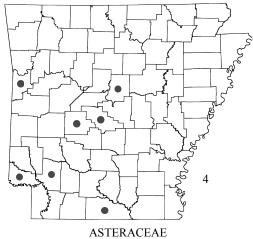
black-eyed Susan

See Appendix I for infraspecific taxa and species status.



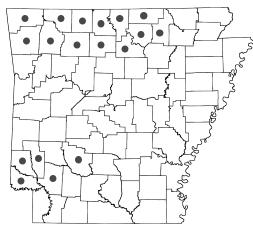
var. laciniata

wild goldenglow



Rudbeckia maxima Nutt.

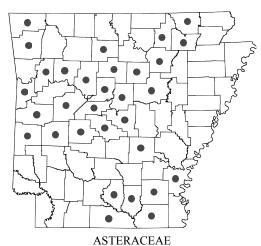
great coneflower, giant coneflower



ASTERACEAE

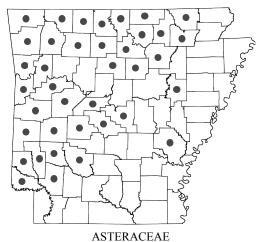
Rudbeckia missouriensis Engelm. ex C.L.Boynton & Beadle

Missouri coneflower



Rudbeckia subtomentosa Pursh

sweet coneflower



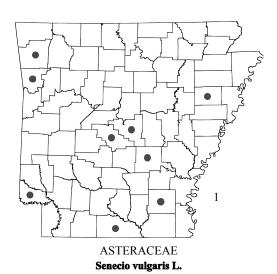
Rudbeckia triloba L.

var. triloba

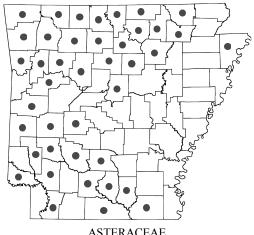
brown-eyed Susan



Texas ragwort, Texas groundsel



common groundsel

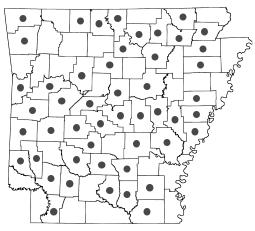


ASTERACEAE

Silphium asteriscus L.

var. asteriscus

starry rosinweed



ASTERACEAE

Silphium integrifolium Michx.

var. integrifolium

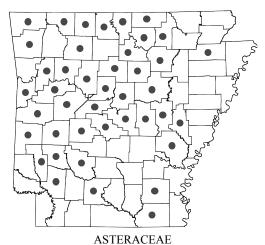
rosinweed



Silphium integrifolium Michx.

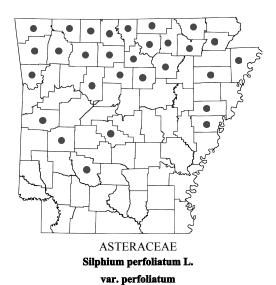
var. laeve Torr. & A.Gray

rosinweed

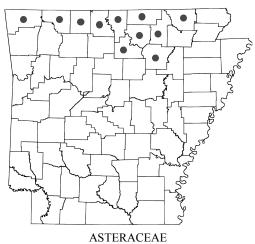


Silphium laciniatum L.

compass-plant

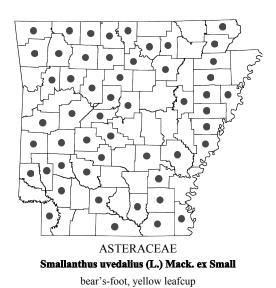


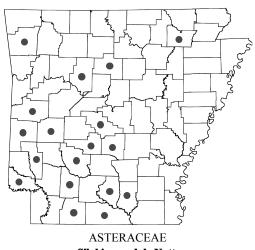
cup-plant



Silphium terebinthinaceum Jacq. var. terebinthinaceum

prairie-dock





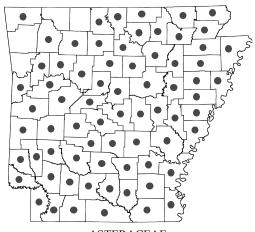
Silphium radula Nutt. var. radula

rosinweed



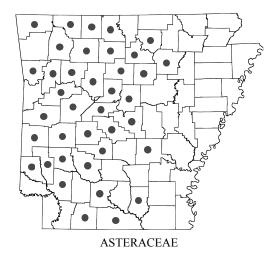
Silybum marianum (L.) Gaertn.

blessed milk-thistle



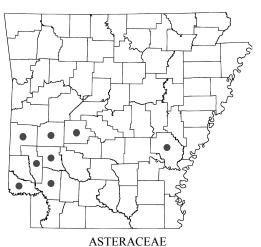
ASTERACEAE Solidago altissima L. subsp. altissima tall goldenrod

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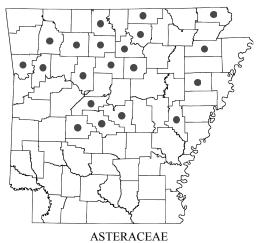
Solidago arguta Aiton subsp. caroliniana (A.Gray) G.H.Morton var. boottii (Hook.) E.J. Palmer & Steyerm.

Boott's goldenrod



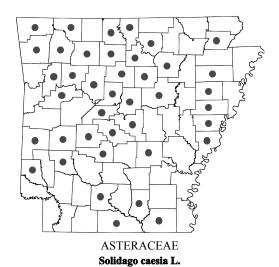
Solidago auriculata Shuttlew. ex S.F.Blake

clasping-leaf goldenrod

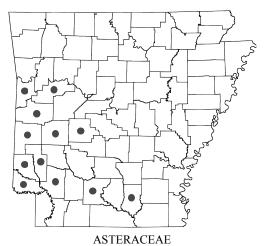


Solidago buckleyi Torr. & A.Gray

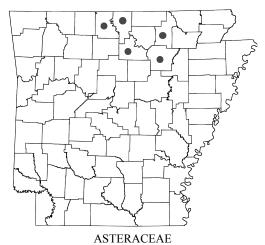
Buckley's goldenrod



wreath goldenrod, blue-stem goldenrod
See *Appendix I* for infraspecific taxa and species status.



Solidago delicatula Small smooth elm-leaf goldenrod

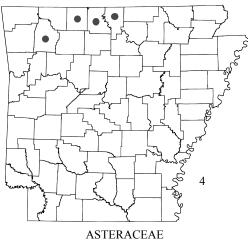


Solidago drummondii Torr. & A.Gray

Drummond's goldenrod



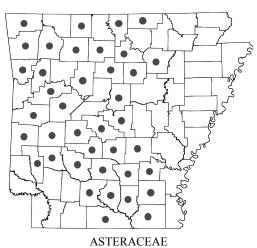
zigzag goldenrod, broad-leaf goldenrod



Solidago gattingeri Chapm. ex A.Gray in A.Gray et al. Gattinger's goldenrod



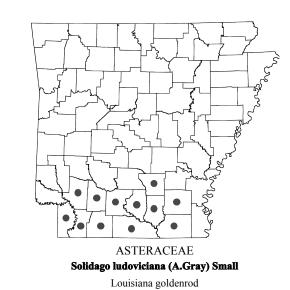
late goldenrod, giant goldenrod

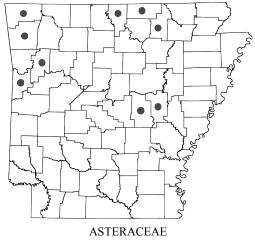


Solidago hispida Muhl. ex Willd. hairy goldenrod



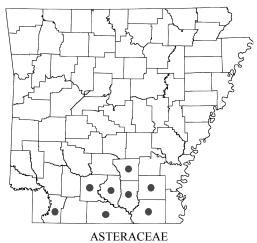
early goldenrod





Solidago missouriensis Nutt.

Missouri goldenrod



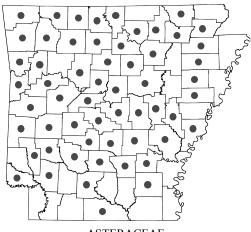
Solidago nitida Torr. & A.Gray

shiny goldenrod



Solidago ouachitensis C.E.S.Taylor & R.J.Taylor

Ouachita goldenrod



ASTERACEAE
Solidago nemoralis Aiton

oldfield goldenrod, gray goldenrod See *Appendix I* for infraspecific taxa and species status.



Solidago odora Aiton

subsp. odora

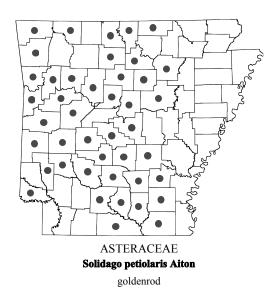
fragrant goldenrod, sweet goldenrod



Solidago patula Muhl. ex Willd.

subsp. strictula (Torr. & A.Gray) Semple

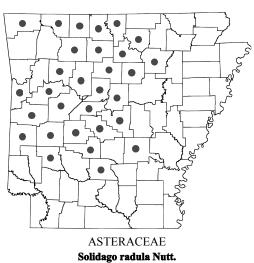
swamp goldenrod, rough-leaf goldenrod



ASTERACEAE

Solidago ptarmicoides (Torr. & A.Gray) B.Boivin

white flat-top goldenrod, white upland-aster

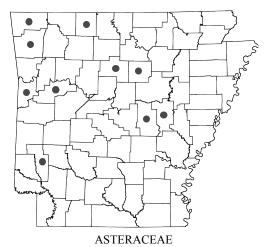




rough goldenrod

Solidago riddellii Frank Riddell's goldenrod



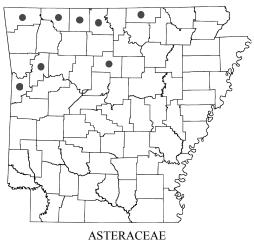


Solidago rigida L. subsp. glabrata (E.L.Braun) S.B.Heard & Semple stiff goldenrod

Solidago rigida L. subsp. rigida stiff goldenrod

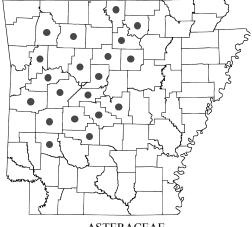


wrinkle-leaf goldenrod, rough-leaf goldenrod, rough-stem goldenrod See *Appendix I* for infraspecific taxa and species status.



Solidago speciosa Nutt.

subsp. speciosa var. speciosa
showy goldenrod

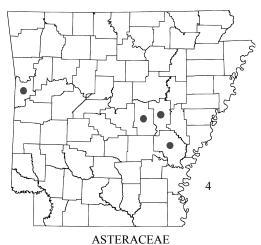


ASTERACEAE

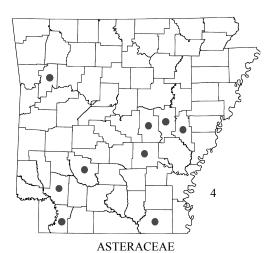
Solidago ulmifolia Muhl. ex Willd.

var. palmeri Cronquist

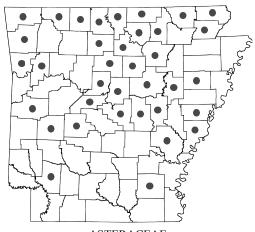
Palmer's elm-leaf goldenrod



Solidago speciosa Nutt.
subsp. speciosa var. rigidiuscula Torr. & A.Gray
narrow-leaf showy goldenrod



Solidago tortifolia Elliott twist-leaf goldenrod

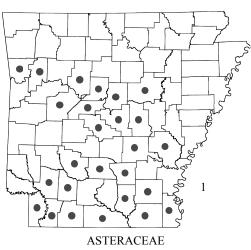


ASTERACEAE
Solidago ulmifolia Muhl. ex Willd.
var. ulmifolia
elm-leaf goldenrod



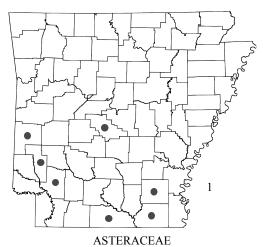
Soliva anthemifolia (Juss.) Sweet

button burweed



Soliva sessilis Ruiz & Pav.

lawn burweed, sticker-bur



Soliva stolonifera (Brot.) Sweet

carpet burweed, sticker-bur



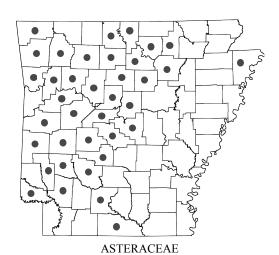
ASTERACEAE

Sonchus asper (L.) Hill spiny sow-thistle



Sonchus oleraceus L.

sow-thistle



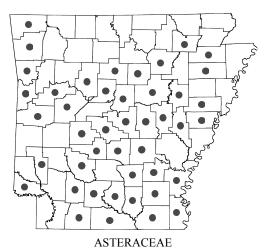
Symphyotrichum anomalum (Engelm. ex Torr. & A.Gray) G.L. Nesom

aster



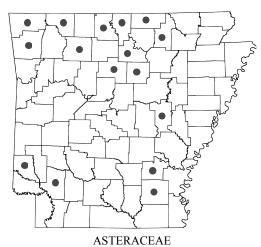
Symphyotrichum cordifolium (L.) G.L.Nesom

blue wood aster



Symphyotrichum dumosum (L.) G.L.Nesom

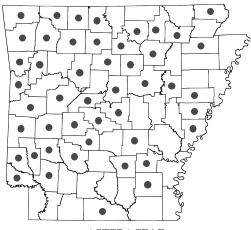
aster



Symphyotrichum laeve (L.) Á.Löve & D.Löve

var. laeve

smooth aster



ASTERACEAE

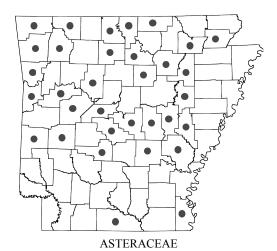
Symphyotrichum drummondii (Lindl.) G.L.Nesom

blue wood aster, Drummond's aster
See *Appendix I* for infraspecific taxa and species status.



Symphyotrichum ericoides (L.) G.L.Nesom
var. ericoides

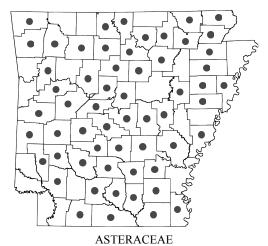
white heath aster, wreath aster



Symphyotrichum lanceolatum (Willd.) G.L.Nesom

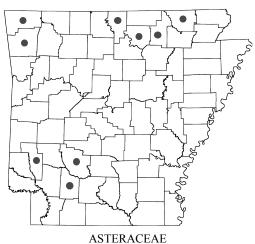
tall white aster

See Appendix I for infraspecific taxa and species status.



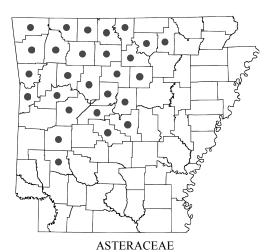
Symphyotrichum lateriflorum (L.) Á.Löve & D.Löve

white woodland aster



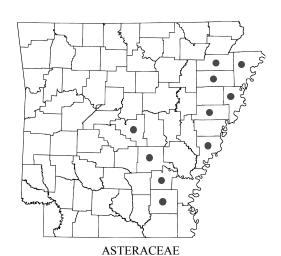
Symphyotrichum novae-angliae (L.) G.L.Nesom

New England aster



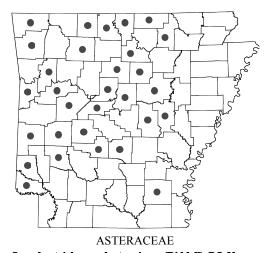
Symphyotrichum oblongifolium (Nutt.) G.L.Nesom

aromatic aster



Symphyotrichum ontarionis (Wiegand) G.L.Nesom var. ontarionis

bottomland aster



Symphyotrichum oolentangiense (Riddell) G.L.Nesom

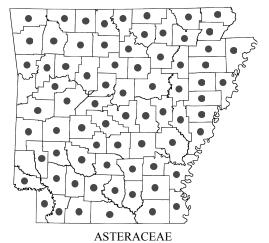
azure aster, sky-blue aster



Symphyotrichum patens (Aiton) G.L.Nesom

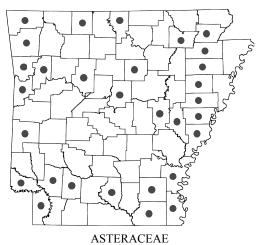
late purple aster, spreading aster

See Appendix I for infraspecific taxa and species status.



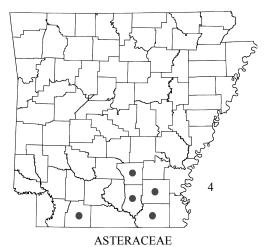
Symphyotrichum pilosum (Willd.) G.L.Nesom
var. pilosum

white heath aster, white oldfield aster



Symphyotrichum praealtum (Poir.) G.L.Nesom

willow-leaf aster



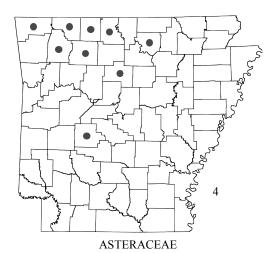
Symphyotrichum pratense (Raf.) G.L.Nesom

barrens silky aster



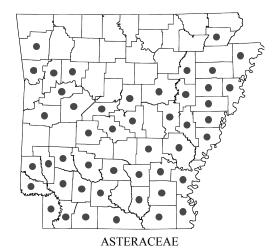
Symphyotrichum racemosum (Elliott) G.L.Nesom

small white aster



Symphyotrichum sericeum (Vent.) G.L.Nesom

silvery aster, silky aster



Symphyotrichum subulatum (Michx.) G.L.Nesom

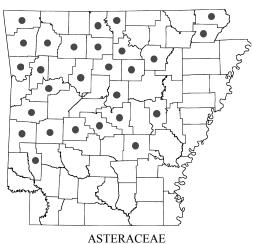
var. ligulatum (Shinners) S.D.Sundberg

inland salt-marsh aster, annual water aster



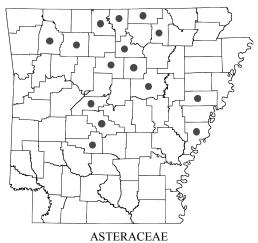
Symphyotrichum subulatum (Michx.) G.L.Nesom var. subulatum

salt-marsh aster



Symphyotrichum turbinellum (Lindl.) G.L.Nesom

prairie aster



Symphyotrichum urophyllum (Lindl. ex DC.) G.L.Nesom

white arrow-leaf aster



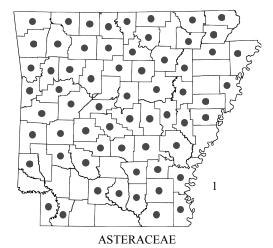
Tagetes erecta L. marigold



tansy



Taraxacum erythrospermum Andrzejowski ex Besser red-seed dandelion



Taraxacum officinale Weber ex F.H.Wigg.

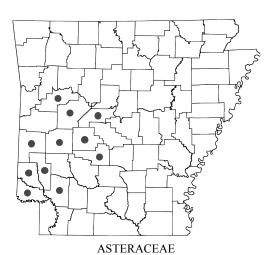
common dandelion



ASTERACEAE

Tetragonotheca ludoviciana (Torr. & A.Gray) A.Gray ex Hall

Louisiana squarehead, Louisiana nerveray



Thelesperma filifolium (Hook.) A.Gray

greenthread



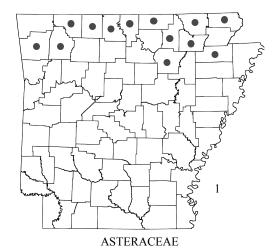
Thelesperma flavodiscum (Shinners) B.L.Turner

yellow-disk greenthread



Thelesperma megapotamicum (Spreng.) Kuntze

greenthread, Hopi-tea



Tragopogon dubius Scop.

goat's-beard



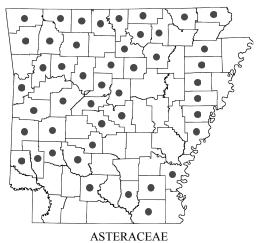
Tragopogon porrifolius L.

salsify, vegetable-oyster



Tragopogon pratensis L.

Jack-go-to-bed-at-noon



Verbesina alternifolia (L.) Britton ex Kearney

yellow-ironweed



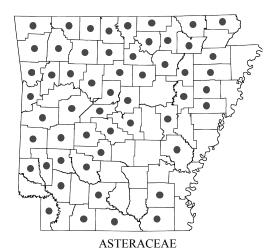
Verbesina encelioides (Cav.) Benth. & Hook.f. ex A.Gray in W.H. Brewer et al.

cowpen daisy



Verbesina helianthoides Michx.

crownbeard, wingstem

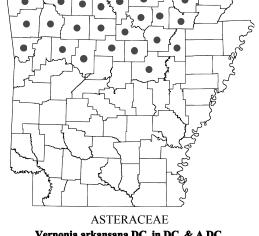


Verbesina virginica L.

frostweed, white crownbeard



rayless crownbeard, Walter's crownbeard



Vernonia arkansana DC. in DC. & A.DC.

Arkansas ironweed



Vernonia baldwinii Torr.

Baldwin's ironweed, western ironweed



Vernonia gigantea (Walter) Trel. ex Branner & Coville tall ironweed

ASTERACEAE

Vernonia lettermannii Engelm. ex A.Gray

Letterman's ironweed, narrow-leaf ironweed



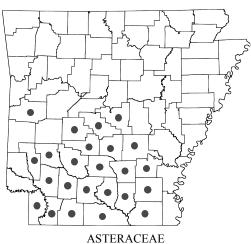
Vernonia lindheimeri A.Gray & Engelm.

woolly ironweed, Lindheimer's ironweed



Vernonia missurica Raf.

Missouri ironweed



Vernonia texana (A.Gray) Small

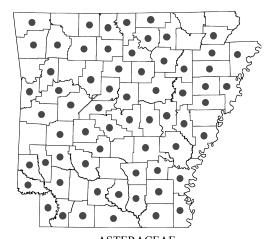
Texas ironweed



ASTERACEAE Xanthisma spinulosum (Pursh) D.R.Morgan & R.L.Hartman

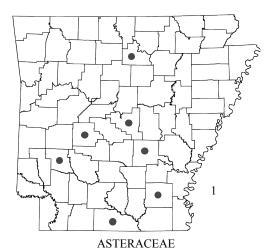
var. spinulosum

lacy tansy-aster



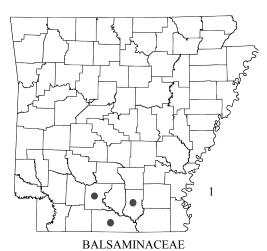
ASTERACEAE Xanthium strumarium L.

cocklebur



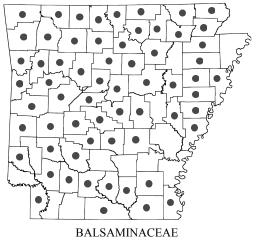
Youngia japonica (L.) DC. in DC. & A.DC.

Oriental false hawk's-beard



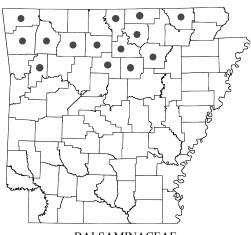
Impatiens balsamina L.

garden balsam



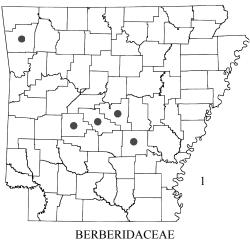
Impatiens capensis Meerb.

spotted jewelweed, spotted touch-me-not



BALSAMINACEAE Impatiens pallida Nutt.

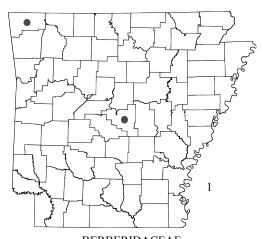
yellow jewelweed, pale touch-me-not



BERBERIDACEAE

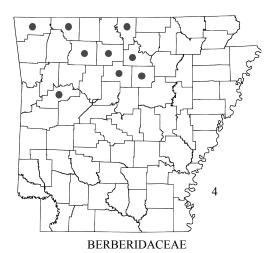
Berberis bealei Fortune

mahonia



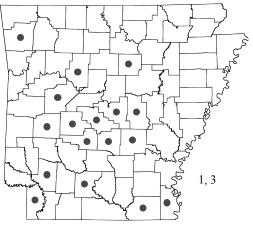
BERBERIDACEAE
Berberis thunbergii DC.

Japanese barberry



Caulophyllum thalictroides (L.) Michx.

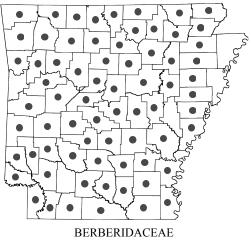
blue cohosh



BERBERIDACEAE

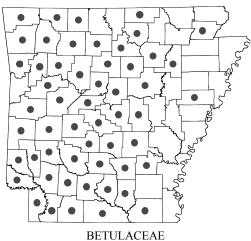
Nandina domestica Thunb.

nandina, heavenly-bamboo



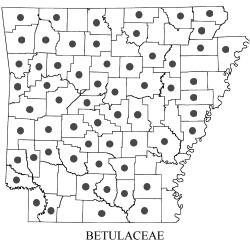
Podophyllum peltatum L.

May-apple, mandrake



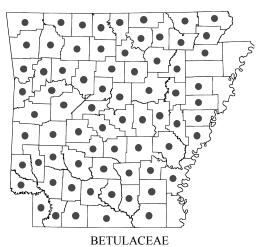
Alnus serrulata (Aiton) Willd.

alder, smooth alder, tag alder



Betula nigra L.

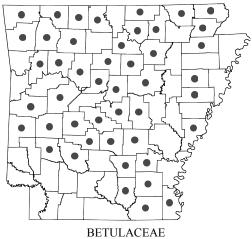
river birch



Carpinus caroliniana Walter

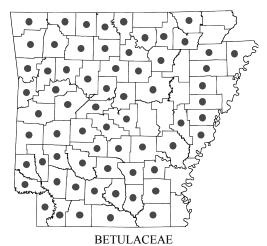
musclewood, ironwood, American hornbeam

See Appendix I for infraspecific taxa and species status.



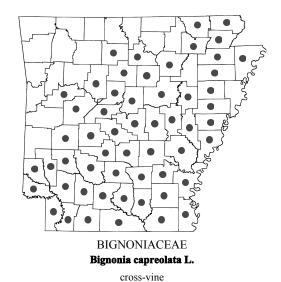
Corylus americana Walter

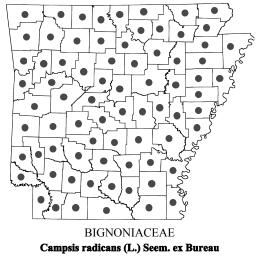
hazelnut, American hazelnut



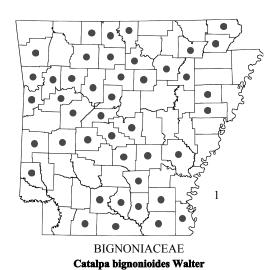
Ostrya virginiana (Mill.) K.Koch

hop-hornbeam, ironwood

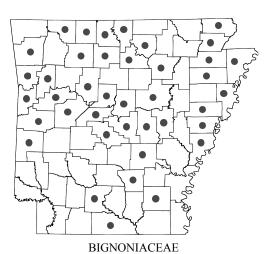




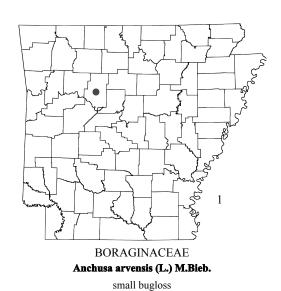
trumpet-creeper

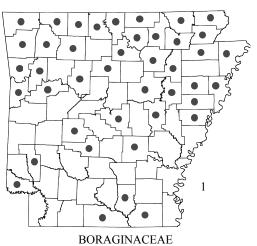


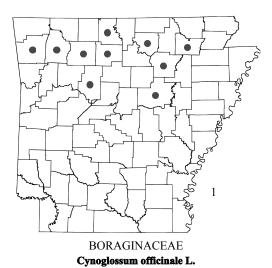
southern catalpa



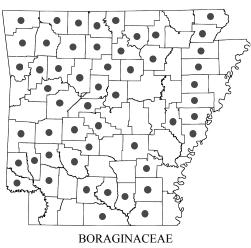
Catalpa speciosa Warder ex Engelm. northern catalpa





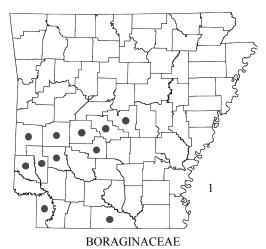


garden comfrey, hound's-tongue



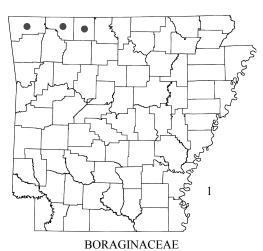
Cynoglossum virginianum L.

wild comfrey



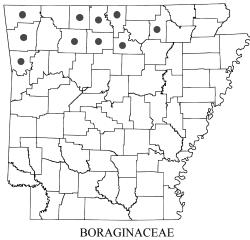
Cynoglossum zeylanicum Thunb. ex Lehm.

Ceylon hound's-tongue



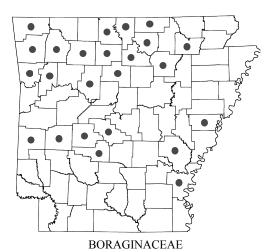
Echium vulgare L.

blueweed, viper's-bugloss



Ellisia nyctelea (L.) L.

Aunt Lucy



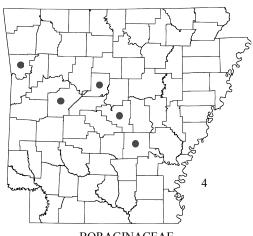
Hackelia virginiana (L.) I.M.Johnst.

beggar's-lice, stickseed



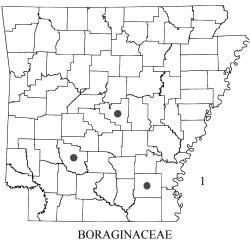
Heliotropium amplexicaule Vahl

wild heliotrope



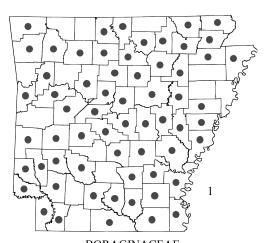
BORAGINACEAE **Heliotropium convolvulaceum (Nutt.) A.Gray**

phlox heliotrope, bindweed heliotrope



Heliotropium curassavicum L.

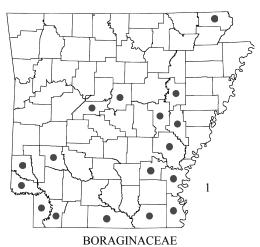
seaside heliotrope



BORAGINACEAE

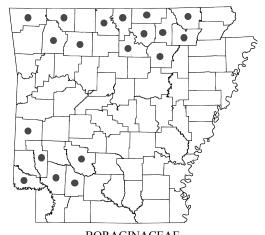
Heliotropium indicum L.

Indian heliotrope, turnsole



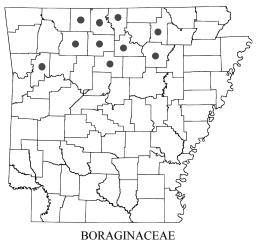
Heliotropium procumbens Mill.

four-spike heliotrope



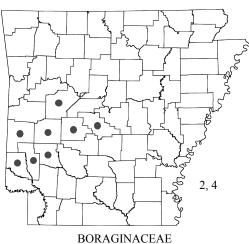
BORAGINACEAE **Heliotropium tenellum (Nutt.) Torr.**

heliotrope



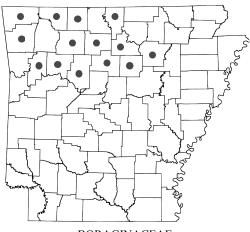
Hydrophyllum appendiculatum Michx.

woolen breeches, great waterleaf



Hydrophyllum brownei Kral & V.M.Bates

Browne's waterleaf



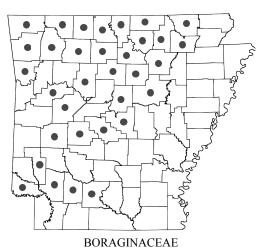
BORAGINACEAE Hydrophyllum virginianum L. var. virginianum

Virginia waterleaf

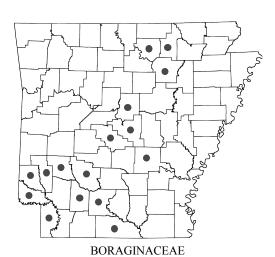


Lappula occidentalis (S.Watson) Greene var. occidentalis

stickseed



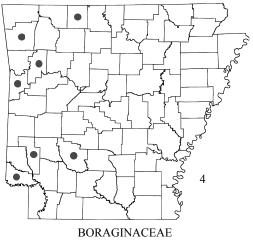
Lithospermum canescens (Michx.) Lehm. hoary puccoon, orange puccoon



Lithospermum caroliniense (Walter ex J.F.Gmel.) MacMill.

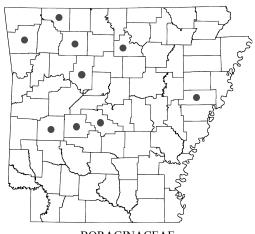
Carolina puccoon

164 BORAGINACEAE / Lithospermum



Lithospermum incisum Lehm.

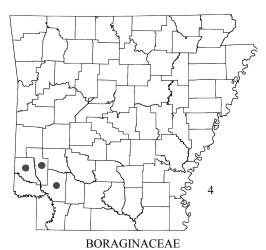
fringed puccoon, yellow puccoon



BORAGINACEAE

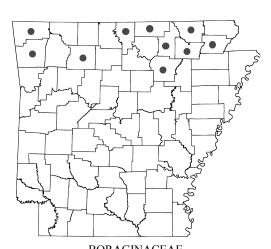
Lithospermum latifolium Michx.

American gromwell



Lithospermum tuberosum Rugel ex DC.

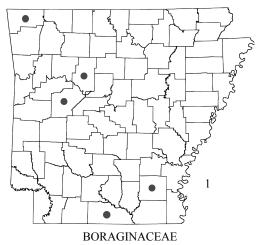
tuberous puccoon



BORAGINACEAE

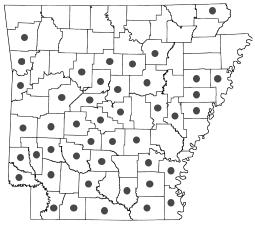
Mertensia virginica (L.) Pers. ex Link

blue bells



Myosotis discolor Pers. ex Murray

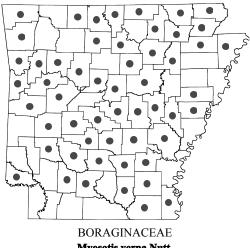
yellow-and-blue scorpion-grass, changing forget-me-not

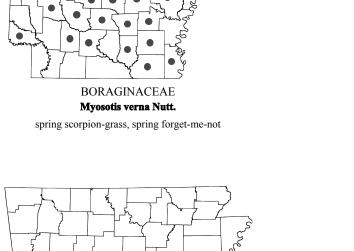


BORAGINACEAE

Myosotis macrosperma Engelm.

big-seed scorpion-grass, big-seed forget-me-not

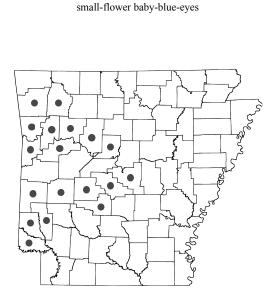






Nemophila maculata Benth. ex Lindl.

fivespot

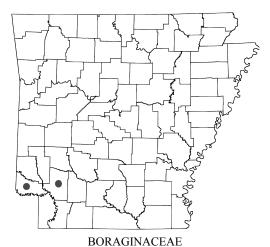


BORAGINACEAE

Nemophila aphylla (L.) Brummitt

BORAGINACEAE Nemophila phacelioides Nutt.

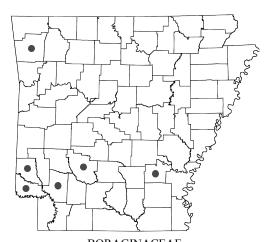
large-flower baby-blue-eyes



Onosmodium bejariense A.DC.

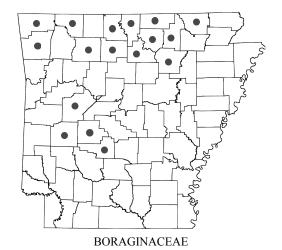
var. bejariense

marbleseed, false gromwell



BORAGINACEAE Onosmodium bejariense A.DC. var. hispidissimum (Mack.) B.L.Turner marbleseed, false gromwell

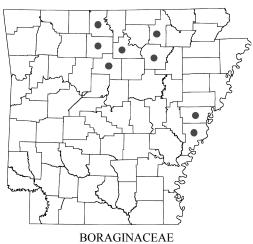
Free download edition. Not for commercial sale.



Onosmodium bejariense A.DC.

var. subsetosum (Mack. & Bush ex Small) B.L.Turner

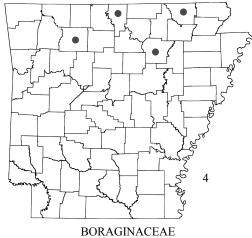
marbleseed, false gromwell



BORAGINACEAE

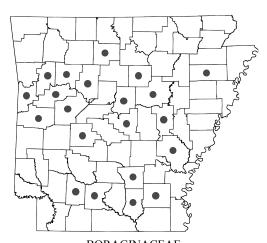
Phacelia bipinnatifida Michx.

fern-leaf scorpion-weed



Phacelia gilioides Brand

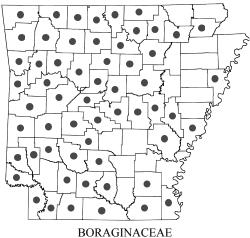
Brand's scorpion-weed



BORAGINACEAE

Phacelia glabra Nutt.

smooth scorpion-weed



Phacelia hirsuta Nutt.

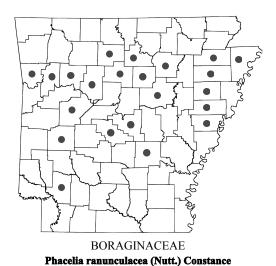
hairy scorpion-weed



BORAGINACEAE

Phacelia purshii Buckley

Miami mist

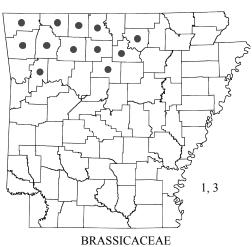


buttercup scorpion-weed



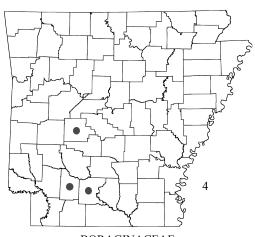
Plagiobothrys figuratus (Piper) I.M.Johnst. ex M.Peck subsp. figuratus

fragrant popcorn-flower



Alliaria petiolata (M.Bieb.) Cavara & Grande

garlic-mustard



BORAGINACEAE Phacelia strictiflora (Engelm. & A.Gray) A.Gray var. robbinsii Constance

Robbins' prairie scorpion-weed

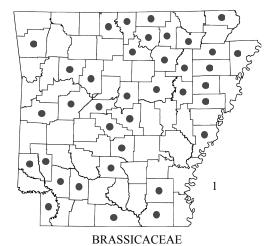


BORAGINACEAE Symphytum officinale L.

common comfrey

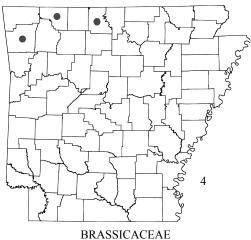


BRASSICACEAE Alyssum alyssoides (L.) L. pale alyssum, yellow alyssum



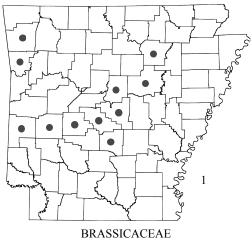
Arabidopsis thaliana (L.) Heynh. in Holl & Heynh.

mouse-ear cress



Arabis hirsuta (L.) Scop.
var. adpressipilis (M.Hopkins) Rollins

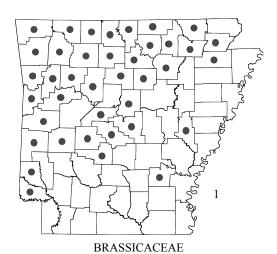
hairy rockcress



BRASSICACEAE

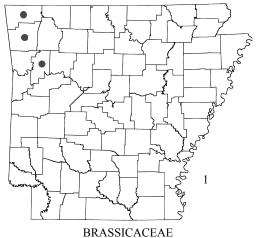
Barbarea verna (Mill.) Asch.

early yellow-rocket, early wintercress



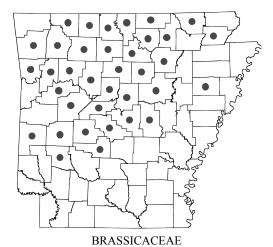
Barbarea vulgaris W.T.Aiton in Aiton & W.T.Aiton

yellow-rocket, wintercress



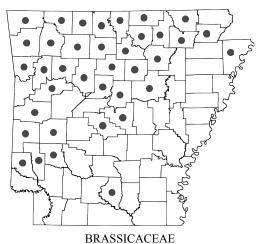
Berteroa incana (L.) DC.

hoary-alyssum



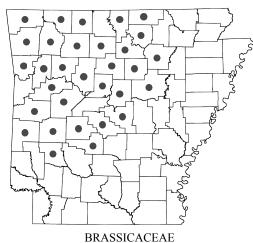
Boechera canadensis (L.) Al-Shehbaz

Canadian rockcress, sicklepod



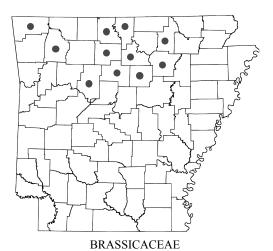
Boechera laevigata (Muhl. ex Willd.) Al-Shehbaz

smooth rockcress



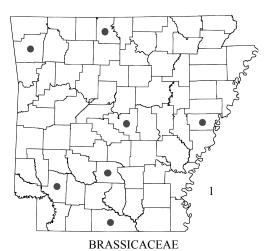
Boechera missouriensis (Greene) Al-Shehbaz

Missouri rockcress



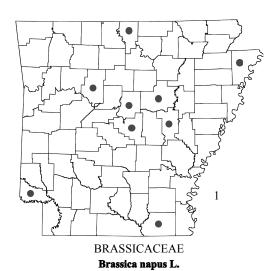
Boechera shortii (Fernald) Al-Shehbaz

Short's rockcress



Brassica juncea (L.) Czern.

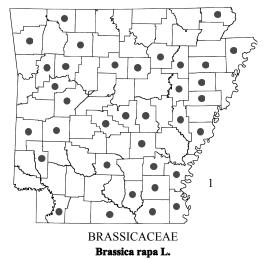
Indian mustard, leaf mustard



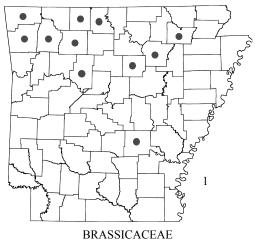
rapeseed, canola

BRASSICACEAE Brassica nigra (L.) W.D.J.Koch in Röhl.

black mustard

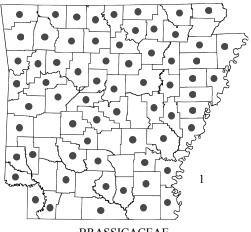


field mustard, turnip mustard



Camelina microcarpa Andrz. ex DC.

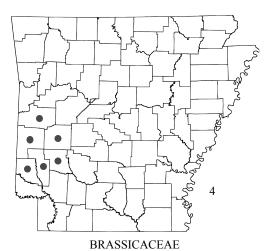
false flax



BRASSICACEAE

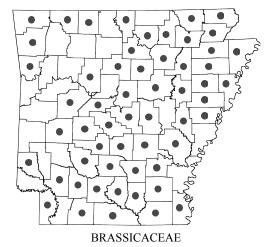
Capsella bursa-pastoris (L.) Medik.

shepherd's-purse



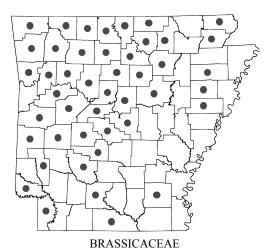
Cardamine angustata O.E.Schulz

slender toothwort



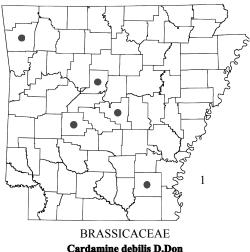
 ${\bf Cardamine\ bulbosa\ (Schreb.\ ex\ Muhl.)\ Britton,\ Sterns\ \&\ Poggenb.}$

spring cress



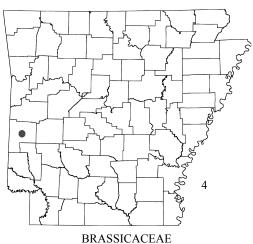
Cardamine concatenata (Michx.) O.Schwarz

toothwort



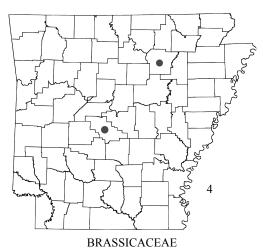
Cardamine debilis D.Don

bittercress



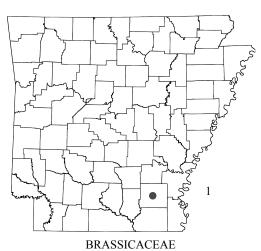
Cardamine dissecta (Leavenw.) Al-Shehbaz

fork-leaf toothwort



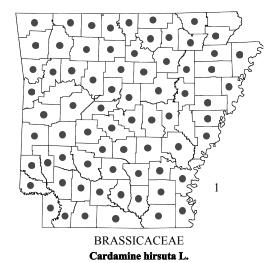
Cardamine douglassii Britton

purple cress, limestone cress



Cardamine flexuosa With.

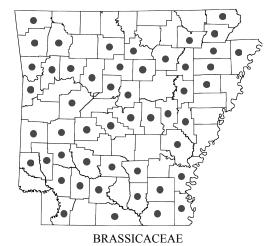
bittercress



hairy bittercress

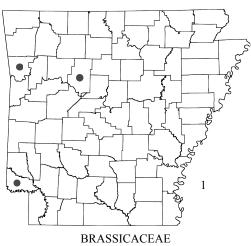
BRASSICACEAE Cardamine parviflora L. var. arenicola (Britton) O.E.Schulz

small-flower bittercress



Cardamine pensylvanica Muhl. ex Willd.

Pennsylvania bittercress



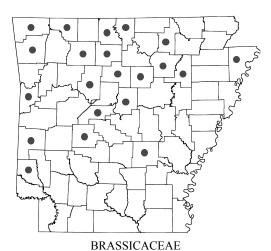
Chorispora tenella (Pall.) DC.

blue-mustard



Conringia orientalis (L.) Dumort.

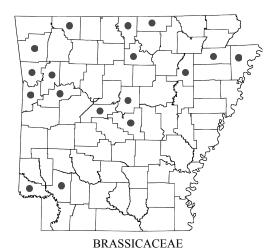
hare's-ear-mustard



Descurainia pinnata (Walter) Britton

subsp. brachycarpa (Richardson) Detling

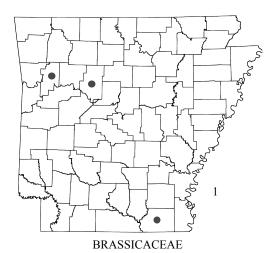
tansy-mustard



Descurainia pinnata (Walter) Britton

subsp. pinnata

tansy-mustard



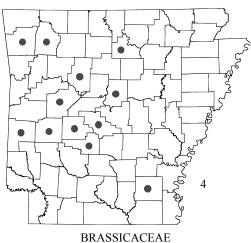
Descurainia sophia (L.) Webb ex Prantl in Engl. & Prantl

tansy-mustard, flixweed



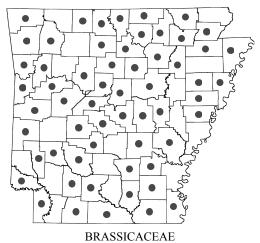
Diplotaxis muralis (L.) DC.

stinking wall-rocket



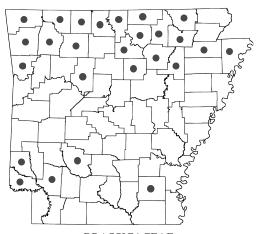
Draba aprica Beadle in Small

open-ground whitlow-grass



Draba brachycarpa Nutt. ex Torr. & A.Gray

short-pod whitlow-grass



BRASSICACEAE

Draba cuneifolia Nutt. ex Torr. & A.Gray

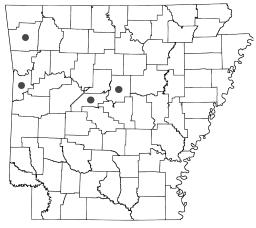
var. cuneifolia

wedge-leaf whitlow-grass



Draba platycarpa Torr. & A.Gray

whitlow-grass

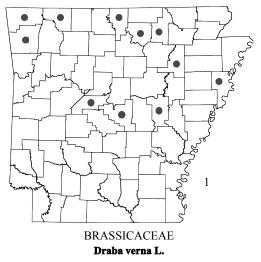


BRASSICACEAE

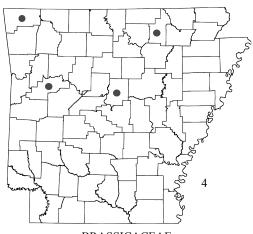
Draba reptans (Lam.) Fernald

whitlow-grass

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whitlow-grass

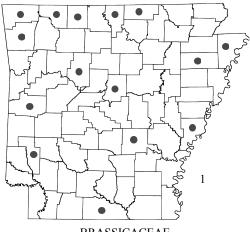


BRASSICACEAE

Erysimum capitatum (Douglas ex Hook.) Greene

var. capitatum

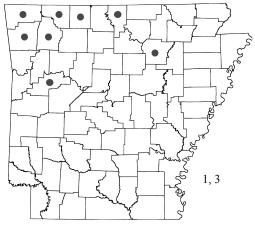
western wallflower



BRASSICACEAE

Erysimum repandum L.

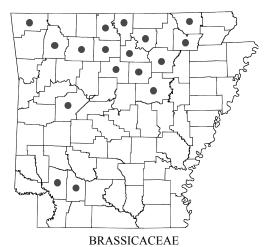
spreading wallflower, bushy wallflower



BRASSICACEAE

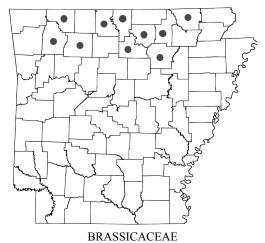
Hesperis matronalis L.

dame's-rocket



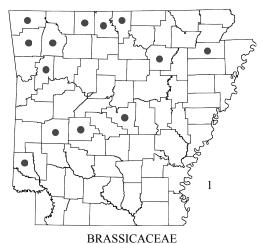
Iodanthus pinnatifidus (Michx.) Steud.

purple-rocket



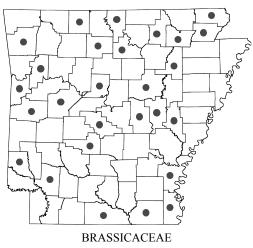
Leavenworthia uniflora (Michx.) Britton

glade cress



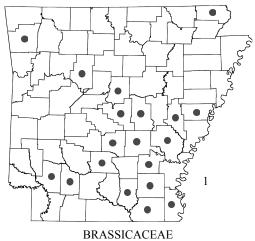
Lepidium campestre (L.) W.T.Aiton in Aiton & W.T.Aiton

field pepper-grass, field cress



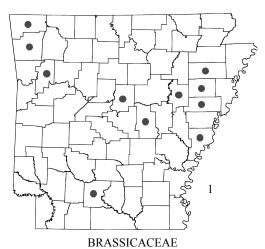
Lepidium densiflorum Schrad.

pepper-grass



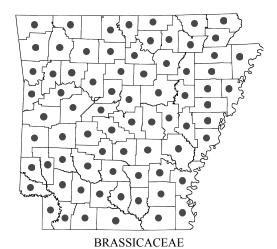
Lepidium didymum L.

swine cress

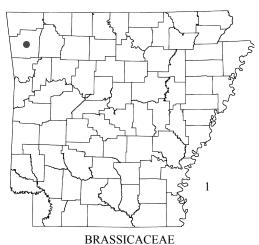


Lepidium oblongum Small

var. oblongum pepper-grass



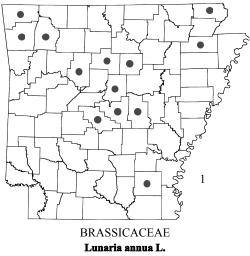
Lepidium virginicum L. Virginia pepper-grass, poor-man's-pepper



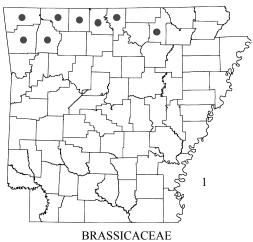
Lobularia maritima (L.) Desv.

sweet-alyssum

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money-plant, honesty



Microthlaspi perfoliatum (L.) F.K.Mey.

pennycress

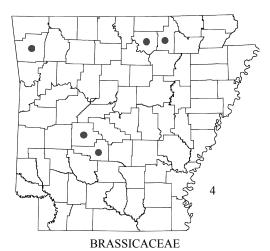


Nasturtium officinale W.T.Aiton in Aiton & W.T.Aiton watercress

BRASSICACEAE

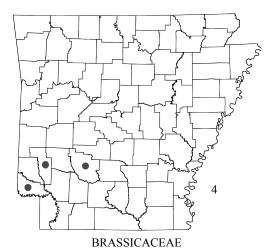
Neobeckia aquatica (Eaton) Greene

lake cress



Physaria filiformis (Rollins) O'Kane & Al-Shehbaz

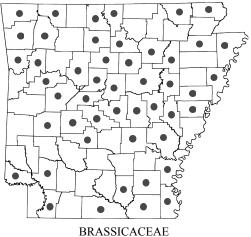
Missouri bladderpod



Physaria gracilis (Hook.) O'Kane & Al-Shehbaz

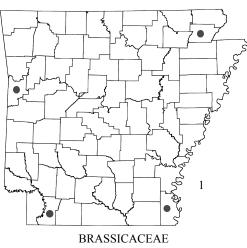
subsp. gracilis

slender bladderpod



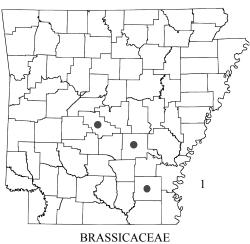
Planodes virginicum (L.) Greene

Virginia rockcress, false bittercress



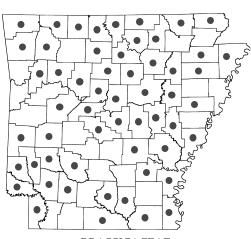
Raphanus raphanistrum L.

wild radish



Raphanus sativus L.

garden radish

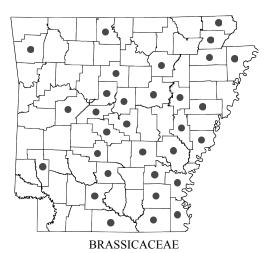


BRASSICACEAE

Rorippa palustris (L.) Besser

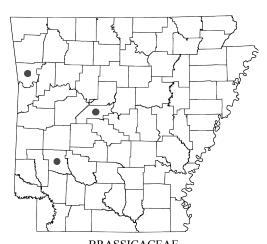
var. fernaldiana (Butters & Abbe) Stuckey

marsh yellowcress



Rorippa sessiliflora (Nutt. ex Torr. & A.Gray) Hitchc.

sessile-flower yellowcress



BRASSICACEAE Rorippa sinuata (Nutt. ex Torr. & A.Gray) Hitchc.

spreading yellowcress

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Rorippa sylvestris (L.) Besser

creeping yellowcress

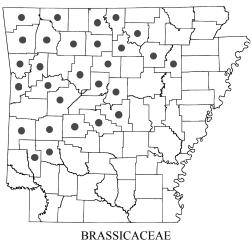


BRASSICACEAE

Rorippa teres (Michx.) Stuckey

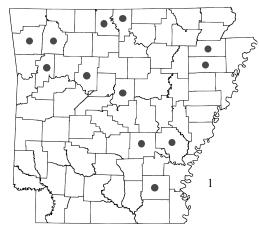
var. teres

yellowcress



Selenia aurea Nutt.

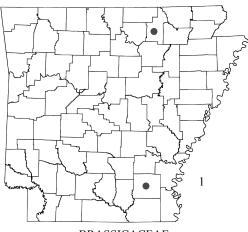
golden selenia



BRASSICACEAE

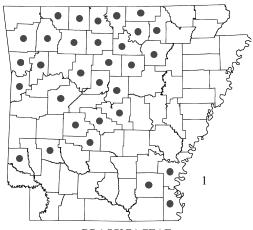
Sinapis arvensis L.

charlock, wild mustard



BRASSICACEAE

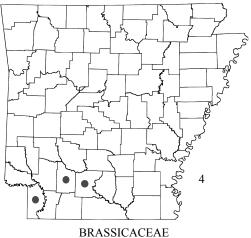
Sisymbrium altissimum L. tumble-mustard



BRASSICACEAE

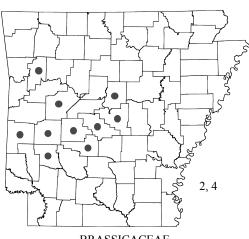
Sisymbrium officinale (L.) Scop.

hedge-mustard



Streptanthus hyacinthoides Hook.

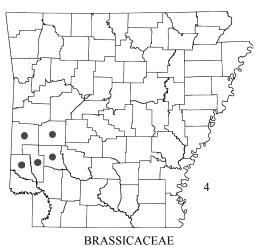
sandhill twistflower



BRASSICACEAE Streptanthus maculatus Nutt.

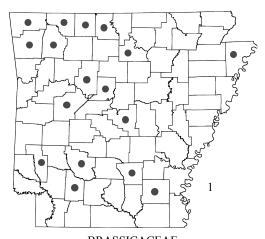
subsp. obtusifolius (Hook.) Rollins

Arkansas twistflower, Arkansas cabbage



Streptanthus squamiformis Goodman

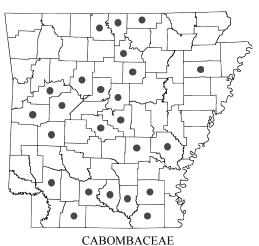
Ouachita twistflower



BRASSICACEAE

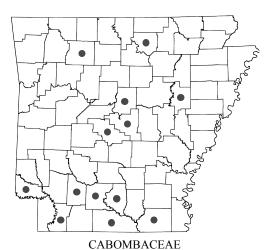
Thlaspi arvense L.

field pennycress



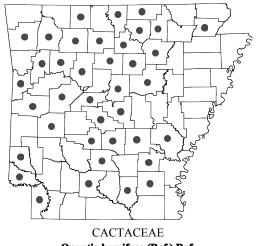
Brasenia schreberi J.F.Gmel.

water-shield



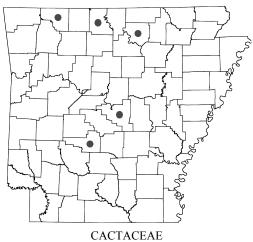
Cabomba caroliniana A.Gray

fanwort



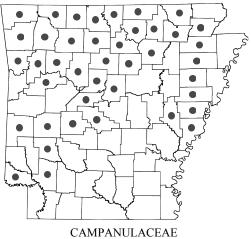
Opuntia humifusa (Raf.) Raf.
var. humifusa

eastern prickly-pear



Opuntia macrorhiza Engelm.

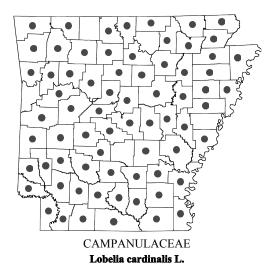
western prickly-pear



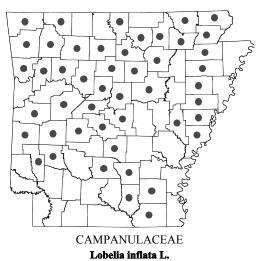
Campanula americana L.
tall bellflower

CAMPANULACEAE **Lobelia appendiculata A.DC.**

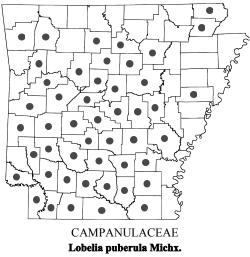
pale lobelia



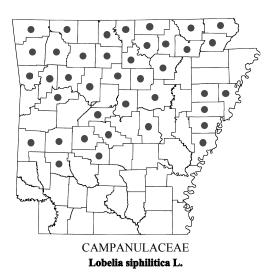
cardinal-flower



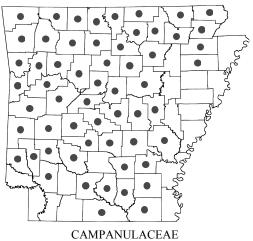
Indian-tobacco



downy lobelia

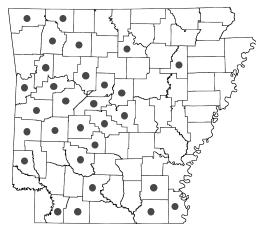


great blue lobelia



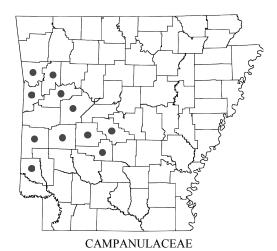
Lobelia spicata Lam.

pale-spike lobelia, highbelia



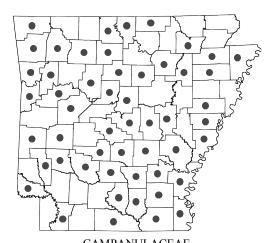
CAMPANULACEAE

Triodanis lamprosperma McVaugh slim-pod Venus'-looking-glass



Triodanis leptocarpa (Nutt.) Nieuwl.

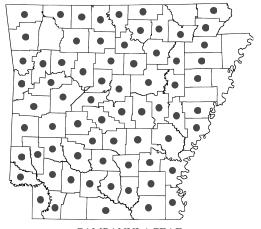
prairie Venus'-looking-glass



CAMPANULACEAE Triodanis perfoliata (L.) Nieuwl.

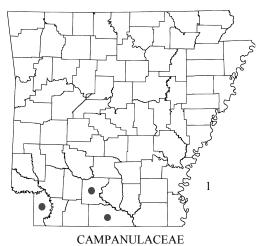
subsp. biflora (Ruiz & Pav.) Lammars

small Venus'-looking-glass



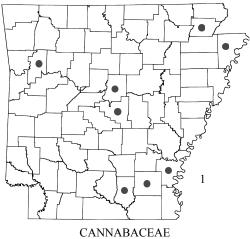
CAMPANULACEAE Triodanis perfoliata (L.) Nieuwl. subsp. perfoliata

clasping-leaf Venus'-looking-glass



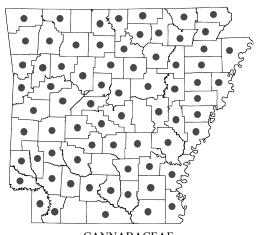
Wahlenbergia marginata (Thunb.) A.DC.

southern rockbell



Cannabis sativa L.

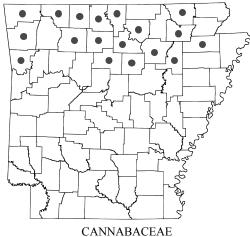
hemp, marijuana



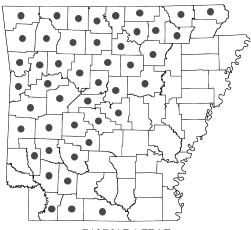
CANNABACEAE

Celtis laevigata Willd.

sugarberry



Celtis occidentalis L. hackberry



CANNABACEAE

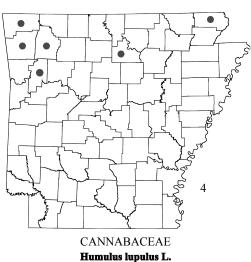
Celtis tenuifolia Nutt.

dwarf hackberry



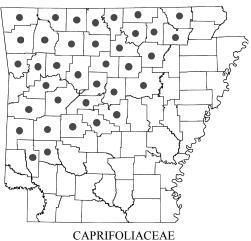
Humulus japonicus Siebold & Zucc.

Japanese hop



var. pubescens E.Small

wild hop



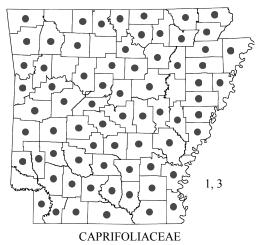
Lonicera flava Sims

yellow honeysuckle



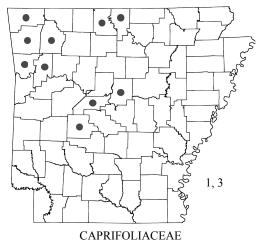
CAPRIFOLIACEAE

Lonicera fragrantissima Lindl. & Paxton fragrant honeysuckle, sweet-breath-of-spring



Lonicera japonica Thunb. ex Murray

Japanese honeysuckle



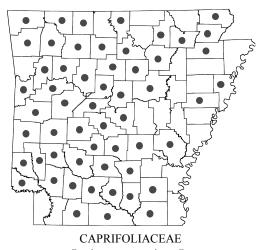
Lonicera maackii (Rupr.) Maxim.

Amur honeysuckle, bush honeysuckle

184 CAPRIFOLIACEAE / Lonicera

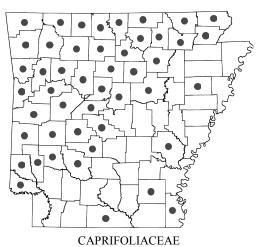


Morrow's honeysuckle, bush honeysuckle

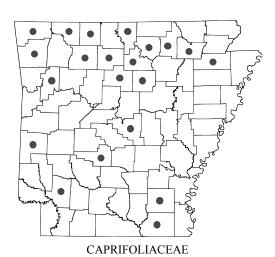


Lonicera sempervirens L.

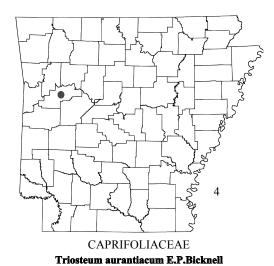
trumpet honeysuckle, coral honeysuckle



Symphoricarpos orbiculatus Moench coral-berry

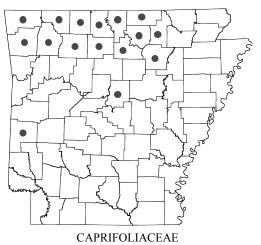


Triosteum angustifolium L. yellow-flower horse-gentian



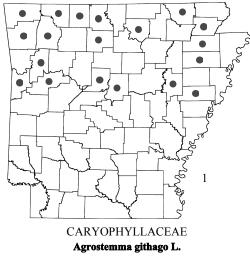
var. illinoense (Wiegand) E.J.Palmer & Steyerm.

red-fruit horse-gentian

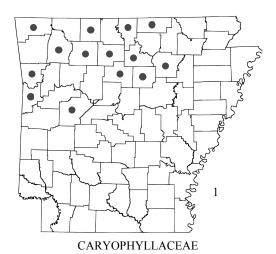


Triosteum perfoliatum L.

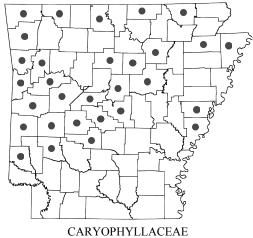
horse-gentian



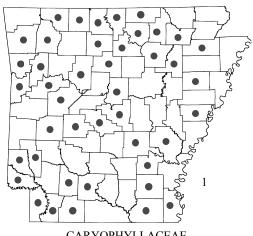
var. githago corncockle



Arenaria serpyllifolia L. var. tenuior Mert. & W.D.J.Koch in Röhl. et al. thyme-leaf sandwort



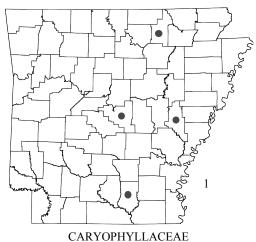
Cerastium brachypodum (Engelm. ex A.Gray) B.L.Rob. mouse-ear chickweed



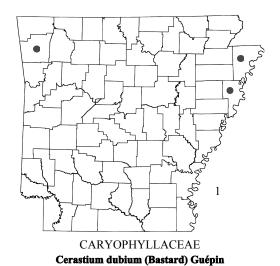
CARYOPHYLLACEAE Arenaria serpyllifolia L. var. serpyllifolia thyme-leaf sandwort



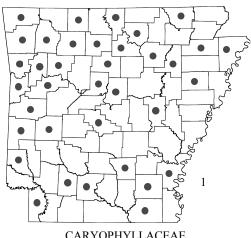
Cerastium brachypetalum Pers. gray mouse-ear chickweed



Cerastium diffusum Pers. mouse-ear chickweed



mouse-ear chickweed

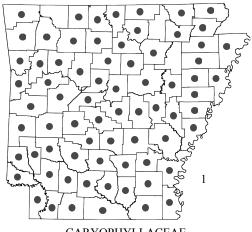


CARYOPHYLLACEAE

Cerastium fontanum Baumg.

subsp. vulgare (Hartm.) Greuter & Burdet

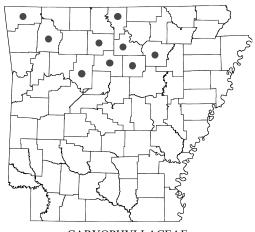
common mouse-ear chickweed



CARYOPHYLLACEAE

Cerastium glomeratum Thuill.

sticky mouse-ear chickweed

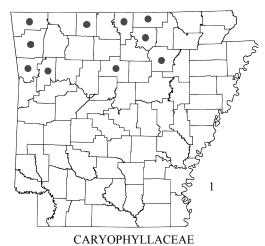


CARYOPHYLLACEAE

Cerastium nutans Raf.

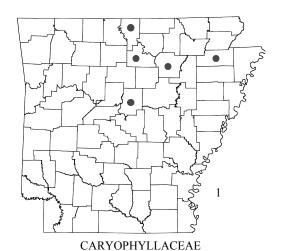
var. nutans

nodding mouse-ear chickweed



Cerastium pumilum Curtis

dwarf mouse-ear chickweed



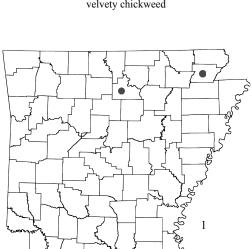
Cerastium semidecandrum L.

small mouse-ear chickweed

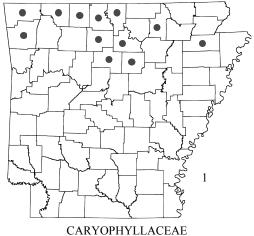


Cerastium velutinum Raf. var. velutinum

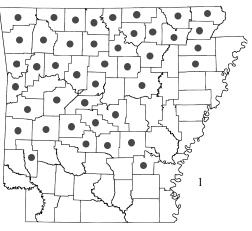
velvety chickweed



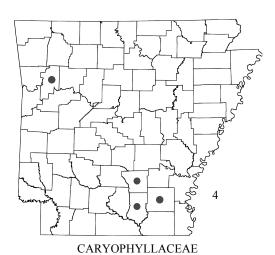
CARYOPHYLLACEAE Dianthus barbatus L. subsp. barbatus sweet-William



Holosteum umbellatum L. subsp. umbellatum jagged-chickweed



CARYOPHYLLACEAE Dianthus armeria L. subsp. armeria Deptford pink

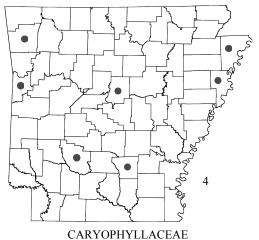


Geocarpon minimum Mack.

geocarpon, tiny-Tim



Loeflingia squarrosa Nutt. in Torr. & A.Gray spreading loeflingia, spreading pygmyleaf



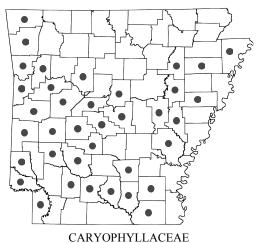
Minuartia drummondii (Shinners) McNeill

Drummond's sandwort



Minuartia michauxii (Fenzl) Farw.

rock sandwort



Minuartia muscorum (Fassett) Rabeler

sandwort



CARYOPHYLLACEAE Minuartia patula (Michx.) Mattf.

sandwort



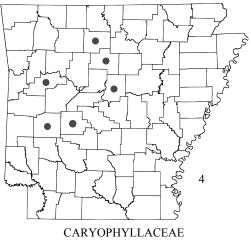
Paronychia canadensis (L.) A.W.Wood forked-chickweed, smooth forked nailwort

CARYOPHYLLACEAE

Paronychia fastigiata (Raf.) Fernald

var. fastigiata

forked-chickweed, hairy forked nailwort



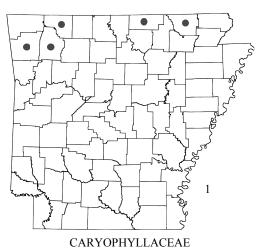
Paronychia virginica Spreng.

yellow nailwort, Virginia nailwort



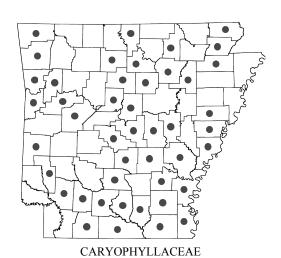
Petrorhagia dubia (Raf.) G.Lopéz & Romo

childing-pink



Petrorhagia prolifera (L.) P.W.Ball & Heyw.

childing-pink

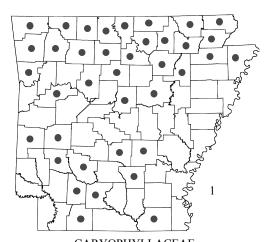


Sagina decumbens (Elliott) Torr. & A.Gray subsp. decumbens

pearlwort

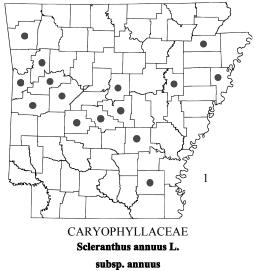


bird's-eye pearlwort, matted pearlwort

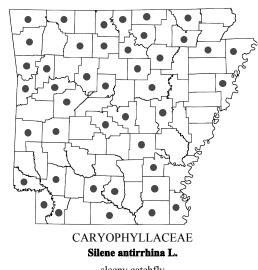


CARYOPHYLLACEAE Saponaria officinalis L.

bouncing-bet, soapwort



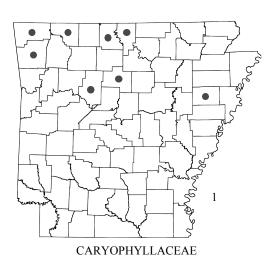
knawel



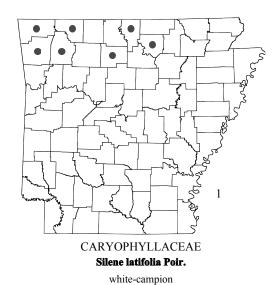
sleepy catchfly

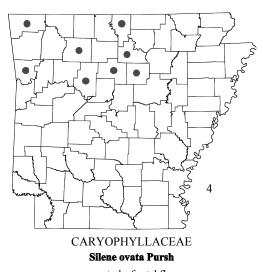


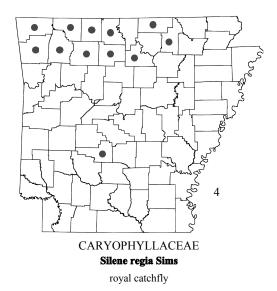
sweet-William catchfly



Silene coronaria (L.) Clairville rose-campion, mullein-pink

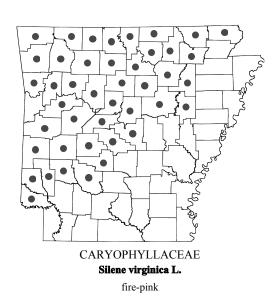


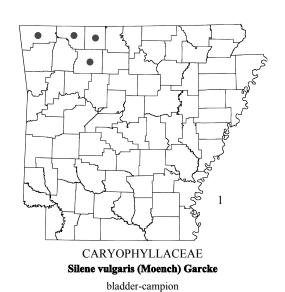




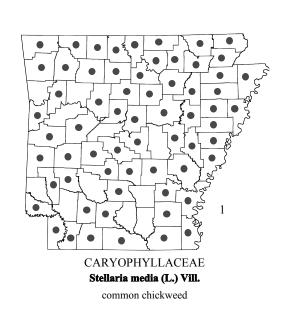
CARYOPHYLLACEAE

Silene stellata (L.) W.T.Aiton in Aiton & W.T.Aiton starry-campion





CARYOPHYLLACEAE Spergula arvensis L. corn spurrey

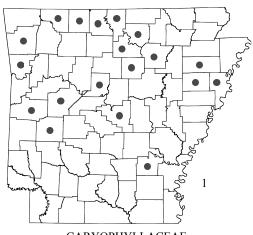


192 CARYOPHYLLACEAE / Stellaria



Stellaria neglecta Weihe in Bluff et al.

greater chickweed



CARYOPHYLLACEAE
Stellaria pallida (Dumort.) Crép.

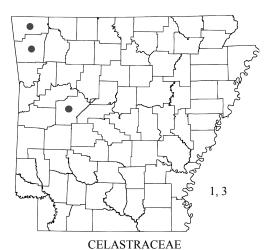
lesser chickweed



CARYOPHYLLACEAE

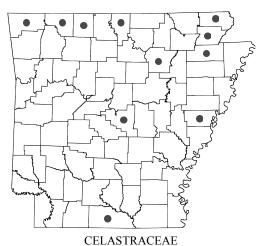
Vaccaria hispanica (Mill.) Rauschert

cow-soapwort, cow-herb



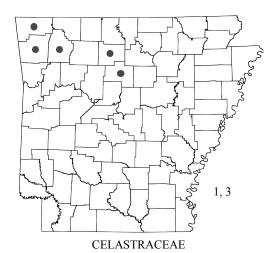
Celastrus orbiculatus Thunb.

Oriental bittersweet



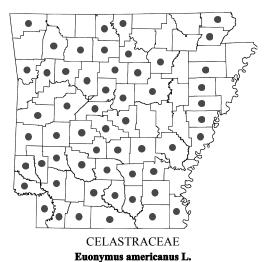
Celastrus scandens L.

American bittersweet

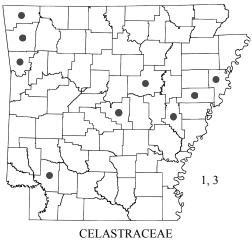


Euonymus alatus (Thunb.) Siebold

burning-bush, winged euonymus

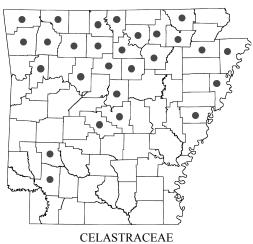


strawberry-bush, hearts-a-bursting-with-love



Euonymus fortunei (Turcz.) Hand.-Mazz.

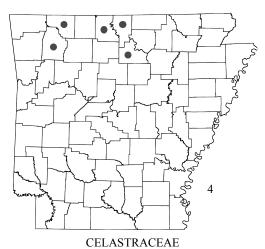
winter-creeper



Euonymus atropurpureus Jacq.

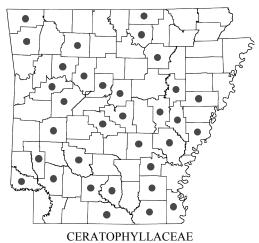
var. atropurpureus

wahoo, burning-bush



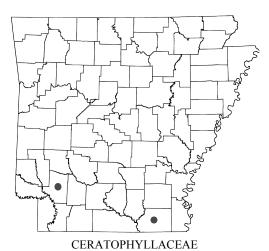
Euonymus obovatus Nutt.

running strawberry-bush



Ceratophyllum demersum L.

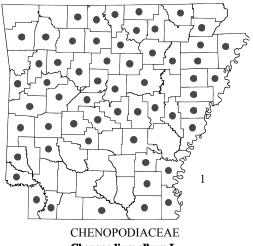
coontail, hornwort



Ceratophyllum echinatum A.Gray

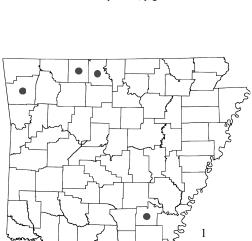
prickly coontail, hornwort

194 CHENOPODIACEAE / Chenopodium



Chenopodium album L.

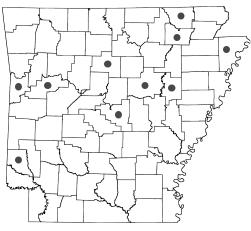
lamb's-quarters, pigweed



CHENOPODIACEAE

Chenopodium murale L.

nettle-leaf goosefoot

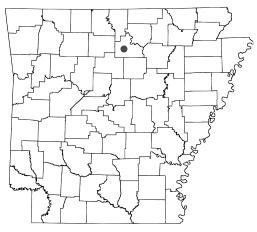


CHENOPODIACEAE

Chenopodium berlandieri Moq.

pit-seed goosefoot

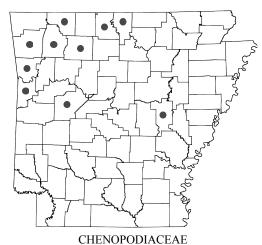
See Appendix I for infraspecific taxa and species status.



CHENOPODIACEAE

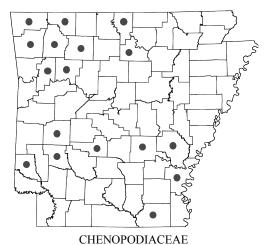
Chenopodium pratericola Rydb.

desert goosefoot



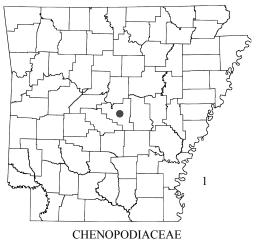
Chenopodium simplex (Torr.) Raf.

maple-leaf goosefoot



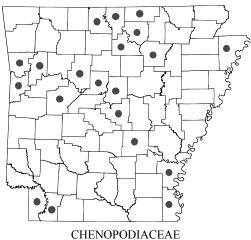
Chenopodium standleyanum Aellen

woodland goosefoot



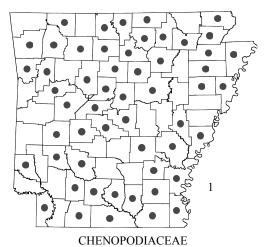
Corispermum americanum (Nutt.) Nutt. var. americanum

bugseed



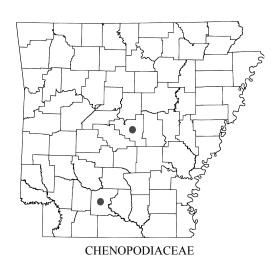
Cycloloma atriplicifolium (Spreng.) J.M.Coult.

winged pigweed



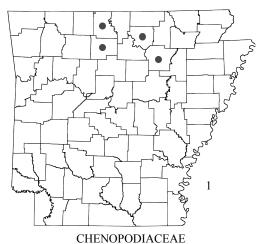
Dysphania ambrosioides (L.) Mosyakin & Clemants

Mexican-tea, wormseed

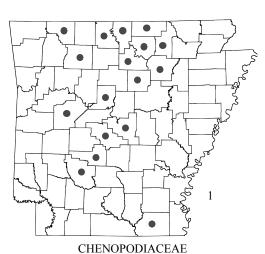


Dysphania anthelmintica (L.) Mosyakin & Clemants

wormseed



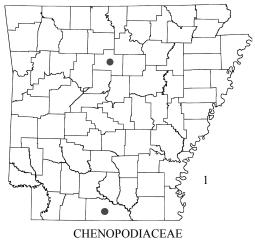
Dysphania carinata (R.Br.) Mosyakin & Clemants goosefoot



Dysphania pumilio (R.Br.) Mosyakin & Clemants

clammy goosefoot

196 CHENOPODIACEAE / Kochia

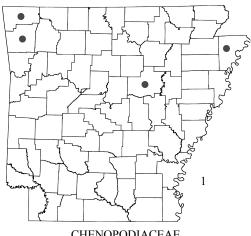


CHENOPODIACEAE

Kochia scoparia (L.) Schrad.

subsp. scoparia

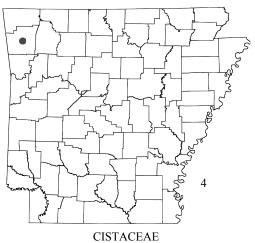
summer-cypress, Mexican-fireweed



CHENOPODIACEAE

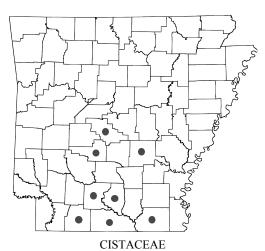
Salsola tragus L.

Russian-thistle, tumbleweed



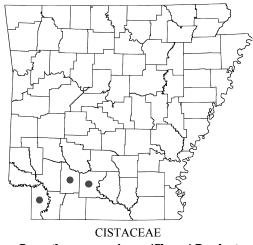
Crocanthemum bicknellii (Fernald) Barnhart

hoary frostweed, Bicknell's rock-rose



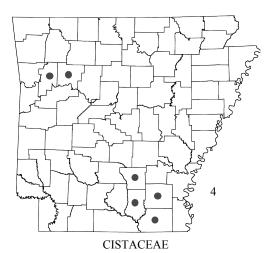
Crocanthemum carolinianum (Walter) Spach

Carolina rock-rose, sun-rose, frostweed



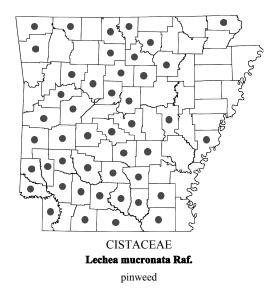
Crocanthemum georgianum (Chapm.) Barnhart

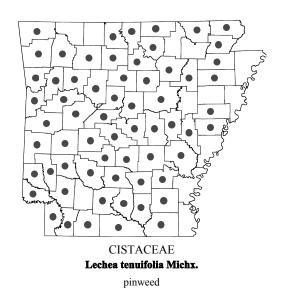
Georgia rock-rose, sun-rose, frostweed



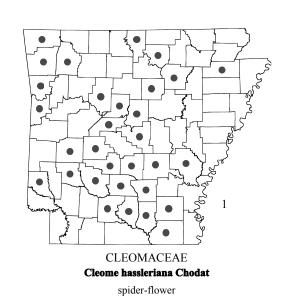
Crocanthemum rosmarinifolium (Pursh) Barnhart

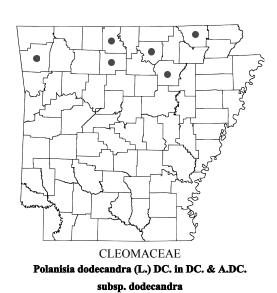
rosemary rock-rose, sun-rose, frostweed



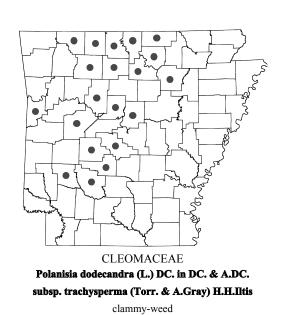


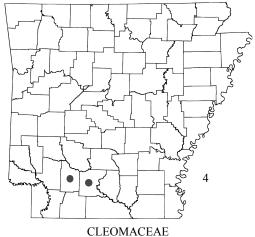
CLEOMACEAE Cleome gynandra L. spider-wisp





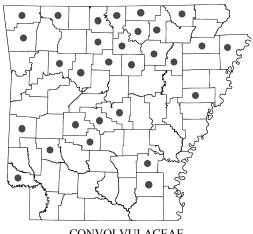
clammy-weed





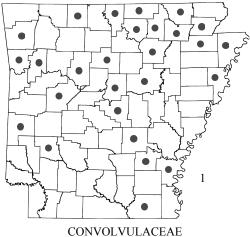
Polanisia erosa (Nutt.) H.H.Iltis subsp. erosa

sandhill clammy-weed



CONVOLVULACEAE Calystegia sepium (L.) R.Br. subsp. angulata Brummitt

hedge bindweed



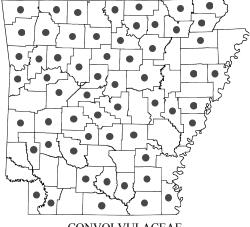
Convolvulus arvensis L.

field bindweed



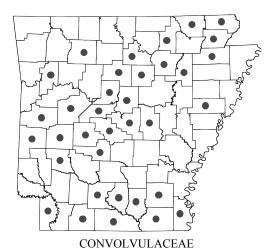
Convolvulus equitans Benth.

Texas bindweed



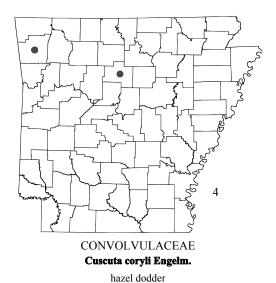
CONVOLVULACEAE Cuscuta campestris Yunck.

field dodder

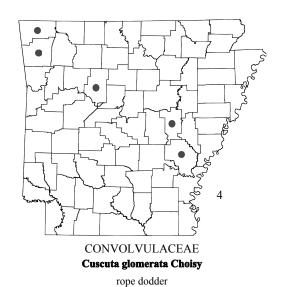


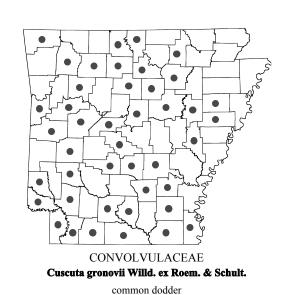
Cuscuta compacta Juss. ex Choisy

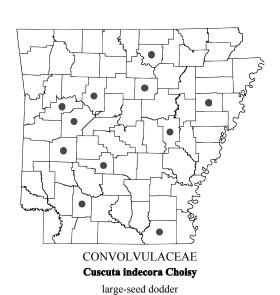
compact dodder

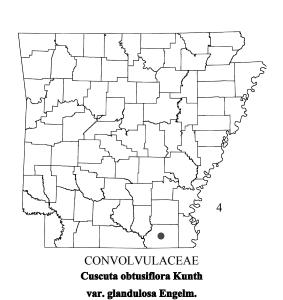


CONVOLVULACEAE Cuscuta cuspidata Engelm. cusp dodder



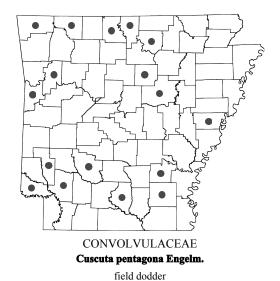


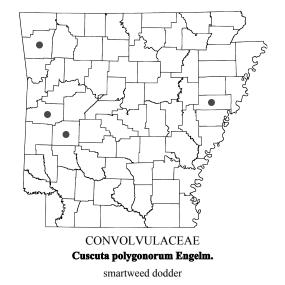


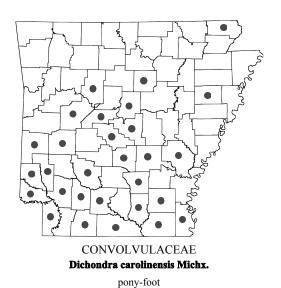


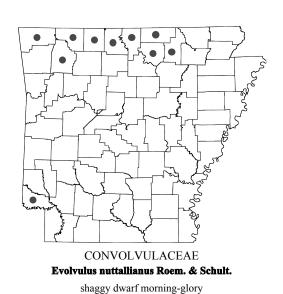
glandular dodder

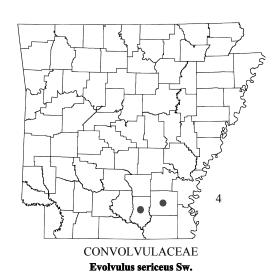
See Appendix I for infraspecific taxa and species status.



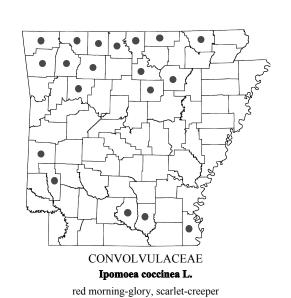








silver dwarf morning-glory

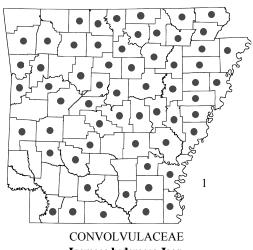




Ipomoea cordatotriloba Dennst.

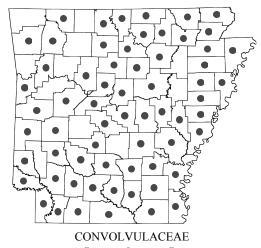
var. cordatotriloba

tie-vine morning-glory



Ipomoea hederacea Jacq.

ivy-leaf morning-glory



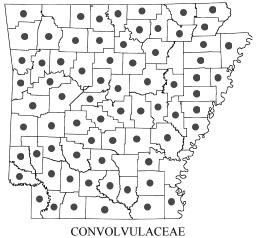
Ipomoea lacunosa L.

small white morning-glory



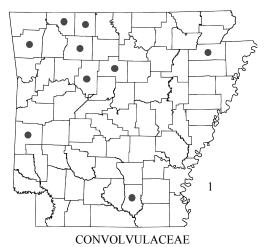
CONVOLVULACEAE Ipomoea muricata (L.) Jacq.

lilacbell, purple moonflower



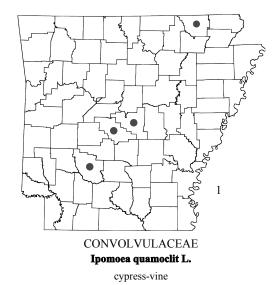
Ipomoea pandurata (L.) G.Mey.

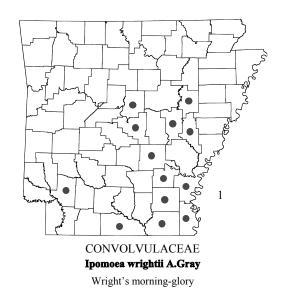
wild potato vine, man-of-the-earth

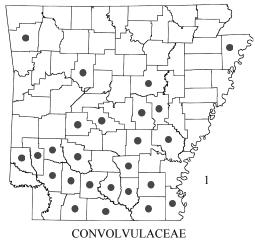


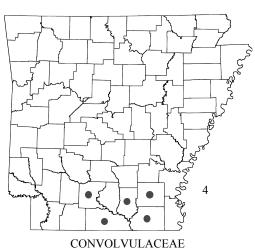
Ipomoea purpurea (L.) Roth

morning-glory



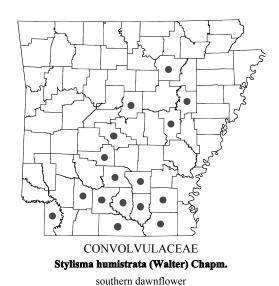


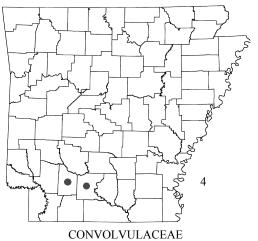




Jacquemontia tamnifolia (L.) Griseb.
hairy tie-vine

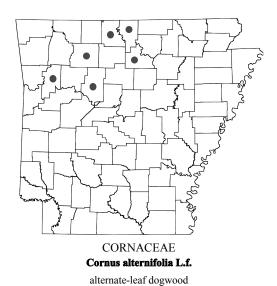






Stylisma pickeringii (Torr. ex M.A.Curtis) A.Gray var. pattersonii (Fernald & B.G.Schub.) Myint

Patterson's dawnflower

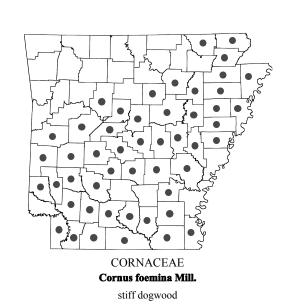


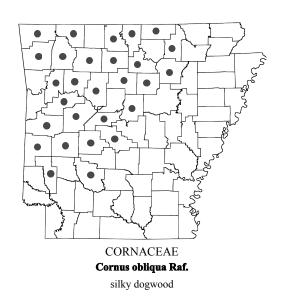
CORNACEAE Cornus drummondii C.A.Mey.

rough-leaf dogwood

CORNACEAE Cornus florida L.

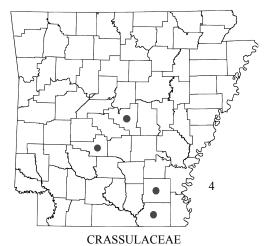
flowering dogwood





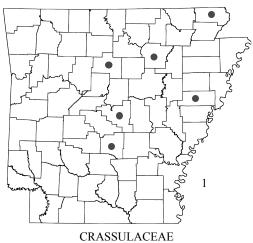


204 CRASSULACEAE / Crassula



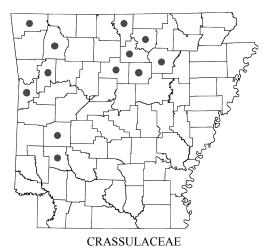
Crassula aquatica (L.) Schönland in Engler & Prantl

water pygmyweed



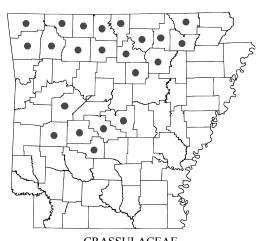
Hylotelephium erythrostictum (Miq.) H.Ohba

garden stonecrop, live-forever



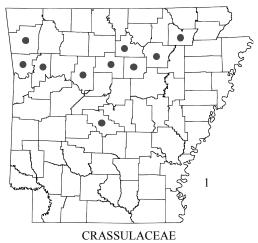
Sedum nuttallii Torr. & E.James ex Eaton

Nuttall's stonecrop, yellow stonecrop



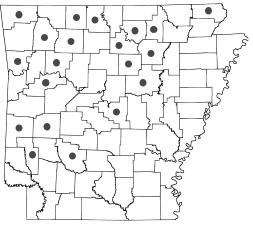
CRASSULACEAE
Sedum pulchellum Michx.

widow's-cross



Sedum sarmentosum Bunge

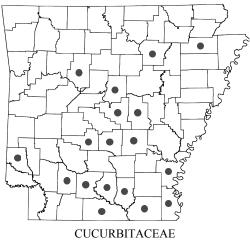
yellow stonecrop



CRASSULACEAE

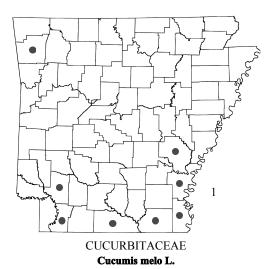
Sedum ternatum Michx.

woodland stonecrop

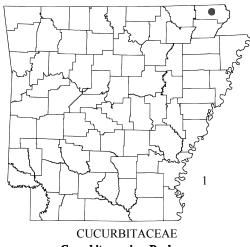


Cayaponia quinqueloba (Raf.) Shinners

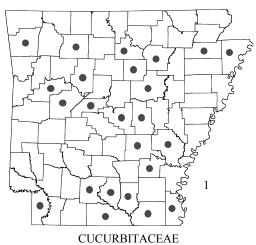
cucumber vine, melonleaf



Queen Anne's pocket melon

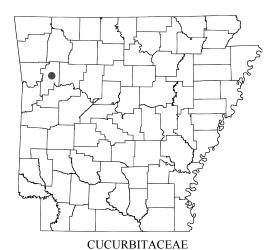


Cucurbita maxima Duchesne winter squash



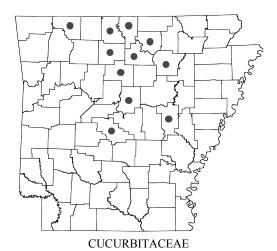
Citrullus lanatus (Thunb.) Matsum. & Nakai var. lanatus

watermelon



Cucurbita foetidissima Kunth

buffalo gourd, Missouri gourd, stinking gourd

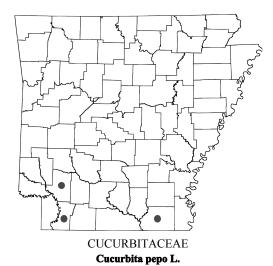


Cucurbita pepo L.

subsp. ovifera (L.) D.S.Decker var. ozarkana Deck.-Walt.

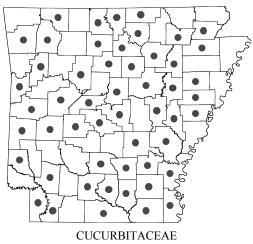
wild pear gourd, yellow-flower gourd

206 CUCURBITACEAE / Cucurbita



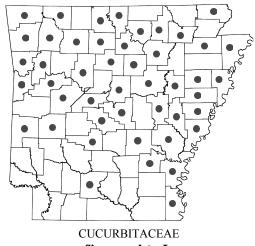
subsp. ovifera (L.) D.S.Decker var. texana (Scheele) D.S.Decker

Texas gourd



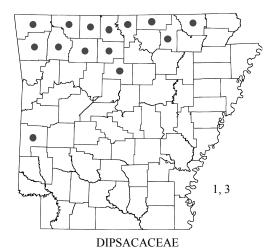
Melothria pendula L.

creeping-cucumber



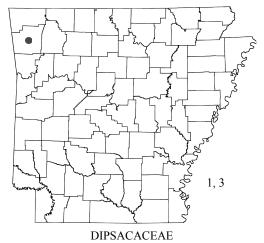
Sicyos angulatus L.

bur-cucumber



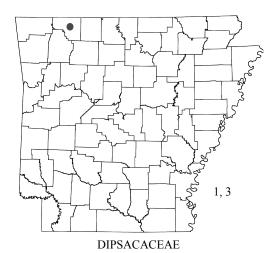
Dipsacus fullonum L.

common teasel



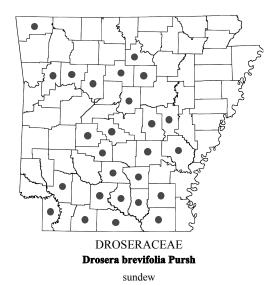
Dipsacus laciniatus L.

cut-leaf teasel

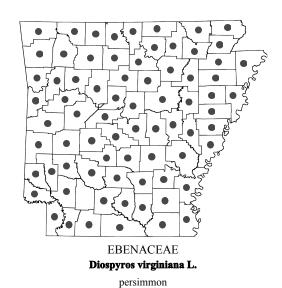


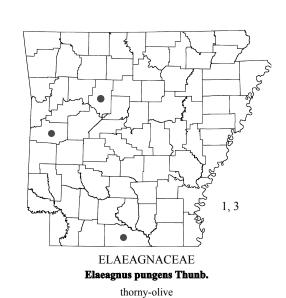
Scabiosa atropurpurea L.

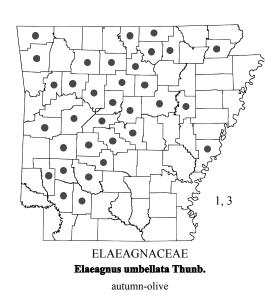
pincushions, mourning-bride

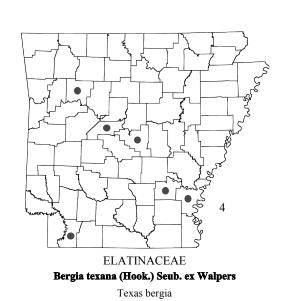














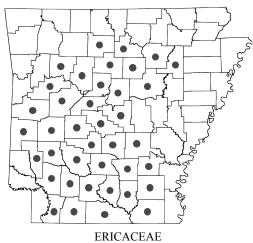
ERICACEAE

ERICACEAE

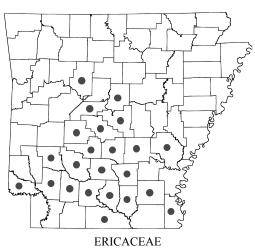
Gaylussacia baccata (Wangenh.) K.Koch

black huckleberry

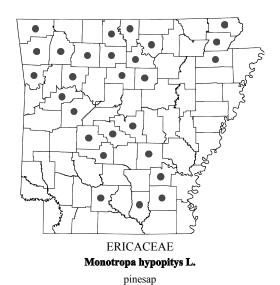
waterwort

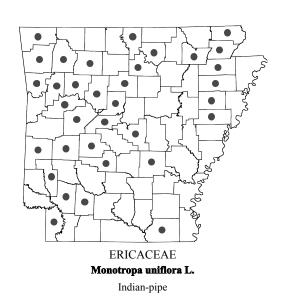


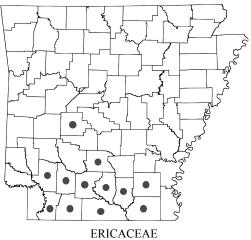
Lyonia ligustrina (L.) DC. in DC. & A.DC.
var. foliosiflora (Michx.) Fernald
maleberry



Lyonia mariana (L.) D.Don
staggerbush

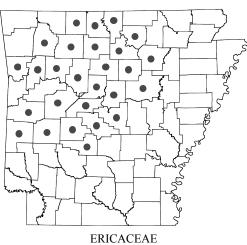






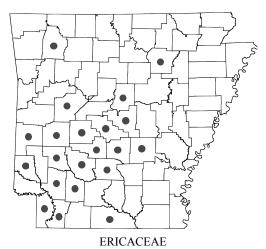
Rhododendron canescens (Michx.) Sweet

swamp azalea, hoary azalea



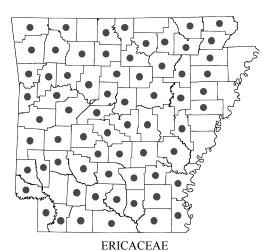
Rhododendron prinophyllum (Small) Millais

pink azalea, mountain azalea



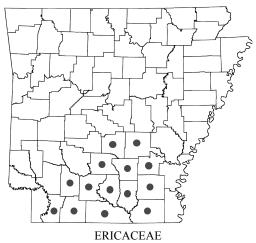
Rhododendron viscosum (L.) Torr.

white azalea



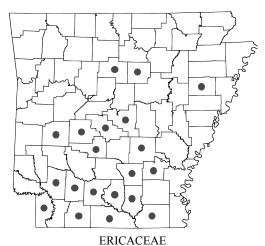
Vaccinium arboreum Marshall

farkleberry, sparkleberry



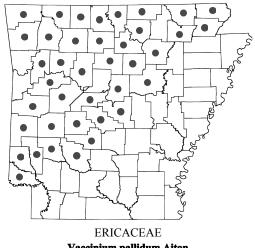
Vaccinium elliottii Chapm.

mayberry, Elliott's blueberry

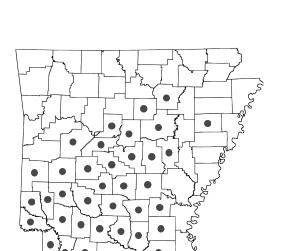


Vaccinium fuscatum Aiton

black high-bush blueberry



Vaccinium pallidum Aiton
low-bush blueberry



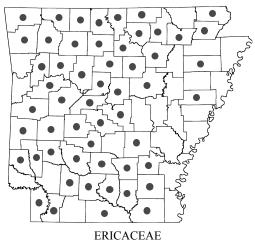
ERICACEAE

Vaccinium virgatum Aiton
high-bush blueberry

EUPHORBIACEAE

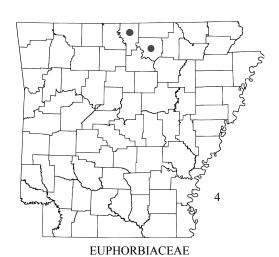
Acalypha gracilens A.Gray

slender three-seed mercury, slender copperleaf

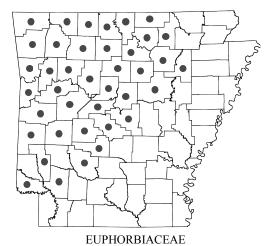


Vaccinium stamineum L.

deerberry

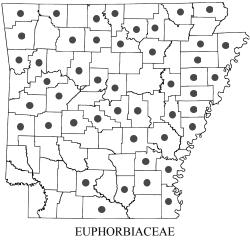


Acalypha deamii (Weath.) H.E.AhlesDeam's copperleaf, two-seed mercury



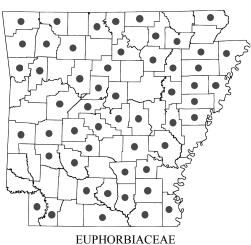
Acalypha monococca (Engelm. ex A.Gray) Lill.W.Mill. & Gandhi

one-seed mercury, slender copperleaf



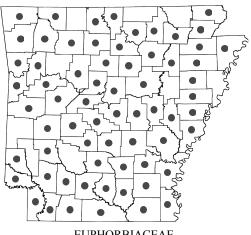
Acalypha ostryifolia Riddell

hop-hornbeam copperleaf



Acalypha rhomboidea Raf.

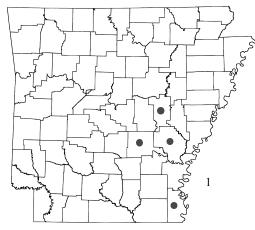
rhombic copperleaf, three-seed mercury



EUPHORBIACEAE

Acalypha virginica L.

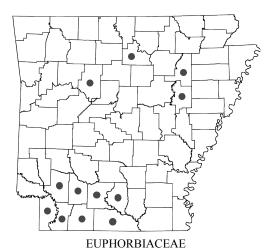
Virginia copperleaf, three-seed mercury



EUPHORBIACEAE

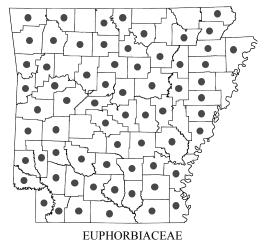
Caperonia palustris (L.) J.St.-Hil.

Mexican-weed, sacatrapo



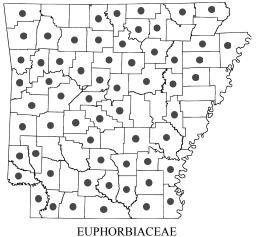
Cnidoscolus texanus (Müll.Arg.) Small

bull-nettle



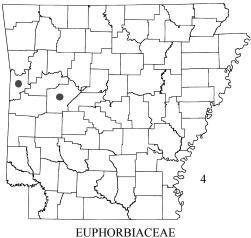
Croton capitatus Michx.

woolly croton, hogwort, goatweed



Croton glandulosus L.
var. septentrionalis Müll.Arg.

tropic croton, sand croton



Croton lindheimerianus Scheele
var. lindheimerianus

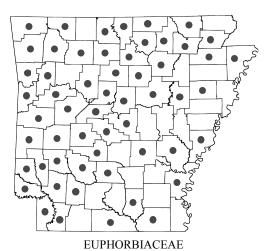
Lindheimer's croton



EUPHORBIACEAE

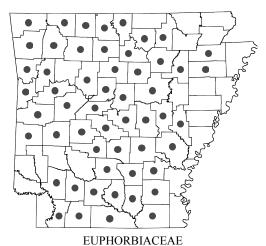
Croton michauxii G.L.Webster

narrow-leaf rushfoil



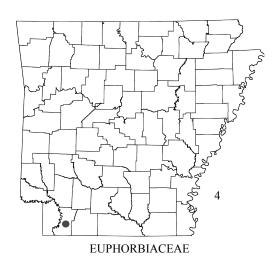
Croton monanthogynus Michx.

prairie-tea



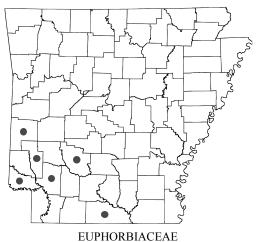
Croton willdenowii G.L.Webster

rushfoil



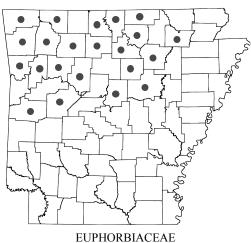
Ditrysinia fruticosa (W.Bartram) Govaerts & Frodin

Sebastian-bush



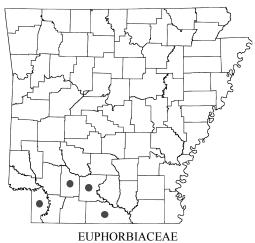
Euphorbia bicolor Engelm. & A.Gray

snow-on-the-prairie



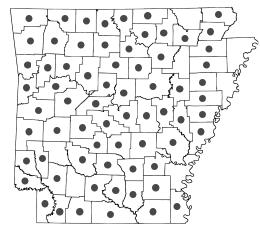
Euphorbia commutata Engelm. ex A.Gray

wood spurge



Euphorbia cordifolia Elliott

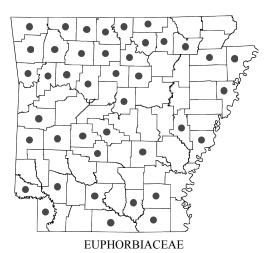
heart-leaf spurge, heart-leaf sandmat



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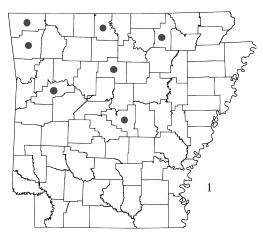
Euphorbia corollata L.

flowering spurge



Euphorbia cyathophora Murray

wild poinsettia, painted-leaf, fire-on-the-mountain

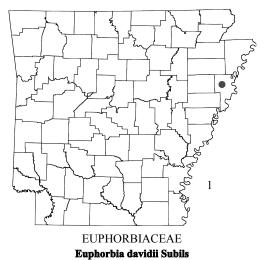


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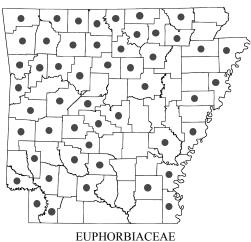
Euphorbia cyparissias L.

cypress spurge

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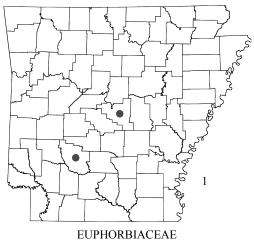


David's spurge, toothed spurge



Euphorbia dentata Michx.

toothed spurge, summer poinsettia



Euphorbia graminea Jacq.

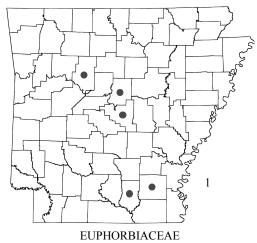
grass-leaf spurge



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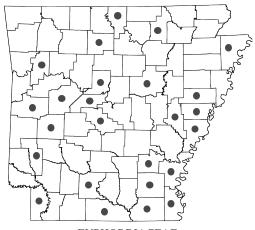
Euphorbia hexagona Nutt. ex Spreng.

six-angle spurge



Euphorbia hirta L.

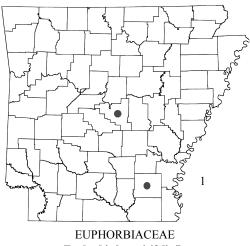
pill-pod spurge, pill-pod sandmat



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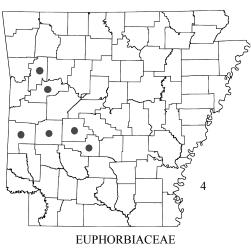
Euphorbia humistrata Engelm. ex A.Gray

spreading sandmat



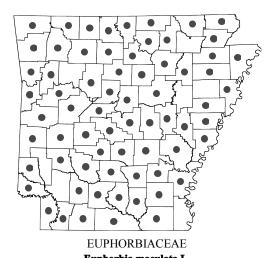
Euphorbia hypericifolia L.

graceful spurge, tropical spurge



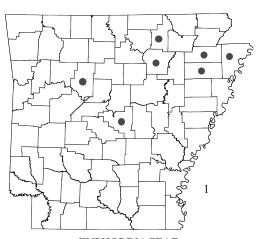
Euphorbia longicruris Scheele

wedge-leaf spurge



Euphorbia maculata L.

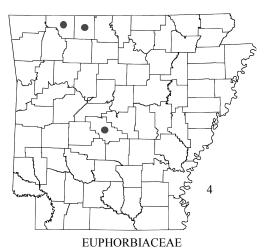
spotted spurge, spotted sandmat



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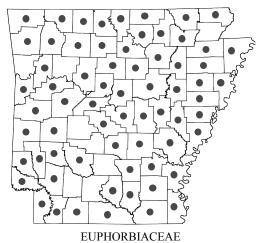
Euphorbia marginata Pursh

snow-on-the-mountain



Euphorbia missurica Raf.

Missouri spurge, prairie spurge



Euphorbia nutans Lag.

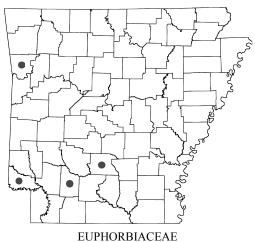
nodding spurge, eyebane

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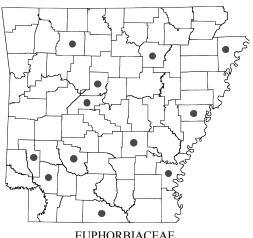
Euphorbia ophthalmica Pers.

vagrant spurge



Euphorbia prostrata Aiton

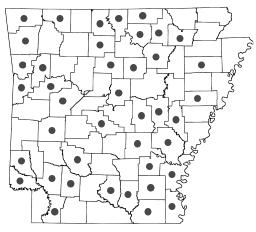
prostrate spurge, prostrate sandmat



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Euphorbia serpens Kunth

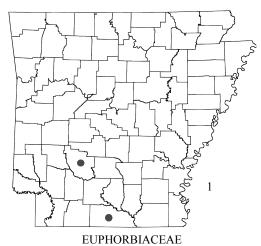
ground spurge, matted sandmat



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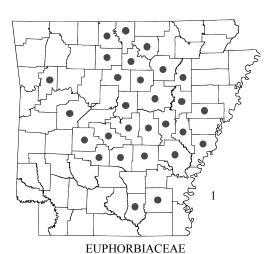
Euphorbia spathulata Lam.

warty spurge

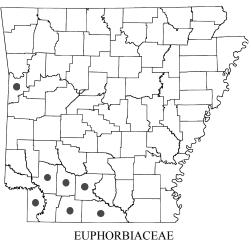


Manihot grahamii Hook.

Graham's cassava

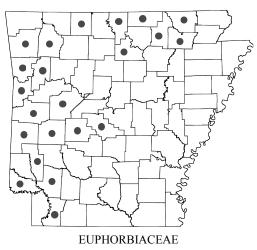


Ricinus communis L. castor-bean, castor-oil-plant



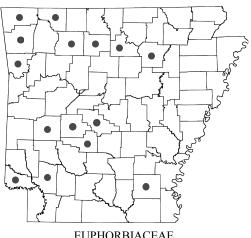
Stillingia sylvatica Garden ex L.

queen's-delight



Tragia betonicifolia Nutt.

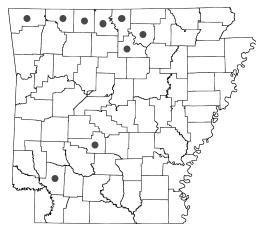
noseburn



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Tragia cordata Michx.

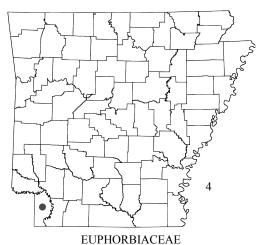
heart-leaf noseburn



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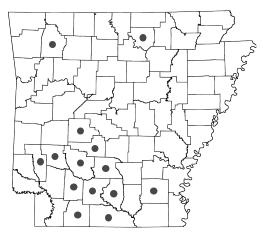
Tragia ramosa Torr.

noseburn



Tragia smallii Shinners

Small's noseburn

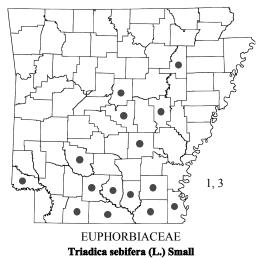


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Tragia urticifolia Michx.

noseburn

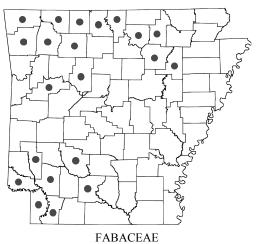
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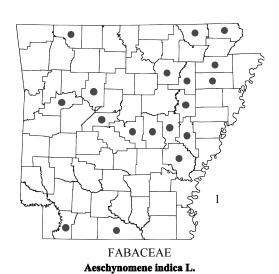
Chinese tallow-tree, popcorn-tree



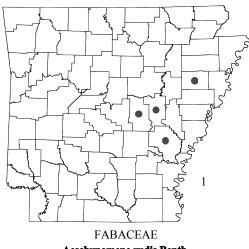
tung-oil-tree



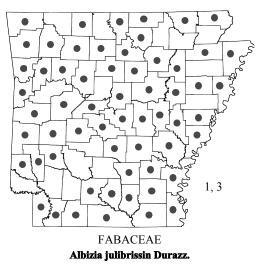
Acaciella angustissima (Mill.) Britton & Rose prairie acacia



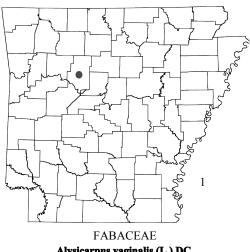
joint-vetch



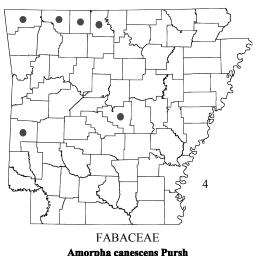




mimosa, silk-tree



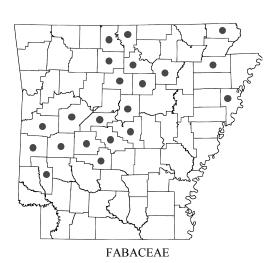
Alysicarpus vaginalis (L.) DC. alyce-clover



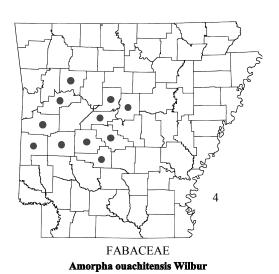
Amorpha canescens Pursh lead-plant



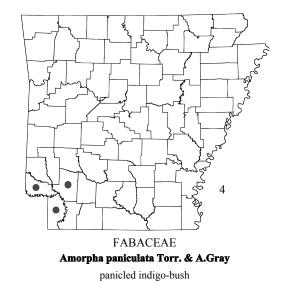
Amorpha fruticosa L. indigo-bush, false indigo

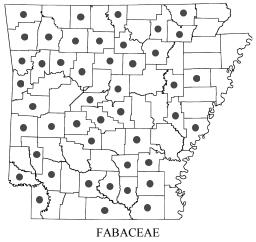


Amorpha nitens F.E.Boynton shining indigo-bush



Ouachita indigo-bush, Ouachita lead-plant





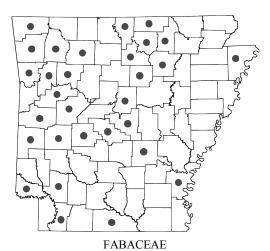
Amphicarpaea bracteata (L.) Fernald

hog-peanut



Apios americana Medik.

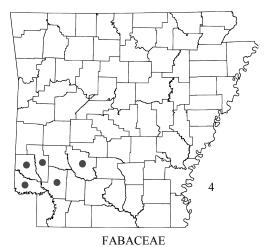
groundnut



Astragalus canadensis L.

var. canadensis

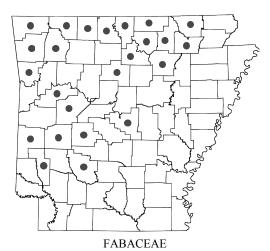
rattle-weed, Canadian milk-vetch



Astragalus crassicarpus Nutt.

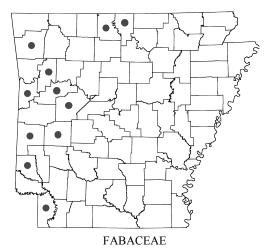
var. crassicarpus

purple ground-plum



Astragalus crassicarpus Nutt. var. trichocalyx (Nutt.) Barneby

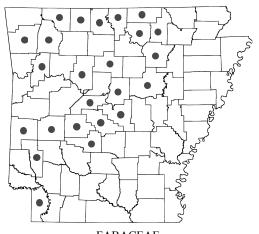
cream ground-plum



Astragalus distortus Torr. & A.Gray

var. distortus

bent milk-vetch



FABACEAE Astragalus distortus Torr. & A.Gray var. engelmannii (E.Sheld.) M.E.Jones

bent milk-vetch

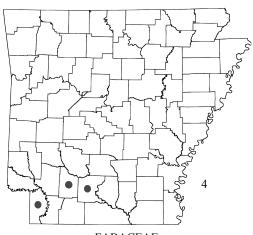


var. nuttallianus Nuttall's milk-vetch, turkey-pea



Baptisia alba (L.) Vent. var. macrophylla (Larisey) Isely

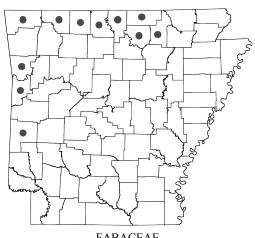
white wild indigo



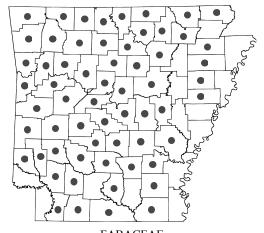
FABACEAE Astragalus leptocarpus Torr. & A.Gray slim-pod milk-vetch



Astragalus soxmaniorum Lundell Soxman's milk-vetch



FABACEAE Baptisia australis (L.) R.Br. in W.T.Aiton var. minor (Lehm.) Fernald blue wild indigo

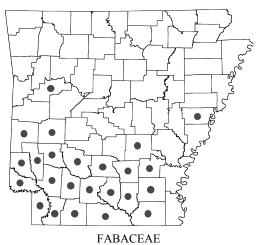


FABACEAE

Baptisia bracteata Muhl. ex Elliott

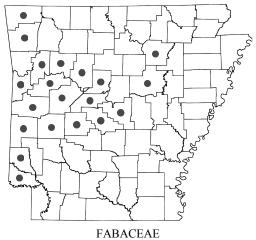
var. leucophaea (Nutt.) Kartesz & Gandhi

cream wild indigo



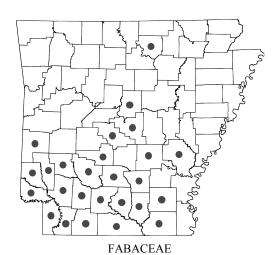
Baptisia nuttalliana Small

Nuttall's wild indigo



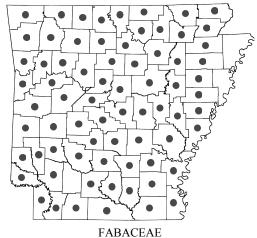
Baptisia sphaerocarpa Nutt.

yellow wild indigo



Centrosema virginianum (L.) Benth.

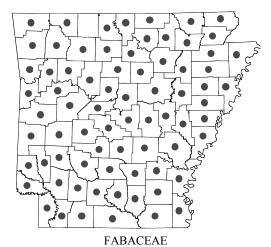
butterfly-pea



Cercis canadensis L.

var. canadensis

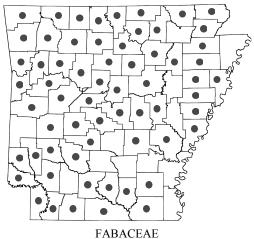
eastern redbud



Chamaecrista fasciculata (Michx.) Greene

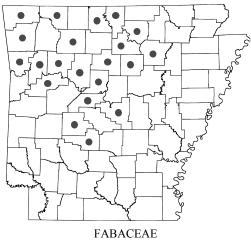
var. fasciculata

showy partridge-pea



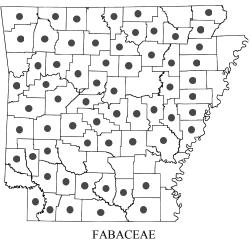
Chamaecrista nictitans (L.) Moench var. nictitans

sensitive partridge-pea



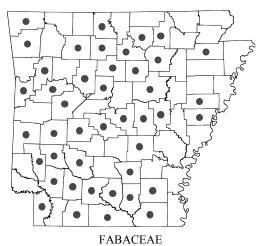
Cladrastis kentukea (Dum.Cours.) Rudd

yellow-wood



Clitoria mariana L.

butterfly-pea



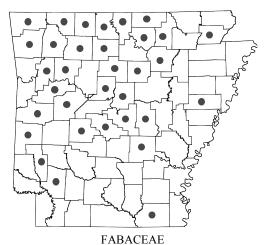
Crotalaria sagittalis L.

rattlebox



Crotalaria spectabilis Roth

showy rattlebox



Dalea candida Michx. ex Willd.

var. candida

white prairie-clover



FABACEAE

Dalea compacta Spreng.

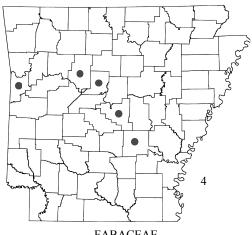
var. compacta

compact prairie-clover



FABACEAE **Dalea gattingeri (A.Heller) Barneby**

Gattinger's prairie-clover



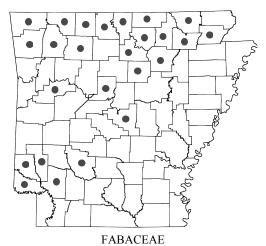
FABACEAE **Dalea lanata Spreng.**var. lanata

woolly prairie-clover



Dalea phleoides (Torr. & A.Gray) Shinners var. microphylla (Torr. & A.Gray) Barneby

little-leaf prairie-clover



Dalea purpurea Vent.

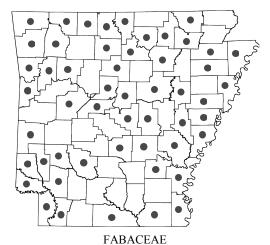
var. purpurea

purple prairie-clover



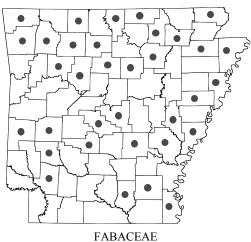
Dalea villosa (Nutt.) Spreng.
var. grisea (Torr. & A.Gray) Barneby

silky prairie-clover



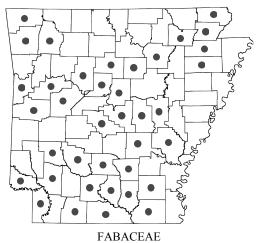
Desmanthus illinoensis (Michx.) MacMill. ex B.L.Rob. & Fernald

Illinois bundleflower, prairie-mimosa



Desmodium canescens (L.) DC.

hoary tick-trefoil, beggar's-lice



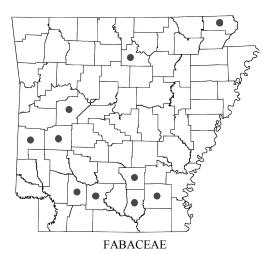
Desmodium ciliare (Muhl. ex Willd.) DC.

tick-trefoil, beggar's-lice



Desmodium cuspidatum (Muhl. ex Willd.) DC. ex Loudon

tick-trefoil, beggar's-lice



Desmodium glabellum (Michx.) DC.

tick-trefoil, beggar's-lice



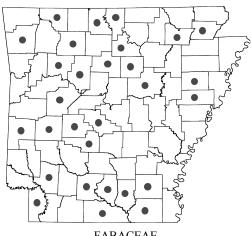
Desmodium glutinosum (Muhl. ex Willd.) A.W.Wood

tick-trefoil, beggar's-lice



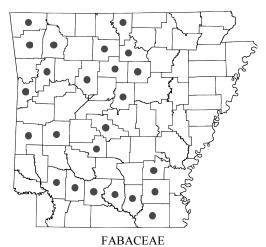
Desmodium illinoense A.Gray

Illinois tick-trefoil, beggar's-lice



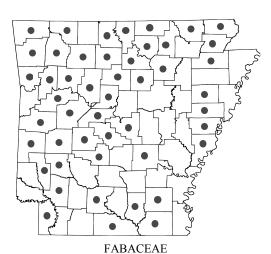
FABACEAE **Desmodium laevigatum (Nutt.) DC.**

smooth tick-trefoil, beggar's-lice



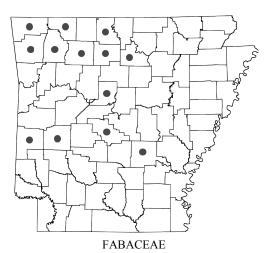
Desmodium marilandicum (L.) DC.

tick-trefoil, beggar's-lice



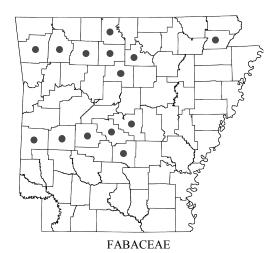
Desmodium nudiflorum (L.) DC.

naked-flower tick-trefoil, beggar's-lice



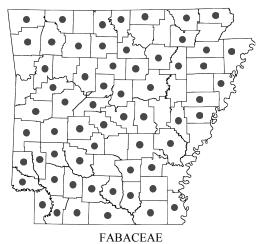
Desmodium nuttallii (Schindl.) B.G.Schub.

Nuttall's tick-trefoil, beggar's-lice



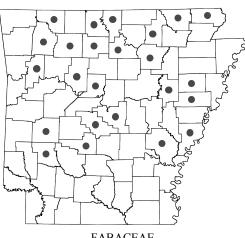
Desmodium obtusum (Muhl. ex Willd.) DC.

tick-trefoil, beggar's-lice



Desmodium paniculatum (L.) DC.

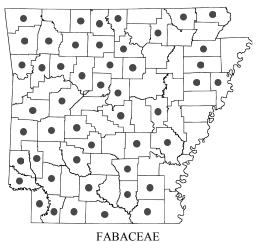
panicled tick-trefoil, beggar's-lice



FABACEAE

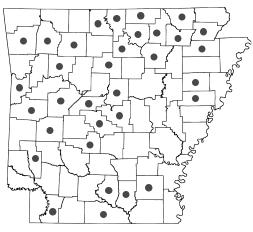
Desmodium pauciflorum (Nutt.) DC.

few-flower tick-trefoil, beggar's-lice



Desmodium perplexum B.G.Schub.

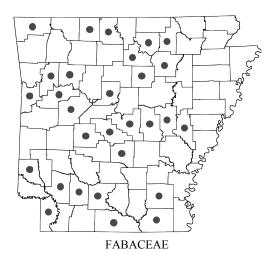
tick-trefoil, beggar's-lice



FABACEAE

Desmodium rotundifolium (Michx.) DC.

dollar-leaf, round-leaf tick-trefoil



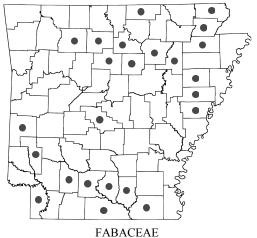
Desmodium sessilifolium (Torr. ex M.A.Curtis) Torr. & A.Gray

sessile-leaf tick-trefoil, beggar's-lice



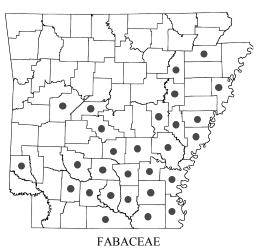
Desmodium tortuosum (Sw.) DC.

Florida beggarweed, beggar's-lice



Desmodium viridiflorum (L.) DC.

velvet-leaf tick-trefoil, beggar's-lice



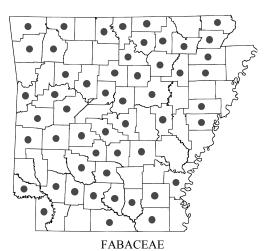
Dioclea multiflora (Torr. & A.Gray) C.Mohr

cluster-pea



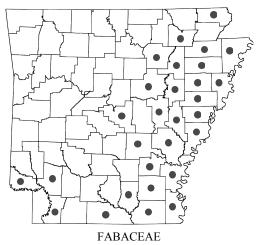
Erythrina herbacea L.

coral-bean, Cherokee-bean, cardinal-spear



Galactia volubilis (L.) Britton

downy milk-pea



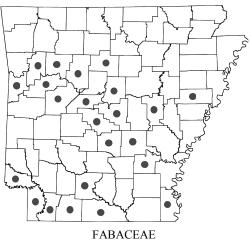
Gleditsia aquatica Marshall

water locust



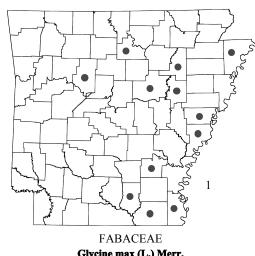
Gleditsia triacanthos L.

honey locust



Glottidium vesicarium (Jacq.) R.M.Harper

bladderpod, bagpod



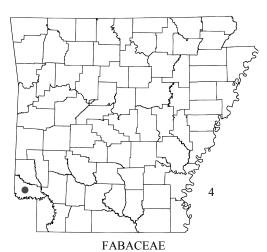
Glycine max (L.) Merr.

soybean



Gymnocladus dioicus (L.) K.Koch

Kentucky coffee-tree



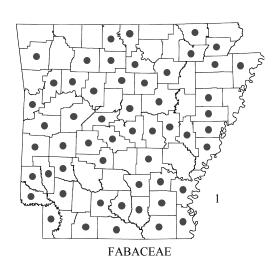
Indigofera miniata Ortega

scarlet-pea



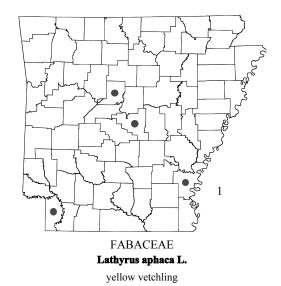
Kummerowia stipulacea (Maxim.) Makino

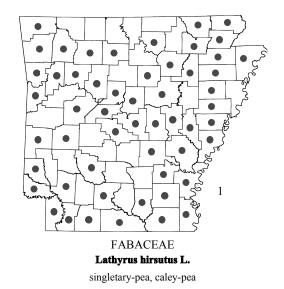
Korean bush-clover, Korean lespedeza

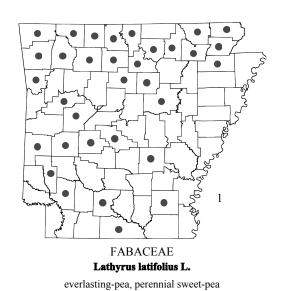


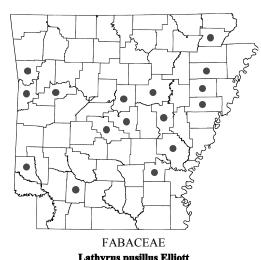
Kummerowia striata (Thunb.) Schindl.

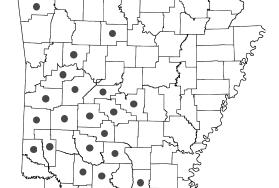
Japanese bush-clover, Japanese lespedeza





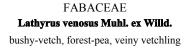


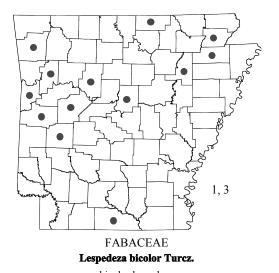


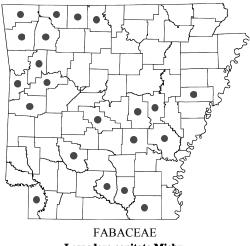


FABACEAE

Lathyrus pusillus Elliott
low vetchling

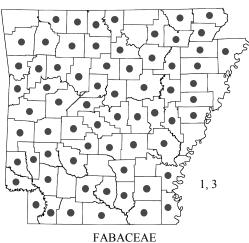






Lespedeza capitata Michx.

round-head bush-clover



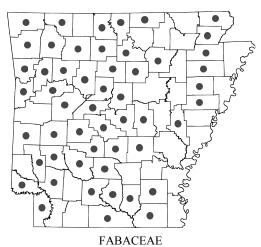
Lespedeza cuneata (Dum.Cours.) G.Don

sericea lespedeza



Lespedeza frutescens (L.) Hornem.

violet bush-clover



Lespedeza hirta (L.) Hornem.

var. hirta

hairy bush-clover



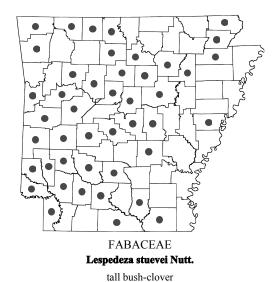
Lespedeza procumbens Michx.

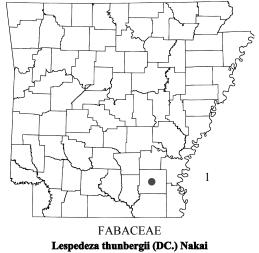
trailing bush-clover



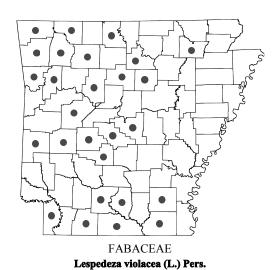
Lespedeza repens (L.) W.P.C.Barton

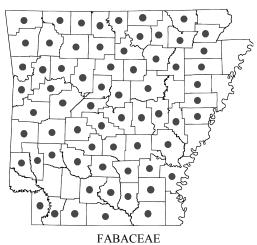
creeping bush-clover





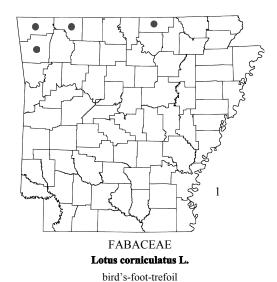
Thunberg's bush-clover

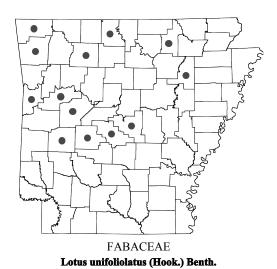




bush-clover







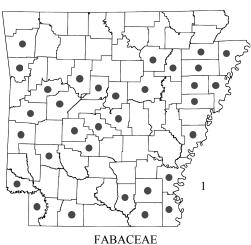
var. unifoliolatus

American bird's-foot-trefoil



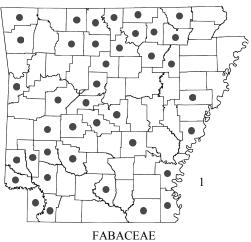
Lupinus texensis Hook.

Texas bluebonnet



Medicago arabica (L.) Huds.

spotted medick, spotted bur-clover



Medicago lupulina L.

black medick



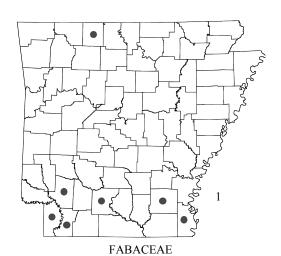
Medicago minima (L.) L. ex Bartal.

bur medick, little bur-clover



Medicago orbicularis (L.) Bartal.

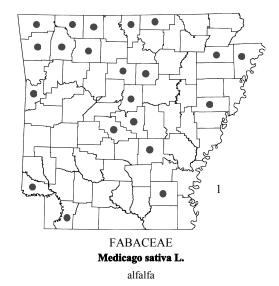
button medick

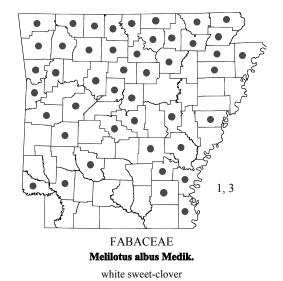


Medicago polymorpha L.

toothed medick, bur-clover

234 FABACEAE / Medicago

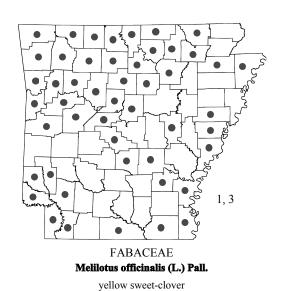


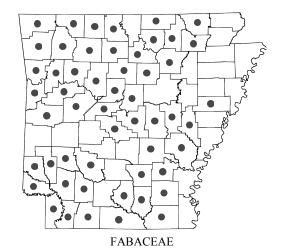


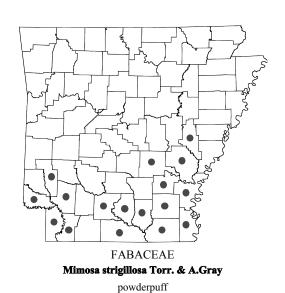
FABACEAE

Melilotus indicus (L.) All.

sour-clover





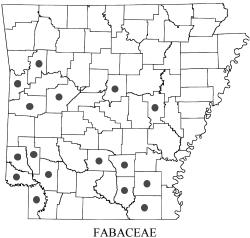


Mimosa quadrivalvis L.

var. nuttallii (DC. ex Britton & Rose) Beard ex Barneby

sensitive-brier

Free download edition. Not for commercial sale.



Neptunia lutea (Leavenw.) Benth.

yellow-puff



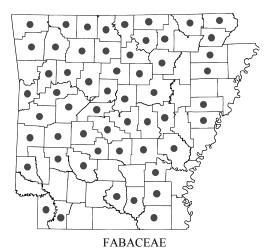
Neptunia oleracea Lour.

water-mimosa, garden-puff, water sensitive plant



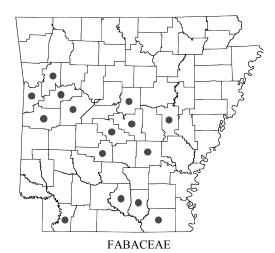
FABACEAE Orbexilum onobrychis (Nutt.) Rydb.

French-grass



Orbexilum pedunculatum (Mill.) Rydb. var. pedunculatum

Sampson's-snakeroot



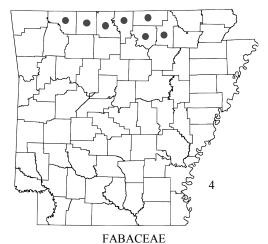
Orbexilum simplex (Nutt. ex Torr. & A.Gray) Rydb.

leather-root



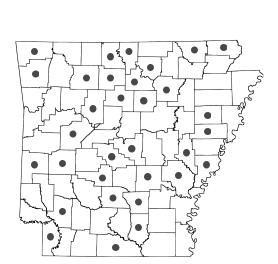
Pediomelum digitatum (Nutt. ex Torr. & A.Gray) Isely

palm-leaf Indian-breadroot, palm-leaf scurf-pea



Pediomelum esculentum (Pursh) Rydb.

large Indian-breadroot, prairie-turnip



FABACEAE

Phaseolus polystachios (L.) Britton, Sterns & Poggenb.

wild bean

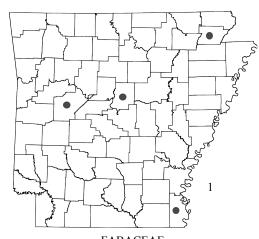


Prosopis glandulosa Torr.
var. glandulosa
mesquite

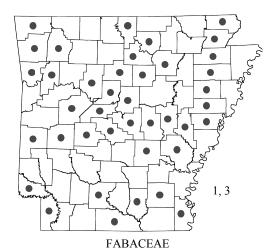


Pediomelum hypogaeum (Nutt. ex Torr. & A.Gray) Rydb.
var. subulatum (Bush) J.W.Grimes

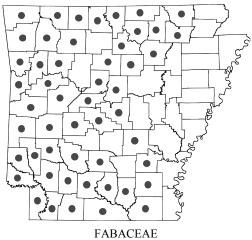
buried Indian-breadroot



FABACEAE **Pisum sativum L.**garden pea



Pueraria montana (Lour.) Merr. var. lobata (Willd.) Maesen & Almeida ex Sanjappa & Preedeep kudzu



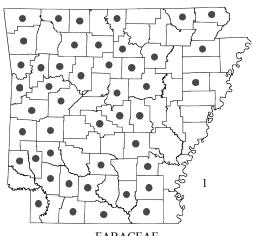
Rhynchosia latifolia Nutt. ex Torr. & A.Gray

snout-bean



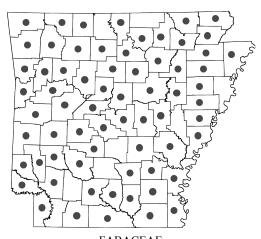
Rhynchosia minima (L.) DC.

least snout-bean



FABACEAE Robinia hispida L. var. hispida

bristly locust



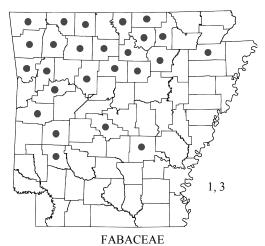
FABACEAE Robinia pseudoacacia L.

black locust



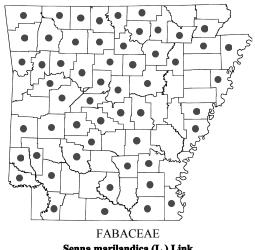
Robinia viscosa Vent. var. hartwigii (Koehne) Ashe

clammy locust



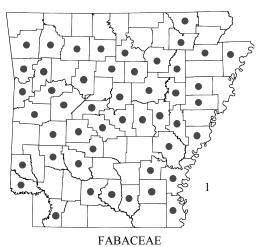
Securigera varia (L.) Lassen

crown-vetch



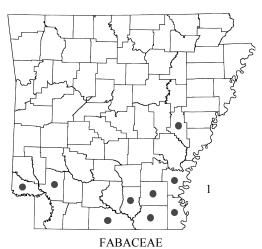
Senna marilandica (L.) Link

wild senna



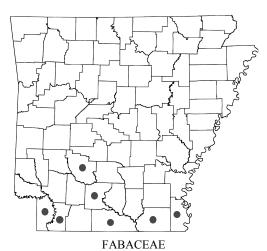
Senna obtusifolia (L.) H.S.Irwin & Barneby

sicklepod, coffee-weed



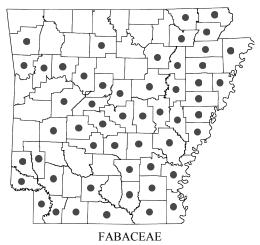
Senna occidentalis (L.) Link

coffee senna, coffee-weed



Sesbania drummondii (Rydb.) Cory

rattlebush, poison-bean



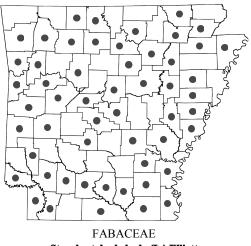
Sesbania herbacea (Mill.) McVaugh

coffee-bean, coffee-weed



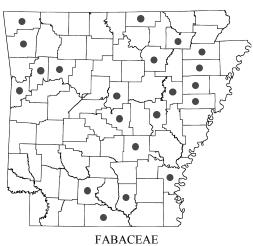
Sesbania punicea (Cav.) Benth.

scarlet rattlebox



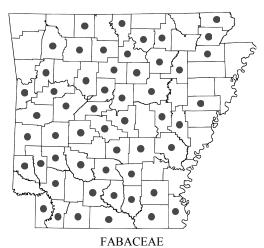
Strophostyles helvola (L.) Elliott

wild bean



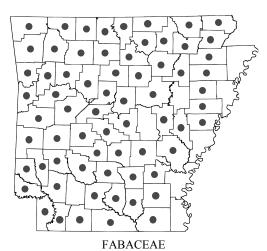
Strophostyles leiosperma (Torr. & A.Gray) Piper

wild bean



Strophostyles umbellata (Muhl. ex Willd.) Britton in Britton & A.Br.

wild bean



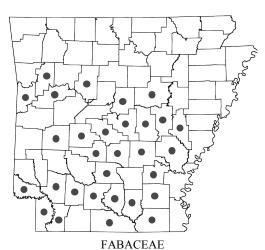
Stylosanthes biflora (L.) Britton, Sterns & Poggenb.

pencil-flower



Styphnolobium affine (Torr. & A.Gray) Walp.

Eve's necklace, Texas sophora



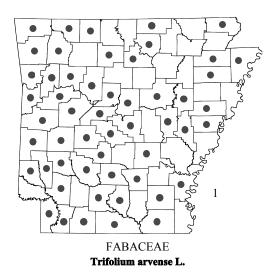
Tephrosia onobrychoides Nutt.

hoary-pea



Tephrosia virginiana (L.) Pers.

goat's-rue



rabbit's-foot clover



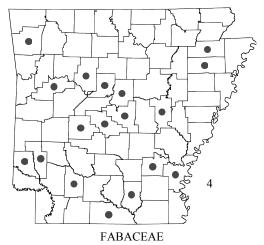
Trifolium bejariense Moric.

Bejar clover



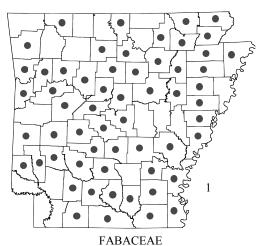
Trifolium campestre Schreb.

hop clover



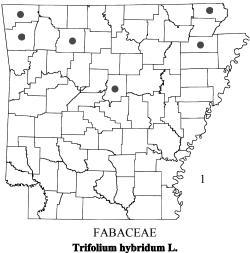
Trifolium carolinianum Michx.

Carolina clover, wild white clover



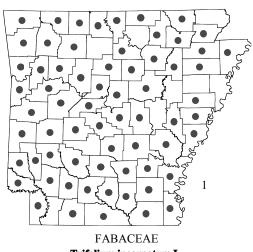
Trifolium dubium Sibth.

small hop clover



Trifolium hybridum L.

Alsike clover



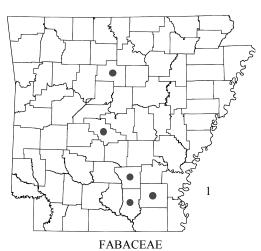
Trifolium incarnatum L.

crimson clover



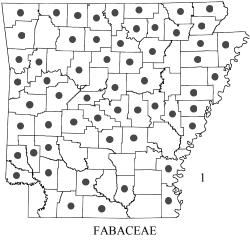
Trifolium lappaceum L.

lappa clover, burdock clover



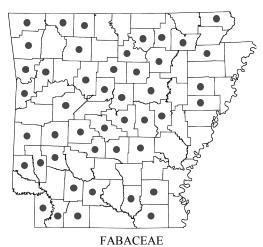
Trifolium nigrescens Viv.

ball clover



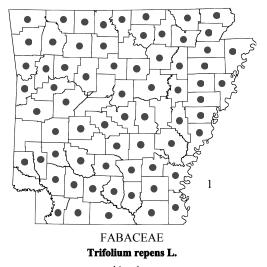
Trifolium pratense L.

red clover

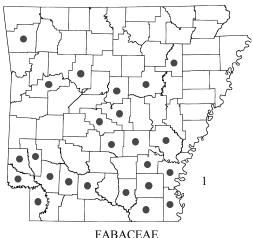


Trifolium reflexum L.

buffalo clover

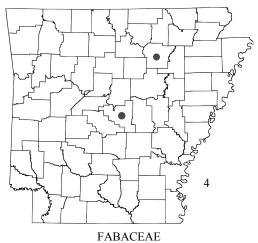


white clover



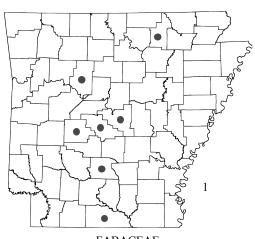
FABACEAE

Trifolium resupinatum L. Persian clover, reversed clover



Trifolium stoloniferum Muhl. ex Eaton

running buffalo clover



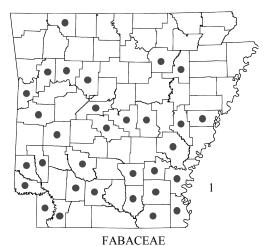
FABACEAE

Trifolium striatum L. knotted clover



Trifolium subterraneum L.

subterranean clover



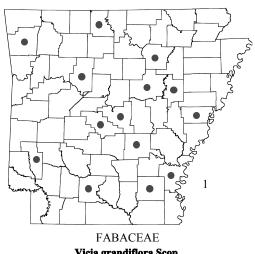
Trifolium vesiculosum Savi

arrow-leaf clover



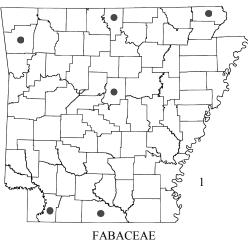
Vicia caroliniana Walter

wood vetch



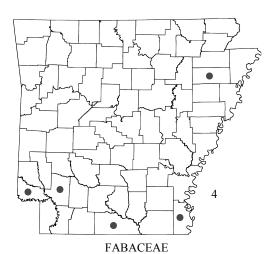
Vicia grandiflora Scop.

large yellow vetch



Vicia hirsuta (L.) Gray

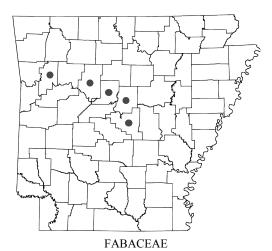
tiny vetch



Vicia ludoviciana Nutt. ex Torr. & A.Gray

subsp. leavenworthii (Torr. & A.Gray) Lassetter & C.R.Gunn

Leavenworth's vetch, deer pea vetch



Vicia ludoviciana Nutt. ex Torr. & A.Gray

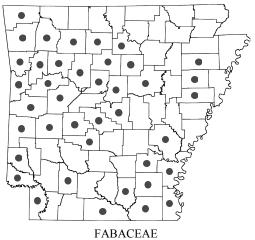
subsp. ludoviciana

Louisiana vetch, deer pea vetch



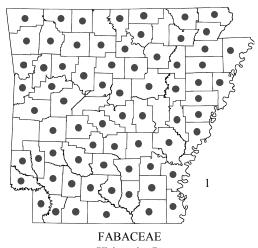
Vicia lutea L. yellow vetch

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Vicia minutiflora D.Dietr.

small-flower vetch, pygmy-flower vetch



Vicia sativa L.

subsp. nigra (L.) Ehrh.

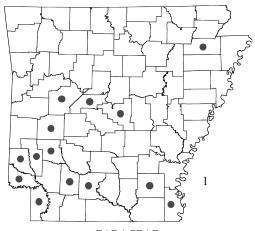
common vetch, narrow-leaf vetch



FABACEAE

Vicia sativa L.

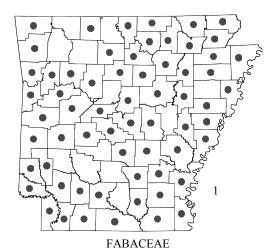
subsp. sativa common vetch



FABACEAE

Vicia tetrasperma (L.) Schreb.

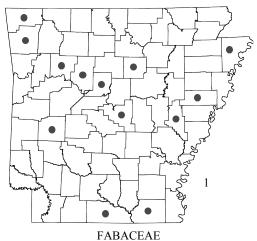
lentil vetch



Vicia villosa Roth.

subsp. varia (Host) Corb.

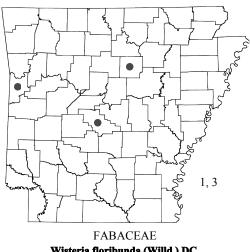
smooth vetch, winter vetch



Vicia villosa Roth.

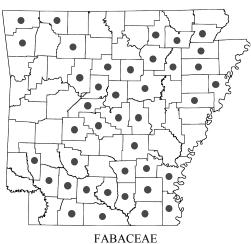
subsp. villosa

hairy vetch, winter vetch



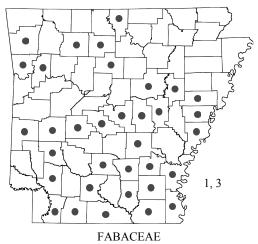
Wisteria floribunda (Willd.) DC.

Japanese wisteria



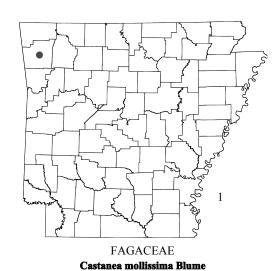
Wisteria frutescens (L.) Poir.

American wisteria



Wisteria sinensis (Sims) Sweet

Chinese wisteria

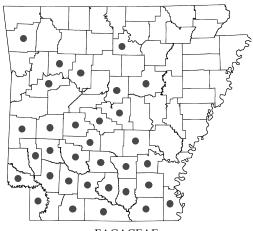


Chinese chestnut



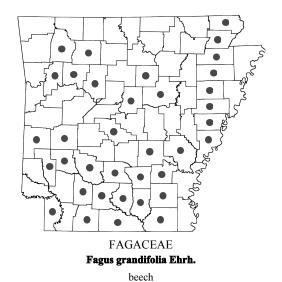
Castanea pumila (L.) Mill. var. ozarkensis (Ashe) G.E.Tucker

Ozark chinquapin



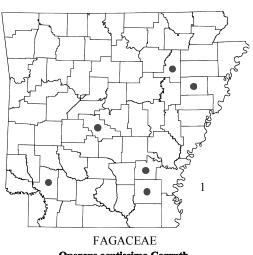
FAGACEAE Castanea pumila (L.) Mill. var. pumila

Allegheny chinquapin

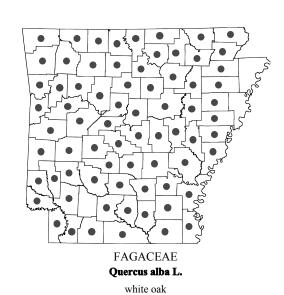


FAGACEAE

Quercus acerifolia (E.J.Palmer) Stoynoff & W.J.Hess maple-leaf oak



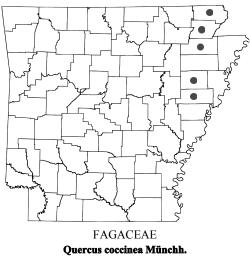




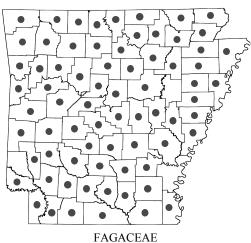








scarlet oak



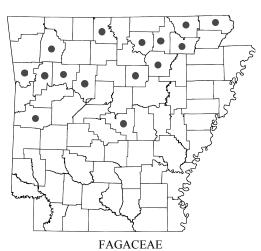
Quercus falcata Michx.

southern red oak, Spanish oak



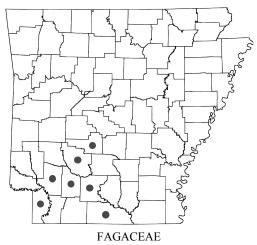
Quercus hemisphaerica W.Bartram ex Willd.

Darlington's oak, laurel oak



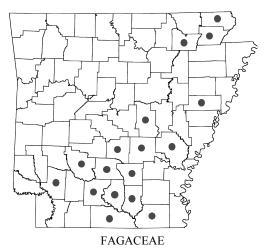
Quercus imbricaria Michx.

shingle oak



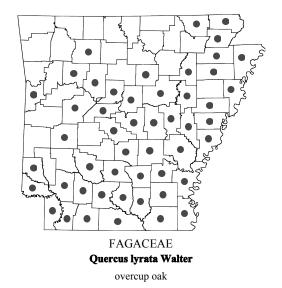
Quercus incana W.Bartram

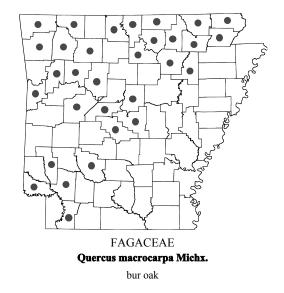
bluejack oak

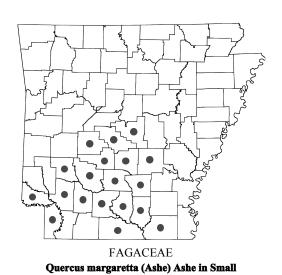


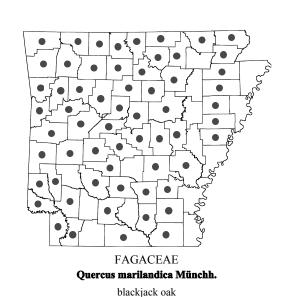
Quercus laurifolia Michx.

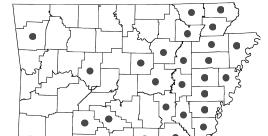
laurel oak





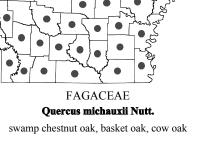


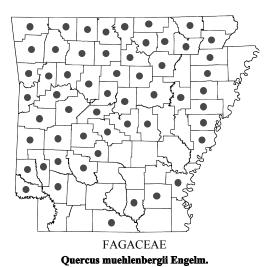


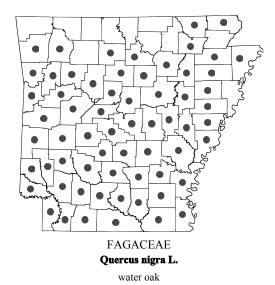


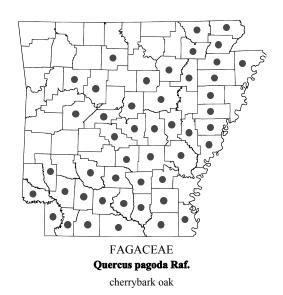
sand post oak, Margaretta's oak

See *Appendix I* for infraspecific taxa and species status.



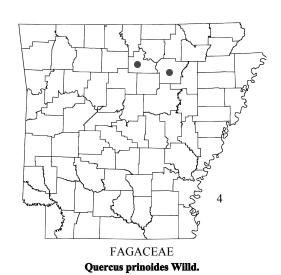




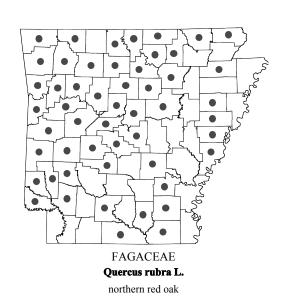


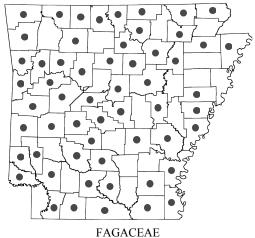






dwarf chinquapin oak, dwarf chestnut oak

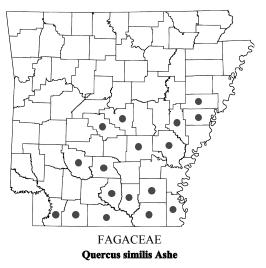




Quercus shumardii Buckley

Shumard's oak, spotted oak

See $Appendix\ I$ for infraspecific taxa and species status.



delta post oak, swamp post oak

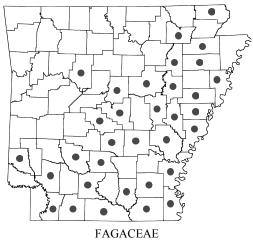


Quercus sinuata WalterDurand's white oak, bastard oak

FAGACEAE

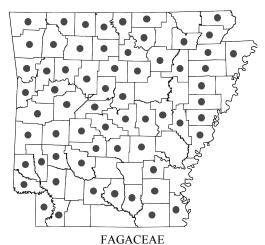
Quercus stellata Wangenh.

post oak



Quercus texana Buckley

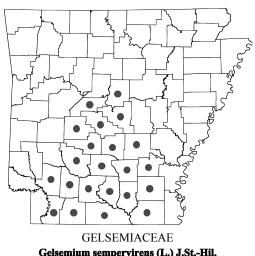
Nuttall's oak



Quercus velutina Lam. in Lam. et al.

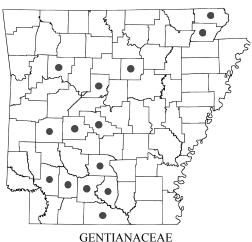
black oak



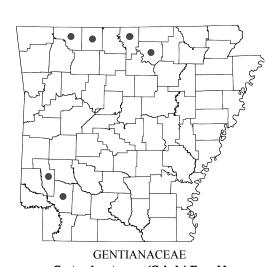


Gelsemium sempervirens (L.) J.St.-Hil.

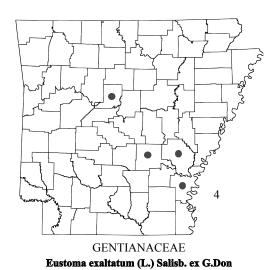
Carolina jasmine, yellow jessamine



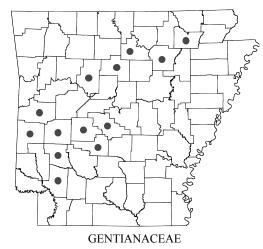
GENTIANACEAE Bartonia paniculata (Michx.) Muhl. subsp. paniculata screw-stem



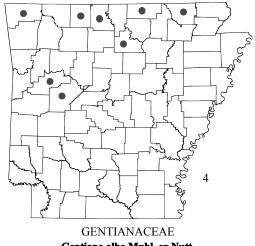
Centaurium texense (Griseb.) Fernald Lady Bird's centaury



catchfly prairie-gentian

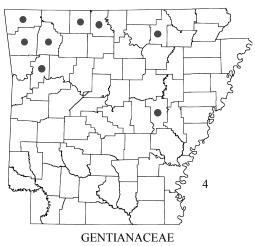


Frasera caroliniensis Walter American columbo



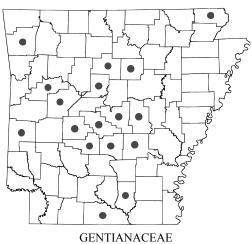
Gentiana alba Muhl. ex Nutt.

pale gentian



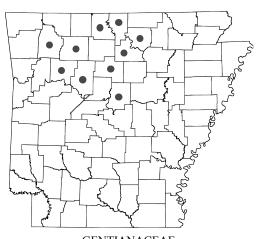
Gentiana puberulenta J.S.Pringle

downy gentian



Gentiana saponaria L.

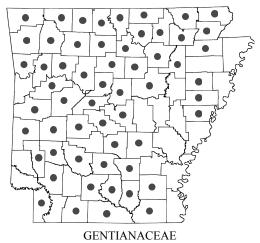
bottle gentian, soapwort gentian



GENTIANACEAE

Gentianella quinquefolia (L.) Small var. occidentalis (A.Gray) Small

stiff gentian, agueweed



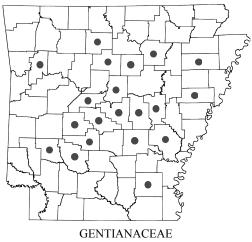
Sabatia angularis (L.) Pursh

rose-gentian, rose-pink



Sabatia arkansana J.S.Pringle & Witsell

Pelton's rose-gentian

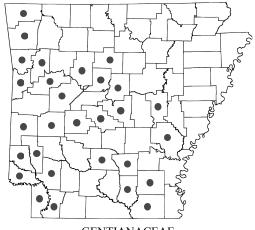


Sabatia brachiata Elliott

narrow-leaf rose-gentian, rose-pink



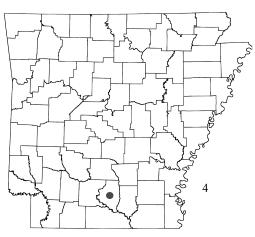
Sabatia campanulata (L.) Torr. slender rose-gentian, slender marsh-pink



GENTIANACEAE

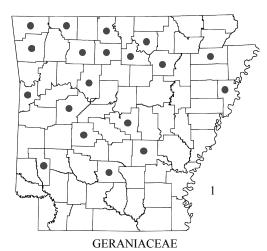
Sabatia campestris Nutt.

rose-gentian, rose-pink



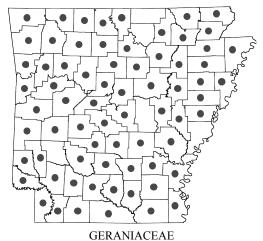
GENTIANACEAE

Sabatia gentianoides Elliott pinewoods rose-gentian



Erodium cicutarium (L.) L' Hér. ex Aiton

pink-needle, red-stem filaree, stork's-bill



Geranium carolinianum L.

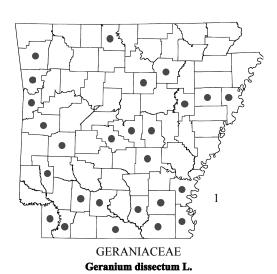
var. carolinianum

Carolina crane's-bill, Carolina geranium

254 GERANIACEAE / Geranium



long-stalk crane's-bill

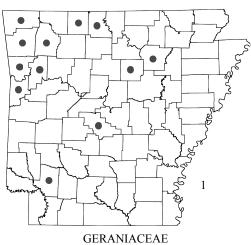


cut-leaf crane's-bill



Geranium maculatum L.

wild geranium, spotted crane's-bill



Geranium molle L.

dove's-foot crane's-bill



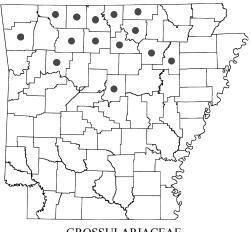
Geranium pusillum L.

small-flower crane's-bill



Geranium texanum (Trel.) A.Heller

Texas crane's-bill, Texas geranium

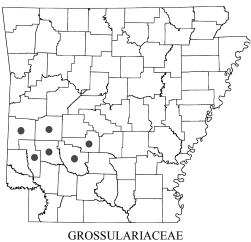


GROSSULARIACEAE

Ribes aureum Pursh

var. villosum DC. in DC. & A.DC.

golden currant, buffalo currant



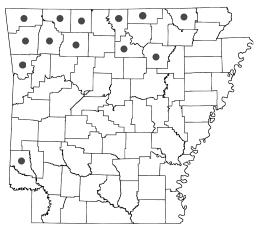
Ribes curvatum Small

granite gooseberry



Ribes cynosbati L.

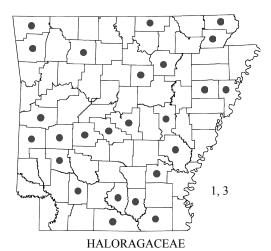
prickly gooseberry



GROSSULARIACEAE

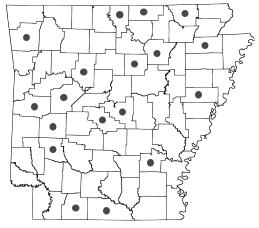
Ribes missouriense Nutt. in Torr. & A.Gray

Missouri gooseberry



Myriophyllum aquaticum (Vell.) Verdc.

parrot's-feather

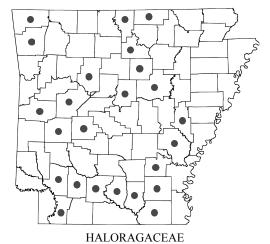


HALORAGACEAE

 ${\bf Myriophyllum\ heterophyllum\ Michx.}$

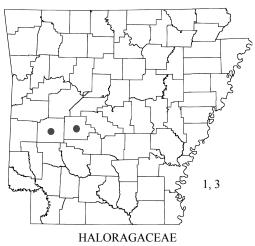
water-milfoil

256 HALORAGACEAE / Myriophyllum



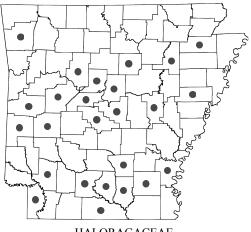
Myriophyllum pinnatum (Walter) Britton, Sterns & Poggenb.

cut-leaf water-milfoil, green parrot's-feather



Myriophyllum spicatum L.

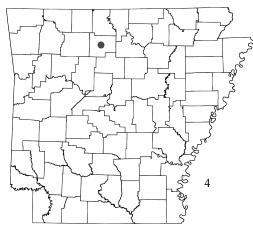
Eurasian water-milfoil



HALORAGACEAE

Proserpinaca palustris L.

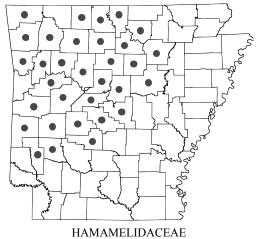
mermaid-weed



HAMAMELIDACEAE

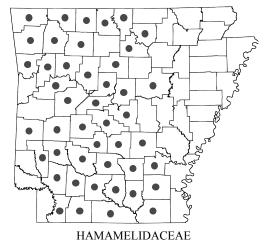
Fothergilla major Lodd.

witch-alder



Hamamelis vernalis Sarg.

vernal witch-hazel, Ozark witch-hazel



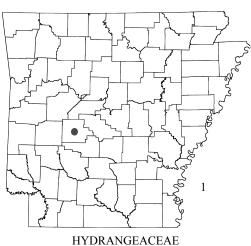
Hamamelis virginiana L.

American witch-hazel



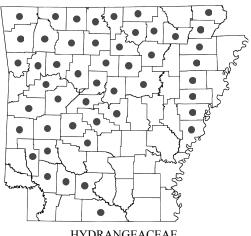
Decumaria barbara L.

climbing-hydrangea, woodvamp



Deutzia scabra Thunb.

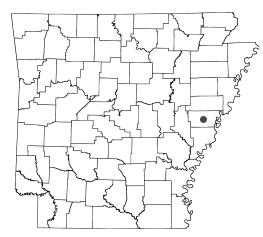
deutzia, pride-of-Rochester



HYDRANGEACEAE

Hydrangea arborescens L.

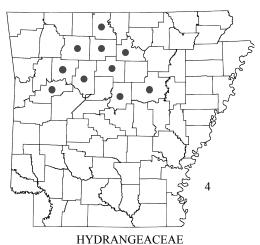
wild hydrangea



HYDRANGEACEAE

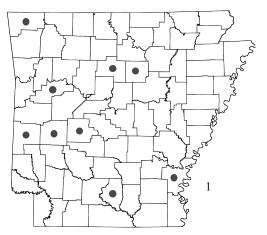
Hydrangea quercifolia W.Bartram

oak-leaf hydrangea



Philadelphus hirsutus Nutt.

hairy mock orange

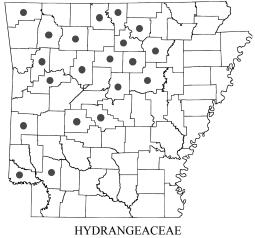


HYDRANGEACEAE

Philadelphus inodorus L.

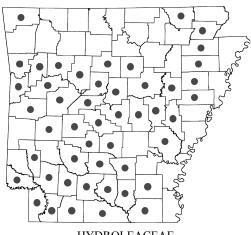
Appalachian mock orange

258 HYDRANGEACEAE / Philadelphus



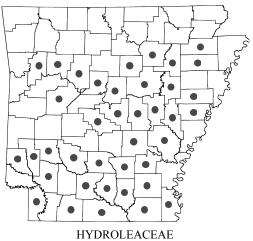
Philadelphus pubescens Loisel.

Ozark mock orange



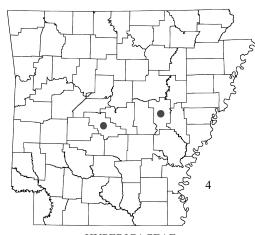
HYDROLEACEAE Hydrolea ovata Nutt. ex Choisy

blue-waterleaf, false fiddleleaf



Hydrolea uniflora Raf.

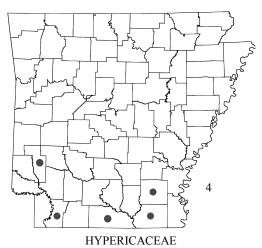
false fiddleleaf, blue-waterleaf



HYPERICACEAE

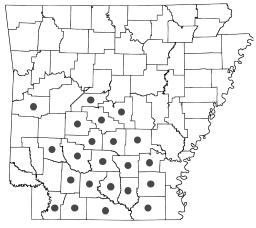
Hypericum adpressum Raf. ex W.P.C.Barton

creeping St. John's-wort



Hypericum apocynifolium Small

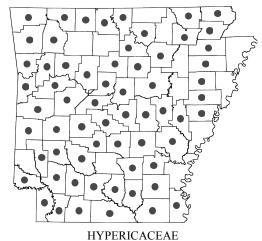
dogbane St. John's-wort



HYPERICACEAE

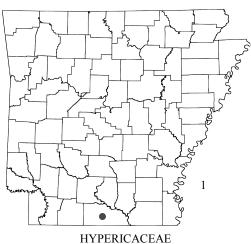
Hypericum crux-andreae (L.) Crantz

St. Peter's-wort



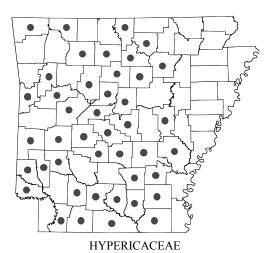
Hypericum drummondii (Grev. & Hook.) Torr. & A.Gray

nits-and-lice



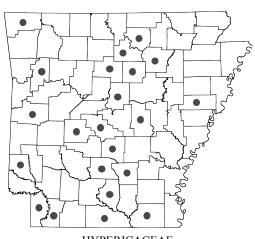
Hypericum fasciculatum Lam.

peel-bark St. John's-wort



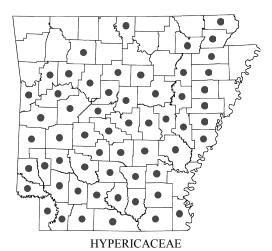
Hypericum gentianoides (L.) Britton, Sterns & Poggenb.

pine-weed, orange-grass



HYPERICACEAE Hypericum gymnanthum Engelm. & A.Gray

clasping-leaf St. John's-wort



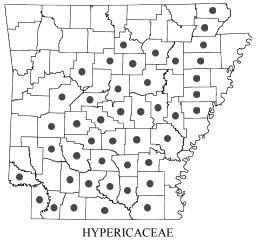
Hypericum hypericoides (L.) Crantz

subsp. hypericoides St. Andrew's-cross

HYPERICACEAE

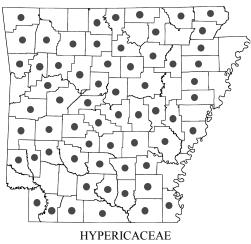
Hypericum hypericoides (L.) Crantz subsp. multicaule (Michx. ex Willd.) N.Robson

St. Andrew's-cross



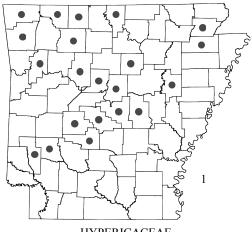
Hypericum lobocarpum Gatt.

five-lobe St. John's-wort



Hypericum mutilum L.

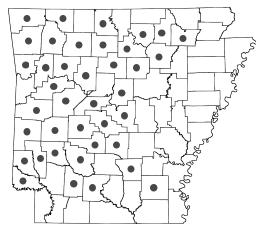
dwarf St. John's-wort



HYPERICACEAE

Hypericum perforatum L.

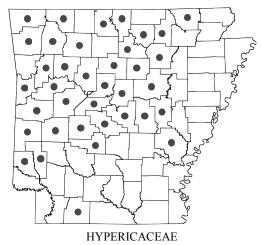
European St. John's-wort



HYPERICACEAE

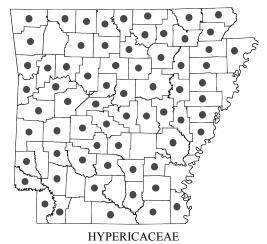
Hypericum prolificum L.

shrubby St. John's-wort



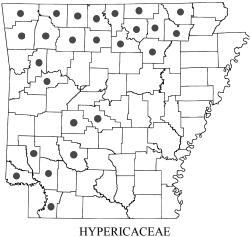
Hypericum pseudomaculatum Bush ex Britton

false spotted St. John's-wort



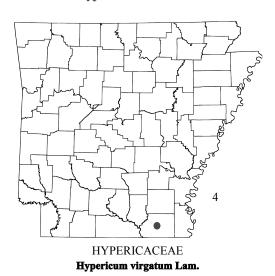
Hypericum punctatum Lam.

spotted St. John's-wort

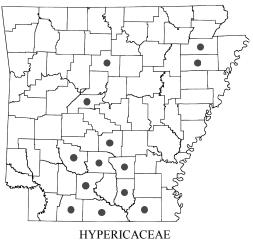


Hypericum sphaerocarpum Michx.

round-fruit St. John's-wort

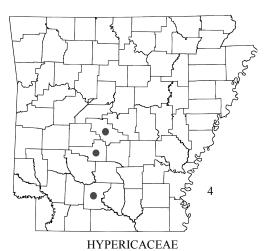


sharp-leaf St. John's-wort



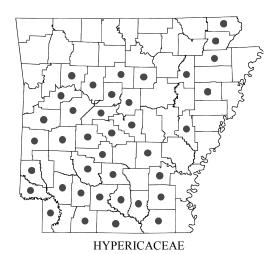
Triadenum tubulosum (Walter) Gleason

marsh-St. John's-wort



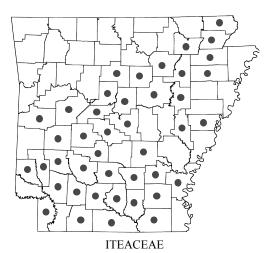
Triadenum virginicum (L.) Raf.

Virginia marsh-St. John's-wort



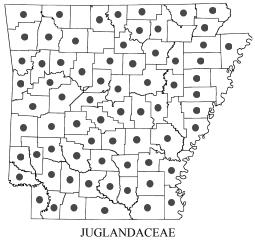
Triadenum walteri (J.F.Gmel.) Gleason

Walter's marsh-St. John's-wort



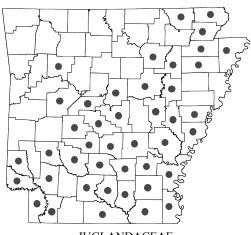
Itea virginica L.

Virginia sweetspire, Virginia-willow



Carya alba (L.) Nutt. ex Elliott

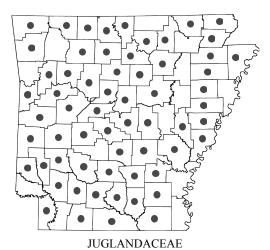
mockernut hickory



JUGLANDACEAE

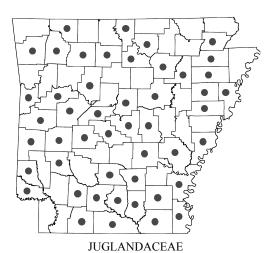
Carya aquatica (F.Michx.) Nutt.

water hickory, bitter-pecan



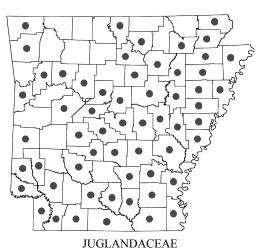
Carya cordiformis (Wangenh.) K.Koch

bitternut hickory



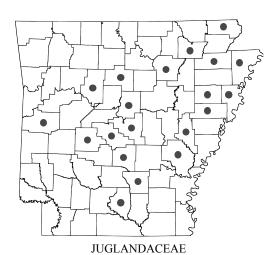
Carya glabra (Mill.) Sweet

pignut hickory, red hickory



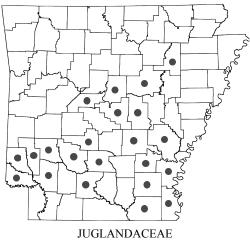
Carya illinoinensis (Wangenh.) K.Koch

pecan



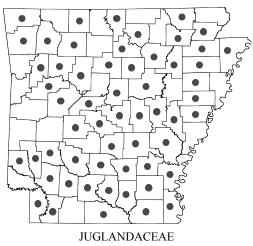
Carya laciniosa (F.Michx.) Loudon

shellbark hickory, kingnut hickory



Carya myristiciformis (F.Michx.) Nutt.

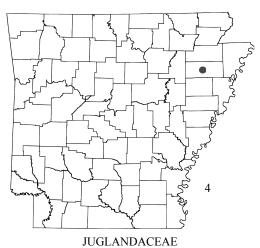
nutmeg hickory



Carya ovata (Mill.) K.Koch

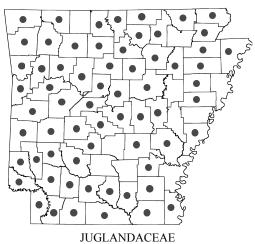
var. ovata

shagbark hickory



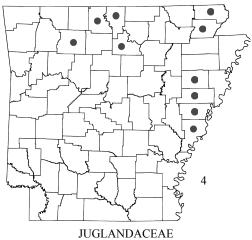
Carya pallida (Ashe) Engl. & Graebn.

pale hickory, sand hickory



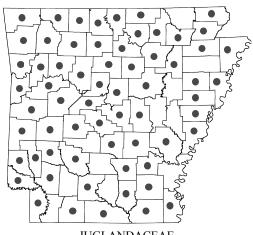
Carya texana Buckley

black hickory



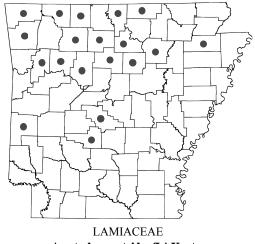
Juglans cinerea L.

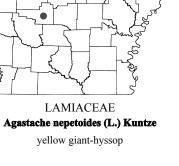
butternut, white walnut

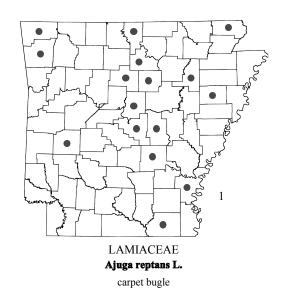


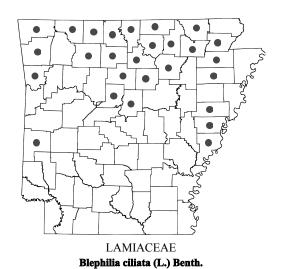
JUGLANDACEAE Juglans nigra L.

black walnut

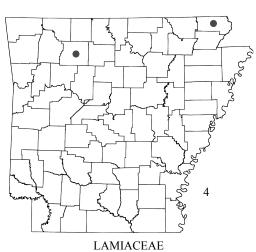






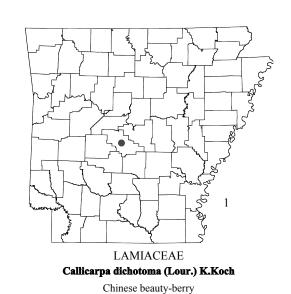


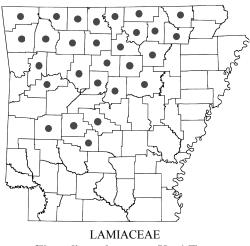
downy wood mint, Ohio horsemint



Blephilia hirsuta (Pursh) Benth. hairy wood mint

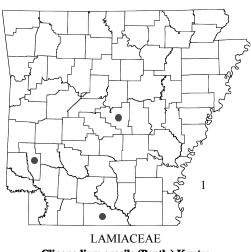






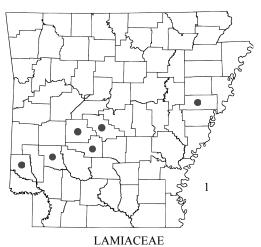
Clinopodium arkansanum (Nutt.) House

Arkansas calamint



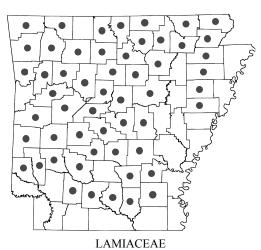
Clinopodium gracile (Benth.) Kuntze

wild basil



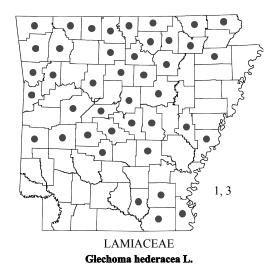
Clinopodium nepeta (L.) Kuntze

lesser calamint



Cunila origanoides (L.) Britton

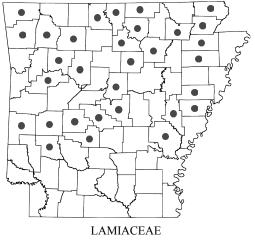
dittany



ground-ivy

LAMIACEAE

Hedeoma hispida Pursh rough false pennyroyal



Hedeoma pulegioides (L.) Pers.

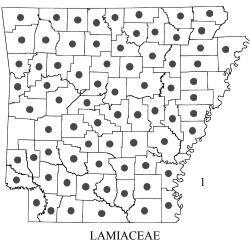
American false pennyroyal



LAMIACEAE **Hedeoma reverchonii (A.Gray) A.Gray**

var. reverchonii

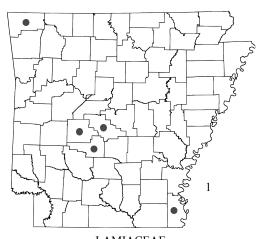
Reverchon's false pennyroyal



LAMIACEAE

Lamium amplexicaule L.

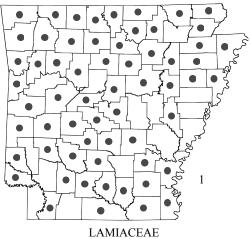
henbit



LAMIACEAE

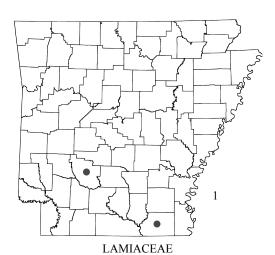
Lamium dissectum With.

cut-leaf dead-nettle



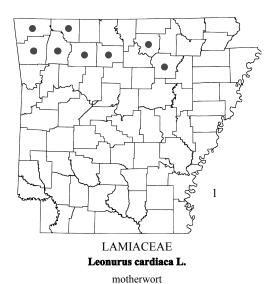
Lamium purpureum L.

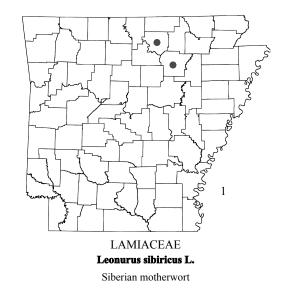
purple dead-nettle

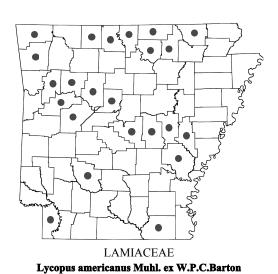


Leonotis nepetifolia (L.) R.Br. ex W.T.Aiton

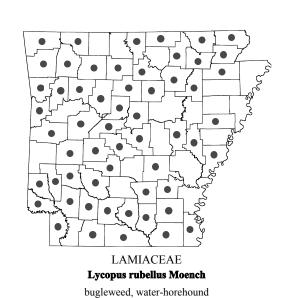
Christmas candlestick, lion's-ear

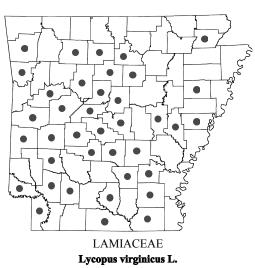


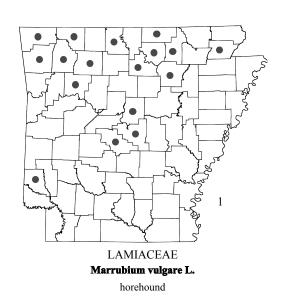


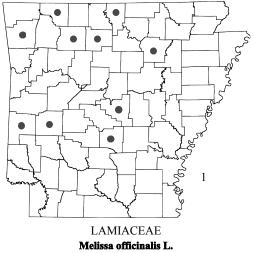


American bugleweed, American water-horehound

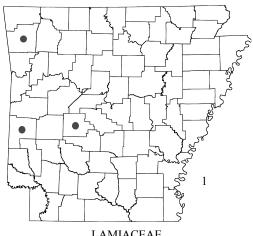








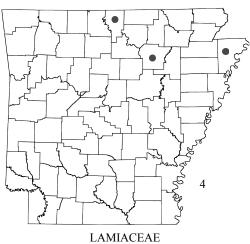
lemon balm



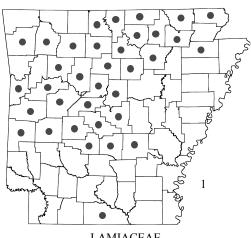
LAMIACEAE

Mentha aquatica L. var. citrata (Ehrh.) Fresen.

lemon mint



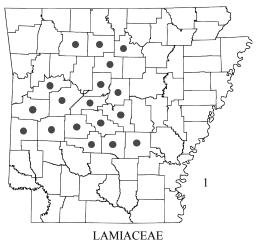
Mentha arvensis L. wild mint, field mint



LAMIACEAE

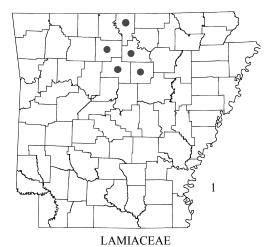
Mentha spicata L.

spearmint



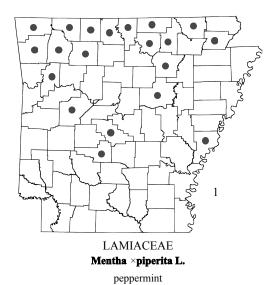
Mentha suaveolens Ehrh.

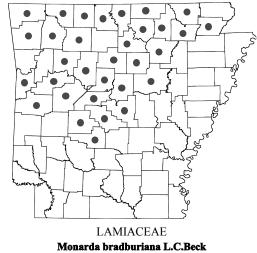
apple mint



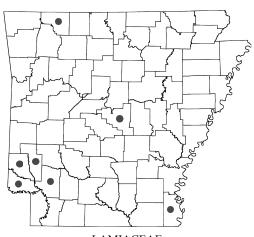
 $\boldsymbol{Mentha} \times \boldsymbol{gracilis} \ \boldsymbol{Sole}$

ginger mint

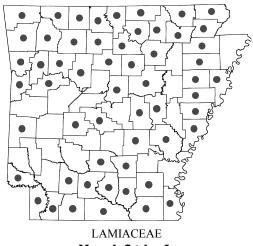




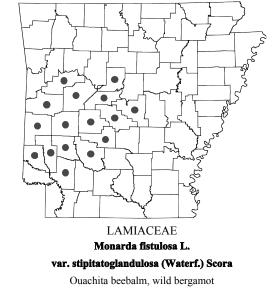
Bradbury's beebalm

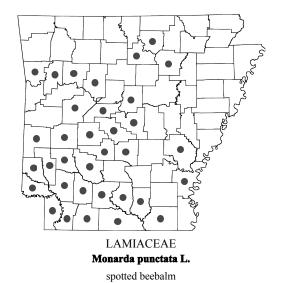


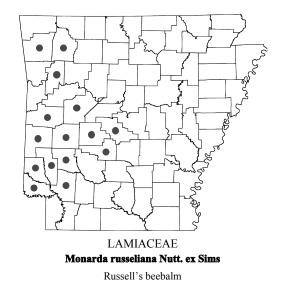
LAMIACEAE Monarda citriodora Cerv. ex Lag. Monarda fistulosa L. var. citriodora var. mollis (L.) Benth. lemon beebalm beebalm, wild bergamot

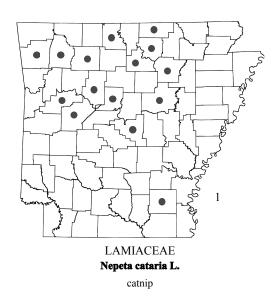


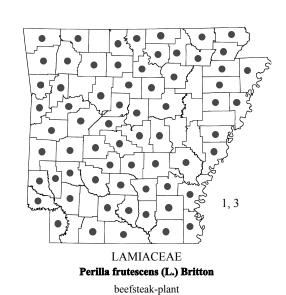
LAMIACEAE

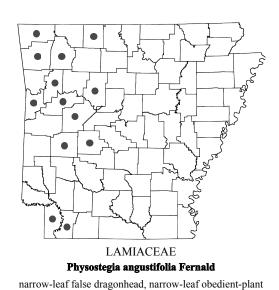


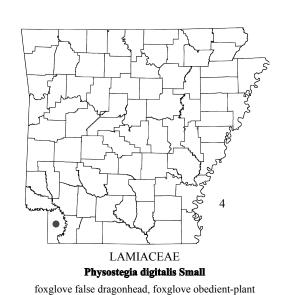


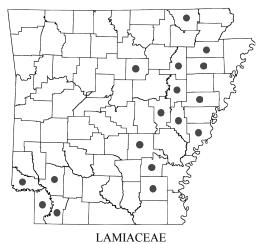






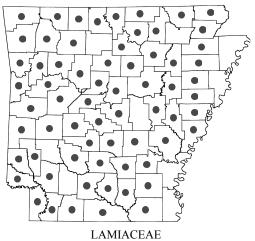






Physostegia intermedia (Nutt.) Engelm. & A.Gray

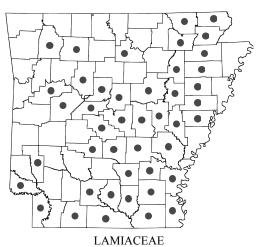
slender false dragonhead, slender obedient-plant



Prunella vulgaris L.

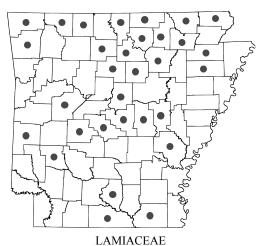
subsp. lanceolata (W.P.C.Barton) Hultén

heal-all, self-heal



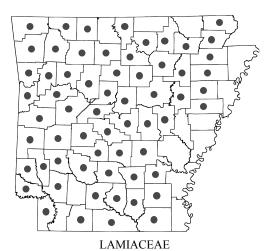
Pycnanthemum muticum (Michx.) Pers.

short-tooth mountain-mint, clustered mountain-mint



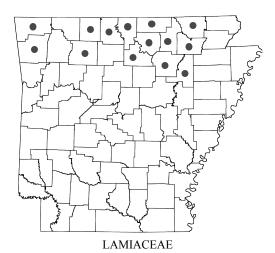
Physostegia virginiana (L.) Benth. subsp. praemorsa (Shinners) P.D.Cantino

obedient-plant, false dragonhead



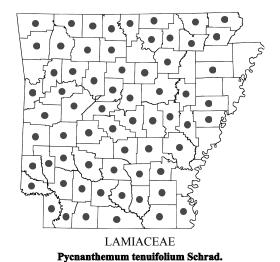
Pycnanthemum albescens Torr. & A.Gray

white-leaf mountain-mint

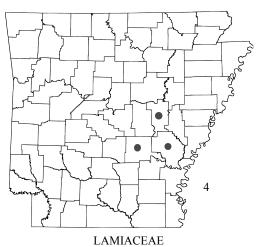


Pycnanthemum pilosum Nutt.

hairy mountain-mint

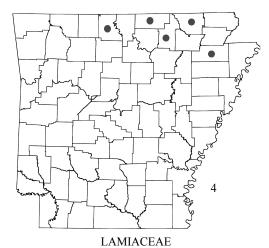


slender mountain-mint, narrow-leaf mountain-mint



Pycnanthemum verticillatum (Michx.) Pers.

whorled mountain-mint



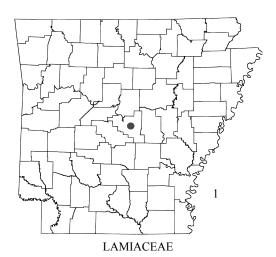
Pycnanthemum virginianum (L.) T.Durand & B.D.Jacks. ex B.L. Rob. & Fernald

Virginia mountain-mint



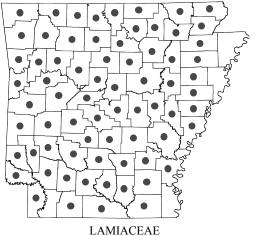
LAMIACEAE Salvia azurea Michx. ex Lam. var. grandiflora Benth.

blue sage



Salvia coccinea Buc'hoz ex Etl.

blood sage, scarlet sage

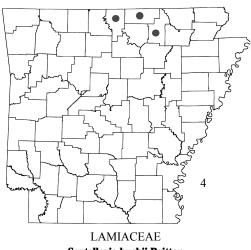


Salvia lyrata L.

lyre-leaf sage, cancer-weed

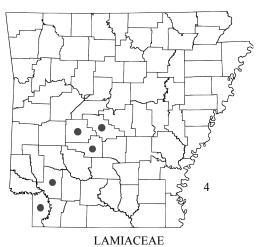


Rocky Mountain sage, lance-leaf sage



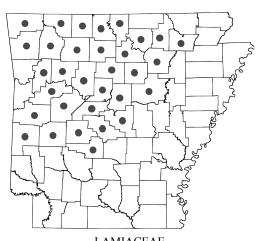
Scutellaria bushii Britton

Bush's skullcap



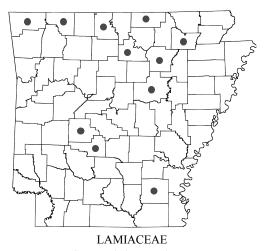
Scutellaria cardiophylla Engelm. & A.Gray

Gulf skullcap, heart-leaf skullcap



LAMIACEAE Scutellaria elliptica Muhl. ex Spreng. var. elliptica

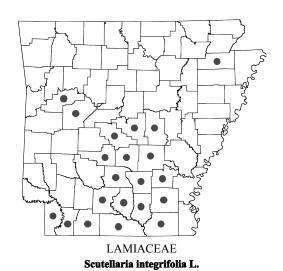
hairy skullcap



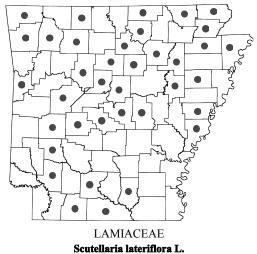
Scutellaria incana Biehler

var. incana

hoary skullcap



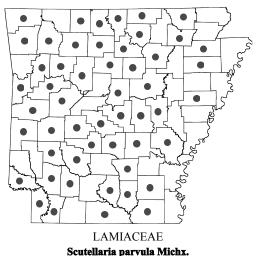
rough skullcap



LAMIACEAE
Scutellaria ovata Hill

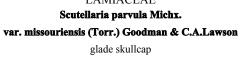
heart-leaf skullcap

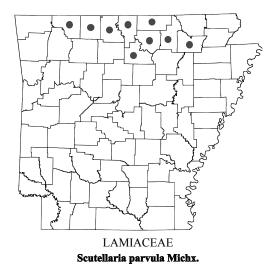
mad-dog skullcap

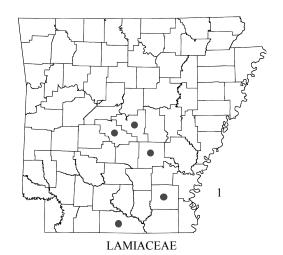


LAMIACEAE

Scutellaria parvula Michx.
var. australis Fassett
southern skullcap



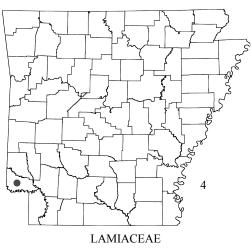




var. parvula small skullcap **Scutellaria racemosa Pers.**South American skullcap

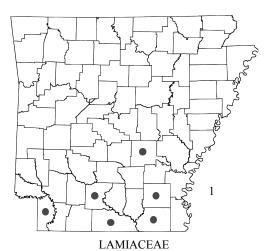


ironwort



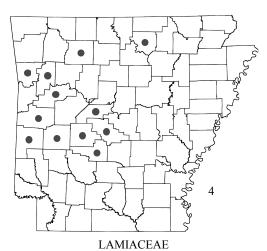
Stachys crenata Raf.

shade betony, mouse's-ear



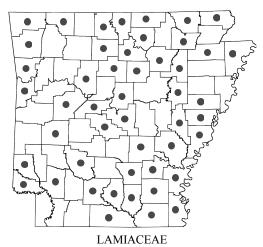
Stachys floridana Shuttlew. ex Benth.

Florida betony



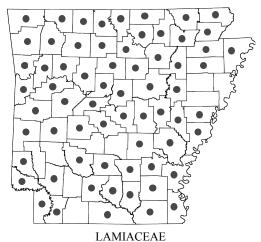
Stachys iltisii J.Nelson

Ouachita hedge-nettle



Stachys tenuifolia Willd.

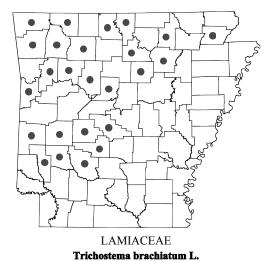
smooth hedge-nettle



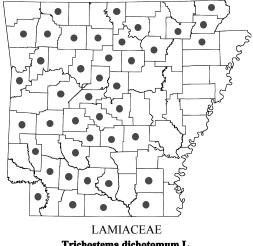
Teucrium canadense L.

var. canadense

American germander, wood sage

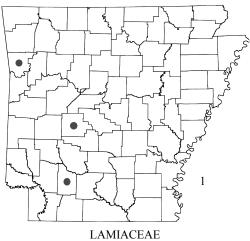


false pennyroyal, flux-weed



Trichostema dichotomum L.

forked blue-curls



Vitex agnus-castus L.

chaste-tree

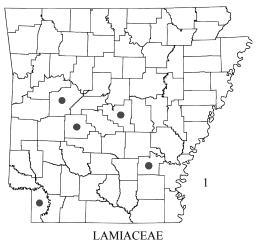


LAMIACEAE

Vitex negundo L.

var. cannabifolia (Sieb. & Zucc.) Hand.-Maz.

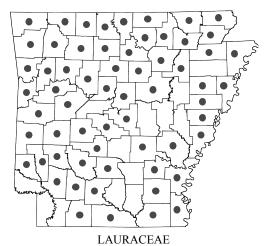
negundo chaste-tree, hemp-tree



Vitex negundo L.

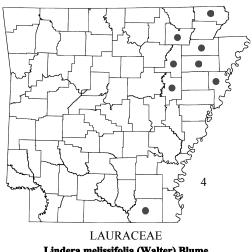
var. negundo

negundo chaste-tree



Lindera benzoin (L.) Blume

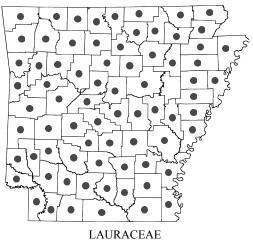
spicebush



Lindera melissifolia (Walter) Blume pondberry



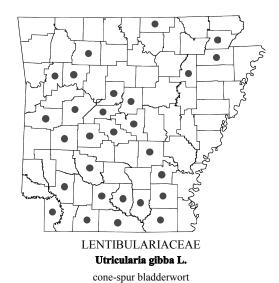
Persea borbonia (L.) Spreng. red bay

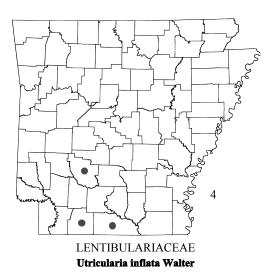


Sassafras albidum (Nutt.) Nees sassafras



Utricularia cornuta Michx. horned bladderwort



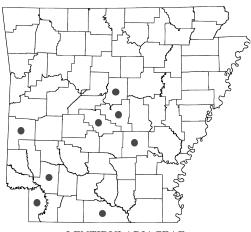


278 LENTIBULARIACEAE / Utricularia



Utricularia macrorhiza Leconte

greater bladderwort, common bladderwort



LENTIBULARIACEAE

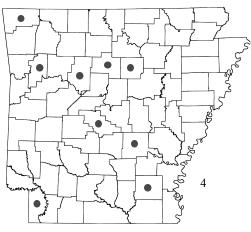
Utricularia radiata Small

small swollen bladderwort, small floating bladderwort



Utricularia striata Leconte ex Torr.

striped bladderwort



LENTIBULARIACEAE

Utricularia subulata L.

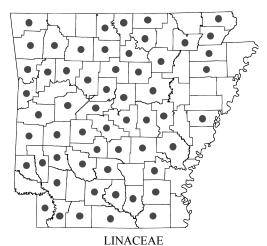
zigzag bladderwort, slender bladderwort



Linum lewisii Pursh

var. lewisii

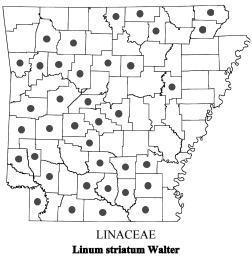
prairie flax



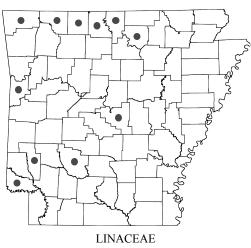
Linum medium (Planch.) Britton

var. texanum (Planch.) Fernald

common yellow flax



ridge-stem yellow flax

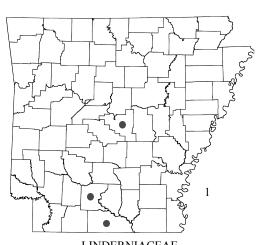


Linum sulcatum Riddell grooved yellow flax

LINACEAE

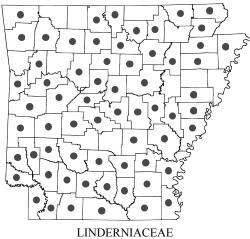
Linum usitatissimum L.

flax, linseed



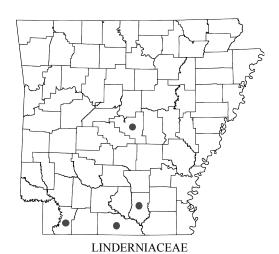
LINDERNIACEAE Lindernia crustacea (L.) F.Muell.

Malaysian false pimpernel



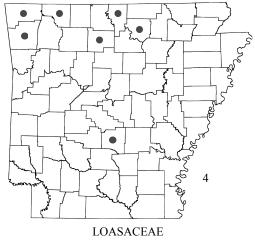
Lindernia dubia (L.) Pennell

false pimpernel



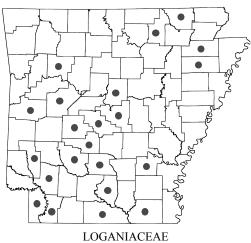
Micranthemum umbrosum (J.F.Gmel) S.F.Blake

shade mudflower



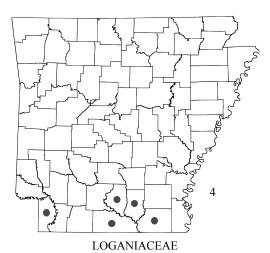
Mentzelia oligosperma Nutt. ex Sims

stick-leaf, chicken-thief



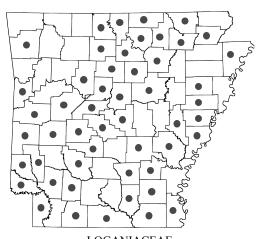
Mitreola petiolata (J.F.Gmel.) Torr. & A.Gray

lax hornpod



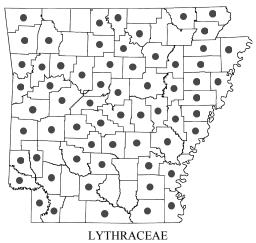
Mitreola sessilifolia (J.F.Gmel.) G.Don

swamp hornpod



LOGANIACEAE

Spigelia marilandica L.Indian-pink, pinkroot



Ammannia coccinea Rottb.

toothcup



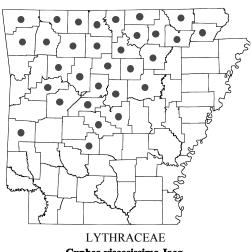
Ammannia robusta Heer & Regel

toothcup



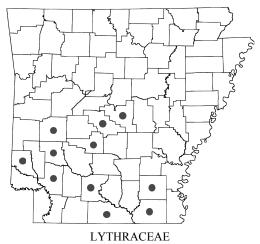
Cuphea carthagenensis (Jacq.) J.F.Macbr.

Colombian waxweed



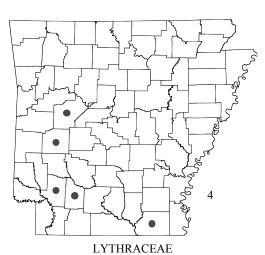
Cuphea viscosissima Jacq.

blue waxweed



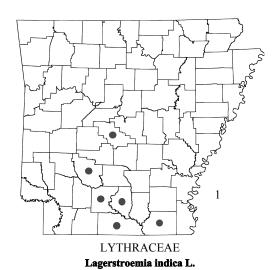
Decodon verticillatus (L.) Elliott

swamp-loosestrife



Didiplis diandra (Nutt. ex DC.) A.W.Wood

water-purslane



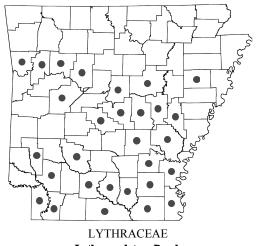
crape-myrtle

LYTHRACEAE

Lythrum alatum Pursh

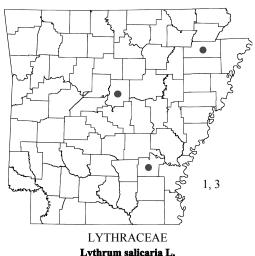
var. alatum

winged loosestrife



Lythrum alatum Pursh var. lanceolatum (Elliott) Rothr.

winged loosestrife



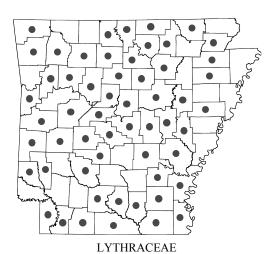
Lythrum salicaria L.

purple loosestrife



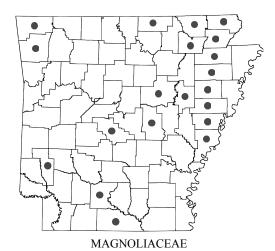
Rotala indica (Willd.) Koehne

Indian toothcup



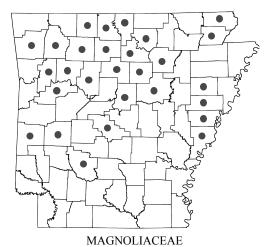
Rotala ramosior (L.) Koehne

toothcup



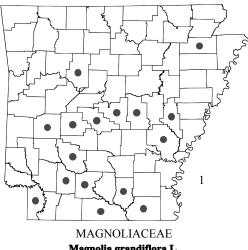
Liriodendron tulipifera L.

tulip-tree, tulip-poplar, yellow-poplar



Magnolia acuminata (L.) L.

cucumber magnolia, cucumber-tree



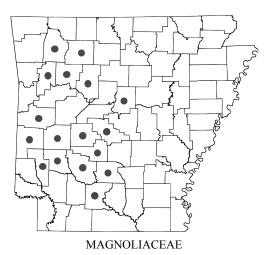
MAGNOLIACEAE

Magnolia grandiflora L.

southern magnolia

Magnolia macrophylla Michx.

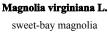
big-leaf magnolia

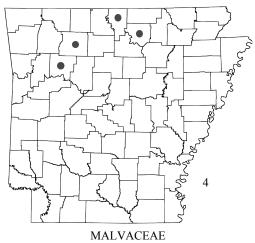


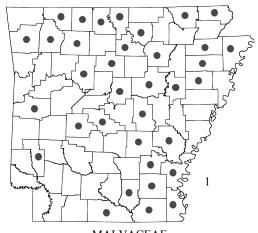


Magnolia tripetala (L.) L.

umbrella magnolia, umbrella-tree



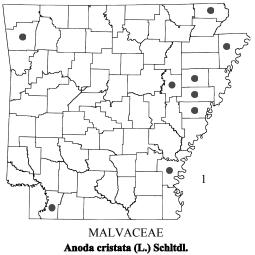




Abutilon fruticosum Guill. & Perr.

Texas Indian-mallow

MALVACEAE Abutilon theophrasti Medik. velvetleaf, Indian-mallow

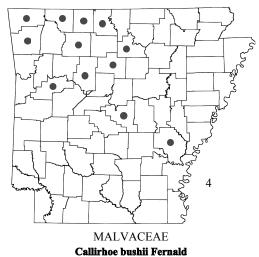


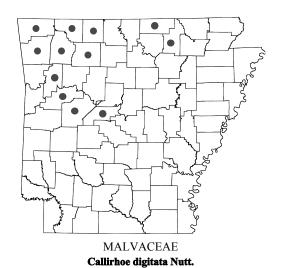
MALVACEAE Callirhoe alcaeoides (Michx.) A.Gray

Anoda cristata (L.) Schltdl.

spurred anoda

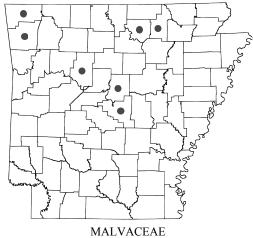
plains poppy-mallow

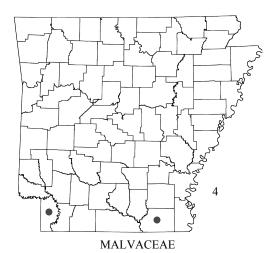




Bush's poppy-mallow

winecup, fringed poppy-mallow

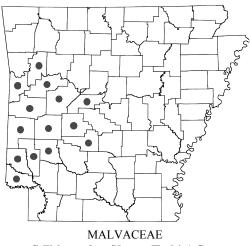




Callirhoe involucrata (Torr. & A.Gray) A.Gray var. involucrata

purple poppy-mallow

Callirhoe papaver (Cav.) A.Gray woodland poppy-mallow

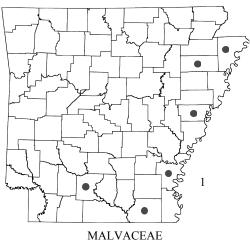


Callirhoe pedata (Nutt. ex Hook.) A.Gray winecup

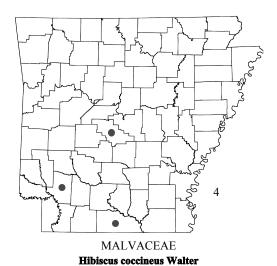


Firmiana simplex (L.) W.Wight

Chinese parasol-tree



Gossypium hirsutum L. cotton

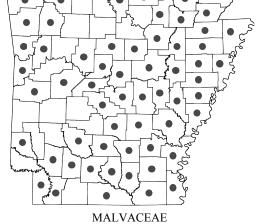


scarlet rose-mallow

MALVACEAE

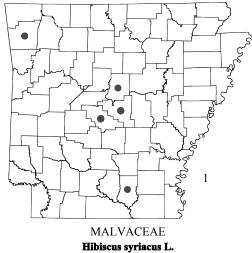
Hibiscus laevis All.

halberd-leaf rose-mallow

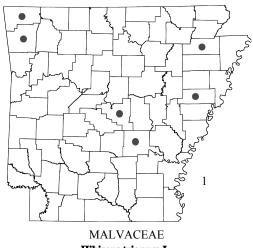


Hibiscus lasiocarpos Cav.

rose-mallow

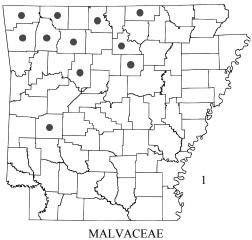


rose-of-Sharon



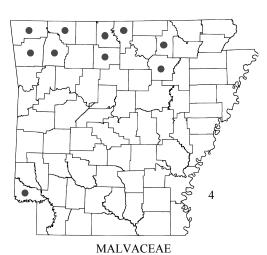
Hibiscus trionum L.

flower-of-an-hour



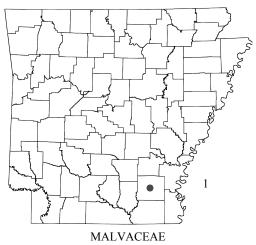
Malva neglecta Wallr.

common mallow, cheeses



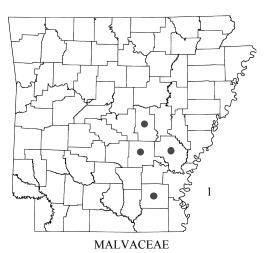
Malvastrum hispidum (Pursh) Hochr.

yellow false mallow



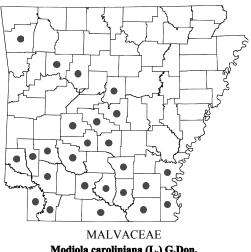
Malvaviscus arboreus Dill. ex Cav. var. drummondii (Torr. & A.Gray) Schery

wax-mallow



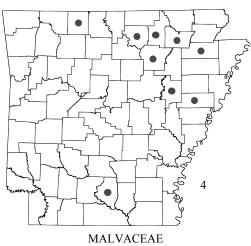
Melochia corchorifolia L.

chocolate-weed



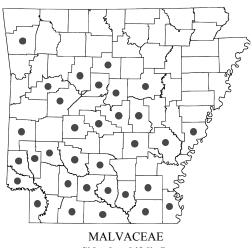
Modiola caroliniana (L.) G.Don.

bristly-mallow



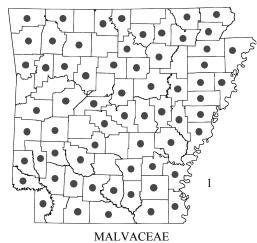
Sida elliottii Torr. & A.Gray

Elliott's sida



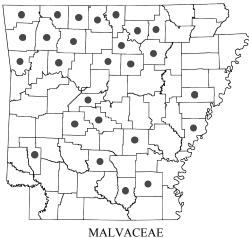
Sida rhombifolia L.

arrow-leaf sida



Sida spinosa L.

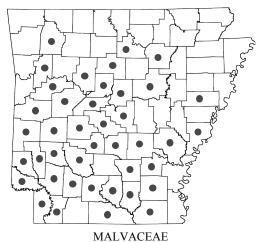
prickly sida, prickly-mallow



Tilia americana L.

var. americana

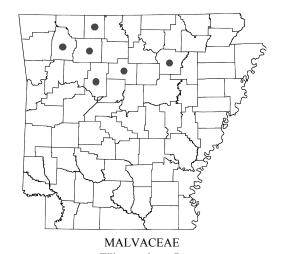
American basswood, linden



Tilia americana L.

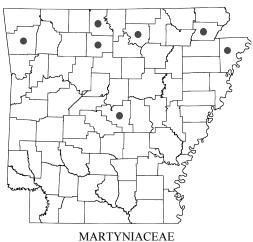
var. caroliniana (Mill.) Castigl.

basswood, linden



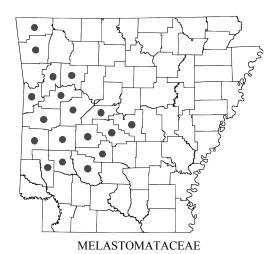
Tilia americana L. var. heterophylla (Vent.) Loudon

white basswood, linden



Proboscidea louisianica (Mill.) Thell.

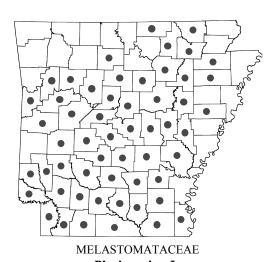
unicorn-plant, devil's-claw



Rhexia mariana L.

var. interior (Pennell) Kral & Bostick

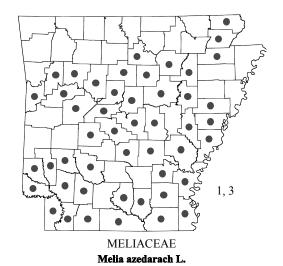
meadow-beauty



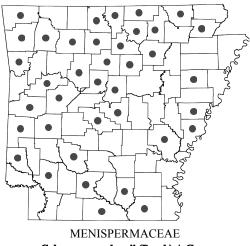
Rhexia mariana L.
var. mariana
meadow-beauty

MELASTOMATACEAE

Rhexia virginica L. wing-stem meadow-beauty

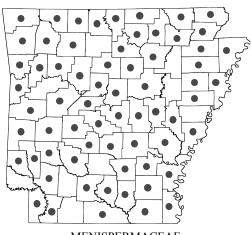


Chinaberry



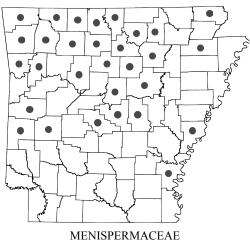
Calycocarpum lyonii (Pursh) A.Gray

cupseed



MENISPERMACEAE Cocculus carolinus (L.) DC.

Carolina snailseed, Carolina-moonseed



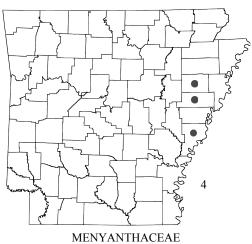
Menispermum canadense L.

moonseed



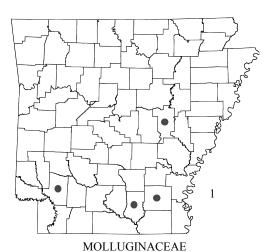
MENYANTHACEAE Nymphoides peltata (S.G.Gmel.) Kuntze

yellow floating-heart



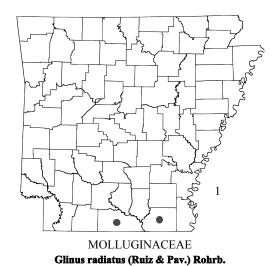
Obolaria virginica L.

Virginia pennywort

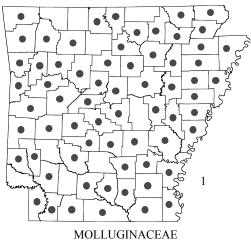


Glinus lotoides L.

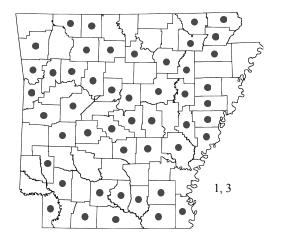
damascisa, sweetjuice



damascisa, sweetjuice

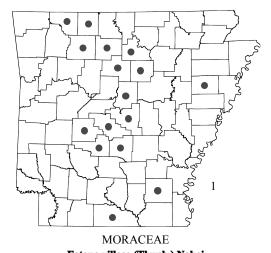


Mollugo verticillata L.
carpetweed, Indian-chickweed



MORACEAE

Broussonetia papyrifera (L.) L'Hér. ex Vent.
paper-mulberry



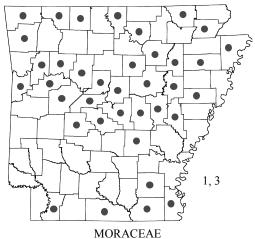
Fatoua villosa (Thunb.) Nakai hairy crabweed, mulberry-weed



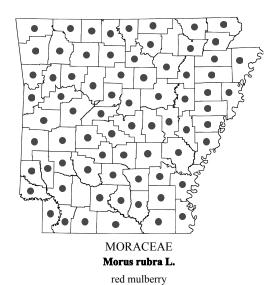
MORACEAE

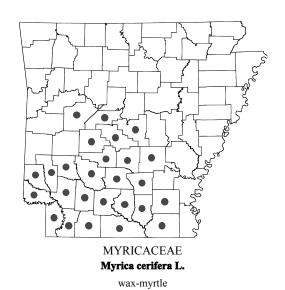
Maclura pomifera (Raf.) C.K.Schneid.

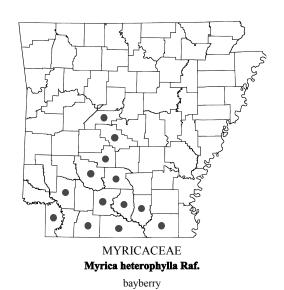
Osage-orange, hedge-apple, bois d'arc

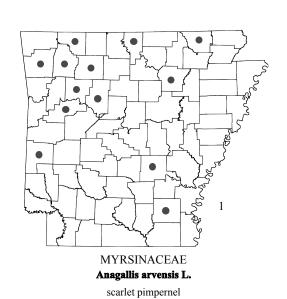


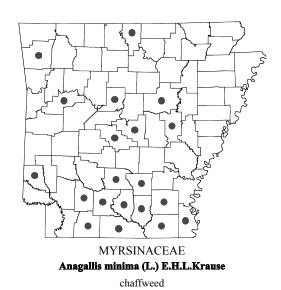
Morus alba L. white mulberry

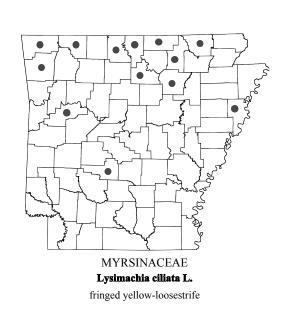






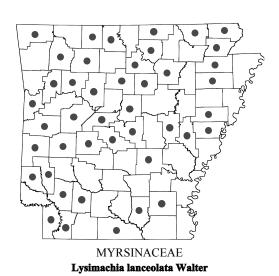








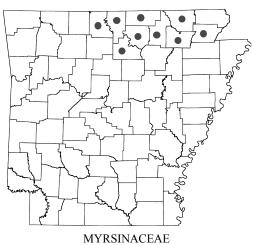
lowland yellow-loosestrife



yellow-loosestrife

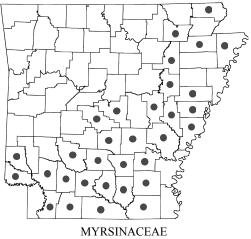


Lysimachia nummularia L. moneywort, creeping-Jenny



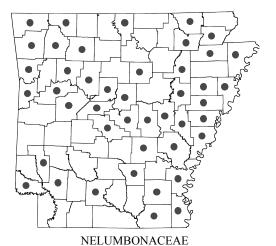
Lysimachia quadriflora Sims

linear-leaf yellow-loosestrife



Lysimachia radicans Hook.

trailing yellow-loosestrife

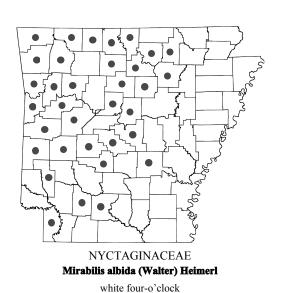


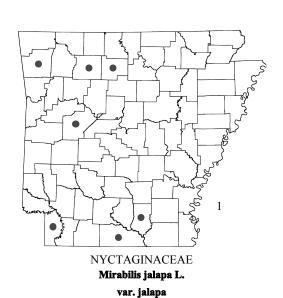
Nelumbo lutea Willd.

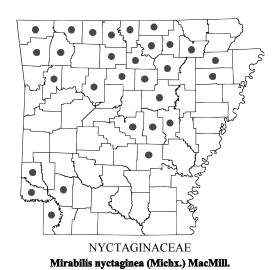
American lotus, yellow lotus



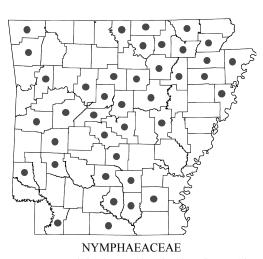
NYCTAGINACEAE Boerhavia erecta L. erect spiderling





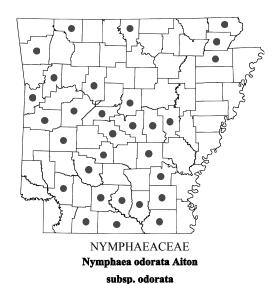


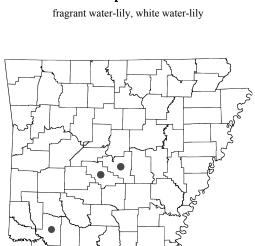
wild four-o'clock



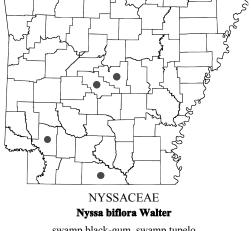
garden four-o'clock, marvel-of-Peru

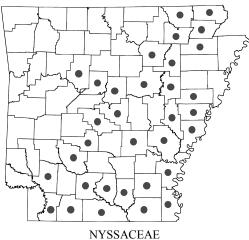
Nuphar advena (Aiton) W.T.Aiton in Aiton & W.T.Aiton yellow pond-lily, spatter-dock





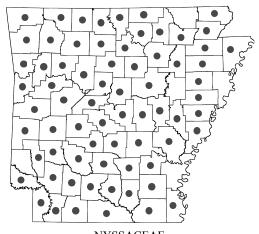
swamp black-gum, swamp tupelo





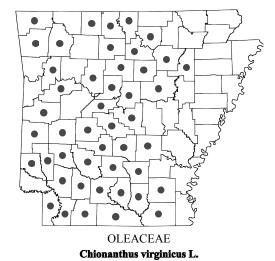
Nyssa aquatica L.

tupelo, water tupelo



NYSSACEAE Nyssa sylvatica Marshall

black-gum



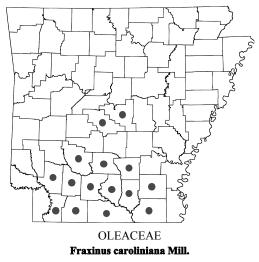
fringe-tree, old-man's-beard, Grancy gray-beard



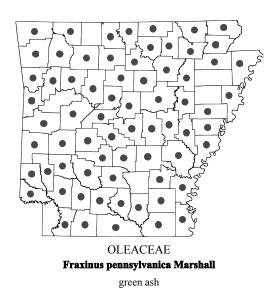
Forestiera acuminata (Michx.) Poir.

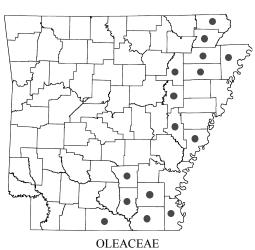
swamp-privet





Carolina ash, water ash



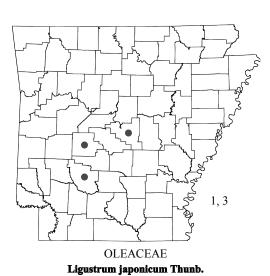


Fraxinus profunda (Bush) Bush ex Britt.

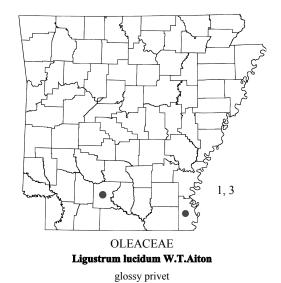
pumpkin ash

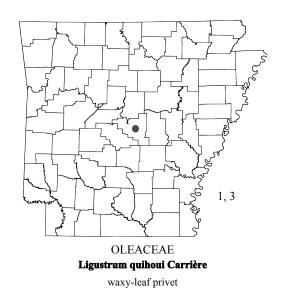


blue ash



Japanese privet



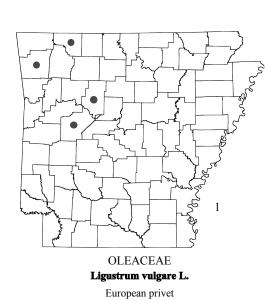


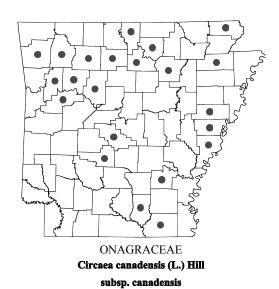
1, 3

OLEACEAE

Ligustrum sinense Lour.

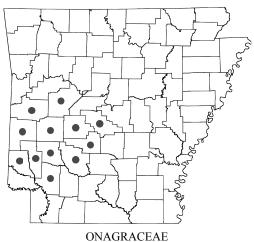
Chinese privet





enchanter's-nightshade





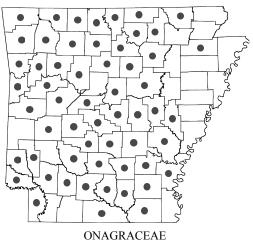
Gaura demareei P.H.Raven & D.P.Greg.

Demaree's gaura



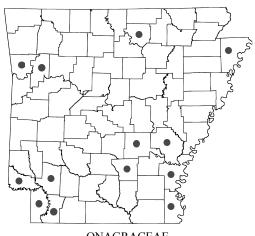
Gaura drummondii (Spach) Torr. & A.Gray

Drummond's gaura



Gaura longiflora Spach

biennial gaura



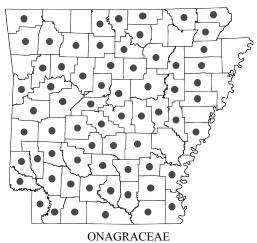
ONAGRACEAE

Gaura parviflora Douglas ex Lehm. velvety gaura, small-flower gaura

ONAGRACEAE

Gaura sinuata Nutt. ex Ser.

wavy-leaf gaura



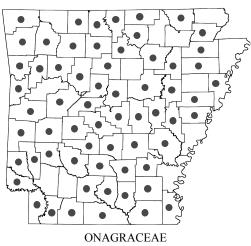
Ludwigia alternifolia L.

seedbox



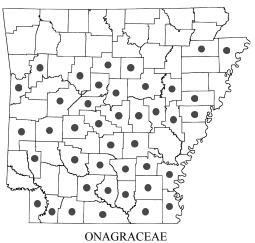
Ludwigia brevipes (B.H.Long ex Britton & A.Br.) Eames

Long Beach primrose-willow



Ludwigia decurrens Walter

wing-stem primrose-willow, wing-stem seedbox



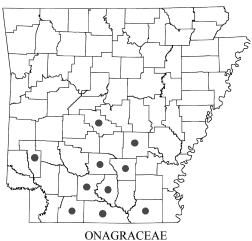
Ludwigia glandulosa Walter

primrose-willow



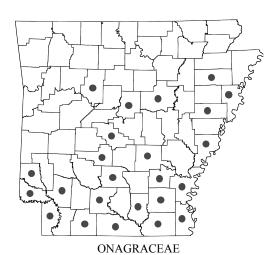
Ludwigia grandiflora (Michx.) Greuter & Burdet subsp. hexapetala (Hook. & Arn.) G.L.Nesom & Kartesz

primrose-willow



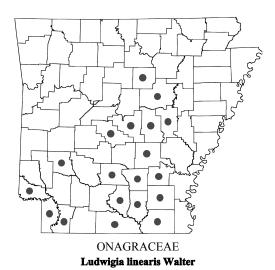
Ludwigia hirtella Raf.

primrose-willow



Ludwigia leptocarpa (Nutt.) H.Hara

primrose-willow



narrow-leaf primrose-willow, narrow-leaf seedbox



Ludwigia microcarpa Michx.

small-fruit primrose-willow

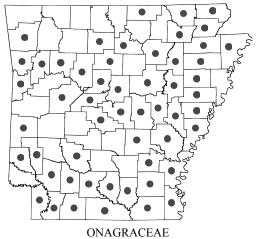


Ludwigia octovalvis (Jacq.) P.H.Raven primrose-willow



Ludwigia palustris (L.) Elliott

water-purslane



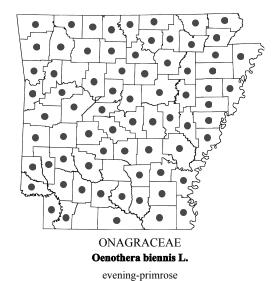
Ludwigia peploides (Kunth) P.H.Raven subsp. glabrescens (Kuntze) P.H.Raven

floating primrose-willow



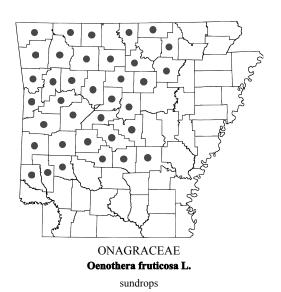
primrose-willow

Free download edition. Not for commercial sale.



ONAGRACEAE

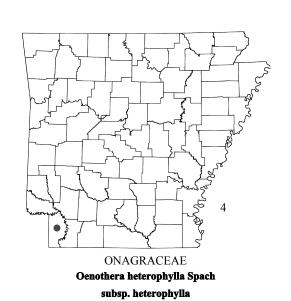
Oenothera clelandii W.Dietr., P.H.Raven & W.L.Wagner
Cleland's evening-primrose



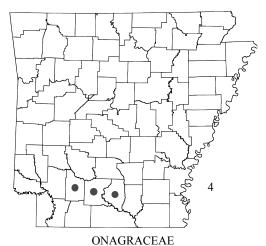


garden evening-primrose



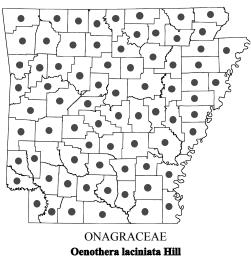


sandhill evening-primrose

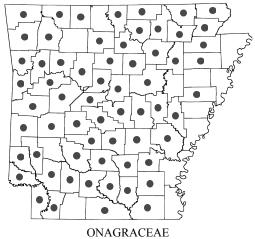


Oenothera heterophylla Spach subsp. orientalis W.Dietr., P.H.Raven & W.L.Wagner

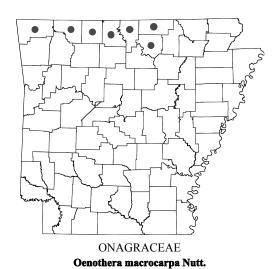
eastern sandhill evening-primrose



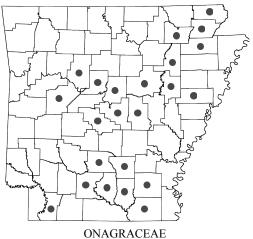
cut-leaf evening-primrose



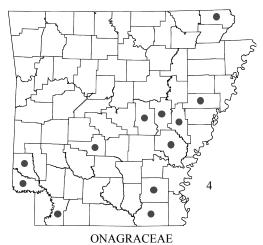
Oenothera linifolia Nutt. thread-leaf sundrops



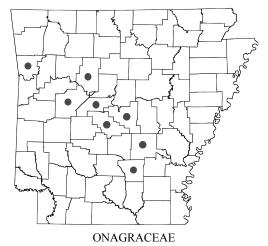
subsp. macrocarpa Missouri-primrose, glade-lily



ONAGRACEAE Oenothera pilosella Raf. subsp. pilosella sundrops



Oenothera pilosella Raf. subsp. sessilis (Pennell) Straley prairie evening-primrose, prairie sundrops



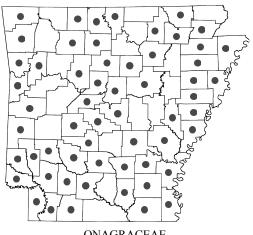
Oenothera rhombipetala Nutt. ex Torr. & A.Gray

four-point evening-primrose



Oenothera spachiana Torr. & A.Gray

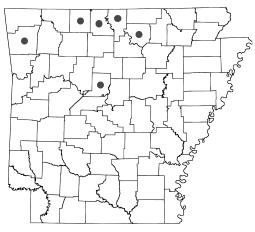
Spach's evening-primrose



ONAGRACEAE

Oenothera speciosa Nutt.

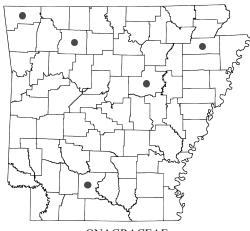
showy evening-primrose, white evening-primrose



ONAGRACEAE

Oenothera triloba Nutt.

evening-primrose

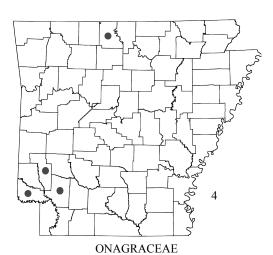


ONAGRACEAE

Oenothera villosa Thunb.

subsp. villosa

evening-primrose



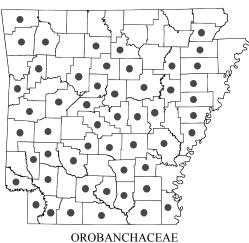
Stenosiphon linifolius (Nutt. ex E.James) Heynh.

false gaura



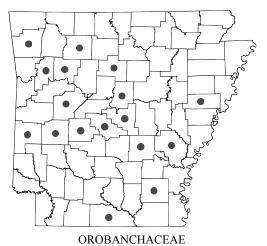
Agalinis auriculata (Michx.) S.F.Blake

ear-leaf false foxglove, ear-leaf gerardia



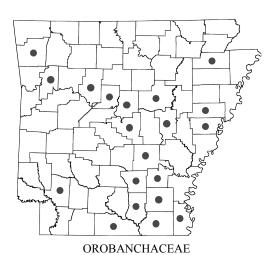
Agalinis fasciculata (Elliott) Raf.

false foxglove, gerardia



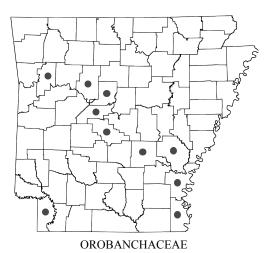
Agalinis gattingeri (Small) Small ex Britton

Gattinger's false foxglove, Gattinger's gerardia



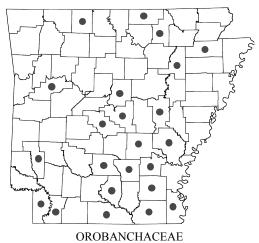
Agalinis heterophylla (Nutt.) Small ex Britton

prairie false foxglove, prairie gerardia



Agalinis homalantha Pennell

false foxglove, gerardia



Agalinis purpurea (L.) Pennell

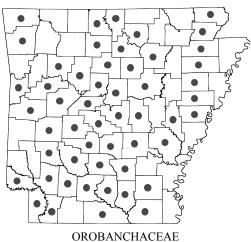
purple false foxglove, purple gerardia

304 OROBANCHACEAE / Agalinis



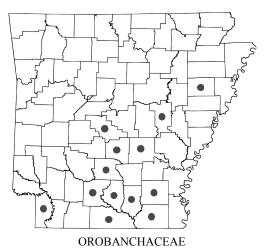
Agalinis skinneriana (A.W.Wood) Britton

Skinner's false foxglove, gerardia



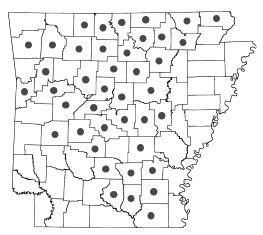
Agalinis tenuifolia (Vahl) Raf.

slender-leaf false foxglove, slender-leaf gerardia



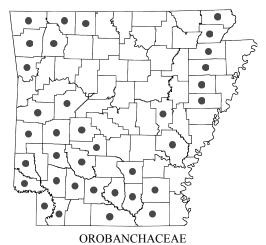
Agalinis viridis (Small) Pennell

green false foxglove, green gerardia



OROBANCHACEAE **Aureolaria flava (L.) Farw.**

yellow false foxglove

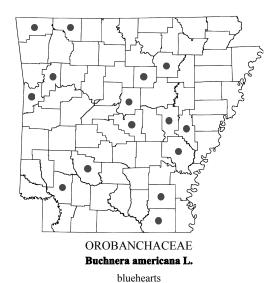


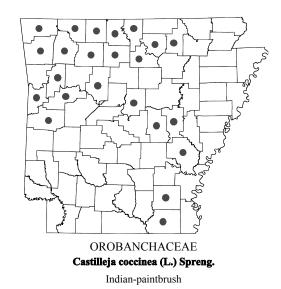
Aureolaria grandiflora (Benth.) Pennell
yellow false foxglove

OROBANCHACEAE

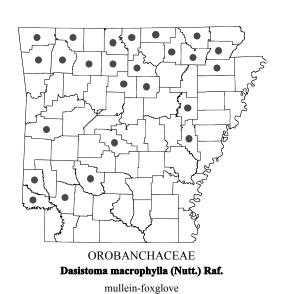
Aureolaria pectinata (Nutt.) Pennell

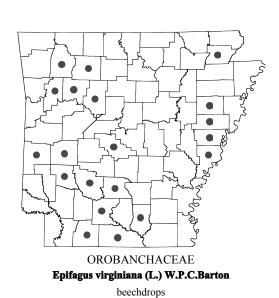
yellow false foxglove

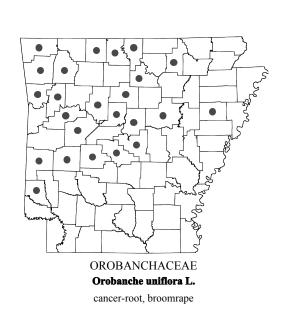








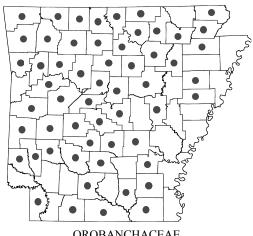






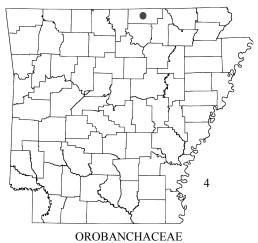
Parentucellia viscosa (L.) Caruel

yellow glandweed



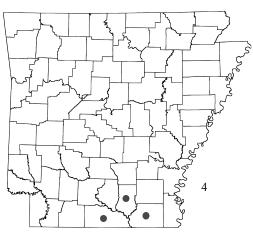
OROBANCHACEAE Pedicularis canadensis L.

wood-betony, lousewort



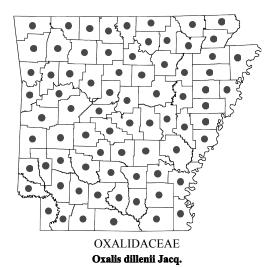
Pedicularis lanceolata Michx.

swamp lousewort



OROBANCHACEAE

Seymeria cassioides (J.F.Gmel.) S.F.Blake yaupon black-senna, seymeria

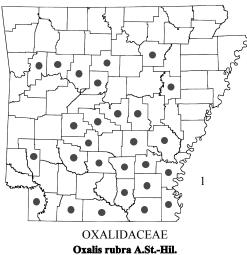


yellow wood-sorrel

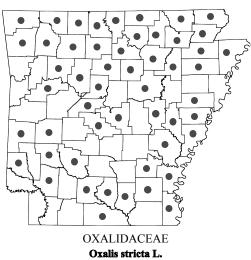
OXALIDACEAE

Oxalis florida Salisb.

yellow wood-sorrel



rose wood-sorrel

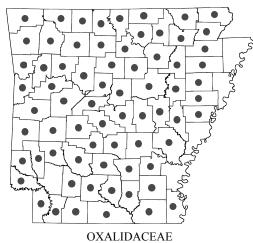


yellow wood-sorrel

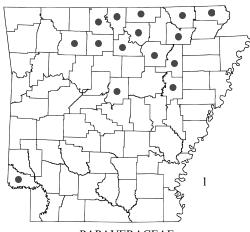


Oxalis texana (Small) Fedde

Texas yellow wood-sorrel



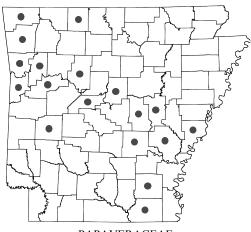
Oxalis violacea L. violet wood-sorrel



PAPAVERACEAE Argemone albiflora Hornem.

subsp. texana G.B.Ownbey

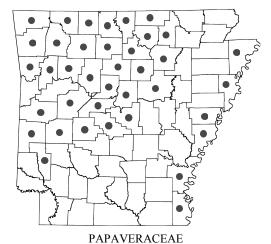
white prickly-poppy



PAPAVERACEAE

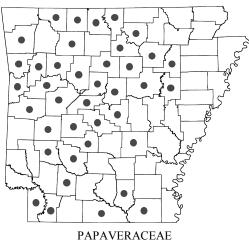
Corydalis crystallina (Torr. & A.Gray) Engelm. ex A.Gray

mealy corydalis



Corydalis flavula (Raf.) DC. in DC. & A.DC.

pale corydalis, yellow corydalis



PAPA VERACEAE

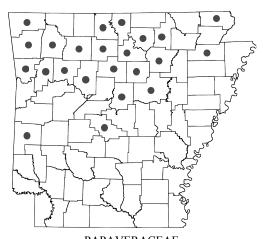
Corydalis micrantha (Engelm. ex A.Gray) A.Gray
subsp. australis (Chapm.) G.B.Ownbey

southern corydalis



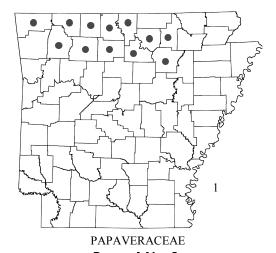
Corydalis micrantha (Engelm. ex A.Gray) A.Gray
subsp. micrantha

small-flower corydalis



PAPAVERACEAE **Dicentra cucullaria (L.) Bernh.**

Dutchman's-breeches

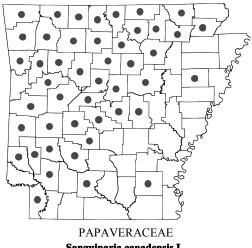


Papaver dubium L. blind-eyes, orange poppy

PAPAVERACEAE

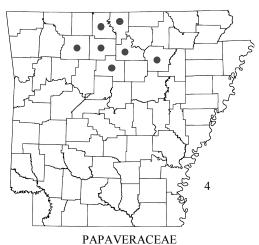
Papaver rhoeas L.

corn poppy, field poppy



Sanguinaria canadensis L.

bloodroot



Stylophorum diphyllum (Michx.) Nutt.

celandine-poppy, wood-poppy



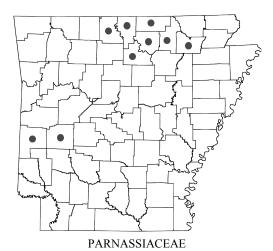
Lepuropetalon spathulatum Elliott

little-people, lepuropetalon



PARNASSIACEAE Parnassia asarifolia Vent.

kidney-leaf grass-of-Parnassus



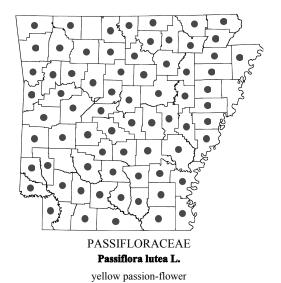
Parnassia grandifolia DC.

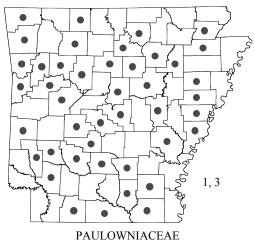
large-leaf grass-of-Parnassus



Passiflora incarnata L.

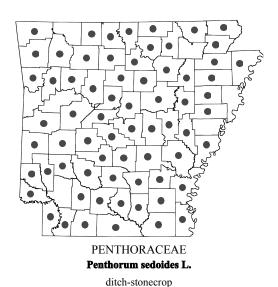
purple passion-flower, maypops

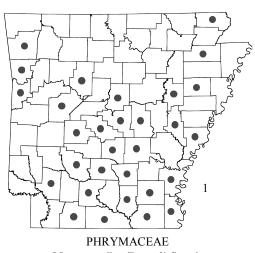




Paulownia tomentosa (Thunb.) Siebold & Zucc. ex Steud.

princess-tree, empress-tree





PHRYMACEAE

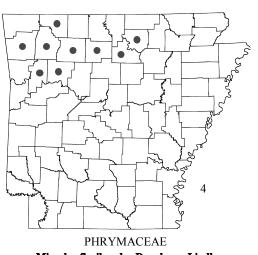
Mazus pumilus (Burm.f.) Steenis

mazus

PHRYMACEAE

Mimulus alatus Aiton

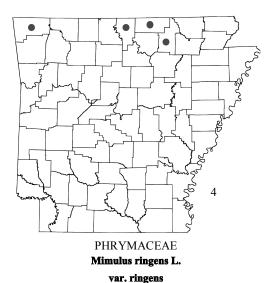
monkey-flower



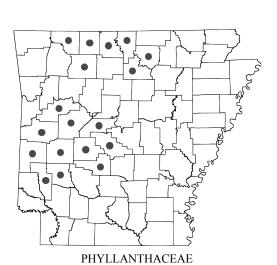
PHRYMACEAE

Mimulus floribundus Douglas ex Lindl.

yellow monkey-flower

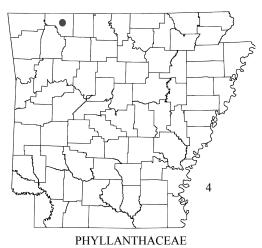


Allegheny monkey-flower



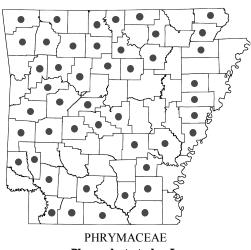
Leptopus phyllanthoides (Nutt.) G.L.Webster

maidenbush, buckbrush

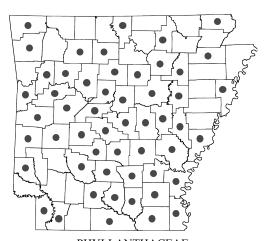


Phyllanthus polygonoides Nutt. ex Spreng.

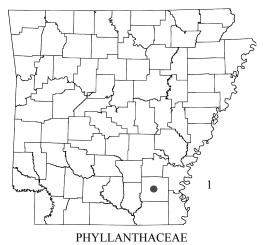
knotweed leaf-flower



Phryma leptostachya L. lopseed



PHYLLANTHACEAE Phyllanthus caroliniensis Walter subsp. caroliniensis Carolina leaf-flower

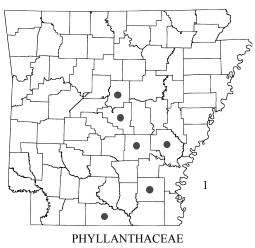


Phyllanthus pudens L.C.Wheeler bird-seed leaf-flower

312 PHYLLANTHACEAE / Phyllanthus

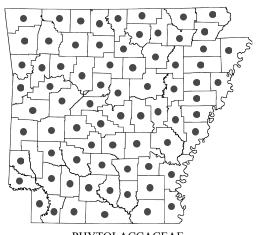


Phyllanthus tenellus Roxb. Mascarene Island leaf-flower



Phyllanthus urinaria L. subsp. urinaria

leaf-flower, chamber-bitter



PHYTOLACCACEAE Phytolacca americana L.

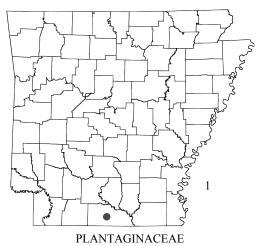
var. americana

poke, pokeweed



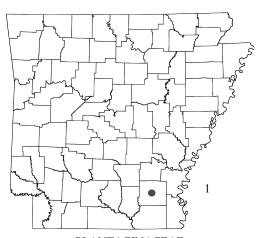
PLANTAGINACEAE Bacopa egensis (Poepp.) Pennell

Brazilian water-hyssop



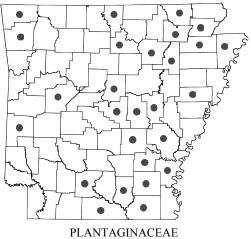
Bacopa monnieri (L.) Wettst.

coastal water-hyssop



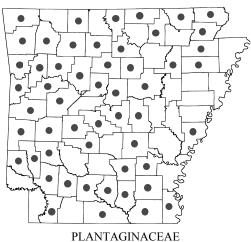
PLANTAGINACEAE Bacopa repens (Sw.) Wettst.

creeping water-hyssop



Bacopa rotundifolia (Michx.) Wettst.

disc water-hyssop



Callitriche heterophylla Pursh

water-starwort



PLANTAGINACEAE

Callitriche nuttallii Torr.

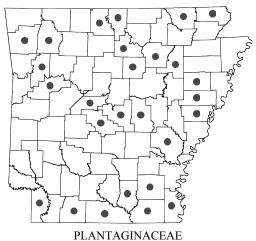
Nuttall's water-starwort



PLANTAGINACEAE

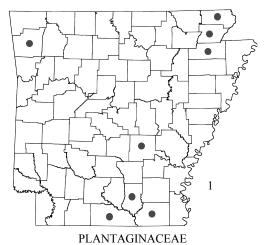
Callitriche peploides Nutt.

water-starwort



Callitriche terrestris Raf.

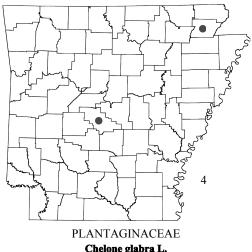
terrestrial water-starwort



Chaenorhinum minus (L.) Lange

dwarf-snapdragon

314 PLANTAGINACEAE / Chelone



Chelone glabra L.

white turtlehead

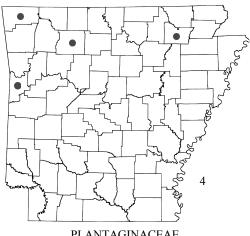


PLANTAGINACEAE

Chelone obliqua L.

var. speciosa Pennell & Wherry

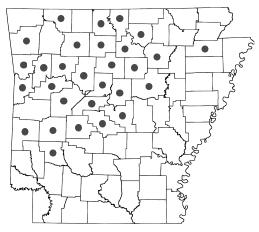
rose turtlehead



PLANTAGINACEAE

Collinsia verna Nutt.

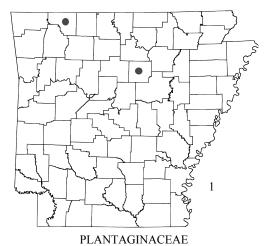
blue-eyed Mary



PLANTAGINACEAE

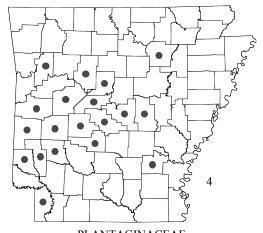
Collinsia violacea Nutt.

violet blue-eyed Mary, violet collinsia



Cymbalaria muralis P.Gaertn., B.Mey. & Scherb.

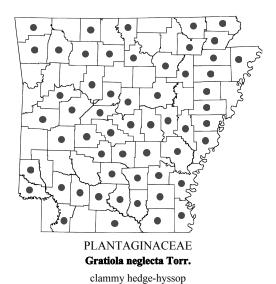
Kenilworth-ivy

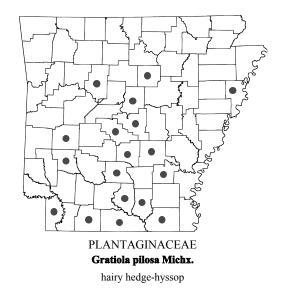


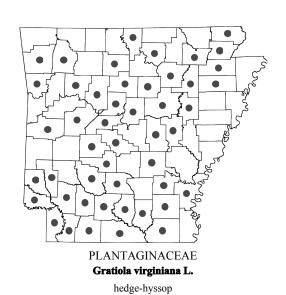
PLANTAGINACEAE

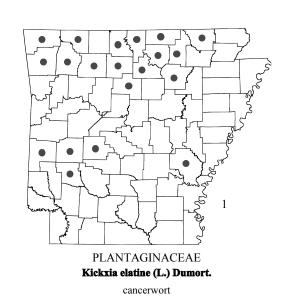
Gratiola brevifolia Raf.

sticky hedge-hyssop

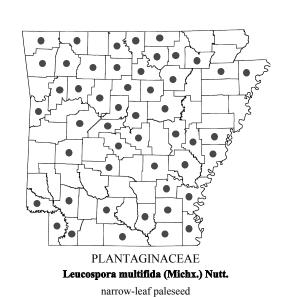




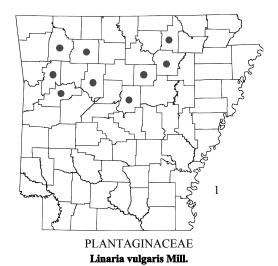




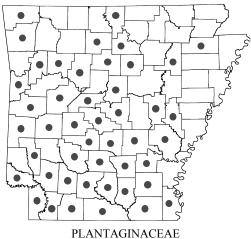




316 PLANTAGINACEAE / Linaria

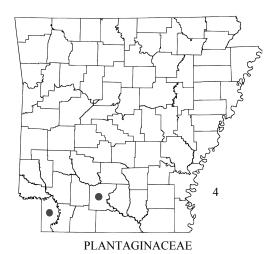


butter-and-eggs, yellow toadflax

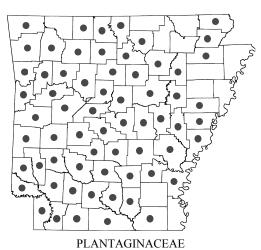


Mecardonia acuminata (Walter) Small

purple axil-flower

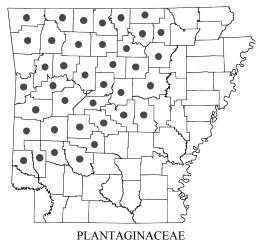


Nuttallanthus canadensis (L.) D.A.Sutton sand blue toadflax



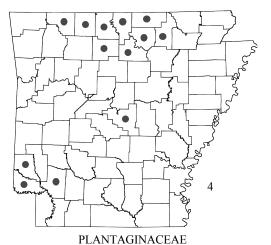
Nuttallanthus texanus (Scheele) D.A.Sutton

blue toadflax, oldfield toadflax



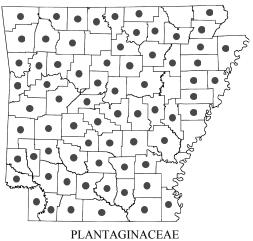
Penstemon arkansanus Pennell

Arkansas beardtongue



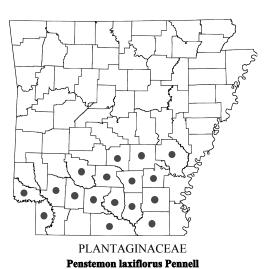
Penstemon cobaea Nutt.

showy beardtongue, cobaea penstemon

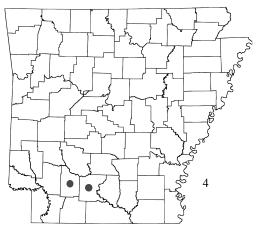


Penstemon digitalis Nutt. ex Sims

foxglove beardtongue

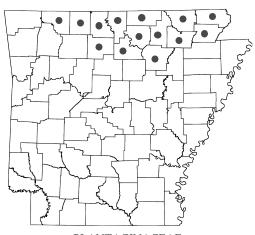


beardtongue



PLANTAGINACEAE

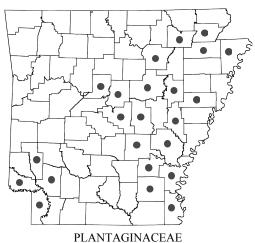
Penstemon murrayanus Hook. scarlet beardtongue, red penstemon



PLANTAGINACEAE

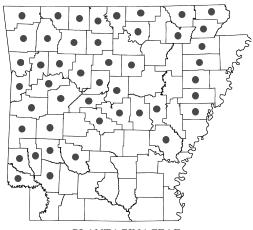
Penstemon pallidus Small

beardtongue



Penstemon tenuis Small

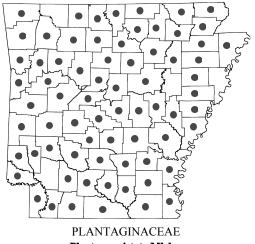
beardtongue



PLANTAGINACEAE

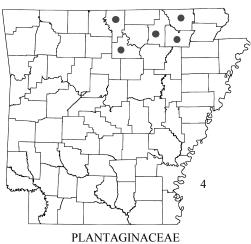
Penstemon tubiflorus Nutt.

beardtongue



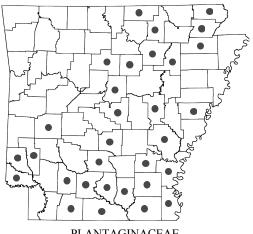
Plantago aristata Michx.

bracted plantain



Plantago cordata Lam.

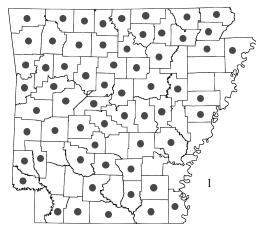
heart-leaf plantain



PLANTAGINACEAE

Plantago heterophylla Nutt.

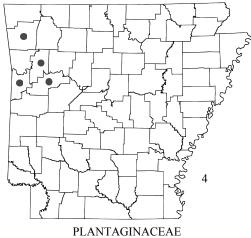
slender plantain



PLANTAGINACEAE

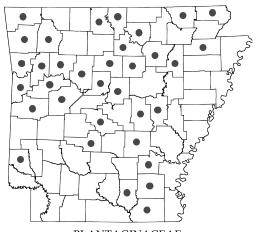
Plantago lanceolata L.

English plantain



Plantago patagonica Jacq.

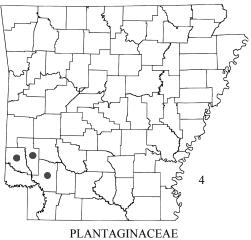
woolly plantain



PLANTAGINACEAE

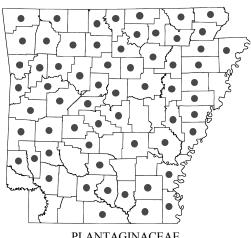
Plantago pusilla Nutt.

dwarf plantain



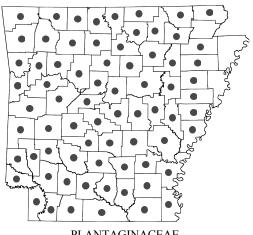
Plantago rhodosperma Decne.

red-seed plantain



PLANTAGINACEAE Plantago rugelii Decne.

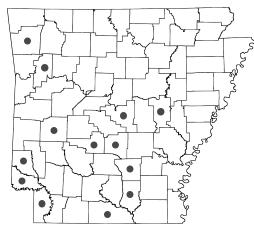
black-seed plantain, Rugel's plantain



PLANTAGINACEAE

Plantago virginica L.

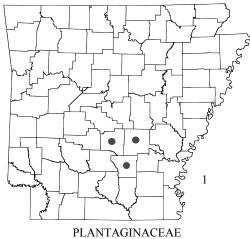
hoary plantain, pale-seed plantain



PLANTAGINACEAE

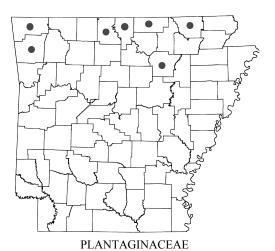
Plantago wrightiana Decne. ex A.DC.

Wright's plantain



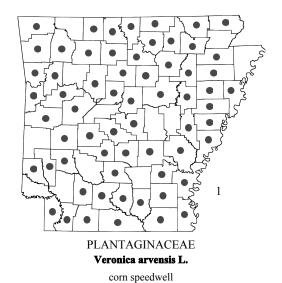
Scoparia dulcis L.

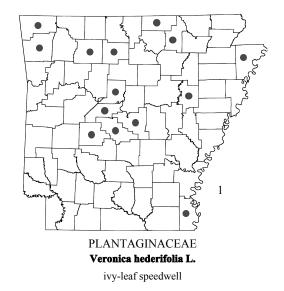
licorice-weed, sweet-broom

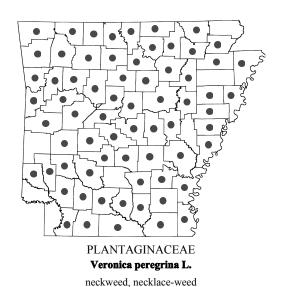


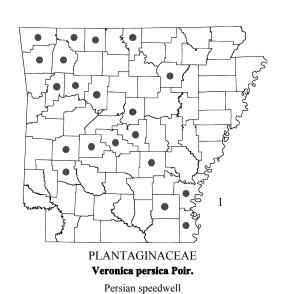
Veronica anagallis-aquatica L.

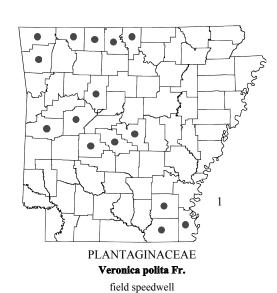
water speedwell

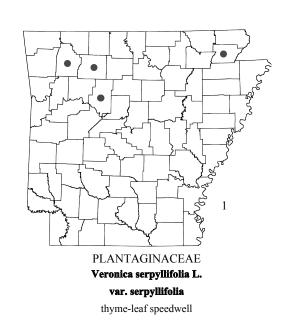


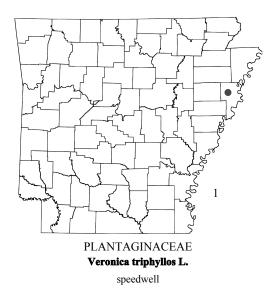






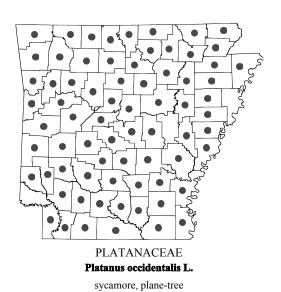


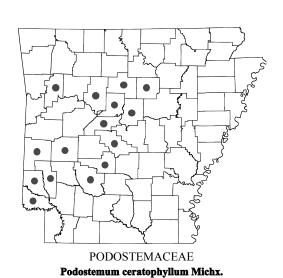




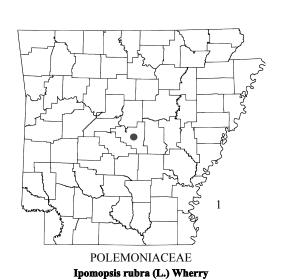
PLANTAGINACEAE Veronicastrum virginicum (L.) Farw.

Culver's-root

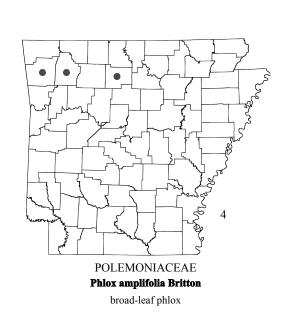


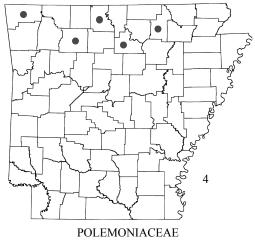


riverweed



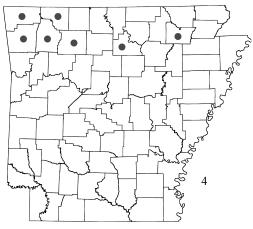
standing-cypress, Texas plume



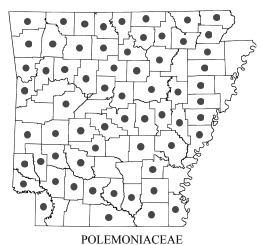


POLEMONIACEAE
Phlox bifida L.C.Beck
subsp. bifida

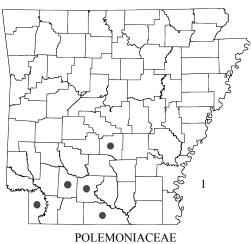
sand phlox, cleft phlox



POLEMONIACEAE
Phlox bifida L.C.Beck
subsp. stellaria (A.Gray) Wherry
starry sand phlox, starry cleft phlox

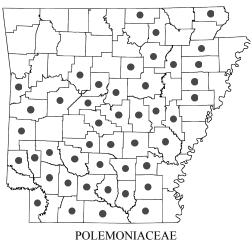


Phlox divaricata L. subsp. laphamii (A.W.Wood) Wherry wild blue phlox, wild sweet-William

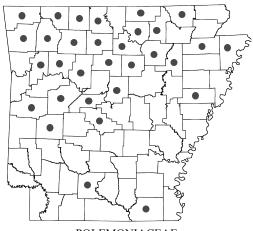


Phlox drummondii Hook.

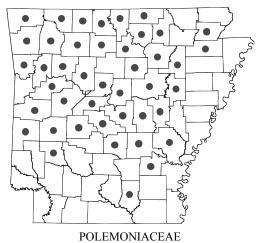
annual phlox



Phlox glaberrima L.
smooth phlox

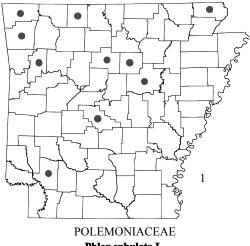


POLEMONIACEAE **Phlox paniculata L.**perennial phlox, garden phlox

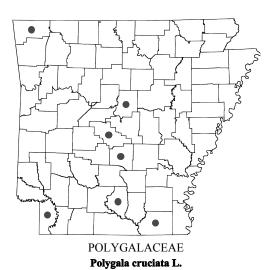


Phlox pilosa L. subsp. ozarkana (Wherry) Wherry

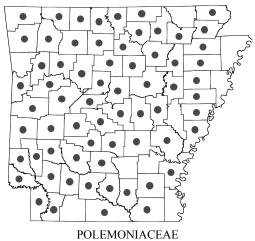
Ozark downy phlox



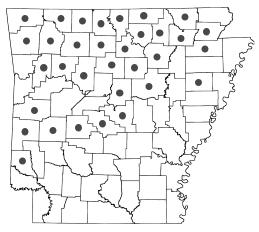
Phlox subulata L. moss phlox



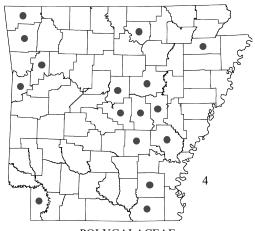
drumheads, cross-leaf milkwort



Phlox pilosa L. subsp. pilosa downy phlox

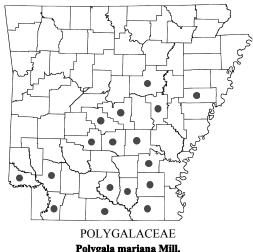


POLEMONIACEAE Polemonium reptans L. var. reptans Jacob's-ladder



POLYGALACEAE Polygala incarnata L. pink milkwort

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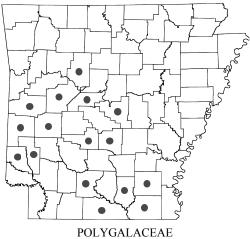
Polygala mariana Mill.

Maryland milkwort



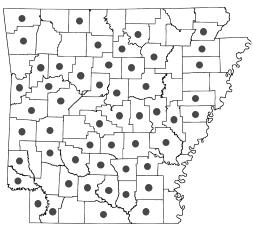
POLYGALACEAE Polygala nana (Michx.) DC.

candyroot, dwarf milkwort



Polygala polygama Walter

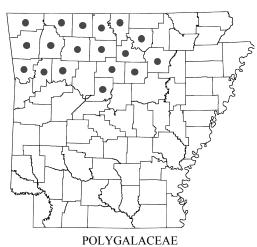
racemed milkwort



POLYGALACEAE

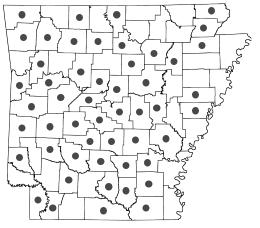
Polygala sanguinea L.

purple milkwort, blood milkwort



Polygala senega L.

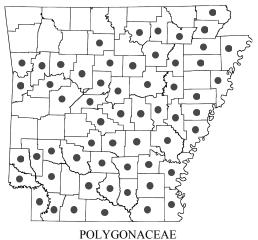
Seneca snakeroot



POLYGALACEAE

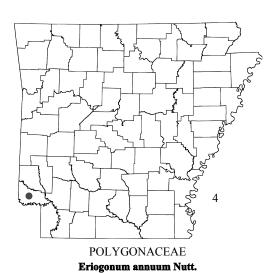
Polygala verticillata L.

whorled milkwort

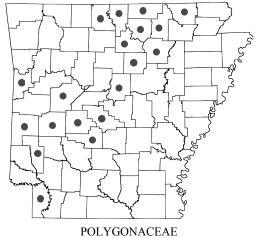


Brunnichia ovata (Walter) Shinners

ladies'-eardrops, buckwheat-vine



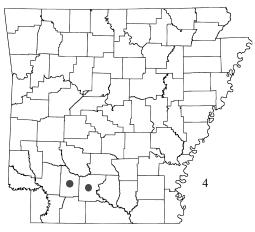
annual wild buckwheat



Eriogonum longifolium Nutt.

var. longifolium

umbrella-plant, wild buckwheat

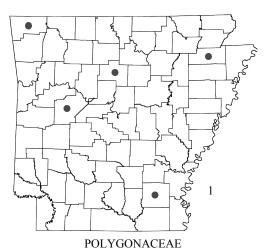


POLYGONACEAE

Eriogonum multiflorum Benth.

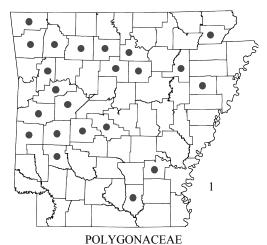
var. multiflorum

many-flower wild buckwheat



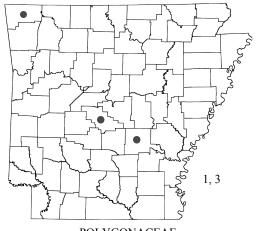
Fagopyrum esculentum Moench

buckwheat



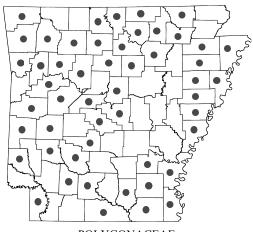
Fallopia convolvulus (L.) Á.Löve

black-bindweed, climbing false buckwheat



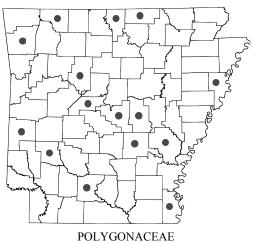
POLYGONACEAE
Fallopia japonica (Houtt.) Ronse Decr.
var. japonica

Japanese knotweed



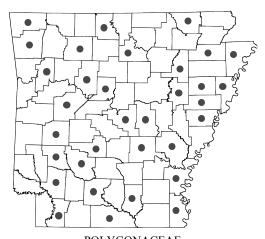
POLYGONACEAE
Fallopia scandens (L.) Holub

climbing false buckwheat, hedge-smartweed



Persicaria amphibia (L.) Gray

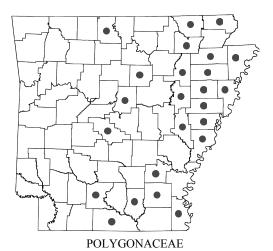
water smartweed



POLYGONACEAE

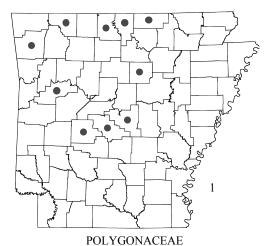
Persicaria bicornis (Raf.) Nieuwl.

pink smartweed



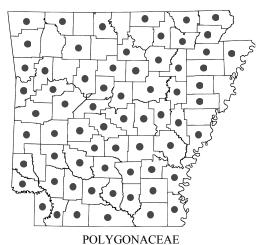
Persicaria glabra (Willd.) M.Gómez

smartweed



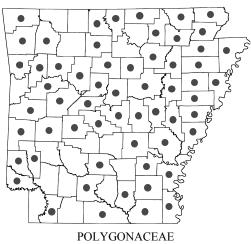
Persicaria hydropiper (L.) Spach

water-pepper, marsh-pepper smartweed



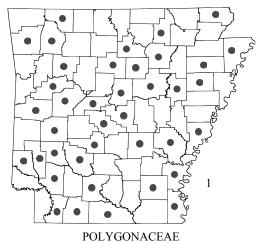
Persicaria hydropiperoides (Michx.) Small

swamp smartweed, wild water-pepper



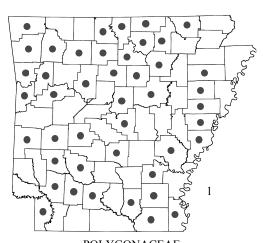
Persicaria lapathifolia (L.) Gray

pale smartweed



Persicaria longiseta (Bruijn) Kitag.

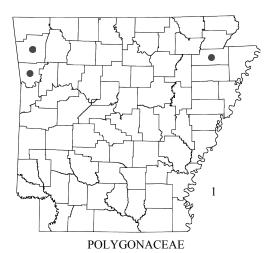
bristly lady's-thumb



POLYGONACEAE

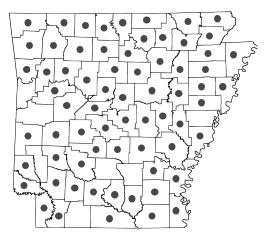
Persicaria maculosa Gray

lady's-thumb



Persicaria orientalis (L.) Spach

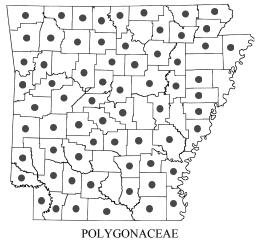
kiss-me-over-the-garden-gate, prince's feather



POLYGONACEAE

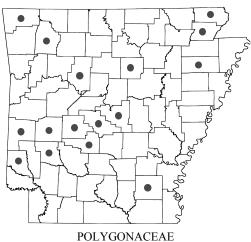
Persicaria pensylvanica (L.) M.Gómez

pink smartweed, Pennsylvania smartweed



Persicaria punctata (Elliott) Small

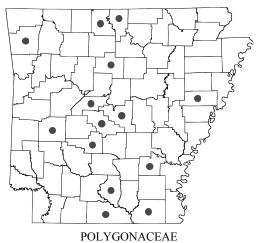
dotted smartweed, water smartweed



POLYGONACEAE

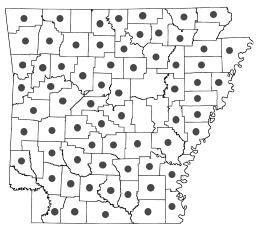
Persicaria sagittata (L.) H.Gross

arrow-leaf tear-thumb



Persicaria setacea (Baldwin) Small

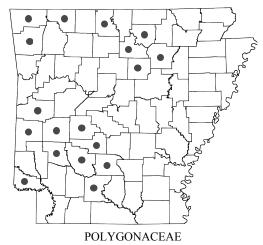
bog smartweed



POLYGONACEAE

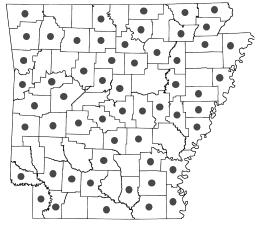
Persicaria virginiana (L.) Gaertn.

jumpseed, Virginia knotweed



Polygonella americana (Fisch. & C.A.Mey.) Small $\,$

jointweed

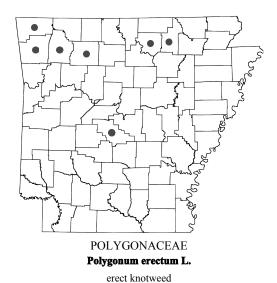


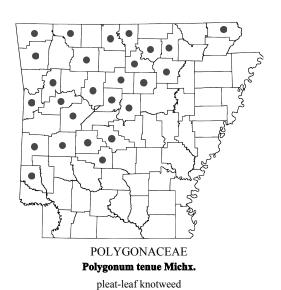
POLYGONACEAE

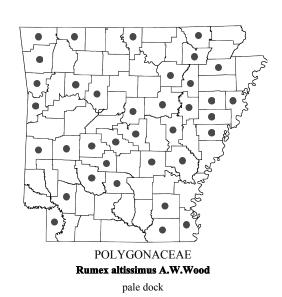
Polygonum aviculare L.

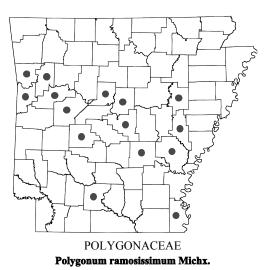
knotweed, knotgrass

See Appendix I for infraspecific taxa and species status.

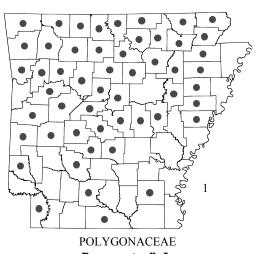




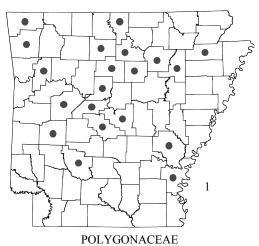




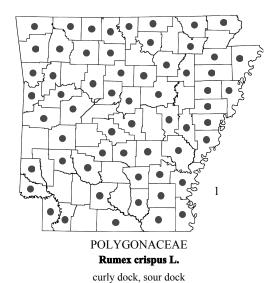
bushy knotweed See Appendix I for infraspecific taxa and species status.

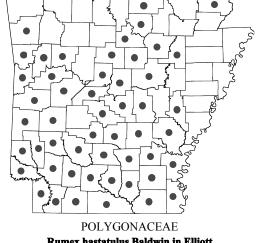


Rumex acetosella L. sheep sorrel



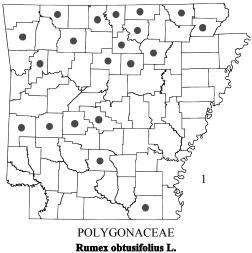
Rumex conglomeratus Murray cluster dock

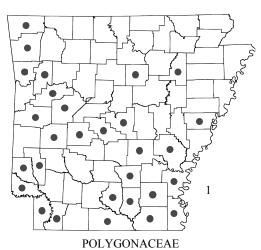




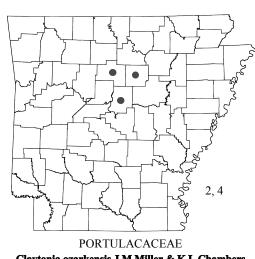
Rumex hastatulus Baldwin in Elliott

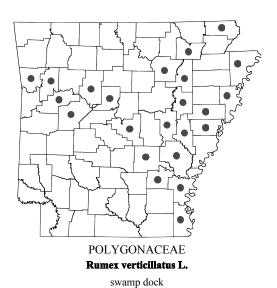
heart-wing sorrel, wild sorrel





Rumex obtusifolius L.Rumex pulcher L.bitter dock, broad-leaf dockfiddle dock

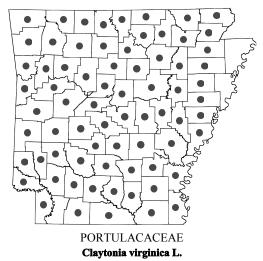




PORTULACACEAE

Claytonia ozarkensis J.M.Miller & K.L.Chambers

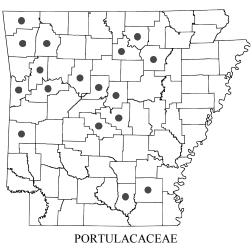
Ozark spring-beauty



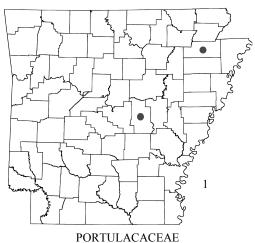




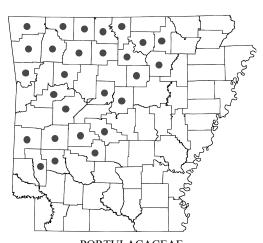
Phemeranthus calcaricus (S.Ware) Kiger fameflower, rock-pink



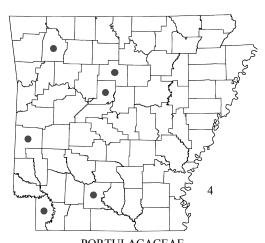
Phemeranthus parviflorus (Nutt.) Kiger fameflower, rock-pink



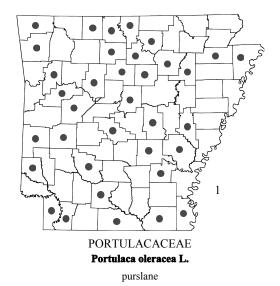
Montia linearis (Douglas ex Hook.) Greene narrow-leaf miner's-lettuce

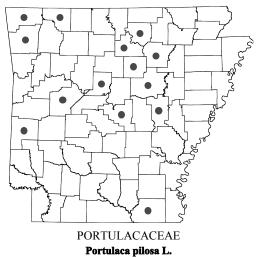


PORTULACACEAE Phemeranthus calycinus (Engelm.) Kiger fameflower, rock-pink



PORTULACACEAE Phemeranthus rugospermus (Holz.) Kiger rough-seed fameflower





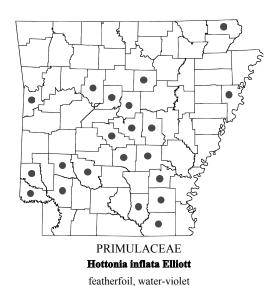
hairy-purslane, kiss-me-quick

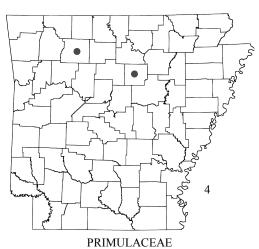


PORTULACACEAE Portulaca umbraticola Kunth in Humb. et al. subsp. lanceolata J.F.Matthews & Ketron wing-pod purslane

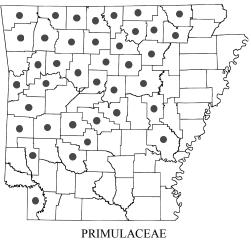


Androsace occidentalis Pursh rock-jasmine



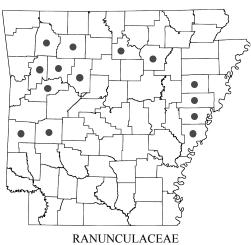


Primula frenchii (Vasey) Mast & Reveal French's shooting-star



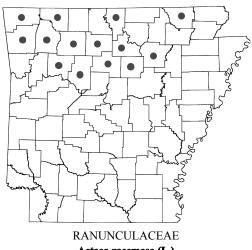
Primula meadia (L.) Mast & Reveal

shooting-star



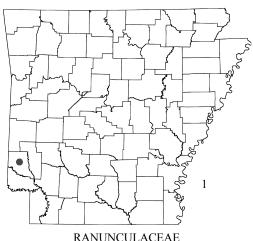
Actaea pachypoda Elliott

doll's-eyes, white baneberry



Actaea racemosa (L.)

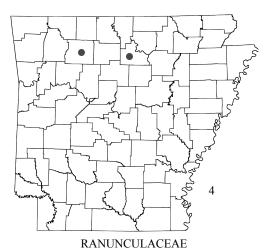
black cohosh



RANUNCULACEAE

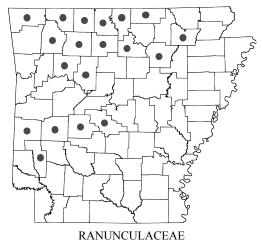
Adonis annua L.

pheasant's-eye, bird's-eye



Anemone acutiloba (DC.) G.Lawson

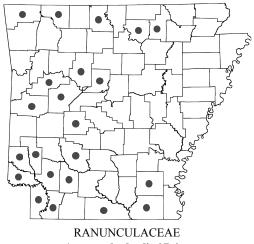
sharp-lobe hepatica



Anemone americana (DC.) H.Hara

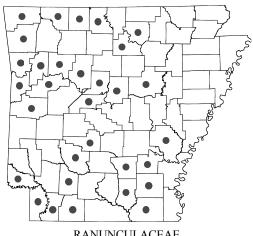
round-lobe hepatica

334 RANUNCULACEAE / Anemone



Anemone berlandieri Pritz.

ten-petal anemone



RANUNCULACEAE Anemone caroliniana Walter

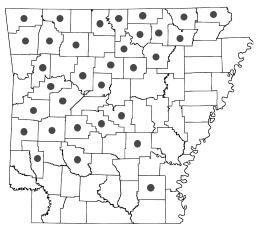
Carolina anemone



RANUNCULACEAE

Anemone quinquefolia L. var. quinquefolia

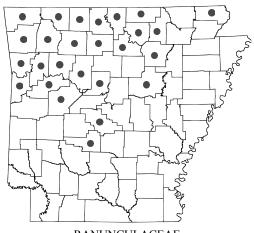
wood anemone



RANUNCULACEAE

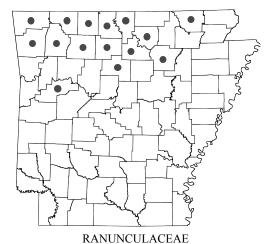
Anemone virginiana L. var. virginiana

thimbleweed, tall anemone



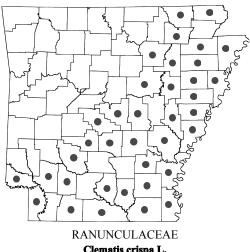
RANUNCULACEAE Aquilegia canadensis L.

columbine



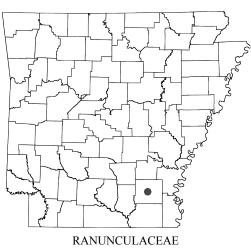
Clematis catesbyana Pursh

Catesby's virgin's-bower, satin-curls



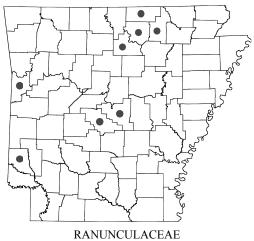
Clematis crispa L.

swamp leather-flower



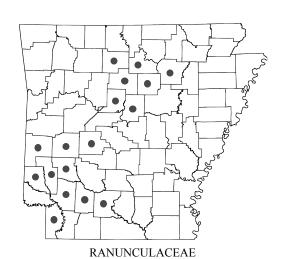
Clematis glaucophylla Small

white-leaf leather-flower



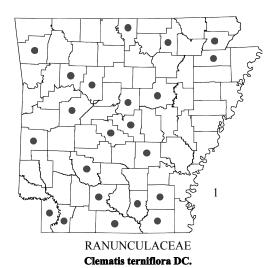
Clematis pitcheri Torr. & A.Gray var. pitcheri

Pitcher's leather-flower

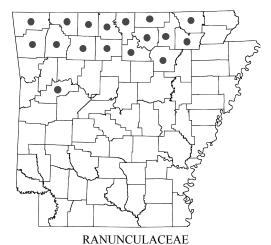


Clematis reticulata Walter

net-leaf leather-flower

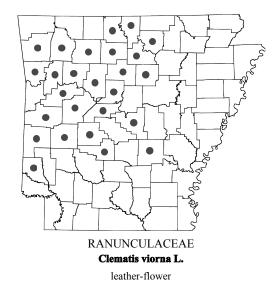


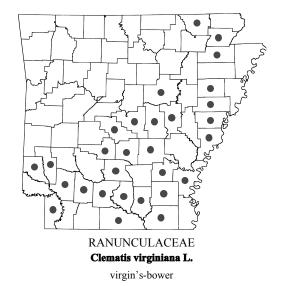
sweet autumn virgin's-bower

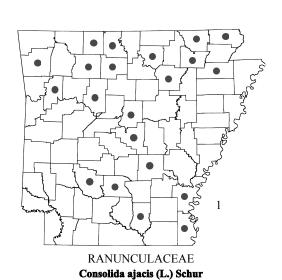


Clematis versicolor Small ex Rydb. in Britton

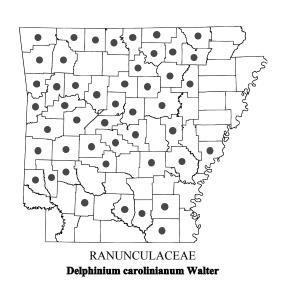
pale leather-flower

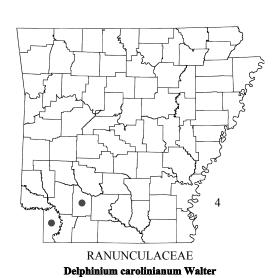






rocket-larkspur





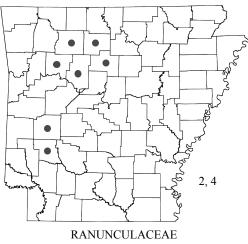
subsp. vimineum (D.Don) M.J.Warnock

pinewoods larkspur

subsp. carolinianum Carolina larkspur, blue larkspur

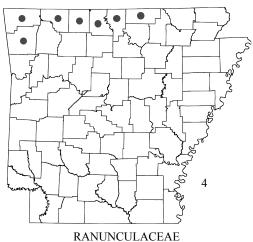


Delphinium carolinianum Walter subsp. virescens (Nutt.) R.E.Brooks plains larkspur



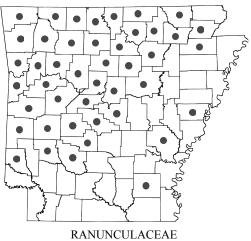
Delphinium newtonianum Dw.Moore

Moore's delphinium



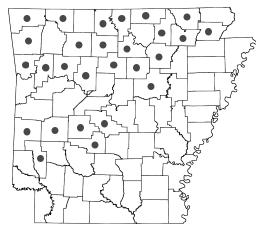
Delphinium treleasei Bush ex K.C.Davis

Trelease's larkspur



Delphinium tricorne Michx.

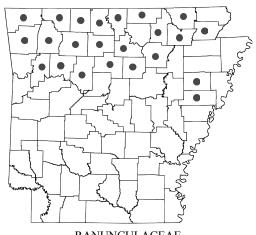
dwarf larkspur



RANUNCULACEAE

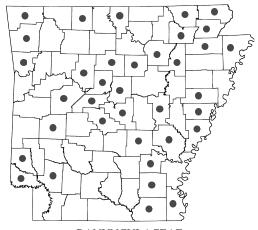
Enemion biternatum Raf.

false rue-anemone



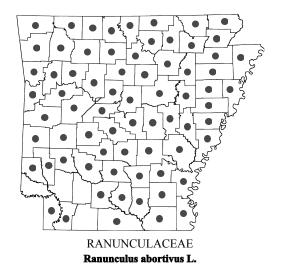
RANUNCULACEAE Hydrastis canadensis L.

goldenseal

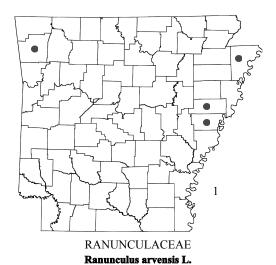


RANUNCULACEAE Myosurus minimus L.

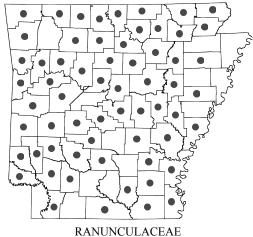
mousetail



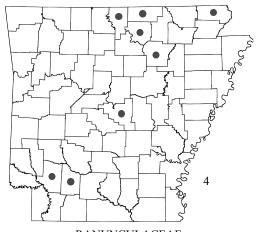
small-flower crowfoot, kidney-leaf buttercup



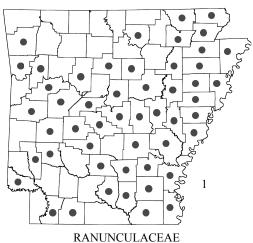
corn buttercup, corn crowfoot



Ranunculus fascicularis Muhl. ex J.M.Bigelow
early buttercup



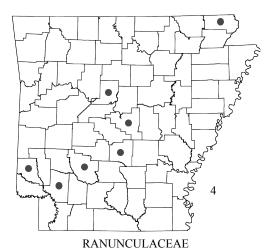
RANUNCULACEAE
Ranunculus aquatilis L.
var. diffusus With.
white water crowfoot



RANUNCULACEAE

Ranunculus bulbosus L.

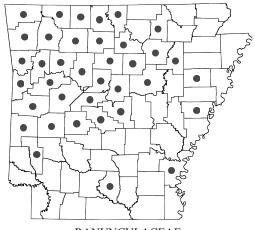
bulbous buttercup



RANUNCULACEAE

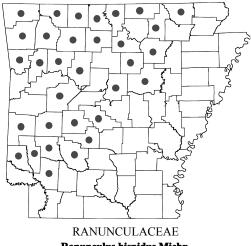
Ranunculus flabellaris Raf.

yellow water crowfoot



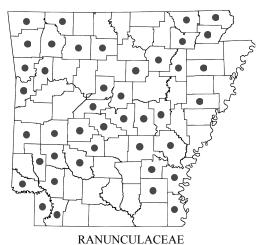
RANUNCULACEAE Ranunculus harveyi (A.Gray) Britton var. harveyi

Harvey's buttercup

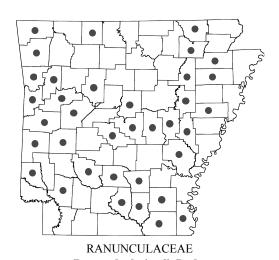


Ranunculus hispidus Michx. var. hispidus

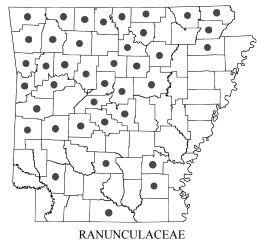
hispid buttercup



Ranunculus hispidus Michx. var. nitidus (Chapm.) T.Duncan swamp buttercup



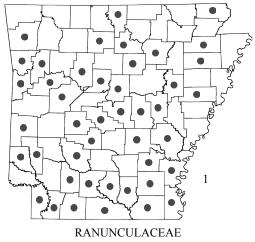
Ranunculus laxicaulis Darby water-plantain spearwort



Ranunculus micranthus Nutt. in Torr. & A.Gray rock buttercup, small-flower crowfoot

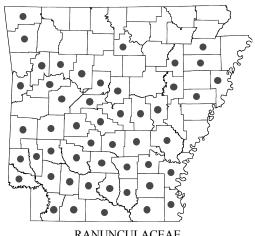
RANUNCULACEAE

Ranunculus muricatus L. rough-seed buttercup



Ranunculus parviflorus L.

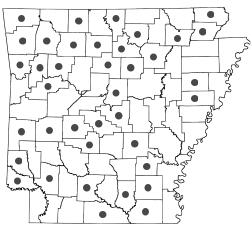
small-flower buttercup



RANUNCULACEAE

Ranunculus pusillus Poir. in Lam. et al.

low spearwort

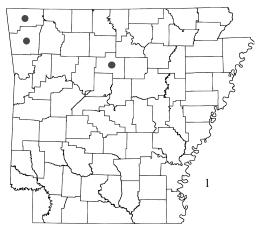


RANUNCULACEAE

Ranunculus recurvatus Poir. in Lam. et al.

var. recurvatus

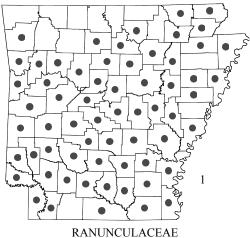
hooked buttercup



RANUNCULACEAE

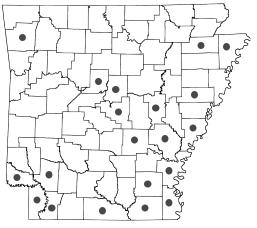
Ranunculus repens L.

creeping buttercup



Ranunculus sardous Crantz

hairy buttercup

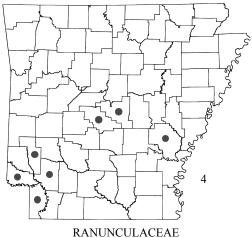


RANUNCULACEAE

Ranunculus sceleratus L.

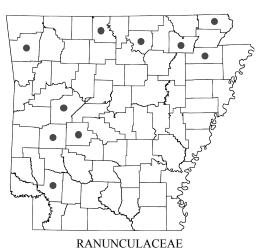
var. sceleratus

cursed buttercup



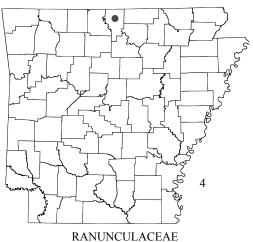
Thalictrum arkansanum B.Boivin

Arkansas meadow-rue



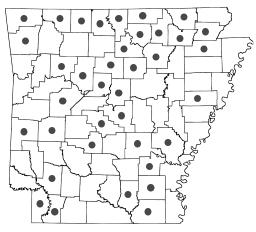
Thalictrum dasycarpum Fisch. & Avé-Lall. in Fisch. et al.

purple meadow-rue



Thalictrum dioicum L.

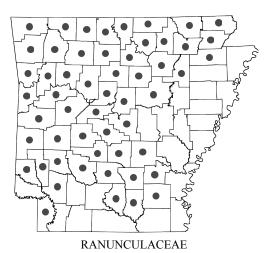
early meadow-rue



RANUNCULACEAE

Thalictrum revolutum DC.

wax-leaf meadow-rue, purple meadow-rue



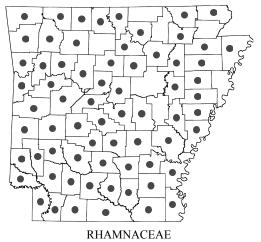
Thalictrum thalictroides (L.) A.J.Eames & B.Boivin

rue-anemone, windflower



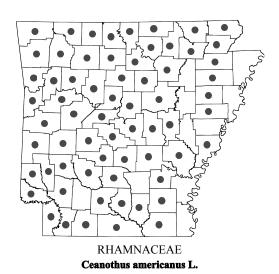
RANUNCULACEAE Trautvetteria caroliniensis (Walter) Vail

false bugbane, tassel-rue

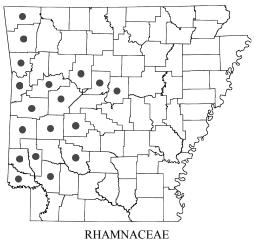


Berchemia scandens (Hill) K.Koch

rattan-vine, supplejack

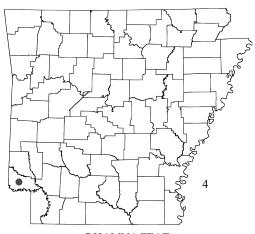


New Jersey-tea



Ceanothus herbaceus Raf.

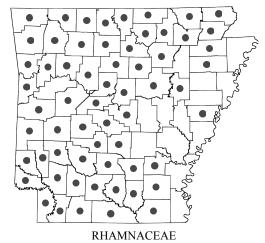
inland New Jersey-tea, redroot



RHAMNACEAE

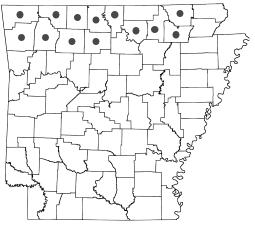
Condalia hookeri M.C.Johnst.

bluewood



Frangula caroliniana (Walter) A.Gray

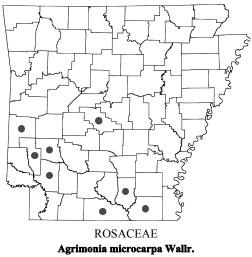
Carolina buckthorn, Indian-cherry



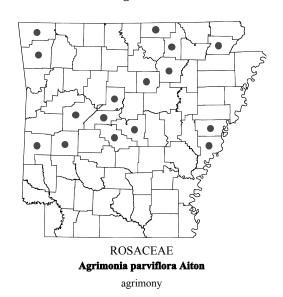
RHAMNACEAE

Rhamnus lanceolata Pursh

lance-leaf buckthorn

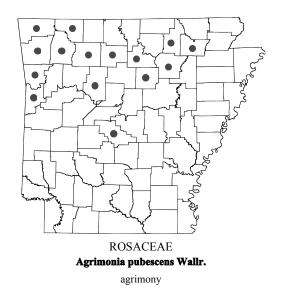


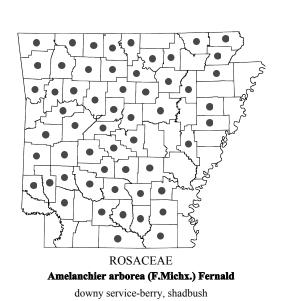
agrimony

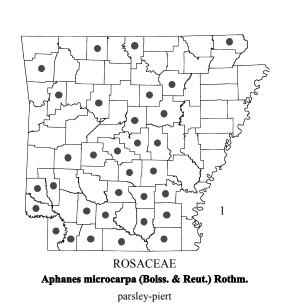


ROSACEAE Agrimonia rostellata Wallr.

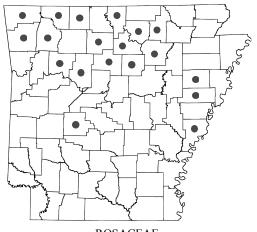
agrimony







344 ROSACEAE / Aruncus

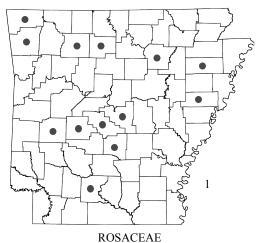


ROSACEAE

Aruncus dioicus (Walter) Fernald

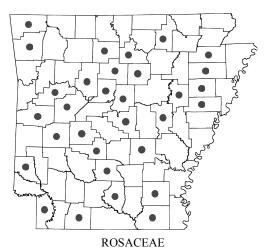
var. pubescens (Rydb.) Fernald

goat's-beard



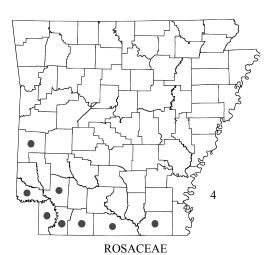
Chaenomeles speciosa (Sweet) Nakai

flowering-quince



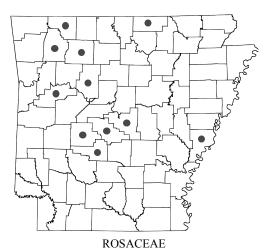
Crataegus berberifolia Torr. & A.Gray

barberry hawthorn



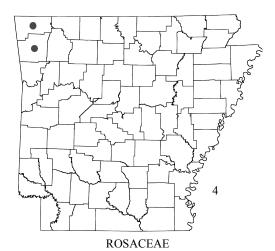
Crataegus brachyacantha Sarg. & Engelm.

blueberry hawthorn



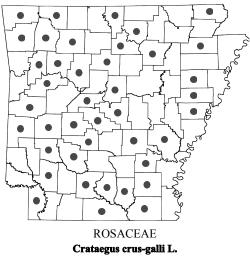
Crataegus calpodendron (Ehrh.) Medik.

pear hawthorn

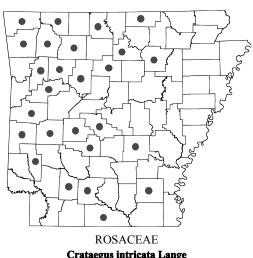


Crataegus coccinioides Ashe

Kansas hawthorn

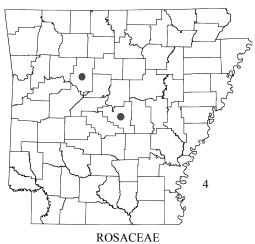


cockspur hawthorn



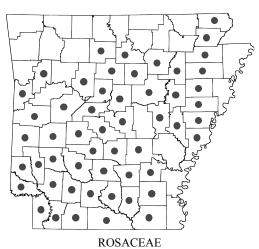
Crataegus intricata Lange

hawthorn



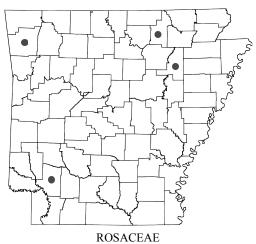
Crataegus macrosperma Ashe

fan-leaf hawthorn



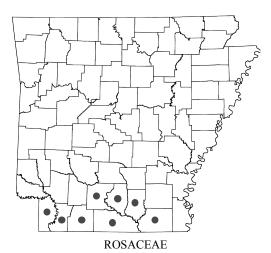
Crataegus marshallii Eggl.

parsley hawthorn



Crataegus mollis Scheele

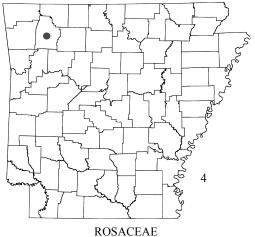
downy hawthorn



Crataegus opaca Hook. & Arn.

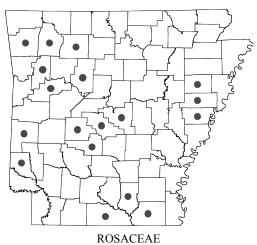
mayhaw, apple haw

346 ROSACEAE / Crataegus



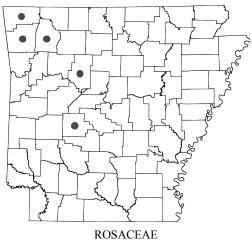
Crataegus phaenopyrum (L.f.) Medik.

Washington hawthorn



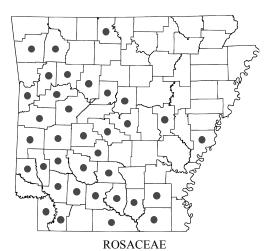
Crataegus pruinosa (H.L.Wendl.) K.Koch

hawthorn



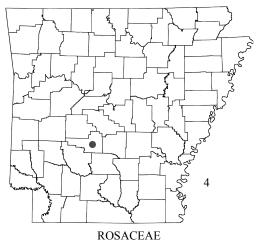
Crataegus punctata Jacq.

haw thorn



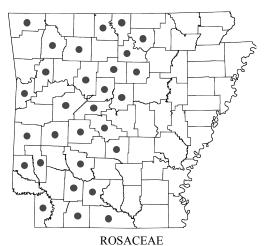
Crataegus spathulata Michx.

pasture hawthorn



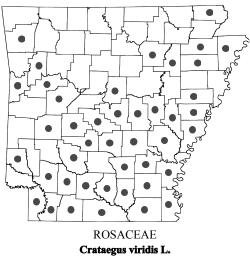
Crataegus triflora Chapm.

three-flower hawthorn

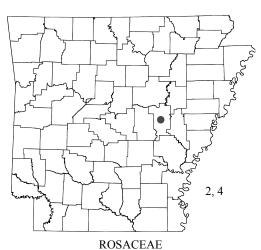


Crataegus uniflora Münchh.

dwarf hawthorn

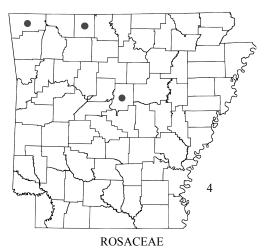


green hawthorn



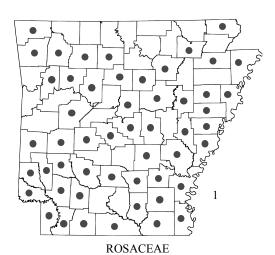
Crataegus × canescens (J.B.Phipps) T.A.Dickinson & E.Y.Y.Lo

Stern's medlar



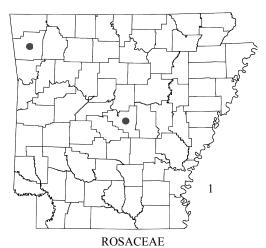
Drymocallis arguta (Pursh) Rydb.

tall cinquefoil



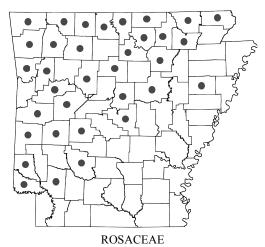
Duchesnea indica (Andrews) Focke

Indian-strawberry



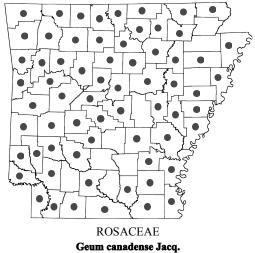
Exochorda racemosa (Lindl.) Rehder

pearlbush

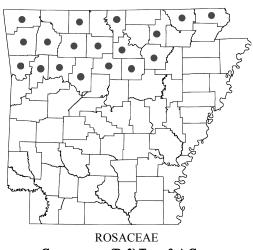


Fragaria virginiana Mill.

wild strawberry

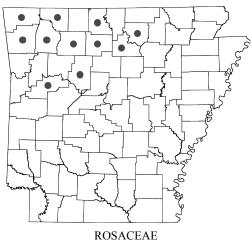


white avens



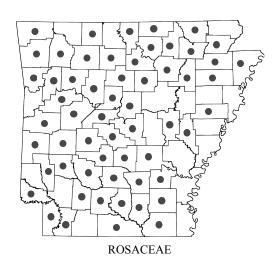
Geum vernum (Raf.) Torr. & A.Gray

spring avens



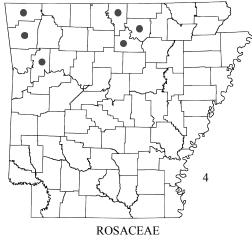
Geum virginianum L.

cream avens



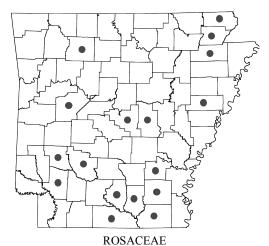
Gillenia stipulata (Muhl. ex Willd.) Nutt. in W.P.C.Barton

American-ipecac, Indian-physic



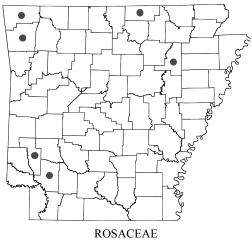
Gillenia trifoliata (L.) Moench

Bowman's-root



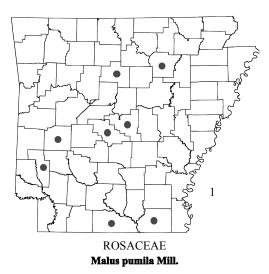
Malus angustifolia (Aiton) Michx.

southern crabapple, wild crabapple

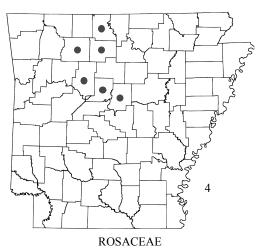


Malus ioensis (A.W.Wood) Britton

prairie crabapple

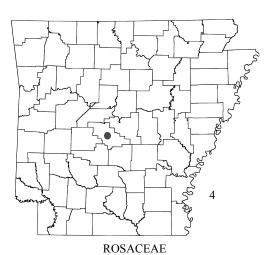


apple



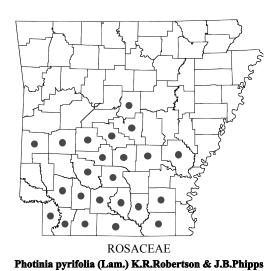
Neviusia alabamensis A.Gray

Alabama snow-wreath

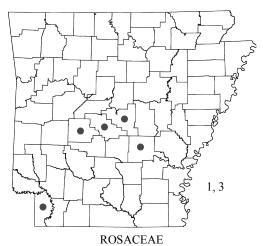


Photinia melanocarpa (Michx.) K.R.Robertson & J.B.Phipps

black chokeberry

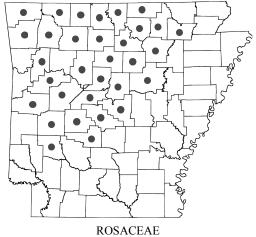


red chokeberry



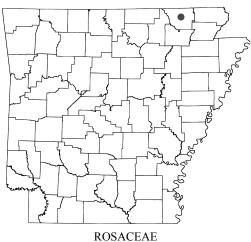
Photinia serratifolia (Desf.) Kalkman

Chinese photinia



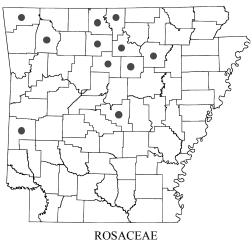
Physocarpus opulifolius (L.) Maxim.

ninebark



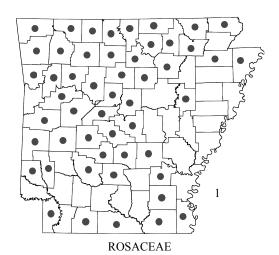
Potentilla canadensis L.

cinquefoil, five-finger



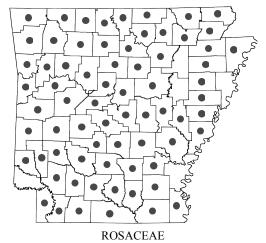
Potentilla norvegica L.

rough cinquefoil



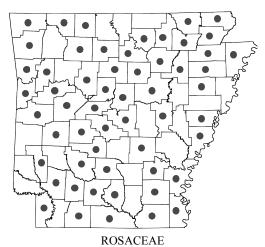
Potentilla recta L.

sulphur cinquefoil, rough-fruit cinquefoil



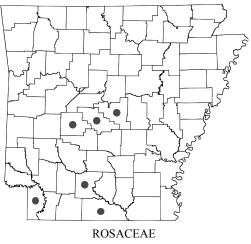
Potentilla simplex Michx.

oldfield cinquefoil, five-finger



Prunus angustifolia Marshall

Chickasaw plum



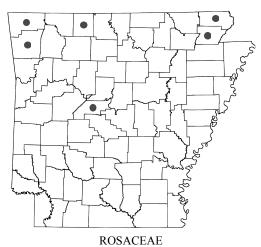
Prunus caroliniana (Mill.) Aiton

Carolina laurel cherry



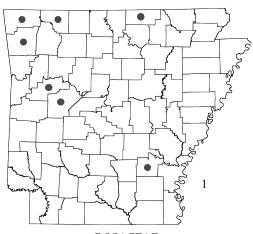
ROSACEAE Prunus gracilis Engelm. & A.Gray

Oklahoma plum



Prunus hortulana L.H.Bailey

hortulan plum



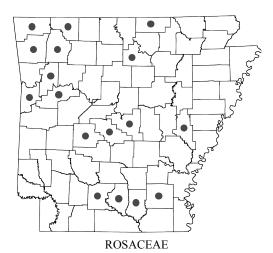
ROSACEAE

Prunus mahaleb L. perfumed cherry

ROSACEAE

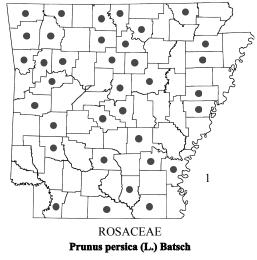
Prunus mexicana S.Watson

bigtree plum, Mexican plum

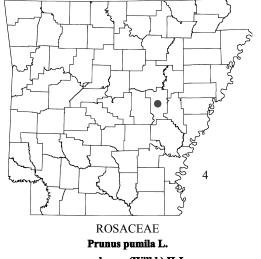


Prunus munsoniana W.Wight & Hedrick

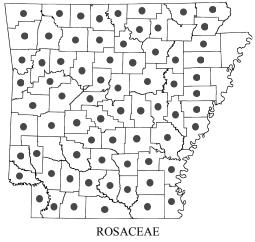
wild goose plum



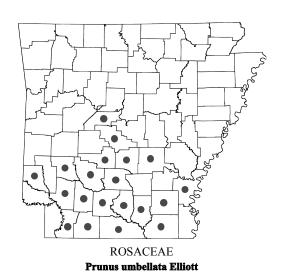
peach



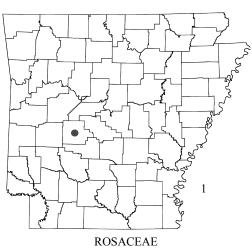
var. susquehanae (Willd.) H.Jaeger sand cherry



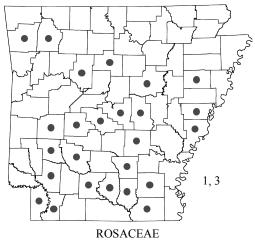
Prunus serotina Ehrh. black cherry



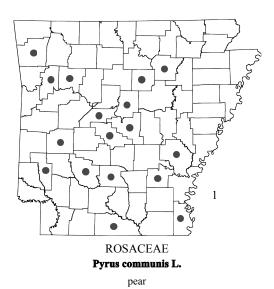
sloe plum, flatwoods plum, hog plum

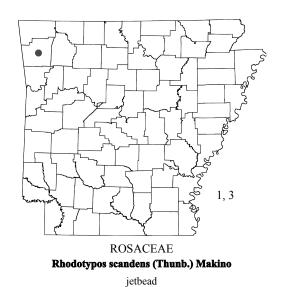


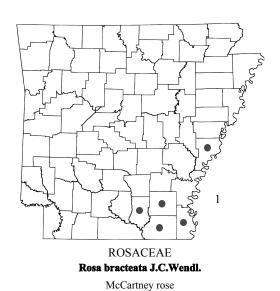
Pyracantha koidzumii (Hayata) Rehder firethorn

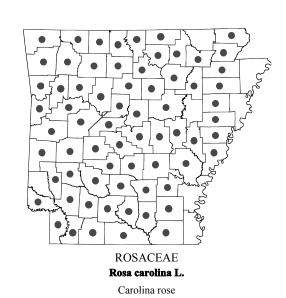


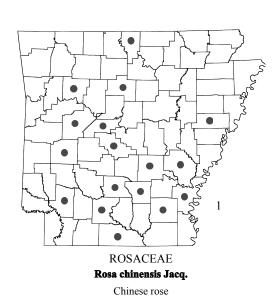
Pyrus calleryana Decne. Callery pear, Bradford pear

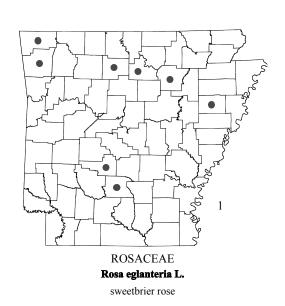


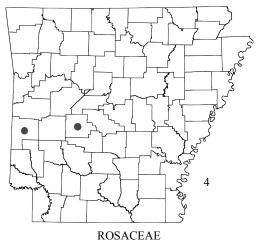






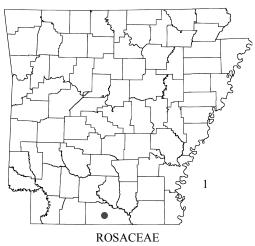






Rosa foliolosa Nutt. ex Torr. & A.Gray

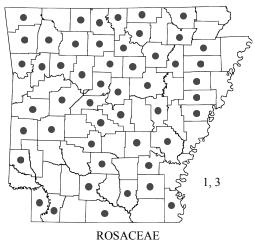
white prairie rose



ROSACEAE

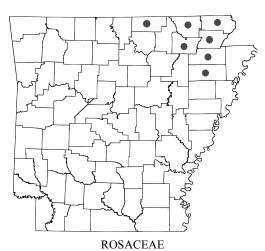
Rosa laevigata Michx.

Cherokee rose



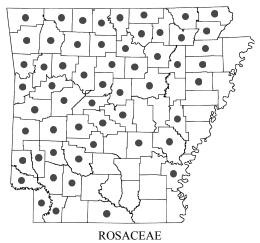
Rosa multiflora Thunb. ex Murray

multiflora rose



Rosa palustris Marshall

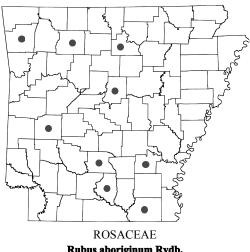
swamp rose



Rosa setigera Michx. climbing rose

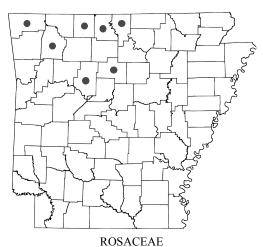
ROSACEAE

Rosa wichuraiana Crép.
memorial rose



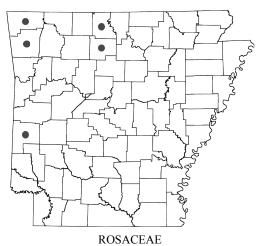
Rubus aboriginum Rydb.

dewberry



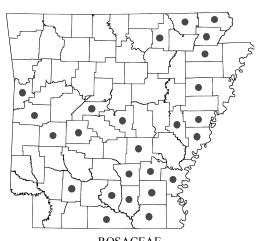
Rubus allegheniensis Porter ex L.H.Bailey

high-bush blackberry, common blackberry



Rubus alumnus L.H.Bailey

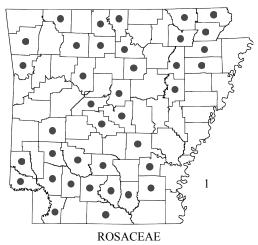
high-bush blackberry



ROSACEAE

Rubus argutus Link

high-bush blackberry, southern blackberry



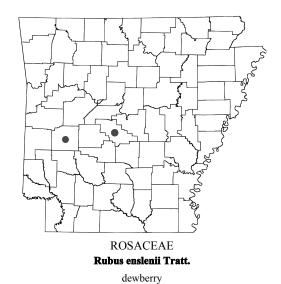
Rubus armeniacus Focke

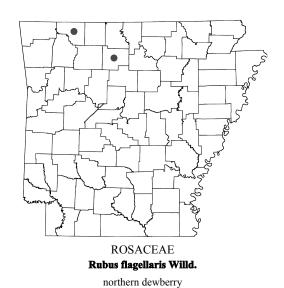
Himalayan blackberry, Armenian blackberry



Rubus bifrons Vest ex Tratt.

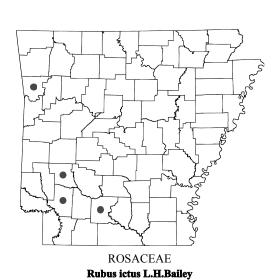
Himalayan-berry



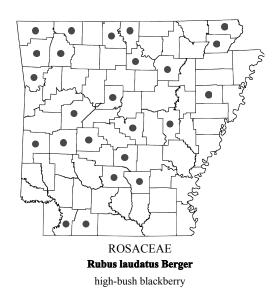


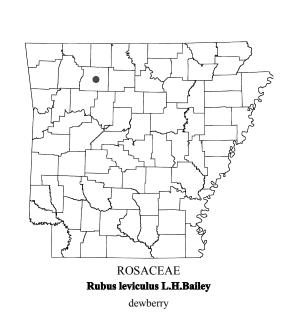
ROSACEAE

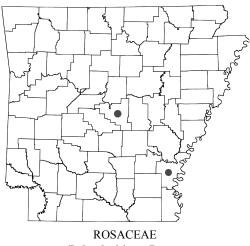
Rubus frondosus Bigelow
high-bush blackberry



savannah dewberry

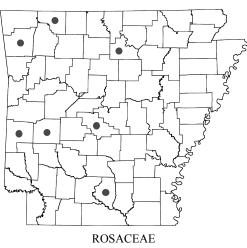






Rubus louisianus Berger

high-bush blackberry, swampberry



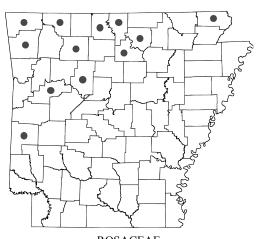
Rubus meracus L.H.Bailey

dewberry



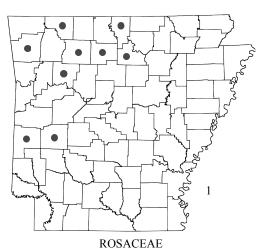
Rubus mollior L.H.Bailey

high-bush blackberry



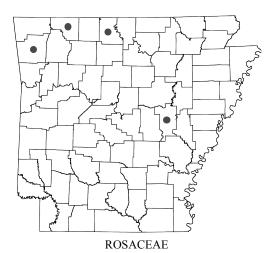
ROSACEAE

Rubus occidentalis L. black raspberry



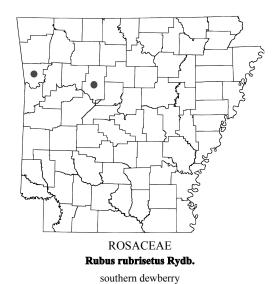
Rubus phoenicolasius Maxim.

wineberry, wine raspberry



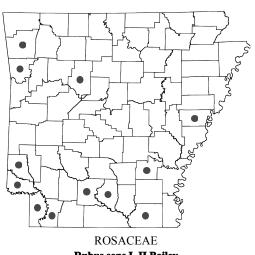
Rubus roribaccus (L.H.Bailey) Rydb.

Lucretia dewberry



1, 3 ROSACEAE

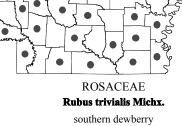
Rubus serissimus L.H.Bailey everbearing blackberry

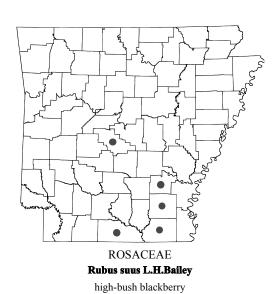


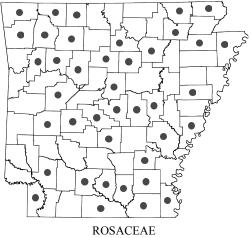
Rubus sons L.H.Bailey southern dewberry



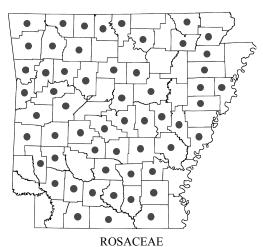
Steele's dewberry



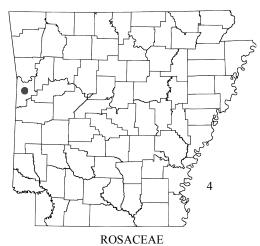




Rubus subg. Rubus sect. Arguti Rydberg



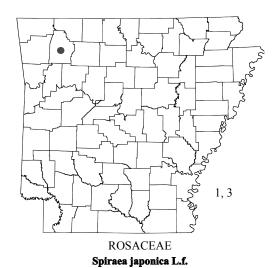
Rubus subg. Rubus sect. Flagellares L.H. Bailey



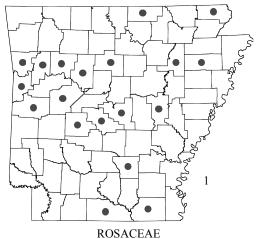
Sanguisorba annua (Nutt. ex Hook.) Nutt. ex Torr. & A.Gray prairie burnet



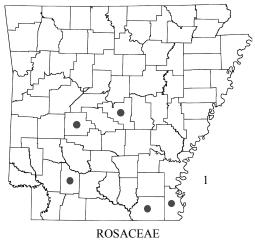
double bridal-wreath spiraea, Reeves' spiraea



Japanese spiraea, Japanese meadowsweet

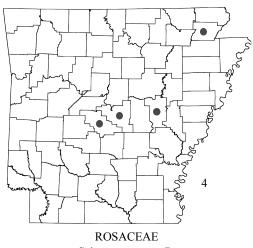


Spiraea prunifolia Siebold & Zucc. bridal-wreath spiraea



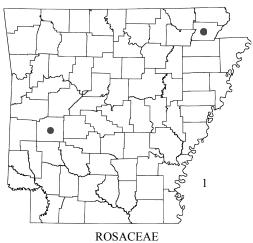
Spiraea thunbergii Siebold ex Blume

Thunberg's spiraea



Spiraea tomentosa L.

hardhack, steeple-bush



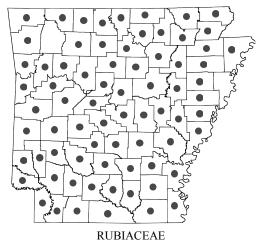
Spiraea ×billiardii Hérincq

Billiard's spiraea



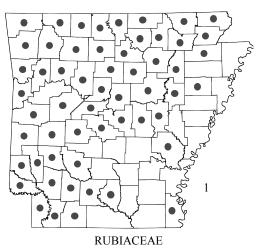
ROSACEAE Waldsteinia fragarioides (Michx.) Tratt.

barren-strawberry



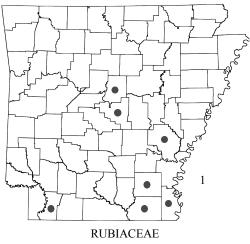
Cephalanthus occidentalis L.

buttonbush



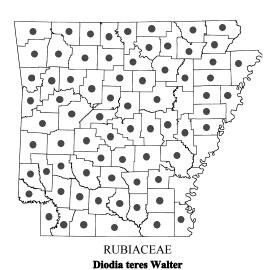
Cruciata pedemontana (Bellardi) Ehrend.

Piedmont bedstraw

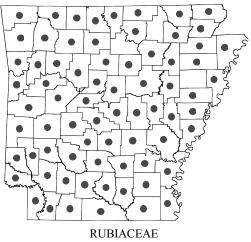


Diodia dasycephala Cham. & Schltdl.

buttonweed

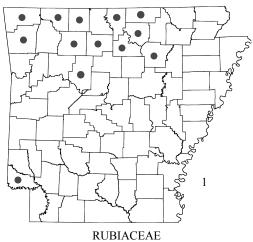


poor-Joe, rough buttonweed



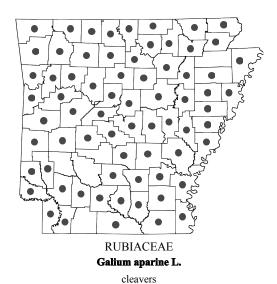
Diodia virginiana L.

Virginia buttonweed



Galium anglicum Huds.

English bedstraw

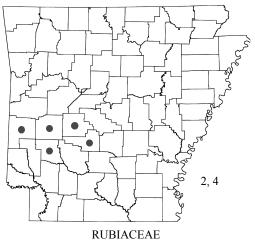


RUBIACEAE

Galium arkansanum A.Gray

var. arkansanum

Arkansas bedstraw

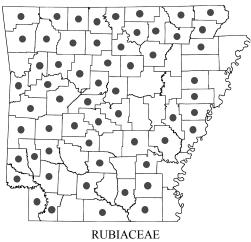


RUBIACEAE

Galium arkansanum A.Gray

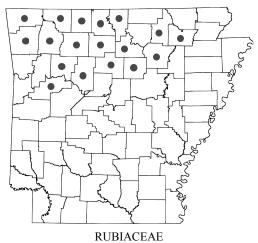
var. pubiflorum E.B.Sm.

hairy-flower Arkansas bedstraw



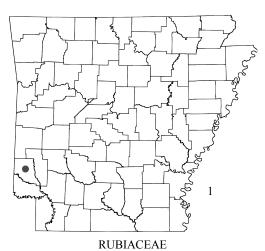
Galium circaezans Michx.

wild licorice



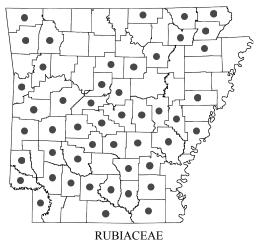
Galium concinnum Torr. & A.Gray

shining bedstraw



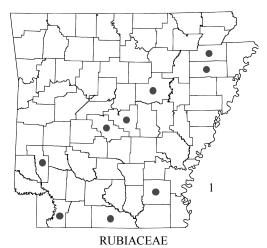
Galium divaricatum Pourr. ex Lam.

Lamarck's bedstraw



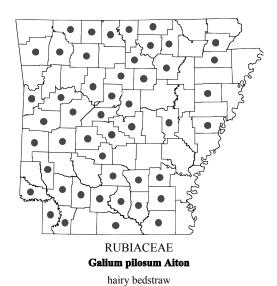
Galium obtusum Bigelow

blunt-leaf bedstraw

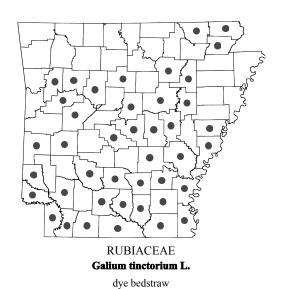


Galium parisiense L.

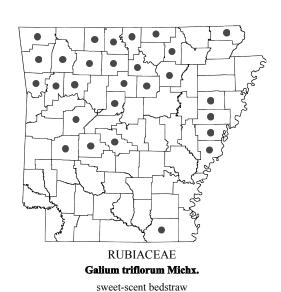
wall bedstraw

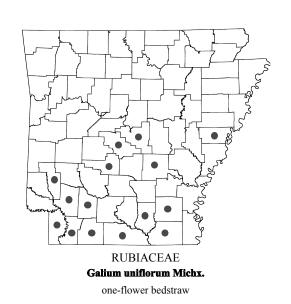




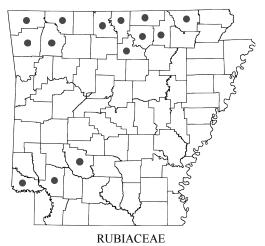






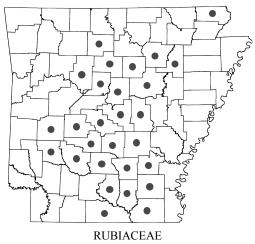


364 RUBIACEAE / Galium



Galium virgatum Nutt. ex Torr. & A.Gray

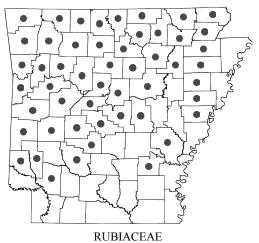
southwestern bedstraw



RUBIACEAE

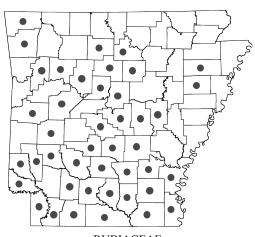
Houstonia caerulea L.

Quaker-ladies, bluet



Houstonia longifolia Gaertn.

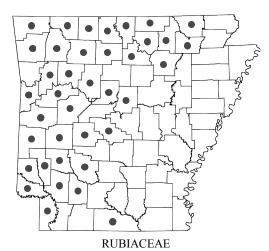
long-leaf bluet, summer bluet



RUBIACEAE

Houstonia micrantha (Shinners) Terrell

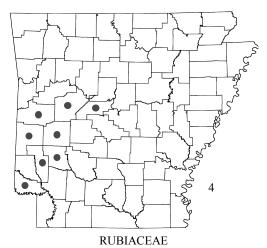
southern bluet, white bluet



Houstonia nigricans (Lam.) Fernald

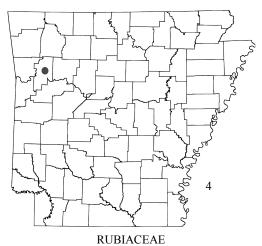
var. nigricans

diamond-flower, glade bluet



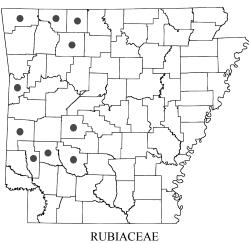
Houstonia ouachitana (E.B.Sm.) Terrell

Ouachita bluet



Houstonia parviflora Holz. ex Greenm.

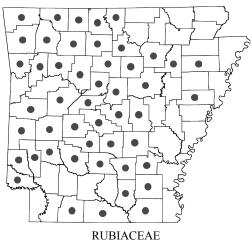
Greenman's bluet



Houstonia purpurea L.

var. calycosa Shuttlw. ex A.Gray

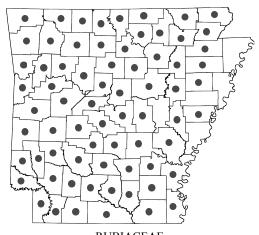
glade mountain houstonia



Houstonia purpurea L.

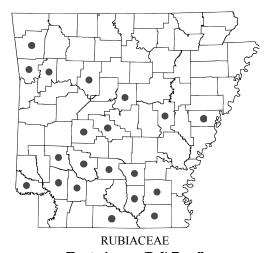
var. purpurea

mountain houstonia, summer bluet



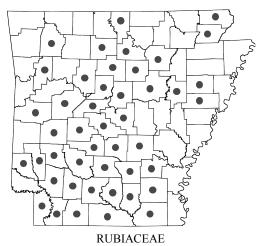
RUBIACEAE Houstonia pusilla Schoepf

star-violet, tiny bluet

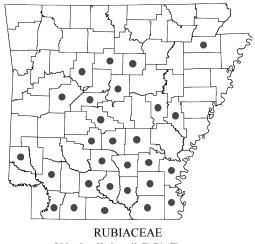


Houstonia rosea (Raf.) Terrell

rose bluet

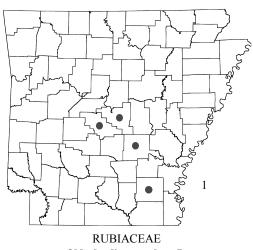


Mitchella repens L. partridge-berry



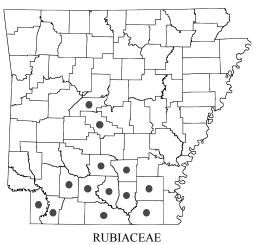
Oldenlandia boscii (DC.) Chapm.

Bosc's bluet



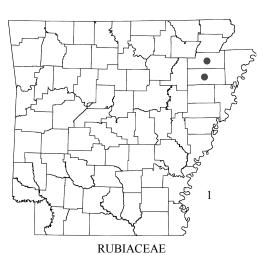
Oldenlandia corymbosa L.

bluet, diamond-flower



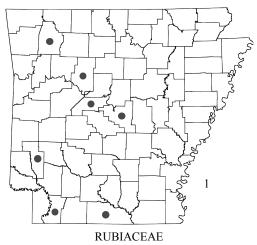
Oldenlandia uniflora L.

oldenlandia, bluet



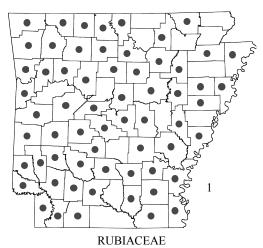
Pentodon pentandrus (Schumach. & Thonn.) Vatke

pentodon



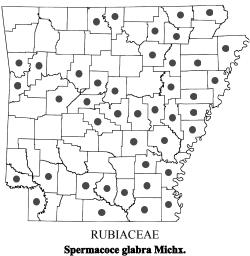
Richardia scabra L.

rough Mexican-clover, pusley

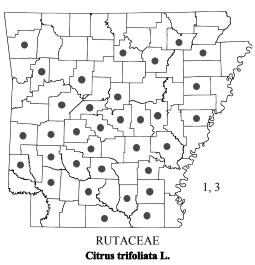


Sherardia arvensis L.

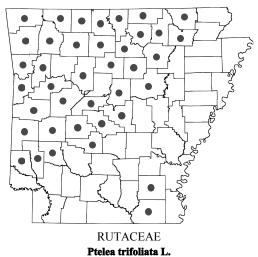
field-madder



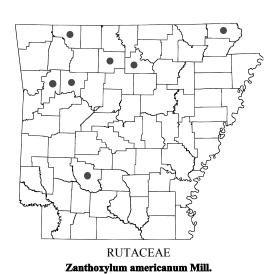
smooth buttonweed



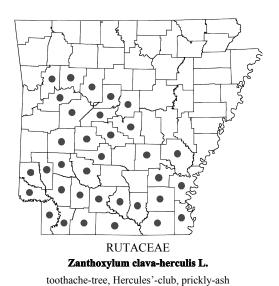
trifoliate orange

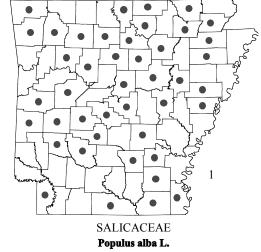


wafer-ash, hop-tree

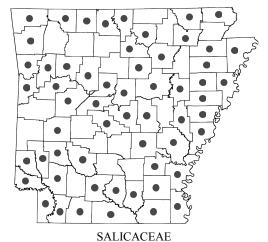


prickly-ash, toothache-tree



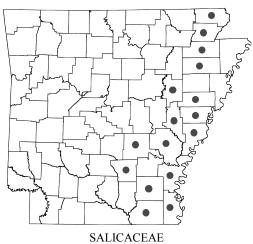


white poplar, silver poplar



Populus deltoides W.Bartram ex Marshall subsp. deltoides

eastern cottonwood



Populus heterophylla L.

swamp cottonwood



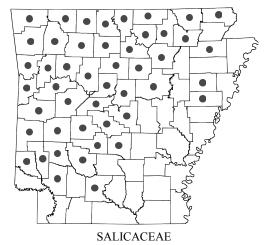


white willow

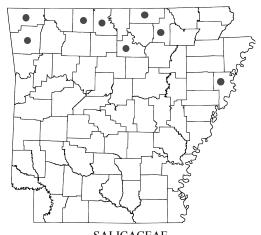


Salix babylonica L.

weeping willow

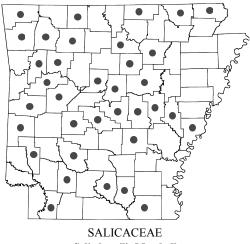


Salix caroliniana Michx. Carolina willow, Ward's willow



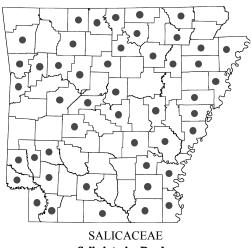
SALICACEAE Salix eriocephala Michx.

Missouri willow



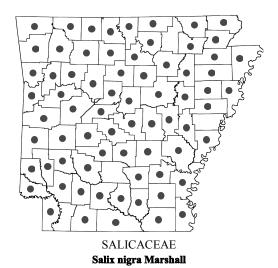
Salix humilis Marshall

upland willow, prairie willow See Appendix I for infraspecific taxa and species status.



Salix interior Rowlee

sandbar willow



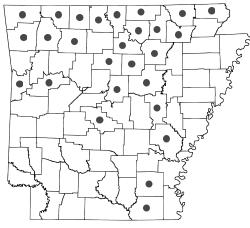
black willow



SALICACEAE

Salix sericea Marshall

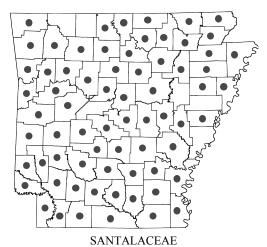
silky willow



SANTALACEAE Comandra umbellata (L.) Nutt.

subsp. umbellata

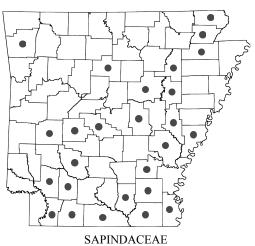
bastard-toadflax



Phoradendron leucarpum (Raf.) Reveal & M.C.Johnst.

mistletoe

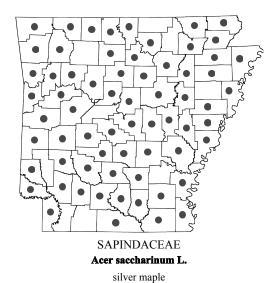


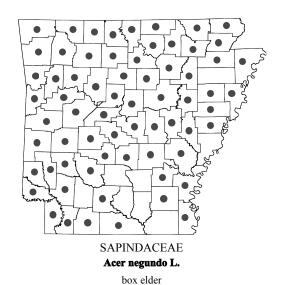


Acer rubrum L.

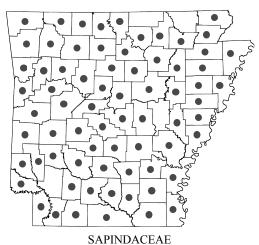
var. drummondii (Hook. & Arn. ex Nutt.) Sarg.

swamp red maple

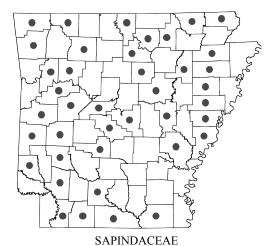




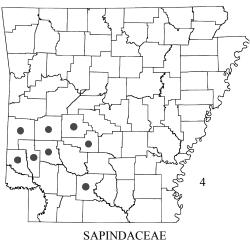
See *Appendix I* for infraspecific taxa and species status.



Acer rubrum L.
var. rubrum
red maple



Acer saccharum Marshall
var. floridanum (Chapm.) Small & A.Heller
southern sugar maple



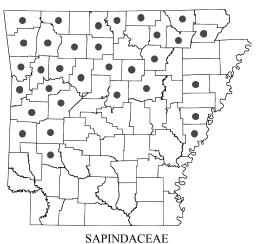
Acer saccharum Marshall var. leucoderme (Small) Sarg.

chalk maple



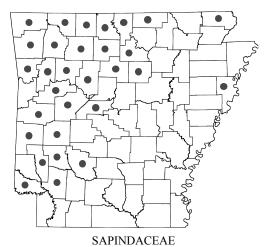
SAPINDACEAE Acer saccharum Marshall var. nigrum (F.Michx.) Britton

black maple



Acer saccharum Marshall var. saccharum

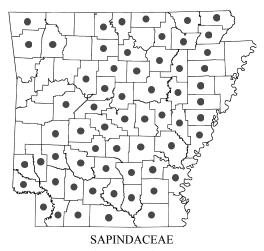
sugar maple



Aesculus glabra Willd.

Ohio buckeye

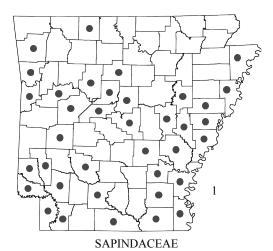
See Appendix I for infraspecific taxa and species status.



Aesculus pavia L.

var. pavia

red buckeye



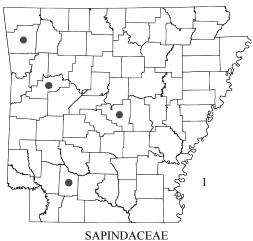
Cardiospermum halicacabum L.

balloon-vine



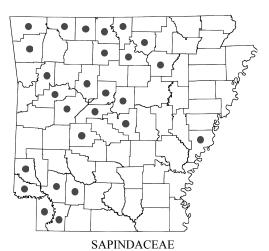
Koelreuteria bipinnata Franch.

Chinese flame-tree, golden-rain-tree



Koelreuteria paniculata Laxm.

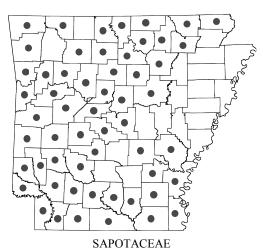
golden-rain-tree



Sapindus saponaria L.

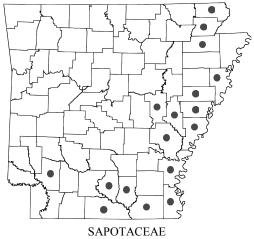
var. drummondii (Hook. & Arn.) L.D.Benson

soapberry



Sideroxylon lanuginosum Michx.

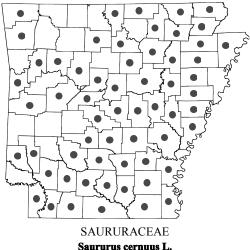
gum bumelia, chittamwood



Sideroxylon lycioides L. buckthorn bumelia

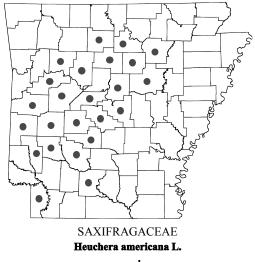


SAURURACEAE **Houttuynia cordata Thunb.**chameleon



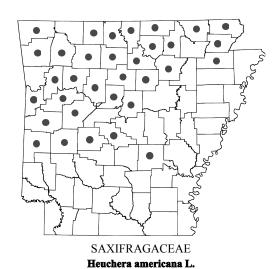
Saururus cernuus L.

lizard's-tail



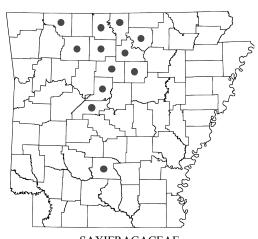
var. americana

American alumroot, rock-geranium



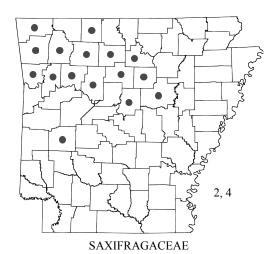
var. hirsuticaulis (Wheelock) Rosend., Butters & Lakela

American alumroot, rock-geranium



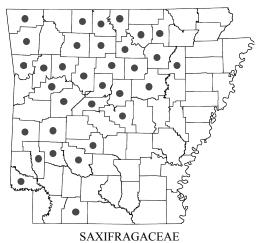
SAXIFRAGACEAE Heuchera parviflora Bartl. var. puberula (Mack. & Bush) E.F.Wells

alumroot



Heuchera villosa Michx. var. arkansana (Rydb.) E.B.Sm.

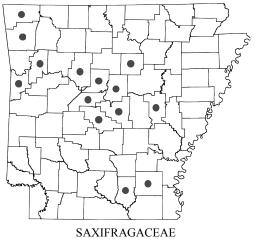
Arkansas alumroot



Micranthes palmeri Bush

Palmer's saxifrage

374 SAXIFRAGACEAE / Micranthes



Micranthes texana (Buckley) Small

Texas saxifrage



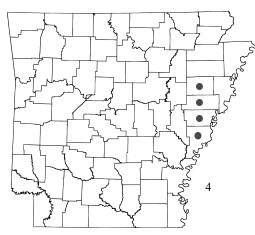
SAXIFRAGACEAE Micranthes virginiensis (Michx.) Small

early saxifrage



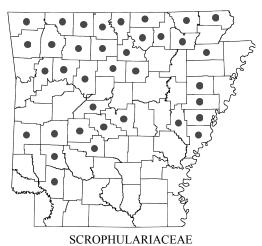
Mitella diphylla L.

miterwort, bishop's-cap



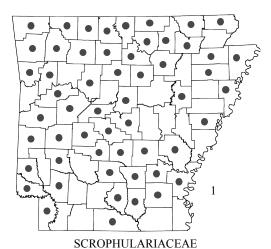
SCHISANDRACEAE

Schisandra glabra (Brickell) Rehder bay star-vine, climbing-magnolia



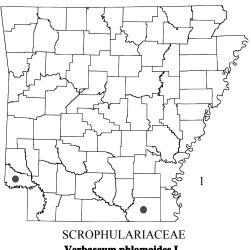
Scrophularia marilandica L.

carpenter's-square, figwort

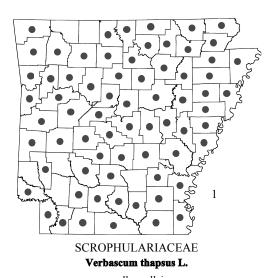


Verbascum blattaria L.

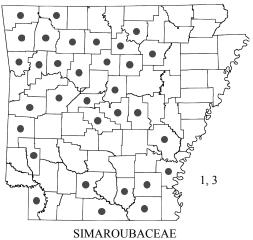
moth mullein



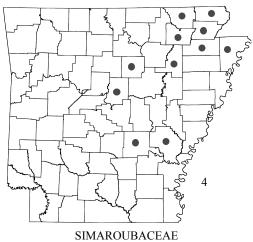
Verbascum phlomoides L. orange mullein



woolly mullein

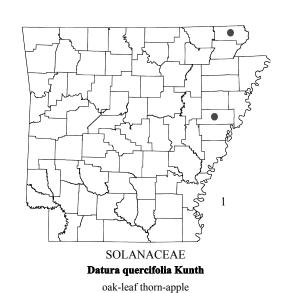


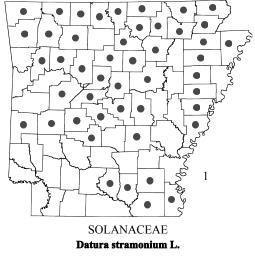
Ailanthus altissima (Mill.) Swingle tree-of-heaven, stink-tree



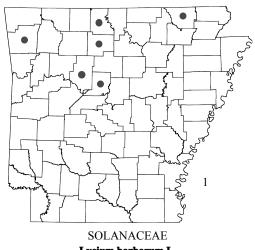
Leitneria floridana Chapm. corkwood



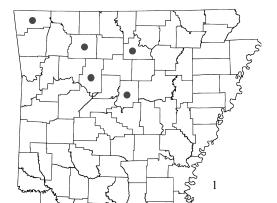




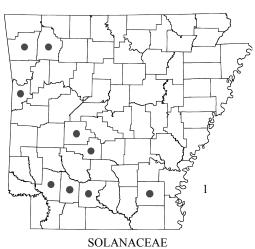
jimsonweed



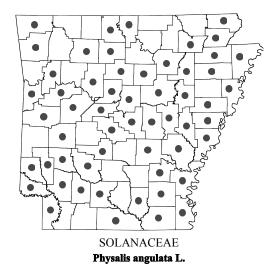
Lycium barbarum L. matrimony-vine



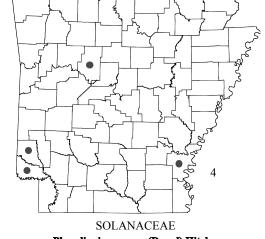
SOLANACEAE Nicandra physalodes (L.) Gaertn. apple-of-Peru



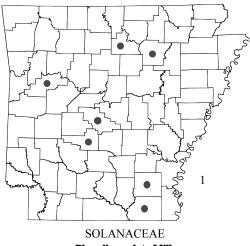
Petunia ×atkinsiana D.Don ex Loudon garden petunia



cut-leaf ground-cherry

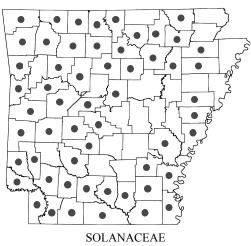


Physalis cinerascens (Dunal) Hitchc. var. cinerascens small-flower ground-cherry



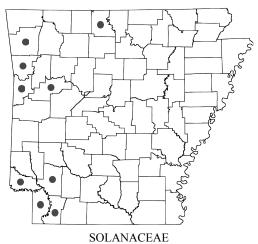
Physalis cordata Mill.

heart-leaf ground-cherry



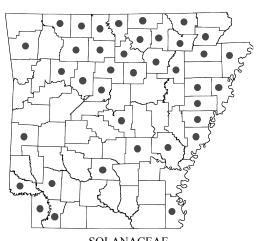
Physalis heterophylla Nees

clammy ground-cherry



Physalis longifolia Nutt. var. longifolia

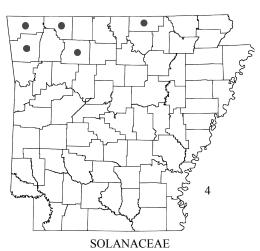
long-leaf ground-cherry



SOLANACEAE Physalis longifolia Nutt.

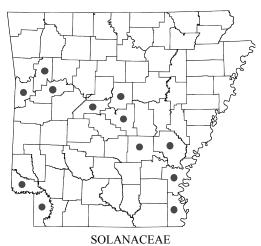
var. subglabrata (Mack. & Bush) Cronquist

long-leaf ground-cherry



Physalis missouriensis Mackenzie & Bush

Missouri ground-cherry



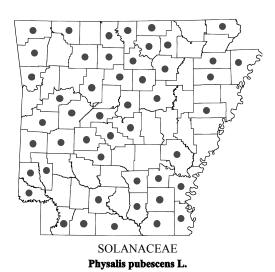
Physalis mollis Nutt.

field ground-cherry

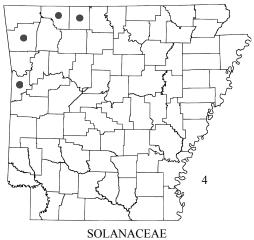


Physalis philadelphica Lam.

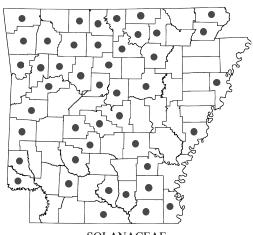
tomatillo, Mexican ground-cherry



downy ground-cherry

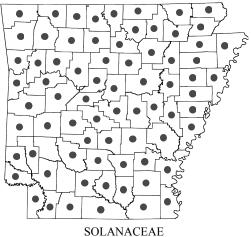


Physalis pumila Nutt. prairie ground-cherry



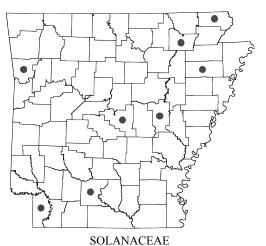
SOLANACEAE Physalis virginiana Mill.

Virginia ground-cherry



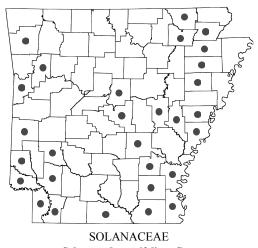
Solanum carolinense L.

Carolina horse-nettle



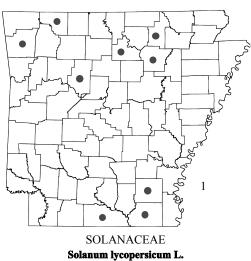
Solanum dimidiatum Raf.

western horse-nettle

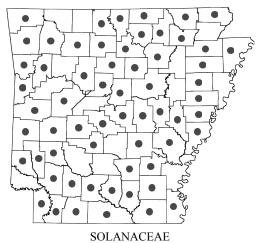


Solanum elaeagnifolium Cav.

silver-leaf nightshade, white horse-nettle

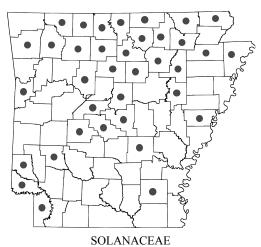


garden tomato



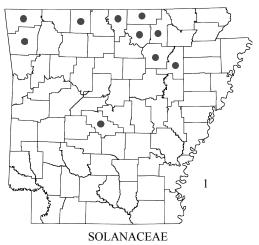
Solanum ptychanthum Dunal

black nightshade



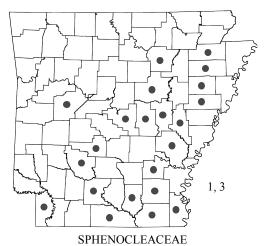
Solanum rostratum Dunal

buffalo-bur



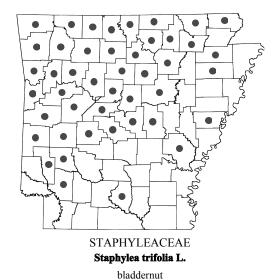
Solanum sarrachoides Sendtn.

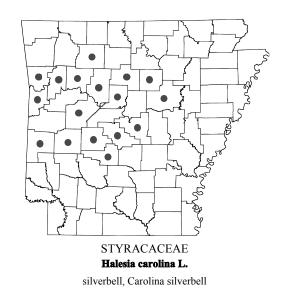
hairy nightshade

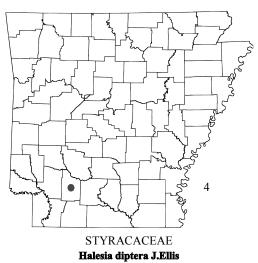


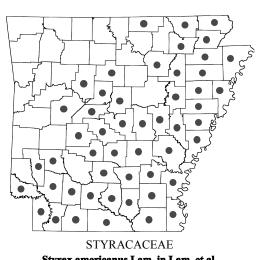
Sphenoclea zeylanica Gaertn.

chickenspike



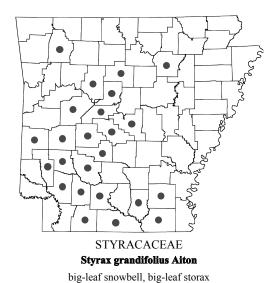


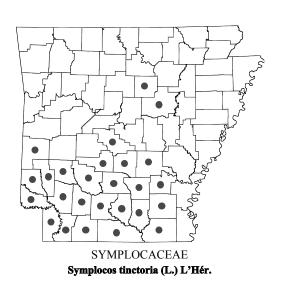


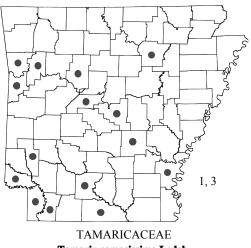


two-wing silverbell, snowdrop

Styrax americanus Lam. in Lam. et al.American snowbell, storax

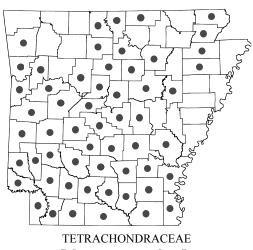






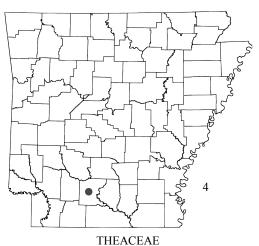
Tamarix ramosissima Ledeb.

tamarisk, salt-cedar



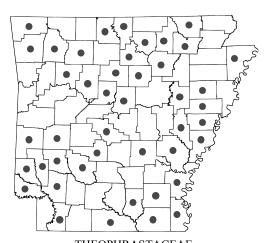
Polypremum procumbens L.

juniper-leaf



Stewartia malacodendron L.

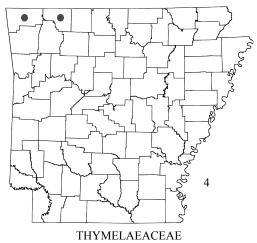
silky-camellia



THEOPHRASTACEAE

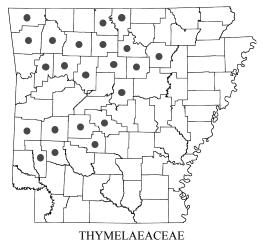
Samolus parviflorus Raf.

water-pimpernel, brookweed



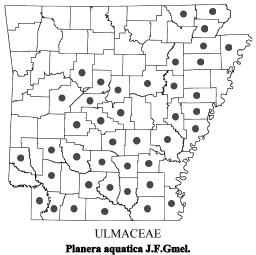
Dirca decipiens A.J.Floden

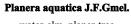
Ozark leatherwood



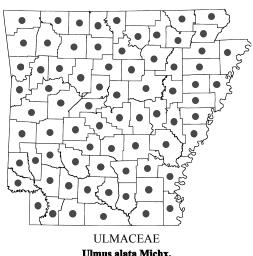
Dirca palustris L.

leatherwood



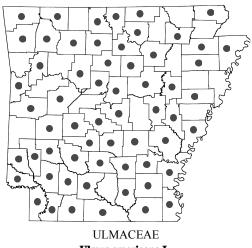


water-elm, planer-tree



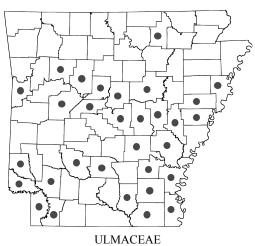
Ulmus alata Michx.

winged elm



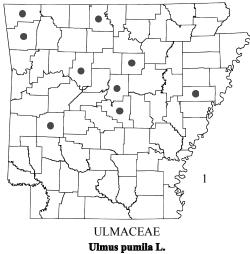
Ulmus americana L.

American elm



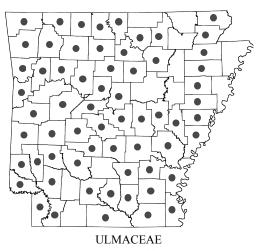
Ulmus crassifolia Nutt.

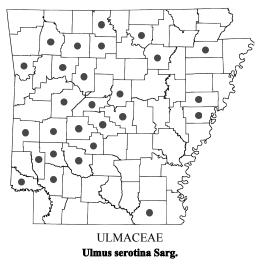
cedar elm



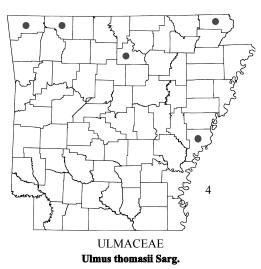
Siberian elm

Ulmus rubra Muhl. slippery elm, red elm

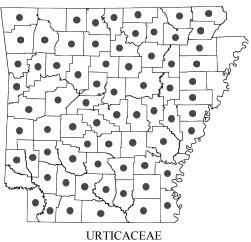




September elm

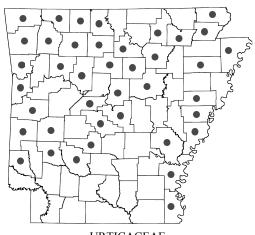


rock elm



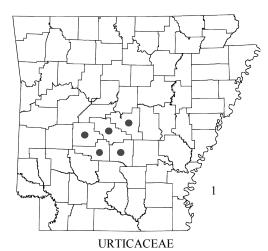
Boehmeria cylindrica (L.) Sw.

false nettle



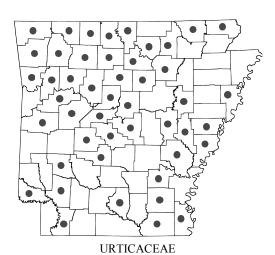
URTICACEAE Laportea canadensis (L.) Wedd.

wood-nettle



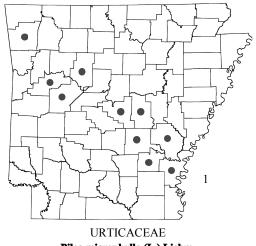
Parietaria floridana Nutt.

Florida pellitory



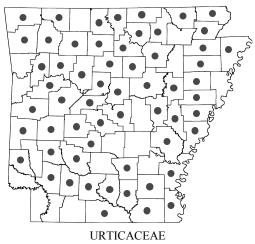
Parietaria pensylvanica Muhl. ex Willd.

pellitory



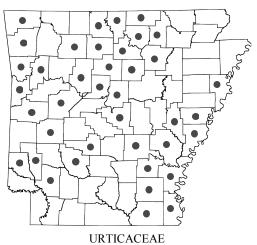
Pilea microphylla (L.) Liebm.

artillery-weed



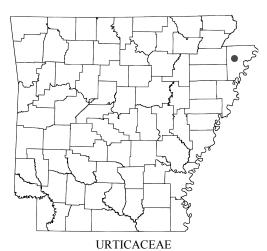
Pilea pumila (L.) A.Gray

clearweed



Urtica chamaedryoides Pursh

stinging nettle



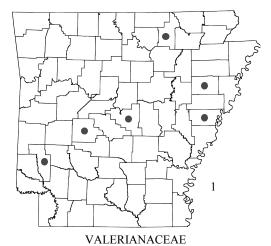
Urtica gracilis Aiton

stinging nettle



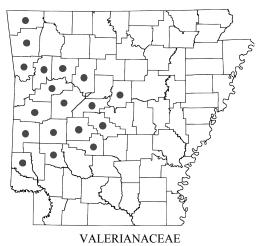
Valerianella amarella (Lindl. ex A.Gray) Krok

hairy cornsalad



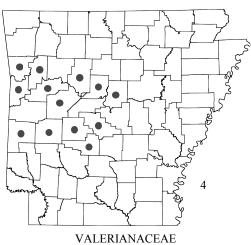
Valerianella locusta (L.) Laterr.

European cornsalad



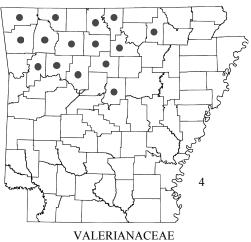
Valerianella longiflora (Torr. & A.Gray) Walp.

long-flower cornsalad



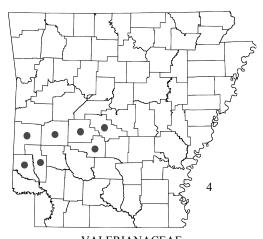
Valerianella nuttallii (Torr. & A.Gray) Walp.

Nuttall's cornsalad



Valerianella ozarkana Dyal

Ozark cornsalad



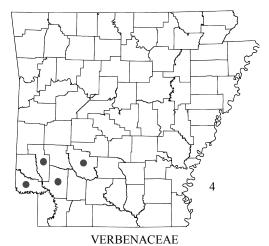
VALERIANACEAE

Valerianella palmeri Dyal Palmer's cornsalad

VALERIANACEAE

Valerianella radiata (L.) Dufr.

cornsalad



Glandularia bipinnatifida (Nutt.) Nutt.

var. bipinnatifida

Dakota vervain



Glandularia canadensis (L.) Nutt.

rose vervain



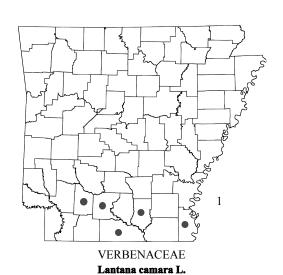
VERBENACEAE

Glandularia pulchella (Sweet) Tronc. moss vervain, South American vervain

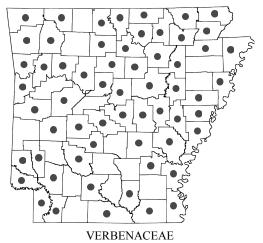


Glandularia pumila (Rydb.) Umber

pink vervain

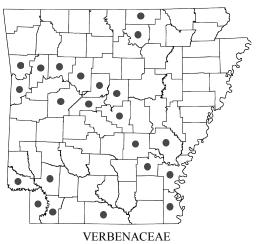


lantana



Phyla lanceolata (Michx.) Greene

northern frog-fruit



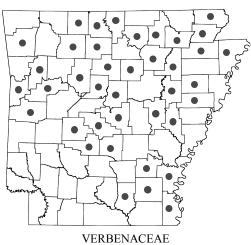
Phyla nodiflora (L.) Greene

turkey-tangle frog-fruit, Texas frog-fruit



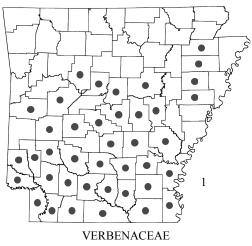
Verbena bonariensis L.

South American vervain



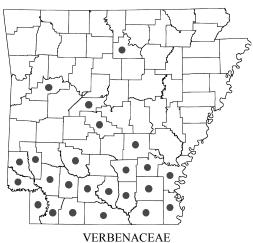
Verbena bracteata Lag. & Rodr.

prostrate vervain



Verbena brasiliensis Vell.

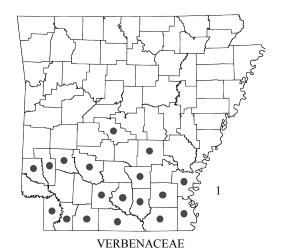
Brazilian vervain



Verbena halei Small Texas vervain

VERBENACEAE Verbena hastata L.

blue vervain

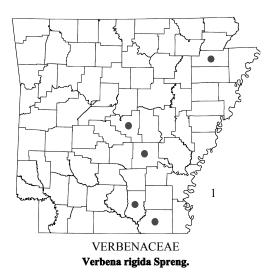


Verbena incompta P.W.Michael

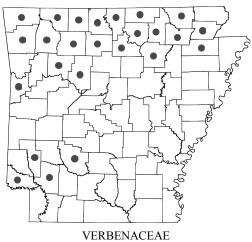
South American vervain



Uruguayan vervain

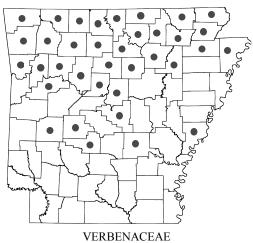


tuber vervain



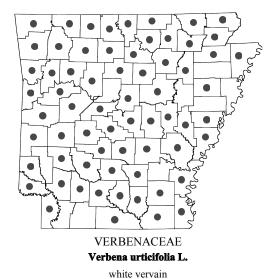
Verbena simplex Lehm.

narrow-leaf vervain



Verbena stricta Vent.

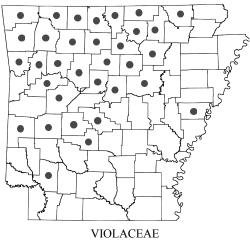
hoary vervain



VERBENACEAE

Verbena xutha Lehm.

Gulf vervain

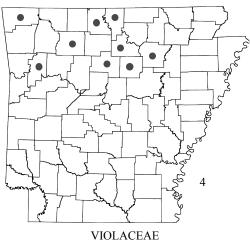


Hybanthus concolor (T.F.Forst.) Spreng.

green-violet



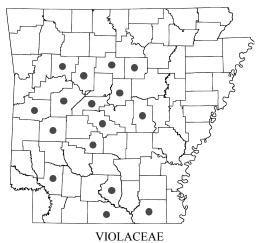
Johnny-jump-up, field pansy



Viola canadensis L.

var. canadensis

Canadian white violet

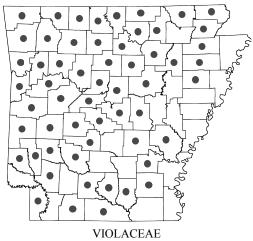


Viola lanceolata L.

lance-leaf violet



three-lobe violet, wood violet

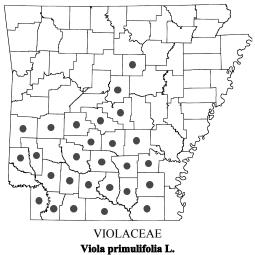


Viola pedata L.

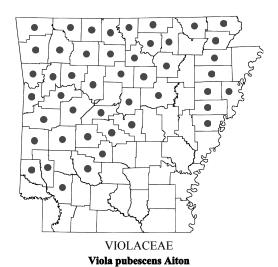
bird's-foot violet



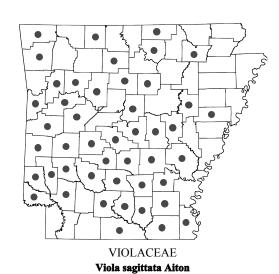
prairie violet, crow's-foot violet



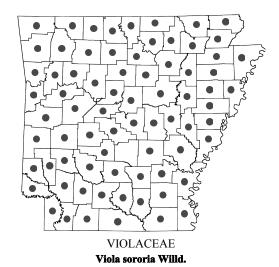
bog white violet, primrose-leaf violet



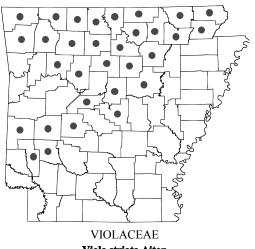
downy yellow violet, smooth yellow violet



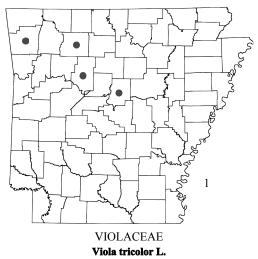
arrow-leaf violet



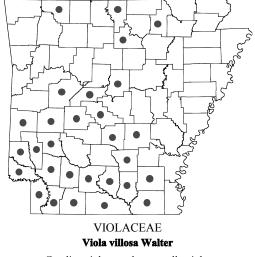
woolly blue violet
See *Appendix I* for infraspecific taxa and species status.



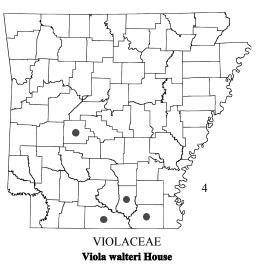
Viola striata Aiton cream violet, pale violet



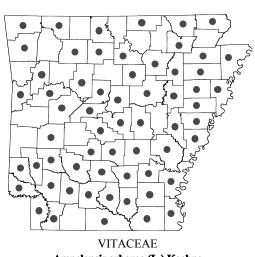
Johnny-jump-up, wild pansy



Carolina violet, southern woolly violet



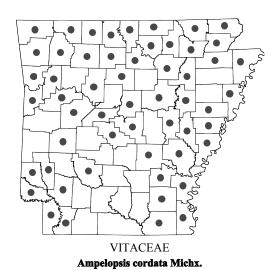
Walter's violet, prostrate blue violet



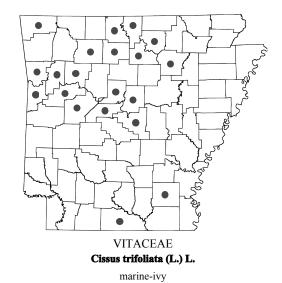
Ampelopsis arborea (L.) Koehne peppervine



Ampelopsis brevipedunculata (Maxim.) Trautv. porcelain-berry

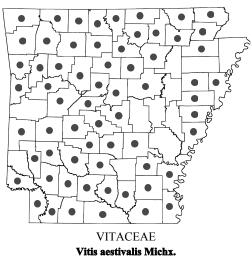


false grape, raccoon-grape, heart-leaf peppervine



VITACEAE Parthenocissus quinquefolia (L.) Planch.

Virginia-creeper, woodbine



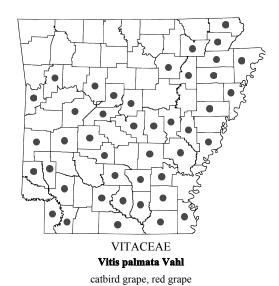
Vitis aestivalis Michx.

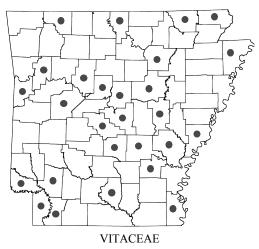
summer grape



Vitis cinerea (Engelm. in A.Gray) Engelm. ex Millardet

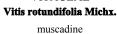
winter grape, downy grape, gray-bark grape

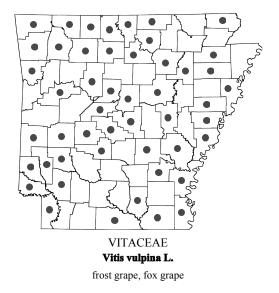


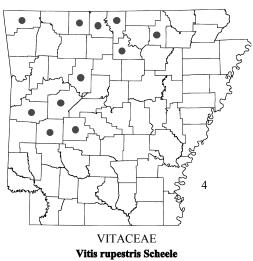


Vitis riparia Michx. river-bank grape

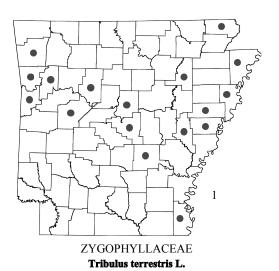




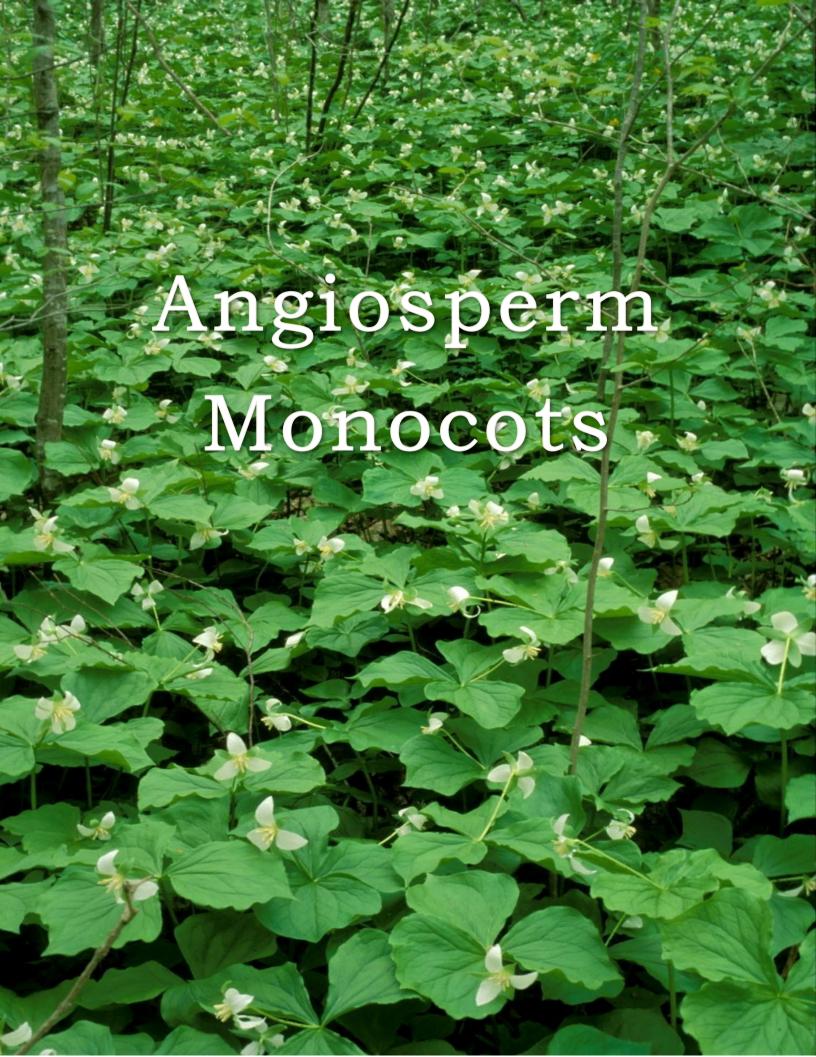




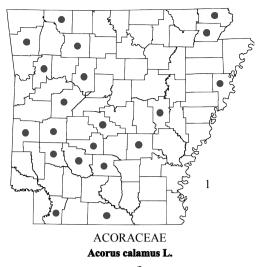
sand grape, rock grape



puncture-vine, caltrop, goat's-head







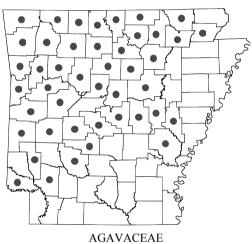
sweet-flag



AGAVACEAE

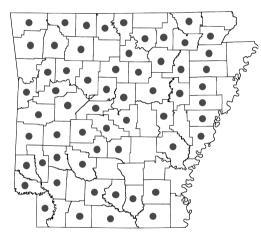
Camassia angusta (Engelm. & A.Gray) Blank.

prairie wild hyacinth, prairie camas



Camassia scilloides (Raf.) Cory

wild hyacinth



AGAVACEAE

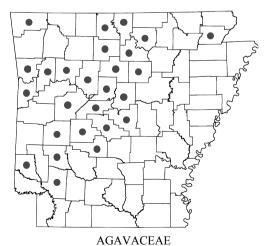
Manfreda virginica (L.) Salisb. ex Rose

false aloe



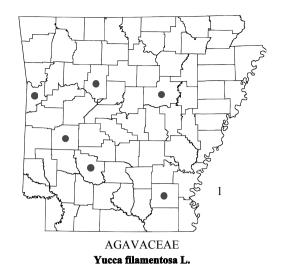
Schoenolirion wrightii Sherman

Texas sunnybell

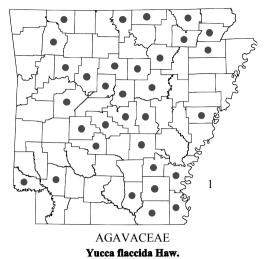


Yucca arkansana Trel.

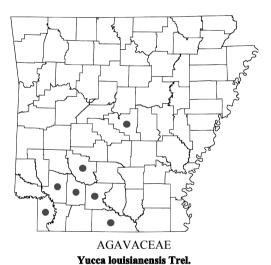
Arkansas yucca, soapweed



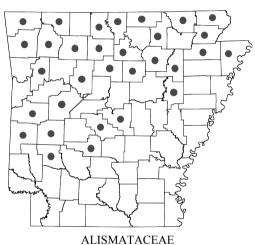
Adam's-needle, Spanish-bayonet, yucca



Adam's-needle, Spanish-bayonet, yucca



Louisiana yucca, sandhill yucca



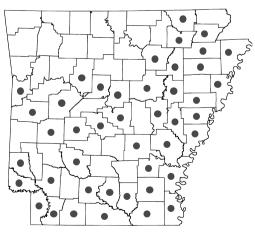
Alisma subcordatum Raf.
water-plantain



ALISMATACEAE

Echinodorus berteroi (Spreng.) Fassett

upright burhead



ALISMATACEAE

Echinodorus cordifolius (L.) Griseb.

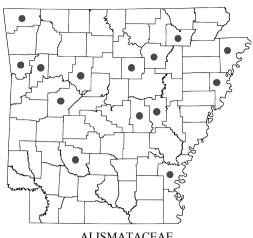
subsp. cordifolius

creeping burhead



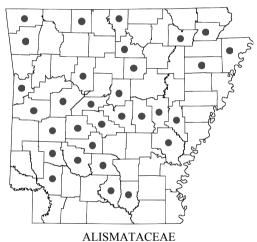
Sagittaria australis (J.G.Sm.) Small

arrowhead



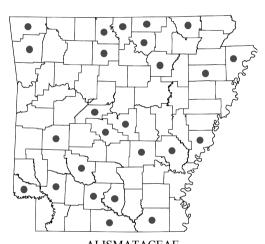
ALISMATACEAE Sagittaria brevirostra Mack. & Bush

arrowhead



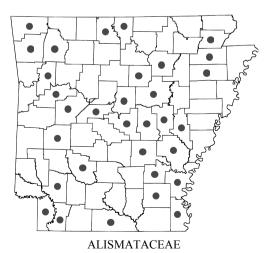
Sagittaria graminea Michx.

grass-leaf arrowhead



ALISMATACEAE

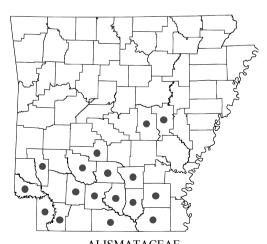
Sagittaria latifolia Willd. arrowhead, duck-potato



Sagittaria montevidensis Cham. & Schtdl.

subsp. calycina (Engelm.) Bogin

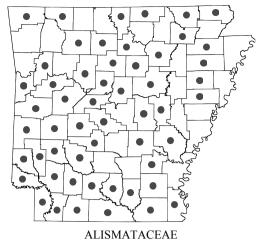
arrowhead



ALISMATACEAE

Sagittaria papillosa Buchenau

arrowhead



Sagittaria platyphylla (Engelm.) J.G.Sm.

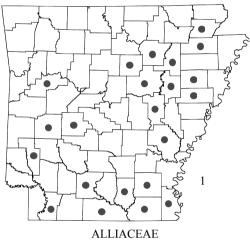
arrowhead



ALISMATACEAE

Sagittaria rigida Pursh

stiff arrowhead



Allium ampeloprasum L.

wild leek



ALLIACEAE

Allium canadense L.

var. canadense

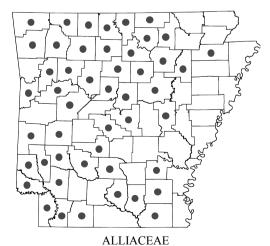
wild onion, wild garlic, meadow garlic



Allium canadense L.

var. lavendulare (Bates) Ownbey & Aase

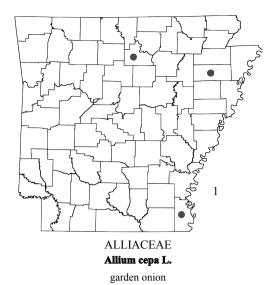
tall pink glade onion

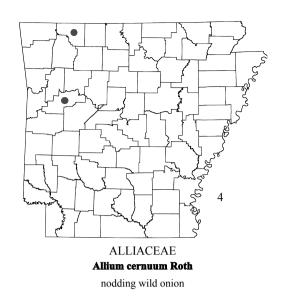


Allium canadense L.

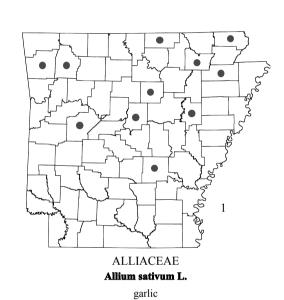
var. mobilense (Regel) Ownbey

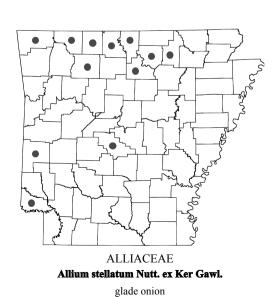
meadow wild onion



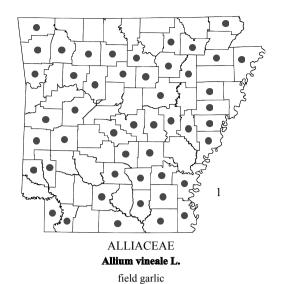










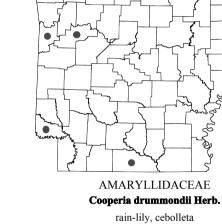


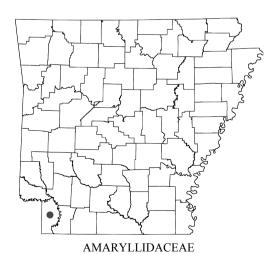
ALLIACEAE

Nothoscordum bivalve (L.) Britton in Britton & A.Br. crow-poison, false garlic

ALLIACEAE
Tristagma uniflorum (Lindl.) Traub

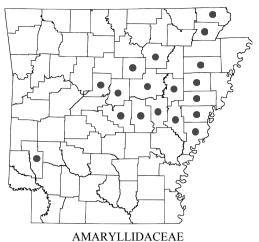
spring star-flower





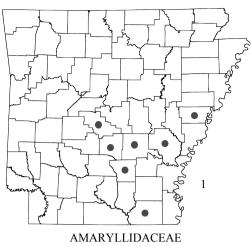
AMARYLLIDACEAE **Hymenocallis liriosme (Raf.) Shinners**spring spider-lily

Hymenocallis occidentalis (Leconte) Kunth var. eulae (Shinners) G.Lom.Sm. & Flory summer spider-lily



Hymenocallis occidentalis (Leconte) Kunth var. occidentalis

summer spider-lily



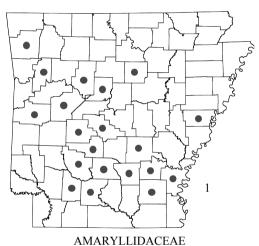
Leucojum aestivum L.

summer snowflake



AMARYLLIDACEAE Lycoris radiata (L'Hér.) Herb.

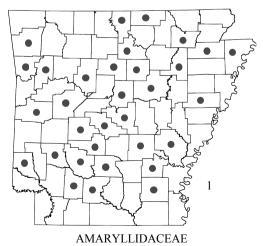
red spider-lily, surprise-lily



Narcissus jonquilla L. jonquil

AMARYLLIDACEAE

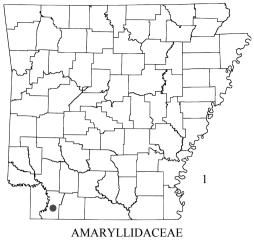
Narcissus poeticus L. poet's narcissus, pheasant's-eye narcissus



Narcissus pseudonarcissus L.

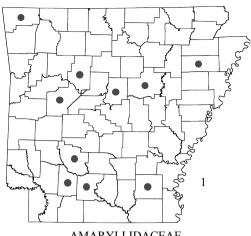
daffodil, buttercup

AMARYLLIDACEAE / Narcissus



Narcissus tazetta L.

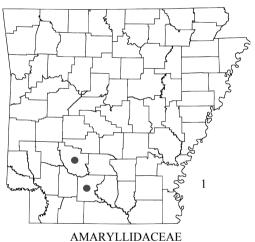
bunch-flower narcissus, polyanthus narcissus



AMARYLLIDACEAE

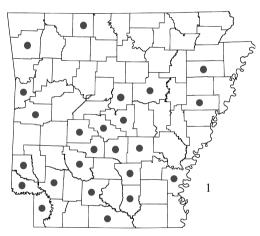
Narcissus ×incomparabilis Mill.

nonesuch daffodil, peerless narcissus



Narcissus ×intermedius Loisel.

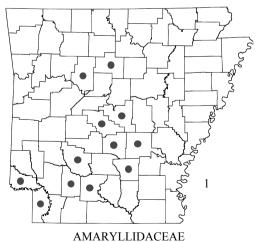
Texas-star jonquil



AMARYLLIDACEAE

Narcissus × medioluteus Mill.

primrose-peerless narcissus, two-flower daffodil



Narcissus \times odorus L.

Campernelle jonquil



AMARYLLIDACEAE

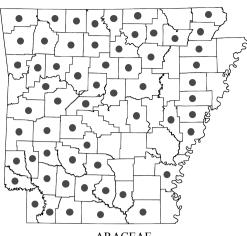
Zephyranthes candida (Lindl.) Herb.

white rain-lily, autumn rain-lily, zephyr-lily



Arisaema dracontium (L.) Schott in Schott & Endl.

green-dragon, dragon-root



Arisaema triphyllum (L.) Schott in Schott & Endl.

Jack-in-the-pulpit, Indian-turnip

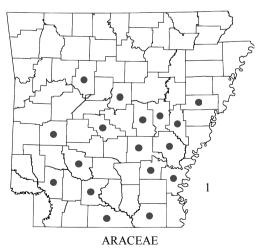


Italian lords-and-ladies, Italian arum

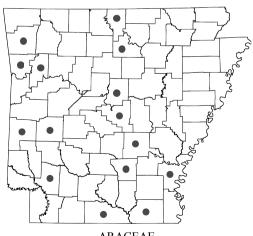


Colocasia esculenta (L.) Schott in Schott & Endl.

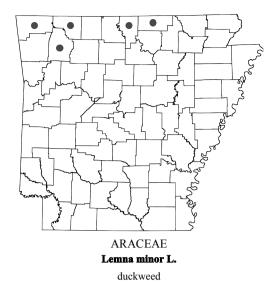
taro, elephant's-ear

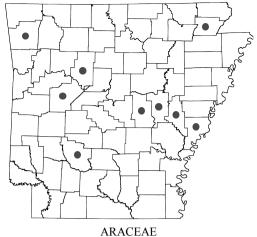


Landoltia punctata (G.Mey.) Les. & D.J.Crawford duckweed



ARACEAE Lemna aequinoctialis Welw. duckweed

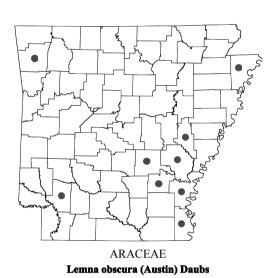




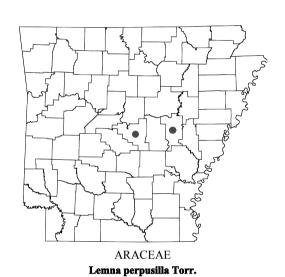
ARACEAE

Lemna minuta Kunth in Humb. et al.

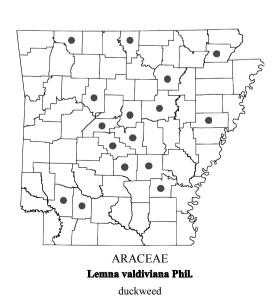
duckweed



duckweed

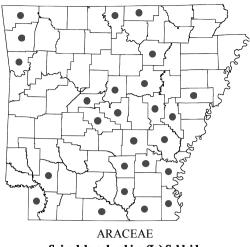


duckweed



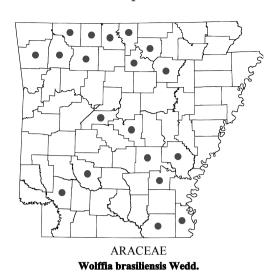


Peltandra virginica (L.) Schott in Schott & Endl.
arrow-arum, tuckahoe

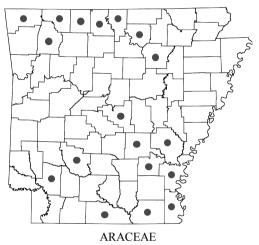


Spirodela polyrrhiza (L.) Schleid.

big duckweed

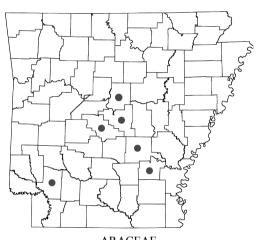


water-meal



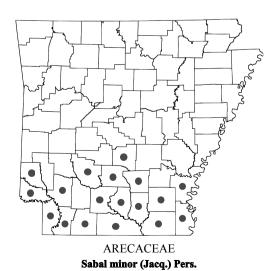
Wolffia columbiana H.Karst.

water-meal

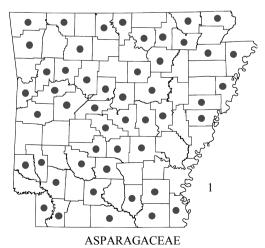


ARACEAE Wolffiella gladiata (Hegelm.) Hegelm.

mud-midget, bog-mat



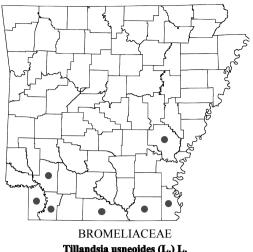
dwarf palmetto



Asparagus officinalis L.

asparagus

BROMELIACEAE / Tillandsia

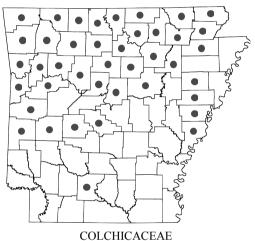


Tillandsia usneoides (L.) L. Spanish-moss

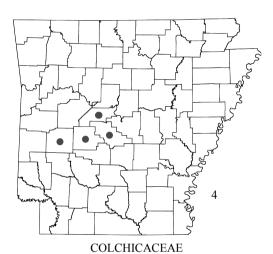


Burmannia biflora L.

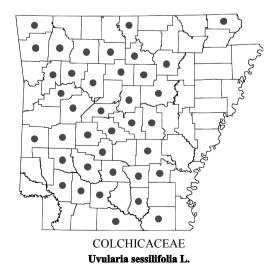
northern bluethread



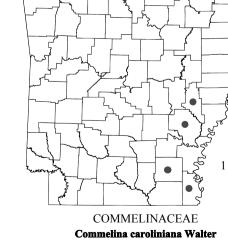
Uvularia grandiflora Sm. large-flower bellwort



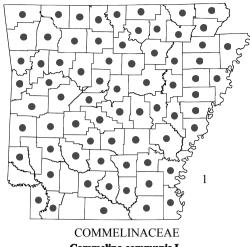
Uvularia perfoliata L. perfoliate bellwort



sessile-leaf bellwort

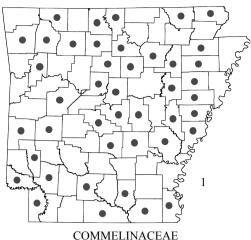


Carolina dayflower



Commelina communis L.

Asiatic dayflower

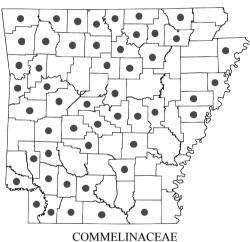


COMMELINACEAE

Commelina diffusa Burm.f.

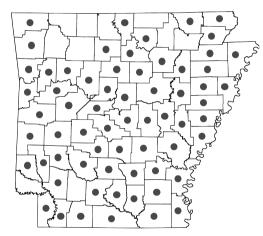
var. diffusa

spreading dayflower, climbing dayflower



Commelina erecta L.

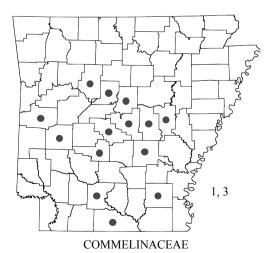
erect dayflower



COMMELINACEAE

Commelina virginica L.

Virginia dayflower



Murdannia keisak (Hassk.) Hand.-Mazz.

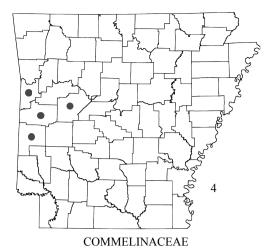
Asian-spiderwort, marsh dewflower



Murdannia nudiflora (L.) Brenan

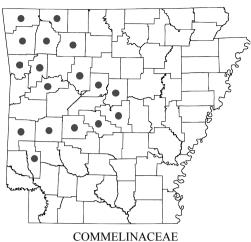
naked-stem dewflower

410 COMMELINACEAE / Tradescantia



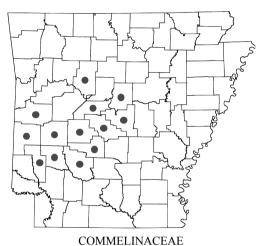
Tradescantia bracteata Small in Britton & A.Br.

long-bract spiderwort



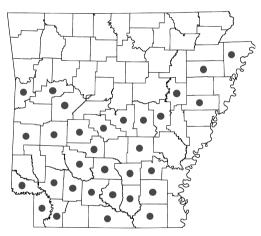
Tradescantia ernestiana E.S.Anderson & Woodson

Ernest's spiderwort



Tradescantia hirsuticaulis Small

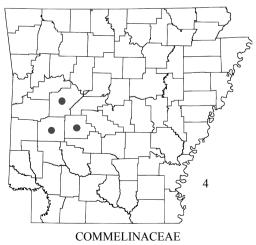
hairy-stem spiderwort



COMMELINACEAE

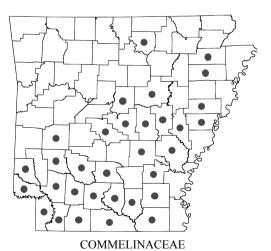
Tradescantia hirsutiflora Bush

hairy spiderwort



Tradescantia longipes E.S.Anderson & Woodson

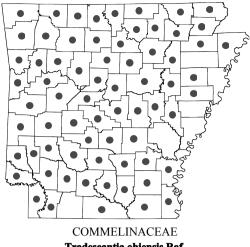
dwarf spiderwort, wild crocus



Tradescantia occidentalis (Britton) Smyth

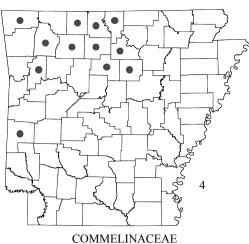
var. occidentalis

prairie spiderwort



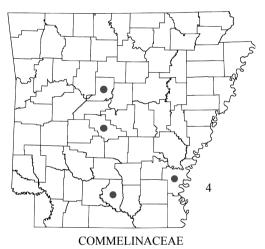
Tradescantia ohiensis Raf.

Ohio spiderwort



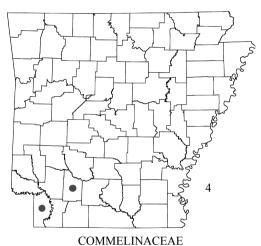
Tradescantia ozarkana E.S.Anderson & Woodson

Ozark spiderwort

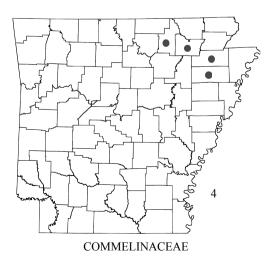


Tradescantia paludosa E.S.Anderson & Woodson

Confederate spiderwort, swamp spiderwort

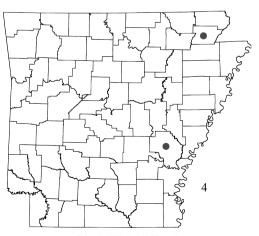


Tradescantia reverchonii Bush Reverchon's spiderwort, woolly spiderwort



Tradescantia subaspera Ker Gawl.

zigzag spiderwort



COMMELINACEAE

Tradescantia virginiana L.

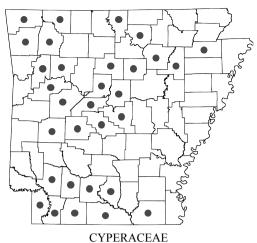
Virginia spiderwort

412 CYPERACEAE / Bolboschoenus



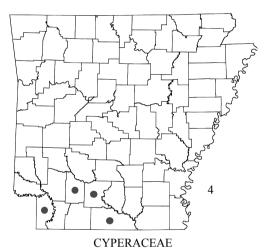
Bolboschoenus robustus (Pursh) Soják

salt-marsh bulrush, seacoast bulrush



Bulbostylis capillaris (L.) Kunth ex C.B.Clarke in Hook.f.

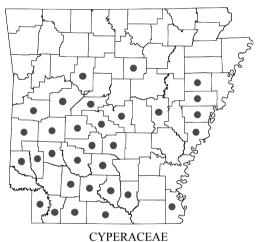
capillary hairsedge



Bulbostylis ciliatifolia (Elliott) Fernald

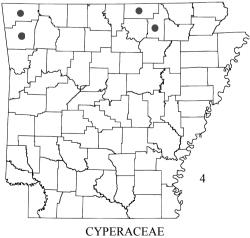
var. coarctata (Elliott) Kral

fringe-leaf hairsedge



Carex abscondita Mack.

sedge



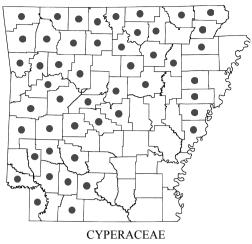
Carex aggregata Mack.

cluster sedge



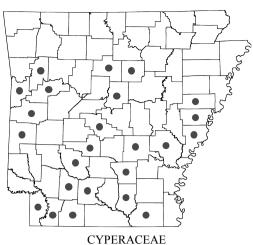
Carex alata Torr.

broad-wing sedge



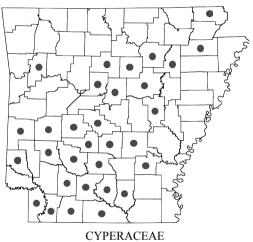
Carex albicans Willd. ex Spreng. var. albicans

sedge



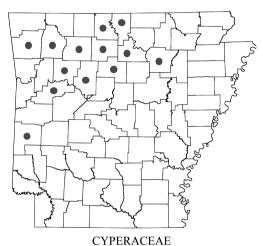
Carex albicans Willd. ex Spreng. var. australis (L.H.Bailey) Rettig

sedge



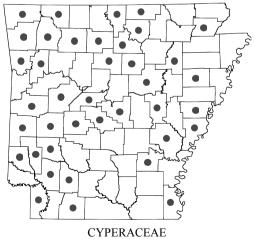
Carex albolutescens Schwein.

sedge



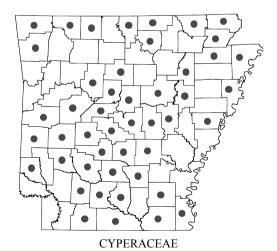
Carex albursina E.Sheld.

sedge



Carex amphibola Steud.

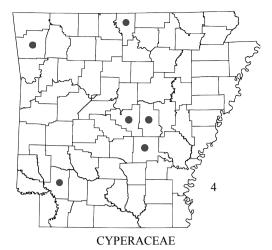
sedge



Carex annectens (E.P.Bicknell) E.P.Bicknell

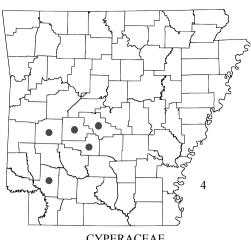
sedge

414 CYPERACEAE / Carex



Carex arkansana (L.H.Bailey) L.H.Bailey

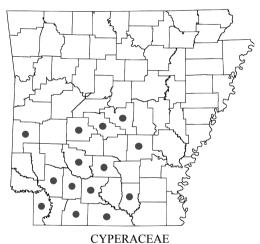
Arkansas sedge



CYPERACEAE

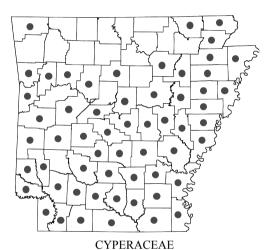
Carex atlantica L.H.Bailey
subsp. atlantica

prickly bog sedge



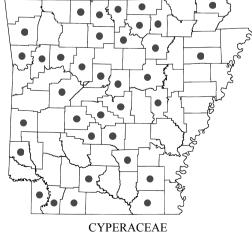
Carex atlantica L.H.Bailey
subsp. capillacea (L.H.Bailey) Reznicek

capillary prickly bog sedge



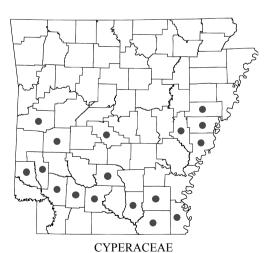
Carex aureolensis Steud.

sedge



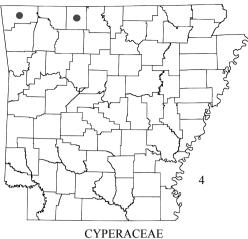
Carex austrina (Small) Mack.

sedge



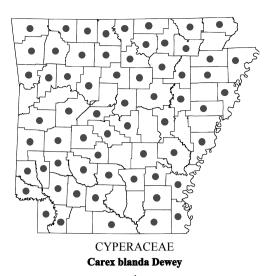
Carex basiantha Steud.

sedge

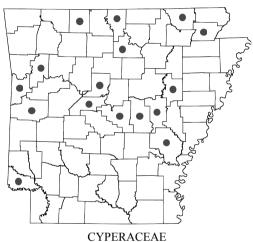


Carex bicknellii Britton in Britton & A.Br.

Bicknell's sedge

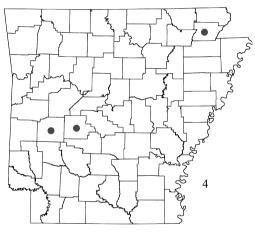


sedge



Carex brevior (Dewey) Mack. ex Lunell

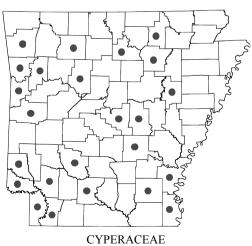
sedge



CYPERACEAE

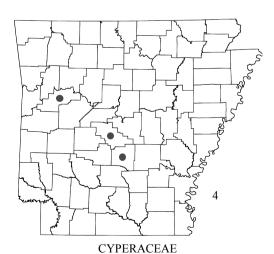
Carex bromoides Schkuhr ex Willd. subsp. bromoides

brome sedge



Carex bulbostylis Mack.

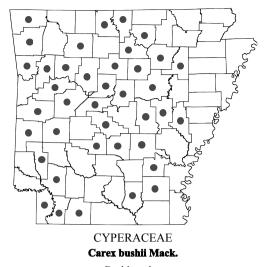
sedge



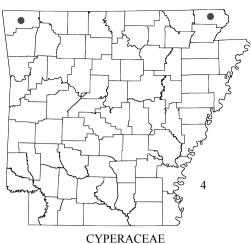
Carex bullata Schkuhr ex Willd.

button sedge

416 CYPERACEAE / Carex

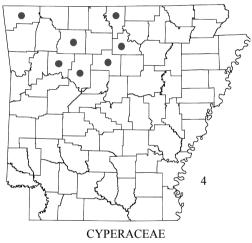


Bush's sedge



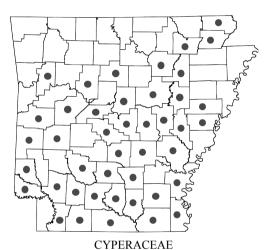
Carex buxbaumii Wahlenb.

brown bog sedge, Buxbaum's sedge



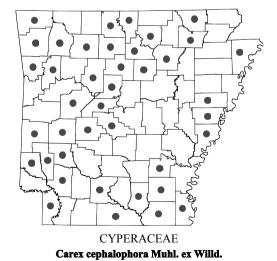
Carex careyana Torr. ex Dewey

Carey's sedge



Carex caroliniana Schwein.

Carolina sedge

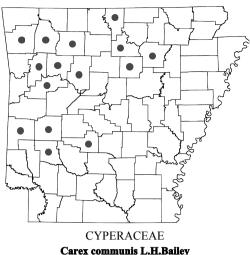


sedge

CYPERACEAE

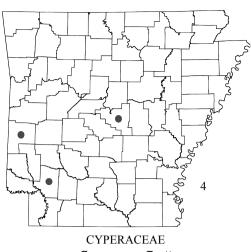
Carex cherokeensis Schwein.

Cherokee sedge



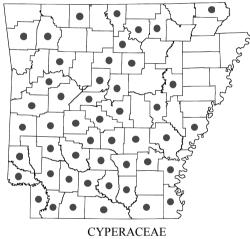
Carex communis L.H.Bailey var. communis

sedge



Carex comosa Boott

bottle-brush sedge

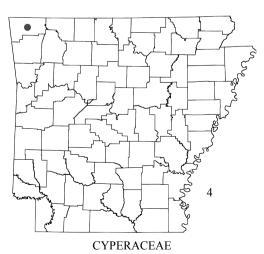


Carex complanata Torr. & Hook.

sedge

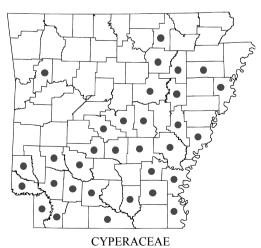


soft fox sedge



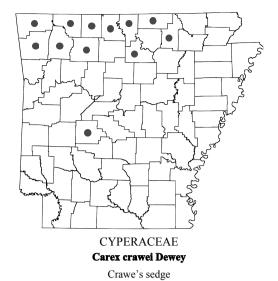
Carex conoidea Schkuhr ex Willd.

open-field sedge



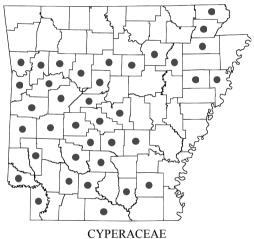
Carex corrugata Fernald

sedge

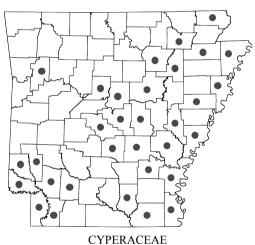




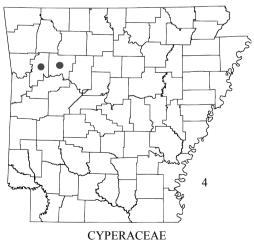
sedge



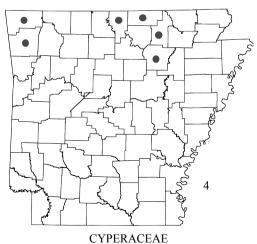
Carex crinita Lam. in Lam. et al. var. brevicrinis Fernald fringed sedge



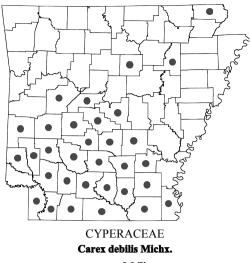
Carex crus-corvi Shuttlew. ex Kunze crow-foot sedge



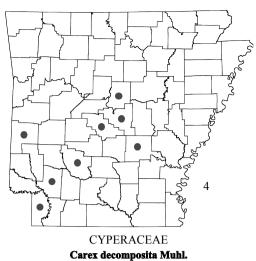
Carex cumberlandensis Naczi, Kral, & Bryson Cumberland sedge



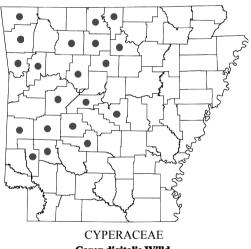
Carex davisii Schwein. & Torr. Davis' sedge



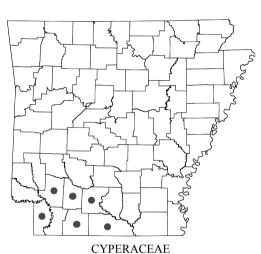
var. debilis sedge



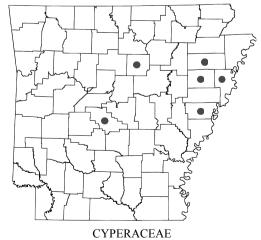
cypress-knee sedge, epiphytic sedge



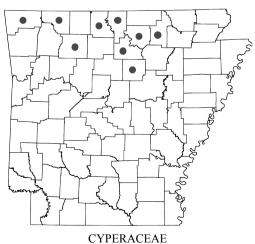
Carex digitalis Willd. var. digitalis sedge



Carex digitalis Willd. var. floridana (L.H.Bailey) Naczi & Bryson sedge

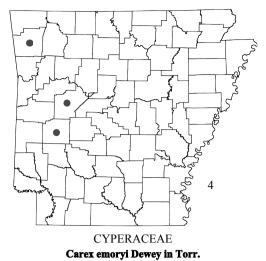


Carex digitalis Willd. var. macropoda Fernald sedge

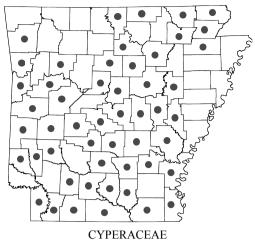


Carex eburnea Boott in Hook. sedge

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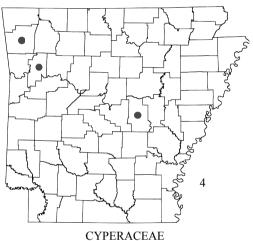


Emory's sedge



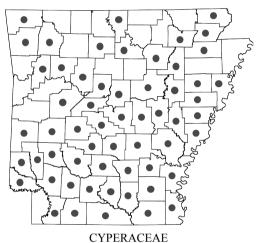
Carex festucacea Schkuhr ex Willd.

fescue sedge



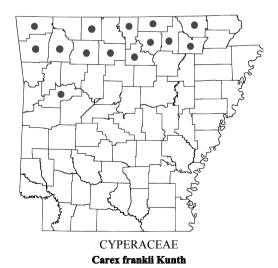
Carex fissa Mack. in Britton et al.
var. fissa

hammock sedge

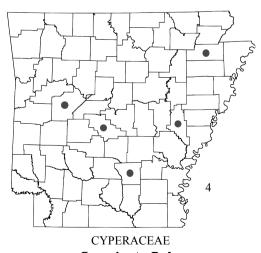


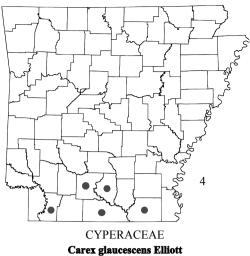
Carex flaccosperma Dewey

blue sedge

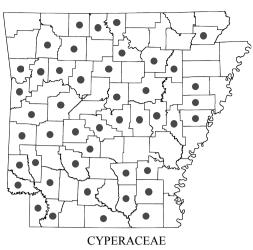


Frank's sedge



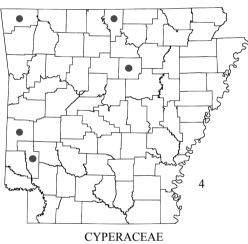


southern waxy sedge



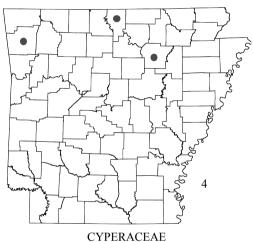
Carex glaucodea Tuck. ex Olney

blue sedge



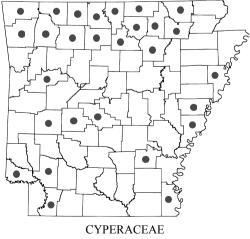
Carex gracilescens Steud.

slender wood sedge



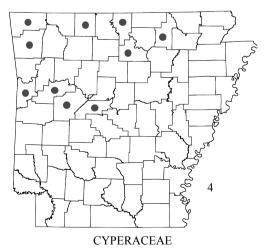
Carex gracillima Schwein.

graceful sedge



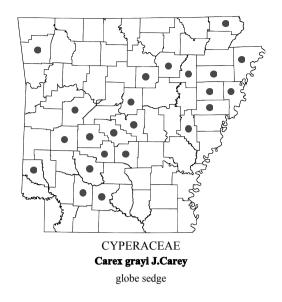
Carex granularis Muhl. ex Willd.

sedge

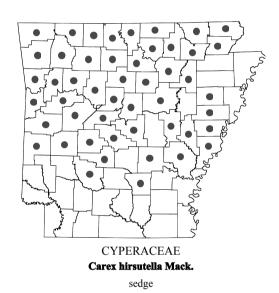


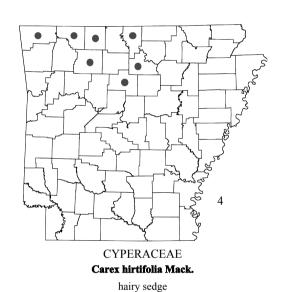
Carex gravida L.H.Bailey

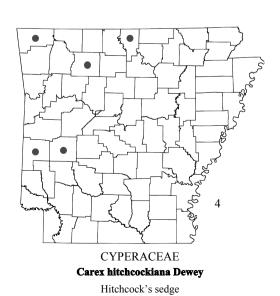
heavy sedge

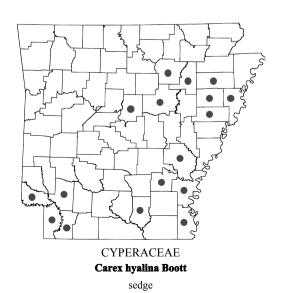


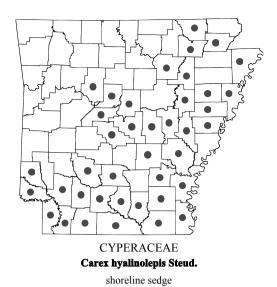






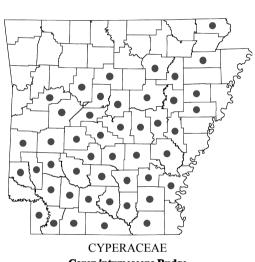






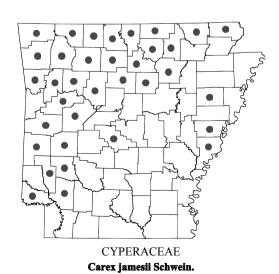
CYPERACEAE Carex hystericina Muhl. ex Willd.

porcupine sedge

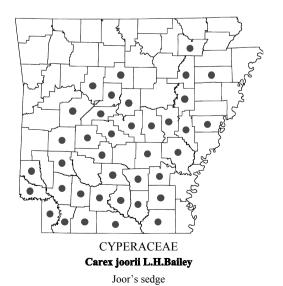


CYPERACEAE Carex interior L.H.Bailey inland star sedge

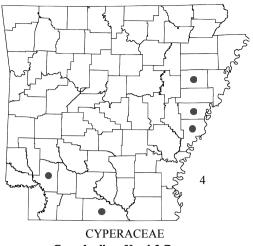
Carex intumescens Rudge bladder sedge



James' sedge

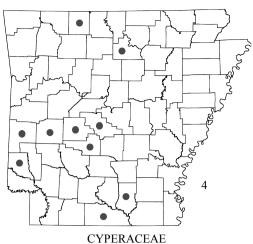


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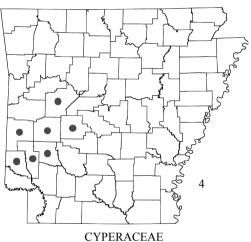
Carex kraliana Naczi & Bryson

Kral's sedge



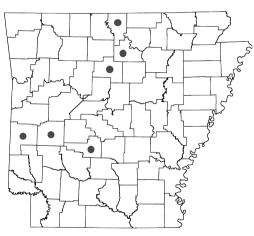
Carex laevivaginata (Kük.) Mack. in Britton & A.Br.

smooth-sheath sedge



Carex latebracteata Waterf.

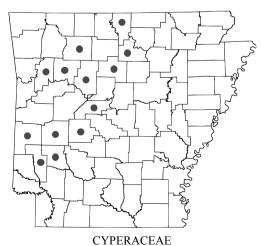
Waterfall's sedge



CYPERACEAE

Carex laxiculmis Schwein.
var. copulata (L.H.Bailey) Fernald

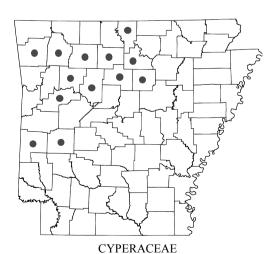
sedge



Carex laxiculmis Schwein.

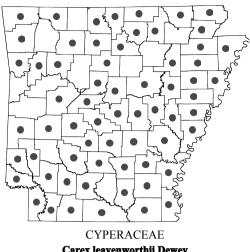
var. laxiculmis

sedge



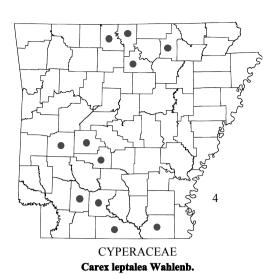
Carex laxiflora Lam. in Lam. et al.

sedge

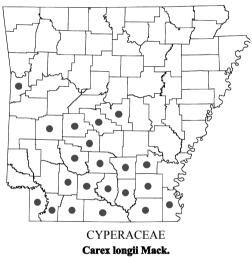


Carex leavenworthii Dewey

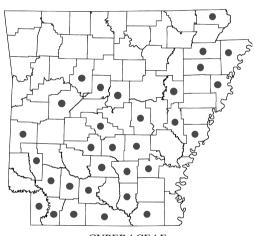
Leavenworth's sedge



bristly-stalk sedge



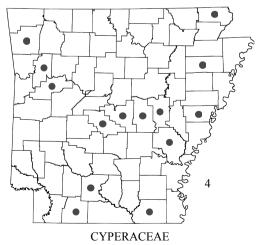
Long's sedge



CYPERACEAE

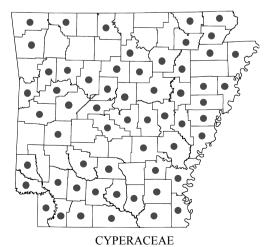
Carex louisianica L.H.Bailey

Louisiana sedge



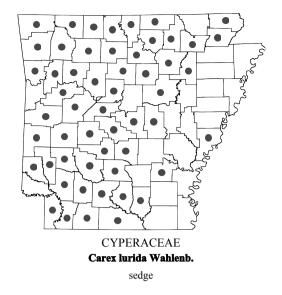
Carex lupuliformis Sartwell ex Dewey

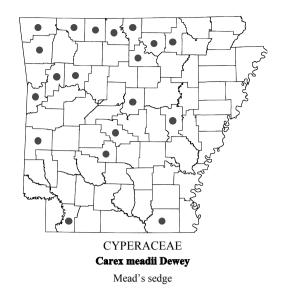
false hop sedge

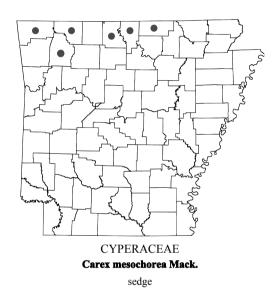


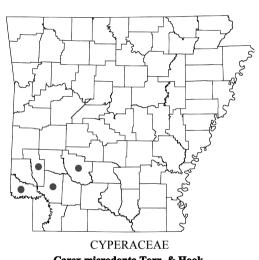
Carex lupulina Muhl. ex Willd.

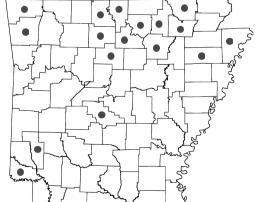
hop sedge





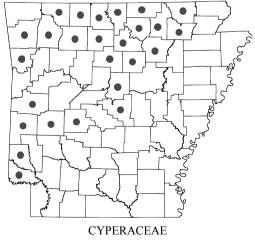


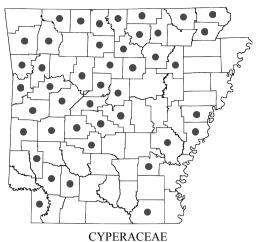




Carex microdonta Torr. & Hook. little-tooth sedge

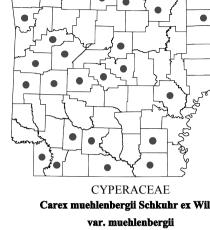






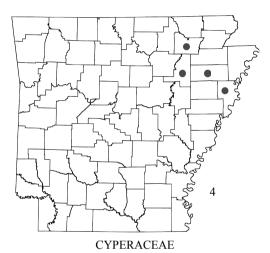
Carex muehlenbergii Schkuhr ex Willd. var. enervis Boott

Muhlenberg's sedge



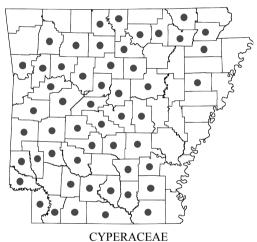
Carex muehlenbergii Schkuhr ex Willd.

Muhlenberg's sedge



Carex muskingumensis Schwein.

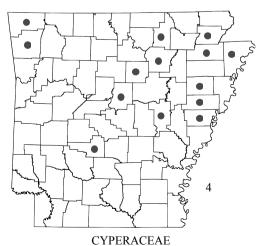
palm sedge



Carex nigromarginata Schwein.

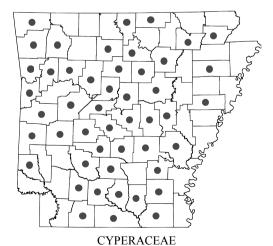
sedge

See Appendix I for infraspecific taxa and species status.



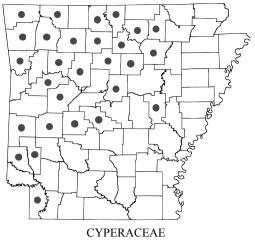
Carex normalis Mack.

spreading oval sedge



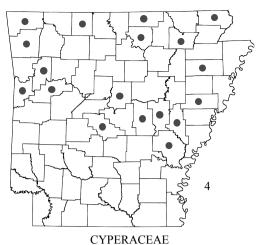
Carex oklahomensis Mack.

Oklahoma sedge



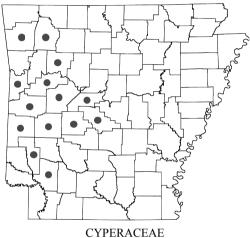
Carex oligocarpa Schkuhr ex Willd.

sedge



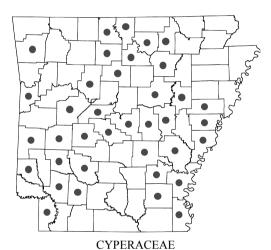
Carex opaca (F.J.Herm.) P.E.Rothr. & Reznicek

opaque prairie sedge



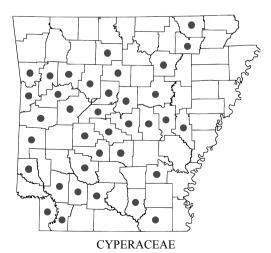
Carex ouachitana Kral, Manhart, & Bryson

Ouachita sedge



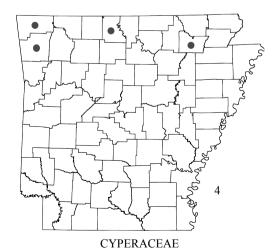
Carex oxylepis Torr. & Hook.

sharp-scale sedge



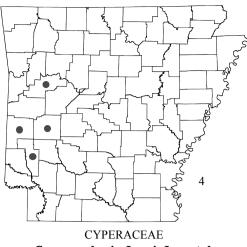
Carex ozarkana P.E.Rothr. & Reznicek

Ozark sedge



Carex pellita Muhl. ex Willd.

woolly sedge

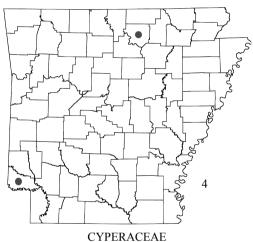


Carex pensylvanica Lam. in Lam. et al.

Pennsylvania sedge

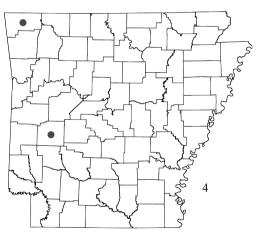


sedge



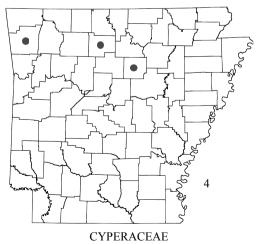
Carex planostachys Kunze

cedar sedge



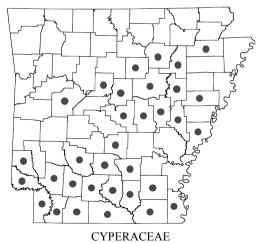
CYPERACEAE

Carex prasina Wahlenb. drooping sedge



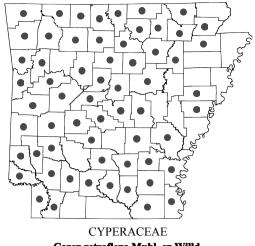
Carex radiata (Wahlenb.) Small

eastern star sedge



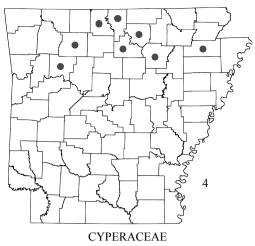
Carex reniformis (L.H.Bailey) Small

sedge



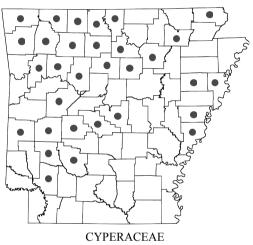
Carex retroflexa Muhl. ex Willd.

sedge



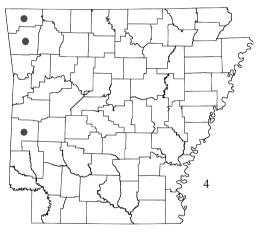
Carex reznicekii Werier

Reznicek's sedge



Carex rosea Schkuhr ex Willd.

sedge

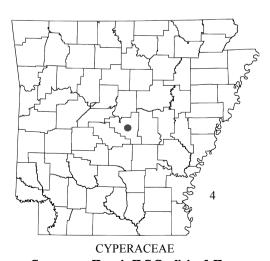


CYPERACEAE

Carex scoparia Schkuhr ex Willd.

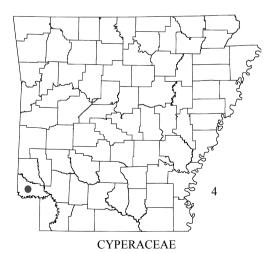
var. scoparia

pointed broom sedge



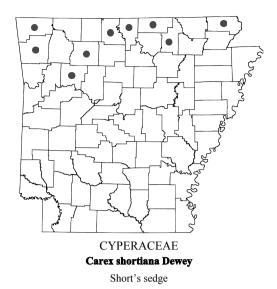
Carex seors a Howe in H.C.Gordinier & Howe

swamp star sedge



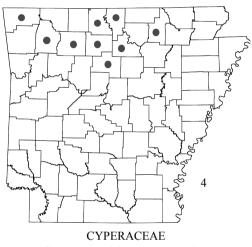
Carex shinnersii P.E.Rothr. & Reznicek

Shinners' sedge

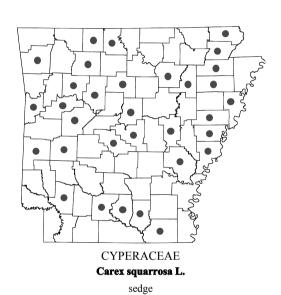


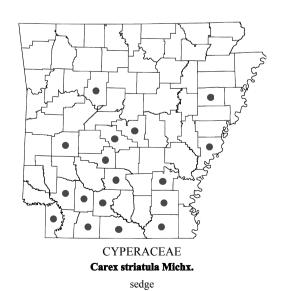
CYPERACEAE

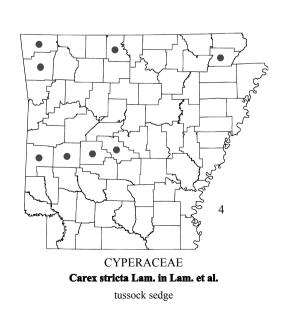
Carex socialis Mohlenbr. & Schwegman sedge



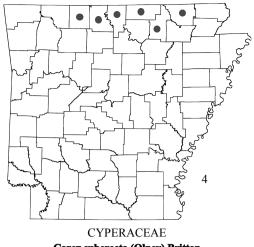
Carex sparganioides Muhl. ex Willd. bur-reed sedge





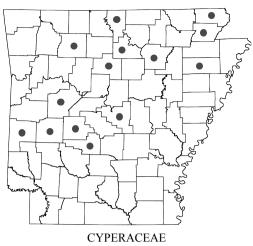


432 CYPERACEAE / Carex



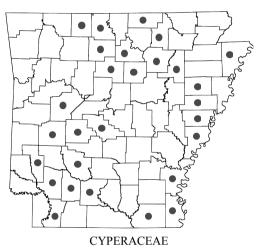
Carex suberecta (Olney) Britton

prairie straw sedge



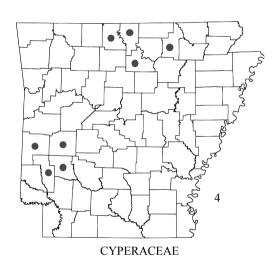
Carex swanii (Fernald) Mack.

Swan's sedge



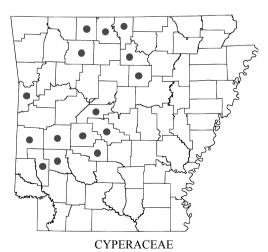
Carex texensis (Torr. ex L.H.Bailey) L.H.Bailey

Texas sedge



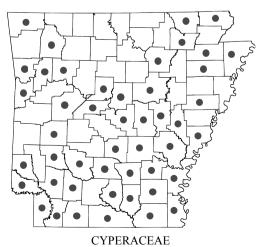
Carex timida Naczi & B.A.Ford

timid sedge



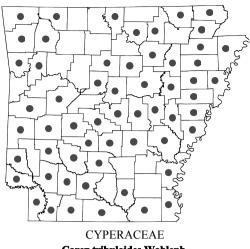
Carex torta Boott ex Tuck.

twisted sedge



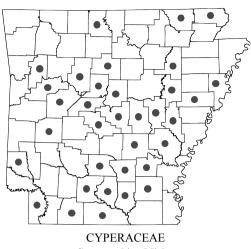
Carex triangularis Boeck.

sedge



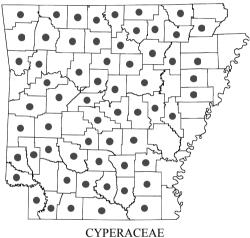
Carex tribuloides Wahlenb. var. sangamonensis Clokey

sedge



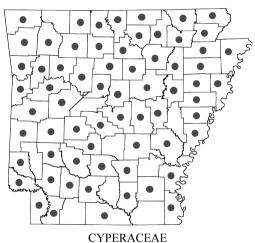
Carex typhina Michx.

cat-tail sedge



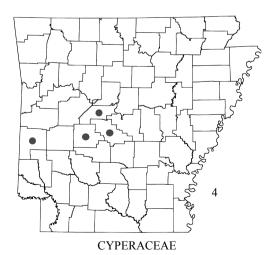
Carex umbellata Schkuhr ex Willd.

sedge



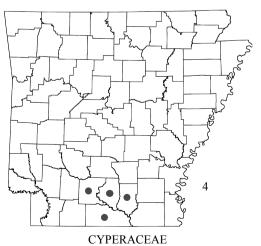
Carex vulpinoidea Michx.

fox sedge



Carex willdenowii Schkuhr ex Willd.

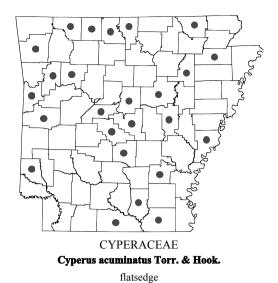
Willdenow's sedge

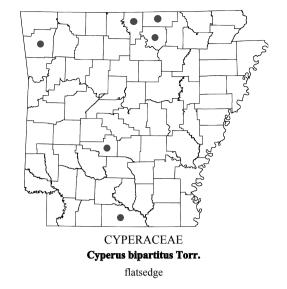


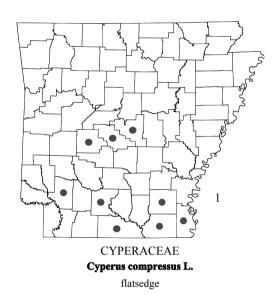
Cladium jamaicense Crantz

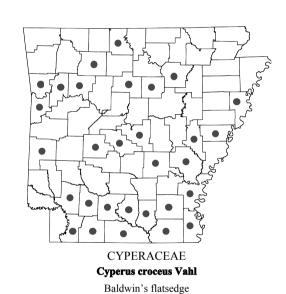
saw-grass

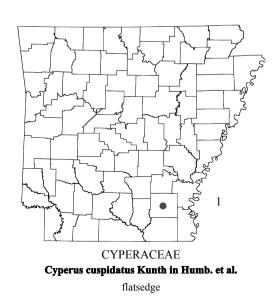
434 CYPERACEAE / Cyperus

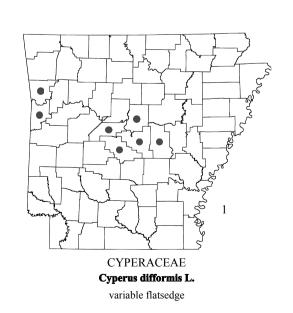


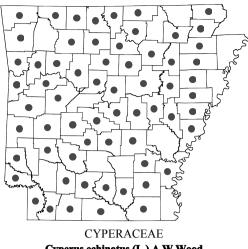




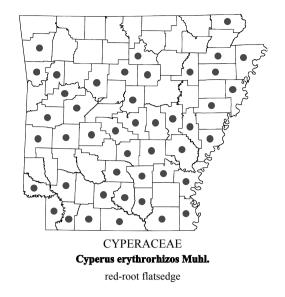


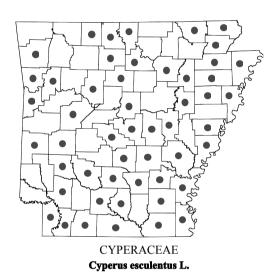




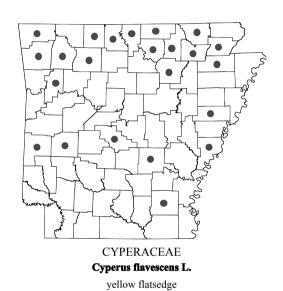


Cyperus echinatus (L.) A.W.Wood globe flatsedge





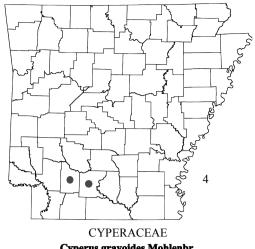
yellow nutsedge, chufa See *Appendix I* for infraspecific taxa and species status.



CYPERACEAE Cyperus fuscus L.



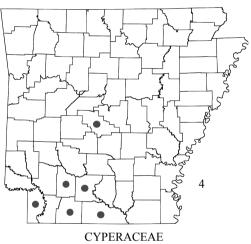
436 CYPERACEAE / Cyperus



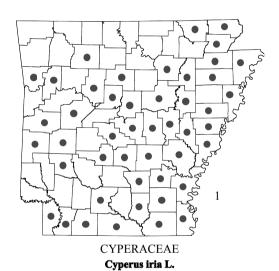
Cyperus grayoides Mohlenbr.Illinois flatsedge



haspan flatsedge



Cyperus hystricinus Fernald bristly flatsedge

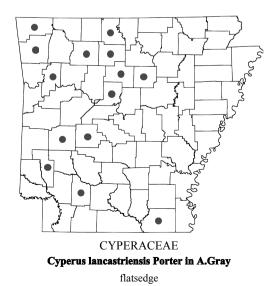


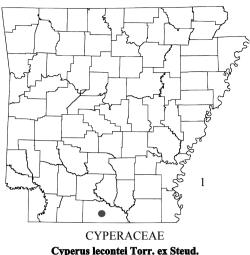
ricefield flatsedge

CYPERACEAE

Cyperus lanceolatus Poir. in Lam. et al.

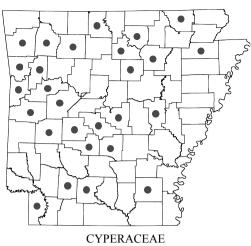
flatsedge





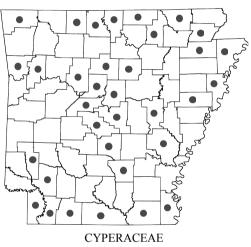
Cyperus lecontei Torr. ex Steud.

Le Conte's flatsedge



Cyperus lupulinus (Spreng.) Marcks

flatsedge



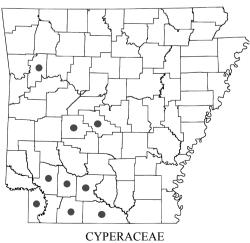
Cyperus odoratus L.

rusty flatsedge

CYPERACEAE

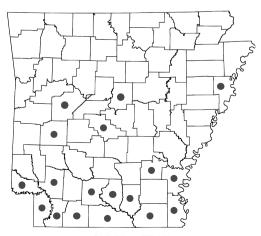
Cyperus oxylepis Nees ex Steud.

flatsedge



Cyperus plukenetii Fernald

Plukenet's flatsedge

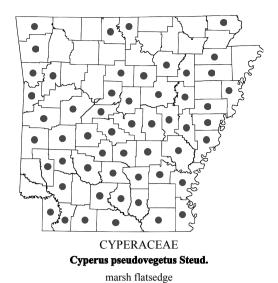


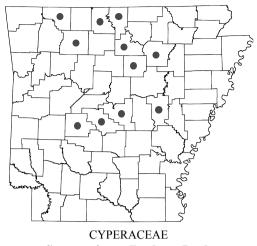
CYPERACEAE

Cyperus polystachyos Rottb.

flatsedge

438 CYPERACEAE / Cyperus





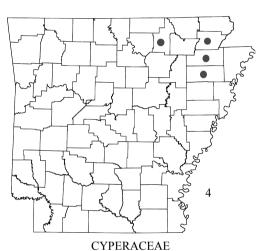
Cyperus refractus Engelm. ex Boeck.
flatsedge

CYPERACEAE

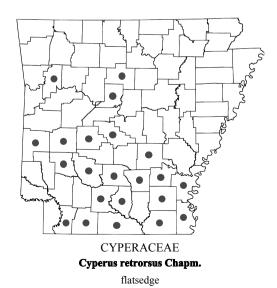
CYPERACEAE

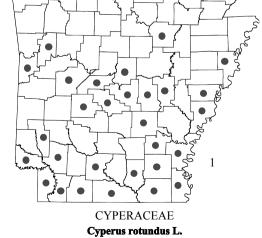
Cyperus retroflexus Buckley

flatsedge

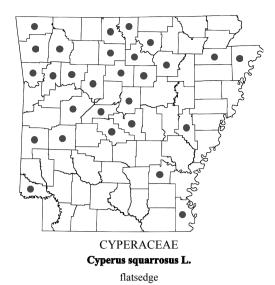


Cyperus retrofractus (L.) Torr. in J.Carey rough flatsedge





purple nutsedge, purple flatsedge

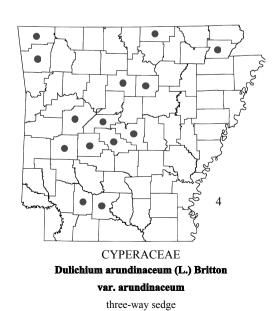


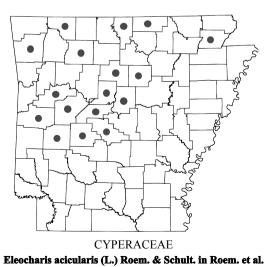
CYPERACEAE Cyperus strigosus L. false nutsedge, flatsedge

CYPERACEAE Cyperus surinamensis Rottb.

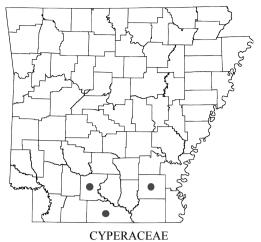
tropical flatsedge







440 CYPERACEAE / Eleocharis



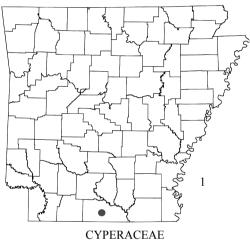
Eleocharis baldwinii (Torr.) Chapm.

Baldwin's spike-rush



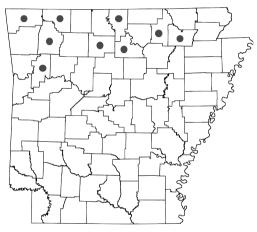
Eleocharis brittonii Svenson ex Small

Britton's spike-rush



Eleocharis cellulosa Torr.

Gulf Coast spike-rush

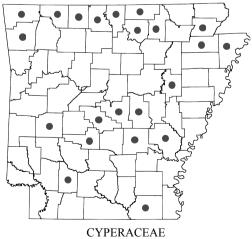


CYPERACEAE

Eleocharis compressa Sull.

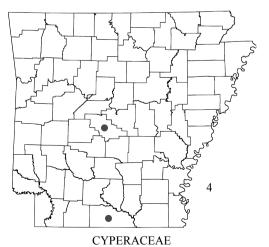
var. compressa

flat-stem spike-rush



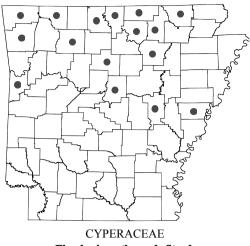
Eleocharis engelmannii Steud.

Engelmann's spike-rush

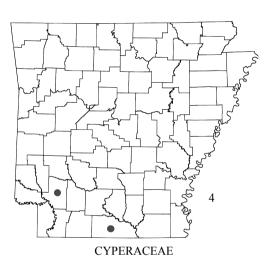


Eleocharis equisetoides (Elliott) Torr.

horsetail spike-rush

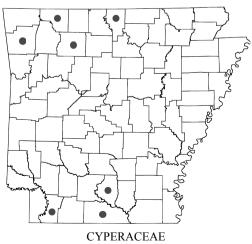


Eleocharis erythropoda Steud. spike-rush



Eleocharis flavescens (Poir.) Urb. var. olivacea (Torr.) Gleason

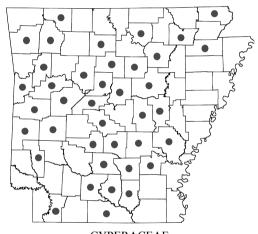
bright-green spike-rush



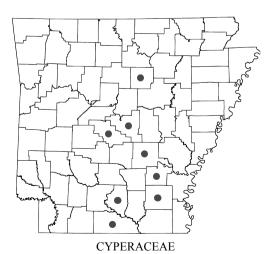
Eleocharis macrostachya Britton in Small spike-rush



Eleocharis flavescens (Poir.) Urb. var. flavescens yellow spike-rush

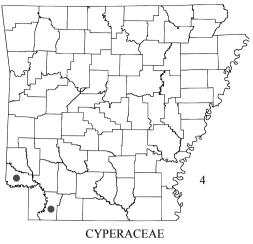


CYPERACEAE Eleocharis lanceolata Fernald spike-rush



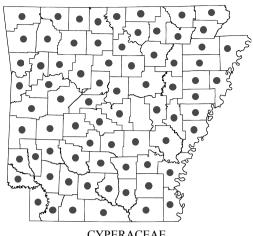
Eleocharis microcarpa Torr. var. filiculmis Torr. spike-rush

442 CYPERACEAE / Eleocharis



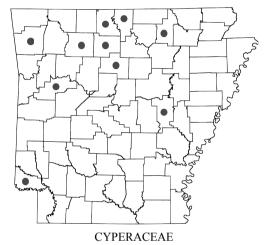
Eleocharis montevidensis Kunth

sand spike-rush

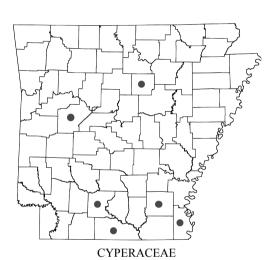


CYPERACEAE

Eleocharis obtusa (Willd.) Schult. blunt spike-rush



Eleocharis palustris (L.) Roem. & Schult. in Roem. et al. spike-rush



Eleocharis parvula (Roem. & Schult.) Link ex Bluff, Nees & Schauer small spike-rush

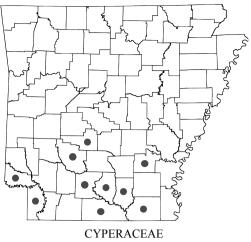
CYPERACEAE

Eleocharis quadrangulata (Michx.) Roem. & Schult. in Roem. et al. square-stem spike-rush

CYPERACEAE

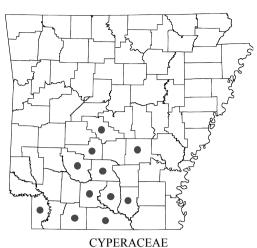
Eleocharis tenuis (Willd.) Schult. var. verrucosa (Svenson) Svenson

slender spike-rush



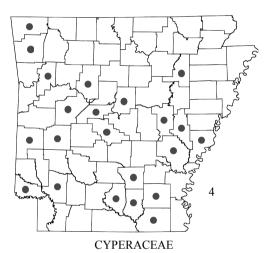
Eleocharis tortilis (Link) Schult.

twisted spike-rush



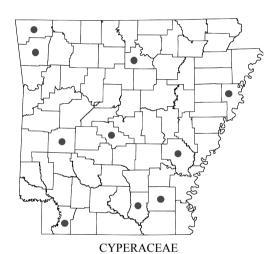
Eleocharis tuberculosa (Michx.) Roem. & Schult. in Roem. et al.

spike-rush



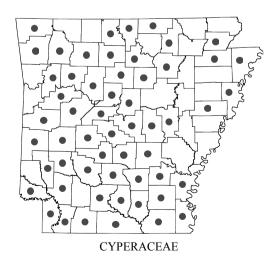
Eleocharis wolfii (A.Gray) A.Gray ex Britton in Patt.

Wolf's spike-rush



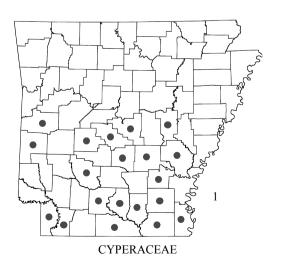
Fimbristylis annua (All.) Roem. & Schult. in Roem. et al.

fimbry, fimbristylis



Fimbristylis autumnalis (L.) Roem. & Schult. in Roem. et al.

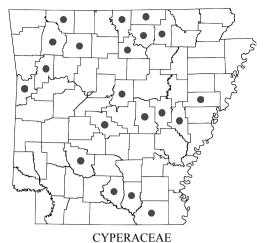
slender fimbry, slender fimbristylis



Fimbristylis littoralis Gaudich.

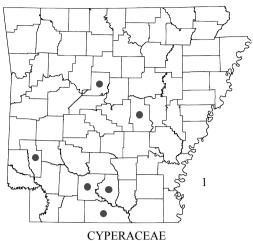
fimbry, fimbristylis

444 CYPERACEAE / Fimbristylis



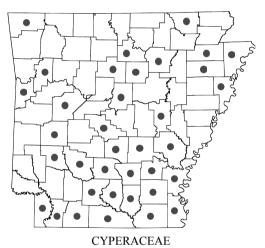
Fimbristylis puberula (Michx.) Vahl
var. puberula

fimbry, fimbristylis



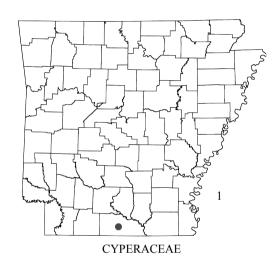
Fimbristylis tomentosa Vahl

fimbry, fimbristylis



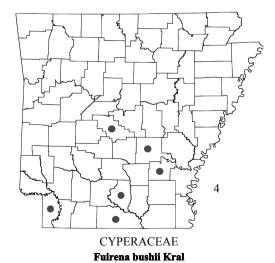
Fimbristylis vahlii (Lam.) Link

Vahl's fimbry, Vahl's fimbristylis

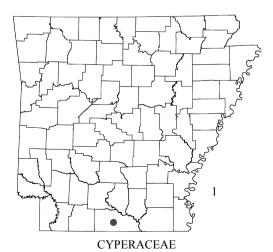


Fuirena breviseta (Coville) Coville

salt-marsh umbrella sedge, salt-marsh umbrella-grass



Bush's umbrella sedge, Bush's umbrella-grass



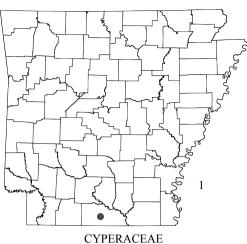
Fuirena longa Chapm.

Coastal Plain umbrella sedge, Coastal Plain umbrella-grass



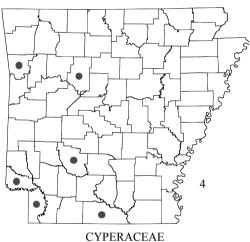
Fuirena pumila (Torr.) Spreng.

dwarf umbrella sedge, dwarf umbrella-grass



Fuirena scirpoidea Michx.

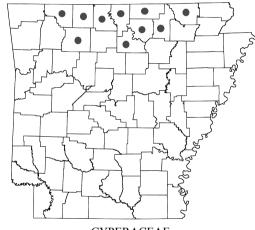
southern umbrella sedge, southern umbrella-grass



Fuirena simplex Vahl

var. aristulata (Torr.) Kral

western umbrella sedge, western umbrella-grass



CYPERACEAE

Fuirena simplex Vahl

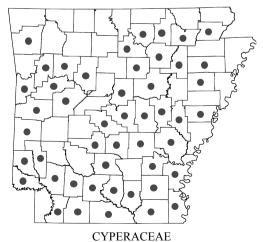
var. simplex

creeping western umbrella sedge, creeping western umbrella-grass



Fuirena squarrosa Michx.

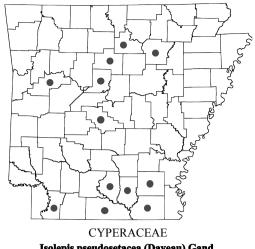
hairy umbrella sedge, hairy umbrella-grass



Isolepis carinata Hook. & Arn. ex Torr.

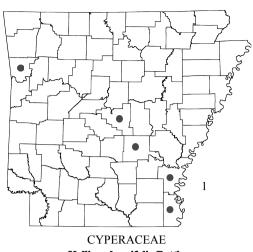
bulrush

446 CYPERACEAE / Isolepis



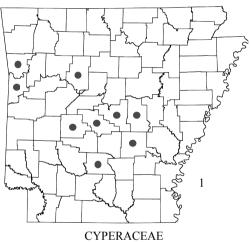
Isolepis pseudosetacea (Daveau) Gand.

bulrush



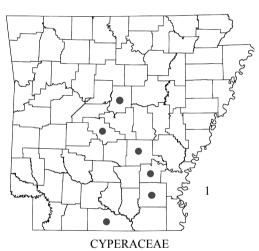
Kyllinga brevifolia Rottb.

spikesedge



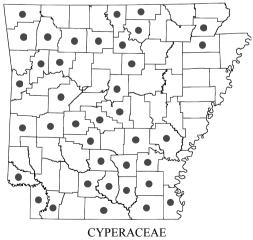
Kyllinga gracillima Miq.

spikesedge



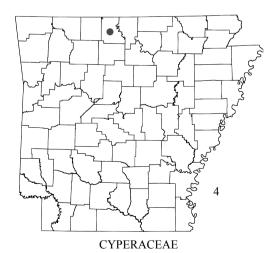
Kyllinga odorata Vahl

spikesedge



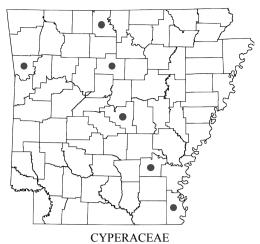
Kyllinga pumila Michx.

spikesedge



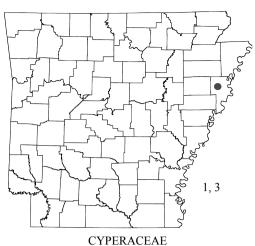
Lipocarpha drummondii (Nees) G.C.Tucker

Drummond's halfchaff sedge



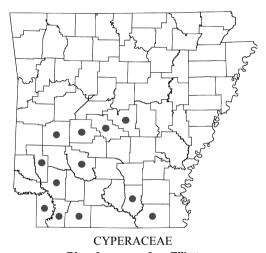
Lipocarpha micrantha (Vahl) G.C.Tucker

halfchaff sedge



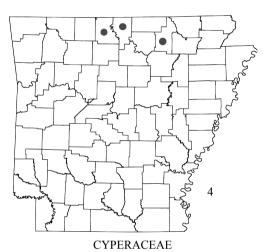
Oxycaryum cubense (Poepp. & Kunth) Palla

Cuban club-rush, Cuban-bulrush



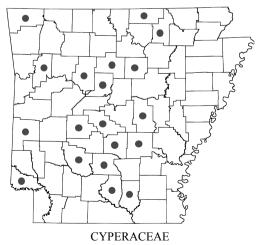
Rhynchospora caduca Elliott

beaksedge, beak-rush



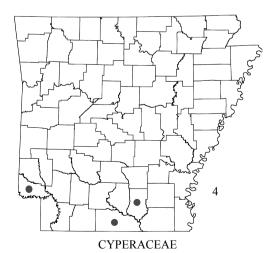
Rhynchospora capillacea Torr.

capillary beaksedge, needle beaksedge, capillary beak-rush



Rhynchospora capitellata (Michx.) Vahl

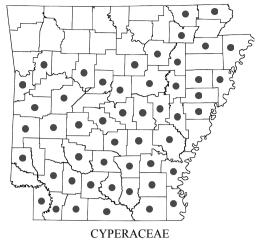
beaksedge, beak-rush



Rhynchospora colorata (L.) H.Pfeiff.

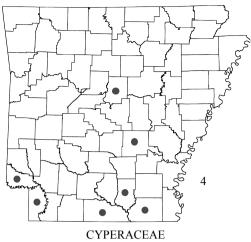
white-top sedge

448 CYPERACEAE / Rhynchospora



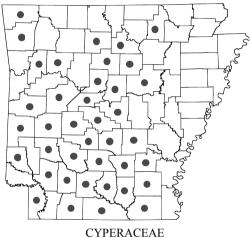
Rhynchospora corniculata (Lam.) A.Gray

horned beaksedge, horned beak-rush



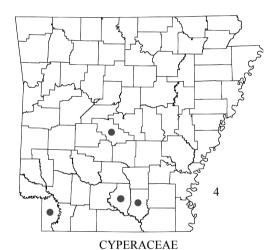
Rhynchospora globularis (Chapm.) Small var. globularis

globe beaksedge, globe beak-rush



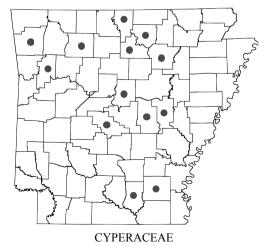
Rhynchospora glomerata (L.) Vahl

beaksedge, beak-rush



Rhynchospora gracilenta A.Gray

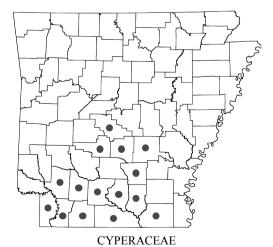
slender beaksedge, slender beak-rush



Rhynchospora harveyi W.Boott

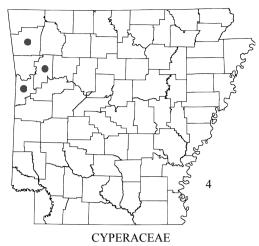
var. harveyi

Harvey's beaksedge, Harvey's beak-rush



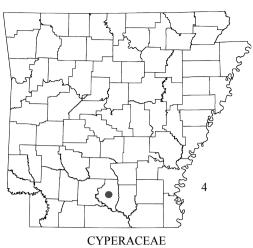
Rhynchospora inexpansa (Michx.) Vahl

nodding beaksedge, nodding beak-rush



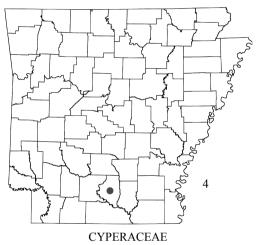
Rhynchospora macrostachya Torr. ex A.Gray

prairie horned beaksedge, prairie horned beak-rush



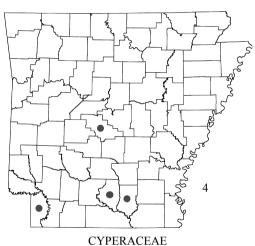
Rhynchospora microcarpa Baldwin ex A.Gray

southern beaksedge, southern beak-rush



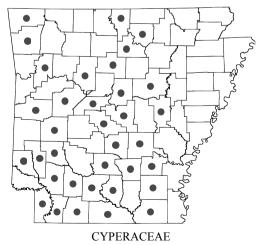
Rhynchospora plumosa Elliott

plumed beaksedge, plumed beak-rush



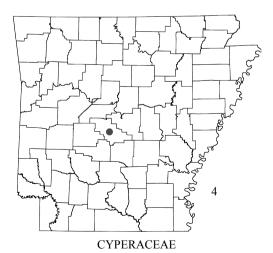
Rhynchospora rariflora (Michx.) Elliott

few-flower beaksedge, few-flower beak-rush



Rhynchospora recognita (Gale) Kral

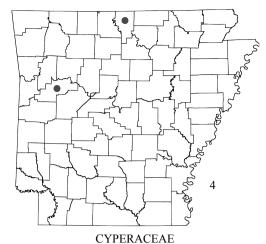
beaksedge, beak-rush



Rhynchospora scirpoides (Torr.) Griseb.

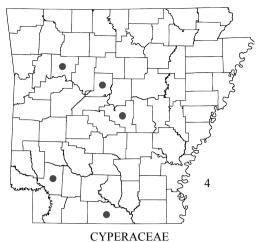
long-beak bald-rush, long-beak beaksedge

450 CYPERACEAE / Schoenoplectus



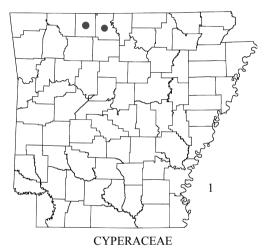
Schoenoplectus acutus (Muhl. ex Bigelow) Á.Löve & D.Löve var. acutus

hard-stem bulrush



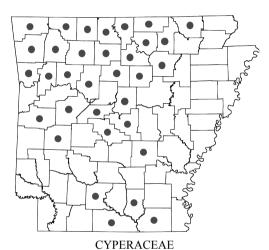
Schoenoplectus californicus (C.A.Mey.) Soják

California bulrush



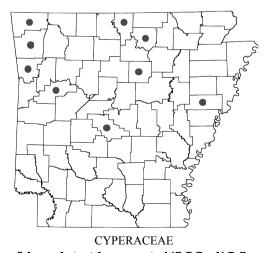
Schoenoplectus mucronatus (L.) Palla

rough-seed bulrush, ricefield bulrush



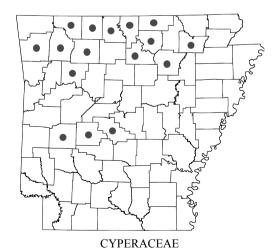
Schoenoplectus pungens (Vahl) Palla

chair-maker's-rush, three-square bulrush



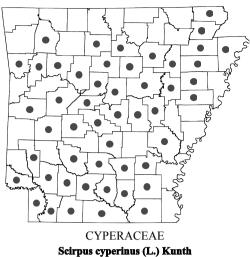
 ${\bf Schoen op lectus\ tabernae montani\ (C.C.Gmel.)\ Palla}$

soft-stem bulrush, great bulrush



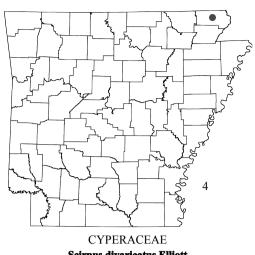
Scirpus atrovirens Willd.

bulrush



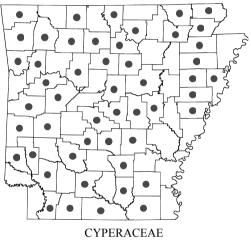
Scirpus cyperinus (L.) Kunth

wool-grass bulrush



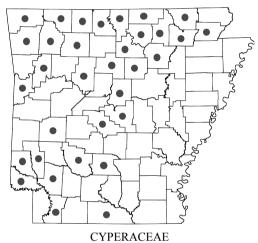
Scirpus divaricatus Elliott

spreading bulrush



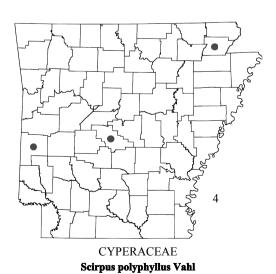
Scirpus georgianus R.M.Harper

bulrush



Scirpus pendulus Muhl.

bulrush



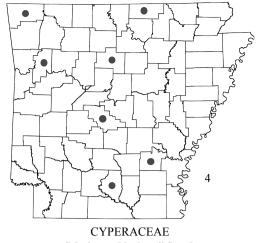
leafy bulrush

CYPERACEAE

Scleria ciliata Michx.

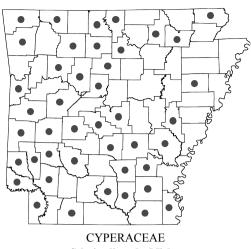
var. ciliata

nut-rush



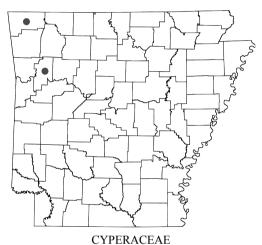
Scleria muehlenbergii Steud.

Muhlenberg's nut-rush



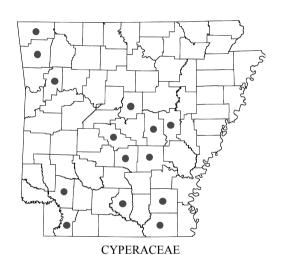
Scleria oligantha Michx.

nut-rush



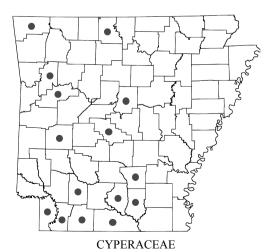
Scleria pauciflora Muhl. ex Willd. var. caroliniana A.W.Wood

nut-rush



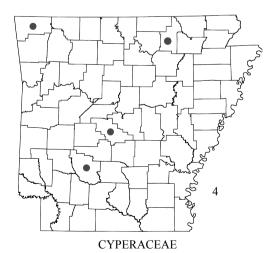
Scleria pauciflora Muhl. ex Willd. var. pauciflora

nut-rush



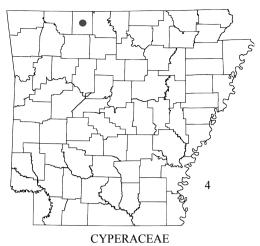
Scleria triglomerata Michx.

nut-rush



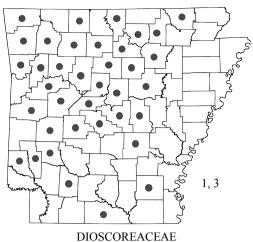
Scleria verticillata Muhl. ex Willd.

whorled nut-rush



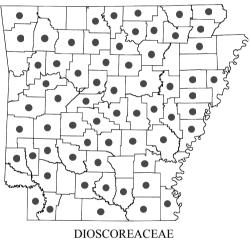
Trichophorum planifolium (Spreng.) Palla

bashful bulrush



Dioscorea polystachya Turcz.

cinnamon vine, Chinese yam



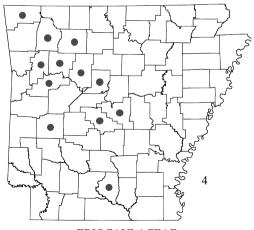
Dioscorea villosa L.

wild yam



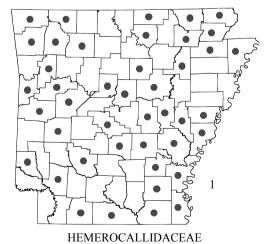
Eriocaulon decangulare L.

large-head pipewort, hat-pins



Eriocaulon koernickianum Van Heurck & Müll.Arg. in Van Heurck small-head pipewort

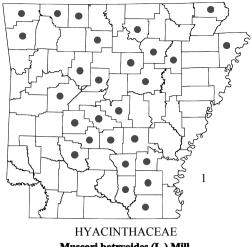
ERIOCAULACEAE



Hemerocallis fulva (L.) L.

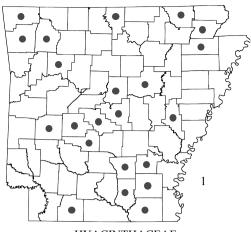
orange day-lily

454 HYACINTHACEAE / Muscari



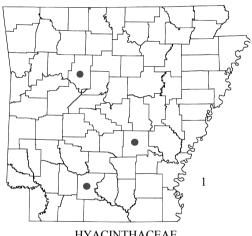
Muscari botryoides (L.) Mill.

grape-hyacinth



HYACINTHACEAE Muscari neglectum Guss. ex Ten.

grape-hyacinth, blue-bottles



HYACINTHACEAE

Ornithogalum caudatum Aiton

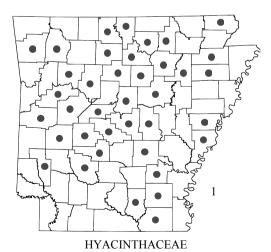
sea-onion



HYACINTHACEAE

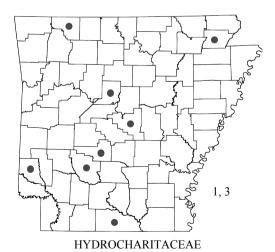
Ornithogalum nutans L.

nodding star-of-Bethlehem



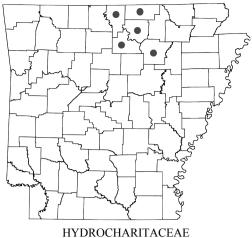
Ornithogalum umbellatum L.

star-of-Bethlehem



Egeria densa Planch.

Brazilian waterweed



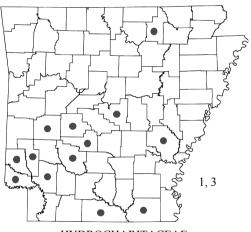
Elodea canadensis Michx.

Canadian waterweed



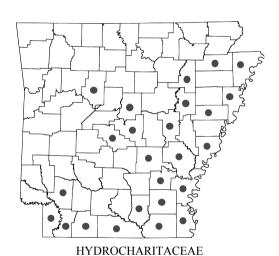
HYDROCHARITACEAE Elodea nuttallii (Planch.) H.St.John

Nuttall's waterweed



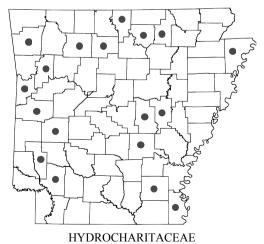
HYDROCHARITACEAE Hydrilla verticillata (L.f.) Royle

hydrilla



Limnobium spongia (Bosc) Rich. ex Steud.

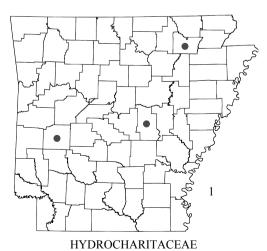
American frog's-bit



Najas guadalupensis (Spreng.) Magnus

subsp. guadalupensis

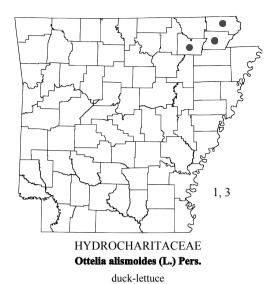
southern naiad, water-nymph



Najas minor All.

brittle naiad, brittle water-nymph

456 HYDROCHARITACEAE / Ottelia



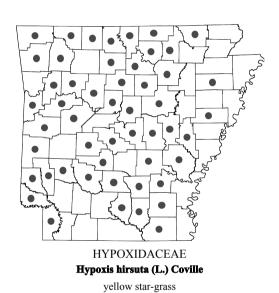
HYDROCHARITACEAE
Vallisneria americana Michx.
eel-grass

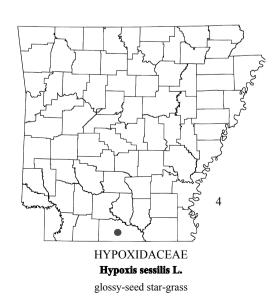


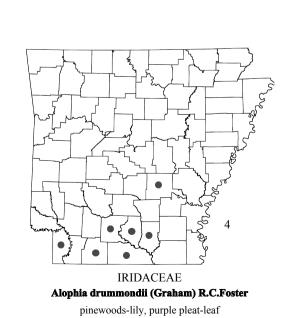
HYPOXIDACEAE

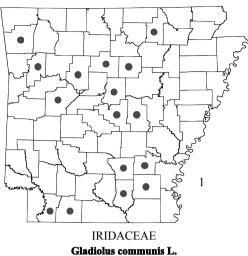
Hypoxis curtissii Rose in Small

Curtiss' star-grass, swamp star-grass









IRIDACEAE Iris brevicaulis Raf. zigzag iris, short-stem iris

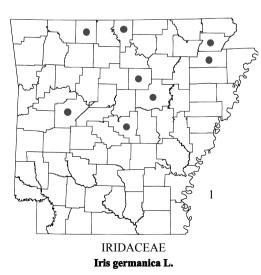
gladiolus, corn-flag



IRIDACEAE

Iris domestica (L.) Goldblatt & Mabb.

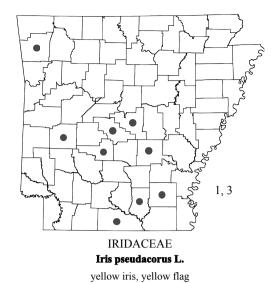
blackberry-lily

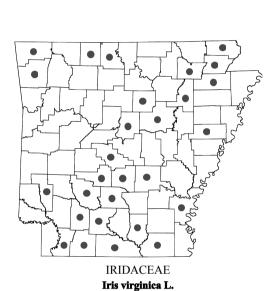


Iris fulva Ker Gawl. copper iris, red iris

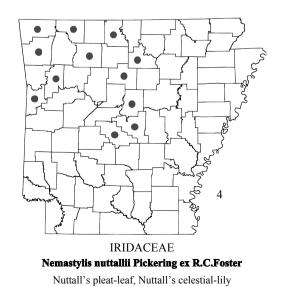
IRIDACEAE

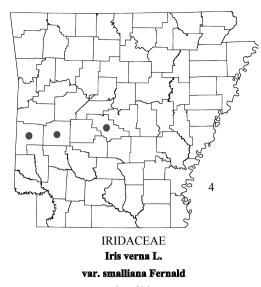
garden iris



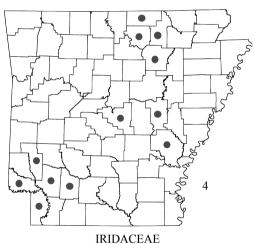


southern blue flag

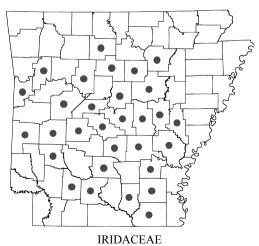




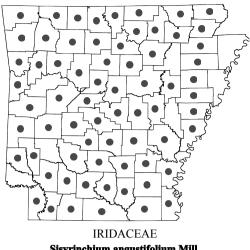
dwarf iris



Nemastylis geminiflora Nutt. celestial-lily, prairie pleat-leaf

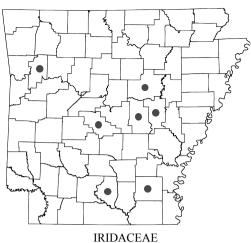


Sisyrinchium albidum Raf. white blue-eyed-grass



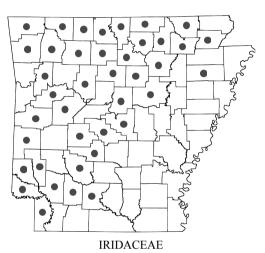
Sisyrinchium angustifolium Mill.

blue-eyed-grass



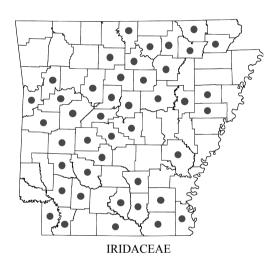
Sisyrinchium atlanticum E.P.Bicknell

blue-eyed-grass



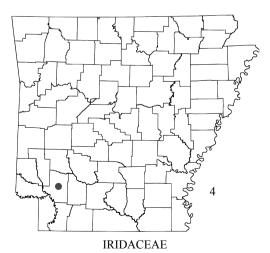
Sisyrinchium campestre E.P.Bicknell

blue-eyed-grass



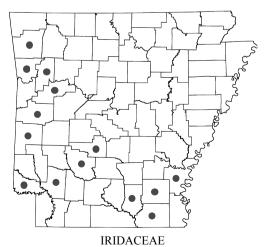
Sisyrinchium langloisii Greene

blue-eyed-grass



Sisyrinchium minus Engelm. & A.Gray

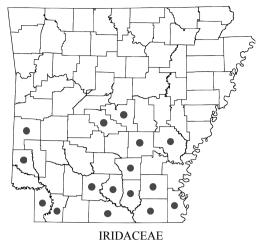
dwarf blue-eyed-grass



Sisyrinchium pruinosum E.P.Bicknell

blue-eyed-grass

460 IRIDACEAE / Sisyrinchium



Sisyrinchium rosulatum E.P.Bicknell

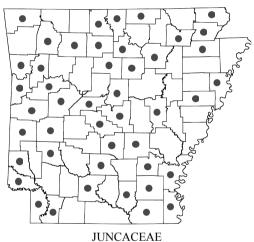
annual blue-eyed-grass



IRIDACEAE

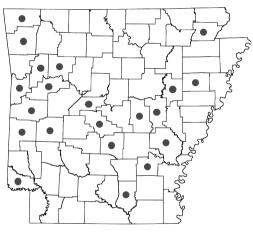
Sisyrinchium sagittiferum E.P.Bicknell

spear-bract blue-eyed-grass



Juncus acuminatus Michx.

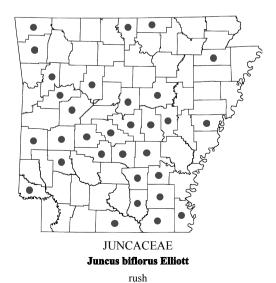
knotty-leaf rush



JUNCACEAE

Juncus anthelatus (Wiegand) R.E.Brooks

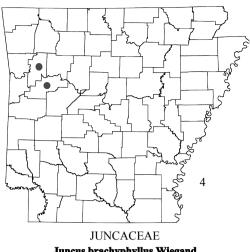
poverty rush



JUNCACEAE

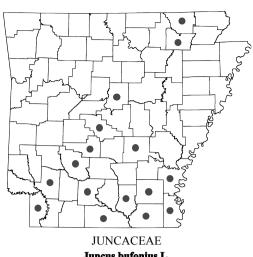
Juncus brachycarpus Engelm. in A.Gray

rush



Juncus brachyphyllus Wiegand

tufted-stem rush



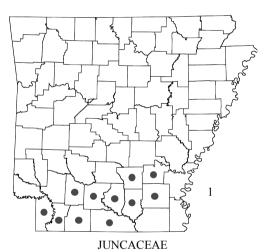
Juncus bufonius L.

toad rush



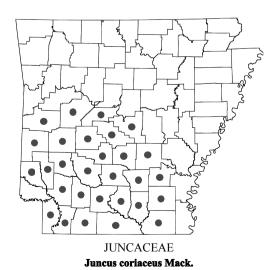
Juncus canadensis J.Gay in Laharpe

Canadian rush



Juncus capitatus Weigel

rush

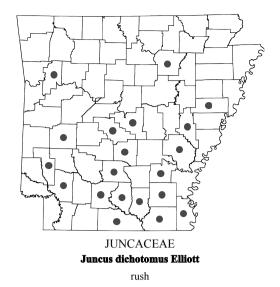


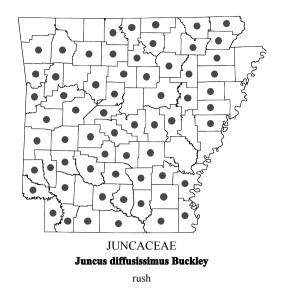
rush

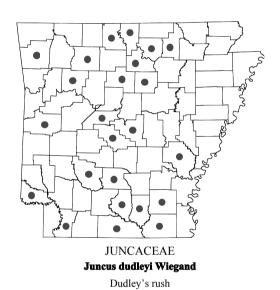
JUNCACEAE

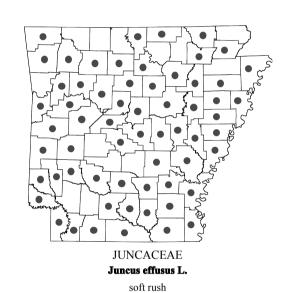
Juncus debilis A.Gray

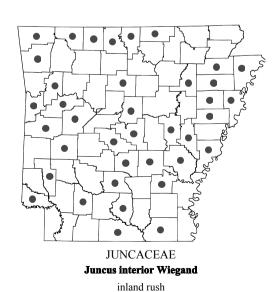
weak rush

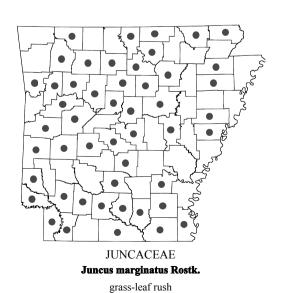


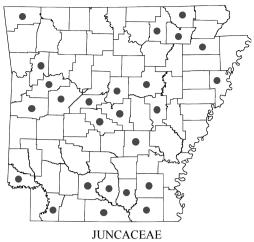






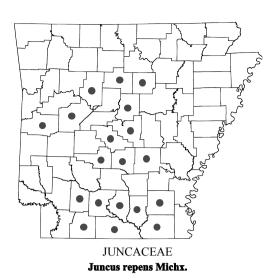




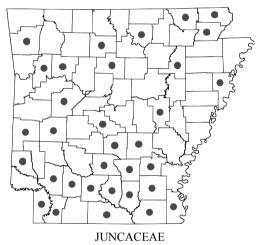


Juncus nodatus Coville in Britton & A.Br.

rush

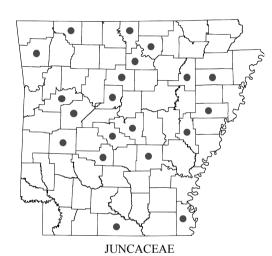


creeping rush



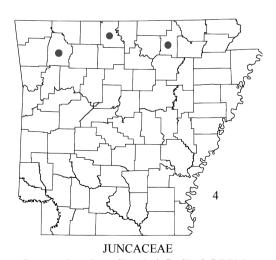
Juncus scirpoides Lam. in Lam. et al.

rush



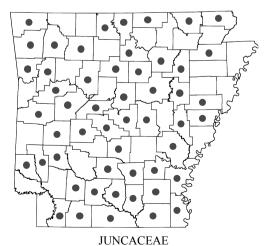
Juncus secundus P.Beauv. ex Poir. in Lam. et al.

rush



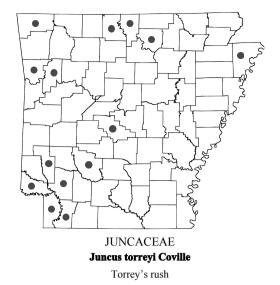
Juncus subcaudatus (Engelm.) Coville & S.F.Blake

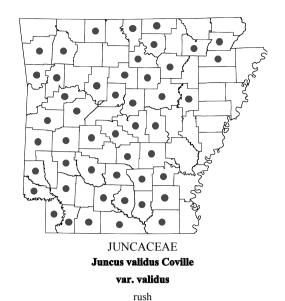
fen rush, woodland rush



Juncus tenuis Willd.

path rush, slender rush

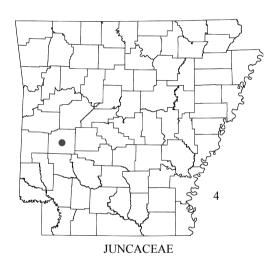


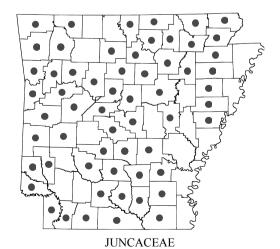


JUNCACEAE Luzula acuminata Raf.

var. acuminata

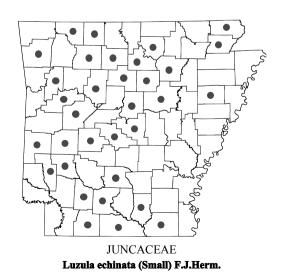
wood-rush

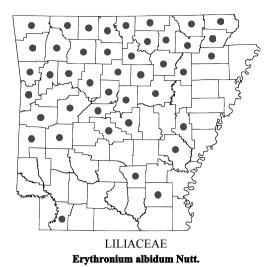




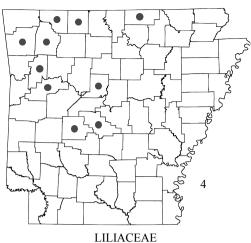
wood-rush

Luzula acuminata Raf. var. carolinae (S.Watson) Fernald Carolina wood-rush



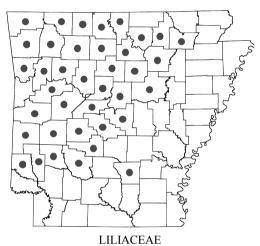


white trout-lily, white dog-tooth-violet



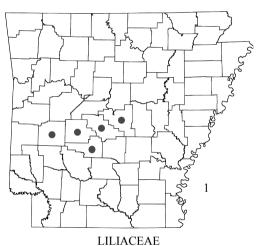
Erythronium mesochoreum Knerr

prairie trout-lily, prairie dog-tooth-violet



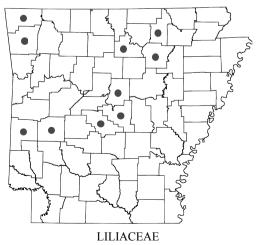
Erythronium rostratum W.Wolf

yellow trout-lily



Lilium lancifolium Thunb.

tiger lily



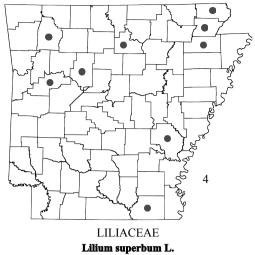
Lilium michiganense Farw.

Michigan lily



Lilium philippinense Baker

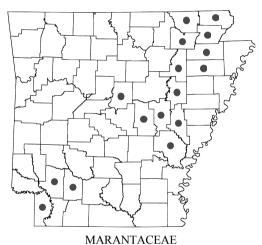
Philippine lily



LILIACEAE

Turk's-cap lily

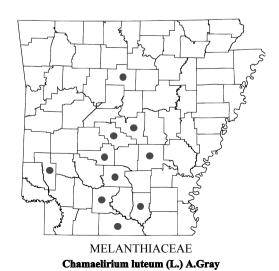
Prosartes lanuginosa (Michx.) D.Don yellow mandarin



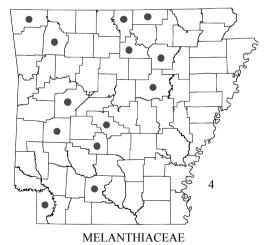
Thalia dealbata Fraser ex Roscoe

powdery thalia, powdery alligator-flag

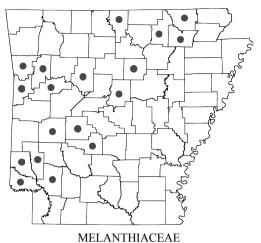
MELANTHIACEAE Amianthium muscitoxicum (Walter) A.Gray fly-poison



devil's-bit, fairy-wand



Stenanthium gramineum (Ker Gawl.) Morong featherbells



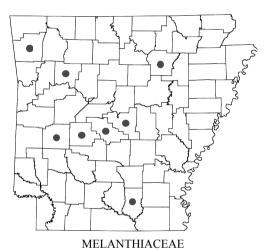
Toxicoscordion nuttallii (A.Gray) Rydb.

death-camas



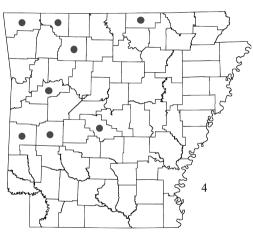
MELANTHIACEAE Veratrum latifolium (Desr. in Lam. et al.) Zomlefer

bunchflower



Veratrum virginicum (L.) W.T.Aiton

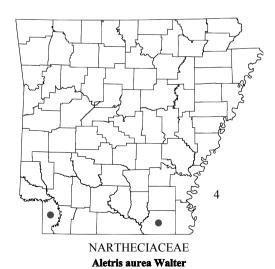
bunchflower



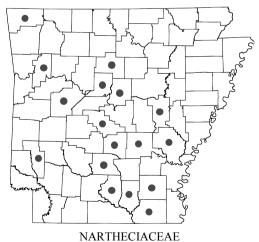
MELANTHIACEAE

Veratrum woodii J.W.Robbins ex A.W.Wood

Wood's false hellebore

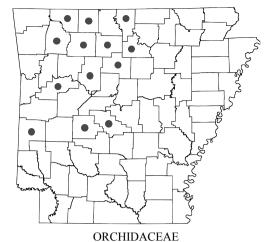


golden colicroot, yellow star-grass



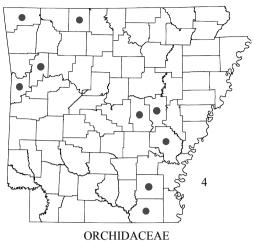
Aletris farinosa L.

white colicroot, unicorn-root, white star-grass



Aplectrum hyemale (Muhl. ex Willd.) Nutt.

Adam-and-Eve, putty-root



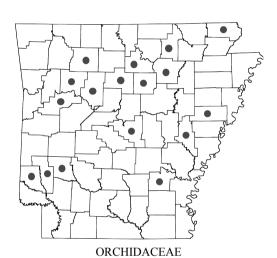
Calopogon oklahomensis D.H.Goldman

Oklahoma grass-pink



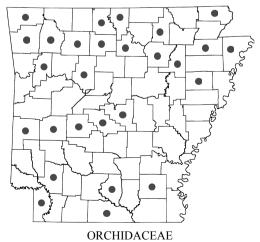
Calopogon tuberosus (L.) Britton, Sterns & Poggenb.
var. tuberosus

tuberous grass-pink



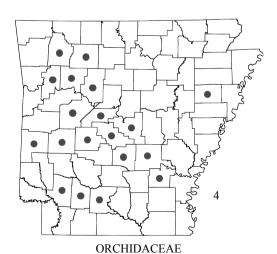
Corallorhiza odontorhiza (Willd.) Poir. in F.Cuvier var. odontorhiza

autumn coralroot, late coralroot



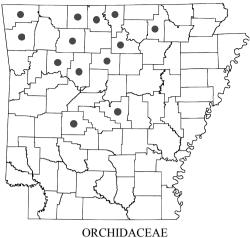
Corallorhiza wisteriana Conrad

spring coralroot



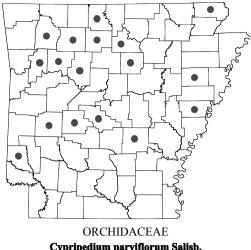
Cypripedium kentuckiense C.F.Reed

Kentucky lady's-slipper



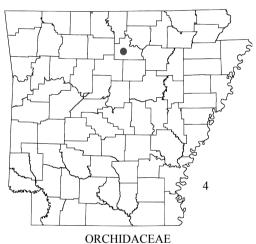
Cypripedium parviflorum Salisb. var. parviflorum

small yellow lady's-slipper



Cypripedium parviflorum Salisb. var. pubescens (Willd.) O.W.Knight

large yellow lady's-slipper



Cypripedium reginae Walter showy lady's-slipper

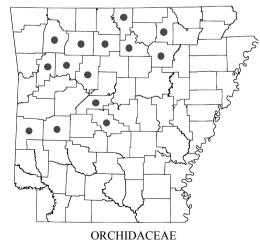


Epipactis helleborine (L.) Crantz

helleborine



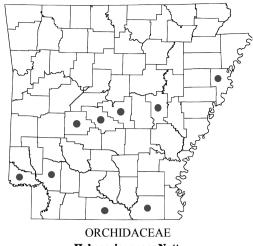
showy orchis



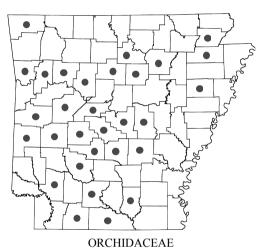
Goodyera pubescens (Willd.) R.Br. in Aiton & W.T.Aiton

downy rattlesnake-plantain

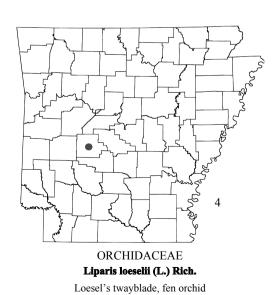
470 ORCHIDACEAE / Habenaria



Habenaria repens Nutt. water-spider orchid



Isotria verticillata (Muhl. ex Willd.) Raf.
large whorled-pogonia



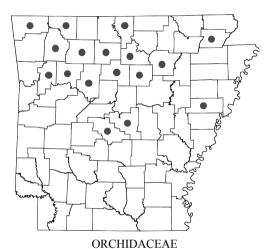
ORCHIDACEAE

ORCHIDACEAE

Hexalectris spicata (Walter) Barnhart

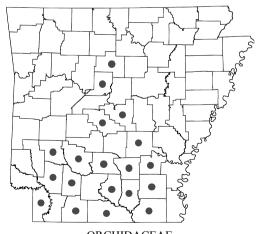
var. spicata

crested-coralroot

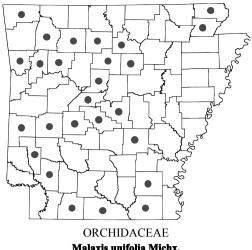


Liparis liliifolia (L.) Rich. ex Lindl.

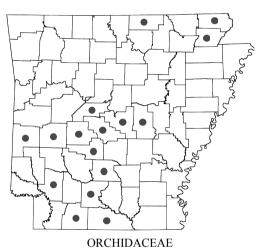
lily-leaf twayblade, large twayblade



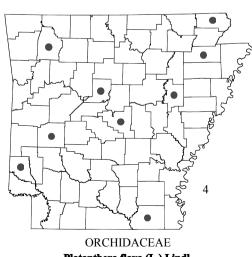
ORCHIDACEAE **Listera australis Lindl.**southern twayblade



Malaxis unifolia Michx. green adder's-mouth



Platanthera clavellata (Michx.) Luer small green wood orchid



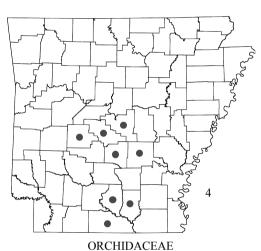
Platanthera flava (L.) Lindl. var. flava

southern rein orchid, southern tubercled orchid, pale-green orchid

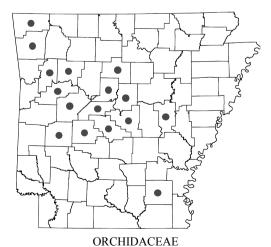
ORCHIDACEAE

Platanthera ciliaris (L.) Lindl.

yellow fringed orchid



Platanthera cristata (Michx.) Lindl. crested fringed orchid, crested yellow orchid



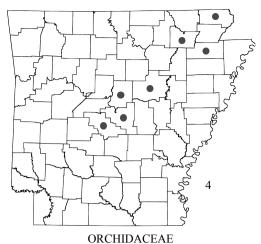
Platanthera lacera (Michx.) G.Don in Sweet green fringed orchid, ragged fringed orchid

472 ORCHIDACEAE / Platanthera



Platanthera nivea (Nutt.) Luer

snowy orchid



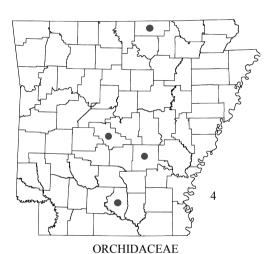
Platanthera peramoena (A.Gray) A.Gray

purple fringeless orchid



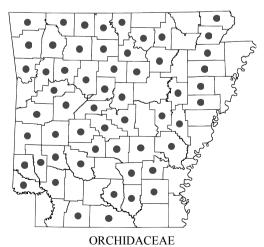
Platanthera ×channellii Folsom

Channell's fringed orchid



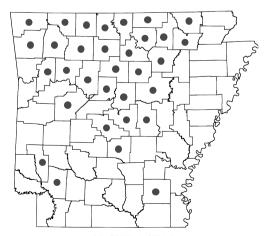
Pogonia ophioglossoides (L.) Ker Gawl.

rose pogonia, snake-mouth



Spiranthes cernua (L.) Rich.

nodding ladies'-tresses



ORCHIDACEAE

Spiranthes lacera (Raf.) Raf. var. gracilis (Bigelow) Luer

southern slender ladies'-tresses



Spiranthes lacera (Raf.) Raf.

var. lacera

northern slender ladies'-tresses



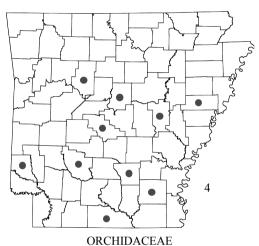
Spiranthes lucida (H.H.Eaton) Ames

shining ladies'-tresses



Spiranthes magnicamporum Sheviak

Great Plains ladies'-tresses



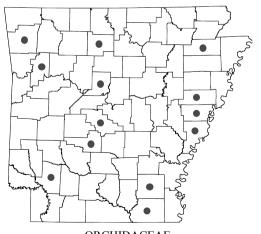
Spiranthes odorata (Nutt.) Lindl.

fragrant ladies'-tresses, marsh ladies'-tresses



Spiranthes ovalis Lindl. var. erostellata Catling

northern oval ladies'-tresses



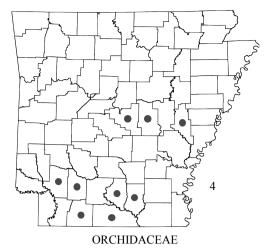
ORCHIDACEAE

Spiranthes ovalis Lindl.

var. ovalis

southern oval ladies'-tresses

474 ORCHIDACEAE / Spiranthes

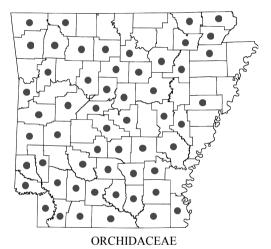


Spiranthes praecox (Walter) S.Watson in A.Gray et al.

giant ladies'-tresses, grass-leaf ladies'-tresses

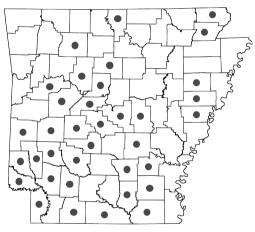


little ladies'-tresses



Spiranthes vernalis Engelm. & A.Gray

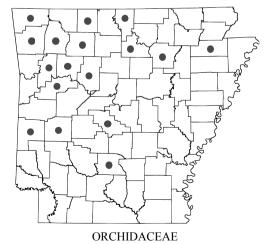
spring ladies'-tresses



ORCHIDACEAE

Tipularia discolor (Pursh) Nutt.

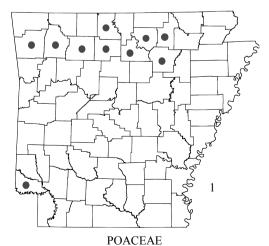
crane-fly orchid



Triphora trianthophora (Sw.) Rydb. in Britton

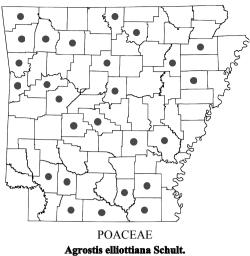
subsp. trianthophora

three-birds orchid, nodding-pogonia

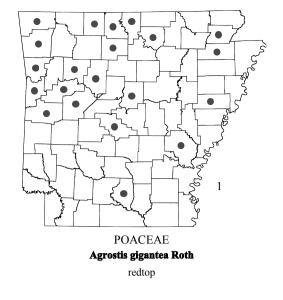


Aegilops cylindrica Host

jointed goat grass

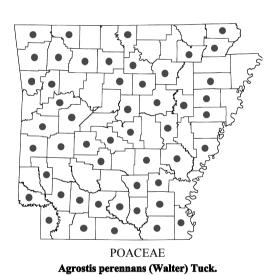


Elliott's bent grass

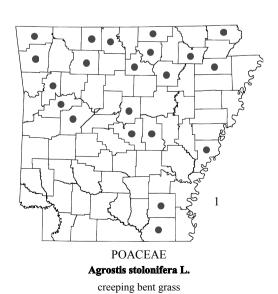


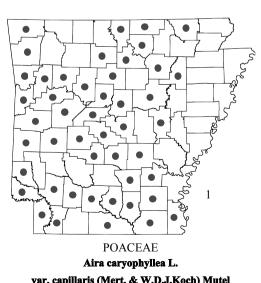
POACEAE

Agrostis hyemalis (Walter) Britton, Sterns & Poggenb. winter bent grass, tickle grass

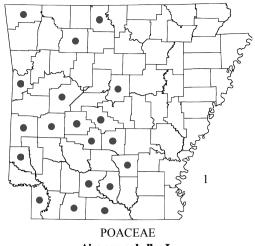


autumn bent grass, upland bent grass



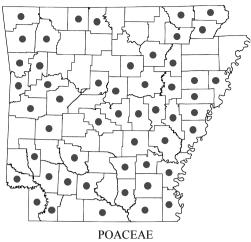


var. capillaris (Mert. & W.D.J.Koch) Mutel annual hair grass



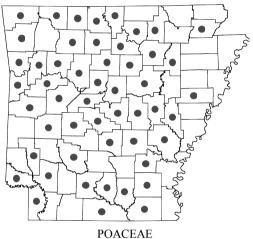
Aira caryophyllea L. var. caryophyllea

silver hair grass



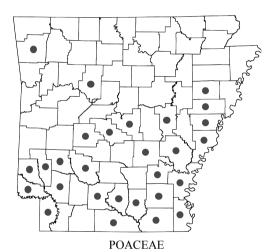
Alopecurus carolinianus Walter

Carolina foxtail



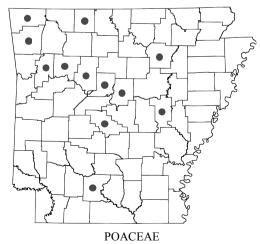
Andropogon gerardii Vitman

big bluestem, turkey-foot



Andropogon glomeratus (Walter) Britton, Sterns & Poggenb.

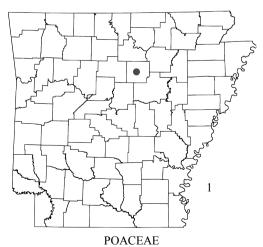
bushy bluestem, bushy beard grass



Andropogon gyrans Ashe

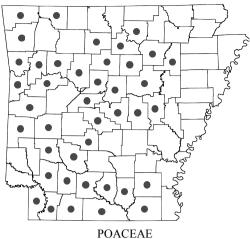
var. gyrans

Elliott's bluestem, Elliott's beard grass



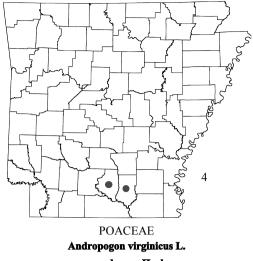
Andropogon hallii Hack.

sand bluestem



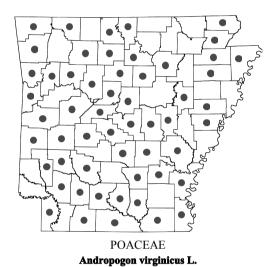
Andropogon ternarius Michx. var. ternarius

split-beard bluestem

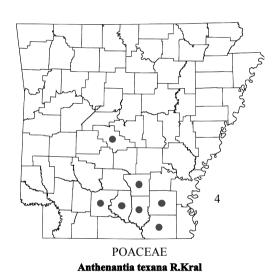


var. glaucus Hack.

chalky bluestem

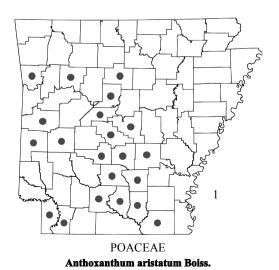


var. virginicus broomsedge, broomsedge bluestem



Kral's silkyscale, purple silkyscale



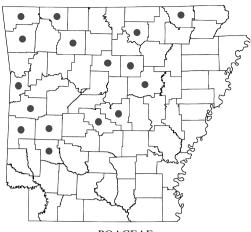


annual vernal grass



Aristida desmantha Trin. & Rupr.

curly three-awn

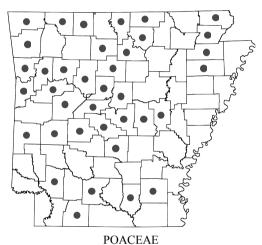


POACEAE

Aristida dichotoma Michx.

var. curtissii A.Gray

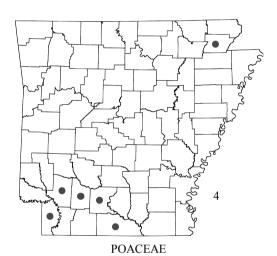
church-mouse three-awn



Aristida dichotoma Michx.

var. dichotoma

church-mouse three-awn



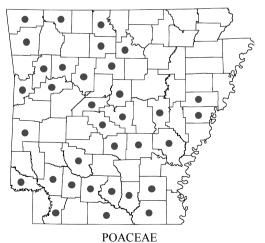
Aristida lanosa Muhl. ex Elliott

woolly three-awn



Aristida longespica Poir. var. geniculata (Raf.) Fernald

slim-spike three-awn



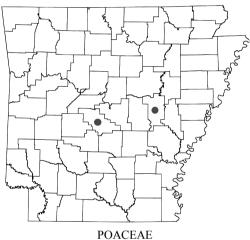
Aristida longespica Poir.

var. longespica

slim-spike three-awn

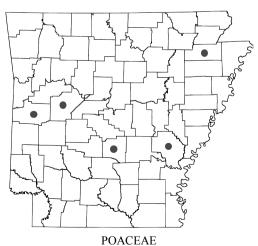


oldfield three-awn, prairie three-awn



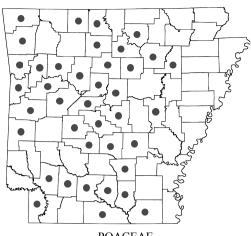
Aristida purpurascens Poir. var. virgata (Trin.) Allred

arrow-feather three-awn



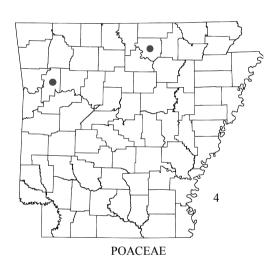
Aristida ramosissima Engelm. ex A.Gray

s-curve three-awn



POACEAE Aristida purpurascens Poir. var. purpurascens

arrow-feather three-awn



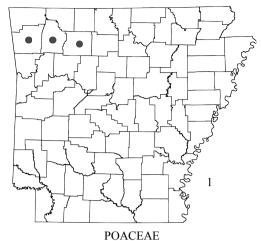
Aristida purpurea Nutt. var. purpurea

purple three-awn



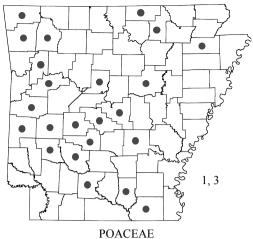
Arrhenatherum elatius (L.) P.Beauv. ex J.Presl & C.Presl var. bulbosum (Willd.) Spenn.

tall oat grass



Arrhenatherum elatius (L.) P.Beauv. ex J.Presl & C.Presl var. elatius

tall oat grass



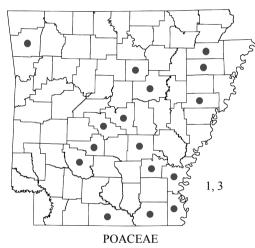
Arthraxon hispidus (Thunb.) Makino

small carp grass



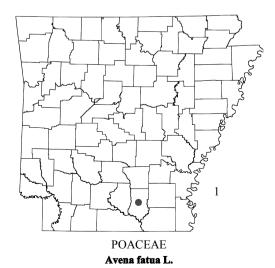
Arundinaria gigantea (Walter) Muhl.

river cane, giant cane, switch cane



Arundo donax L.

giant reed

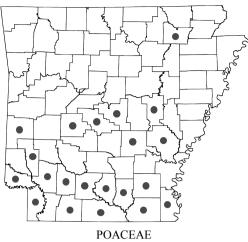


wild oats

POACEAE

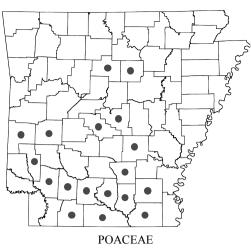
Avena sativa L.

oats



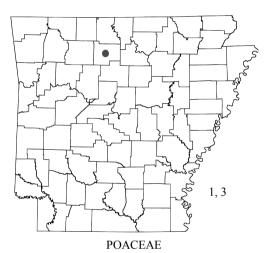
Axonopus fissifolius (Raddi) Kuhlm.

common carpet grass



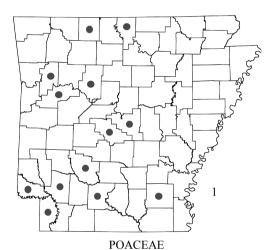
Axonopus furcatus (Flüggé) Hitchc.

big carpet grass



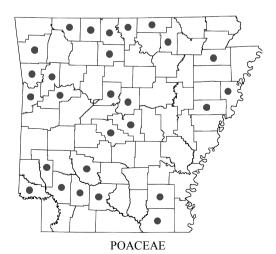
Bothriochloa bladhii (Retz.) S.T.Blake

Australian bluestem, Caucasian bluestem



Bothriochloa ischaemum (L.) Keng

yellow bluestem



Bothriochloa laguroides (DC.) Herter subsp. torreyana (Steud.) Allred & Gould

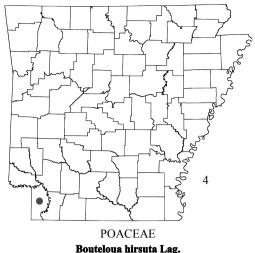
silver beard grass, silver bluestem



Bouteloua curtipendula (Michx.) Torr.

var. curtipendula

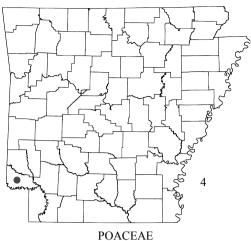
side-oats grama



POACEAE

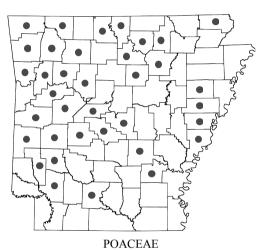
Bouteloua hirsuta Lag.
subsp. hirsuta

hairy grama



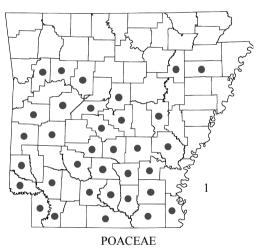
Bouteloua rigidiseta (Steud.) Hitchc.

Texas grama



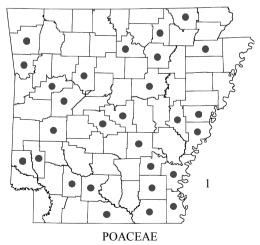
Brachyelytrum erectum (Schreb.) P.Beauv.

bearded shorthusk



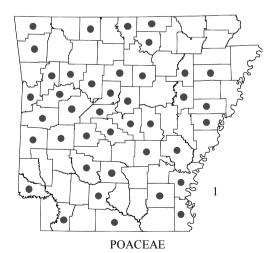
Briza minor L.

little quaking grass



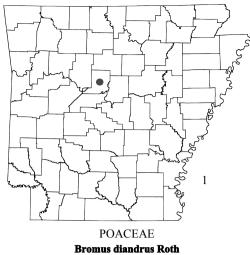
Bromus catharticus Vahl

rescue grass

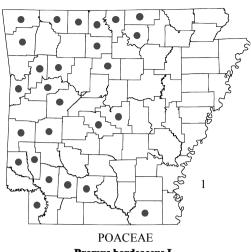


Bromus commutatus Schrad.

meadow brome, hairy chess



ripgut grass



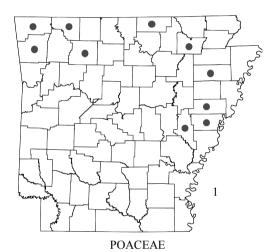
Bromus hordeaceus L. subsp. hordeaceus

soft chess



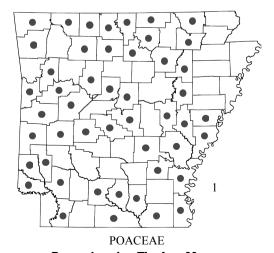
Bromus hordeaceus L. subsp. pseudothominei (P.M.Sm.) H.Scholz

soft chess



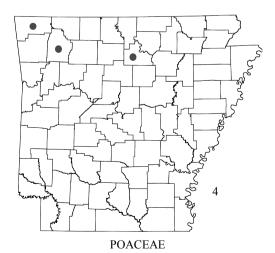
Bromus inermis Leyss.

smooth brome



Bromus japonicus Thunb. ex Murray

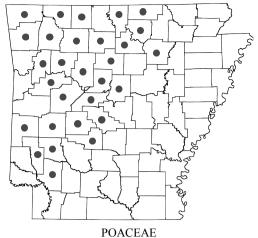
Japanese brome, Japanese chess



Bromus nottowayanus Fernald

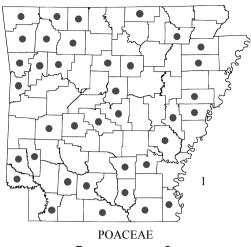
satin brome, Virginia brome

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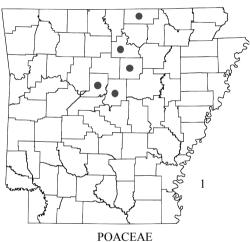
Bromus pubescens Muhl. ex Willd.

hairy woodland brome



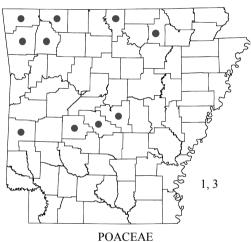
Bromus racemosus L.

bald brome, smooth brome



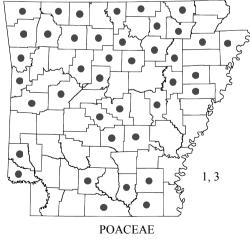
Bromus secalinus L.

rye brome, cheat



Bromus sterilis L.

poverty brome, barren brome



Bromus tectorum L.

cheat grass, downy chess



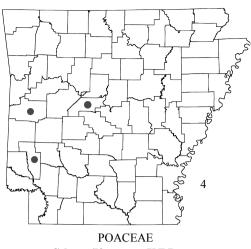
Buchloë dactyloides (Nutt.) Engelm.

buffalo grass



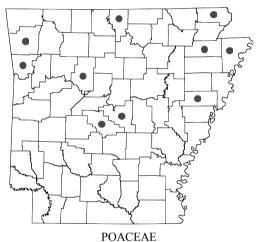
Calamagrostis porteri A.Gray subsp. insperata (Swallen) C.W.Greene

Porter's reed grass, Ofer Hollow reed grass



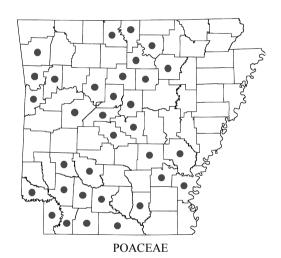
Calamovilfa arcuata K.E.Rogers

Cumberland sand-reed



Cenchrus longispinus (Hack.) Fernald

long-spine sandbur, matted sandbur



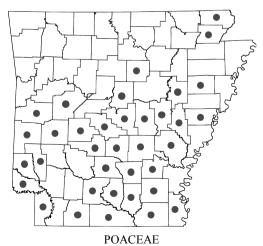
Cenchrus spinifex Cav.

coastal sandbur



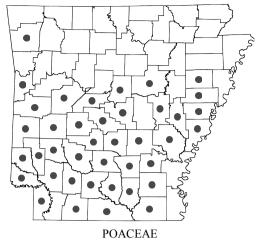
Chasmanthium latifolium (Michx.) H.O.Yates

river-oats, inland sea-oats



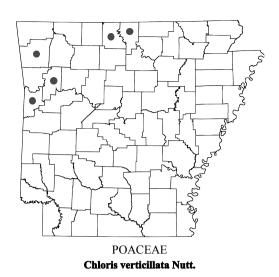
Chasmanthium laxum (L.) H.O.Yates

slender wood-oats

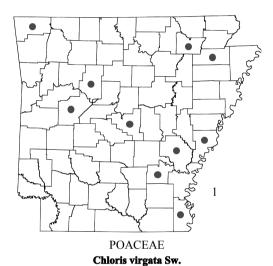


Chasmanthium sessiliflorum (Poir.) H.O.Yates

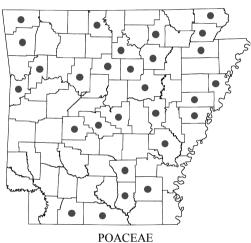
long-leaf wood-oats



windmill grass

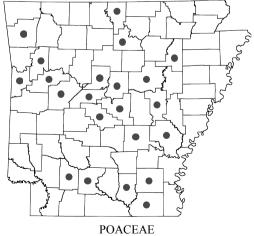


feather finger grass, showy chloris

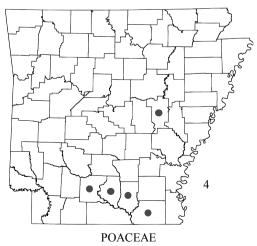


Cinna arundinacea L.

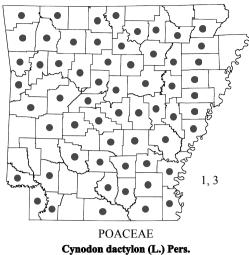
stout wood-reed



Coelorachis cylindrica (Michx.) Nash Coelorachis rugosa (Nutt.) Nash Carolina joint-tail, Carolina joint grass

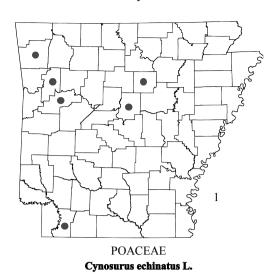


wrinkled joint-tail, wrinkled joint grass

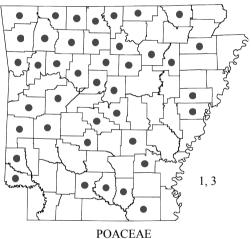


Cynodon dactylon (L.) Pers.

Bermuda grass



bristly dog's-tail



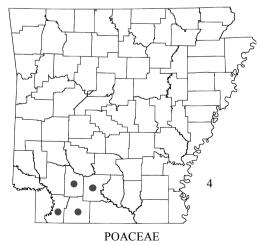
Dactylis glomerata L.

orchard grass



POACEAE Dactyloctenium aegyptium (L.) Willd.

Durban crowfoot



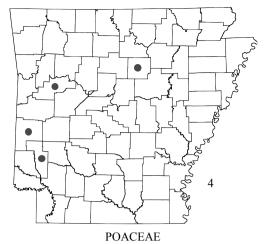
Danthonia sericea Nutt.

downy oat grass



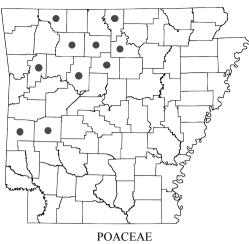
Danthonia spicata (L.) P.Beauv. ex Roem. & Schult.

poverty oat grass



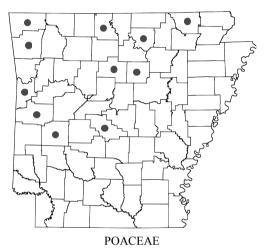
Deschampsia flexuosa (L.) Trin.

wavy hair grass, crinkled hair grass



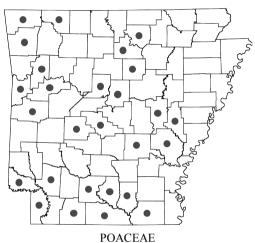
Diarrhena americana P.Beauv.

American beakgrain, American beak grass



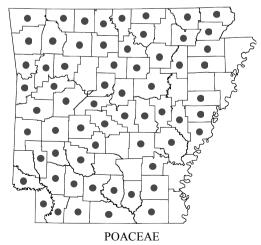
Diarrhena obovata (Gleason) Brandenburg

beakgrain, beak grass



Dichanthelium aciculare (Desv. ex Poir.) Gould & C.A.Clark

narrow-leaf rosette grass, narrow-leaf panic grass See Appendix I for infraspecific taxa and species status.



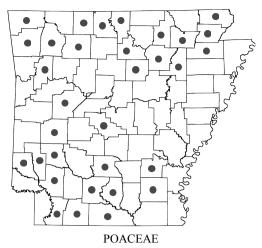
Dichanthelium acuminatum (Sw.) Gould & C.A.Clark

hairy rosette grass, hairy panic grass See Appendix I for infraspecific taxa and species status.



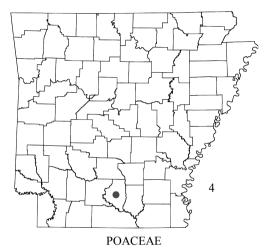
Dichanthelium boscii (Poir.) Gould & C.A.Clark

Bosc's rosette grass, Bosc's panic grass



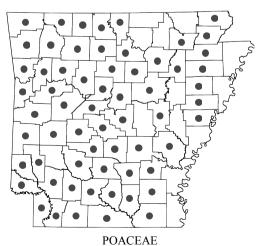
Dichanthelium clandestinum (L.) Gould

deer-tongue rosette grass, deer-tongue panic grass



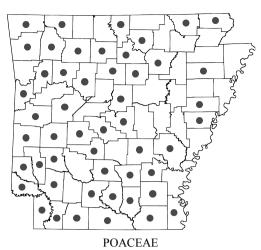
Dichanthelium consanguineum (Kunth) Gould & C.A.Clark

blood rosette grass, blood panic grass



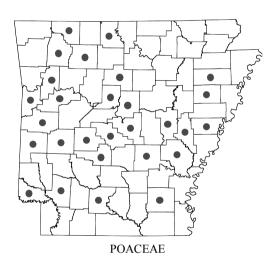
Dichanthelium dichotomum (L.) Gould

forked rosette grass, forked panic grass
See *Appendix I* for infraspecific taxa and species status.



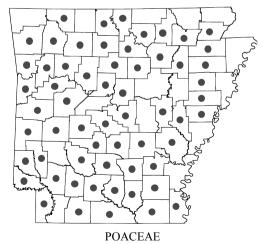
Dichanthelium commutatum (Schult.) Gould

variable rosette grass, variable panic grass
See *Appendix I* for infraspecific taxa and species status.



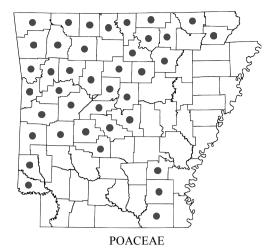
Dichanthelium depauperatum (Muhl.) Gould

starved rosette grass, starved panic grass



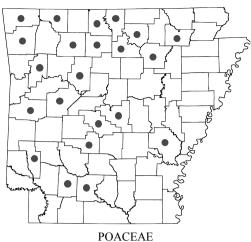
Dichanthelium laxiflorum (Lam.) Gould

open-flower rosette grass, open-flower panic grass



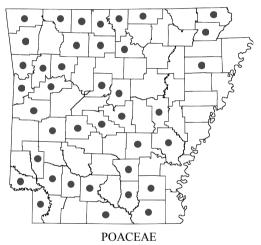
Dichanthelium linearifolium (Scribn. ex Nash) Gould

slim-leaf rosette grass, slim-leaf panic grass



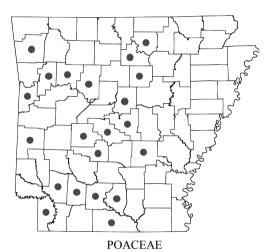
Dichanthelium malacophyllum (Nash) Gould

soft-leaf rosette grass, soft-leaf panic grass



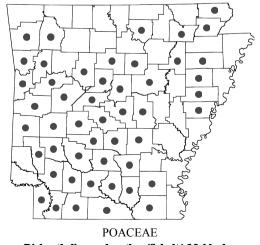
Dichanthelium oligosanthes (Schult.) Gould

few-flower rosette grass, few-flower panic grass
See *Appendix I* for infraspecific taxa and species status.



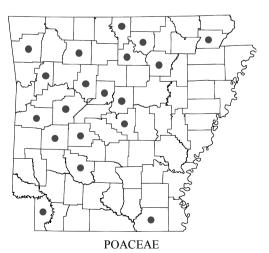
Dichanthelium ovale (Elliott) Gould & C.A.Clark

stiff-leaf rosette grass, stiff-leaf panic grass
See *Appendix I* for infraspecific taxa and species status.



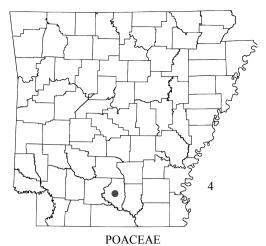
Dichanthelium polyanthes (Schult.) Mohlenbr.

many-flower rosette grass, many-flower panic grass



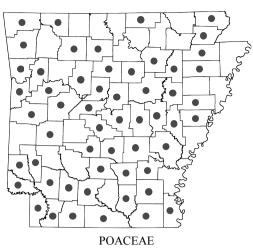
Dichanthelium ravenelii (Scribn. & Merr.) Gould

Ravenel's rosette grass, Ravenel's panic grass



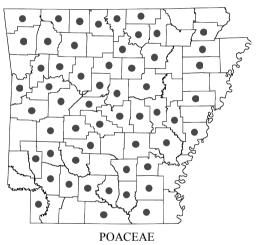
Dichanthelium scabriusculum (Elliott) Gould & C.A.Clark

tall swamp rosette grass, tall swamp panic grass



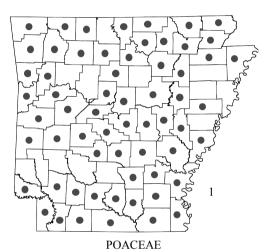
Dichanthelium scoparium (Lam.) Gould

velvet rosette grass, velvet panic grass



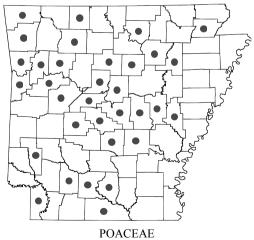
Dichanthelium sphaerocarpon (Elliott) Gould

round-seed rosette grass, round-seed panic grass



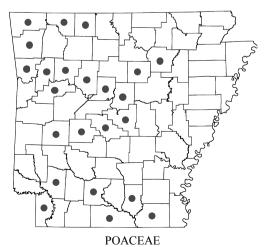
Digitaria ciliaris (Retz.) Koeler

southern crab grass



Digitaria cognata (Schult.) Pilg.

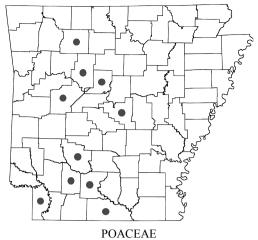
fall witch grass



Digitaria filiformis (L.) Koeler

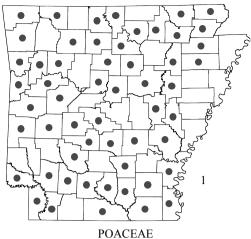
var. filiformis

slender crab grass



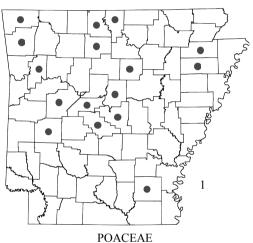
Digitaria filiformis (L.) Koeler var. villosa (Walter) Fernald

shaggy crab grass



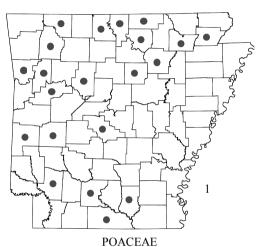
Digitaria ischaemum (Schreb.) Muhl.

smooth crab grass



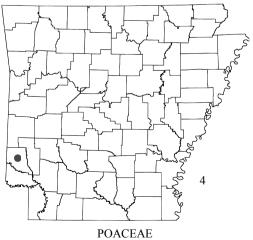
Digitaria sanguinalis (L.) Scop.

hairy crab grass



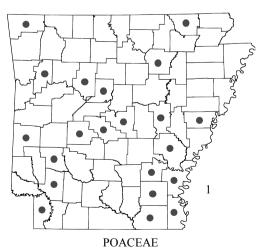
Digitaria violascens Link

violet crab grass



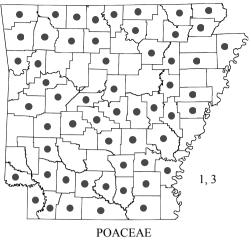
Distichlis spicata (L.) Greene

salt grass



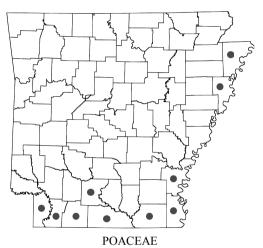
Echinochloa colona (L.) Link

jungle-rice



Echinochloa crusgalli (L.) P.Beauv.

barnyard grass



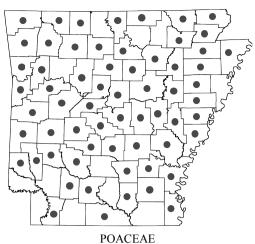
Echinochloa walteri (Pursh) A.Heller

coast barnyard grass



Eleusine tristachya (Lam.) Lam.

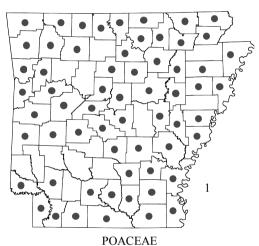
three-spike goose grass



Echinochloa muricata (P.Beauv.) Fernald

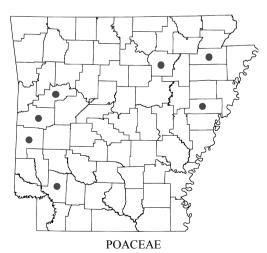
American barnyard grass

See Appendix I for infraspecific taxa and species status.



Eleusine indica (L.) Gaertn.

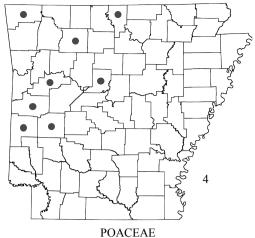
goose grass



Elymus canadensis L.

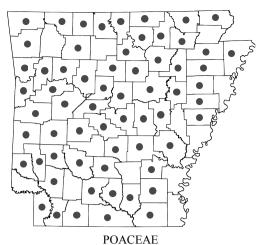
Canadian wild rye, Great Plains wild rye

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Elymus churchii J.J.N.Campb.

Church's wild rye



Elymus glabriflorus (Vasey ex L.H.Dewey) Scribn. & C.R.Ball

southeastern wild rye



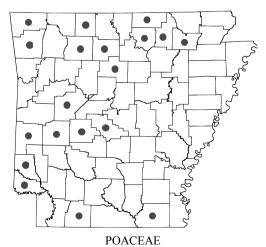
Elymus glaucus Buckley subsp. mackenzii (Bush) J.J.N.Campb.

Mackenzie's blue wild rye



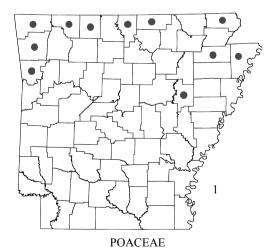
Elymus hystrix L.

bottle-brush grass



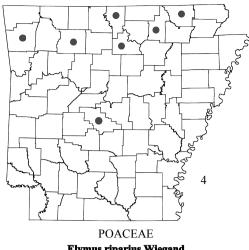
Elymus macgregorii R.Brooks & J.J.N.Campb.

early wild rye

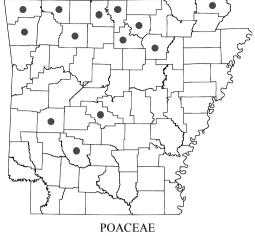


Elymus repens (L.) Gould

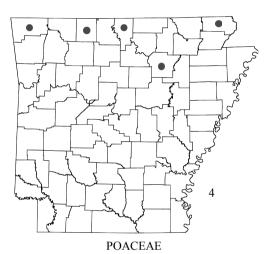
quack grass



Elymus riparius Wiegand river-bank wild rye



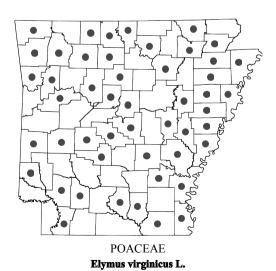
Elymus villosus Muhl. ex Willd. hairy wild rye, downy wild rye



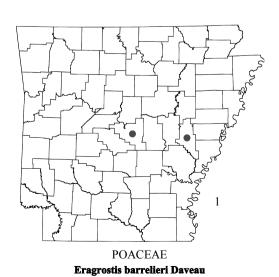
Elymus virginicus L. var. intermedius (Vasey ex A.Gray) Bush intermediate wild rye



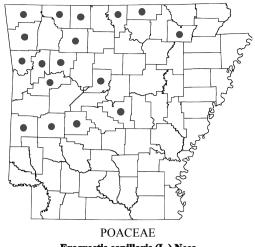
Elymus virginicus L. var. jejunus (Ramaley) Bush Virginia wild rye



var. virginicus Virginia wild rye

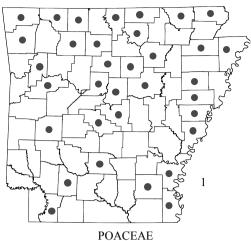


Mediterranean love grass



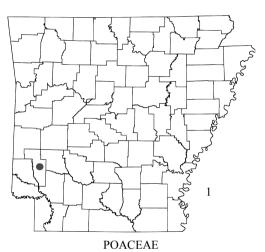
Eragrostis capillaris (L.) Nees

lace grass



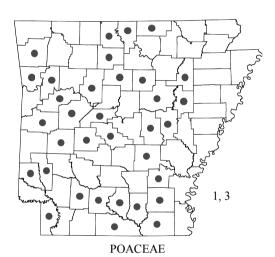
Eragrostis cilianensis (All.) Vignolo ex Janch.

stink grass



Eragrostis curtipedicellata Buckley

gummy love grass



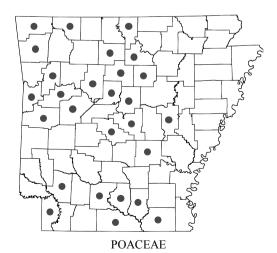
Eragrostis curvula (Schrad.) Nees

weeping love grass



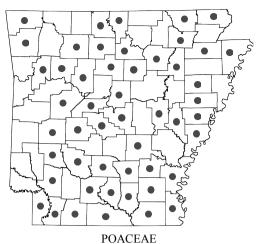
Eragrostis frankii C.A.Mey. ex Steud.

sandbar love grass



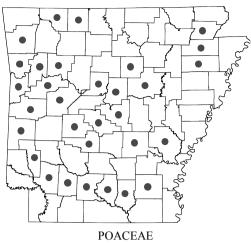
Eragrostis hirsuta (Michx.) Nees

big-top love grass



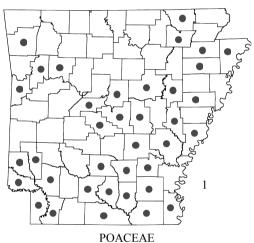
Eragrostis hypnoides (Lam.) Britton, Sterns & Poggenb.

teal love grass



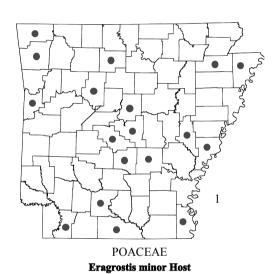
Eragrostis intermedia Hitchc.

plains love grass

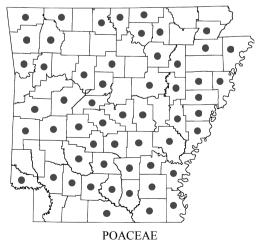


Eragrostis japonica (Thunb.) Trin.

pond love grass



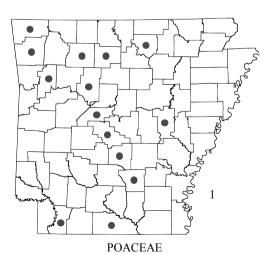
little love grass



Eragrostis pectinacea (Michx.) Nees

var. pectinacea

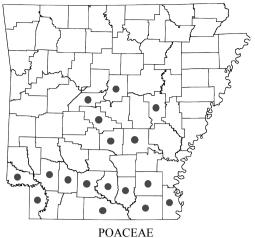
tufted love grass



Eragrostis pilosa (L.) P.Beauv.

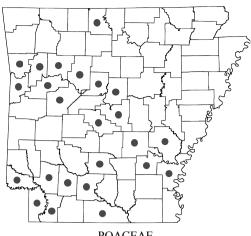
var. pilosa

Indian love grass



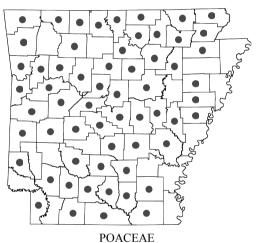
Eragrostis refracta (Muhl.) Scribn.

coastal love grass



POACEAE
Eragrostis secundiflora J.Presl
subsp. oxylepis (Torr.) S.D.Koch

red love grass



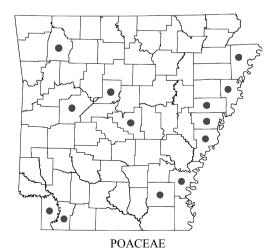
Eragrostis spectabilis (Pursh) Steud.

purple love grass



Eremochloa ophiuroides (Munro) Hack.

centipede grass



Eriochloa acuminata (J.Presl) Kunth

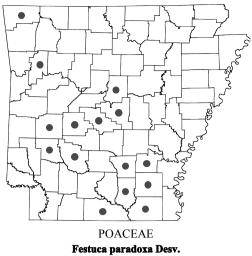
var. acuminata

southwestern cup grass

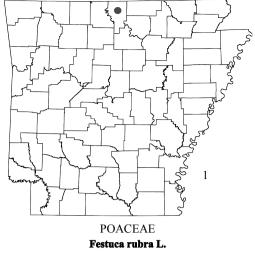


Eriochloa contracta Hitchc.

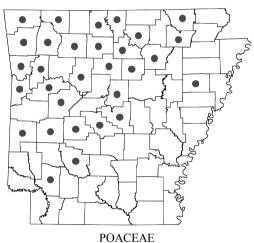
prairie cup grass



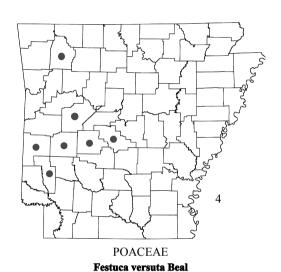
clustered fescue



red fescue



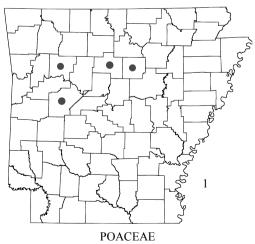
Festuca subverticillata (Pers.) E.B.Alexeev nodding fescue



Texas fescue

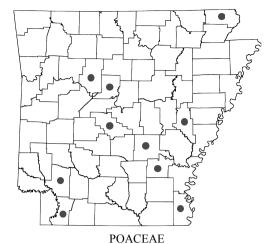


creeping manna grass, sharp-glume manna grass



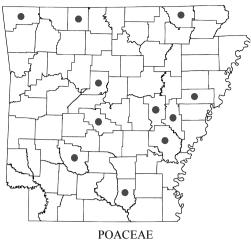
Glyceria declinata Bréb.

waxy manna grass



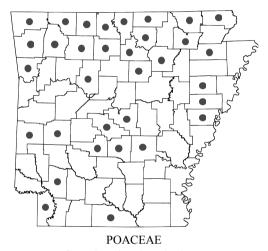
Glyceria septentrionalis Hitchc. var. arkansana (Fernald) Steyerm. & Kučera

Arkansas manna grass



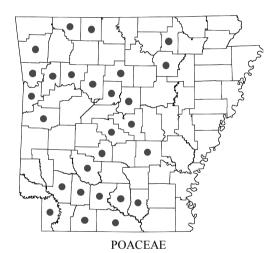
Glyceria septentrionalis Hitchc.
var. septentrionalis

floating manna grass



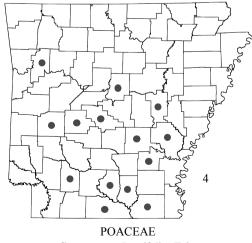
Glyceria striata (Lam.) Hitchc.

fowl manna grass



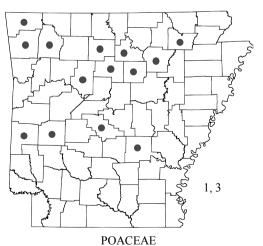
Gymnopogon ambiguus (Michx.) Britton, Sterns & Poggenb.

bearded skeleton grass



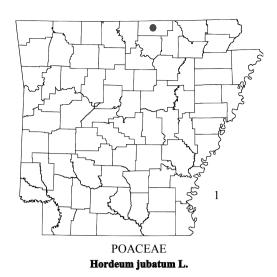
Gymnopogon brevifolius Trin.

short-leaf skeleton grass

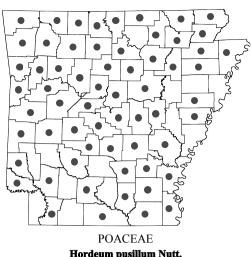


Holcus lanatus L.

velvet grass



subsp. jubatum fox-tail barley, squirrel-tail barley

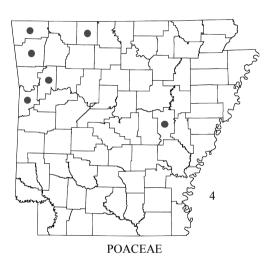


Hordeum pusillum Nutt.

little barley



Hordeum vulgare L. barley

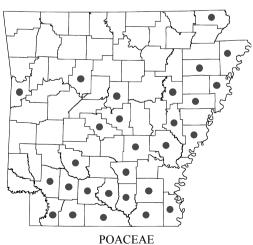


Koeleria macrantha (Ledeb.) Schult.

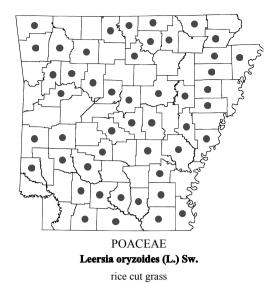
prairie June grass

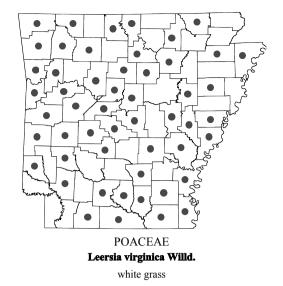


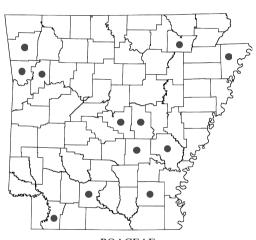
southern cut grass



Leersia lenticularis Michx. catchfly grass



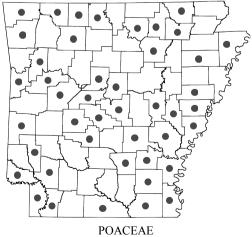




POACEAE
Leptochloa fusca (L.) Kunth
subsp. fascicularis (Lam.) N.Snow
bearded sprangletop



Leptochloa fusca (L.) Kunth
subsp. uninervia (J.Presl) N.Snow
Mexican sprangletop

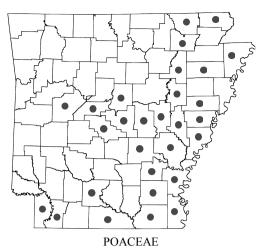


Leptochloa panicea (Retz.) Ohwi subsp. brachiata (Steud.) N.Snow red sprangletop

POACEAE

Leptochloa panicea (Retz.) Ohwi subsp. mucronata (Michx.) Nowack

Mississippi sprangletop



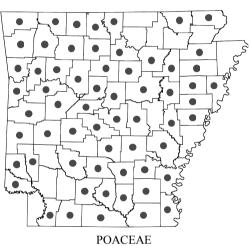
Leptochloa panicoides (J.Presl) Hitchc.

Amazon sprangletop



Limnodea arkansana (Nutt.) L.H.Dewey

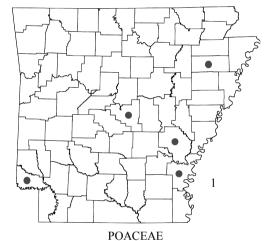
Ozark grass



Lolium perenne L.

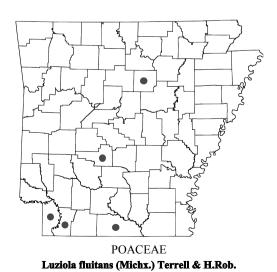
perennial rye grass

See Appendix I for infraspecific taxa and species status.



Lolium temulentum L.

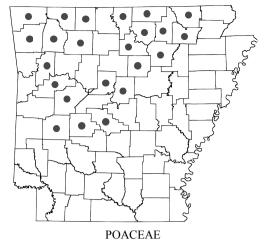
subsp. temulentum darnel rye grass



water grass

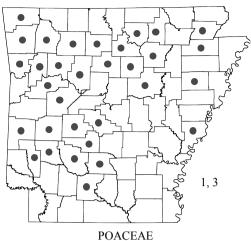
POACEAE

Melica mutica Walter two-flower melic



Melica nitens (Scribn.) Nutt. ex Piper

three-flower melic



Microstegium vimineum (Trin.) A.Camus

Japanese stilt grass, Nepalese brown-top



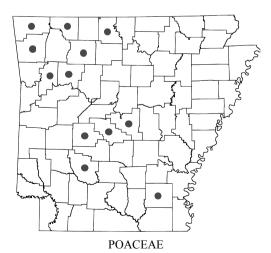
Miscanthus sacchariflorus (Maxim.) Benth.

Amur silver grass, silver plume grass



Muhlenbergia bushii R.W.Pohl

nodding muhly



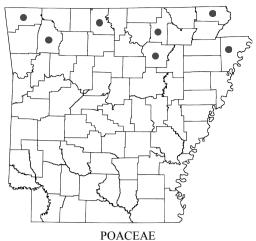
Muhlenbergia capillaris (Lam.) Trin.

hair-awn muhly

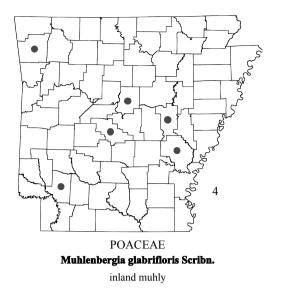


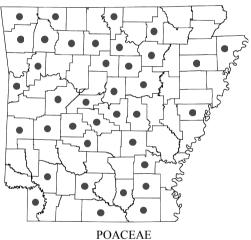
Muhlenbergia cuspidata (Torr. ex Hook.) Rydb.

plains muhly

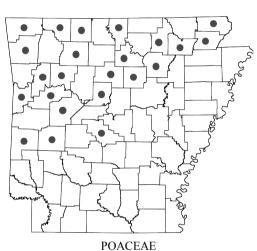


Muhlenbergia frondosa (Poir.) Fernald wire-stem muhly

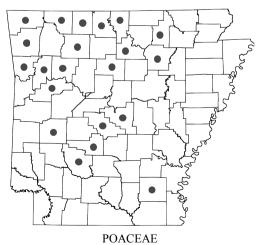




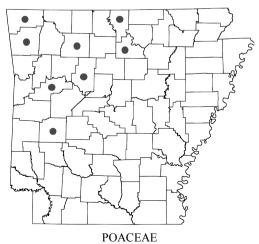
Muhlenbergia schreberi J.F.Gmel. nimblewill



Muhlenbergia sobolifera (Muhl. ex Willd.) Trin. rock muhly



Muhlenbergia sylvatica (Torr.) Torr. ex A.Gray woodland muhly

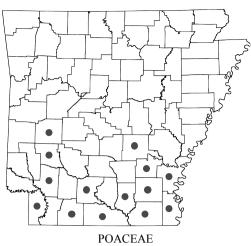


Muhlenbergia tenuiflora (Willd.) Britton, Sterns & Poggenb. slim-flower muhly



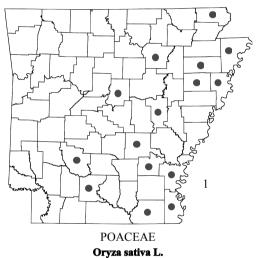
Nassella leucotricha (Trin. & Rupr.) R.W.Pohl

Texas winter grass, Texas needle grass

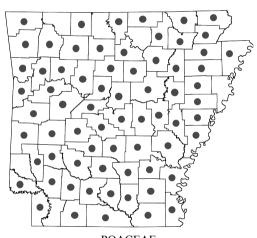


Oplismenus hirtellus (L.) P.Beauv.

basket grass



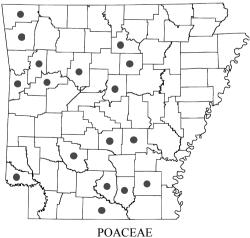
rice



POACEAE

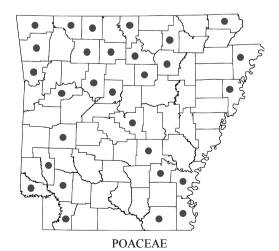
Panicum anceps Michx. subsp. anceps

beaked panic grass



Panicum brachyanthum Steud.

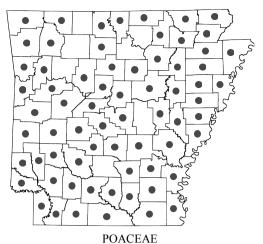
prairie panic grass



Panicum capillare L.

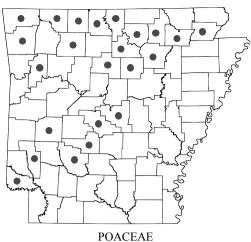
subsp. capillare

witch grass



Panicum dichotomiflorum Michx. subsp. dichotomiflorum

fall panic grass



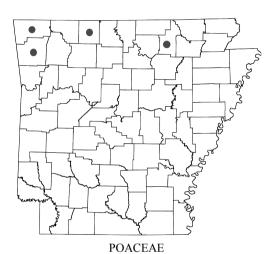
Panicum flexile (Gatt.) Scribn.

wiry witch grass



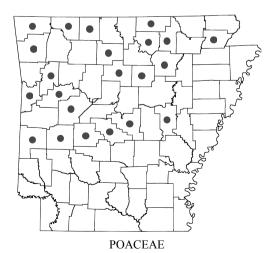
Panicum hemitomon Schult.

maiden-cane



Panicum philadelphicum Bernh. ex Trin. subsp. gattingeri (Nash) Freckmann & Lelong

Gattinger's witch grass



Panicum philadelphicum Bernh. ex Trin.

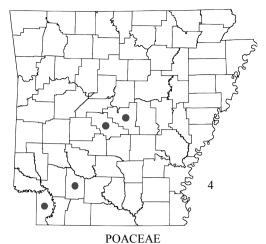
subsp. philadelphicum

Philadelphia witch grass



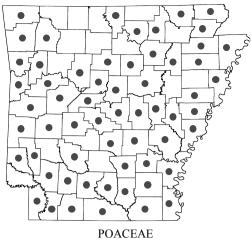
Panicum repens L.

torpedo grass



Panicum rigidulum Bosc ex Nees subsp. pubescens (Vasey) Freckmann & Lelong

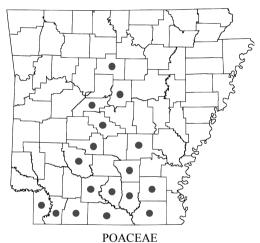
red-top panic grass



POACEAE

Panicum rigidulum Bosc ex Nees
subsp. rigidulum

red-top panic grass



Panicum verrucosum Muhl.

warty panic grass



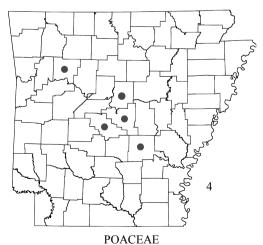
Panicum virgatum L.

switch grass



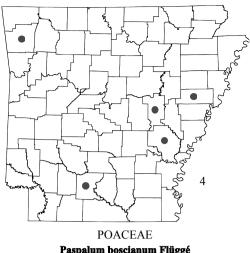
Pascopyrum smithii (Rydb.) Barkworth & D.R.Dewey

western wheat grass

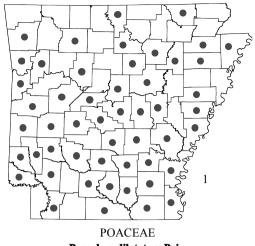


Paspalum bifidum (Bertol.) Nash

pitchfork paspalum

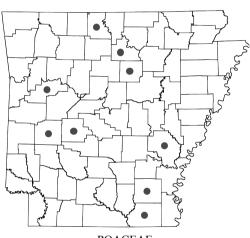


Paspalum boscianum Flüggé bull paspalum

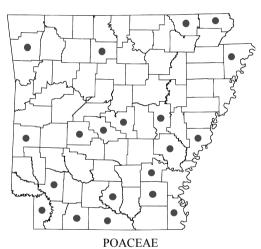


Paspalum dilatatum Poir.

Dallis grass

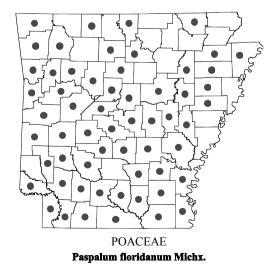


POACEAE Paspalum dissectum (L.) L. mudbank paspalum

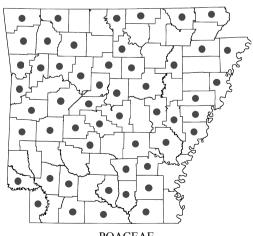


Paspalum distichum L.

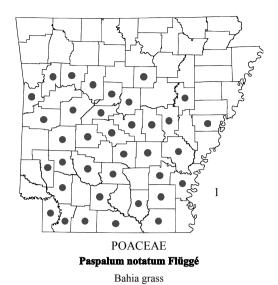
knot grass

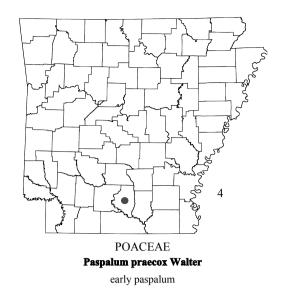


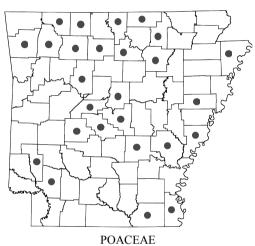
Florida paspalum



POACEAE Paspalum laeve Michx. field paspalum

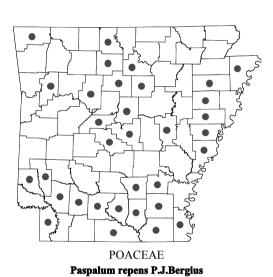




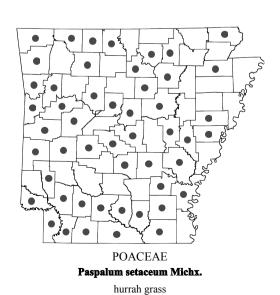


POACEAE

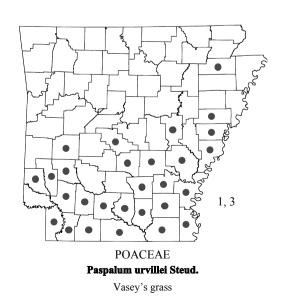
Paspalum pubiflorum Rupr. ex E.Fourn.
hairy-seed paspalum

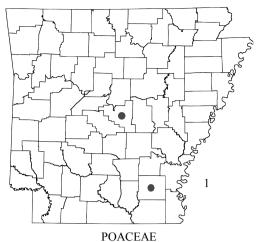


water paspalum, horse-tail paspalum



See Appendix I for infraspecific taxa and species status.





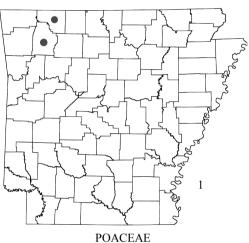
Pennisetum alopecuroides (L.) Spreng.

Chinese fountain grass



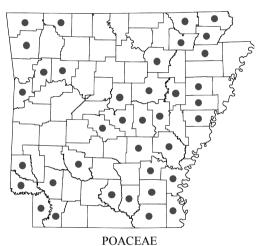
Phalaris arundinacea L.

reed canary grass



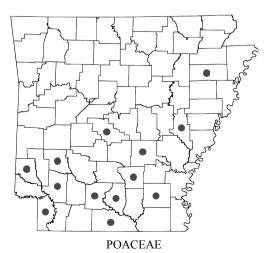
Phalaris canariensis L.

annual canary grass



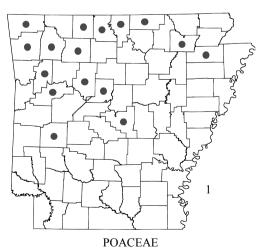
Phalaris caroliniana Walter

Carolina canary grass, May grass



Phanopyrum gymnocarpon (Elliott) Nash

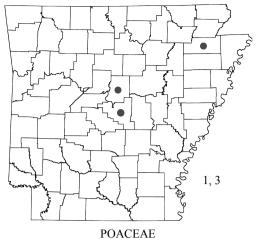
savannah panic grass



Phleum pratense L.

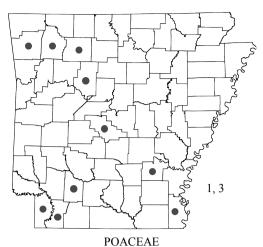
subsp. pratense

Timothy



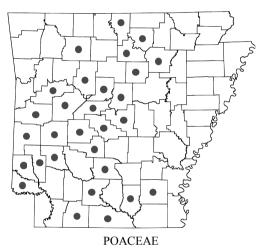
Phragmites australis (Cav.) Trin. ex Steud. subsp. australis

common reed



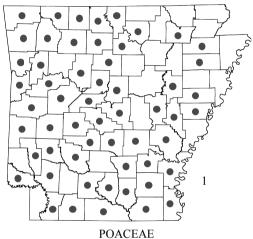
Phyllostachys aurea Carrière ex Rivière & C.Rivière

golden bamboo



Piptochaetium avenaceum (L.) Parodi

black-seed needle grass, black-seed spear grass



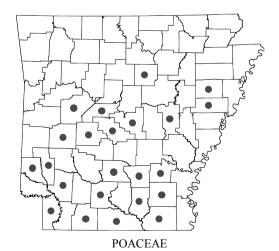
Poa annua L.

annual blue grass



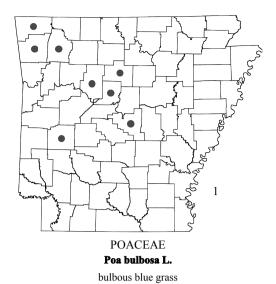
Poa arachnifera Torr.

Texas blue grass



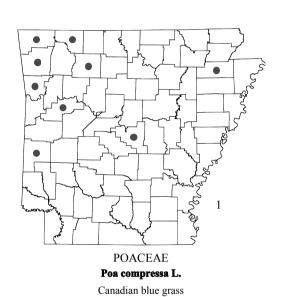
Poa autumnalis Muhl. ex Elliott

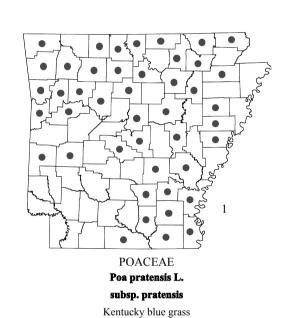
autumn blue grass

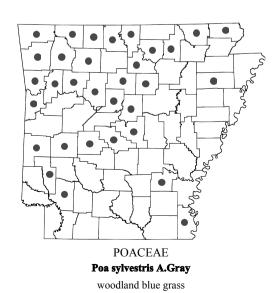


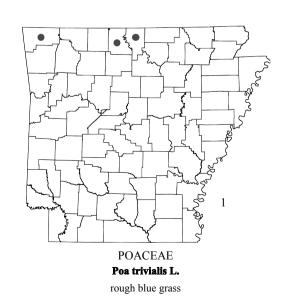
POACEAE Poa chapmaniana Scribn.

Chapman's blue grass

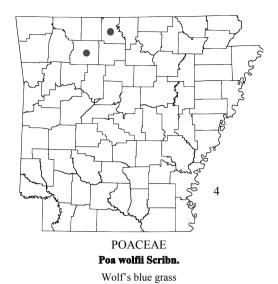


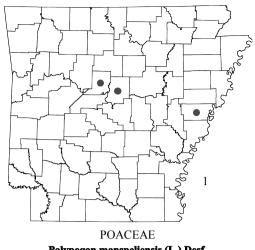






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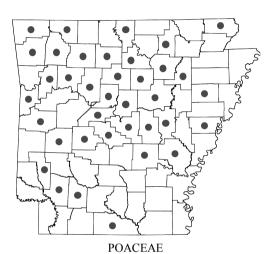


Polypogon monspeliensis (L.) Desf.

rabbit's-foot grass



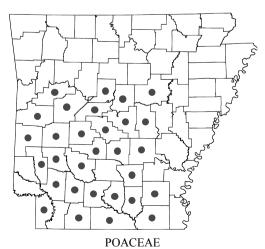
Rottboellia cochinchinensis (Lour.) Clayton itch grass



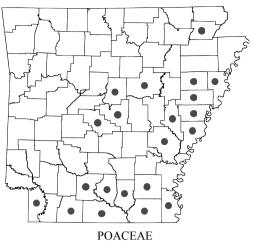
Saccharum alopecuroides (L.) Nutt. silver plume grass

POACEAE Saccharum baldwinii Spreng.

narrow plume grass

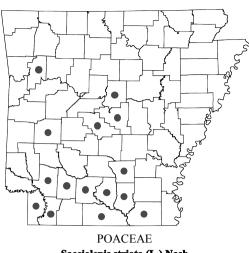


Saccharum brevibarbe (Michx.) Pers. var. contortum (Elliott) R.D.Webster short-beard plume grass, bent-awn plume grass



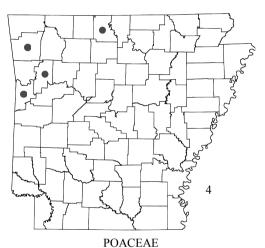
Saccharum giganteum (Walter) Pers.

sugarcane plume grass, giant plume grass



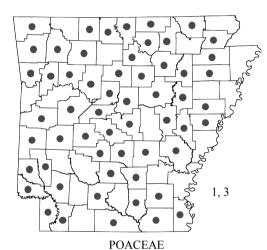
Sacciolepis striata (L.) Nash

American cupscale



Schedonnardus paniculatus (Nutt.) Trel.

tumble grass



Schedonorus arundinaceus (Schreb.) Dumort.

tall fescue



Schizachyrium scoparium (Michx.) Nash

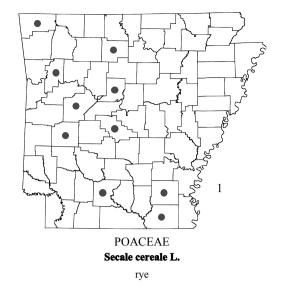
little bluestem

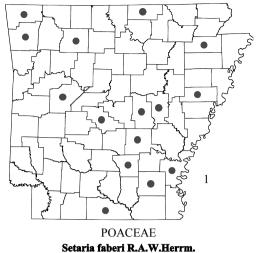
See Appendix I for infraspecific taxa and species status.



Sclerochloa dura (L.) P.Beauv.

hard grass





Setaria faberi R.A.W.Herrm.

Chinese foxtail, nodding foxtail



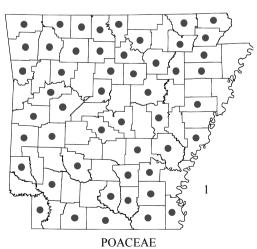
Setaria italica (L.) P.Beauv. fox-tail millet



giant bristle grass, giant foxtail



knot-root bristle grass, knot-root foxtail



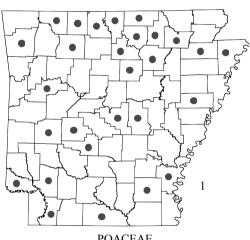
Setaria pumila (Poir.) Roem. & Schult. subsp. pumila

yellow bristle grass, yellow foxtail



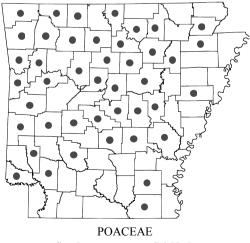
Setaria verticillata (L.) P.Beauv.

bristly foxtail, hooked bristle grass



POACEAE Setaria viridis (L.) P.Beauv. var. viridis

green bristle grass, green foxtail



Sorghastrum nutans (L.) Nash

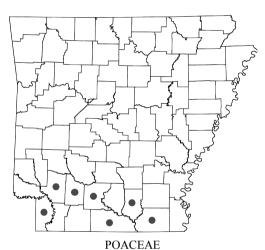
Indian grass



POACEAE Setaria viridis (L.) P.Beauv.

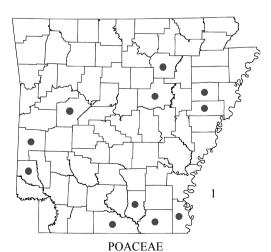
var. major (Gaudin) Peterm.

giant green bristle grass, giant green foxtail



Sorghastrum elliottii (C.Mohr) Nash

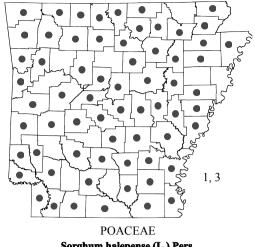
slender Indian grass



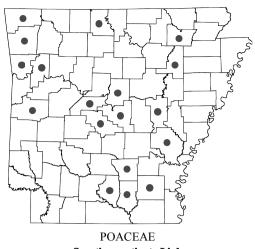
Sorghum bicolor (L.) Moench

subsp. bicolor

sorghum, broom-corn



Sorghum halepense (L.) Pers. Johnson grass



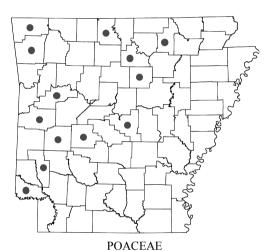
Spartina pectinata Link

prairie cord grass



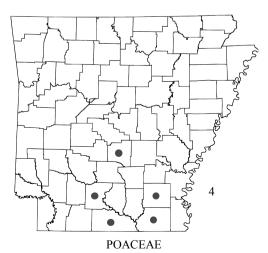
Sphenopholis filiformis (Chapm.) Scribn.

long-leaf wedgescale



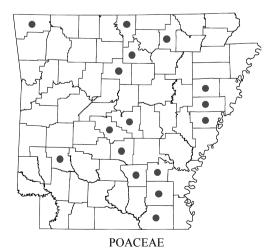
Sphenopholis intermedia (Rydb.) Rydb.

slender wedgescale



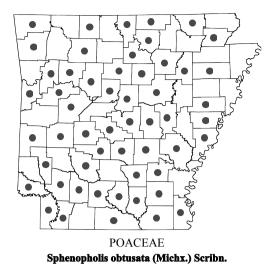
Sphenopholis longiflora (Vasey ex L.H.Dewey) Hitchc.

Texas wedgescale

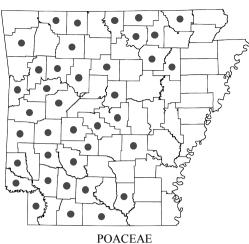


Sphenopholis nitida (Biehler) Scribn.

shiny wedgescale

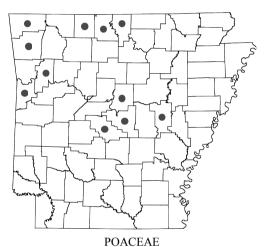


prairie wedgescale



Sporobolus clandestinus (Biehler) Hitchc.

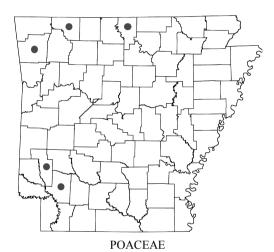
hidden dropseed, rough dropseed



Sporobolus compositus (Poir.) Merr.

var. compositus

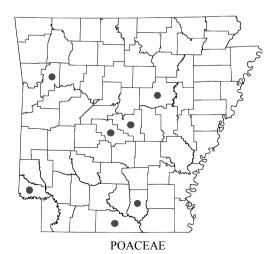
tall dropseed, rough dropseed



Sporobolus compositus (Poir.) Merr.

var. drummondii (Trin.) Kartesz & Gandhi

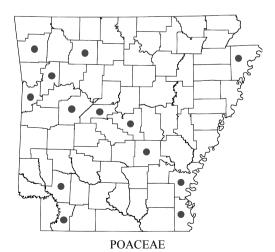
tall dropseed, rough dropseed



Sporobolus compositus (Poir.) Merr.

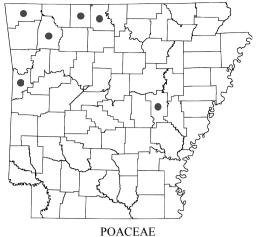
var. macer (Trin.) Kartesz & Gandhi

tall dropseed, rough dropseed



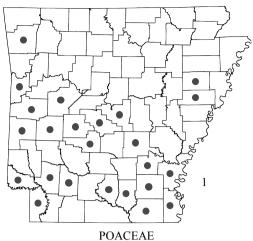
Sporobolus cryptandrus (Torr.) A.Gray

sand dropseed



Sporobolus heterolepis (A.Gray) A.Gray

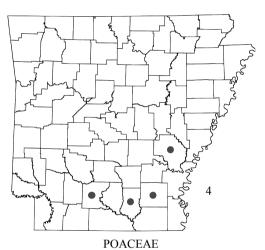
prairie dropseed



POACEAE

Sporobolus indicus (L.) R.Br.

smut grass



Sporobolus junceus (P.Beauv.) Kunth

pineywoods dropseed



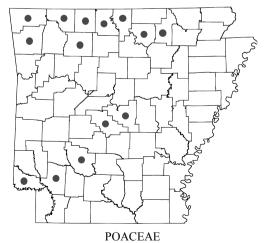
Sporobolus neglectus Nash

small dropseed, puff-sheath dropseed



Sporobolus pyramidatus (Lam.) Hitchc.

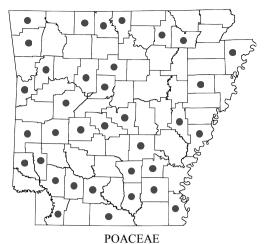
whorled dropseed



Sporobolus vaginiflorus (Torr. ex A.Gray) A.W.Wood

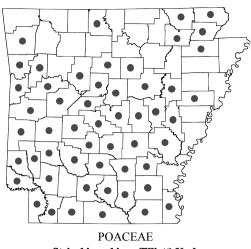
var. ozarkanus (Fernald) Shinners

Ozark dropseed



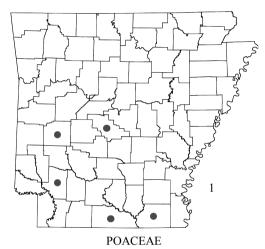
Sporobolus vaginiflorus (Torr. ex A.Gray) A.W.Wood var. vaginiflorus

poverty grass, poverty dropseed



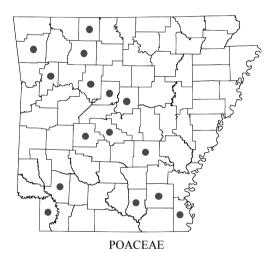
Steinchisma hians (Elliott) Nash

gaping grass, gaping panic grass



Stenotaphrum secundatum (Walter) Kuntze

St. Augustine grass



Tridens flavus (L.) Hitchc.

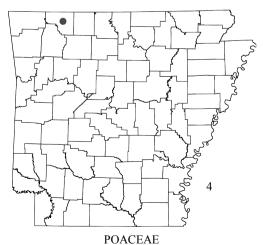
var. chapmanii (Small) Shinners Chapman's tridens, purple-top tridens



Tridens flavus (L.) Hitchc.

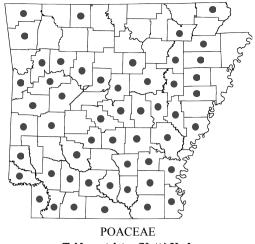
var. flavus

purple-top tridens, grease grass



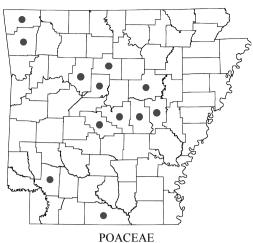
Tridens muticus (Torr.) Nash var. elongatus (Buckley) Shinners

slim tridens



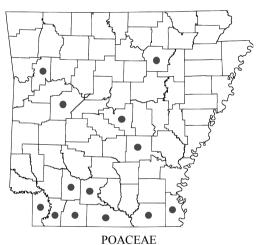
Tridens strictus (Nutt.) Nash

long-spike tridens



Tridens ×oklahomensis (Feath.) Feath.

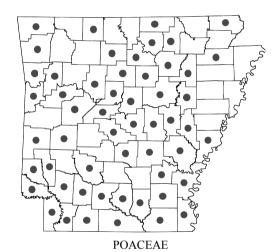
hybrid tridens



Triplasis purpurea (Walter) Chapm.

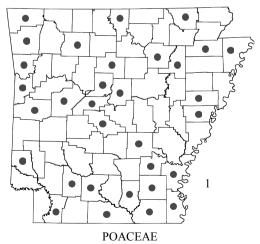
var. purpurea

purple sand grass



Tripsacum dactyloides (L.) L.

eastern gama grass



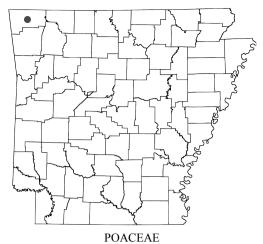
Triticum aestivum L.

wheat



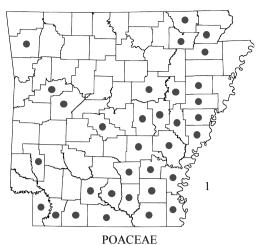
Urochloa arizonica (Scribn. & Merr.) Morrone & Zuloaga

Arizona signal grass



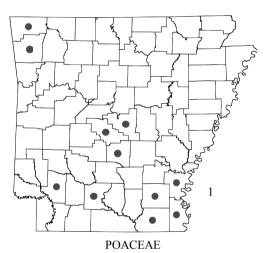
Urochloa ciliatissima (Buckley) R.D.Webster

fringed signal grass



Urochloa platyphylla (Munro ex C.Wright) R.D.Webster

broad-leaf signal grass



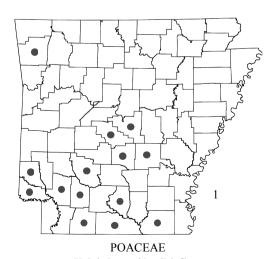
Urochloa ramosa (L.) T.Q.Nguyen

brown-top millet



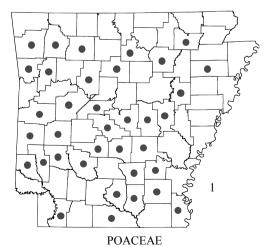
Urochloa texana (Buckley) R.D.Webster

Texas signal grass, Texas millet



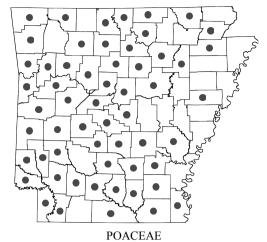
Vulpia bromoides (L.) Gray

brome six-weeks grass, brome fescue



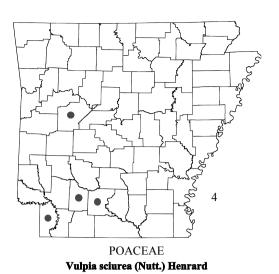
Vulpia myuros (L.) C.C.Gmel.

rat-tail six-weeks grass, rat-tail fescue

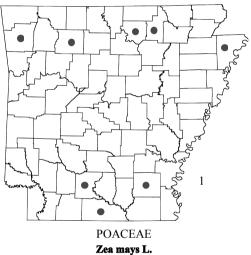


Vulpia octoflora (Walter) Rydb.

common six-weeks grass, six-weeks fescue See *Appendix I* for infraspecific taxa and species status.



squirrel-tail six-weeks grass, squirrel-tail fescue

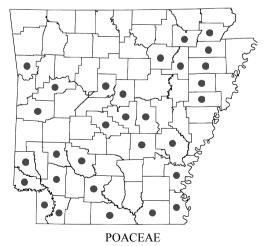


POACEAE
Zea mays L.
subsp. mays
corn, maize



Zizania palustris L. var. interior (Fassett) Dore

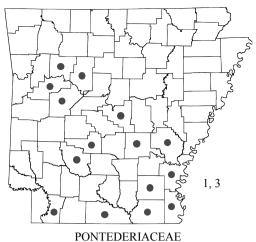
interior wild rice



Zizaniopsis miliacea (Michx.) Döll. & Asch. southern wild rice, giant cut grass, water-millet

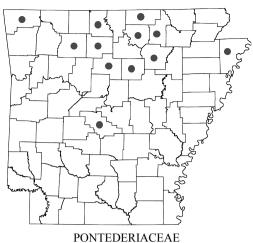


Zoysia japonica Steud. Korean lawn grass, zoysia grass



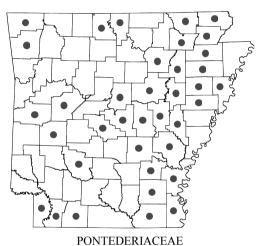
Eichhornia crassipes (Mart.) Solms in A.DC. & C.DC.

water-hyacinth



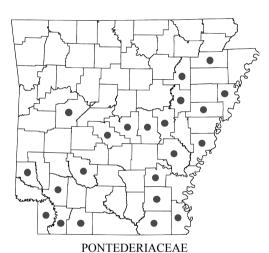
Heteranthera dubia (Jacq.) MacMill.

water star-grass



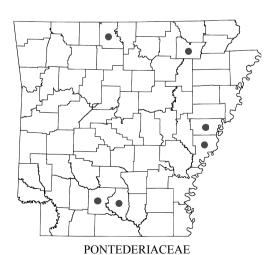
Heteranthera limosa (Sw.) Willd.

mud-plantain



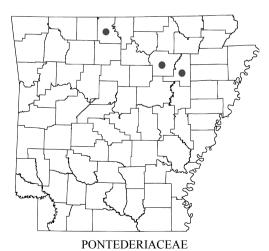
Heteranthera multiflora (Griseb.) C.N.Horn

mud-plantain



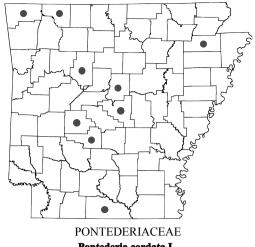
 $\ \, \textbf{Heteranthera reniform is Ruiz \& Pav.} \\$

mud-plantain



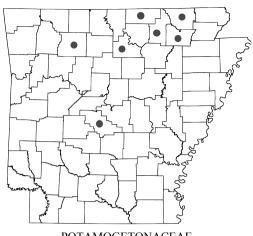
Heteranthera rotundifolia (Kunth) Griseb.

mud-plantain



Pontederia cordata L.

pickerel-weed



POTAMOGETONACEAE Potamogeton amplifolius Tuck.

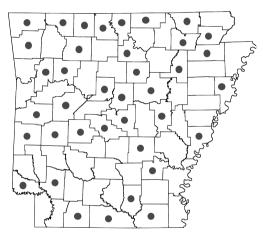
large-leaf pondweed



POTAMOGETONACEAE

Potamogeton crispus L.

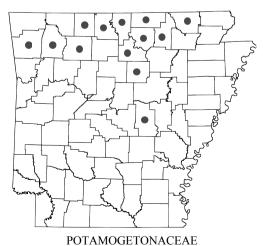
curly pondweed, curly muckweed



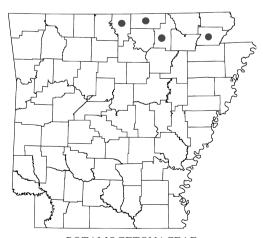
POTAMOGETONACEAE

Potamogeton diversifolius Raf.

pondweed, water-thread pondweed



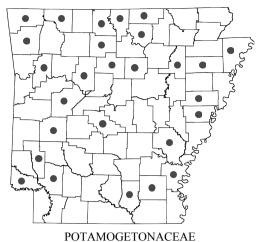
Potamogeton foliosus Raf. subsp. foliosus leafy pondweed



POTAMOGETONACEAE

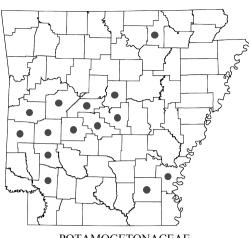
Potamogeton illinoensis Morong

Illinois pondweed



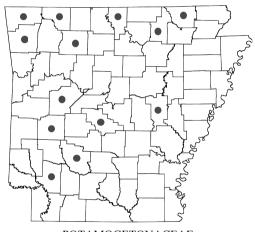
Potamogeton nodosus Poir. in Lam. et al.

long-leaf pondweed, American pondweed



POTAMOGETONACEAE Potamogeton pulcher Tuck.

spotted pondweed

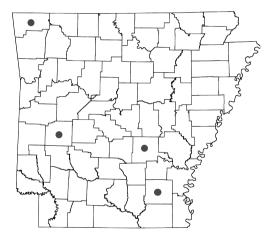


POTAMOGETONACEAE

Potamogeton pusillus L.

subsp. pusillus

small pondweed

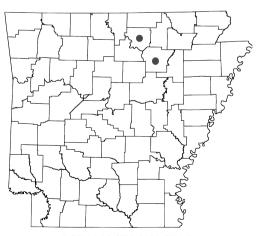


POTAMOGETONACEAE

Potamogeton pusillus L.

subsp. tenuissimus (Mert. & W.D.J.Koch) R.R.Haynes & Hellq.

small pondweed



POTAMOGETONACEAE

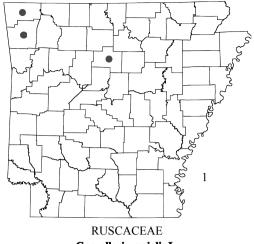
Stuckenia pectinata (L.) Börner sago pondweed, fennel-leaf pondweed



POTAMOGETONACEAE

Zannichellia palustris L.

horned-pondweed



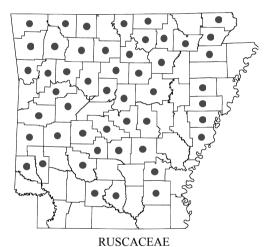
Convallaria majalis L.

lily-of-the-valley



RUSCACEAE
Liriope spicata (Thunb.) Lour.

creeping lily-turf, monkey-grass



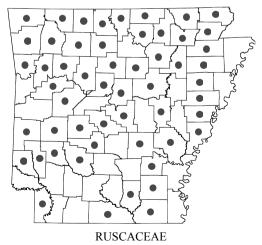
Maianthemum racemosum (L.) Link subsp. racemosum

false Solomon's-seal, false spikenard



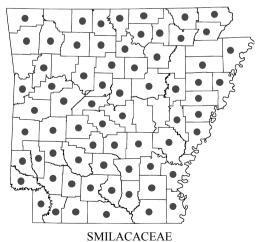
Maianthemum stellatum (L.) Link

starry false Solomon's-seal



Polygonatum biflorum (Walter) Elliott

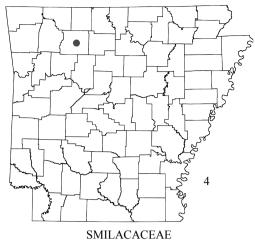
Solomon's-seal



SMILACACEAE

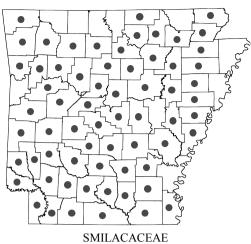
Smilax bona-nox L.

saw greenbrier, catbrier



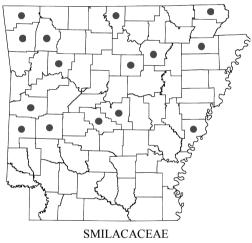
Smilax ecirrhata (Engelm. ex Kunth) S.Watson in A.Gray et al.

carrion-flower



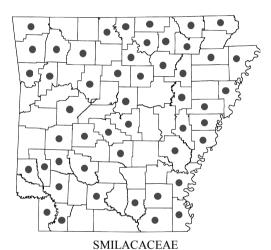
Smilax glauca Walter

cat greenbrier, sawbrier



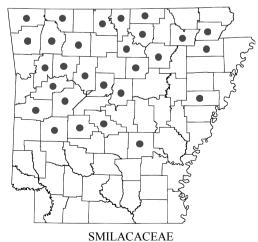
Smilax herbacea L.

carrion-flower



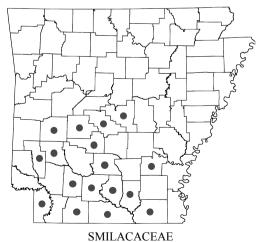
Smilax hispida Raf.

bristly greenbrier



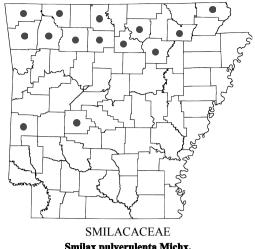
Smilax lasioneura Hook.

carrion-flower

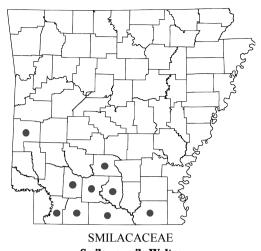


Smilax laurifolia L.

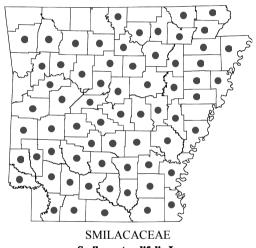
laurel greenbrier, bamboo-vine



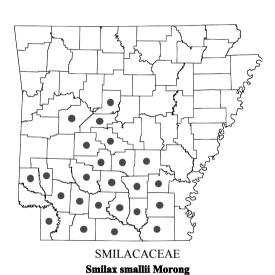
Smilax pulverulenta Michx. carrion-flower



Smilax pumila Walter sarsaparilla-vine, dwarf greenbrier



Smilax rotundifolia L. common greenbrier, horsebrier



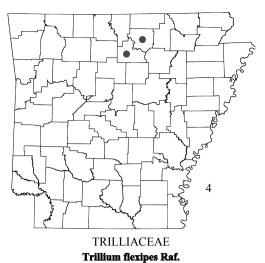
lance-leaf greenbrier



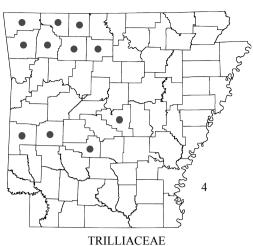
red-berried greenbrier, coral greenbrier



THEMIDACEAE Dichelostemma congestum (Sm.) Kunth ookow

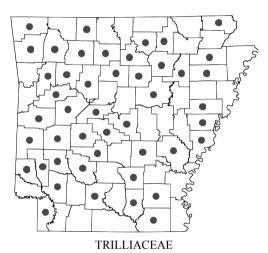


white trillium, white wakerobin



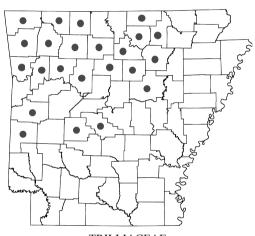
Trillium ozarkanum E.J.Palmer & Steyerm.

Ozark trillium, Ozark wakerobin



Trillium recurvatum L.C.Beck

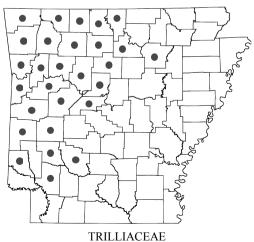
purple trillium



TRILLIACEAE

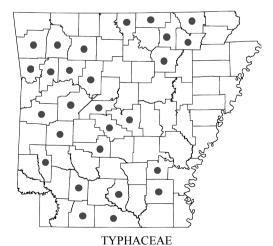
Trillium sessile L.

wakerobin, toadshade



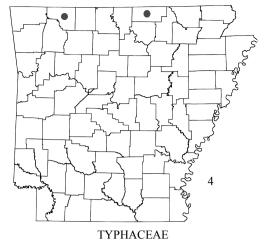
Trillium viridescens Nutt.

green trillium



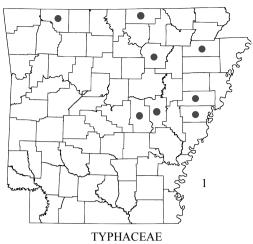
Sparganium americanum Nutt.

American bur-reed



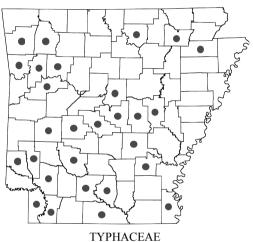
Sparganium androcladum (Engelm.) Morong

branched bur-reed



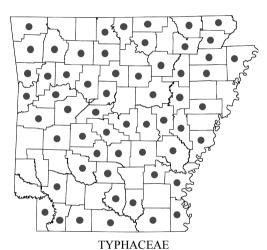
Typha angustifolia L.

narrow-leaf cat-tail



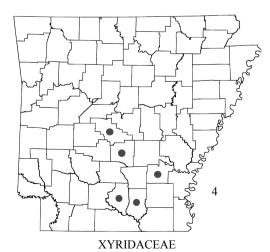
Typha domingensis Pers.

southern cat-tail



Typha latifolia L.

common cat-tail



Xyris ambigua Beyr. ex Kunth

Coastal Plain yellow-eyed-grass



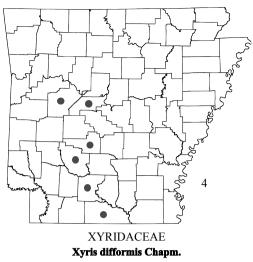
Xyris baldwiniana Schult. in Schult. & Schult.f.

Baldwin's yellow-eyed-grass



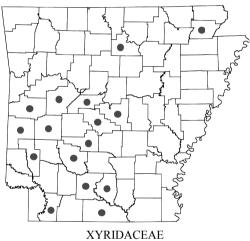
Xyris difformis Chapm. var. curtissii (Malme) Kral

Curtiss' yellow-eyed-grass

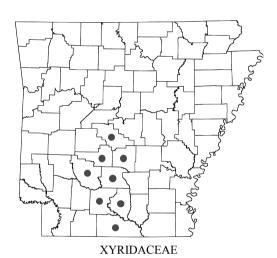


var. difformis

bog yellow-eyed-grass

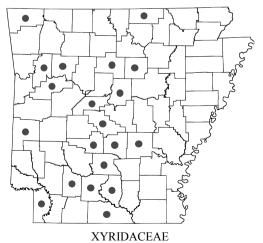


Xyris jupicai Rich. yellow-eyed-grass



Xyris laxifolia Mart. var. iridifolia (Chapm.) Kral

yellow-eyed-grass



Xyris torta Sm. in Rees yellow-eyed-grass





APPENDIX I

SPECIES WITH COMBINED INFRASPECIFIC TAXA IN MAPS

Due to uncertainty of the exact distributions of infraspecific taxa within Arkansas for some species, it was necessary to combine such taxa for mapping purposes. Because of formatting restrictions, the amount of space available for information beneath a map was limited. Therefore, complete scientific names, authorities, common names, and status codes for the infraspecific taxa of the combined maps are provided below. The organization follows that of the main body of the Atlas.

PTERIDOPHYTES

WOODSIACEAE Lady Fern Family

Woodsia obtusa (Spreng.) Torr.

subsp. obtusa subsp. occidentalis Windham eastern blunt-lobe cliff fern western blunt-lobe cliff fern

ANGIOSPERMS (DICOTS)

ASTERACEAE **Sunflower Family**

Boltonia asteroides (L.) L'Hér.

var. asteroides white doll's daisy var. latisquama (A.Gray) Cronquist white doll's daisy var. recognita (Fernald & Griscom) Cronquist white doll's daisy

Boltonia diffusa Elliott

var. diffusa small-head doll's daisy var. interior Fernald & Griscom small-head doll's daisy

Brickellia eupatorioides (L.) Shinners

var. eupatorioides false boneset var. texana (Shinners) Shinners false boneset

Erigeron strigosus Muhl. ex Willd.

var. septentrionalis (Fernald & Wiegand) Fernald daisy fleabane var. strigosus daisy fleabane

Eupatorium hyssopifolium L.

var. hyssopifolium hyssop-leaf boneset var. laciniatum A.Gray in A.Gray et al. hyssop-leaf boneset

Eupatorium rotundifolium L.

var. ovatum (Bigelow) Torr. ex DC. in DC. & A.DC round-leaf boneset round-leaf boneset var. rotundifolium var. scabridum (Elliott) A.Gray round-leaf boneset

Eutrochium purpureum (L.) E.E.Lamont

var. holzingeri (Rydb.) E.E.Lamont Joe-pye-weed var. purpureum Joe-pye-weed

Rudbeckia fulgida Aiton

var. palustris (Eggert ex C.L.Boynton & Beadle) Perdue orange coneflower var. speciosa (Wenderoth) Perdue orange coneflower var. umbrosa (C.L.Boynton & Beadle) Cronquist orange coneflower

Rudbeckia hirta L.

black-eyed Susan var hirta var. pulcherrima Farw. black-eyed Susan

536

Solidago caesia L.

var. caesia

var. zedia R.E.Cook & Semple

wreath goldenrod, blue-stem goldenrod wreath goldenrod, blue-stem goldenrod

Solidago nemoralis Aiton

subsp. decemflora (DC.) Brammall ex Semple

subsp. *nemoralis*

oldfield goldenrod, gray goldenrod oldfield goldenrod, gray goldenrod

Solidago rugosa Mill.

subsp. aspera (Aiton) Cronquist

var. aspera (Aiton) Fernald

subsp. rugosa

var. rugosa

wrinkle-leaf goldenrod, rough-leaf goldenrod,

rough-stem goldenrod

wrinkle-leaf goldenrod, rough-leaf goldenrod,

rough-stem goldenrod

Symphyotrichum drummondii (Lindl.) G.L.Nesom

var. drummondii

var. texanum (E.S.Burgess) G.L.Nesom

blue wood aster, Drummond's aster blue wood aster, Drummond's aster

Symphyotrichum lanceolatum (Willd.) G.L.Nesom

var. interior (Weigand) G.L.Nesom

var. lanceolatum

var. latifolium (Semple & Chmielewski) G.L.Nesom

Symphyotrichum patens (Aiton) G.L.Nesom

var. gracile (Hook) G.L.Nesom

var. patens

var. patentissimum (Lindl. ex DC.) G.L.Nesom

late purple aster, spreading aster late purple aster, spreading aster late purple aster, spreading aster

BETULACEAE

Carpinus caroliniana Walter

subsp. caroliniana

subsp. virginiana (Marshall) Furlow

Birch Family

tall white aster

tall white aster

tall white aster

musclewood, ironwood, American hornbeam musclewood, ironwood, American hornbeam

CHENOPODIACEAE

 $Chenopodium\ berlandieri\ Moq.$

var. bushianum (Aellen) Cronquist in Gleason & Cronquist

var. zschackei (Murr) Murr in Urb. & Graebn.

pit-seed goosefoot pit-seed goosefoot

Goosefoot Family

CONVOLVULACEAE

Cuscuta indecora Choisy

var. indecora

var. longisepala Yunck.

large-seed dodder

large-seed dodder

Beech Family

FAGACEAE

Quercus marilandica Münchh.

var. ashei Sudworth

var. marilandica

blackjack oak blackjack oak

Quercus shumardii Buckley

var. schneckii (Britton) Sarg.

var. shumardii

Schneck's oak, spotted oak Shumard's oak, spotted oak

POLYGONACEAE **Buckwheat Family** Polygonum aviculare L. subsp. aviculare knotweed, knotgrass 1 subsp. buxiforme (Small) Costea & Tardif knotweed, knotgrass subsp. depressum (Meisn.) Arcang. knotweed, knotgrass 1 subsp. rurivagum (Jord. ex Boreau) Berher knotweed, knotgrass 1 Polygonum ramosissimum Michx. subsp. prolificum (Small) Costea & Tardif bushy knotweed bushy knotweed subsp. ramosissimum SALICACEAE Willow Family Salix humilis Marshall upland willow, prairie willow var. humilis var. tristis (Aiton) Griggs dwarf upland willow, dwarf prairie willow **SAPINDACEAE** Soapberry Family Acer negundo L. var. negundo box elder var. texanum Pax box elder Aesculus glabra Willd. var. arguta (Buckley) B.L.Rob. Texas buckeye var. glabra Ohio buckeye **VIOLACEAE** Violet Family Viola sororia Willd. var. missouriensis (Greene) L.E.McKinney Missouri violet var. sororia woolly blue violet ANGIOSPERMS (MONOCOTS) **CYPERACEAE Sedge Family** Carex nigromarginata Schwein. var. floridana (Schwein.) Kük. sedge var. nigromarginata sedge Cyperus esculentus L. var. leptostachyus Boeck. yellow nutsedge, chufa yellow nutsedge, chufa var. macrostachyus Boeck. **POACEAE Grass Family** Dichanthelium aciculare (Desv. ex Poir.) Gould & C.A.Clark subsp. aciculare narrow-leaf rosette grass, narrow-leaf panic grass subsp. angustifolium (Elliott) Freckmann & Lelong narrow-leaf rosette grass, narrow-leaf panic grass Dichanthelium acuminatum (Sw.) Gould & C.A.Clark subsp. acuminatum hairy rosette grass, hairy panic grass subsp. fasciculatum (Torr.) Freckmann & Lelong hairy rosette grass, hairy panic grass subsp. implicatum (Scribn.) Freckmann & Lelong hairy rosette grass, hairy panic grass subsp. lindheimeri (Nash) Freckmann & Lelong hairy rosette grass, hairy panic grass Dichanthelium commutatum (Schult.) Gould subsp. ashei (T.G.Pearson ex Ashe) Freckmann & Lelong variable rosette grass, variable panic grass subsp. commutatum variable rosette grass, variable panic grass

Dichanthelium dichotomum (L.) Gould

subsp. dichotomum

subsp. lucidum (Ashe) Freckmann & Lelong

subsp. microcarpon (Muhl. ex Elliott) Freckmann & Lelong

subsp. nitidum (Lam.) Freckmann & Lelong

subsp. roanokense (Ashe) Freckmann & Lelong

Dichanthelium oligosanthes (Schult.) Gould

subsp. oligosanthes

subsp. scribnerianum (Nash) Freckmann & Lelong

Dichanthelium ovale (Elliott) Gould & C.A.Clark

subsp. *praecocius* (Hitchc. & Chase) Frekmann & Lelong subsp. *pseudopubescens* (Nash) Freckmann & Lelong

subsp. villosissimum (Nash) Freckmann & Lelong

Echinochloa muricata (P.Beauv.) Fernald

var. microstachya Wiegand

var. muricata

Lolium perenne L.

var. aristatum Willd.

var. perenne

Paspalum setaceum Michx.

var. ciliatifolium (Michx.) Vasey

var. muhlenbergii (Nash) D.J.Banks

var. setaceum

var. stramineum (Nash) D.J.Banks

Schizachyrium scoparium (Michx.) Nash

var. divergens (Hack.) Gould

var. scoparium

Vulpia octoflora (Walter) Rydb.

var. glauca (Nutt.) Fernald

var. octoflora

forked rosette grass, forked panic grass Roanoke rosette grass, Roanoke panic grass

few-flower rosette grass, few-flower panic grass Scribner's rosette grass, Scribner's panic grass

stiff-leaf rosette grass, stiff-leaf panic grass stiff-leaf rosette grass, stiff-leaf panic grass stiff-leaf rosette grass, stiff-leaf panic grass

1

1

American barnyard grass American barnyard grass

Italian rye grass perennial rye grass

fringe-leaf paspalum hurrah grass thin paspalum yellow sand paspalum

pinehill bluestem little bluestem

common six-weeks grass, six-weeks fescue common six-weeks grass, six-weeks fescue

APPENDIX II

ARKANSAS ENDEMIC TAXA

The eleven taxa of vascular plants currently known to occur only within the borders of Arkansas are listed below, along with each taxon's common name and family.

| Claytonia ozarkensis J.M.Miller & K.L.Chambers | Ozark spring-beauty | PORTULACACEAE |
|--|--------------------------------|---------------|
| Crataegus ×canescens (J.B.Phipps) T.A.Dickinson & E.Y.Y.Lo | Stern's medlar | ROSACEAE |
| Delphinium newtonianum Dw.Moore | Moore's delphinium | RANUNCULACEAE |
| Galium arkansanum A.Gray var. pubiflorum E.B.Sm. | hairy-flower Arkansas bedstraw | RUBIACEAE |
| Heuchera villosa Michx. var. arkansana (Rydb.) E.B.Sm. | Arkansas alumroot | SAXIFRAGACEAE |
| Hydrophyllum brownei Kral & V.M.Bates | Browne's waterleaf | BORAGINACEAE |
| Liatris compacta (Torr. & A.Gray) Rydb. | Ouachita blazing-star | ASTERACEAE |
| Polymnia cossatotensis Pittman & V.M.Bates | Cossatot leafcup | ASTERACEAE |
| Quercus acerifolia (E.J.Palmer) Stoynoff & W.J.Hess | maple-leaf oak | FAGACEAE |
| Sabatia arkansana J.S.Pringle & Witsell | Pelton's rose-gentian | GENTIANACEAE |
| Streptanthus maculatus Nutt. subsp. obtusifolius (Hook.) Rollins | Arkansas twistflower | Brassicaceae |

APPENDIX III

ARKANSAS VASCULAR PLANT FAMILIES

This appendix consists of an alphabetical list of all vascular plant families currently represented in Arkansas, along with their common names and page numbers of primary occurrence.

| ACANTHACEAE | Wild Petunia Family | 75 |
|----------------------------|--------------------------------|-----------|
| ACORACEAE | Sweet-flag Family | 397 |
| ADOXACEAE | Arrow-wood Family | 76 |
| AGAVACEAE | Agave Family | 397 |
| AIZOACEAE | Iceplant Family | 78 |
| ALISMATACEAE | Water-plantain Family | 398 |
| ALLIACEAE | Onion Family | 400 |
| ALTINGIACEAE | Sweet-gum Family | 78 |
| AMARANTHACEAE | Amaranth Family | 78 |
| AMARYLLIDACEAE | Amaryllis Family | 402 |
| ANACARDIACEAE | Sumac Family | 81 |
| ANNONACEAE | Custard-apple Family | 82 |
| APIACEAE | Parsley Family | 83 |
| APOCYNACEAE | Dogbane Family | 92 |
| AQUIFOLIACEAE | Holly Family | 97 |
| ARACEAE | Arum Family | 405 |
| ARALIACEAE | Ginseng Family | 98 |
| ARECACEAE | Palm Family | 407 |
| ARISTOLOCHIACEAE | Dutchman's-pipe Family | 100 |
| ASPARAGACEAE | Asparagus Family | 407 |
| ASPLENIACEAE | Spleenwort Fern Family | 51 |
| ASTERACEAE | Sunflower Family | 101 |
| AZOLLACEAE | Mosquito Fern Family | 52 |
| BALSAMINACEAE | Touch-me-not Family | 157 |
| BERBERIDACEAE | Barberry Family | 158 |
| BETULACEAE | Birch Family | 159 |
| BIGNONIACEAE | Trumpet-creeper Family | 160 |
| BLECHNACEAE | Chain Fern Family | 52 |
| BORAGINACEAE | Borage Family | 160 |
| BRASSICACEAE | Mustard Family | 167 |
| BROMELIACEAE | Bromeliad Family | 408 |
| BURMANNIACEAE | Bluethread Family | 408 |
| CABOMBACEAE | Fanwort Family | 179 |
| CACTACEAE | Cactus Family | 180 |
| CAMPANULACEAE | Bellflower Family | 180 |
| CANNABACEAE | Hemp Family | 182 |
| CAPRIFOLIACEAE | Honeysuckle Family | 183 |
| CARYOPHYLLACEAE | Pink Family | 185 |
| CELASTRACEAE | Bittersweet Family | 192 |
| CERATOPHYLLACEAE | Hornwort Family | 193 |
| CHENOPODIACEAE | Goosefoot Family | 194 |
| CISTACEAE | Rock-rose Family | 196 |
| CLEOMACEAE | Spider-flower Family | 197 |
| COLCHICACEAE | Bellwort Family | 408 |
| COMMELINACEAE | Spiderwort Family | 408 |
| CONVOLVULACEAE | Morning-glory Family | 198 |
| CORNACEAE | Dogwood Family | 203 |
| CRASSULACEAE | Stonecrop Family | 204 |
| CUCURBITACEAE | Gourd Family | 205 |
| CUPRESSACEAE CYPERACEAE | Cypress Family Sedge Family | 71 412 |
| DENNSTAEDTIACEAE | Bracken Fern Family | 53 |
| DIOSCOREACEAE | Yam Family | 53 453 |
| DIPSACACEAE | Teasel Family | 206 |
| DILBACACEAE | 1 caser 1 annry | 200 |

| DROSERACEAE | Sunday Family | 207 |
|--------------------------------|-----------------------------------|-------------------|
| DRYOPTERIDACEAE | Sundew Family Wood Fern Family | 53 |
| EBENACEAE | Ebony Family | 207 |
| ELAEAGNACEAE | Oleaster Family | 207 |
| ELATINACEAE | Waterwort Family | 207 |
| EQUISETACEAE | Horsetail Family | 55 |
| ERICACEAE | Heath Family | 208 |
| ERIOCAULACEAE | Pipewort Family | 453 |
| EUPHORBIACEAE | Spurge Family | 210 |
| FABACEAE | Bean Family | 218 |
| FAGACEAE | Beech Family | 246 |
| GELSEMIACEAE | Jessamine Family | 251 |
| GENTIANACEAE | Gentian Family | 251 |
| GERANIACEAE | Geranium Family | 253 |
| GROSSULARIACEAE | Currant Family | 255 |
| HALORAGACEAE | Water-milfoil Family | 255 |
| HAMAMELIDACEAE | Witch-hazel Family | 256 |
| HEMEROCALLIDACEAE | Day-lily Family | 453 |
| HYACINTHACEAE | Hyacinth Family | 454 |
| HYDRANGEACEAE | Hydrangea Family | 257 |
| HYDROCHARITACEAE | Frog's-bit Family | 454 |
| HYDROLEACEAE | Blue-waterleaf Family | 258 |
| HYMENOPHYLLACEAE | Filmy Fern Family | 56 |
| HYPERICACEAE | St. John's-wort Family | 258 |
| HYPOXIDACEAE | Star-grass Family | 456 |
| IRIDACEAE | Iris Family | 456 |
| ISOETACEAE | Quillwort Family | 56 |
| ITEACEAE | Sweetspire Family | 261 |
| JUGLANDACEAE | Walnut Family | 262 |
| JUNCACEAE | Rush Family | 460 |
| LAMIACEAE | Mint Family | 264 |
| LAURACEAE | Laurel Family | 276 |
| LENTIBULARIACEAE | Bladderwort Family | 277 |
| LILIACEAE | Lily Family | 465 |
| LINACEAE | Flax Family | 278 |
| LINDERNIACEAE | False Pimpernel Family | 279 |
| LOASACEAE | Stick-leaf Family | 280 |
| LOGANIACEAE | Logania Family | 280 |
| LOMARIOPSIDACEAE | Sword Fern Family | 57 |
| LYCOPODIACEAE | Club-moss Family | 57 |
| LYGODIACEAE | Climbing Fern Family | 59 |
| LYTHRACEAE | Loosestrife Family | 280 |
| MAGNOLIACEAE | Magnolia Family | 282 |
| MALVACEAE | Mallow Family | 283 |
| MARANTACEAE | Thalia Family | 466 |
| MARSILEACEAE | Water-clover Fern Family | 59 |
| MARTYNIACEAE | Unicorn-plant Family | 288 |
| MELANTHIACEAE | Bunchflower Family | 466 |
| MELASTOMATACEAE | Meadow-beauty Family | 288 |
| MELIACEAE | Mahogany Family | 288 |
| MENISPERMACEAE | Moonseed Family | 289 |
| MENYANTHACEAE | Buck-bean Family | 289 |
| MOLLUGINACEAE | Carpetweed Family | 289 |
| MORACEAE MVDICACEAE | Mulberry Family | 290 |
| MYRICACEAE MYDSINACEAE | Wax-myrtle Family | 291 |
| MYRSINACEAE | Colicect Family | 291 467 |
| NARTHECIACEAE NELUMBONACEAE | Colicroot Family Lotus Family | 467 292 |
| NYCTAGINACEAE NYCTAGINACEAE | Four-o'clock Family | 292 |
| NYMPHAEACEAE | Water-lily Family | 293 |
| NYSSACEAE | Tupelo Family | 293 294 |
| OLEACEAE | Olive Family | 294 |
| OLDI OLI IL | On to Luminy | ∠ / 1 |

| ONAGRACEAE | Evening-primrose Family | 296 |
|-------------------------------|---------------------------------|------------|
| ONOCLEACEAE | Sensitive Fern Family | 59 |
| OPHIOGLOSSACEAE | Adder's-tongue Fern Family | 59 |
| ORCHIDACEAE | Orchid Family | 468 |
| OROBANCHACEAE | Broomrape Family | 303 |
| OSMUNDACEAE | Royal Fern Family | 61 |
| OXALIDACEAE | Wood-sorrel Family | 306 |
| PAPAVERACEAE | Poppy Family | 307 |
| PARNASSIACEAE | Grass-of-Parnassus Family | 309 |
| PASSIFLORACEAE | Passion-flower Family | 309 |
| PAULOWNIACEAE | Princess-tree Family | 310 |
| PENTHORACEAE | Ditch-stonecrop Family | 310 |
| PHRYMACEAE | Lopseed Family | 310 |
| PHYLLANTHACEAE | Leaf-flower Family | 311 |
| PHYTOLACCACEAE | Pokeweed Family | 312 |
| PINACEAE | Pine Family | 71 |
| PLANTAGINACEAE | Plantain Family | 312 321 |
| PLATANACEAE POACEAE | Sycamore Family | 474 |
| | Grass Family | 321 |
| PODOSTEMACEAE | Riverweed Family | 321 |
| POLYCAL ACEAE | Phlox Family Milkwort Family | 321 |
| POLYGONA CEA E | Buckwheat Family | 323 325 |
| POLYGONACEAE POLYPODIACEAE | Polypody Fern Family | 61 |
| PONTEDERIACEAE | Pickerel-weed Family | 525 |
| PORTULACACEAE | Purslane Family | 330 |
| POTAMOGETONACEAE | Pondweed Family | 526 |
| PRIMULACEAE | Primrose Family | 332 |
| PSILOTACEAE | Whisk Fern Family | 62 |
| PTERIDACEAE | Brake Fern Family | 62 |
| RANUNCULACEAE | Buttercup Family | 333 |
| RHAMNACEAE | Buckthorn Family | 342 |
| ROSACEAE | Rose Family | 343 |
| RUBIACEAE | Madder Family | 360 |
| RUSCACEAE | Solomon's-seal Family | 528 |
| RUTACEAE | Rue Family | 367 |
| SALICACEAE | Willow Family | 367 |
| SALVINIACEAE | Floating Fern Family | 64 |
| SANTALACEAE | Sandalwood Family | 369 |
| SAPINDACEAE | Soapberry Family | 370 |
| SAPOTACEAE | Sapodilla Family | 372 |
| SAURURACEAE | Lizard's-tail Family | 372 |
| SAXIFRAGACEAE | Saxifrage Family | 373 |
| SCHISANDRACEAE | Star-vine Family | 374 |
| SCROPHULARIACEAE | Figwort Family | 374 |
| SELAGINELLACEAE | Spike-moss Family | 64 |
| SIMAROUBACEAE | Quassia Family | 375 |
| SMILACACEAE | Greenbrier Family | 528 |
| SOLANACEAE | Nightshade Family | 375 |
| SPHENOCLEACEAE | Chickenspike Family | 379 |
| STAPHYLEACEAE | Bladdernut Family | 380 |
| STYRACACEAE | Storax Family | 380 |
| SYMPLOCACEAE | Sweetleaf Family | 380 |
| TAMARICACEAE | Tamarisk Family | 381 |
| TETRACHONDRACEAE | Tetrachondra Family | 381 |
| THEACEAE | Tea Family | 381 |
| THELYPTERIDACEAE | Marsh Fern Family | 65 |
| THEMIDACEAE | Brodiaea Family | 530 |
| THEOPHRASTACEAE | Theophrasta Family | 381 |
| THYMELAEACEAE | Leatherwood Family | 381 |
| TRILLIACEAE | Trillium Family | 531 |
| ТҮРНАСЕАЕ | Cat-tail Family | 531 |
| | | |

| ULMACEAE | Elm Family | 382 |
|----------------|--------------------------|-----|
| URTICACEAE | Nettle Family | 383 |
| VALERIANACEAE | Cornsalad Family | 384 |
| VERBENACEAE | Vervain Family | 385 |
| VIOLACEAE | Violet Family | 389 |
| VITACEAE | Grape Family | 391 |
| WOODSIACEAE | Lady Fern Family | 65 |
| XYRIDACEAE | Yellow-eyed-grass Family | 532 |
| ZYGOPHYLLACEAE | Caltrop Family | 393 |

APPENDIX IV

ADDITIONAL TAXA REPORTED FOR ARKANSAS

The following list contains additional taxa that have been cited by various sources as occurring in Arkansas but for which voucher specimens have not yet been located and/or reviewed by the Arkansas Vascular Flora Committee. Some in the following list may eventually be confirmed as bona fide members of the Arkansas flora. Others may be dubious reports for the state.

PTERIDOPHYTES

ASPLENIACEAE

Spleenwort Fern Family

Asplenium ruta-muraria L.

wall-rue spleenwort

This species has been attributed to Arkansas by Nuttall (1835), Lesquereux (1860), Harvey (1881), Wagner et al. (1993), Weakley (2008), and Kartesz (2009). PLANTS Database (USDA 2008) also showed it for the state, citing Fernald (1928), who listed the species for Arkansas, but did not cite a voucher specimen. This plant occurs in southeastern Missouri, including Howell, Oregon, and Ozark counties (Yatskievych 1999; Kartesz 2009), on dolomite and limestone bluffs and boulders within the Ozarks (Yatskievych 1999). It likely occurs in similar habitats in the Arkansas Ozarks.

DRYOPTERIDACEAE

Wood Fern Family

Dryopteris intermedia (Muhl. ex Willd.) A.Gray

evergreen wood fern

Weakley (2008) cited Arkansas as within the range of this species. Otherwise it has been reported as approaching the state in southeastern Missouri (Yatskievych 1999), southern Illinois, and western Kentucky (USDA 2008; Kartesz 2009). Montgomery and Wagner (1993) did not attribute *D. intermedia* to Arkansas but they did show its range approaching the northeastern corner of the state.

LYCOPODIACEAE

Club-moss Family

 hybrid fir-moss

Kartesz (2009) attributed this sterile hybrid to Arkansas, as did PLANTS Database (USDA 2008), which cited personal communication with "anonymous." However, one of the purported parents, *H. porophila*, has not been documented from Arkansas, and Wagner and Beitel (1993) did not report *H. ×bartleyi* for the state. Nevertheless, the hybrid and both of the purported parents are known from southeastern Missouri (Yatskievych 1999; USDA 2008; Kartesz 2009) and could possibly all occur in northeastern Arkansas.

ANGIOSPERMS (DICOTS)

AIZOACEAE

Iceplant Family

Sesuvium verrucosum Raf.

western sea-purslane

Smith (1988) included this species in the Arkansas flora, citing reports by Correll and Johnston (1970) and the Great Plains Flora Association (1986). Ferren (2003), PLANTS Database (USDA 2008), and Kartesz (2009) also attributed *S. verrucosum* to Arkansas. The primary range of this species appears to be west of Arkansas, approaching the state in central Kansas, central Oklahoma, and western Texas, but it has also been reported from Claiborne Parish, Louisiana (Kartesz 2009).

AMARANTHACEAE

Amaranth Family

Alternanthera caracasana Kunth in Humb. et al.

mat chaff-flower

This tropical American species was attributed to southern Arkansas by Clemants (2003) and to the state by Kartesz (2009) and PLANTS Database (USDA 2008), the latter citing Smith (1988). However, Smith excluded A. caracasana from the flora, although he did state that it had been reported for Arkansas by Demaree (1943) as Achyranthes repens L. Regardless of the accuracy of Demaree's report, it should be noted that A. repens is actually a synonym of Alternanthera pungens Kunth.

Amaranthus australis (A.Gray) J.D.Sauer

southern amaranth

This tropical American [and possibly Gulf Coast native] species was attributed to Arkansas by Mosyakin and Roberston (2003), as well as by Weakley (2008). Kartesz (2009) reported it as far north as Caddo, East Carroll, and Morehouse parishes, Louisiana and central Tennessee.

APIACEAE **Parsley Family**

Petroselinum crispum (Mill.) Nyman ex A.W.Hill

parsley

This Mediterranean species is often cultivated and was reported for Arkansas by Kartesz (2009) and PLANTS Database (USDA 2008), the latter citing Coulter and Rose (1900). Coulter and Rose referred to a voucher specimen at the United States National Herbarium (US), but it is not entirely clear of its cultivation or escape status.

APOCYNACEAE

Dogbane Family

Asclepias longifolia Michx.

long-leaf milkweed

This species was reported for Calhoun County by Smith (1988) [as subsp. longifolia], and subsequently by PLANTS Database (USDA 2008) and Kartesz (2009), on the basis of a report by Orzell and Bridges (1987). However, the voucher specimens supporting this report have not been located for verification. Additionally, the Prairie County record cited by Kartesz was based on misdetermined material of A. hirtella.

Asclepias rubra L.

red milkweed

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing an unpublished and undated Vascular Flora of the Southeastern United States, edited by Albert E. Radford et al. It occurs in seeps and swamp habitats (Weakley 2008) of the coastal plain, and is reported from eastern Texas and west-central Louisiana (USDA 2008; Kartesz 2009). The Arkansas report may be dubious, but it does seem remotely possible in wetland habitats of southern Arkansas.

Matelea carolinensis (Jacq.) Woodson

Carolina milkvine

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). Matelea carolinensis has been reported from northern Louisiana, including Caddo and Union parishes, and western Mississippi, including DeSoto County (Kartesz 2009). It may possibly occur in southern or eastern Arkansas.

ASTERACEAE

Sunflower Family

Anaphalis margaritacea (L.) Benth. & Hook.f.

pearly-everlasting

Nesom (2006b) attributed this northern and western North American species to Arkansas, as did Kartesz (2009). Nesom noted that A. margaritacea is widely planted as an ornamental and often escapes.

Bidens mitis (Michx.) Sherff

beggar-ticks, stick-tight

This species was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. However, Strother and Weedon (2006) did attribute it to Arkansas, as did Kartesz (2009). Kartesz also showed it for Claiborne, Union, and West Carroll parishes, Louisiana, as well as northern Mississippi. Cronquist (1980) stated that it is a plant of the coastal plain from Maryland to Texas. It may occur in the West Gulf Coastal Plain of southern Arkansas.

Bidens trichosperma (Michx.) Britton

crowned beggar-ticks, stick-tight

Strother and Weedon (2006) attributed this species to Arkansas, but Kartesz (2009) showed it no closer to the state than east-central Missouri, southern Illinois, and western Kentucky. Yatskievych (2006) treated it as introduced to St. Louis, Missouri from the northeastern United States.

Brickellia eupatorioides (L.) Shinners

var. corymbulosa (Torr. & A.Gray) Shinners

false boneset

This variety was listed for Arkansas in the Checklist (AVFC 2006) based on the report by Scott (2006). PLANTS Database (USDA 2008) and Kartesz (2009) attributed this taxon to Faulkner and Logan counties, citing the Great Plains Flora Association (1977). Yatskievych (2006) also listed Arkansas as within the range of this variety.

Brickellia eupatorioides (L.) Shinners

var. gracillima (A.Gray) B.L.Turner

false boneset

Scott (2006) reported this variety for Arkansas, as did Kartesz (2009).

Cirsium texanum Buckley

Texas thistle

Keil (2006b) attributed this species to southwestern Arkansas and stated that it grows along roadsides and in "pastures, fields, [and] shrub-tree savannas." Kartesz (2009) showed it as scattered in Texas and southern Oklahoma, including McCurtain County, but did not attribute it to Arkansas.

Coreopsis gladiata Walter

tickseed

This species was listed for Arkansas in the Checklist (AVFC 2006) based on the report by Strother (2006a). Strother attributed this coastal plain species to Arkansas, listing its habitat as "peaty bogs, swamps, depressions, in pine barrens."

Coreopsis verticillata L.

whorled tickseed

Strother (2006a) attributed this species to Arkansas and a number of other southeastern states. Kartesz (2009) and PLANTS Database (USDA 2008) also attributed it to the state, the latter citing the North American Flora series published by the New York Botanical Garden. The primary range of the species, however, appears to be well east of Arkansas, mainly in Maryland, the Virginias, the Carolinas, and Georgia (Kartesz 2009).

Crepis capillaris (L.) Wallr.

smooth hawk's-beard

Bogler (2006) and Kartesz (2009) attributed this European species to Arkansas.

Eupatorium lancifolium (Torr. & A.Gray) Small

lance-leaf boneset

Siripun and Schilling (2006) attributed this species to Arkansas along with Texas, Louisiana, and Alabama, listing the habitat as "dry, rolling terrain, clay soils,...[and] shortleaf pine and oak woods." Weakley (2008) also listed southern Arkansas as within the range of this species. Kartesz (2009) attributed it to Lonoke County, citing personal communication with Lucile M. McCook and stating that a voucher specimen exists at the Pullen Herbarium (MISS).

Guizotia abyssinica (L.f.) Cass. in F.Cuvier

Niger-seed, Niger-thistle

Strother (2006b) attributed this African species to Arkansas, stating that most North American occurrences are from birdseed waste areas.

Helenium drummondii H.Rock

fringed sneezeweed

Bierner (2006) attributed this species to Arkansas, listing its habitat as "ditches [and] other moist areas such as wet woods, bogs, and swamp edges." Kartesz (2009) attributed it only to southeastern Texas, southwestern Louisiana, and southern Mississippi.

Helenium elegans DC. in DC. & A.DC.

var. elegans

sneezeweed

Bierner (2006) attributed this taxon to Arkansas, stating that it grows on "calcareous soils, [in] ditches, washes, [and] along streams." Kartesz (2009) attributed it only to central Texas, Oklahoma, and Louisiana.

Helianthus decapetalus L.

thin-leaf sunflower

Schilling (2006) and Kartesz (2009) attributed this species to Arkansas. Yatskievych (2006) explained that many of the historic Missouri records of this species were based on misdeterminations, and that it was only known from the northeastern part of that state.

Heliopsis helianthoides (L.) Sweet

var. helianthoides

ox-eve

This variety was reported for Arkansas in the *Checklist* (AVFC 2006) based on the report by Smith (2006). PLANTS Database (USDA 2008) and Kartesz (2009) also attributed it to the state. However, all Arkansas material of *H. helianthoides* examined thus far seems referable to var. *scabra*.

Lactuca ludoviciana (Nutt.) Riddell

Louisiana wild lettuce

Strother (2006e) attributed this species to Arkansas. Kartesz (2009) showed it for the state, as did PLANTS Database (USDA 2008), which cited Smith (1988). However, Smith excluded the species, stating that previous reports had been based on misdetermined material. Nevertheless, it has been reported from several states surrounding Arkansas (Strother 2006e; Kartesz 2009), including from numerous border parishes and counties in Louisiana and Oklahoma (Kartesz 2009).

Nothocalaïs cuspidata (Pursh) Greene

false dandelion, prairie-dandelion

Chambers (2006) attributed this species to Arkansas, as did PLANTS Database (USDA 2006) and Kartesz (2009), both citing Smith (1988). Smith included it [as *Microseris cuspidata* (Pursh) Sch.-Bip.] in the flora based solely on a Montgomery County report by the Great Plains Flora Association (1977). A Montgomery County occurrence would be considerably disjunct from the primary range of this species, which includes the northern Rockies, northern Plains, and parts of the Midwest (Kartesz 2009). It may be worth noting that *N. cuspidata* is known from Montgomery County, Missouri and that Montgomery County, Kansas is also within the range of this species (Kartesz 2009), and thus the record cited by the Great Plains Flora Association could possibly be the result of a state reporting error.

Packera anonyma (A.W.Wood) W.A.Weber & Á.Löve

Small's ragwort, Small's groundsel

Trock (2006) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). However, Smith excluded the species [as *Senecio smallii* Britt.] as a probable erroneous report, stating that it was "exceedingly unlikely" for the state.

Pluchea baccharis (Miller) Pruski

rosy camphorweed

Nesom (2006g) reported this species for Arkansas but noted that he had not seen a voucher specimen. Smith (1988, 1994) included it [as *P. rosea* Godfrey] as a possible addition to the state flora based on reports from northern Louisiana. Kartesz (2009) showed it from northern Louisiana, including Bossier, Claiborne, Morehouse, Union, and Webster parishes.

Rhaponticum repens (L.) Hidalgo

Russian knapweed, hardheads

Kartesz (2009) attributed this invasive Eurasian species to Arkansas, as did PLANTS Database (USDA 2008) [as *Acroptilon repens* (L.) DC. in DC. & A.DC.]. Keil (2006a) stated that this species [as *Acroptilon repens*] had been reported for Arkansas but that he had not seen a voucher specimen.

Rudbeckia fulgida Aiton

var. sullivantii (C.L.Boynton & Beadle) Cronquist

orange coneflower

Urbatsch and Cox (2006) attributed this variety to Arkansas, listing its habitat as "swamps, shorelines, fens, [and] sedge meadows." Kartesz (2009) merged this taxon with var. *speciosa*.

Santolina chamaecyparissus L.

lavender-cotton

This frequently cultivated Mediterranean species was listed for Arkansas in the *Checklist* (AVFC 2006) based on apparently cultivated material. However, Watson (2006) and Kartesz (2009) both attributed it to the state, although it is unclear whether their reports are based on the same cultivated material.

Silphium radula Nutt.

var. gracile (A.Gray) J.A.Clevinger

rosinweed

Smith (1994) treated this taxon [as *S. gracile* Gray] as a possible addition to the state flora. Yatskievych (2006) listed Arkansas as within its range, though neither Clevinger (2006) nor Kartesz (2009) reported it for the state. Kartesz (2009) showed it approaching Arkansas in Bossier, Caddo, and Webster parishes, Louisiana.

Solidago rugosa Mill.

subsp. aspera (Aiton) Cronquist

wrinkle-leaf goldenrod, rough-leaf goldenrod,

var. celtidifolia (Small) Fernald

rough-stem goldenrod

Semple and Cook (2006) as well as Kartesz (2009) attributed this variety to Arkansas.

Symphyotrichum laeve (L.) A.Love & D.Love

var. purpuratum (Nees) G.L.Nesom

smooth aster

Brouillet (2006) and Kartesz (2009) attributed this variety to Arkansas, as did PLANTS Databse (USDA 2008), which cited Demaree (1943).

Symphyotrichum parviceps (E.S.Burgess) G.L.Nesom

small white aster, small-head aster

Smith (1988, 1994) listed this species [as *Aster parviceps* (Burgess) Mack. & Bush] as a possible addition to the Arkansas flora, stating that it seemed probable in the northern part of the state. Brouillet et al. (2006), Yatskievych (2006), PLANTS Database (USDA 2008), and Kartesz (2009) all attributed it to Arkansas.

Symphyotrichum undulatum (L.) G.L.Nesom

wavy-leaf aster

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). Brouillet et al. (2006), however, did not show it for the state.

BALSAMINACEAE

Touch-me-not Family

Impatiens balfourii Hook.f.

Balfour's touch-me-not, Kashmir balsam

Kartesz (2009) attributed this Himalayan species to Arkansas.

BORAGINACEAE

Borage Family

Hydrophyllum canadense L.

Canadian waterleaf

Kartesz (2009) attributed this species to Clay County, citing Constance (1942). Constance did cite an Eggert specimen collected in Clay County in 1893 but did not mention where the specimen was located.

Lappula squarrosa (Retz.) Dumort.

bristly stickseed

Kartesz (2009) attributed this Eurasian species to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). Smith (1988) listed it [as *L. echinata* Gilib.] as a possible addition to the state flora based on Demaree's listing and reports from neighboring states. However, a voucher specimen has yet to be located to substantiate Demaree's report.

Myosotis scorpioides L.

forget-me-not, water scorpion-grass

PLANTS Database (USDA 2008) attributed this European species to Arkansas, citing Hulten and Fries (1986). It is also reported from southern Missouri, including Ozark County (Yatskievych 2006; Kartesz 2009).

Onosmodium bejariense A.DC.

var. occidentale (Mack.) B.L.Turner

marbleseed, false gromwell

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this variety to Arkansas, citing Smith (1988). However, it appears that Smith may have misapplied this name [as O. molle Michx. var. occidentale (Mack.) I.M.Johnst.] to specimens of various other varieties. Based on our interpretation of the O. bejariense complex, no Arkansas specimens observed thus far are referable to var. occidentale, though the genus is in much need of a more thorough review in the state.

BRASSICACEAE

Mustard Family

Arabis hirsuta (L.) Scop.

var. pycnocarpa (M.Hopkins) Rollins

hairy rockcress

Smith (1988) included this taxon in the Arkansas flora based on a Logan County report and a citation by the Great Plains Flora Association (1986). Later, Smith (1994) included it as a bona fide member of the flora based on a specimen that had been deposited at the University of Arkansas Herbarium (UARK) but which was later redetermined as var. adpressipilis. Both Yatskievych (2006) and Weakley (2008) [as A. pycnocarpon M.Hopkins var. pycnocarpon] cited Arkansas as within the range of this variety. PLANTS Database (USDA 2008) and Kartesz (2009) merged the two varieties, thus treating all Arkansas material as A. hirsuta var. pycnocarpa.

Descurainia pinnata (Walter) Britton

subsp. *halictorum* (Cockerell) Detling

tansy-mustard

This subspecies was cited for western Arkansas by Rollins (1993) and attributed to the state by Kartesz (2009), as well as PLANTS Database (USDA 2008), which cited the Great Plains Flora Association (1986).

Erysimum asperum (Nutt.) DC.

prairie wallflower

Al-Shehbaz (2010a) attributed this Great Plains species to Arkansas.

Erysimum cheiranthoides L.

wormseed wallflower

PLANTS Database (USDA 2008) attributed this Eurasian species to Arkansas, citing Demaree (1943). Al-Shehbaz (2010a) also attributed it to the state. Smith (1988) cited it as a possible addition to the Arkansas flora based on Demaree's listing and a citation by Steyermark (1963). Kartesz (2009), though, did not show it for the state.

Erysimum inconspicuum (S. Watson) MacMill.

shy wallflower

Al-Shehbaz (2010a) attributed this species to Arkansas.

Lepidium perfoliatum L.

clasping pepper-grass

Al-Shehbaz and Gaskin (2010) attributed this Eurasian species to Arkansas.

Lepidium ruderale L.

roadside pepper-grass

Kartesz (2009), as well as Al-Shehbaz and Gaskin (2010), attributed this European species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). Smith included it in the Arkansas flora based on a listing by Al-Shehbaz (1986). The species was subsequently listed in the Checklist (AVFC 2006) based on the above stated citations. However, no Arkansas voucher specimen has yet been located to substantiate the report.

Nasturtium microphyllum Boenn. ex Reichenb.

watercress

Kartesz (2009) attributed this European species to Arkansas, as did PLANTS Database (USDA 2008), which cited the University of North Carolina Herbarium (NCU) as the location of a voucher specimen.

Rorippa curvipes Greene

var. truncata (Jepson) Rollins

yellowcress

Kartesz (2009) attributed this taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited personal communication with "anonymous." Al-Shehbaz (2010b) also attributed Rorippa curvipes to the state.

Turritis glabra L.

tower-mustard

Hopkins (1937) attributed this species to Pulaski County, citing a voucher specimen at the New York Botanical Garden Herbarium (NY). Since it hadn't been collected in over 50 years, though, Smith (1988) excluded it [as Arabis glabra (L.) Bernh.] from the Arkansas flora, stating that it was likely no longer present in the state. The species has subsequently been cited for Arkansas by the Arkansas Vascular Flora Committee (2006), Yatskievych (2006), Weakley (2008), PLANTS Database (USDA 2008), and Kartesz (2009), probably all ultimately based on the specimen cited by Hopkins. However, no voucher specimen could be located at NY to verify the report.

BUDDLEJACEAE

Butterfly-bush Family

Buddleja lindlevana Fortune

Lindley's butterfly-bush

Kartesz (2009) attributed this frequently cultivated Chinese species to Arkansas, as did PLANTS Database (USDA 2008), which cited an unpublished and undated Vascular Flora of the Southeastern United States, edited by Albert E. Radford et al.

CACTACEAE

Cactus Family

Escobaria missouriensis (Sweet) D.R.Hunt

Missouri fox-tail cactus

Zimmerman and Parfitt (2003) did not attribute this species [as Coryphantha missouriensis (Sweet) Britton & Rose in Britton & A.Br.] to Arkansas, but it was shown for Miller County by PLANTS Database (USDA 2008) and Kartesz (2009), both citing Benson (1982). Smith (1988), however, excluded this taxon [as Coryphantha missouriensis] from the Arkansas flora, stating that the Miller County record reported by Benson [as var. caespitosa (Engelm.) L.D.Benson] was "doubtless on the basis of material collected in the Arkansas territory – in what is presently part of Oklahoma – as pointed out by Orzell and Bridges (1987)." Orzell and Bridges argued that the locality, "Red River, Arkansas," as stated on the 1830 voucher specimen collected by Pitcher and cited by Benson, almost certainly referred to southern Oklahoma, part of Arkansas Territory at the time. Barry Snow (pers. comm. 2005), in turn citing personal communication with Benson, however, stated that the specimen on which the Arkansas record was based was collected by Zina Pitcher from a high bluff overlooking the Red River at Fulton, but this has yet to be substantiated. Incidentally, if accurate, the specimen would probably be mapped in Hempstead rather than Miller County based on habitat and locality. Of further note and support for a probable Arkansas occurrence, E. missouriensis has been observed in McCurtain County, Oklahoma, a mere four miles from the Arkansas border (Susan Hooks, pers. comm. 2012).

CAMPANULACEAE

Bellflower Family

Triodanis holzingeri McVaugh

Holzinger's Venus'-looking-glass

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Carroll County, citing Smith (1988). Smith included it the Arkansas flora, citing the Carroll County report by the Great Plains Flora Association (1977), but later (Smith 1994) excluded the species from the flora.

CARYOPHYLLACEAE

Pink Family

Arenaria lanuginosa (Michx.) Rohrb. in Mart. et al.

var. lanuginosa

spreading sandwort

Kartesz (2009) attributed this taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited Gleason and Cronquist (1991). Weakley (2008) also included Arkansas as within the range of this taxon. Hartman et al. (2005a), however, did not attribute it to the state.

Dianthus caryophyllus L.

clove pink, carnation

Kartesz (2009) attributed this Mediterranean species to Montgomery County, as did PLANTS Database (USDA 2008), both citing the University of North Carolina Herbarium (NCU) as the location of a voucher specimen. However, Rabeler and Hartman (2005) stated that this species does not escape or persist after cultivation in North America.

Silene dichotoma Ehrh.

subsp. dichotoma

forked catchfly

PLANTS Database (USDA 2008) attributed this European taxon to Arkansas, citing Hulten and Fries (1986). However, Morton (2005b) did not show it for the state.

CHENOPODIACEAE

Goosefoot Family

Chenopodium berlandieri Mog.

var. boscianum (Moq.) Wahl

pit-seed goosefoot

PLANTS Database (USDA 2008) attributed this variety to Arkansas, citing Demaree (1943). However, neither Clemants and Mosyakin (2003a) nor Kartesz (2009) attributed it to the state. They showed it as restricted mostly to the immediate Gulf Coast from Florida to Texas, and Clemants and Mosyakin listed the habitat as "beaches, sandy soils, [and] marshes."

Chenopodium pallescens Standl. in Britton et al.

slim-leaf goosefoot

PLANTS Database (USDA 2008) and Kartesz (2009) both attributed this species to Crittenden County, citing Smith (1988). Smith included the species in the Arkansas flora based solely on a report by Wilcox (1973). Clemants and Mosyakin (2003a) also reported *C. pallescens* for northern Arkansas. Yatskievych (2006) cited Arkansas as within the range of the species and also showed it for Dunklin, McDonald, and Oregon counties, Missouri.

Chenopodium strictum Roth

goosefoot

PLANTS Database (USDA 2008) and Kartesz (2009) both attributed this species to Arkansas, citing Smith (1988). The species was also attributed to the state in the *Checklist* (AVFC 2006) based on Smith's report. Smith included the taxon [as *C. strictum* var. *glaucophyllum* (Aellen) Wahl] in the Arkansas flora, stating that he had seen three specimens at the New York Botanical Garden Herbarium (NY). However, the NY specimens have been reviewed and appear referable, though with some hesitation, to other species. Nevertheless, Clemants and Mosyakin (2003a) attributed *C. strictum* to Arkansas and it would seem that Arkansas material of *Chenopodium* requires further study.

CONVOLVULACEAE

Morning-glory Family

Calystegia silvatica (Kit.) Griseb.

subsp. fraterniflora (Mack. & Bush) Brummitt

hedge bindweed

PLANTS Database (USDA 2008) attributed this taxon to Arkansas, citing Demaree (1943). Yatskievych (2006) showed it scattered statewide in Missouri, including in Howell, Pemiscott, and Stone counties. Kartesz (2009) showed it approaching Arkansas in Texas, Oklahoma, Kansas, Missouri, and Tennessee.

Cuscuta cephalanthi Engelm.

buttonbush dodder

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). Smith included it in the Arkansas flora based solely on a report by Demaree (1943). *Cuscuta cephalanthi* is reported from "stream banks, bottomland forests, and wet prairies" throughout Missouri, including from Butler, Dunklin, Howell, and McDonald counties (Yatskievych 2006). It may occur in similar habitats in northern Arkansas.

CRASSULACEAE

Stonecrop Family

Crassula longipes (Rose) M.Bywater & Wickens

water pygmyweed

Moran (2009) attributed this species to Arkansas. In contrast, he did not show *C. aquatica* for the state, although Arkansas does appear to be within the range of this species. Until a thorough assessment of Arkansas material is conducted, we are treating all Arkansas *Crassula* specimens as *C. aquatica*.

CUCURBITACEAE

Gourd Family

Cucumis sativus L.

cucumber

Kartesz (2009) attributed this commonly cultivated Asian species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). Despite Smith's comments that this species was "occasionally seen as a waif in waste areas, etc." and that it was "perhaps frequent enough to include [in the flora] as a common waif," no voucher specimens of non-cultivated material have yet been observed from the state.

ERICACEAE

Heath Family

Vaccinium corymbosum L.

high-bush blueberry

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Vander Kloet (1988). Vander Kloet (2009) merged *V. elliottii, V. fuscatum*, and *V. virgatum*, among other taxa, under the name *V. corymbosum*, stating that "[e]very morphological variant of the high-bush blueberry has been named formally at one time or another," but of the twenty-five or more segregate taxa, "none is distinct throughout its putative range nor has the properties normally associated with biological species...." Despite Vander Kloet's conclusions, *V. elliotti*, *V. fuscatum*, and *V. virgatum* appear quite distinct morphologically, geographically, and, to an extent, ecologically within Arkansas and are thus being retained at the specific level in the present treatment. It remains to be determined if *V. corymbosum*, in a stricter sense, occurs in Arkansas in addition to the above listed taxa.

EUPHORBIACEAE

Spurge Family

Euphorbia helioscopia L.

mad-woman's-milk

Kartesz (2009) attributed this European species to Arkansas, as did PLANTS Database (USDA 2008), which cited personal communication with Grady L. Webster.

FABACEAE

Bean Family

Dalea phleoides (Torr. & A.Gray) Shinners

var. phleoides

slim-spike prairie-clover

Isely (1998) listed southwestern Arkansas as within the range of this variety but did not show an Arkansas occurrence on his map. Curiously, Isely stated that var. *microphylla* had only been "reported" from southwestern Arkansas, but he did show a Miller County occurrence on the map for that taxon. Variety *phleoides* has been reported from Oklahoma, eastern Texas, including Cass County, and Louisiana, including Caddo Parish (Isely 1998; Kartesz 2009), and thus does at least seem possible in southwestern Arkansas.

Desmodium canadense (L.) DC.

tick-trefoil, beggar's-lice

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Gleason (1963). Kartesz (2009) showed the range of this species generally north of the state but approaching Arkansas in eastern Oklahoma, southeastern Kansas, and southern Missouri, including Oregon County. Isely (1998) also showed *D. canadense* generally well north of Arkansas but did attribute a record to southwestern Missouri and another to central Oklahoma.

Glycyrrhiza lepidota Nutt. ex Pursh

wild licorice, American licorice

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Demaree (1943). It has otherwise been reported as approaching Arkansas in central Oklahoma, southeastern Kansas, and western Missouri (Isely 1998; Kartesz 2009).

Lathyrus sylvestris L.

narrow-leaf vetchling

Kartesz (2009) attributed this European species to Arkansas, as did PLANTS Database (USDA 2008), which cited Isely (1990).

Pediomelum rhombifolium (Torr. & A.Gray) Rydb.

Indian-breadroot

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Polk County, citing Isely (1990) and Isely (1998), respectively.

Psoralidium tenuiflorum (Pursh) Rydb.

slender scurf-pea

This species was listed for Arkansas in the *Checklist* (AVFC 2006) based on misdetermined material. Smith (1988, 1994) included it [as *Psoralea tenuiflora* Pursh var. *floribunda* (Nutt.) Rydb.] in the Arkansas flora based on Steyermark's (1963) inclusion of Arkansas in its range and under the assumption that it did occur in the state. This species is reported as approaching Arkansas in eastern Texas, southeastern Kansas, southern Missouri, and eastern Oklahoma, including Adair, Delaware, LeFlore, and Sequoyah counties (Kartesz 2009). Although it remains unconfirmed for the state, *P. tenuiflorum* very likely occurs in western or northwestern Arkansas.

Rhynchosia tomentosa (L.) Hook & Arn.

var. tomentosa

snout-bean

Smith (1994) listed this taxon as a possible addition to the Arkansas flora. Isely (1998) attributed it to Garland County, and PLANTS Database (USDA 2008) and Kartesz (2009) also attributed it to Garland County based on Isely's citation. It was reported for Arkansas in the *Checklist* (AVFC 2006) based on Isely's citation as well; however, a voucher specimen has not yet been located to substantiate the report.

Trifolium polymorphum Poir.

peanut clover

Isely (1998) stated that this species [as *T. amphianthum* Torr. & A.Gray] had been reported from southwestern Arkansas. It has also been reported from eastern Texas and western Louisiana (Isely 1998; Kartesz 2009).

Vicia pannonica Crantz

Hungarian vetch

Kartesz (2009) attributed this European species to Arkansas, as did PLANTS Database (USDA 2008), which cited Isely (1998). Isely stated that he had seen a specimen from Arkansas but provided no information on the specimen or its location.

Vigna unguiculata (L.) Walp.

cow-pea, black-eyed-pea

Kartesz (2009) attributed this commonly cultivated African and Asian species to Arkansas, as did PLANTS Database (USDA 2008), which cited Isely (1998). Isely did indicate that he had seen specimens from Arkansas.

HYDRANGEACEAE

Hydrangea Family

Hydrangea cinerea Small

ashy hydrangea

PLANTS Database (USDA 2008), Weakley (2008), and Kartesz (2009) recognized this entity as distinct and attributed it to Arkansas, while Tucker (1976) and Smith (1988) merged it with *H. arborescens*. Until Arkansas material can be studied more thoroughly, we are following the latter group in the present treatment.

HYPERICACEAE

St. John's-wort Family

Hypericum nudiflorum Michx. ex Willd.

early St. John's-wort

Some authorities have treated *H. apocynifolium* as synonymous with *H. nudiflorum*, which has been reported for Arkansas (e.g., Tucker 1976; Smith 1988, 1994; AVFC 2006; USDA 2008; Kartesz 2009). Others have treated them as distinct species (e.g., Weakley 2008). We believe that *H. apocynifolium* seems distinct enough to be recognized as separate from *H. nudiflorum*. In addition, all Arkansas material observed thus far seems referable to *H. apocynifolium*, although Weakley did cite the state as within the range for both *H. apocynifolium* and *H. nudiflorum*.

LAMIACEAE Mint Family

Collinsonia canadensis L.

richweed

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). Although it had been reported for Arkansas by both Demaree (1943) and Steyermark (1963), Smith, nevertheless, excluded the species since he had seen no voucher specimens. A voucher specimen has still yet to be located for Arkansas, but the species has been reported from northern Mississippi and western Tennessee, including Dyer and Shelby counties (Kartesz 2009), as well as from southeastern Missouri (Steyermark 1963; Kartesz 2009), where it is reported to grow in "rich woods of usually limestone soils, in ravines and [on] slopes" (Steyermark 1963). It may occur in similar habitats in northeastern Arkansas.

Lycopus uniflorus Michx. var. uniflorus northern bugleweed, northern water-horehound

Kartesz (2009) attributed this taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). However, despite Demaree (1943) listing it for the state, Smith excluded the species from the Arkansas flora on the basis of its primarily northern range and lack of any voucher material from the state. Weakley (2008) cited Arkansas as within the range of the species. The primary range of *L. uniflorus* does seem to be well north of Arkansas and would support its exclusion from the state flora, but there are a few curious reports from eastern Oklahoma, including McCurtain County and western Tennessee, including Shelby County (Kartesz 2009).

Pycnanthemum torrei Benth.

Torrey's mountain-mint

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Fernald (1950). It has also been reported from southeastern Missouri, including Butler, Dunklin, and Pemiscott counties (Kartesz 2009), and may occur in northeastern Arkansas.

Scutellaria nervosa Pursh

veiny skullcap

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Demaree (1943). It has been reported from "rich, moist or low woodland bordering swamps and streams, [and at the] base of rich woodland bluffs" (Steyermark 1963) in eastern and southeastern Missouri, including Dunklin, Howell, and Pemiscott counties (Steyermark 1963, Kartesz 2009). It may occur in similar habitats in northeastern Arkansas.

Scutellaria saxatilis Riddell

smooth rock skullcap

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Leonard (1927). Leonard did cite a Marion County specimen housed at the Missouri Botanical Garden Herbarium (MO), but the specimen has not been relocated for confirmation. The primary range of this species is generally well east of Arkansas, in the Appalachian Mountains (Kartesz 2009), and it seems rather unlikely to occur in the state.

Stachys clingmanii Small

Clingman's hedge-nettle

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Mulligan and Munro (1989). However, Weakley (2008) stated that this species is a southern Appalachian endemic, restricted to southwestern North Carolina and southeastern Tennessee, though he did acknowledge some possible populations in Virginia and Indiana.

Stachys pilosa Nutt.

var. arenicola (Britton) G.A.Mulligan & D.B.Munro

hairy hedge-nettle

Kartesz (2009) attributed this taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited Mulligan and Munro (1989).

LENTIBULARIACEAE

Bladderwort Family

Utricularia biflora Lam.

long-spur bladderwort

Some authorities (e.g., Weakley 2008) have recognized this taxon as distinct from *U. gibba* and report Arkansas as within its range. Others (e.g., Smith 1988; Diggs et al. 1999; USDA 2008; Kartesz 2009) have merged it with *U. gibba*. Pending a more thorough study of Arkansas material, we are following the latter group in the present treatment.

Utricularia juncea Vahl

southern bladderwort

Weakley (2008) attributed this species to southeastern Arkansas.

LINACEAE Flax Family

Linum rigidum Pursh

var. berlandieri (Hook.) Torr. & A.Gray

yellow flax

This taxon was listed for Arkansas in the *Checklist* (AVFC 2006) based on the report by Rogers (1968). Kartesz (2009) attributed it [as *L. berlandieri* Hook. var. *berlandieri*] to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). However, Smith (1988) had excluded the taxon from the state flora, dismissing the reports by Demaree (1943) and Browne (1974) as "spurious" and the report by Rogers (1968) as "probably...a waif." Rogers showed a dot in extreme southwestern Arkansas (possibly in either Hempstead, Little River, or Miller County). No voucher specimens have yet been located, though, to substantiate any of these reports.

MAGNOLIACEAE Magnolia Family

Magnolia pyramidata Bartr.

pyramid magnolia

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Hardin (1972). Hardin did list Arkansas as within the range of this species but did not supply voucher information. This primarily coastal plain species has been reported from along the Mississippi River in Fulton County, Kentucky (Johnson & Nicely 1990) and may occur at localities along the lower Mississippi River Alluvial Plain.

MYRSINACEAE Colicwood Family

Lysimachia tonsa (A.W.Wood) A.W.Wood ex R.Knuth in Engler

Appalachian yellow-loosestrife, southern yellow-loosestrife

Cholewa (2009) attributed this species to Arkansas, possibly ultimately based on the unsubstantiated 1943 report by Demaree discussed by Peck (2003). Weakley (2008) and Kartesz (2009) indicated a primarily southern Appalachian range for this species.

NYMPHAEACEAE Water-lily Family

Nymphaea odorata Aiton fragrant water-lily, subsp. tuberosa (Paine) Wiersema & Hellquist white water-lily

Kartesz (2009) attributed this subspecies to Arkansas, as did PLANTS Database (USDA 2008), which cited Muenscher (1944). Wiersema (1997), however, did not show it for Arkansas, although he did indicate that it occurs in northeastern Oklahoma, southeastern Kansas, and western Missouri.

OLEACEAE Olive Family

Forsythia viridissima Lindl. forsythia

Kartesz (2009) attributed this Chinese species to Arkansas, as did PLANTS Database (USDA 2008), which cited Hardin (1974). Hardin stated that "[t]here are a number of records...of local establishment" of two *Forsythia* species in the southeastern United States, and listed Arkansas under *F. viridissima*. He did not provide information on a voucher specimen, though.

ONAGRACEAE Evening-primrose Family

Calylophus serrulatus (Nutt.) P.H.Raven yellow evening-primrose

This species was listed for Arkansas in the *Checklist* (2006) based on misdetermined material. Kartesz (2009) attributed this Great Plains species to Scott County, as did PLANTS Database (USDA 2008), both citing Smith (1988). Smith included it in the state flora based solely on an as yet unconfirmed Scott County report by the Great Plains Flora Association (1977).

Ludwigia polycarpa Short & Peter

primrose-willow

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Clay County, citing the Great Plains Flora Association (1977). Smith (1988) had listed it as a possible addition to the state flora and it was reported for Arkansas in the *Checklist* (AVFC 2006) based on the report by the Great Plains Flora Association (1977); however, no specimen has yet been located to confirm this occurrence.

Ludwigia repens J.R.Forst.

creeping primrose-willow, false loosestrife

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Crittenden County, citing Smith (1988). Smith stated that it was reported [as *L. ascendens* (L.) H.Hara] for Crittenden County by Wilcox (1973). It was also reported for Arkansas in the *Checklist* (AVFC 2006) based on this report by Wilcox. However, a vourcher specimen documenting this report has yet to be located.

Oenothera nutans G.F.Atk. & Bartlett

evening-primrose

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Dietrich et al. (1997). Dietrich et al. did state in the text that "disjunct occurrences in Missouri and Arkansas probably represent unintentional introductions by humans," but the authors do not show an Arkansas occurrence on their map, nor do they cite an Arkansas voucher specimen.

OROBANCHACEAE

Broomrape Family

Agalinis oligophylla Pennell

false foxglove, gerardia

Apparently, there may be a historical collection of this species from southern Arkansas (John F. Hays, pers. comm. 2003).

OXALIDACEAE

Wood-sorrel Family

Oxalis corniculata L.

creeping yellow wood-sorrel, creeping lady's-sorrel

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this Asian species to Arkansas, citing Smith (1988). Smith did include *O. corniculata* in the flora but stated that it "is sometimes difficult to separate from *O. dillenii*" and that he "suspect[ed] that some of the indicated distribution is based on material of that species." Nesom (2009) also attributed the species to the state. However, although we have seen a few Arkansas voucher specimens of *O. corniculata* collected from within greenhouses or as weeds in potted plants, we have yet to review any obviously escaped or naturalized material.

PAPAVERACEAE

Poppy Family

Macleaya cordata (Willd.) R.Br. in Denham & Clapperton

plume-poppy, tree-celandine

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this eastern Asian species to Washington County, citing the University of North Carolina Herbarium (NCU) as the location of a voucher specimen.

PHYTOLACCACEAE

Pokeweed Family

Rivina humilis L.

pigeon-berry, rouge-plant

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). Nienaber and Thieret (2003) also reported it for the state. However, these reports may be based on a Thomas Nuttall specimen at the New York Botanical Garden Herbarium (NY) that was collected at "Red River, Arkansas" (Smith 1988). Smith (1988) concluded that the specimen was almost certainly collected on the Red River in southern Oklahoma, then part of Arkansas Territory. There have been reports, though, from Bowie County, Texas, and Caddo Parish, Louisiana (Kartesz 2009), suggesting the possibility of an occurrence in southwestern Arkansas.

PLANTAGINACEAE

Plantain Family

Linaria dalmatica (L.) Mill.

subsp. dalmatica

Dalmatian toadflax

Kartesz (2009) attributed this Eurasian taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited the University of North Carolina Herbarium (NCU) as the location of a voucher specimen. This species is generally much more widely established in western North America (Kartesz 2009).

Penstemon alluviorum Pennell

lowland beardtongue

PLANTS Database (USDA 2008) recognized this taxon as distinct and attributed it to Arkansas, citing Demaree (1943). Kartesz (2009) also recognized it and attributed it to Craighead County, citing Pennell (1935). However, pending a more thorough study of the Arkansas material, in the present treatment we are following Smith (1988), who treated it as a form of *P. digitalis*.

Penstemon laevigatus Aiton

beardtongue

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited the University of North Carolina Herbarium (NCU) as the location of a voucher specimen. It has also been reported from Louisiana, Mississippi, including DeSoto and Washington counties, and Tennessee, including Dyer, Shelby, and Tipton counties (Kartesz 2009). Weakley (2008) included Arkansas within the range of *P. laevigatus* and listed its habitat as "low meadows, bottomlands, [and] forest edges," However, Pennell (1935) showed this species approaching Arkansas no closer than extreme eastern Mississippi.

Plantago major L.

great plantain

PLANTS Database (USDA 2008) attributed this European species to Arkansas, citing Demaree (1943). It appears to be more widely established in western and northern North America but is also reportedly scattered in the Southeast, including in DeSoto County, Mississippi and Claiborne and Morehouse parishes, Louisiana (Kartesz 2009).

POLEMONIACEAE

Phlox Family

Phlox carolina L.

subsp. angusta Wherry

Carolina phlox

Kartesz (2009) attributed this taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited Wherry (1955).

Phlox carolina L.

subsp. *carolina*

Carolina phlox

Kartesz (2009) attributed this taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited Wherry (1955).

Phlox divaricata L.

subsp. divaricata

wild blue phlox, wild sweet-William

Kartesz (2009) attributed this subspecies to Arkansas, as did PLANTS Database (USDA 2008), which cited an unpublished and undated Vascular Flora of the Southeastern United States, edited by Albert E. Radford et al. This subspecies generally occurs east and northeast of Arkansas but has been reported from all bordering Tennessee counties (Kartesz 2009).

Phlox oklahomensis Wherry

Oklahoma phlox

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Wherry (1955).

Phlox pilosa L.

subsp. fulgida (Wherry) Wherry

downy phlox

Kartesz (2009) attributed this subspecies to Arkansas, as did PLANTS Database (USDA 2008), which cited Wherry (1970). The primary range of this subspecies seems to be generally north of the state, though (Kartesz 2009).

Phlox pilosa L.

subsp. pulcherrima Lundell

downy phlox

Kartesz (2009) attributed this subspecies to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). Smith merely listed the taxon [as *P. pilosa* L. var. *amplexicaulis* (Raf) Wherry] as a possible addition to the Arkansas flora based on the range stated by Steyermark (1963) and a previous listing for the state by Demaree (1943).

POLYGALACEAE

Milkwort Family

Polygala ambigua Nutt.

whorled milkwort

This taxon, which is sometimes treated as a variety of *P. verticillata*, was attributed to Arkansas by PLANTS Database (USDA 2008), citing Demaree (1943), by Kartesz (2009), citing a voucher specimen at the University of Alabama Herbarium (UNA), and as within range according to Weakley (2008). For the present treatment, though, we are considering this taxon a member of the variable *P. verticillata* species, without recognizing infraspecific taxa.

POLYGONACEAE

Buckwheat Family

Polygonum aviculare L.

subsp. neglectum (Besser) Arcang.

knotweed, knotgrass

This European subspecies was listed for Arkansas in the *Checklist* (AVFC 2006) based on the report by Costea et al. (2005). Kartesz (2009) also attributed it to the state.

Rumex fueginus Phil.

golden dock

Kartesz (2009) attributed this species [as var. *fueginus*] to Arkansas, as did Mosyakin (2005). Smith (1988) listed it [as *R. maritimus* L. var. *fueginus* (Phil.) Dusen] only as a possible addition to the flora but stated that it had been reported for Pulaski County (Little Rock) according to Graham and Wood (1965), evidently based on a report by Rechinger (1937), who, in turn, cited a Pulaski County specimen at the United States National Herbarium (US).

PORTULACACEAE

Purslane Family

Portulaca grandiflora Hook.

moss-rose

Matthews (2003) attributed this commonly cultivated South American species to Arkansas, as did Kartesz (2009).

RANUNCULACEAE

Buttercup Family

Thalictrum pubescens Pursh

late meadow-rue, king-of-the-meadow

This species was listed for Arkansas in the *Checklist* (AVFC 2006) based on Park and Festerling (1997), who attributed it to extreme eastern Arkansas.

RESEDACEAE

Mignonette Family

Reseda alba L.

white mignonette

This Mediterranean species was attributed to Arkansas by Martín-Bravo et al. (2010).

Reseda lutea L.

yellow mignonette

This Eurasian and north African species was attributed to Arkansas by Martín-Bravo et al. (2010).

ROSACEAE

Rose Family

Crataegus dissona Sarg.

hawthorn

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943).

Crataegus latebrosa Sarg.

hawthorn

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Palmer (1925).

Crataegus monogyna Jacq.

English hawthorn

Kartesz (2009) attributed this cultivated Eurasian species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). Smith listed it as a possible addition to the Arkansas flora, stating that Tucker (1976) had included it based on Ernest J. Palmer's authority and that it "perhaps rarely escapes in the state." No voucher specimen has yet been located to substantiate this report, though.

Crataegus succulenta Schrad. ex Link

hawthorn

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). Smith listed it as a possible addition to the Arkansas flora, stating that Tucker (1976) had included it based on Ernest J. Palmer's authority. However, no voucher specimen has yet been located to substantiate this report.

Malus coronaria (L.) Mill.

sweet crabapple

This species was reported for Arkansas in the *Checklist* (AVFC 2006) based on the report by Tucker (1976) as well as on misdetermined material. PLANTS Database (USDA 2008) and Kartesz (2009) attributed it to northeastern Arkansas, citing Smith (1988). Smith included it [as *Pyrus coronaria* L.] in the state flora based on Tucker's authority.

Potentilla rivalis Nutt.

brook cinquefoil

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). Smith (1988, 1994) treated two varieties [var. *millegrana* (Engelm.) Wats. and var. *pentandra* (Engelm.) Wats.] as possible additions to the Arkansas flora based on listings by Small (1913), Steyermark (1963), and Robertson (1974), none of whom cited voucher specimens. This species was reported for Arkansas in the *Checklist* (AVFC 2006) based on the report by Robertson (1974). However, no Arkansas voucher specimens have yet been located to substantiate any of these reports.

Prunus americana Marshall

wild plum, American plum

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). Kartesz (2009) also attributed it to the state, citing Little (1977) and Smith (1988). Weakley (2008) stated a range for this species that would likely include Arkansas. Despite having been shown from throughout the Interior Highlands of the state by Little and Smith, all Arkansas specimens previously determined as *P. americana* observed thus far actually seem best referable to *P. mexicana*. It should be noted that Smith's (1994) key contributes to some of the confusion about these taxa within the state; an individual tree may key to *P. americana* while in flower but to *P. mexicana* later in the season. Although we are currently referring all Arkansas material to *P. mexicana*, this issue certainly requires further study before *P. americana* can be conclusively removed from the Arkansas flora.

Prunus rivularis Scheele

creek plum

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Logan County, citing Smith (1988). Smith included it in the state flora based solely on Tucker's (1976) authority. Tucker attributed it to Logan County but did not cite a voucher specimen. *Prunus rivularis* has been reported from throughout Oklahoma, including LeFlore County (Kartesz 2009), and may occur in western Arkansas.

Prunus virginiana L.

choke cherry

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). Kartesz (2009) also attributed it to the state, citing Smith as well as a report originating from the University of Arkansas Herbarium (UARK). In addition, Weakley (2008) included Arkansas within the range of this species. However, the UARK report listed by Kartesz was based on misdetermined specimens, and although Smith did include the species in the state flora based on two separate reports for northwestern Arkansas, he had seen voucher specimens for neither report. Furthermore, Tucker (1976) had excluded *P. virginiana* from the Arkansas flora, indicating that despite his extensive herbaria searches and collections, he never saw Arkansas voucher material for this species.

RUBIACEAE Madder Family

Houstonia canadensis Willd. ex Roem. & Schult.

Canadian bluet

Weakley (2008) listed Arkansas as within the range of this species. However, Kartesz (2009) showed the range to the northeast of the state.

SALICACEAE

Willow Family

Populus nigra L.

black poplar, Lombardy poplar

Kartesz (2009) attributed this southern European species to Arkansas, as did PLANTS Database (USDA 2008), which cited an unpublished and undated *Vascular Flora of the Southeastern United States*, edited by Albert E. Radford et al. Eckenwalder (2010) stated that although *Populus nigra* is often planted, persists after cultivation, and spreads by root suckers, the plants are all staminate clones and the species does not become naturalized.

Salix caprea L.

goat willow, pussy willow

Kartesz (2009) and Argus (2010) attributed this Eurasian species to Arkansas.

SAPINDACEAE

Soapberry Family

Acer rubrum L.

var. trilobum Torr. & A.Gray ex K.Koch

red maple

Weakley (2008), PLANTS Database (USDA 2008), and Kartesz (2009) recognized this variety as distinct, and the latter two attributed it to Arkansas. Yatskievych (2006), however, argued that there seems to be no correlation between the number of leaf lobes and other characteristics of the leaves and fruit in Missouri, and that, therefore, this variety does not warrant separation from the typic variety. We are following Yatskievych (2006) in the present treatment.

Acer saccharum Marshall

var. schneckii Rehder

sugar maple

PLANTS Database (USDA 2008) and Kartesz (2009) recognized this variety as distinct and attributed it to Arkansas. Yatskievych (2006) also recognized it as distinct [as subsp. *schneckii* (Rehder) Desmarais] and stated that it occurs in eastern and southern Missouri but did acknowledge that "there are some questions as to [its] status." Weakley (2008) stated that this entity "is probably only a form" of *A. saccharum*. Tucker (1976) relegated it to synonymy with the typic variety without explanation. In light of its questionable status and pending a more thorough assessment of Arkansas material, we choose to synonymize it with the typic variety in the present treatment.

SOLANACEAE

Nightshade Family

Datura wrightii Regel

sacred thorn-apple

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Arkansas, citing Smith (1988). There is considerable confusion about the distinctiveness of this taxon from *D. inoxia* (Weakley 2008), hence the Arkansas report of *D. wrightii* in the *Checklist* (AVFC 2006). Kartesz attributed only *D. wrightii* to the United States. However, it is unclear, due to the poor condition of most of the Arkansas specimens, which name [or if both] applies to Arkansas plants. Since *D. inoxia* has nomenclatural priority, and since Smith (1988, 1994) treated Arkansas plants as such, we are inclined to only recognize *D. inoxia* in Arkansas at this time.

Physalis grisea (Waterf.) M.Martinez

strawberry-tomato

Kartesz (2009) attributed this species to Garland County, citing Martinez (1993). PLANTS Database (USDA 2008) also attributed it to the state, citing Martinez.

Physalis peruviana L.

Peruvian ground-cherry

Kartesz (2009) attributed this South American species to Sevier County, citing Waterfall (1958). PLANTS Database (USDA 2008) also attributed it to the state, citing Waterfall. Waterfall made reference to a Sevier County specimen at the Herbarium of the University of Texas (TEX) but includes a question mark in his notation, implying some doubt about the record.

VIOLACEAE Violet Family

Viola cucullata Aiton

marsh violet, bog violet

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Gleason and Cronquist (1991). Weakley (2008) also listed eastern Arkansas as within the range of this species. However, Smith (1988) stated that this name had been misapplied in Arkansas to plants of V. palmata. Viola cucullata is a plant of "bogs, seeps, [and] margins of spring branches" (Weakley 2008) and has been reported from southeastern Missouri, western Tennessee, and northern Mississippi (Kartesz 2009). It may occur in similar habitats in northeastern Arkansas.

Viola nephrophylla Greene

northern bog violet

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Arkansas, citing Russell (1965). Smith (1988), however, stated that this name had been misapplied in Arkansas to material of V. sororia.

VITACEAE **Grape Family**

Vitis mustangensis Buckley

mustang grape

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Tucker (1976). Tucker stated that Bailey (1934) had listed it for western Arkansas, but Bailey merely stated that it [as V. candicans Engelm. in Gray] has been "accredited also to western Louisiana, southern Oklahoma, [and] western Arkansas..." in addition to eastern Texas. No voucher specimens have been located to substantiate the report, though.

ANGIOSPERMS (MONOCOTS)

ALISMATACEAE

Water-plantain Family

Alisma triviale Pursh

water-plantain

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Hendricks (1957), who, in turn, cited a Hot Spring County specimen. The species has been reported from southern Missouri, including Barry, Howell, McDonald, Ozark, and Ripley counties by Yatskievych (1999), and subsequently by Kartesz (2009). However, Haynes and Hellquist (2000a) showed this species no closer to Arkansas than southern Illinois. All Alisma specimens at the University of Arkansas Herbarium (UARK) were annotated by Robert R. Haynes as A. subcordatum in 1995; all subsequent collections are also referable to A. subcordatum.

ARACEAE **Arum Family**

Lemna trisulca L. star duckweed

> Landolt (2000) attributed this species to northern Arkansas, specifically Fulton County (Landolt 1986). This was the basis for the Arkansas report in the Checklist (AVFC 2006). Kartesz (2009) also attributed it to the state, as did PLANTS Database (USDA 2008), which cited Landolt (1986). Lemna trisulca has also been reported from "cool, flowing water of spring branches, streams, and rivers" of southeastern Missouri, including Ripley and Oregon counties (Yatskievych 1999).

CYPERACEAE Sedge Family

Carex albicans Willd. ex Spreng.

var. emmonsii (Dewey ex Torr.) Rettig

sedge

Crins and Rettig (2002) attributed this variety to Arkansas, as did Kartesz (2009).

Carex crinita Lam. in Lam. et al.

var. crinita

fringed sedge

This variety was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material, though Standley et al. (2002) as well as Kartesz (2009) did attribute it to the state. However, all Arkansas material of C. crinita examined thus far seems referable to var. brevicrinis.

Carex microrhyncha Mack.

sedge

Diggs et al. (2006) and Kartesz (2009) treated this taxon as distinct from C. umbellata and attributed it to Arkansas. PLANTS Database (USDA 2008) also attributed it to the state, citing personal communication with Stanley D. Jones. In the present treatment, however, we are following Crins and Rettig (2002) who synonymized it with C. umbellata, though it warrants further study.

Carex tribuloides Wahlenb.

var. tribuloides

sedge

Kartesz (2009) attributed this variety to Arkansas, as did PLANTS Database (USDA 2008), which cited the North American Flora series published by the New York Botanical Garden. However, Mastrogiuseppe et al. (2002) did not attribute this variety to the state. All Arkansas material of this species observed thus far seems referable to var. sangamonensis.

Carex virescens Muhl. ex Willd.

sedge

This species was listed for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. PLANTS Database (USDA 2008) attributed it to Arkansas, citing Smith (1988), who, in turn, included it in the state flora citing reports from five counties. Hyatt (1998) also reported it from two counties. However, these reports have either been proven erroneous or remain unconfirmed. Ball (2002) did attribute C. virescens to Arkansas, but his report may be based on Smith's or Hyatt's citations. The range has been reported to extend westward into southeastern Missouri (Yatskievych 1999; Kartesz 2009), western Tennessee, and northern Mississippi (Kartesz 2009), making at least a northeastern Arkansas occurrence a possibility.

Eleocharis coloradoensis (Britton) Gilly

dwarf spike-rush, Colorado spike-rush

This species was reported for Arkansas in the Checklist (AVFC 2006) based on Smith (2002b). Kartesz (2009) syonymized it with *E. parvula*.

Eleocharis montana (Kunth) Roem. & Schult. in Roem. et al.

mountain spike-rush

Diggs et al. (2006) listed Arkansas as within the range of this species. Kartesz (2009) showed it for central and southern Louisiana and southeastern Texas but not for Arkansas. Smith (2002a) did not attribute it to the state either.

Rhynchospora nivea Boeck.

white-top sedge

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Correll and Johnston (1970). Smith (1988) listed the species [as Dichromena nivea (Boeck.) Britt.] as a possible addition to the flora, stating that it had been reported for Arkansas by Correll and Johnston (1970) and the Great Plains Flora Association (1986). Kral (2002), however, did not attribute it to the state and no voucher specimens have been located.

DIOSCOREACEAE

Yam Family

Dioscorea quaternata J.F.Gmel.

wild yam

Some authorities (e.g., Yatskievych 1999: Weakley 2008: USDA 2008) have recognized this taxon as distinct from D. villosa, and have given a range that would include Arkansas. Others (e.g., Raz 2002; Diggs et al. 2006; Kartesz 2009) merge it with D. villosa. Raz stated that "[a]t present, I can find no natural gaps in the variation between the plants that have been called...D. villosa and those called D. quaternata, and therefore I am treating the complex as a single species." We are following the latter group in the present treatment. If the two taxa are recognized as distinct, though, all Arkansas material apparently may belong to D. quaternata (Al-Shehbaz & Schubert 1989).

HEMEROCALLIDACEAE

Day-lily Family

Hemerocallis lilioasphodelus L.

yellow day-lily, lemon day-lily

This eastern Asian species was erroneously reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. However, Kartesz (2009) did attribute it to Arkansas, as did PLANTS Database (USDA 2008), which cited an unpublished and undated Vascular Flora of the Southeastern United States, edited by Albert E. Radford et al. Additionally, Straley and Utech (2002) also attributed it to the state.

HYPOXIDACEAE

Star-grass Family

Hypoxis wrightii (Baker) Brackett

yellow star-grass

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited the University of North Carolina Herbarium (NCU) as the location of a voucher specimen. According to NCU's *Flora of the Southeastern United States Atlas* (NCU 2009), there is a Hempstead County specimen at NCU that was determined as *H. wrightii* in 1991 by Alan Herndon. However, Herndon (2002), curiously, did not attribute the species to Arkansas but rather showed it as restricted to the outer Gulf and southern Atlantic coasts.

JUNCACEAE Rush Family

Juncus elliottii Chapm.

Elliott's rush

Clemants (2000) attributed this primarily coastal plain species to Arkansas, as did PLANTS Database (USDA 2008) and Kartesz (2009), the latter two citing Smith (1988). Diggs et al. (2006) also included Arkansas as within its range. Smith attributed it to three counties in northeastern Arkansas, citing a voucher specimen at the Southern Methodist University Herbarium (SMU) [now a part of the Botanical Research Institute of Texas Herbarium (BRIT)] and indicated that it had also been reported for Bradley County.

LILIACEAE Lily Family

Erythronium americanum Ker Gawl. subsp. americanum

American trout-lily, yellow trout-lily

Kartesz (2009) attributed this taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited Parks and Hardin (1963). Weakley (2008) also included Arkansas as within the range of this taxon, possibly based on the Parks and Hardin report. Parks and Hardin did list Arkansas [as well as Oklahoma] in the range of *E. americanum* subsp. *americanum*, but they seemed to express uncertainty of the Arkansas [and Oklahoma] material in light of tentative determinations of specimens of *E. rostratum*. In addition, they only attributed *E. rostratum* to Arkansas on their map. Although *E. americanum* subsp. *americanum* has been reported from southeastern Missouri (Allen & Robertson 2002), including Butler County (Yatskievych 1999; Kartesz 2009), and therefore could occur in northeastern Arkansas, no specimens have yet been confirmed from the state. Furthermore, Allen and Robertson (2002) did not attribute it to Arkansas.

ORCHIDACEAE

Orchid Family

Platanthera flava (L.) Lindl. var. herbiola (R.Br.) Luer northern rein orchid, northern tubercled orchid, pale-green orchid

Sheviak (2002) attributed this variety to northeastern Arkansas. It has been reported from southeastern Missouri, including Butler, Howell, Oregon, and Ripley counties (Kartesz 2009), and would seem likely to occur in northeastern Arkansas. No definitive specimens attributable to this variety have yet been reviewed by us, though several have appeared intermediate between this and the typic variety.

POACEAE Grass Family

Agrostis scabra Willd.

rough bent grass

This western and northern North American species was listed for Arkansas in the *Checklist* (AVFC 2006) based on misdetermined material. However, Harvey (2007) did attribute it to a county in west-central Arkansas. Additionally, PLANTS Database (USDA 2008) and Kartesz (2009) showed it for the state, the former citing Hitchcock (1950). The primary range of this species, though, appears to be well to the north and west of Arkansas (Harvey 2007; Kartesz 2009).

Alopecurus pratensis L.

meadow foxtail

This Eurasian and northern African species was reported for Arkansas in the *Checklist* (AVFC 2006) based on advanced data from the Grass Manual/Flora of North America Project (i.e., Crins 2007). Crins did attribute it to a county in west-central Arkansas and Kartesz (2009) also attributed it to the state. The species has been reported from southern Missouri (Crins 2007), including Howell County (Yatskievych 1999; Kartesz 2009).

Arundinaria tecta (Walter) Muhl.

switch cane

Clark and Triplett (2007) attributed this species to Miller County. Kartesz (2009) also showed it for the state, as did PLANTS Database (USDA 2008) [as *A. gigantea* (Walter) Muhl. subsp. *tecta* (Walter) McClure], which cited Demaree (1943).

Bouteloua gracilis (Kunth) Lag. ex Griffiths

blue grama

Kartesz (2009) attributed this western North American species to Washington County, citing Arrieta et al. (2004). Smith (1988) had excluded it from the flora despite listings by Demaree (1943) and Moore (1961), stating that the only voucher material he had seen represented cultivated material from the 1930s from the University of Arkansas grass nursery in Fayetteville. This material may be the source of the reports by Demaree, Moore, and Arrieta et al.

Danthonia compressa Austin

flattened oat grass

This species was listed for Arkansas in the *Checklist* (AVFC 2006) based on the report by Darbyshire (2003), who attributed it to one county in eastern Arkansas. Kartesz (2009) also attributed it to the state, as did PLANTS Database (USDA 2008), which cited personal communication with Mary E. Barkworth. However, an eastern Arkansas occurrence would be considerably disjunct from the primary range extending from eastern Tennessee through New England (Darbyshire 2003; Kartesz 2009).

Dichanthelium boreale (Nash) Freckmann

northern rosette grass, northern panic grass

Weakley (2008) listed Arkansas as within the range of this species. It has been reported from southern Missouri (Yatskievych 1999; Freckmann & Lelong 2003a; Kartesz 2009), including Barry, McDonald, and Ripley counties (Yatskievych 1999; Kartesz 2009). Curiously, though, these occurrences are considerably disjunct from the primary range in the northeastern United States and southern Canada (Gould & Clark 1978; Freckmann & Lelong 2003a).

Dichanthelium ensifolium (Baldwin ex Elliott) Gould

sword-leaf rosette grass, sword-leaf panic grass

Kartesz (2009) attributed this primarily coastal plain taxon [as *D. dichotomum* var. *ensifolium* (Baldwin ex Elliott) Gould & C.A.Clark] to Arkansas, as did PLANTS Database (USDA 2008) [as *D. dichotomum* var. *ensifolium*], which cited Gould and Clark (1978). Weakley (2008) also listed Arkansas as within its range. Gould and Clark simply stated, though, that this taxon [as *D. dichotomum* var. *ensifolium*] had been "reported for Arkansas," without further documentation.

Dichanthelium ovale (Elliott) Gould & C.A.Clark subsp. ovale

stiff-leaf rosette grass, stiff-leaf panic grass

This taxon was listed for Arkansas in the *Checklist* (AVFC 2006) without a voucher specimen to substantiate the report. Kartesz (2009) attributed it [as var. *ovale*] to Arkansas, as did PLANTS Database (USDA 2008) [as var. *ovale*], which cited Gould and Clark (1978). Based on the range stated by Freckmann and Lelong (2003a), this subspecies may occur in the Gulf Coastal Plain of southern Arkansas.

Dichanthelium tenue (Muhl.) Freckmann & Lelong

slender rosette grass, slender panic grass

Kartesz (2009) attributed this primarily coastal plain taxon [as *D. dichotomum* (L.) Gould var. *tenue* (Muhl.) Gould & C.A.Clark] to Lafayette County, citing a report originating from the University of Arkansas Herbarium (UARK). However, no voucher specimens of this taxon have been located at UARK. PLANTS Database (USDA 2008) also attributed it [as *D. dichotomum* var. *tenue*] to the state, citing Demaree (1943). It may occur in southern Arkansas, as it has been reported from nearby Claiborne and Union parishes, Louisiana (Freckmann & Lelong 2003a; Kartesz 2009).

Digitaria bicornis (Lam.) Roem. & Schult.

tropical crab grass

This species was listed for Arkansas in the *Checklist* (AVFC 2006) based on the report by Wipff (2003b). Wipff attributed it to Pulaski County, as did Kartesz (2009).

Echinochloa crus-pavonis (Kunth) Schult.

var. macera (Wiegand) Gould

Gulf barnyard grass

Kartesz (2009) attributed this taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). However, Michael (2003, 2007) did not attribute it to the state.

Echinochloa frumentacea Link

Indian-millet

Kartesz (2009) attributed this Asian species to Arkansas, as did PLANTS Database (USDA 2008), which cited Gould et al. (1972), who, in turn, cited Washington County specimens collected by Younge and Nielsen [as *E. crusgalli* (L.) Beauv. var. *frumentacea* (Roxb.) W.F.Wight] at the University of Illinois Herbarium (ILL) and the University of Minnesota Herbarium (MIN).

Elymus ×pseudorepens (Scribn. & J.G.Sm.)
Barkworth & D.R.Dewey

{E. lanceolatus (Scribn. & J.G.Sm.) Gould × E. trachycaulus (Link) Gould}

false quack grass

Kartesz (2009) attributed this hybrid taxon to Dallas County, citing *Flora of North America* (i.e., Barkworth et al. 2007a) and *Manual of Grasses for North America* (i.e., Barkworth et al. 2007b), who merely stated that it has been "reported from...Arkansas." An Arkansas occurrence of this taxon seems unlikely, though, as it would be highly disjunct from the western North American range of the two purported parents.

Eragrostis elliottii S.Watson

Elliott's love grass

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Yatskievych (1999). Yatskievych stated that it is native to the southeastern United States, "west to Arkansas and Texas." Peterson (2003a), however, did not show it for the state.

Eragrostis lugens Nees

mourning love grass

This species was reported for Arkansas in the *Checklist* (AVFC 2006) based on misdetermined material. However, Kartesz (2009) did attribute it to Drew and Union counties, citing Peterson (2003a). PLANTS Database (USDA 2008) also attributed it to the state, citing the University of North Carolina Herbarium (NCU) as the location of a voucher specimen.

Eragrostis pectinacea (Michx.) Nees

var. miserrima (E.Fourn.) Reeder

tufted love grass

Kartesz (2009) attributed this variety to Arkansas, as did PLANTS Database (USDA 2008), which cited Harvey (1948). Peterson (2003a) stated that this variety occurs in the southern United States, from Texas to Florida. Thus, it may occur in southern Arkansas.

Eragrostis trichodes (Nutt.) A.W.Wood

sand love grass

Kartesz (2009) attributed this primarily Great Plains species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). However, Smith had actually excluded the species from the state flora. Peck (2003) attributed it to Arkansas, citing a Thomas Nuttall specimen lacking precise locality data at the Philadelphia Herbarium (PH), as well as a George M. Merrill specimen supposedly at the University of Arkansas Herbarium (UARK) but which has not been located. Peterson (2003a) did not attribute the species to Arkansas, though it has been reported from all surrounding states, including from Claiborne and Morehouse parishes, Louisiana (Kartesz 2009), Howell, Oregon, and Ozark counties, Missouri (Yatskievych 1999; Kartesz 2009), Shelby County, Tennessee, and Bowie County, Texas (Kartesz 2009).

Hopia obtusa (Kunth) Zuloaga & Morrone

vine mesquite

This species was reported for Arkansas [as *Panicum obtusum* Kunth] in the *Checklist* (AVFC 2006) without a supporting voucher specimen. Smith (1988) included it [as *P. obtusum*] in the Arkansas flora, citing Washington County (Moore 1961) and Conway County (Moore 1965) reports. Freckmann and Lelong (2003b) [as *P. obtusum*], PLANTS Database (USDA 2008) [as *P. obtusum*], and Kartesz (2009) also attributed it to the same two counties, undoubtedly on the basis of Smith's report. Furthermore, Yatskievych (1999) [as *P. obtusum*] listed Arkansas as within the range of the species. The Arkansas reports may have been based on misdetermined material, as an Arkansas occurrence would be somewhat disjunct from the primary range to the west (Freckmann & Lelong 2003b; Kartesz 2009).

Muhlenbergia mexicana (L.) Trin.

wire-stem muhly, Mexican muhly

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Arkansas, citing Smith (1988). Peterson (2003b) attributed it to the state, likely also based on Smith. Smith included it in the Arkansas flora based on a Drew County specimen at the Missouri Botanical Garden Herbarium (MO), as well as on reports by Moore (1961) and Robinson (1968). However, no voucher specimens have yet been confirmed for the state. The Drew County specimen, although verified by Smith, has not been reviewed by the Arkansas Vascular Flora Committee and seems rather disjunct from the species' generally northern and northeastern United States distribution (Peterson 2003b; Kartesz 2009).

Panicum rigidulum Bosc ex Nees

subsp. combsii (Scribn. & C.R.Ball) Freckmann & Lelong

red-top panic grass

Kartesz (2009) attributed this taxon [as var. combsii (Scribn. & C.R.Ball) Lelong] to Arkansas, as did PLANTS Database (USDA 2008), which cited Gleason (1963).

Panicum rigidulum Bosc ex Nees

subsp. elongatum (Scribn.) Freckmann & Lelong

red-top panic grass

Kartesz (2009) attributed this taxon [as var. elongatum (Pursh) Lelong] to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943).

Paspalidium geminatum (Forssk.) Stapf

Egyptian water grass, alligator grass

Smith (1988) listed this species [as Panicum geminatum Forsk.] as a possible addition to the Arkansas flora. Kartesz (2009) attributed it to Bradley County, citing Flora of North America (i.e., Allen 2003) and Manual of Grasses for North America (i.e., Allen 2007). It was likewise reported for the state in the Checklist (AVFC 2006) based on the report by Allen (2003).

Paspalum setaceum Michx.

var. supinum (Bosc ex Poir.) Trin.

thin paspalum

This variety was reported for Arkansas in the Checklist (AVFC 2006) based on the report by Allen and Hall (2003), who listed Arkansas as within its range. Weakley (2008), however, implied a range for this variety extending only as far west as southern Mississippi.

Pennisetum glaucum (L.) R.Br.

pearl-millet

The reports of this Asian species by PLANTS Database (USDA 2008), which cited Smith (1988), were erroneously based on Smith's reports of Setaria glauca (L.) Beauv., a synonym of Pennisetum glaucum, but a name which he incorrectly applied to Setaria pumila subsp. pumila. Kartesz (2009) attributed P. glaucum to Columbia and Lawrence counties, citing a report originating from the University of Arkansas Herbarium (UARK), as well as to Montgomery County, citing Manual of Grasses for North America (i.e., Wipff 2007). However, the reports from UARK were based on misdetermined matrial of Setaria pumila subsp. pumila. Likewise, Wipff's report of P. glaucum from Montgomery County was likely based on Marsico (2005), which was also based on misdetermined material of Setaria pumila subsp. pumila. Pennisetum glaucum is occasionally planted as wildlife forage and as a soil stabilizer, and is reported as an occasional waif throughout the southeastern United States, apparently not persisting for more than a few years (Wipff 2003c).

Poa alsodes A.Gray

grove blue grass

This species was reported for Arkansas in the Checklist (AVFC 2006) without a supporting voucher specimen. Kartesz (2009) attributed it to Crittenden County, though, citing personal communication with Lucile M. McCook and stating that a voucher specimen exists in the Pullen Herbarium (MISS). However, this is a species of northeastern North America (Soreng 2007; Kartesz 2009) and it seems unlikely to occur in Arkansas.

Saccharum brevibarbe (Michx.) Pers. var. brevibarbe

short-beard plume grass

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this taxon to Arkansas, citing Smith (1988). It was also reported for Arkansas in the Checklist (AVFC 2006) based on Smith's report. Smith did include the taxon [as Erianthus brevibarbis Michx.] in the Arkansas flora, attributing it to Calhoun, Drew, Pulaski, and Saline counties and cited a Delzie Demaree specimen at the Missouri Botanical Garden Herbarium (MO). However, Smith also stated that he doubted the distinctness of this taxon from var. contortum [as Erianthus contortus Ell.]. Although a few Arkansas specimens have awns that are slightly less coiled (which varies even on the same plant), the awns are short and well within the range of the character for var. contortum (Webster 2003). Webster did state, though, that var. brevibarbe "is common in central and southern Arkansas." Obviously a more thorough assessment of Arkansas material is needed.

Schedonorus pratensis (Huds.) P.Beauv.

meadow fescue

This Eurasian species was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material, as well as on the reports by Darbyshire (2007), PLANTS Database (USDA 2008) and Kartesz (2009), which were, in turn, all seemingly based originally on the report by the Great Plains Flora Association (1977). However, all Arkansas Schedonorus specimens examined thus far are referable to S. arundinaceus. The reports by the Great Plains Flora Association seem dubious.

Tridens eragrostoides (Vasey & Scribn.) Nash

love grass tridens

This species was reported for Arkansas in the Checklist (AVFC 2006) based on the report by Valdés-Reyna (2003), who appeared to attribute it to Crittenden County, PLANTS Database (USDA 2008) and Kartesz (2009) attributed it to Phillips County, citing Smith (1988). Smith included the species in the Arkansas flora based solely on a Phillips County report by Richards (1985), but later Smith (1994) only included it as a possible addition to the flora. The Richards specimen could not be located during the present inventory and may have been redetermined. Furthermore, the primary range of this species appears to be well to the southwest of Arkansas (Valdés-Reyna 2003; Kartesz 2009), making an eastern Arkansas occurrence rather unlikely.

Urochloa plantaginea (Link) R.D.Webster

plantain signal grass

Kartesz (2009) attributed this African species to Arkansas, as did PLANTS Database (USDA 2008), which cited the University of North Carolina Herbarium (NCU) as the location of a voucher specimen. Wipff and Thompson (2003) did not attribute this species to Arkansas but rather showed it as introduced only in southern Louisiana, Alabama, Florida, and Georgia.

Zizania palustris L.

var. *palustris*

northern wild rice

PLANTS Database (USDA 2008) attributed this taxon to Arkansas, citing Tucker (1988). Tucker stated that var. palustris occurs as far south as Missouri, Arkansas, and Kansas. However, Yatskievych (1999) and Kartesz (2009) only attributed var. interior to Missouri, and Kartesz indicates that the range of the typic variety is far to the north of Arkansas. Terrell (2007) did not attribute the species to Arkansas but did show Missouri records on the species' distribution map, though it is unclear which variety they represent.

POTAMOGETONACEAE

Pondweed Family

Potamogeton epihydrus Raf.

ribbon-leaf pondweed

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited personal communication with Robert R. Haynes. Peck (2003) indicated that Haynes had no recollection of this communication, however. The species has been reported from a sinkhole pond in one county in southeastern Missouri (Yatskievych 1999) as well as from West Carroll Parish, Louisiana (Kartesz 2009), but otherwise primarily occurs in the northeastern United States and Great Lakes region (Haynes & Hellquist 2000b; Kartesz 2009). Haynes and Hellquist did not attribute it to Arkansas.

TRILLIACEAE

Trillium Family

Trillium texanum Buckley.

Texas trillium, Texas wakerobin

Case (2002) submerged this taxon into the typic variety of *T. pusillum* L., stating that it merely represented a "widely disjunct, regional population." Other recent authorities, however, have recognized it as distinct, either as a separate variety of *T. pusillum*, var. *texanum* (Buckl.) Reveal & Bloome (e.g., Diggs et al. 2006), or as elevated to species, *T. texanum* (e.g., Kartesz 2009). It has been reported from eastern Texas, including Cass County (Diggs et al. 2006; USDA 2008), as well as from Caddo Parish in northwestern Louisiana (USDA 2008; Kartesz 2009). Diggs et al. (2006) stated that it grows in "creek bottom bogs (baygalls) at the head of springs and seeps" and "acid hardwood bottoms and lower slopes." It likely occurs in similar habitats in extreme southwestern Arkansas and has even been attributed to Miller County by Freeman (1994) but without specific locality or voucher specimen information.

APPENDIX V

EXCLUDED TAXA

The following list includes taxa that were either attributed erroneously to Arkansas in the *Checklist* (AVFC 2006), by Smith (1988, 1994), or by others, or are taxa treated in those sources but which are not currently being recognized as valid.

ANGIOSPERMS (DICOTS)

ACANTHACEAE

Wild Petunia Family

Yeatesia viridiflora (Nees) Small

yellow bract-spike

Kartesz (2009) attributed this species to Dallas County, citing Sorrie and LeBlond (2008). However, the specimen they cited is actually from Dallas County, Alabama.

AMARANTHACEAE

Amaranth Family

Amaranthus arenicola I.M.Johnst.

sandhill amaranth, sandhill pigweed

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Thomas et al. (1991). Smith (1994) and the Arkansas Vascular Flora Committee (2006) also included it in the state flora based on the same report. However, the specimen cited by Thomas et al. actually represents material of *A. tuberculatus*. Although Mosyakin and Robertson (2003) attributed *A. arenicola* to Arkansas, they make note that some of the state references outside of the native range [central and southwestern Great Plains] might be based on misidentified *A. tuberculatus*. *Amaranthus arenicola* probably does not occur in Arkansas and should be excluded from the state flora.

Celosia cristata L.

crested cock's-comb

This tropical species was reported for Arkansas in the *Checklist* (AVFC 2006) based on misdetermined material of *C. argentea*.

ANACARDIACEAE

Sumac Family

Schinus terebinthifolius Raddi

Brazilian pepper-tree

Peck (2003) attributed this species to Arkansas; however, the voucher specimen cited was based on a single, cultivated individual plant that was later eradicated. This should not be considered a part of the Arkansas flora.

APIACEAE

Parsley Family

Berula erecta (Huds.) Coville

cut-leaf water-parsnip

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Demaree (1943). However, this plant of the western United States and Great Plains seems to approach Arkansas no closer than central Texas, northwestern Oklahoma, central Kansas (Kartesz 2009), and north-central Missouri (Yatskievych 2006, Kartesz 2009). Demaree's report is dubious and should probably be excluded from the state flora.

Zizia trifoliata (Michx.) Fernald

meadow Alexanders

This species was reported for Arkansas in the *Checklist* (AVFC 2006) based on misdetermined material of *Z. aurea*. Kartesz (2009) did attribute it to Arkansas County, though, citing Smith (1988). However, Smith did not include this species, so the source of Kartesz's report is unclear. Weakley (2008) cited Arkansas as within the range of this species, and PLANTS Database (USDA 2008) showed it for the state, citing the *North American Flora* series published by the New York Botanical Garden. The primary range of *Z. trifoliata*, however, is considerably east of Arkansas (Kartesz 2009) and it seems rather unlikely to occur in the state.

APOCYNACEAE

Dogbane Family

Amsonia ciliata Walter

var. ciliata

bluestar

Kartesz (2009) attributed this variety to Arkansas, as did PLANTS Database (USDA 2008), both citing Smith (1988). However, these were erroneous reports stemming from Smith's use of a similar varietal name, ciliolata (A.DC.) Lemke & Ayers, which apparently was never validly published. All Arkansas material of this species is referable to var. tenuifolia.

Asclepias sullivantii Engelm. ex A.Gray

prairie milkweed

This species was listed for Arkansas in the Checklist (AVFC 2006) based on a spurious report. The Jackson County voucher specimen cited by Smith (1988), and the basis for the reports by PLANTS Database (USDA 2008) and Kartesz (2009), was actually collected in Jackson County, Missouri. The only other Arkansas report was a notation on a reference card file in the University of Arkansas Herbarium (UARK) which stated that Ernest J. Palmer "saw," but did not collect a specimen near Fayetteville in Washington County on 12 June 1923, and that evidently John T. Buchholz collected it the following day. Despite this notation, however, there was no further record of such a specimen. Thus, this species has been excluded from the state flora. It does, however, seem quite possible in the prairies of northwestern Arkansas, having been reported from west-central Missouri (Kartesz 2009; Yatskievych 2006), southeastern Kansas, and northeastern Oklahoma, including Delaware County (Kartesz 2009).

Matelea obliqua (Jacq.) Woodson

climbing-milkweed

Yatskievych (2006) stated that this species had been reported for Arkansas but only after mentioning that previous reports for Missouri (Steyermark 1963; USDA 2008; Kartesz 2009) were either erroneous or remained unconfirmed. It seems that the primary range of this species is mainly southern Appalachian (Kartesz 2009), and thus it probably does not occur in Arkansas.

AQUIFOLIACEAE

Holly Family

Ilex glabra (L.) A.Gray

inkberry

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing an unpublished and undated Vascular Flora of the Southeastern United States, edited by Albert E. Radford et al. However, the primary range of this shrub extends along the coastal states from southeastern Louisiana to Maine (Kartesz 2009). It doubtfully occurs in Arkansas.

ASTERACEAE

Sunflower Family

Ageratina altissima (L.) R.M.King & H.Rob.

var. angustata (A.Gray) Clewell & Wooten

white snakeroot

PLANTS Database (USDA 2008) attributed this variety to Arkansas, citing Clewell and Wooten (1971). However, Nesom (2006a), Yatskievych (2006), and Kartesz (2009) all relegated it to synonymy with the typic variety. We are following the latter group in the present treatment.

Antennaria solitaria Rydb.

single-head pussytoes

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Arkansas. Bayer (2006) attributed it to Arkansas, but the listing was based on literature reports, not on an actual voucher specimen (Randall J. Bayer, pers. comm. 2007). Smith (1988) had stated that the species was shown for the southeastern half of the state by Bayer and Stebbins (1982), who did show the distribution as including eastern Arkansas but did not cite or reference any Arkansas specimens. It is likely that their mapped distribution for A. solitaria was inferred to include eastern Arkansas based on known records from western Tennessee, Mississippi, and eastern Louisiana rather than being supported by actual voucher specimens.

Astranthium integrifolium (Michx.) Nutt.

western daisy

PLANTS Database (USDA 2008) attributed this taxon [as subsp. integrifolium] to Arkansas, citing DeJong (1965), in addition to reporting A. ciliatum [as subsp. ciliatum (Raf.) DeJong] for the state. Smith (1988, 1994) treated Arkansas material as A. integrifolium, without reference to infraspecific taxa. However, based on Nesom's (2005, 2006c) taxonomic reassessment of the group, all Arkansas material is referable to A. ciliatum. Astranthium integrifolium occurs to the east of Arkansas (Nesom 2006c), primarily in Kentucky, central Tennessee, and northern Alabama (Kartesz

Berlandiera pumila (Michx.) Nutt.

var. scabrella G.L.Nesom & B.L.Turner

green-eyes, berlandiera

This name was misapplied in the Checklist (AVFC 2006) to plants from Miller County that are better treated as B. pumila var. pumila (Guy L. Nesom, pers. comm. 2007). Incidentally, in the present work we are following Nesom and Turner's (1998) treatment of the *B. pumila* complex.

Bidens beckii Torr. ex Spreng.

water-marigold

This species was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. It seems rather unlikely to occur in the state given its primary range in the northeastern United States and Great Lakes regions (Storther & Weedon 2006; Kartesz 2009).

Bidens polylepis S.F.Blake

tickseed-sunflower

Strother and Weedon (2006) attributed this species to Arkansas. However, we are following Lipscomb and Smith (1977), Smith (1988), Yatskievych (2006), and Kartesz (2009) in merging it with B. aristosa.

Cirsium horridulum Michx.

var. horridulum

yellow thistle

This variety was erroneously reported for Arkansas in the Checklist (AVFC 2006). The reports for Arkansas by Kartesz (2009) and PLANTS Database (USDA 2008) were apparently also in error. According to Keil's (2006b) treatment, Arkansas material is referable to var. *megacanthum*.

Diaperia verna (Raf.) Morefield

var. drummondii (Torr. & A.Gray) Morefield

rabbit-tobacco, cotton-rose

PLANTS Database (USDA 2008) attributed this variety [as Evax verna Raf. var. drummondii (Torr. & A.Gray) Kartesz & Gandhi] to Arkansas, citing personal communication with James D. Moorefield. However, Moorefield (2006) did not show this variety for the state.

Doellingeria umbellata (Mill.) Nees

parasol white-top aster, white flat-top aster

This name was misapplied in the Checklist (AVFC 2006) to Arkansas plants of D. sericocarpoides.

Erigeron quercifolius Lam. in Lam. & Poir.

southern fleabane

This name was misapplied in Arkansas by Smith (1988, 1994), and subsequently by the Arkansas Vascular Flora Committee (2006), PLANTS Database (USDA 2008), and Kartesz (2009), to plants of E. philadelphicus var. philadelphicus. Erigeron quercifolius is restricted to the extreme southeastern coastal United States from Virginia to Florida (Nesom 2006d) and is not to be expected in Arkansas.

Erigeron strigosus Muhl. ex Willd.

var. beyrichii (Fisch. & C.A.Mey.)

Torr. & A.Gray ex A.Gray

daisy fleabane

This variety was reported for Arkansas in the Checklist (AVFC 2006), and PLANTS Database (USDA 2008) attributed it to the state, citing Demaree (1943). However, in the present treatment we are following Nesom (2006d) and Kartesz (2009) in treating it as a synonym of the typic variety.

Eupatorium album L.

var. glandulosum (Michx.) DC.

boneset, white thoroughwort

This variety was reported for Arkansas in the Checklist (AVFC 2006) but is being treated as a synonym of the typic variety in the present treatment following Siripun and Schilling (2006) and Kartesz (2009).

Eupatorium hyssopifolium L.

var. calcaratum Fernald & B.G.Schub.

hyssop-leaf boneset

PLANTS Database (USDA 2008) attributed this variety, in addition to the typic variety, to Arkansas, citing Smith (1988). Smith had placed var. calcaratum in synonymy with var. hyssopifolium, though. Yatskievych (2006) recognized this variety as distinct, and reported it from southeastern Missouri, including Butler, Howell, and Ripley counties. In the present treatment, however, we are following Smith, Siripun and Schilling (2006), and Kartesz (2009) in placing var. calcaratum in synonymy with the typic variety.

Eurybia furcata (E.S.Burgess) G.L.Nesom

forked aster

The Arkansas Vascular Flora Committee (2006), Brouillet (2006), Yatskievych (2006), PLANTS Database (USDA 2008), and Kartesz (2009) all attributed this species to Arkansas. However, the only known voucher specimen, housed at the University of Arkansas Herbarium (UARK), and presumably the basis for all the above reports, actually represents material of E. macrophylla. Based on the Missouri distribution given by Yatskievych and Kartesz, E. furcata remains a possibility for northern Arkansas. It would most likely be found on moist limestone and dolomite ledges and bluffs or along the banks of streams (Brouillet 2006; Yatskievych 2006).

Galinsoga parviflora Cav.

var. parviflora

gallant-soldier

PLANTS Database (USDA 2008) attributed this tropical American taxon to Arkansas, citing Demaree (1943). However, neither Canne-Hilliker (2006) nor Kartesz (2009) attributed it to the state. It seems likely that Demaree's listing was based on misdetermined material of G. quadriradiata.

Gamochaeta falcata (Lam.) Cabrera

sickle cudweed

This name has been misapplied in North America, and thus in Arkansas (Smith 1988, 1994 [as Gnaphalium purupureum L. var. falcatum (Lam.) Torr. & A.Gray]; AVFC 2006; USDA 2008), to plants of G. antillana and G. calviceps (Nesom 2006e). Gamochaeta falcata is a South American species not presently known from North America (Nesom 2006e).

Hasteola suaveolens (L.) Pojark.

false Indian-plantain

This species was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. Smith (1988, 1994) listed it [as Cacalia suaveolens L.] as a possible addition to the flora. Yatskievych (2006) and Kartesz (2009) reported it for eastern and southeastern Missouri, including Butler County. It also approaches Arkansas in western Kentucky and western Tennessee (Kartesz 2009). Hasteola suaveolens is stated as growing in rich woods, on moist bluff bases, and along stream banks (Anderson 2006; Yatskievych 2006), and it may occur in suitable habitats in northeastern Arkansas.

Helianthus atrorubens L.

rosinweed sunflower

This name was misapplied in the Checklist (AVFC 2006) to plants of H. silphioides. Helianthus atrorubens occurs to the east of Arkansas (Schilling 2006; Kartesz 2009).

Heterotheca barbata (Rydb.) Semple

Spokane golden-aster

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing the University of North Carolina Herbarium (NCU) as the location of a voucher specimen. Semple (2006) questioned the status of this taxon but, regardless, attributed it only to the Spokane River Valley of Washington and Idaho. Kartesz (2009) also attributed it only to those two states. The PLANTS Database report is undoubtedly erroneous.

Hieracium marianum Willd.

Maryland hawkweed

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited personal communication with Guy L. Nesom. However, Peck (2003) indicated that Nesom did not recollect such a communication and suspected the report to be erroneous. Furthermore, Strother (2006c) stated that the type of H. marianum may be a cross between plants of H. venosum L. and either H. gronovii or H. scabrum. Given the generally more eastern distribution of H. marianum (Kartesz 2009), as well as the fact that H. venosum is not currently known from Arkansas, H. marianum seems unlikely to occur in the state.

Hymenopappus scabiosaeus L'Hér.

var. corymbosus (Torr. & A.Gray) B.L.Turner

old-plainsman

This variety was attributed to Arkansas by PLANTS Database (USDA 2008) and Kartesz (2009), both citing a report by the Great Plains Flora Association (1977). It was also reported for the state in the Checklist (AVFC 2006) based on the report by the Great Plains Flora Association. However, all Arkansas material observed thus far is referable to var. scabiosaeus. Furthermore, Strother (2006d) reported only var. scabiosaeus for the state. In light of the fact that the Great Plains Flora Association makes no mention of the typic variety, it seems probable that there was an error in reporting.

Liatris densispicata (Bush) Gaiser

var. interrupta Gaiser

gayfeather

PLANTS Database (USDA 2008) erroneously reported this taxon for Arkansas, citing Gaiser (1946a). However, Gaiser described var. interrupta as a variety of L. mucronata, not L. densispicata. Furthermore, Gaiser cited neither L. mucronata var. interrupta nor L. densispicata for Arkansas. Liatris mucronata var. interrupta is synonymous with L. mucronata var. mexicana Gaiser, which occurs in Mexico, New Mexico, Texas (Nesom 2006f; Kartesz 2009), and possibly Louisiana (Nesom 2006f). Nesom and Kartesz treated L. densispicata, cited by Gaiser as restricted to Minnesota, as a synonym of L. punctata var. punctata.

Liatris ligulistylis (A.Nelson) K.Schum.

gayfeather

Kartesz (2009) attributed this species to Carroll, Logan, and Marion counties, citing Smith (1988). However, Arkansas plants previously treated as this species are better treated as L. scariosa var. nieuwlandii. Liatris ligulistylis is a plant of the Rocky Mountains and northern Midwest (Nesom 2006f).

Liatris punctata Hook.

var. nebraskana Gaiser

dotted gayfeather

PLANTS Database (USDA 2008) recognized this variety and attributed it to Arkansas. However, Nesom (2006f) synonymized it under the typic variety, stating that "weak geographic trends exist" in the features used to distinguish var. nebraskana, and that "variability renders var. nebraskana largely typological and necessitates much arbitrary identification." Kartesz (2009) also placed it in synonymy with the typic variety.

Liatris spicata (L.) Willd.

var. spicata

florist's gayfeather

PLANTS Database (USDA 2008) and Kartesz (2009) [as L. spicata] attributed this taxon to Arkansas, citing Smith (1988). Smith included it [as L. spicata] in the Arkansas flora based solely on a Bradley County report by Leslie (1986). The taxon was subsequently reported for Arkansas in the Checklist (AVFC 2006) based on Leslie's report. Nesom (2006f) also attributed it to Arkansas, presumably based on Leslie's report as well, but stated that the report is probably based on garden plants or a garden escape. The Bradley County voucher specimen has not been located, and it is possible that it was redetermined. Given the dubious nature of the report, it seems best to exclude L. spicata var. spicata from the state flora.

Liatris ×spheroidea Michx.

gayfeather

 $\{L. aspera Michx. \times \}$

L. ligulistylis (A.Nelson) K.Schum.}

PLANTS Database (USDA 2008) treated this taxon as a distinct species and attributed it to Arkansas, citing Gaiser (1946b). Nesom (2006f) treated it as a hybrid involving L. aspera, as did Kartesz (2009), who attributed it to Carroll County, citing Gaiser. Gaiser considered the entity [as \times L. sphaeroidea] to be of hybrid origin and cited a Carroll County specimen collected by Ernest J. Palmer at the United States National Herbarium (US). Yatskievych (2006), on the other hand, treated the taxon as a direct synonym of L. aspera. Although there may be some confusion as to the proper treatment of this name, for the time being we are assuming this entity does not warrant recognition in the Arkansas flora.

Melampodium leucanthum Torr. & A.Gray

Plains blackfoot

This species was erroneously reported for Arkansas in the *Checklist* (AVFC 2006) [as *M. paludosum* Kunth], and apparently subsequently by Kartesz (2009), based on misdetermined material of *M. divaricatum*.

Pluchea odorata (L.) Cass. in F.Cuvier

var. succulenta (Fernald) Cronquist

sweetscent

This varietal name was misapplied to Arkansas plants of the typic variety by Smith (1988, 1994) and the Arkansas Vascular Flora Committee (2006). Variety *succulenta* is restricted to the northeastern United States (Nesom 2006g; Kartesz 2009) and is not to be expected in Arkansas.

Pyrrhopappus grandiflorus (Nutt.) Nutt.

false dandelion

Smith did not include this species in the Arkansas flora in his *Atlas* (1988) but did include it in his *Keys* (1994). Strother (2006f) merely stated that it "has been reported from Arkansas...." *Pyrrhopappus grandiflorus* was listed for Arkansas in the *Checklist* (AVFC 2006) based on a single misdetermined specimen. PLANTS Database (USDA 2008) attributed it to Arkansas, citing Turner and Kim (1990). However, Turner and Kim only showed the "approximate distribution" for *P. grandiflorus* as barely extending into northwestern Benton County. Their inclusion of Arkansas in the map appears to be an estimation of the possible range of the species rather than a report based on an actual observation or voucher specimen.

Rudbeckia fulgida Aiton

var. fulgida

orange coneflower

This variety was erroneously reported for Arkansas in the *Checklist* (AVFC 2006). It occurs to the east of the state (Urbatsch & Cox 2006; Kartesz 2009).

Rudbeckia hirta L.

var. angustifolia (T.V.Moore) Perdue

black-eyed Susan

This variety was reported for Arkansas in the *Checklist* (AVFC 2006) based on misdetermined material. It occurs on the Gulf Coastal Plain to the south of the state (Urbatsch & Cox 2006; Kartesz 2009).

Silphium integrifolium Michx.

var. deamii L.M.Perry

rosinweed

PLANTS Database (USDA 2008) treated this variety as distinct and attributed it to Arkansas, citing Demaree (1943). However, Yatskievych (2006) and Weakley (2008) both stated that it is not worthy of recognition and, along with Clevinger (2006) and Kartesz (2009), placed it in synonymy with the typic variety.

Silphium integrifolium Michx.

var. speciosum (Nutt.) Clevenger

rosinweed

This invalid varietal name was applied in the Checklist (AVFC 2006) to plants correctly called var. laeve.

Silphium scaberrimum Elliott

rough-leaf rosinweed

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). However, Smith excluded this as a "weak species" that should be merged with S. asteriscus var. asteriscus. Likewise, Clevinger (2006) and Kartesz (2009) both merged it with S. asteriscus var. asteriscus.

Solidago altissima L.

subsp. gilvocanescens (Rydb.) Semple

tall goldenrod

This taxon was erroneously reported for Arkansas in the Checklist (AVFC 2006). PLANTS Database (USDA 2008) also attributed it [as S. canadensis L. var. gilvocanescens Rydb.] to the state, citing Demaree (1943). However, this name has been misapplied in the state to material of subsp. altissima and should be excluded.

Solidago arguta Aiton

subsp. arguta

goldenrod

This taxon was erroneously reported for Arkansas in the Checklist (AVFC 2006). Kartesz (2009) attributed it [as var. arguta] to the state, as did PLANTS Database (USDA 2008), which cited Demaree (1943). However, all Arkansas material of this species observed thus far is referable to subsp. caroliniana var. boottii.

Solidago arguta Aiton

subsp. caroliniana (A.Gray) G.H.Morton

var. caroliniana A.Gray in A.Gray et al.

goldenrod

Although Smith (1988, 1994) [as the misapplied and orthographic variant name var. bootii (Hook.) Palmer & Steverm.], Semple and Cook (2006), PLANTS Database (USDA 2008), and Kartesz (2009) all attributed this variety to Arkansas, upon thorough study of Arkansas specimens of this species, var. caroliniana apparently does not occur in the state. The range of this variety appears to be well east of the state (Kartesz 2009).

Solidago arguta Aiton

var. neurolepis (Fernald) Steyerm.

goldenrod

Kartesz (2009) attributed this variety to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). However, Yatskievych (2006) explained that the type specimen is probably of hybrid origin. Also, Semple and Cook (2006) did not mention the taxon. Thus, it doubtfully deserves recognition in the state flora.

Solidago bicolor L.

white goldenrod, silverrod

The Garland County specimen cited by Orzell and Bridges (1987), and the basis for the Arkansas reports by Smith (1988), Semple and Cook (2006), the Arkansas Vascular Flora Committee (2006), PLANTS Database (USDA 2008), Kartesz (2009), and probably Cronquist (1980), actually represents misdetermined material of S. hispida. Solidago bicolor generally occurs well northeast of Arkansas (Kartesz 2009) and is not to be expected in the state.

Solidago canadensis L.

var. hargeri Fernald

Canadian goldenrod

This taxon was erroneously reported for Arkansas in the Checklist (AVFC 2006) based on material of S. altissma subsp. alstissima. Solidago canadensis occurs to the north of the state (Semple & Cook 2006; Kartesz 2009).

Solidago curtisii Torr. & A.Gray

var. curtisii

Curtis' goldenrod

This taxon was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material.

Solidago squarrosa Nutt.

goldenrod

This species was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. It occurs in the northeastern United States (Semple & Cook 2006; Kartesz 2006) and is not to be expected in Arkansas.

Symphyotrichum shortii (Lindl.) G.L.Nesom

Short's aster

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Montgomery and Newton counties, citing Smith (1988). Although Smith acknowledged that the speices [as Aster shortii Lindl.] had been reported for Arkanas by Cronquist (1980), he initially excluded it from the state flora, stating that it was "perhaps in the state, but so similar to A. oolentangiensis that it should perhaps be lumped with that species." However, prior to publication Smith added Aster shortii to the flora, citing the Montgomery and Newton county reports by Orzell and Bridges (1987), although he did imply that the Arkansas plants could be based on hybrid material. Symphyotrichum shortii was also attributed to Arkansas by the Arkansas Vascular Flora Committee (2006) and Brouillet et al. (2006) based on the aforementioned reports. However, upon further review of the specimens, as well as after communication with Guy L. Nesom (pers. comm. 2008), it was concluded that the Arkansas material formerly attributed to S. shortii was referable either to different species or possible hybrids. The primary range of this species is generally well east and northeast of Arkansas (Kartesz 2009) and probably not to be expected in the state.

Symphyotrichum tradescantii (L.) G.L.Nesom

Tradescant's aster

This species was erroneously reported for Arkansas in the Checklist (AVFC 2006). It occurs in New England and adjacent Canada (Brouillet et al. 2006; Kartesz 2009) and is not to be expected in Arkansas.

Tetraneuris scaposa (DC.) Greene

var. scaposa

bitterweed

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this taxon to Prairie County, citing Smith (1988). Smith included it [as Hymenoxys scaposa (DC.) Parker var. glabra (Nutt.) Parker] in the Arkansas flora based solely on a Prairie County report by the Great Plains Flora Association (1977). However, Smith (1994) later excluded the taxon from the flora. Furthermore, Bierner and Turner (2006) did not attribute it to the state. An Arkansas occurrence, especially in the eastern part of the state, would be considerably disjunct from the primary range of this species: central Texas, central Oklahoma, central Kansas, and southwestern Nebraska, west to New Mexico and Colorado (Great Plains Flora Association 1977; Kartesz 2009). The original report was likely in error, and thus should probably be excluded from the state flora.

Verbesina occidentalis (L.) Walter

yellow crownbeard

This species was erroneously reported for Arkansas in the Checklist (AVFC 2006). It generally occurs well to the east of Arkansas (Kartesz 2009), and is probably not to be expected in the state.

Vernonia fasciculata Michx.

prairie ironweed

This name has been misapplied to Arkansas specimens from the Ouachita Mountains (Smith 1988, 1994; AVFC 2006; USDA 2008; Kartesz 2009) that represent hybrid material of V. lettermannii with other species. Vernonia fasciculata occurs in "bottomlands, ditches, [and] low prairies" (Strother 2006g) of the Midwest, approaching Arkansas in southeastern Kansas and southern Missouri (Yatskievych 2006; Kartesz 2009) but has yet to be documented in Arkansas.

Vernonia marginata (Torr.) Raf.

Plains ironweed

This species was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. It is a plant of the southwestern United States and Mexico (Strother 2006g; Kartesz 2009) and is not to be expected in Arkansas.

BORAGINACEAE

Borage Family

Cynoglossum amabile Stapf. & J.R.Drumm.

Chinese hound's-tongue

This eastern Asian species has long been reported for southwestern Arkansas (Smith 1988, 1994; AVFC 2006; USDA 2008; Kartesz 2009), as well as adjacent southeastern Oklahoma (Waterfall 1979; Kartesz 2009). However, apparently identical plants in adjacent Louisiana, and possibly several other southern states, have been called C. zeylanicum [or the possible synonym C. furcatum Wall.] (USDA 2008; Kartesz 2009). It is not entirely clear at this point what name is correctly applied to Arkansas material, but based on circumstantial evidence as well as the descriptions and keys in Flora of China (eFloras 2012) it appears that C. amabile, a frequently cultivated plant, evidently has larger and showier corollas and larger nutlets than C. zeylancium [C. furcatum]. Thus, the Arkansas material, with rather small corollas, seems better referable to C. zeylanicum [C. furcatum]. These plants and this issue certainly require further

investigation, but for the time being we are treating the Arkansas specimens as C. zeylanicum and excluding C. amabile.

Heliotropium europaeum L.

European heliotrope

This Eurasian and northern African species was included in the Arkansas flora by Smith (1988), and subsequently by the Arkansas Vascular Flora Committee (2006), PLANTS Database (USDA 2008), and Kartesz (2009), based on misdetermined material of *H. procumbens*.

Hydrophyllum macrophyllum Nutt.

large-leaf waterleaf

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Arkansas, citing Smith (1988). However, Smith had misapplied the name to specimens of various other species, including the subsequently described H. brownei. Hydrophyllum macrophyllum occurs to the northeast of Arkansas (Kartesz 2009) and is not to be expected in the state.

Phacelia dubia (L.) Trel.

var. dubia

small-flower scorpion-weed

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited an unpublished and undated Vascular Flora of the Southeastern United States, edited by Albert E. Radford et al. However, its range is generally well east of Arkansas (Kartesz 2009), and it seems rather unlikely to occur in the state.

BRASSICACEAE

Mustard Family

Cardamine diphylla (Michx.) A.W.Wood

crinkleroot

This species has been erroneously attributed to Arkansas, Harriman (1965) cited a Yell County specimen in his unpublished dissertation on the genus Dentaria [now treated within the genus Cardamine]. This Arkansas report was later cited by Al-Shehbaz (1988), mentioned by Yatskievych (2006), as well as incorporated into PLANTS Database (USDA 2008) and Kartesz's Floristic Synthesis of North America (2009). It was also the basis for the Arkansas report of the species in the Checklist (AVFC 2006) and likely the Arkansas report by Al-Shehbaz et al. (2010). However, upon further investigation it was discovered that Edwin B. Smith had reviewed the specimen cited by Harriman and found that, not only did it represent material of *C. concatenata*, but it had actually been annotated as such by Harriman himself [as Dentaria laciniata], contrary to the report in his dissertation (Smith 1982). Although widespread in the northeastern United States, southward through the Appalachians (Al-Shehbaz 1988; Kartesz 2009), C. diphylla reproduces almost exclusively asexually (Al-Shehbaz 1988) and approaches Arkansas only as close as central Tennessee and northern Alabama. It doubtfully is to be expected in the state.

CACTACEAE

Cactus Family

Escobaria orcuttii Boed.

Orcutt's fox-tail cactus

PLANTS Database (USDA 2008) erroneously attributed this species to Arkansas, citing Anderson (2001). Anderson did not, however, report this species for the state. On the contrary, the species is appartenly restricted to southern Arizona, southern New Mexico, southwestern Texas, and Mexico (Anderson 2001; Zimmerman & Parfitt 2003 [as Coryphantha sneedii (Britton & Rose) A.Berger]; Kartesz 2009) and is not to be expected in Arkansas.

CAPRIFOLIACEAE

Honeysuckle Family

Lonicera albiflora Torr. & A.Gray

western white honeysuckle

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988), However, Smith (1988) excluded it, stating that previous reports for the state were likely based on Arkansas Territory records, and thus probably from present-day Oklahoma.

Lonicera dioica L.

limber honeysuckle

This species was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. PLANTS Database (USDA 2008) and Kartesz (2009) attributed it to the state, citing Smith (1988), Smith, however, treated L. flava as conspecific with L. dioica, thus calling all Arkansas material L. dioica. The two taxa are generally considered quite distinct (Yatskievych 2006; Weakley 2008), though, and L. dioica generally has a much more northern and northeastern United States distribution (Kartesz 2009). Although L. dioica is reported as far south as Missouri (Yatskievych 2006; Kartesz 2009), no representative specimens have yet been observed from Arkansas.

Lonicera reticulata Raf.

grape honeysuckle

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). Additionally, Weakley (2008) included Arkansas as within its range. However, all material previously labeled as this species in Arkansas is referable to L. flava. Lonicera reticulata generally has a more northern distribution, though it is reported as approaching Arkansas in Missouri (Yatskievych 2006; Kartesz 2009).

Triosteum aurantiacum E.P.Bicknell

var. aurantiacum

horse-gentian

PLANTS Database (USDA 2008) attributed this taxon to Arkansas, citing Smith (1988). However, Smith had misapplied the name T. perfoliatum var. aurantiacum, a synonym of T. aurantiacum var. aurantiacum, to Arkansas material of T. aurantiacum var. illinoense, as well as to some material of T. perfoliatum. The typic variety of T. aurantiacum occurs well to the north and northeast of Arkansas (Kartesz 2009) and is not to be expected in the state.

CARYOPHYLLACEAE

Pink Family

Cerastium arvense L.

subsp. *strictum* Gaudin

field mouse-ear chickweed

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this taxon to Newton County, citing Smith (1988). However, the material to which Smith (1988) applied the name C. arvense is better treated as C. velutinum var. velutinum (Morton 2005a).

Dianthus deltoides L.

subsp. deltoides

maiden pink

Smith (1988) included this European taxon in the Arkansas flora based on a report by Richards (1985) for Clay County and an additional report for Carroll County. However, the report by Richards was based on a misdetermined specimen, and a Carroll County voucher specimen has not been located. Rabeler and Hartman (2005) and Yatskievych (2006) attributed this taxon to Arkansas, but their reports are likely based on Smith. PLANTS Database (USDA 2008) and Kartesz (2009) both attributed it to Carroll and Clay counties, citing Smith, but Kartesz also showed it for Sevier County based on a report originating from the University of Arkansas Herbarium (UARK). However, no specimen has been located at UARK, thus the record is assumed erroneous.

Minuartia godfrevi (Shinners) McNeill

Godfrey's sandwort

Smith (1988) included this species [as Arenaria godfrevi Shinners] in the Arkansas flora, citing a Drew County report by Kral (1983). PLANTS Database (USDA 2008) and Kartesz (2009) attributed it to Drew County, citing Smith, but Kartesz also showed it for Polk County, citing a University of Arkansas Herbarium (UARK) report. Additionally, Rabeler et al. (2005) and Weakley (2008) also attributed the species to Arkansas. However, these reports have proven erroneous, all based on misdetermined material of M. muscorum (Richard K. Rabeler, pers. comm. 2007; Theo Witsell, pers. comm. 2007). Minuartia godfreyi, an extremely rare species of the southeastern United States, is not currently known from west of Alabama, and is probably not to be expected in Arkansas (Richard K. Rabeler, pers. comm. 2007).

Paronychia fastigiata (Raf.) Fernald

var. paleacea Fernald

forked-chickweed, hairy forked nailwort

PLANTS Database (USDA 2008) recognized this variety and attributed it to Arkansas. Weakley (2008) also recognized it, and the range he gave for it could include Arkansas. However, in the present treatment we are following Hartman et al. (2005b) and Kartesz (2009) in merging it with the typic variety.

CELASTRACEAE

Bittersweet Family

Euonymus kiautschovicus Loes.

creeping strawberry-bush

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). Kartesz (2009) also attributed it to the state, specifically Crittenden County, citing Smith. However, although it had been reported for Crittenden County by Wilcox (1973), Smith excluded the taxon, stating that it was "a cultivated species, not known to escape in Arkansas." It was subsequently reported for Arkansas in the Checklist (AVFC 2006) based on a Crittenden County specimen that has since been redetermined as *E. fortunei*.

CHENOPODIACEAE

Goosefoot Family

Dysphania botrys (L.) Mosyakin & Clemants

Jerusalem-oak, feather-geranium

Kartesz (2009) attributed this Eurasian species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). Although all the University of Arkansas Herbarium (UARK) material had been annotated to Chenopodium pumilio R.Br., Smith included Dysphania botrys [as Chenopodium botrys L.] in the flora, merely stating that it "probably does occur in Arkansas." Clemants and Mosyakin (2003b) did not attribute it to the state but did show it for northern Louisiana and southern Missouri. It was listed for Arkansas in the Checklist (AVFC 2006) based on a report [as Chenopodium bortys] by Buchholz and Palmer (1926) for Marion County. However, it seems likely that this record was also based on a misdetermined material of D. pumilio.

CONVOLVULACEAE

Morning-glory Family

Calystegia catesbeiana Pursh

Catesby's bindweed

This species was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. Its range is well east of Arkansas (USDA 2008; Weakley 2008; Kartesz 2009) and it is not to be expected in the state.

Calystegia sepium (L.) R.Br.

subsp. americana (Sims) Brummitt

hedge bindweed

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this subspecies to Arkansas, citing Smith (1988). However, all Arkansas material of this species observed thus far seems referable to subsp. angulata.

Cuscuta rostrata Shuttlw. ex Engelm. & A.Gray

beaked dodder, Appalachian dodder

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), both based on misidentified specimens at the University of North Carolina Herbarium (NCU). A southern Appalachian endemic (Weakley 2008), C. rostrata is not likely to occur in Arkansas.

Ipomoea cairica (L.) Sweet

mile-a-minute-vine

Kartesz (2009) attributed this African species to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). These reports are almost certainly based on material of *I. wrightii*, which Smith (1988) stated has been previously misreported in Arkansas as *I. cairica* (L.) House.

Ipomoea ×leucantha Jacq.

hybrid morning-glory

{I. cordatotriloba Dennst. × I. lacunosa L.}

This introgressive hybrid was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material.

CUCURBITACEAE

Gourd Family

Cucurbita pepo L.

subsp. ovifera (L.) D.S.Decker

var. ovifera (L.) Harz

gourd

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this taxon [as C. pepo var. ovifera] to Arkansas, citing Smith (1988). However, Arkansas specimens of this species actually correspond to either var. ozarkana or var. texana, neither of which Smith recognized. The cultivated gourd is not represented in the state by voucher specimens of escaped material.

Echinocystis lobata (Michx.) Torr. & A.Gray

wild cucumber

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). It was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. Smith (1988) listed it as a possible addition to the flora, stating that there was a single specimen at the University of Arkansas Herbarium (UARK) from Pulaski County that "perhaps represent[ed] a local escape." However, that specimen has not been relocated, and given the lack of a voucher specimen, it seems best to exclude the species from the state flora.

Lagenaria siceraria (Molina) Standl.

bottle gourd, calabash

Kartesz (2009) attributed this African species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). Smith, however, merely listed it as a possible addition to the flora, stating that it "probably appear[s] occasionally as a waif" and possibly escapes locally. However, no voucher specimens have been observed to support this claim. Thus it should be excluded from the state flora.

DROSERACEAE

Sundew Family

Drosera intermedia Hayne

spoon-leaf sundew

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). However, Smith excluded the species, stating that the Conway County report (Moore 1965) was likely based on material of D. brevifolia. Drosera intermedia apparently approaches Arkansas no closer than southeastern Louisiana (Kartesz 2009) and doubtfully occurs in the state.

ELATINACEAE

Waterwort Family

Elatine americana (Pursh) Arn.

waterwort

Kartesz (2009) attributed this species to Arkansas, almost certainly based on the reports of E. triandra by Marsico (2005) and the Arkansas Vascular Flora Committee (2006). However, the basis for both of those reports, a single Arkansas specimen from Montgomery County, clearly fits the description of E. rubella (Weakley 2008).

Elatine triandra Schkuhr

waterwort

This name was misapplied by Marsico (2005) and the Arkansas Vascular Flora Committee (2006) to the only known Arkansas Elatine specimen. The Montgomery County specimen clearly fits the description of E. rubella (Weakley 2008), a North American native species (Weakley 2008; Kartesz 2009). Elatine triandra, strictly defined, is a Eurasian species known only in the United States from New England (Kartesz 2009) and possibly Missouri (Yatskievych 2006).

ERICACEAE

Heath Family

Oxydendrum arboreum (L.) DC. in DC. & A.DC.

sourwood

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). However, Smith actually excluded it from the state flora. Oxydendrum arboreum does approach Arkansas in Louisiana, Mississippi, and Tennessee (Kartesz 2009; Judd 2009) and may possibly be found in eastern or southeastern Arkansas but has yet to be documented from the state.

Rhododendron oblongifolium (Small) Millais

Texas azalea

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). However, Smith (1988) treated it as a synonym of R. viscosum. In the present treatment we are following Smith, as well as Judd and Kron (2009), who also place R. oblongifolium in synonymy with R. viscosum, stating that R. viscosum is a variable species that has been divided into as many as four different species as well as several minor varieties and forms, but that "[b]ecause correlated or geographically coherent sets of character states cannot be discerned within this species," infraspecific taxa cannot be recognized.

EUPHORBIACEAE

Spurge Family

Euphorbia hyssopifolia L.

hyssop-leaf sandmat

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Wheeler (1941). However, Wheeler did not attribute the species to Arkansas.

Euphorbia obtusata Pursh

blunt-leaf spurge

Yatskievych (2006) recognized this taxon as distinct and reported it from Missouri, including Barry, Howell, Oregon, and Ripley counties. Weakley (2008) also recognized it as distinct and lists a range that seems to include Arkansas. However, other authorities merge this entity with *E. spathulata* (Great Plains Flora Association 1986; Smith 1988; Kartesz 2009). Further investigation is needed in order to determine the distinctness of *E. obtusata* in Arkansas, but for now we are following the latter group and including it within *E. spathulata*.

Euphorbia pubentissima Michx.

false flowering spurge

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). However, this taxon apparently exists to the east and southeast of Arkansas (Yatskievych 2006; Weakley 2008), and is likely reported for the state based on the misapplication of one or more of its synonyms (Yatskievych 2006).

Euphorbia tetrapora Engelm.

weak spurge

This species was reported for Arkansas in the *Checklist* (AVFC 2006) based on material of a new species currently being described from the Ouachita Mountains of Arkansas and Oklahoma (Mark H. Mayfield, pers. comm. 2007). *Euphorbia tetrapora* is reported, though, from "sandy woods and fields" (Diggs et al. 1999) in eastern Texas and western Louisiana, including Caddo Parish (Kartesz 2009) and remains a possibility in the Gulf Coastal Plain of Arkansas.

FABACEAE Bean Family

Abrus precatorius L.

rosary-pea

PLANTS Database (USDA 2008) attributed this tropical African and Asian species to Arkansas, citing Isely (1998). However, the report is based on an error in Isely's (1998) map in which the symbols for *A. precatorius* and *Amorpha nitens* are transposed. *Abrus precatorius* is only known in the United States from peninsular Florida (Isely 1998; Kartesz 2009), and is not to be expected in Arkansas.

Canavalia ensiformis (L.) DC.

wonder-bean, Jack-bean

Kartesz (2009) attributed this tropical American species to Arkansas, as did PLANTS Database (USDA 2008), which cited Sauer (1964). Peck (2003) also attributed it to the state, referencing Sauer. Sauer did cite two Arkansas voucher specimens of this species: one at the Gray Herbarium (GH) and the other in the Herbarium of the Field Museum of Natural History (F). There are also several specimens in the University of Arkansas Herbarium (UARK), but all are obviously of cultivated material. Isely (1998) stated that he had not seen definitive specimens of non-cultivated material outside of Florida. It stands to reason that the specimens cited by Sauer are likely of cultivated material as well, and that the species should probably be excluded from the state flora.

Codariocalyx gyroides (Roxb. ex Link) Hassk.

false tick-trefoil

Kartesz (2009) attributed this Asian species to Arkansas, apparently based on reports of the native *Desmodium ciliare*. *Codariocalyx gyroides*, though, has supposedly not been documented from the United States (Isely 1998; USDA 2008).

Crotalaria rotundifolia (Walter) Walter ex J.F.Gmel.

rabbitbells

This species was reported for Arkansas by Thomas et al. (1991) [as *C. angulata* Miller], Smith (1994) [as *C. angulata*], and subsequently by PLANTS Database (USDA 2008) and Kartesz (2009), based on misdetermined material of *C. sagittalis. Crotalaria rotundifolia* approaches Arkansas no closer than southeastern Louisiana and southern Mississippi (Isely 1998; Kartesz 2009) and doubtfully occurs in the state.

Dalea compacta Spreng.

var. pubescens (A.Gray) Barneby

prairie-clover

The Hempstead County voucher specimen of this variety cited by Orzell and Bridges (1987), which also served as the basis for the Arkansas reports by Smith (1988), the Arkansas Vascular Flora Committee (2006), PLANTS Database (USDA 2008), and Kartesz (2009), has since been redetermined as *D. purpurea* var. *purpurea*. The Arkansas Natural Heritage Commission had a report of another specimen from Little River County in the Arkansas Heritage Program database, but the voucher specimen cannot be located and remains unconfirmed (Theo Witsell, pers. comm. 2009). Therefore, *Dalea compacta* var. *pubescens* should probably be excluded from the state flora for now. However, it is reported from northwestern Louisiana, including Caddo Parish, southern Oklahoma, and eastern Texas (Isely 1998; Kartesz 2009) and may occur in southwestern Arkansas.

Galactia regularis (L.) Britton, Sterns & Poggenb.

milk-pea

There is considerable confusion between this taxon and G. volubilis due to unstable nomenclatural application. Both are members of a closely related group of taxa within the genus in the southeastern United States. Traditionally, it seems that the name G. volubilis was most often applied to the more widespread entity that spans from New York to Florida, west to Kansas, Oklahoma, and Texas. The name G. regularis, therefore, was most often applied to the entity more restricted to the outer coastal plain. Duncan (1979) studied the group and concluded that the name G. regularis was better applied to the more widespread entity, and that the more restricted entity actually consisted of several taxa, including G. glabella Michx. and G. volubilis. The Great Plains Flora Association (1986) and Smith (1988, 1994) followed Duncan's interpretation. Thus all Arkansas material was called G. regularis. The application of the names, however, was not settled by Duncan's work. Even among more recent manuals one or the other name may be applied to the same plant; hence the report of both taxa for Arkansas in the Checklist (AVFC 2006). Weakley (2008) basically follows Duncan, although he does not separate G. glabella from G. volubilis. Diggs et al. (1999) and Isely (1998) treat the more widespread entity (and, therefore, Arkansas material) as G. volubilis, but even Isely's treatment lends itself to some confusion. Using Isely's key, all Arkansas material examined thus far keys to G. volubilis. This is supported by his description of the range of this taxon, as well as by his description of the range of the more restricted G. regularis, which he stated as ranging from southeastern New York and southeastern Pennsylvania, south to Florida, and west to southern Mississippi (Isely 1998). The confusion lies in the fact that his map shows both taxa in Arkansas [as well as in Louisiana]. At least a portion of the G. regularis map may be in error, though, as some of the distribution [including the Arkansas dots] correspond to the distribution map for Duncan's G. regularis [Isely's G. volubilis]. On an additional note, PLANTS Database (USDA 2008) and Kartesz (2009) attributed both taxa to Arkansas, but their maps seem generally confused as well. After close examination of Arkansas material, it appears that only one entity is represented in the state, and, without having studied the type material ourselves, we choose to follow Isely's keys, descriptions, and described ranges of the two taxa [while assuming his map for G. regularis is erroneous], thus recognizing only G. volubilis for the state.

 $Lathyrus\ ochroleucus\ Hook.$

cream-pea, cream vetchling

This northern North American species (Isely 1998; Kartesz 2009) was erroneously reported for Arkansas in the *Checklist* (AVFC 2006).

Lespedeza intermedia (S.Watson ex A.Gray) Britton

bush-clover

Specimens treated by Smith (1988, 1994), the Arkansas Vascular Flora Committee (2006), and many other regional floras (e.g., Isely 1998) as *L. intermedia* are actually correctly referable to *L. violacea*, a name which the aforementioned authorities misapplied to plants correctly called *L. frutescens*.

Pediomelum hypogaeum (Nutt. ex Torr. & A.Gray) Rydb.

var. scaposum (A.Gray) Mahler

buried Indian-breadroot

Orzell and Bridges (1987) reported this taxon [as subsp. *scaposum* (Gray) Ockendon] for Miller County but stated that the voucher specimen seemed to have mixed characters. However, Smith (1988) postulated that the specimen probably represented var. *subulatum* [as *Psoralea subulata* Bush], and thus did not include var. *scaposum* in the state flora. Furthermore, Isely (1998), Diggs et al. (1999), and Kartesz (2009) all treated var. *scaposum* as endemic to central and north-central Texas.

Prosopis juliflora (Sw.) DC.

mesquite

Kartesz (2009) attributed this tropical American species to Pulaski County [the only record for the contiguous United States], citing Smith (1988). However, the specimen mentioned by Smith actually represents material of *P. glandulosa* var. *glandulosa*, which, incidentally, Kartesz also showed for Pulaski County, citing Smith.

Trifolium hirtum All.

rose clover

This Eurasian species was reported for Arkansas in the *Checklist* (AVFC 2006), and subsequently by Kartesz (2009), based on misdetermined material.

Vicia cracca L.

var. cracca

tufted vetch

PLANTS Database (USDA 2008) attributed this European taxon to Arkansas, citing Smith (1988). However, although it had been listed for the state by Demaree (1943), Smith excluded it as "probably not in the state." Furthermore, Kartesz (2009) did not attribute it to Arkansas.

HALORAGACEAE

Water-milfoil Family

Myriophyllum verticillatum L.

whorled water-milfoil

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing an unpublished and undated *Vascular Flora of the Southeastern United States*, edited by Albert E. Radford et al. However, its range is generally well north of Arkansas (Kartesz 2009), and it seems rather unlikely to occur in the state.

HYDRANGEACEAE

Hydrangea Family

Philadelphus sharpianus Hu

Sharp's mock orange

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Demaree (1943), and Kartesz (2009) showed it for Van Buren County, citing Hu (1954 [presumably 1956]). Some authorities (e.g., Tucker 1976; Smith 1988; Weakley 2008), though, believe that this entity is probably better treated as a form of *P. hirsutus*. We are in agreement with the latter group.

JUGLANDACEAE

Walnut Family

Carva ovalis (Wangenh.) Sarg.

red hickory

PLANTS Database (USDA 2008) attributed this taxon to Arkansas, citing Smith (1988). Smith did recognize this entity but as a variety of *C. glabra* [var. *odorata* (Wangenh.) K.Koch]. However, some authorities (e.g., Stone 1997; Kartesz 2009) treat this entity as merely a form of *C. glabra*. We are following the latter group in the present treatment.

KRAMERIACEAE

Ratany Family

Krameria lanceolata Torr.

trailing ratany

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). As Peck (2003) stated, though, it is probable that the report was ultimately based on a Thomas Nuttall specimen from Oklahoma, part of Arkansas Territory during his time, or even a C.W. Short specimen at the Missouri Botanical Garden Herbarium (MO) collected on the "Arkansas [River] at Leavenworth," which also falls within Oklahoma. The range of this species is generally to the west of the Arkansas (Kartesz 2009), although it is reported in McCurtain County, Oklahoma, and thus may occur in southwestern Arkansas.

LAMIACEAE

Mint Family

Clinopodium glabellum (Michx.) Kuntz

calamint

This species was cited for Arkansas by Weakley (2008). However, this is evidently a taxon of north-central Kentucky, central Tennessee, and northern Alabama (Kartesz 2009). There apparently has been some confusion between this taxon and *C. arkansanum*. Evidently, broad-leaf forms ["probably environmentally induced" (Smith 1988)] of *C. arkansanum* superficially resemble *C. glabellum*.

Clinopodium vulgare L.

wild basil

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Demaree (1943). This report is likely erroneous, though, as the primary range of this species seems to be well northeast of Arkansas (Kartesz 2009).

Hedeoma drummondii Benth.

false pennyroyal

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing the Arkansas Heritage Program. However, this report is almost certainly based on the Arkansas record of H. reverchonii var. reverchonii [synonym: H. drummondii var. reverchonii], which PLANTS Database did not attribute to the state. Hedeoma drummondii occurs primarily to the west of Arkansas (Kartesz 2009) and probably does not occur in the state.

Lamium maculatum L.

spotted dead-nettle

Kartesz (2009) attributed this species to Arkansas, likely based on the Arkansas report in the Checklist (AVFC 2006). However, this name was misapplied in the Checklist to apparent waif material of Lamiastrum galeobdolon (L.) Ehrend. & Polatschek.

Monarda fistulosa L.

var. fistulosa

beebalm, wild bergamot

This variety has been variously reported for Arkansas (e.g., Great Plains Flora Association 1977; AVFC 2006; USDA 2008; Kartesz 2009). However, we are following Weakley (2008) in his interpretation of the varietal limits of M. fistulosa. Accordingly, the typic variety, restricted to the Appalachians, has only spreading hairs. Thus, Arkansas material, with its canescent pubescence, is better treated as var. mollis.

Monarda lindheimeri Engelm. & A.Gray ex A.Gray

Lindheimer's beebalm

Arkansas material previously attributed to this species (AVFC 2006; Kartesz 2009) is referable to the recently described M. luteola (Singhurst & Holmes 2011).

Origanum vulgare L.

wild marjoram

Smith (1994) included this cultivated Eurasian species in the Arkansas flora based on a specimen at the University of Arkansas Herbarium (UARK) that was accidentally transplanted to a different site with some topsoil from a persistent plant at an old home site. Kartesz (2009) attributed the species to the state, though, as did PLANTS Database (USDA 2008), which cited Demaree (1943). However, the basis for Demaree's report is unknown. The species should probably be excluded from the state flora until a truly naturalized voucher specimen is located.

Prunella vulgaris L.

subsp. vulgaris

heal-all, self-heal

This Eurasian subspecies was erroneously reported for Arkansas in the Checklist (AVFC 2006), and subsequently by Kartesz (2009), based on misdetermined material of subsp. lanceolata.

Scutellaria incana Biehler

var. punctata (Chapm.) C.Mohr

hoary skullcap

Kartesz (2009) attributed this variety to Arkansas, as did PLANTS Database (USDA 2008), which cited Fernald (1950). However, all Arkansas specimens of S. incana observed thus far are referable to the typic variety. Furthermore, Weakley (2008) stated that var. punctata is a southern Appalachian endemic.

Stachys cordata Riddell

heart-leaf hedge-nettle

Kartesz (2009) attributed this species to Logan, Montgomery, and Polk counties, citing Nelson (1975). PLANTS Database (USDA 2008) also attributed it to the state, citing Demaree (1943). However, these records are almost certainly based on the recently described S. iltisii (Nelson 2008). The primary range of S. cordata is well east of Arkansas (Kartesz 2009) and it is doubtfully expected in the state.

Stachys eplingii J.Nelson

Epling's hedge-nettle

Arkansas material previously treated as this species (Smith 1988, 1994; AFVC 2006; USDA 2008; Kartesz 2009) has recently been referred to the newly described S. iltisii (Nelson 2008). Stachys eplingii is restricted to the southern Appalachian Mountains (Neslon 2008) and is not to be expected in Arkansas.

LINACEAE Flax Family

Linum rigidum Pursh

var. rigidum

yellow flax

PLANTS Database (USDA 2008) attributed this taxon to Arkansas, citing Demaree (1943). However, the primary range of this taxon appears to be well west of Arkansas, in the central and northern Great Plains, approaching Arkansas no closer than central Oklahoma (Kartesz 2009; Rogers 1968). Demaree's report was likely in reference to L. rigidum var. berlandieri. Variety rigidum is probably not to be expected in the state.

Linum virginianum L.

woodland flax, Virginia yellow flax

This species was listed for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. It is reported, though, from southern Missouri, including Howell, McDonald, Oregon, and Ozark counties (Kartesz 2009) and thus could possibly occur in northern Arkansas.

MALVACEAE **Mallow Family**

Althaea officinalis L.

marsh-mallow

Kartesz (2009) attributed this European species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). However, although it had been listed for the state by Demaree (1943), Smith excluded it from the flora, stating that "this cultivated species persists in old gardens around old homesteads, but does not really escape in the state." No Arkansas voucher specimens have been located for this species.

MYRSINACEAE **Colicwood Family**

Lysimachia japonica Thunb.

Japanese yellow-loosestrife

Kartesz (2009) attributed this eastern Asian species to Arkansas, as did PLANTS Database (USDA 2008), which cited Sundell et al. (1999). However, the voucher specimen cited by Sundell et al. appears to be material spreading within a garden from cultivated plants. In light of this fact, the species probably does not deserve inclusion in the state flora at this time.

NYCTAGINACEAE Four-o'clock Family

Mirabilis hirsuta (Pursh) MacMill.

hairy four-o'clock

Smith (1988, 1994), PLANTS Database (USDA 2008), and Kartesz (2009) recognized this taxon as distinct from M. albida, and reported it for Arkansas. Nevertheless, we are following Spellenberg (2003) in treating it as merely a form of the variable M. albida.

Mirabilis linearis (Pursh) Heimerl

var linearis

narrow-leaf four-o'clock

Kartesz (2009) attributed this taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). However, although it had been listed for the state by Demaree (1943), Smith excluded this species from the flora. Although it is reported just to the west and northwest of Arkansas (Kartesz 2009; Spellenberg 2003) and possibly occurs in western parts of the state, no voucher specimen has yet been located to verify its existence in the state.

OLEACEAE Olive Family

Forsythia suspensa (Thunb.) Vahl

weeping forsythia

This Chinese species was reported for Arkansas in the *Checklist* (AVFC 2006) based on cultivated material. Kartesz (2009) attributed it to Newton County, citing Thompson (1977). PLANTS Database (USDA 2008) also attributed it to the state, citing Smith (1988). Smith, however, excluded the species, explaining that the Newton County report was based on cultivated material.

Ligustrum amurense Carrière

Amur privet

This Chinese species was reported for Arkansas in the *Checklist* (AVFC 2006) based on misdetermined material. Kartesz (2009) did attribute it to Poinsett County, though, citing Smith (1988). PLANTS Database (USDA 2008) also attributed it to the state, citing Smith. However, despite the Poinsett County report (Johnson 1971), Smith excluded *L. amurense* from the flora, stating that this is a "cultivated species, not known to escape in Arkansas." Although the voucher specimen has not been located or reviewed, the Poinsett County report should probably be considered dubious.

Syringa vulgaris L.

lilac

PLANTS Database (USDA 2008) attributed this European species to Arkansas, citing Smith (1988). However, Smith excluded it, stating that the Newton County report by Thompson (1977) was based on cultivated material.

ONAGRACEAE

Evening-primrose Family

Ludwigia bonariensis (Micheli) H.Hara

primrose-willow

This tropical American species was reported for Arkansas in the *Checklist* (AVFC 2006) based on misdetermined material. At present, it is only known to be introduced in the United States to coastal areas from Virginia to Alabama (Kartesz 2009).

Ludwigia grandiflora (Michx.) Greuter & Burdet subsp. grandiflora

primrose-willow

PLANTS Database (USDA 2008) attributed this tropical American subspecies to Arkansas, citing Smith (1988). Smith, though, only included subsp. *hexapetala* [as *L. hexapetala* (Hook. & Arn.) Zardini & Peng]. Kartesz (2009) showed the typic subspecies for Lawrence and Pike counties, citing two reports that originated from the University of Arkansas Herbarium (UARK). However, all UARK specimens of this species are referable to subsp. *hexapetala*.

OROBANCHACEAE

Broomrape Family

Agalinis aspera (Douglas ex Benth.) Britton

tall false foxglove, tall gerardia

The Arkansas reports of this species by Smith (1988), and subsequently by PLANTS Database (USDA 2008) and Kartesz (2009), were based on misdetermined material. However, it does apparently approach Arkansas in southeastern Kansas and southwestern Missouri (Kartesz 2009) and seems at least possible in northwestern Arkansas.

Agalinis nuttallii Shinners

Nuttall's false foxglove, Nuttall's gerardia

Kartesz (2009) recognized this taxon as distinct and attributed it to Arkansas, as did PLANTS Database (USDA 2008), which cited Pennell (1935). Peck (2003) also attributed it to the state, citing Pennell. However, this name is probably better treated as synonymous with *A. homalantha* (John F. Hays, pers. comm. 2003).

Agalinis setacea (J.F.Gmel.) Raf.

false foxglove, gerardia

This species was reported for Arkansas by PLANTS Database (USDA 2008) and Kartesz (2009) based on misdetermined material of *Agalinis gattingeri*. The primary range of this species is well east of Arkansas (Kartesz 2009) and it is not to be expected in the state.

OXALIDACEAE

Wood-sorrel Family

Oxalis albicans Kunth subsp. *albicans*

vellow wood-sorrel

Kartesz (2009) attributed this taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited Turner (1994). Turner, however, treated O. corniculata in a very broad sense, admittedly including Eiten's (1955, 1963) concepts of O. dillenii and O. stricta within O. corniculata var. wrightii (A.Gray) B.L.Turner, a name widely treated as a synonym of the more restricted and southwestern North American O. albicans subsp. albicans (Eiten 1963; USDA 2008; Kartesz 2009). Therefore, the reports of O. albicans subsp. albicans for Arkansas are almost certainly based on material of either O. dillenii or O. stricta.

PAPAVERACEAE

Poppy Family

Argemone mexicana L.

Mexican prickly-poppy, yellow prickly-poppy

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Demaree (1943). Kartesz (2009) attributed it to Fulton County, citing the University of North Carolina Herbarium (NCU) as the location of a voucher specimen. These reports, however, are based on material of A. albiflora subsp. texana.

Corydalis aurea Willd.

subsp. aurea

golden corydalis

PLANTS Database (USDA 2008) attributed this taxon [as C. aurea] to Arkansas, citing Smith (1988). However, Smith had actually excluded it [as C. aurea] from the flora. Kartesz (2009) also attributed it [as C. aurea] to the state, specifically Washington County, but based on a misdetermined specimen at the University of North Carolina Herbarium (NCU). An Arkansas occurrence of this taxon would be considerably disjunct from its western and northern North American range (Stern 1997). Thus, C. aurea doubtfully occurs in the state.

Fumaria officinalis L.

drug fumitory

This Mediterranean species was not attributed to Arkansas by Boufford (1997) but was by Kartesz (2009) [as subsp. officinalis], as well as by PLANTS Database (USDA 2008) [as subsp. officinalis], which cited Smith (1988). Smith treated it as a possible addition to the state flora, postulating that a single Pulaski County specimen at the University of Arkansas Herbarium (UARK) possibly represented "a local escape from cultivation." The species was subsequently listed for Arkansas in the Checklist (AVFC 2006) based on this Pulaski County specimen collected in Little Rock in 1955 and which lacks any information on its cultivation status. Given that this specimen may represent cultivated material and since no other collections have been made in the intervening years, it should probably be excluded from the state flora.

PLANTAGINACEAE

Plantain Family

Penstemon tenuiflorus Pennell

beardtongue

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). However, Smith excluded the species, stating that the report for Stone County (Browne 1974) was based on misdetermined material.

Plantago elongata Pursh

dwarf plantain

This name was applied in the Checklist (AVFC 2006) to plants currently treated as P. pusilla. There are differing opinions on whether P. pusilla should be recognized as distinct from P. elongata. The Great Plains Flora Association (1986) and Diggs et al. (1999) merged P. pusilla with P. elongata. In the present treatment, however, we are following Weakley (2008) and Kartesz (2009) in recognizing P. pusilla.

Veronica agrestis L.

field speedwell

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this Eurasian species to Arkansas, citing Smith (1988). However, Smith (1988, 1994) misapplied the name V. agrestis to material of V. polita.

Veronica americana Schwein, ex Benth.

American speedwell, American brooklime

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Baxter County, citing Smith (1988). It was also reported for Arkansas in the *Checklist* (AVFC 2006) based on the specimen cited by Smith. However, upon close examination, the voucher specimen cited by Smith was actually found to be referable to *V. anagallis-aquatica*. *Veronica americana* is primarily a western and northeastern North American taxon (Kartesz 2009), and is probably not to be expected in the state.

POLYGALACEAE

Milkwort Family

Polygala alba Nutt.

white milkwort

This species was attributed to Arkansas by Peck (2003) and listed for the state in the *Checklist* (AVFC 2006) based on misdetermined material. It has a western and central Plains distribution, approaching Arkansas in central Texas, central Oklahoma, and central Kansas (Kartesz 2009) but probably does not occur in the state.

Polygala nuttallii Torr. & A.Gray

Nuttall's milkwort

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Jefferson County, citing Smith (1988). Smith (1988, 1994), however, included it in the Arkansas flora based on a misdetermined Jefferson County specimen, as well as on a citation by Miller (1971). The primary range for this species is generally well east of Arkansas (Kartesz 2009; Weakley 2008), though, and an Arkansas occurrence seems doubtful.

POLYGONACEAE

Buckwheat Family

Fallopia cristata (Engelm. & A.Gray) Holub

climbing false buckwheat, hedge-smartweed

Kartesz (2009) recognized this species as distinct from *F. scandens* and attributed it to Arkansas. PLANTS Database (USDA 2008) also recognized the taxon [as *Polygonum scandens* L. var. *cristatum* (Engelm. & A.Gray) Gleason] as distinct from *F. scandens* [as *Polygonum scandens* var. *scandens*] and attributed it to the state, citing Smith (1988). Smith, however, noted that the two entities had been convincingly shown to intergrade completely and, thus, did not treat them as distinct. Furthermore, neither Freeman and Hinds (2005) nor Weakley (2008) recognized *F. cristata* as distinct from *F. scandens*. We are following the latter group in the present treatment.

Fallopia dumetorum (L.) Holub

corpse-bindweed, climbing false buckwheat

Freeman and Hinds (2005) and Kartesz (2009) attributed this Eurasian species to Arkansas. PLANTS Database (USDA 2008) also attributed it [as *Polygonum scandens* L. var. *dumetorum* (L.) Gleason] to the state, citing Demaree (1943). However, Freeman and Hinds state that "[e]xperience suggests that many North American herbarium specimens attributed to *F. dumetorum* are misidentified" and that "the range of *F. dumetorum* in North America is unclear...[and] probably exaggerated in most floras." In support of their statement, all Arkansas voucher specimens originally determined as this taxon that have been examined thus far actually represent material of *F. scandens. Fallopia dumetorum* probably does not occur in the state.

Polygonum bellardii All.

knotweed, knotgrass

PLANTS Database (USDA 2008) attributed this European species to Arkansas, citing Demaree (1943). However, PLANTS Database treats *P. neglectum* Besser [i.e., *P. aviculare* subsp. *neglectum*], which is attributed to Arkansas by Costea et al. (2005) and Kartesz (2009), as a synonym of *P. bellardii*. Costea et al. and Kartesz, though, only attribute *P. bellardii* in the stricter sense to Massachusetts. *Polygonum bellardii* almost certainly does not occur in Arkansas.

Rumex maritimus L.

golden dock

PLANTS Database (USDA 2008) attributed this Eurasian species to Arkansas, citing a 1937 Contributions from the United States National Herbarium article. Evidently, though, the citation was actually based on Rechinger (1937), which was a Field Museum of Natural History work. It should be noted that PLANTS Database synonymized the North American indigenous R. fueginus with R. maritimus. Rechinger, Mosyakin (2005), and Kartesz (2009) all treated R. maritimus as very sparingly introduced in North America, with no populations near Arkansas. Rumex maritimus, as recognized by these latter three authorities, should be excluded from the Arkansas flora.

PORTULACACEAE

Purslane Family

Claytonia caroliniana

Carolina spring-beauty, tangle-gut

This name was misapplied by Smith (1988, 1994) and in the *Checklist* (AVFC 2006) to material of the more recently described *C. ozarkensis* and wide-leaf forms of *C. virginica*. The range of *C. caroliniana* occurs well east of Arkansas and it is not to be expected in the state.

Portulaca halimoides L.

silk-cotton purslane

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited the *North American Flora* series published by the New York Botanical Garden. However, this is a plant of the southwestern United States and Mexico and seems rather unlikely to occur in Arkansas (Matthews 2003).

RANUNCULACEAE

Buttercup Family

Ranunculus cymbalaria Pursh

buttercup

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Keener (1976). Keener did include the Gulf Coastal Plain of Arkansas as within the range of this species, but the primary range appears to be well to the west and northwest of the state (Kartesz 2009; Whittemore 1997). It seems rather unlikely to occur in Arkansas and until a voucher specimen is located to verify its existence, it seems best to exclude it from the state flora.

ROSACEAE Rose Family

Agrimonia gryposepala Wallr.

agrimony

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). However, Smith excluded the species, stating that a previous Arkansas report proved to be a misdetermination. The primary range of this species is generally well north and northeast of Arkansas (Kartesz 2009) and it seems unlikely to occur in the state.

Crataegus arborea Beadle

Montgomery hawthorn

Kartesz (2009) recognized this taxon as distinct and attributed it to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). However, in the present treatment we are following Tucker (1976) and Smith (1988) in synonymizing it with *C. berberifolia*.

Crataegus carrollensis Sarg.

Eureka Springs hawthorn

Kartesz (2009) recognized this taxon as distinct and attributed it to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). However, in the present treatment we are following Tucker (1976) and Smith (1988) in synonymizing it with *C. calpodendron*.

Crataegus collina Chapm.

Chapman's hawthorn

Weakley (2008) recognized this taxon as distinct and attributed it to Arkansas. It was reported for Arkansas in the *Checklist* (AVFC 2006) based on Weakley's citation. However, in the present treatment we are following Tucker (1976), Smith (1988), and Kartesz (2009) in synonymizing it with *C. punctata*.

Crataegus engelmannii Sarg.

Engelmann's hawthorn

PLANTS Database (USDA 2008) and Kartesz (2009) recognized this taxon and attributed it to Arkansas. Diggs et al. (1999) also recognized this species, listing *C. berberifolia* as a synonym. However, in the present treatment we are following Tucker (1976) and Smith (1988) in synonymizing *C. engelmannii* with *C. berberifolia*.

Crataegus flabellata (Bosc ex Spach) Rydb.

fan-leaf hawthorn

PLANTS Database (USDA 2008) and Kartesz (2009) recognized this taxon and attributed it to Pope County, citing Smith (1988). It was reported for Arkansas in the *Checklist* (AVFC 2006) based on these citations. However, in the present treatment we are following Tucker (1976) and Weakley (2008) in treating it as a synonym of *C. macrosperma*.

Crataegus harveyana Sarg.

Harvey's hawthorn

Kartesz (2009) recognized this taxon as distinct and attributed it to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). It was reported for Arkansas in the Checklist (AVFC 2006) based on these citations. In the present treatment, however, we are following Tucker (1976) and Smith (1988) in synonymizing it with C. intricata.

Crataegus lanuginosa Sarg.

hawthorn

Kartesz (2009) recognized this taxon as distinct and attributed it to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). However, in the present treatment we are following Tucker (1976) and Smith (1988) in synonymizing it with *C. mollis*.

Crataegus nitida (Engelm.) Sarg.

hawthorn

Kartesz (2009) recognized this taxon as distinct and attributed it to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). However, in the present treatment we are following Tucker (1976) and Smith (1988) in synonymizing it with *C. viridis*.

Crataegus reverchonii Sarg.

Reverchon's hawthorn

Kartesz (2009) recognized this taxon as distinct and attributed it to Arkansas, as did PLANTS Database (USDA 2008). which cited Demaree (1943). It was reported for Arkansas in the Checklist (AVFC 2006) based on these citations. However, in the present treatment we are following Tucker (1976) and Smith (1988) in synonymizing it with C. crusgalli.

Crataegus thermopegaea E.J.Palmer

graceful hawthorn

Kartesz (2009) recognized this taxon as distinct and attributed it to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). Peck (2003) also attributed it to the state. In the present treatment, however, we are following Tucker (1976) and Smith (1988) in synonymizing it with C. calpodendron.

Prunus cerasus L.

sour cherry

Kartesz (2009) attributed this Eurasian species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). However, Smith excluded it, stating that the Newton County report (Thompson 1977) was based on cultivated material.

Prunus pumila L.

var. bessevi (L.H.Bailey) Gleason

sand cherry

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this variety to Prairie County based on Smith's (1988) report of var. susquehanae. PLANTS Database and Kartesz treated var. susquehanae at the species level and showed it well to the east and northeast of Arkansas. However, in the present treatment we are following Joseph R. Rohrer (pers. comm. 2008), who stated that the Arkansas material is best treated as P. pumila var. susquehanae.

Pvracantha coccinea M.Roemer

scarlet firethorn

This Eurasian species was erroneously reported for Arkansas in the Checklist (AVFC 2006) based on apparently cultivated material. Kartesz (2009) did attribute it to Arkansas, though, as did PLANTS Database (USDA 2008), which cited Smith (1988). However, Smith excluded it from the Arkansas flora, stating that the Newton County report (Thompson 1977) was based on cultivated material.

Rosa arkansana Porter

var. suffulta (Greene) Cockerell

sunshine rose, wild prairie rose

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this taxon to Benton County, citing Smith (1988). Smith did attribute the taxon to Benton County, merely citing the Demaree specimen that Tucker (1976) had stated was housed at the University of Arkansas Herbarium (UARK). The taxon was also reported for Arkansas in the Checklist (AVFC 2006) based on Tucker's authority. However, the voucher specimen, which has since been located at the Arkansas Tech University Herbarium (APCR) instead, actually represents material of R. carolina. Although it must now be excluded from the Arkansas flora in light of this evidence, the range of R. arkansana does approach Arkansas in northeastern Oklahoma, southeastern Kansas, and southwestern Missouri (Kartesz 2009), and thus it remains a possibility in northwestern Arkansas.

Rosa canina L. dog rose

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this Eurasian species to Franklin County, citing Smith (1988). However, Smith excluded it, stating that the single voucher specimen "probably represents a local escape or was persistent at an old home site." We are in agreement with Smith and are, likewise, excluding it from the flora.

Rosa virginiana Mill.

var. virginiana

Virginia rose

PLANTS Database (USDA 2008) attributed this taxon to Arkansas, citing the *North American Flora* series published by the New York Botanical Garden. The primary range of this taxon, however, is considerably northeast of Arkansas (Kartesz 2009) and it seems rather unlikely to occur in the state.

Rubus bushii L.H. Bailey

Bush's high-bush blackberry

The Arkansas plants to which Kartesz (2009) applied this name are currently treated at R. laudatus.

Rubus discolor Weihe & Nees

Himalayan blackberry

Smith (1988, 1994) misapplied this name to Arkansas material of *R. armeniacus* (Johnnie L. Gentry, pers. comm. 2009). The name *R. discolor* is an illegitimate name and has been treated as a synonym of another European species, *R. ulmifolius* Schott (Ceska 1999).

Rubus idaeus L.

var. idaeus

red raspberry

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this European taxon to Arkansas, citing Smith (1988). Smith included it in the Arkansas flora based on Tucker's (1976) authority. Tucker stated that it was escaping from old homesites in the Ozarks; however, no voucher specimens have been located to verify this claim.

Rubus ostryifolius Rydb.

high-bush blackberry

Smith (1988, 1994) included this species in the Arkansas flora. However, Kartesz (2009) showed it occurring only in the extreme northeastern United States, placing the Arkansas records under the name *R. bushii*. The name *R. ostryifolius* as used by Rydberg is illegitimate because the binomial had previously been associated with an unrelated European species. The North American type specimen to which Rydberg applied this name is actually a member of section *Flagellares* (dewberries) and not applicable to any member of section *Arguti* (high-bush blackberries) (Johnnie L. Gentry, pers. comm. 2009). The Arkansas plants to which Smith applied the name *R. ostryifolius* are currently treated as *R. laudatus*.

Rubus pensilvanicus Poir.

high-bush blackberry

Smith (1988, 1994) included this species in the Arkansas flora. However, Kartesz (2009) showed in the northeastern United States, west and south to Minnesota, Illinois, and Tennessee. We are considering this name applicable to a northeastern element of *Rubus* that is apparently not present in Arkansas. The entity within Arkansas to which Smith applied this name is being treated as *R. laudatus*.

Rubus pubifolius L.H.Bailey

high-bush blackberry

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Davis et al. (1969). However, this name should be placed in synonymy with *R. alumnus* (Widrlechner 1998).

Spiraea ×vanhouttei (Briot) Carrière

spiraea

{S. cantoniensis Lour. × S. trilobata L.}

Kartesz (2009) attributed this Asian hybrid to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). Smith, however, excluded it from the flora, stating that the Newton County report (Thompson 1977) was based on cultivated material.

RUBIACEAE

Houstonia tenuifolia Nutt.

bluet

Madder Family

Weakley (2008) recognized this taxon as distinct and stated that its distribution is centered in the southern Appalachians and Ozarks, presumably including Arkansas. However, in the present treatment we are following Terrell (1991) and Kartesz (2009) in placing it in synonymy with *H. longifolia*.

RUTACEAE Rue Family

Zanthoxylum hirsutum Buckley

toothache-tree, Texas Hercules'-club

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Correll and Johnston (1970). Although Correll and Johnston did list Arkansas as within the range of this species, Smith (1988) implied that previous Arkansas reports of *Z. hirsutum* were erroneous. Furthermore, Kartesz (2009) showed the range of this species extending from south-central Oklahoma through central Texas to Mexico, well excluding Arkansas.

SALICACEAE Willow Family

Populus tremuloides Michx.

quaking aspen

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). However, Smith had excluded it, stating that the report for Crittenden County (Wilcox 1973) was likely based on cultivated material. No voucher specimens have been located, and given that the primary range of this species is well north and west of Arkansas (Kartesz 2009), it seems rather unlikely that it occurs in the state.

Salix amygdaloides Andersson

peach-leaf willow

Although the Arkansas report of this species by the Great Plains Flora Association (1977) had proven erroneous and both Tucker (1976) and Argus (1986) had excluded it from the state flora, Smith (1988) included it in his *Atlas* based on a Crittenden County report by Wilcox (1973), which Smith had not verified. However, Smith (1994) later treated it as merely a possible addition to the flora in his *Keys*. The species is reported as approaching Arkansas in southeastern Missouri (Kartesz 2009) and remains a possibility for the state but for now should probably be excluded from the flora.

SOLANACEAE Nightshade Family

Petunia axillaris (Lam.) Britton, Sterns, & Poggenb.

white garden petunia

Kartesz (2009) attributed this South American species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). Although it had been listed for the state by Demaree (1943), Smith excluded it as an occasional waif and not a normal part of the flora. Regardless, all escaped or waif *Petunia* material observed from Arkansas thus far is referable to *P.* × atkinsiana.

Solanum physalifolium Rusby

hairy nightshade

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this South American species to Arkansas, citing Smith (1988), who actually listed *S. sarrachoides*, a species that PLANTS Database and Kartesz excluded from the North American flora. *Solanum physalifolium* was reported for Arkansas in the *Checklist* (AVFC 2006) based on the assumption that it was the only widely escaped entity in North America. However, Edmonds (1986) argued that both species are present in North America. Based on her interpretation of the taxa, all Arkansas material observed thus far is referable to *S. sarrachoides*.

Solanum tuberosum L.

potato

Kartesz (2009) attributed this frequently cultivated South American species to Poinsett County, citing Smith (1988). PLANTS Database (USDA 2008) also attributed it to the state, citing Smith. However, Smith excluded this species from the flora, stating that the Poinsett County report (Johnson 1971) was "doubtless on the basis of cultivated material or a waif." We are, likewise, assuming that the specimen is of cultivated material and do not deem it worthy of inclusion in the state flora.

STYRACACEAE

Storax Family

Halesia tetraptera Ellis

var. tetraptera

mountain silverbell

Some authorities (e.g., USDA 2008; Weakley 2008; Kartesz 2009) have attributed this taxon to Arkansas, treating *H. carolina* as a narrowly defined taxon of the extreme southeastern United States from southern Mississippi to South Carolina. The other variety of *H. tetraptera*, var. *monticola* (Rehder) Reveal & Seldina, a name once misapplied to Arkansas material (Smith 1988, 1994), was defined as a southern Appalachian endemic by these same authorities (Weakley 2008; Kartesz 2009). However, Fritsch and Lucas (2000) showed that there is a gradual gradation of characters over the entire southeastern United States and that only one variable species should be recognized. After a thorough review of Arkansas specimens, we are in agreement with Fritsch and Lucas and are treating Arkansas material in the broadly defined and variable *H. carolina*.

TAMARICACEAE

Tamarisk Family

Tamarix chinensis Lour.

Chinese tamarisk, salt-cedar

This name has been misapplied in Arkansas (Smith 1988, 1994; Crins 1989; AVFC 2006; USDA 2008; Kartesz 2009) to material of *T. ramosissima. Tamarix chinensis* is a distinct Asian species (Crins 1989; Diggs et al. 1999) that is not currently known as naturalized in Arkansas.

Tamarix gallica L.

French tamarisk, salt-cedar

This name was misapplied in the *Checklist* (AVFC 2006) to Arkansas material of *T. ramosissima*. *Tamarix gallica* is a distinct European species (Crins 1989; Diggs et al. 1999) that is not currently known as naturalized in Arkansas.

ULMACEAE Elm Family

Ulmus parvifolia Jacq.

Chinese elm

Kartesz (2009) attributed this Asian species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). However, Smith excluded the species, stating that the Newton County report (Thompson 1977) was "doubtless on the basis of cultivated material." This name seems to have also been misapplied in Arkansas to material of *U. pumila*.

VERBENACEAE

Vervain Family

Verbena litoralis Kunth

seashore vervain

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this tropical American species to Arkansas. However, it is apparently not known to be naturalized in the United States and the name has been misapplied in Arkansas to material of *V. montevidensis* (Nesom 2010b).

Verbena scabra Vahl

sandpaper vervain

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Arkansas, citing Smith (1988). However, although *V. scabra* had been reported for the state by Demaree (1943), Moore (1965), and Wilcox (1973), Smith excluded it from the Arkansas flora, stating that the reports were probably based on material of *V. urticifolia*. Upon a thorough examination of Arkansas specimens labeled as *V. scabra*, it is now clear that they are, in fact, referable to *V. urticifolia*. *Verbena scabra* occurs to the south of Arkansas, along the outer Gulf and southern Atlantic Coasts, as well as in the southwestern United States (Kartesz 2009). It doubtfully occurs in Arkansas.

VIOLACEAE Violet Family

Viola affinis Leconte

Leconte's violet

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Arkansas, citing Russell (1965). Russell did show it as widely scattered in the state but showed a primary range generally well northeast of Arkansas. Weakley (2008) also described a range that could include Arkansas. However, in the present treatment we are following Smith (1988), who stated that this name has been misapplied in Arkansas to material of *V. sororia*.

Viola arvensis Murray

European field pansy

PLANTS Database (USDA 2008) attributed this European species to Arkansas, citing Smith (1988). However, although it had been listed for the state by Demaree (1943), Smith had actually excluded *V. arvensis* from the Arkansas flora due to the lack of voucher material.

Viola triloba Schwein.

three-lobe violet

PLANTS Database (USDA 2008) and Kartesz (2009) recognized this species and attributed it to Arkansas, citing Russell (1965). In the present treatment, however, we are following Smith (1988, 1994), Diggs et al. (1999), and Weakley (2008) in treating it as a synonym of *V. palmata*.

ANGIOSPERMS (MONOCOTS)

AGAVACEAE

Agave Family

Yucca glauca Nutt.

yucca, soapweed

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Demaree (1943) and Tucker (1976). However, Tucker did not report this species for the state, and the report by Demaree was likely based on *Y. glauca* var. *mollis* Engelm. ex Branner & Coville, a synonym of *Y. arkansana. Yucca glauca* is reported as far east as eastern Oklahoma, including McCurtain County (Hess & Robbins 2002; Kartesz 2009), and would seem possible for western Arkansas. However, it is possible that some of the eastern Oklahoma records may actually represent material of *Y. arkansana*.

ALISMATACEAE

Water-plantain Family

Echinodorus tenellus (Mart.) Buchenau

dwarf burhead

The specimen cited by Sorrie and LeBlond (2008), the basis for the reports by Kartesz (2009) and PLANTS Database (USDA 2008) [which cited the original report by Lipscomb (1977)], and the same specimen that Smith (1988) cited as the state voucher for *E. berteroi*, actually represents material of *Sagittaria graminea. Echinodorus tenellus*, widely scattered and uncommon throughout its range, has been reported from all states surrounding Arkansas except Tennessee (Kartesz 2009), including from Howell County, Missouri (Yatskievych 1999; Kartesz 2009) and McCurtain County, Oklahoma (Kartesz 2009). It may occur in widely scattered localities in Arkansas as well.

Sagittaria ambigua J.G.Sm.

arrowhead

This species was listed by Smith (1988) as a possible addition to the state flora but was later included as a bona fide member (Smith 1994). It was included in the *Checklist* (AVFC 2006) based on misdetermined material. PLANTS Database (USDA 2008) and Kartesz (2009) attributed it to the state, the former citing the Arkansas Heritage Program. However, the Arkansas Natural Heritage Commission had tracked the species on the basis of misdetermined specimens and unsubstantiated reports (Theo Witsell, pers. comm. 2008). *Sagittaria ambigua* is reported from southwestern Missouri, southeastern Kansas (Haynes & Hellquist 2000a; Kartesz 2009), and eastern Oklahoma (Haynes & Hellquist 2000a), including LeFlore, McCurtain, and Sequoyah counties (Kartesz 2009), and thus does seem at least possible in western or northwestern Arkansas.

Sagittaria chapmanii (J.G.Sm.) C.Mohr

Chapman's arrowhead

The specimens cited by Sorrie and LeBlond (2008) for Bradley and Calhoun counties, the basis for the Arkansas reports by the Arkansas Vascular Flora Committee (2006) [as *S. graminea* Michx. subsp. *chapmanii* (J.G.Sm.) R.R.Haynes & Hellq.], PLANTS Database (USDA 2008) [as *S. graminea* Michx. var. *chapmanii* J.G.Sm.] and Kartesz (2009), actually represent material of *S. papillosa. Sagittaria chapmanii* is restricted to Alabama, Florida, Georgia, and South Carolina (Haynes & Hellquist 2000a [as *S. graminea* subsp. *chapmanii*]), and is not to be expected in Arkansas.

ALLIACEAE

Onion Family

Allium porrum L.

garden leek

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this Eurasian species to Drew County, citing Smith (1988). However, the specimen cited by Smith actually represents material of *A. ampeloprasum*.

AMARYLLIDACEAE

Amaryllis Family

Crinum americanum L.

var. americanum

swamp-lily

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). However, although it had been listed for Arkansas by Demaree (1943), Smith excluded it from the flora as "not likely for the state." Furthermore, Holmes (2002a) did not attribute it to Arkansas.

COMMELINACEAE

Spiderwort Family

Gibasis pellucida (M.Martens & Galeotti) D.R.Hunt

bridal-veil

This Mexican species was reported for Arkansas in the *Checklist* (AVFC 2006), and subsequently by Kartesz (2009), based on cultivated material. Although often cultivated as a house plant and occasionally spreading vegetatively from containers, *G. pellucida* doubtfully persists through Arkansas winters and is not to be expected as a naturalized member of the flora.

Tradescantia crassula Link & Otto

succulent spiderwort

Kartesz (2009) attributed this South American species to Arkansas, as did PLANTS Database (USDA 2008), which cited Sundell at al. (1999). However, the report by Sundell et al. was based on misdetermined material. Although often cultivated as a house plant, *T. crassula* doubtfully persists through Arkansas winters and is not to be expected as a naturalized member of the flora.

Tradescantia occidentalis (Britton) Smyth

var. melanthera MacRoberts

prairie spiderwort

Kartesz (2009) recognized this variety as distinct and attributed it to Arkansas, as did PLANTS Database (USDA 2008), which cited Tucker (1989). In the present treatment, however, we are following Faden (2000), who stated that he had been unable to recognize the character of dark anther connectives in dried specimens, as well as Smith (1988), who stated that this variety "appears to be merely a minor color variant."

CYPERACEAE

Sedge Family

Bulbostylis ciliatifolia (Elliott) Fernald

var. ciliatifolia

fringe-leaf hairsedge

This variety was reported for Arkansas in the *Checklist* (AVFC 2006) based on misdetermined material of var. *coarctata*. PLANTS Database (USDA 2008) attributed var. *ciliatifolia* to Arkansas, citing Fernald (1950), but this report is also likely based on material of var. *coarctata*.

Carex backii Boott in Hook.

sedge

Smith (1988) attributed this species to Polk County based on a report by Lipscomb (1980). However, the specimen cited by Lipscomb actually represents material of *C. latebracteata* (Hyatt 1998). *Carex backii* is a species of the northern United States and Canada (Crins et al. 2002; Kartesz 2009) and is not to be expected in Arkansas.

Carex baileyi Britton

Bailey's sedge

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited personal communication with Philip E. Hyatt. However, Hyatt (1998) excluded it from the state flora. The report could possibly be based on a citation by Wilcox (1973) for Crittenden County, which Smith (1988) deemed unlikely and a probable misidentification. *Carex baileyi* appears to be mostly New England and Appalachian (Kartesz 2009; Weakley 2008) in distribution and was not attributed to Arkansas by Reznicek and Ford (2002).

Carex debilis Michx.

var. rudgei L.H.Bailey

sedge

Smith (1994) and Hyatt (1998) included this taxon [as var. *pubera* Gray] in the Arkansas flora based on misdetermined material of var. *debilis*. Kartesz (2009) attributed it to the state, as did PLANTS Database (USDA 2008) [as var. *pubera* A.Gray], which cited the Arkansas Heritage Program. However, the Arkansas Heritage Program report was also based on the misdetermined specimens mentioned above (Theo Witsell, pers. comm. 2009). Furthermore, Waterway (2002) showed the range well to the northeast of Arkansas. This variety is probably not to be expected in the state.

Carex stipata Muhl. ex Willd.

sedge

Smith (1988, 1994) misapplied this name to Arkansas material of *C. oklahomensis*. Although it has been variously reported for all states surrounding Arkansas (Yatskievych 1999; Standley 2002; Weakley 2008; Kartesz 2009), no authentic material from Arkansas has been observed.

Carex styloflexa Buckley

sedge

This species was reported for Arkansas in the *Checklist* (AVFC 2006) based on misdetermined material. Furthermore, Bryson and Naczi (2002) did not attribute it to the state.

Carex tetanica Schkuhr

sedge

Smith (1988) excluded this primarily northern North American species from the Arkansas flora in his *Atlas* but later included it in his *Keys* (1994). No voucher specimen has been located and neither Rothrock and Reznicek (2002) nor Kartesz (2009) attributed it to Arkansas. However, it is reported from fens of southeastern Missouri (Yatskievych 1999) and may be found in similar habitats in northern Arkansas.

Cyperus schweinitzii Torr.

flatsedge

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Clay County, citing Smith (1988). Smith included it in the Arkansas flora based solely on a report for Clay County by the Great Plains Flora Association (1977). However, Tucker et al. (2002) did not attribute it to Arkansas, and its primary range appears generally north and west of the state (Tucker et al. 2002; Kartesz 2009).

Cyperus thyrsiflorus Jungh.

southern flatsedge

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Tucker (1994). However, Peck (2003) pointed out that the report by Tucker (1994) was merely a text passage and contained neither a map nor a voucher to substantiate the claim. Futhermore, neither Tucker et al. (2002) nor Kartesz (2009) attributed it to the state.

Rhynchospora cephalantha A.Gray

beaksedge, beak-rush

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). It was also reported for Arkansas in the *Checklist* (AVFC 2006) based on the report cited by Smith. Smith included this species in the Arkansas flora based solely on the report by Davis (1981). However, the specimen cited by Davis has since been redetermined. According to Arkansas Natural Heritage Commission records, there may also be a central Arkansas specimen at the New York Botanical Garden Herbarium (NY) (Theo Witsell, pers. comm. 2008), but this record seems dubious. Kral (2002) did not attribute *R. cephalantha* to Arkansas, and given the outer Gulf and southern Atlantic coastal distribution (Kartesz 2009), an Arkansas occurrence seems unlikely.

Rhynchospora chalarocephala Fernald & Gale

beaksedge, beak-rush

This species was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material.

Scirpus lineatus Michx.

bulrush

This species was reported for Arkansas in the *Checklist* (AVFC 2006) based on a misapplication of the name to material of *S. pendulus. Scirpus lineatus* occurs to the southeast of Arkansas (Whittemore & Schuyler 2002; Kartesz 2009), and is probably not to be expected in the state.

Scleria reticularis Michx.

nut-rush

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). However, Smith misapplied this name to material of S. muehlenbergii. Scleria reticularis generally occurs along the outer Gulf and Atlantic coasts (Reznicek et al. 2002; Kartesz 2009) and probably does not occur in the state.

Websteria confervoides (Poir.) S.S.Hooper

algal bulrush

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing the Arkansas Heritage Program. However, the reports by the Arkansas Natural Heritage Commission (Theo Witsell, pers. comm. 2007), as well as the Arkansas report in the Checklist (AVFC 2006), were based on sterile, proliferating, submerged material of Eleocharis species. Websteria confervoides has only been documented within the United States from Florida, Georgia (Bruhl 2002), and Alabama (Kartesz 2009) and is not to be expected in Arkansas.

IRIDACEAE Iris Family

Gladiolus dalenii Van Geel subsp. dalenii

gladiolus

Kartesz (2009) attributed this African taxon to Arkansas, listing G. lemoinei Baker as a synonym and citing Smith (1988). However, Smith misapplied the names G. lemoinei Hort. (Smith 1988) and G. ×lemoinei Hort. (Smith 1994) to plants of G. communis. True G. dalenii is not known to persist or escape in Arkansas.

Gladiolus lemoinei Baker

gladiolus

This name was erroneously applied in the Checklist (AVFC 2006) to Arkansas material of G. communis, a result of Smith's misapplication of the names G. lemoinei Hort. (Smith 1988) and G. ×lemoinei Hort. (Smith 1994) to plants of G. communis.

Gladiolus ×gandavensis Van Houtte

garden gladiolus

 $\{G. dalenii \ Van \ Geel \times G. \ oppositiflorus \ Herb.\}$

PLANTS Database (USDA 2008) attributed this African taxon to Arkansas, citing Smith (1988), evidently based on his report of G. lemoinei escaping in the state. However, Smith misapplied the names G. lemoinei Hort. (Smith 1988) and G. ×lemoinei Hort. (Smith 1994) to plants of G. communis. The common garden gladiolus, G. ×gandavensis, is not known to persist or escape in Arkansas.

Iris hexagona Walter

Dixie iris

PLANTS Database (USDA 2008) attributed this species [as I. hexagona var. hexagona] to Arkansas, citing Thomas et al. (1991). Smith (1994) included it in the Arkansas flora apparently based on the report by Thomas et al.. However, the specimen cited by Thomas et al. actually represents material of I. brevicaulis. Iris hexagona is apparently restricted to Florida and South Carolina (Henderson 2002) and is not to be expected in Arkansas.

Iris pallida Lam. in Lam. et al.

sweet iris, Dalmatian iris

This European species was reported for Arkansas in the Checklist (AVFC 2006) based on the Newton County (Thompson 1977) and Bradley County (Leslie 1986) literature reports. Kartesz (2009) attributed it to Newton and Bradley counties, citing Smith (1988). PLANTS Database (USDA 2008) also attributed it to the state, citing Smith. However, Smith excluded the species from the state flora, arguing that the reports by Thompson and Leslie were "doubtless...based on cultivated material or infrequent waifs." Since no Arkansas voucher specimens of I. pallida have yet been located to substantiate these reports, it seems best to exclude it from the flora for now.

Sisyrinchium capillare E.P.Bicknell

blue-eyed-grass

This species was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. Its range is well east of Arkansas (Cholewa & Henderson 2002; Kartesz 2009), and it is not to be expected in the state.

JUNCACEAE Rush Family

Juncus arcticus Willd.

var. balticus (Willd.) Trautv.

Baltic rush

This taxon was reported for Arkansas in the *Checklist* (AVFC 2006) based on misdetermined material. PLANTS Database (USDA 2008) and Kartesz (2009) attributed it [as *J. arcticus* subsp. *littoralis* (Engelm.) Hultén] to the state, citing Smith (1988), who, in turn, attributed it [as *J. balticus* Willd.] to Calhoun, Dallas, and Saline counties. Brooks (2000) also reported it for Arkansas, likely ultimately based on Smith's report. However, upon close examination, the specimens were all found to actually represent material of *J. coriaceus. Juncus arcticus* var. *balticus* occurs in northern and western North American and approaches Arkansas no closer than west-central Missouri (Yatskievych 1999; Brooks 2000; Kartesz 2009) and is probably not to be expected in the state.

Juncus trigonocarpus Steud.

rush

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Brown and Thomas (1992). Smith (1994) had included it in the Arkansas flora, presumably based on the Brown and Thomas report. However, the specimen cited by Brown and Thomas is referable to *J. canadensis*. Furthermore, Clemants (2000) did not attribute *J. trigonocarpus* to Arkansas.

LILIACEAE Lily Family

Erythronium americanum Ker Gawl.

subsp. harperi (W.Wolf) Parks & Hardin

American trout-lily, yellow trout-lily

PLANTS Database (USDA 2008) attributed this taxon to Arkansas, citing the University of North Carolina Herbarium (NCU) as the location of a voucher specimen. However, this subspecies is apparently restricted to northern Alabama, Tennessee, northeastern Mississippi, and northwestern Georgia (Parks & Hardin 1963; Allen & Robertson 2002; Weakley 2008; Kartesz 2009) and doubtfully occurs in Arkansas.

Lilium canadense L.

Canadian lily

PLANTS Database (USDA 2008) attributed this taxon [as *L. canadense* subsp. *canadense*] to Arkansas, citing an unpublished and undated *Vascular Flora of the Southeastern United States*, edited by Albert E. Radford et al. However, the range of *L. canadense* appears to be well east and northeast of Arkansas (Skinner 2002; Kartesz 2009), making an Arkansas occurrence rather unlikely. Skinner (2002) stated that *L. canadense* had been reported for Ashley County but that it was "quite likely to represent *L. superbum*." This is supported by the fact that *L. superbum* has been treated in the past as a subspecies of *L. canadense*; the reports may simply be the result of nomenclatural confusion.

Lilium formosanum Wallace

Formosa lily

This Taiwanese species was reported for Arkansas in the *Checklist* (AVFC 2006), and subsequently by Kartesz (2009), based on misdetermined material of *L. philippinense*.

Lilium michauxii Poir. in Lam. et al.

Carolina lily

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Demaree (1943). However, neither Skinner (2002) nor Kartesz (2009) attributed it to the state.

Lilium philadelphicum L.

wood lily

PLANTS Database (USDA 2008) attributed this taxon [as *L. philadelphicum* var. *philadelphicum*] to Arkansas, citing Hitchcock et al. (1969). Skinner (2002) mentioned reports from Arkansas but stated that they have not been verified. The range of this species appears to be well north of Arkansas (Skinner 2002; Kartesz 2009), making an Arkansas occurrence rather unlikely.

Medeola virginiana L.

Indian cucumber-root

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Demaree (1943). However, neither Utech (2002) nor Kartesz (2009) attributed it to the state.

ORCHIDACEAE

Orchid Family

Platanthera leucophaea (Nutt.) Lindl.

eastern prairie fringed orchid

Smith (1988) excluded this species from the Arkansas flora, citing Sheviak (1987), who had shown that the voucher specimens once cited for the state neither represented this species nor were collected in present-day Arkansas. However, Smith later included the species in his *Keys* (1994) as a member of the flora. The basis for that inclusion is unknown and likely erroneous. Neither Sheviak (2002) nor Kartesz (2009) attributed it to Arkansas.

Platanthera psycodes (L.) Lindl.

small purple fringed orchid

Yatskievych (1999) cited this species as ranging from the eastern United States west to Arkansas, but this statement may be erroneous, as he went on to state that the single report in Missouri, from Ozark County, is questionable and disjunct from the nearest populations in northern Illinois and Iowa, seemingly ruling out an Arkansas occurrence. Other than the questionable Missouri record, the species approaches Arkansas no closer than eastern Iowa, northern Indiana, and extreme eastern Tennessee (Sheviak 2002; Kartesz 2009), and thus seems rather unlikely to occur in the state.

Spiranthes laciniata (Small) Ames

lace-lip ladies'-tresses

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Sebastian County, citing Smith (1988). However, Smith (1988, 1994) included it in the Arkansas flora based on a misdetermined specimen of *S. vernalis*. *Spiranthes laciniata* is reported as approaching Arkansas in Mississippi and Louisiana (Sheviak & Brown 2002), as close as Caddo and Union Parishes, Louisiana (Kartesz 2009), and thus it may possibly occur in southern Arkansas.

Spiranthes sylvatica P.M.Br.

woodland ladies'-tresses

Diggs et al. (2006) attributed this species to Arkansas, most likely based on the report by Brown (2006), who indicated that all Arkansas plants treated as *S. praecox* are in fact of *S. sylvatica*. However, the Arkansas plants seem rather intermediate in characters and for now we are continuing to recognize them as *S. praecox*. It should also be noted that Kartesz (2009) attributed *S. sylvatica* only to Florida.

POACEAE Grass Family

Achnatherum hymenoides (Roem. & Schult.) Barkworth

Indian rice grass

This species was reported for Arkansas in the *Checklist* (AVFC 2006) based on a dubious report. Barkworth (2007a) attributed this species to a county in northeastern Arkansas. Kartesz (2009) showed it for Randolph County, citing *Flora of North America* (i.e., Barkworth 2007a) and *Manual of Grasses for North America* (i.e., Barkworth 2007b). Mary E. Barkworth (pers. comm. 2003) stated that the basis for the listing was a Sharp County report by Kartesz and Meacham (1999), who, in turn, cited the Arkansas Heritage Program as the source of the original record. PLANTS Database (USDA 2008) also attributed it to the state, citing the Arkansas Heritage Program. However, the Arkansas Natural Heritage Commission (Theo Witsell, pers. comm. 2006) has no such record. Given the dubious nature of the record and the fact that the primary range of this species is in the western United States, *A. hymenoides* should be excluded from the state flora.

Agrostis capillaris L.

colonial bent grass

PLANTS Database (USDA 2008) attributed this European species to Arkansas, citing Smith (1988). Smith, however, only listed the taxon [as *A. tenuis* Sibth.] as a possible addition to the state flora based on Steyermark's (1963) reports from Missouri. In addition, Smith stated that Moore's (1961) Arkansas report was likely based on a cultivated specimen at the University of Arkansas Herbarium (UARK). Furthermore, neither Harvey (2007) nor Kartesz (2009) attributed *A. capillaris* to Arkansas. It doubtfully occurs in the state.

Anthenantia rufa (Elliott) Schult.

purple silkyscale

Although this species has been reported for Arkansas by Smith (1988, 1994), Wipff (2003a), PLANTS Database (USDA 2008), and Kartesz (2009), the Arkansas material previously referred to this taxon represents the recently described *A. texana* (Kral 2004).

Anthenantia villosa (Michx.) P.Beauv.

green silkyscale

Wipff (2003a), and subsequently Kartesz (2009), attributed this species to Bradley County. This report, however, is likely based on material of the recently described *A. texana* (Kral 2004).

Axonopus compressus (Sw.) P.Beauv.

broad-leaf carpet grass

This species was reported for Arkansas in the *Checklist* (AVFC 2006) based on the report by Barkworth (2003a). PLANTS Database (USDA 2008) attributed it the state, citing Smith (1988), though Smith merely mentioned that it may not be specifically distinct from *A. fissifolius* [as *A. affinis* Chase]. Kartesz (2009) attributed it to Pulaski County, citing *Flora of North America* (i.e., Barkworth 2003a) and *Manual of Grasses for North America* (i.e., Barkworth 2007c). Barkworth (2003a) attributes *A. compressus* to Pulaski and Saline counties on the basis of two Dwight M. Moore specimens at the Utah State University Herbarium (UTC) (Kathleen Capels, pers. comm. 2005). However, duplicates of both specimens at the University of Arkansas Herbarium (UARK) seem best referable to *A. fissifolius*.

Bromus arvensis L.

field brome

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Arkansas, but they treated *B. japonicus* as a synonym. However, in the present treatment we are following Pavlick and Anderton (2007), who treated the two taxa as distinct and only attributed *B. japonicus* to Arkansas.

Bromus squarrosus L.

chess

This Eurasian species was erroneously listed for Arkansas in the *Checklist* (AVFC 2006). The two county records reported by Smith (1988), and subsequently by PLANTS Database (USDA 2008), Kartesz (2009), and Pavlick and Anderton (2007), actually represent material of *B. japonicus. Bromus squarrosus* is naturalized in North America generally well north of Arkansas (Pavlich & Anderton 2007) and probably does not occur in the state.

Calamagrostis porteri A.Gray

subsp. porteri

Porter's reed grass

Weakley (2008) attributed this subspecies to both Arkansas and Missouri. However, this report is surely in error, as the Arkansas and Missouri populations belong to subsp. *insperata* (Smith 1988, 1994; Yatskievych 1999; Marr et al. 2007; Kartesz 2009). Subspecies *porteri* is restricted to the Appalachians (Marr et al. 2007; Kartesz 2009) and is probably not to be expected in Arkansas.

Chloris cucullata Bisch.

windmill grass

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited Smith (1988). However, although it had been listed for the state by Demaree (1943), Smith excluded it from the flora as "unlikely for the state." Furthermore, Barkworth (2003b) did not attribute it to Arkansas. The primary range of *C. cucullata* is to the southwest of Arkansas (Barkworth 2003b; Kartesz 2009) and it probably does not occur in the state.

Dichanthelium acuminatum (Sw.) Gould & C.A.Clark subsp. longiligulatum (Nash) Freckmann & Lelong

hairy rosette grass, hairy panic grass

Kartesz (2009) attributed this taxon [as *D. longiligulatum* (Nash) Freckmann] to Arkansas, as did PLANTS Database (USDA 2008) [as *D. longiligulatum*], which cited Gould and Clark (1978). However, there are apparently errors with a few of Gould and Clark's maps and they did not actually attribute this taxon [as *D. acuminatum* var. *longiligulatum*] to Arkansas. This subspecies is reported primarily from the coastal plain (Gould & Clark 1978) and a few inland sites (Freckmann & Lelong 2003a). Although it possibly could occur in the Gulf Coastal Plain of southern Arkansas, it should be excluded for now

Dichanthelium acuminatum (Sw.) Gould & C.A.Clark

hairy rosette grass, hairy panic grass

var. thurowii (Scribn. & J.G.Sm.) Gould & C.A.Clark

Gould and Clark (1978) and Kartesz (2009) attributed this taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). Weakley (2008) also listed Arkansas as within its range and indicated that Freckmann and Lelong (2003a) apparently included this entity within subsp. *acuminatum*. In the present treatment we are following

Freckmann and Lelong in not recognizing the taxon.

Dichanthelium dichotomum (L.) Gould

subsp. mattamuskeetense (Ashe) Freckmann & Lelong

forked rosette grass, forked panic grass

This subspecies was erroneously reported for Arkansas in the *Checklist* (AVFC 2006). It occurs on the Atlantic Coastal Plain from Massachusetts to Florida (Freckmann & Lelong 2003a) and is not to be expected in Arkansas.

Dichanthelium latifolium (L.) Harvill

broad-leaf rosette grass, broad-leaf panic grass

This species was reported for Arkansas in the *Checklist* (AVFC 2006) based on misdetermined material. Smith (1988, 1994) included it [as *Panicum latifolium* L.] in the Arkansas flora, though he stated that all the University of Arkansas Herbarium (UARK) material was out on loan and, thus, could not be confirmed. The loan was either never returned or the specimens were all redetermined because UARK currently has no Arkansas specimens of this species. In addition, no authentic voucher material of the species has yet been located for the state at any other of the herbaria searched. The reports by Freckmann and Lelong (2003a), PLANTS Database (USDA 2008), and Kartesz (2009) were almost certainly based on Smith's (1988) report, and are, therefore, dubious. Nevertheless, *D. latifolium* is reported from throughout Missouri, including Dunklin, Howell, McDonald, and Taney counties (Yatskievych 1999; Kartesz 2009) and would seem at least possible for northern Arkansas.

Dichanthelium ovale (Elliott) Gould & C.A.Clark var. addisonii (Nash) Gould & C.A.Clark stiff-leaf rosette grass, stiff-leaf panic grass

Kartesz (2009) attributed this taxon to Arkansas, as did PLANTS Database (USDA 2008), which cited Gould and Clark (1978). Although he, too, treated the taxon as above, Weakley (2008) implied that Freckmann and Lelong (2003a) synonymized this name with *D. ovale* subsp. *pseudopubescens*. We are following Freckmann and Lelong in the present treatment.

Elymus diversiglumis Scribn. & C.R.Ball

wild rye

PLANTS Database (USDA 2008) erroneously reported this species for Arkansas based on Smith's (1988) report of *E. interruptus*. However, Smith's (1988, 1994) reports of *E. interruptus* were actually based on material of the recently described *E. churchii. Elymus diversiglumis* is a species of the north-central United States and south-central Canada (Barkworth et al. 2007a; Kartesz 2009) and is not to be expected in Arkansas.

Elymus glaucus Buckley subsp. glaucus

western wild rye, blue wild rye

The Arkansas reports of this subspecies (Smith 1988, 1994; AVFC 2006; USDA 2008; Kartesz 2009) are based on specimens currently treated as subspecies *mackenziei* (Barkworth et al. 2007a). The typic subspecies occurs primarily in western North America (Barkworth et al. 2007a) and is not to be expected in Arkansas.

Elymus interruptus Buckley

southwestern wild rye

This species was reported for Arkansas by Smith (1988, 1994) and the Arkansas Vascular Flora Committee (2006) based on material of a recently described species, *E. churchii* (Campbell 2006; Barkworth et al. 2007a). *Elymus interruptus* is restricted to the southwestern United States and northern Mexico (Barkworth et al. 2007a; Kartesz 2009) and is not to be expected in Arkansas.

Elymus svensonii G.L.Church

Svenson's wild rye

This species was erroneously reported for Arkansas in the *Checklist* (AVFC 2006). PLANTS Database (USDA 2008) attributed it to the state, citing personal communication with Julian J. N. Campbell. However, Barkworth et al. (2007a) did not report it for the state but instead showed it as restricted to central Kentucky and central Tennessee.

Elymus virginicus L.

var. halophilus (E.P.Bicknell) Wiegand

Virginia wild rye

This variety was erroneously reported for Arkansas in the *Checklist* (AVFC 2006). It is restricted to the northern Atlantic coast (Barkworth et al. 2007a; Kartesz 2009) and is not to be expected in Arkansas.

Glyceria fluitans (L.) R.Br.

water manna grass

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this Eurasian species to Washington County, citing Smith (1988). It was also reported for Arkansas in the Checklist (AVFC 2006) based on Smith's report. Smith included it in the Arkansas flora based solely on a report for Washington County by Moore (1961). It is possible, though, that the Moore report was based on two F. L. Harvey specimens at the University of Arkansas Herbarium (UARK) collected in 1882 from "N.W. Ark." [possibly interpreted as Washington County] of G. septentrionalis var. septentrionalis that were originally labeled as G. fluitans. Furthermore, Barkworth and Anderton (2007a) did not attribute G. fluitans to the

Glyceria notata Chevall.

plicate manna grass

Kartesz (2009) attributed this Eurasian species to Clay, Prairie, and St. Francis counties, citing Flora of North America (i.e., Barkworth and Anderton 2007a) and Manual of Grasses for North America (i.e., Barkworth and Anderton 2007b). Barkworth and Anderton (2007a) stated that "the reports [from North America] have not been verified." The Arkansas reports are likely based on material of G. septentrionalis.

Miscanthus floridulus (Labill.) Warb. ex K.Schum. & Lauterb.

giant Chinese silver grass

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Smith (1988). However, Smith excluded the species, stating that the Newton County report (Thompson 1977) was based on cultivated material.

Phragmites australis (Cav.) Trin. ex Steud.

subsp. americanus Saltonstall, P.M.Peterson & Soreng American reed

Kartesz (2009) attributed this North American native subspecies to Arkansas in addition to the weedy, introduced Eurasian subspecies. PLANTS Database (USDA 2008) attributed the species to the state, without infraspecific designation, citing Demaree (1943). However, the only specimens of the species known from Arkansas are of recently collected material of the weedy, introduced strain. Subspecies americanus doubtfully occurs in the state.

Pseudoroegneria spicata (Pursh) Á.Löve

blue-bunch wheat grass

This species was erroneously reported for Arkansas in the Checklist (AVFC 2006). It is a species of western North America (Carlson 2007; Kartesz 2009) and is not to be expected in Arkansas.

Setaria leucopila (Scribn. & Merr.) K.Schum.

streambed bristle grass

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited personal communication with Mary E. Barkworth. However, Rominger (2003, 2007) did not attribute it to Arkansas, and the primary range appears to be well to the west of the state (Rominger 2003, 2007; Kartesz 2009).

Setaria pumila (Poir.) Roem. & Schult.

subsp. pallidefusca (Schumach.) B.K.Simon

yellow bristle grass, yellow foxtail

This African taxon was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material, though Kartesz (2009) did attribute it to the state. However, Rominger (2003) stated that this subspecies is only known from southeastern Louisiana and Oregon.

Sorghastrum secundum (Elliott) Nash

lopsided Indian grass

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing personal communication with Mary E. Barkworth. However, neither Aranda and Hatch (2003, 2007) nor Kartesz (2009) attributed it to Arkansas; and they give a range for the species well to the southeast of the state, from southern Mississippi to North Carolina. Sorghastrum secundum seems rather unlikely to occur in Arkansas.

Sporobolus airoides (Torr.) Torr.

alkali sacaton

Kartesz (2009) attributed this species to Arkansas, as did PLANTS Database (USDA 2008), which cited the Arkansas Heritage Program. However, the Arkansas Heritage Program report was based on a misdetermined specimen of S. cryptandrus at the University of Arkansas Herbarium (UARK) (Smith 1988). The primary range of S. airoides extends westward from southern Texas, central Oklahoma, central Kansas, and central Nebraska (Peterson et al. 2003; Kartesz 2009). It is probably not to be expected in Arkansas.

Tridens ambiguus (Elliott) Schult.

pine-barren tridens

This species was reported for Arkansas in the Checklist (AVFC 2006) based on misdetermined material. The basis for this report, as well as the reports by Valdés-Revna (2007) and Kartesz (2009), represents material of the hybrid T. ×oklahomensis.

Tridens muticus (Torr.) Nash

var. muticus

slim tridens

Kartesz (2009) attributed this variety to Arkansas, as did PLANTS Database (USDA 2008), which cited Demaree (1943). However, the typic variety apparently occurs well to the southwest of Arkansas (Valdés-Reyna 2003; Kartesz 2009). Demaree's report was likely based on material of var. *elongatus*.

Zoysia matrella (L.) Merr.

Manila grass

Kartesz (2009) attributed this southeastern Asian species to Ouachita County, citing Flora of North America (i.e., Anderson 2003) and Manual of Grasses for North America (i.e., Anderson 2007). However, Anderson did not attribute this species to Arkansas in either source, though he did add a record for Ouachita Parish, Louisiana in the latter. The Arkansas report is thus considered erroneous.

RUSCACEAE

Solomon's-seal Family

Ophiopogon jaburan (Siebold) Lodd.

monkey-grass, lily-turf

This species was attributed to Arkansas by Smith (1988), and subsequently by the Arkansas Vascular Flora Committee (2006), PLANTS Database (USDA 2008), and Kartesz (2009), based on misdetermined material of Liriope spicata (Nesom 2010a).

SMILACACEAE

Greenbrier Family

Smilax auriculata Walter

wild bamboo

PLANTS Database (USDA 2008) and Kartesz (2009) attributed this species to Montgomery County, citing Smith (1988). Tucker (1976) and Smith both included it in the Arkansas flora based on a Montgomery County report by Duncan (1967). Duncan did show a dot for Montgomery County on the distribution map but did not cite a voucher specimen. Peck (2003) speculated that this report was the result of a clerical error. Other than the Montgomery County report, the species appears to be restricted to "dunes and sandy flatwoods" on the outer coastal plain from southeastern Louisiana to North Carolina (Holmes 2002b). It seems rather unlikely that S. auriculata occurs in Arkansas.

Smilax illinoensis Mangaly

Illinois carrion-flower

PLANTS Database (USDA 2008) attributed this species to Arkansas, citing Mangaly (1968). Mangaly stated that its "distribution is mostly in the Great Lakes Region" and "extends to northern Missouri," but he did list Arkansas among the states from which specimens have been collected. However, he did not cite an Arkansas voucher specimen, nor did he show any Arkansas occurrences on his map. Holmes (2002b) and Kartesz (2009) showed the species ranging from the Great Lakes southward to east-central Missouri and southern Illinois, but neither attributed it to Arkansas. Since no voucher specimens are known, and since Arkansas seems to be outside of its range, S. illinoensis should probably be excluded from the state flora.

TRILLIACEAE

Trillium Family

Trillium pusillum Michx.

var. pusillum

wakerobin

This taxon was reported for Arkansas in the Checklist (AVFC 2006) following Case (2002), who merged var. ozarkanum with the typic variety, stating that it merely represented a "widely disjunct, regional population." For the present treatment, however, we are recognizing the Ozark entity at the species level, following Susan B. Farmer's (pers. comm. 2008) recommendation. Thus, var. pusillum, in the strictest sense, is a more eastern entity (Kartesz 2009) and is being excluded from the Arkansas flora.

APPENDIX VI

ARKANSAS VASCULAR PLANTS OF CONSERVATION CONCERN

Arkansas' list of vascular plants of conservation concern is the result of over three decades of work by Arkansas botanists and ecologists. It began with the development of a State Biological Inventory Program in 1978, in partnership with The Nature Conservancy. Known as the Arkansas Heritage Program, this inventory process is now managed by the Research and Inventory Section of the Arkansas Natural Heritage Commission (ANHC). The Arkansas Heritage Program is a member of NatureServe, an international network of state Natural Heritage Programs and Conservation Data Centers. The principal mission of NatureServe members is to gather, organize, and distribute high-quality biodiversity information. To this end, NatureServe members utilize the same data management methodology, enabling standardized information regarding biological diversity to be shared across state and international boundaries.

The plants on the following list are those determined by the Arkansas Heritage Program to be of conservation concern in the state. They are also designated in the main body of the *Atlas* with a "4" status code. This list conforms to the nomenclature and organization used throughout the body of the *Atlas*. In a few cases the scientific names presented here may not match that used by NatureServe, though they will likely be found by searching synonyms.

Each species or infraspecific taxon on this list is assigned a conservation status rank, made up of a global (G) rank and a state (S) rank. Global and state ranks provide information as to the relative rarity and endangerment of a taxon throughout its range. Global ranks address the status of taxa throughout their entire range,

while state ranks address status within the state. The appearance of a taxon on this list and the ranks that it carries are based upon the best available science but are not static. The list is reviewed periodically and may change as new data are gathered about plants on the list or as changes in their status are documented. Updated lists and status ranks can be found at www.naturalheritage.com.

Each taxon on this list is actively tracked by the ANHC, which maintains a geospatial (GIS) database with information on known occurrences or populations of each. This database houses detailed information on almost 14,000 occurrences of rare plants, animals, and natural communities in Arkansas. Data from the database are used for conservation planning, environmental review, and research purposes.

A legend is also provided which includes explanations of federal and state status codes as well as global and state ranks. Federal status codes represent designations by the U.S. Fish and Wildlife Service under the Endangered Species Act. State status codes comprise administrative designations by the ANHC to describe a taxon's status within Arkansas. The ANHC has summarized, county-level distribution information on these plants from its database available from its website at www.naturalheritage.com.

For more information on the Arkansas Heritage Program, or to report an occurrence of a plant of conservation concern, please contact: Theo Witsell, Botanist; Arkansas Natural Heritage Commission; 1500 Tower Building, 323 Center Street; Little Rock, AR 72201. Or call 501.324.9615 or email theo@arkansasheritage.org.

CONSERVATION STATUS CODE/RANK LEGEND

STATUS CODES

FEDERAL STATUS CODES

- C = Candidate Species. The U.S. Fish and Wildlife Service has enough scientific information to warrant proposing this species for listing as endangered or threatened under the Endangered Species Act.
- **LE** = **Listed Endangered.** The U.S. Fish and Wildlife Service has listed this species as endangered under the Endangered Species Act.
- LT = Listed Threatened. The U.S. Fish and Wildlife Service has listed this species as threatened under the Endangered Species Act.

STATE STATUS CODES

- INV = Inventory Element. The Arkansas Natural Heritage Commission is currently conducting active inventory work on these elements. Available data suggests these elements are of conservation concern. These elements may include outstanding examples of Natural Communities, colonial bird nesting sites, outstanding scenic and geologic features as well as plants and animals, which, according to current information, may be rare, peripheral, or of an undetermined status in the state. The ANHC is gathering detailed location information on these elements.
- **SE** = **State Endangered.** The Arkansas Natural Heritage Commission applies this term to native plant taxa which are in danger of being extirpated from the state.
- ST = State Threatened. The Arkansas Natural Heritage Commission applies this term to native plant taxa which are believed likely to become endangered in Arkansas in the foreseeable future, based on current inventory information.

DEFINITION OF RANKS

GLOBAL RANKS

- G1 = Critically Imperiled Globally. At a very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
- **G2** = **Imperiled Globally.** At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
- G3 = Vulnerable Globally. At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
- **G4** = **Apparently Secure Globally.** Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- **G5** = **Secure Globally.** Common, widespread and abundant.
- **GH** = **Of Historical Occurrence, Possibly Extinct Globally.** Missing; known from only historical occurrences but still some hope of rediscovery.
- **GU** = **Unrankable.** Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
- **GX** = **Presumed Extinct Globally.** Not located despite intensive searches and virtually no likelihood of rediscovery.
- **GNR** = **Unranked.** The global rank not yet assessed.
- **GNA** = **Not Applicable.** A conservation status rank is not applicable.

STATE RANKS

- S1 = Critically Imperiled in the State. At a very high risk of extirpation due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
- S2 = Imperiled in the State. At high risk of extirpation due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
- S3 = Vulnerable in the State. At moderate risk of extirpation due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
- S4 = Apparently Secure in the State. Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- S5 = Secure in the State. Common, widespread and abundant.
- SH = Of Historical Occurrence, With Some Possibility of Rediscovery. Its presence may not have been verified in the past 20–40 years. A species may be assigned this rank without the 20–40 year delay if the only known occurrences were destroyed or if it had been extensively and unsuccessfully sought.
- SU = Unrankable. Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
- **SX** = **Presumed Extirpated From the State.** Not located despite intensive searches and virtually no likelihood of rediscovery.
- **SNR** = **Unranked.** The state rank not yet assessed.
- **SNA** = **Not Applicable.** A conservation status rank is not applicable.

GENERAL RANKING NOTES

- **Q** = A "Q" in the global rank indicates the element's taxonomic classification as a species is a matter of conjecture among scientists.
- **Ranges** = Ranges are used to indicate a range of uncertainty about the status of the element.
- ? A question mark is used to denote an inexact numeric rank.

VASCULAR PLANTS OF CONSERVATION CONCERN

| Name | Common Name | Federal Status | State Status | Global Rank | State Rank |
|---|--|-------------------|--------------------------------|------------------------------------|----------------------------|
| PTERIDOPHYTES | | | | | |
| ASPLENIACEAE | Spleenwort Fern Family | | | | |
| Asplenium pinnatifidum Asplenium ×ebenoides Asplenium ×gravesii Asplenium ×kentuckiense | lobed spleenwort Scott's spleenwort Graves' spleenwort Kentucky spleenwort | - - - - | INV INV INV | G4 GNA GNA GNA | S3 S1 S1 SH |
| AZOLLACEAE | Mosquito Fern Family | | | | |
| Azolla caroliniana | Carolina mosquito fern | - | INV | G5 | SU |
| DENNSTAEDTIACEAE | Bracken Fern Family | | | | |
| Dennstaedtia punctilobula | hay-scented fern | - | INV | G5 | S2 |
| DRYOPTERIDACEAE | Wood Fern Family | | | | |
| Dryopteris carthusiana Dryopteris celsa Dryopteris goldiana Dryopteris ludoviciana Dryopteris ×australis Dryopteris ×leedsii | spinulose wood fern log fern Goldie's wood fern southern wood fern Dixie wood fern Leed's wood fern | - - - - | ST INV INV INV INV | G5 G4 G4 G4 GNA GNA | S1 S2 S1 S1 S1 |
| EQUISETACEAE | Horsetail Family | | | | |
| Equisetum laevigatum | smooth scouring-rush | - | INV | G5 | S1 |
| HYMENOPHYLLACEAE | Filmy Fern Family | | | | |
| Trichomanes boschianum Trichomanes petersii | Appalachian filmy fern dwarf bristle fern | - - | ST ST | G4 G4G5 | S2S3 S2 |
| ISOETACEAE | Quillwort Family | | | | |
| Isoetes engelmannii | Engelmann's quillwort | - | INV | G4 | S1 |
| LYCOPODIACEAE | Club-moss Family | | | | |
| Diphasiastrum digitatum Huperzia lucidula Lycopodiella prostrata Palhinhaea cernua Pseudolycopodiella caroliniana | southern running-pine shining fir-moss prostrate bog club-moss nodding club-moss slender bog club-moss | - - - - | INV INV INV INV | G5 G5 G5 G5 G4 | S1S2 S2S3 S1 S1 |
| OSMUNDACEAE | Royal Fern Family | | | | |
| Osmunda claytoniana | interrupted fern | - | ST | G5 | S1 |
| PSILOTACEAE | Whisk Fern Family | | | | |
| Psilotum nudum | whisk fern | - | INV | G5 | S1? |

| Name | Common Name | Federal Status | State Status | Global Rank | State Rank |
|------------------------------|----------------------------|-------------------|-----------------|----------------|---------------|
| APOCYNACEAE | Dogbane Family | | | | |
| Amsonia hubrichtii | Ouachita bluestar | - | INV | G3 | S3 |
| Apocynum androsaemifolium | spreading dogbane | - | INV | G5 | SH |
| Asclepias incarnata | | | | | |
| subsp. incarnata | swamp milkweed | - | INV | G5T5 | S2 |
| Asclepias obovata | savannah milkweed | - | INV | G5? | S2 |
| Asclepias stenophylla | narrow-leaf milkweed | - | INV | G4G5 | SH |
| Aatelea cynanchoides | milkvine | - | SE | G4G5 | S1 |
| AQUIFOLIACEAE | Holly Family | | | | |
| lex longipes | Georgia holly | - | INV | G5 | S3 |
| lex verticillata | winterberry | - | ST | G5 | S2 |
| ARALIACEAE | Ginseng Family | | | | |
| Hydrocotyle americana | marsh pennywort | - | INV | G5 | SH |
| ASTERACEAE | Sunflower Family | | | | |
| Antennaria neglecta | field pussytoes | - | INV | G5 | S1 |
| Aphanostephus skirrhobasis | 1 5 | | | | |
| var. skirrhobasis | Arkansas lazy daisy | - | INV | G5TNR | S1 |
| Artemisia ludoviciana | | | | | |
| subsp. mexicana | white sagebrush | - | INV | G5T5? | S1S2 |
| Berlandiera pumila | | | | | |
| var. pumila | sandhill green-eyes | - | INV | G4G5TNR | S1 |
| Brickellia grandiflora | tassel-flower | - | INV | G5 | S2 |
| Cirsium muticum | swamp thistle | - | ST | G5 | S1 |
| Coreopsis basalis | golden-mane tickseed | - | INV | G5 | S2 |
| Coreopsis grandiflora | | | | | |
| var. saxicola | large-flower tickseed | - | INV | G5T4? | S3 |
| Coreopsis intermedia | golden-wave tickseed | - | INV | G3 | S1 |
| Diaperia candida | silver rabbit-tobacco | _ | INV | G3G5 | S1S2 |
| Diaperia prolifera | | | | | |
| var. <i>prolifera</i> | big-head rabbit-tobacco | _ | INV | G5TNR | S1S3 |
| Diaperia verna | org nead racon toodeec | | 1111 | 0311110 | 5155 |
| var. verna | many-stem rabbit-tobacco | _ | INV | G5TNR | SH |
| Echinacea paradoxa | many stem rabbit tobacco | | 1111 | GSTIVIC | 511 |
| var. <i>paradoxa</i> | yellow coneflower | _ | ST | G2T2 | S2 |
| Echinacea sanguinea | sanguine purple coneflower | - | ST | G3G5 | S2S3 |
| | Engelmann's daisy | - | | G5 | |
| Engelmannia peristenia | | - | INV | | S1 |
| Eurybia macrophylla | big-leaf aster | - | ST | G5 | SH |
| Helianthus occidentalis | | | DAILY | O.S.T.S | 0100 |
| subsp. occidentalis | naked-stem sunflower | - | INV | G5T5 | S1S2 |
| Helianthus occidentalis | 1 1 . 2 . 2 | | 13.77 | O STRATES | 0.1 |
| subsp. plantagineus | plantain-leaf sunflower | - | INV | G5T2T3 | S1 |
| Helianthus pauciflorus | | | | | |
| subsp. pauciflorus | prairie sunflower | - | INV | G5T5? | S1 |
| Heliopsis gracilis | pinewoods ox-eye | - | INV | G5? | S1 |
| Hieracium scabrum | rough hawkweed | - | INV | G5 | S2 |
| Hymenopappus artemisiifolius | | | | | |
| var. artemisiifolius | woolly-white | - | INV | G5T4 | S2 |
| | slender marsh-elder | | INIX | | S1 |
| Iva angustifolia | Sichaci maish-ciaci | - | INV | G5? | 31 |

| BRASSICACEAE Arabis hirsuta var. adpressipilis Cardamine angustata Cardamine dissecta | Mustard Family hairy rockcress slender toothwort fork-leaf toothwort purple cress open-ground whitlow-grass | - - - | INV INV | G5T4Q | |
|--|--|-------------|------------|--------|------|
| var. adpressipilis Cardamine angustata Cardamine dissecta | slender toothwort fork-leaf toothwort purple cress | - - - | INV | G5T4Q | |
| Cardamine angustata Cardamine dissecta | slender toothwort fork-leaf toothwort purple cress | - - - | INV | G5T4Q | |
| Cardamine dissecta | fork-leaf toothwort purple cress | - - - | | | S1? |
| | purple cress | - | T3 TT 7 | G5 | S2 |
| | | - | INV | G4? | S1 |
| Cardamine douglassii | open-ground whitlow-grass | | INV | G5 | S1 |
| Draba aprica | | - | ST | G3 | S2 |
| Erysimum capitatum | | | | | |
| var. capitatum | western wallflower | - | INV | G5T5 | S2 |
| Physaria filiformis | Missouri bladderpod | LT | INV | G3 | S1 |
| Physaria gracilis | • | | | | |
| subsp. <i>gracilis</i> | slender bladderpod | - | INV | G5T4 | S1 |
| Streptanthus hyacinthoides | sandhill twistflower | _ | ST | G4 | S2 |
| Streptanthus maculatus | | | | | |
| subsp. <i>obtusifolius</i> | Arkansas twistflower | _ | INV | G3T3 | S3 |
| Streptanthus squamiformis | Ouachita twistflower | _ | ST | G2G3 | S2 |
| | | | ~ - | | ~- |
| CANNABACEAE | Hemp Family | | | | |
| Humulus lupulus | | | | | |
| var. pubescens | wild hop | - | INV | G5T4? | S1S2 |
| CAPRIFOLIACEAE | Honeysuckle Family | | | | |
| Triosteum aurantiacum | | | | | |
| var. illinoense | red-fruit horse-gentian | - | INV | G5TNR | SH |
| CARYOPHYLLACEAE | Pink Family | | | | |
| Cerastium velutinum | | | | | |
| var. velutinum | velvety chickweed | - | INV | GNRT4? | S1 |
| Geocarpon minimum | geocarpon | LT | SE | G2 | S2 |
| Loeflingia squarrosa | spreading loeflingia | - | INV | G5 | S1 |
| Minuartia drummondii | Drummond's sandwort | - | INV | G5 | S2S3 |
| Minuartia michauxii | rock sandwort | - | INV | G5 | S1 |
| Paronychia virginica | yellow nailwort | - | INV | G4 | S2 |
| Silene ovata | ovate-leaf catchfly | - | ST | G3 | S3 |
| Silene regia | royal catchfly | - | ST | G3 | S2 |
| CELASTRACEAE | Bittersweet Family | | | | |
| Euonymus obovatus | running strawberry-bush | - | INV | G5 | S3 |
| CISTACEAE | Rock-rose Family | | | | |
| Crocanthemum bicknellii | hoary frostweed | - | INV | G5 | SH |
| Crocanthemum rosmarinifolium | rosemary rock-rose | - | INV | G4 | S1 |
| CLEOMACEAE | Spider-flower Family | | | | |
| Polanisia erosa | | | | | |
| subsp. <i>erosa</i> | sandhill clammy-weed | - | INV | G5T5 | S1S2 |

| Name | Common Name | Federal Status | State Status | Global Rank | State Rank |
|--|----------------------------|-------------------|-----------------|----------------|---------------|
| CONVOLVULACEAE | Morning-glory Family | | | | |
| Convolvulus equitans | Texas bindweed | - | INV | G5 | S1 |
| Cuscuta coryli | hazel dodder | - | INV | G5? | SU |
| Cuscuta glomerata | rope dodder | - | INV | G5 | S1 |
| Cuscuta obtusiflora | | | | | |
| var. <i>glandulosa</i> | glandular dodder | - | INV | G5T4T5 | SU |
| Evolvulus sericeus | silver dwarf morning-glory | - | ST | G5 | S1 |
| Ipomoea cordatotriloba | | | | | |
| var. cordatotriloba | tie-vine morning-glory | - | INV | G5T5 | S1 |
| Stylisma aquatica | water dawnflower | - | INV | G4 | S1S2 |
| Stylisma pickeringii var. pattersonii | Patterson's dawnflower | - | INV | G4T4 | S2 |
| CRASSULACEAE | Stonecrop Family | | | | |
| Crassula aquatica | water pygmyweed | - | INV | G5 | S1S3 |
| DROSERACEAE | Sundew Family | | | | |
| DROSERACEAE | Sundew 1 aminy | | | | |
| Drosera capillaris | pink sundew | - | INV | G5 | S1 |
| ELATINACEAE | Waterwort Family | | | | |
| Bergia texana | Texas bergia | - | INV | G5 | S2 |
| ERICACEAE | Heath Family | | | | |
| Gaylussacia baccata | black huckleberry | - | INV | G5 | S3 |
| EUPHORBIACEAE | Spurge Family | | | | |
| Acalypha deamii | Deam's copperleaf | _ | INV | G4? | S1 |
| Croton lindheimerianus | Tr - | | | | |
| var. lindheimerianus | Lindheimer's croton | - | INV | G5TNR | S1 |
| Croton michauxii | narrow-leaf rushfoil | - | INV | G5 | S1S2 |
| Ditrysinia fruticosa | Sebastian-bush | - | INV | G5 | S1 |
| Euphorbia hexagona | six-angle spurge | - | INV | G5 | S2 |
| Euphorbia longicruris | wedge-leaf spurge | - | INV | G4G5 | S1 |
| Euphorbia missurica | Missouri spurge | - | INV | G5 | S2 |
| Tragia smallii | Small's noseburn | - | INV | G4? | S1 |
| FABACEAE | Bean Family | | | | |
| Amorpha canescens | lead-plant | - | INV | G5 | S1 |
| Amorpha ouachitensis | Ouachita indigo-bush | - | INV | G3Q | S3 |
| Amorpha paniculata | panicled indigo-bush | - | ST | G2G3 | S1 |
| Astragalus crassicarpus | | | | | |
| var. crassicarpus | purple ground-plum | - | INV | G5T5 | S2 |
| Astragalus leptocarpus | slim-pod milk-vetch | - | INV | G5 | S2 |
| Astragalus nuttallianus | | | | | |
| var. nuttallianus | Nuttall's milk-vetch | - | INV | G5TNR | S1 |
| Astragalus soxmaniorum | Soxman's milk-vetch | - | INV | G3 | S2 |
| Dalea compacta | | | | a == : | G. |
| var. compacta | compact prairie-clover | - | INV | G5T4 | S2 |
| Dalea gattingeri | Gattinger's prairie-clover | - | INV | G3G4 | S2 |

| Name | Common Name | Federal Status | State Status | Global Rank | State Rank |
|---|---|-------------------|-----------------|----------------|---------------|
| Dalea lanata | | | | | |
| var. <i>lanata</i> | woolly prairie-clover | - | INV | G5TNR | S2S3 |
| Dalea phleoides | | | | | |
| var. microphylla | little-leaf prairie-clover | - | ST | G4T4 | S1 |
| Dalea villosa | | | | | |
| var. <i>grisea</i> | silky prairie-clover | - | SE | G5T4 | S1 |
| Desmodium illinoense | Illinois tick-trefoil | - | INV | G5 | S2 |
| Indigofera miniata | scarlet-pea | - | ST | G5 | S2 |
| Lupinus texensis | Texas bluebonnet | - | INV | G5 | S1 |
| Orbexilum onobrychis | French-grass | - | INV | G5 | S1 |
| Pediomelum digitatum | palm-leaf Indian-breadroot | - | ST | G5 | S1 |
| Pediomelum esculentum Pediomelum hypogaeum | large Indian-breadroot | - | INV | G5 | S2 |
| var. <i>subulatum</i> | buried Indian-breadroot | - | SE | G5T4 | S1 |
| Styphnolobium affine | Eve's necklace | - | INV | G4 | S2S3 |
| Trifolium bejariense | Bejar clover | - | INV | G4 | SH |
| Trifolium carolinianum | Carolina clover | - | INV | G5 | S1? |
| Trifolium stoloniferum Vicia ludoviciana | running buffalo clover | LE | INV | G3 | SH |
| subsp. leavenworthii Vicia ludoviciana | Leavenworth's vetch | - | INV | G5T5 | S1S2 |
| subsp. ludoviciana | Louisiana vetch | - | INV | G5TNR | SH |
| FAGACEAE | Beech Family | | | | |
| Quercus acerifolia | maple-leaf oak | - | ST | G1 | S1 |
| Quercus austrina | bluff oak | - | INV | G4? | S1 |
| Quercus hemisphaerica | Darlington's oak | - | INV | G5 | S1S2 |
| Quercus prinoides | dwarf chinquapin oak | - | INV | G5 | SH |
| Quercus sinuata | Durand's white oak | - | ST | G4G5 | S2 |
| GENTIANACEAE | Gentian Family | | | | |
| Eustoma exaltatum | catchfly prairie-gentian | _ | INV | G5 | S2 |
| Gentiana alba | pale gentian | _ | INV | G4 | S1 |
| Gentiana puberulenta | downy gentian | - | INV | G4G5 | S2 |
| Sabatia arkansana | Pelton's rose-gentian | - | INV | G1 | S1 |
| Sabatia campanulata | slender rose-gentian | - | SE | G5 | S1 |
| Sabatia gentianoides | pinewoods rose-gentian | - | INV | G4G5 | S1 |
| GERANIACEAE | Geranium Family | | | | |
| Geranium texanum | Texas crane's-bill | - | INV | G4 | SH |
| GROSSULARIACEAE | Currant Family | | | | |
| Ribes cynosbati | prickly gooseberry | - | INV | G5 | S2S3 |
| HAMAMELIDACEAE | Witch-hazel Family | | | | |
| Fothergilla major | witch-alder | - | INV | G3 | S1 |
| HYDRANGEACEAE | Hydrangea Family | | | | |
| D : 1 1 | 1. 1. 1. 1 | | D.II. | 0.5 | G1 |
| Decumaria barbara Philadelphus hirsutus | climbing-hydrangea hairy mock orange | - | INV INV | G5 G5 | S1 S2S3 |
| * | , | | | | |

| Name | Common Name | Federal | State Status | Global Status | State Rank | Rank |
|--|--|---------|---|--|---|--|
| Hypericaceae | St. John's-wort Family | | | | | |
| Hypericum adpressum Hypericum apocynifolium Hypericum virgatum Triadenum virginicum | creeping St. John's-wort dogbane St. John's-wort sharp-leaf St. John's-wort Virginia marsh-St. John's-wo | ort | - - - | INV INV INV INV | G3 GNR G4? G5 | S1 S1S2 S1 |
| JUGLANDACEAE | Walnut Family | | | | | |
| Carya pallida Juglans cinerea | pale hickory butternut | | - | ST INV | G5 G4 | S1 S3 |
| LAMIACEAE | Mint Family | | | | | |
| Blephilia hirsuta Hedeoma reverchonii | hairy wood mint | | - | INV | G5? | S1 |
| Hedeoma reverchonii Vat. reverchonii Mentha arvensis Monarda luteola Physostegia digitalis Pycnanthemum verticillatum Pycnanthemum virginianum Salvia reflexa Scutellaria bushii Scutellaria cardiophylla Stachys crenata Stachys iltisii LAURACEAE Lindera melissifolia Persea borbonia LENTIBULARIACEAE Utricularia cornuta Utricularia inflata Utricularia macrorhiza Utricularia subulata | Reverchon's false pennyroya wild mint yellow-flower beebalm foxglove false dragonhead whorled mountain-mint Virginia mountain-mint Rocky Mountain sage Bush's skullcap Gulf skullcap shade betony Ouachita hedge-nettle Laurel Family pondberry red bay Bladderwort Family horned bladderwort swollen bladderwort greater bladderwort zigzag bladderwort | 1 | - - - - - - - - - - - - - - - | INV INV INV INV INV INV INV ST INV INV INV INV | G5?TNR G5 GNR G5 G5 G5 G5 G5 G5 G7 G5 G7 G5 G7 G7 G5 G7 G5 G7 G5 G7 G5 G5 G5 G5 G5 G5 | S1 S1 S1 S1 S1 S1S2 SH S2 S1S2 SH S3 S2 SH S3 |
| LOASACEAE | Stick-leaf Family | | | | | |
| Mentzelia oligosperma | stick-leaf | | - | INV | G4 | SH |
| LOGANIACEAE | Logania Family | | | | | |
| Mitreola sessilifolia | swamp hornpod | | - | INV | G4G5 | S2 |
| LYTHRACEAE | Loosestrife Family | | | | | |
| Didiplis diandra | water-purslane | | - | INV | G5 | S1S3 |
| MAGNOLIACEAE | Magnolia Family | | | | | |
| Magnolia macrophylla | big-leaf magnolia | | - | SE | G5 | S1 |

| Name | Common Name | Federal Status | State Status | Global Rank | State Rank |
|---|-----------------------------------|-------------------|-----------------|----------------|---------------|
| MALVACEAE | Mallow Family | | | | |
| Abutilon fruticosum | Texas Indian-mallow | _ | INV | G4G5 | S1S2 |
| Callirhoe alcaeoides | plains poppy-mallow | _ | INV | G5? | S1? |
| Callirhoe bushii | Bush's poppy-mallow | _ | INV | G3 | S3 |
| Callirhoe papaver | woodland poppy-mallow | _ | INV | G5 | S1 |
| Hibiscus coccineus | scarlet rose-mallow | _ | INV | G4? | S1 |
| Malvastrum hispidum | yellow false mallow | _ | INV | G3G5 | S2 |
| Sida elliottii | Elliott's sida | - | INV | G4G5 | S2S3 |
| MENYANTHACEAE | Buck-bean Family | | | | |
| Obolaria virginica | Virginia pennywort | - | INV | G5 | S2 |
| MYRSINACEAE | Colicwood Family | | | | |
| Lysimachia hybrida | lowland yellow-loosestrife | - | INV | G5 | S1 |
| ONAGRACEAE | Evening-primrose Family | | | | |
| Ludwigia microcarpa | small-fruit primrose-willow | _ | INV | G5 | S1 |
| Oenothera clelandii | Cleland's evening-primrose | - | INV | G3G5 | S1 |
| Oenothera heterophylla subsp. heterophylla Oenothera heterophylla | sandhill evening-primrose | - | INV | G4TNR | S1 |
| subsp. orientalis Oenothera pilosella | eastern sandhill evening-primrose | - | INV | G4TU | S1S2 |
| subsp. sessilis | prairie evening-primrose | _ | ST | G5T2 | S2 |
| Oenothera spachiana | Spach's evening-primrose | _ | INV | G5 | SH |
| Stenosiphon linifolius | false gaura | - | ST | G5 | S1 |
| OROBANCHACEAE | Broomrape Family | | | | |
| OROBANCHACEAE | Broom ape Family | | | | |
| Agalinis auriculata | ear-leaf false foxglove | - | INV | G3 | S1 |
| Agalinis skinneriana | Skinner's false foxglove | - | INV | G3G4 | SH |
| Castilleja indivisa | entire-leaf Indian-paintbrush | - | INV | G5 | SH |
| Pedicularis lanceolata | swamp lousewort | - | INV | G5 | S1 |
| Seymeria cassioides | yaupon black-senna | - | INV | G5 | S1 |
| OXALIDACEAE | Wood-sorrel Family | | | | |
| Oxalis texana | Texas yellow wood-sorrel | - | INV | GNR | SU |
| PAPAVERACEAE | Poppy Family | | | | |
| Stylophorum diphyllum | celandine-poppy | - | INV | G5 | S3 |
| PARNASSIACEAE | Grass-of-Parnassus Family | | | | |
| Parnassia asarifolia | kidney-leaf grass-of-Parnassus | - | INV | G4 | S1 |
| РНКУМАСЕАЕ | Lopseed Family | | | | |
| Mimulus floribundus Mimulus ringens | yellow monkey-flower | - | INV | G5 | S2S3 |
| var. ringens | Allegheny monkey-flower | - | INV | G5T5 | S1S2 |

| Name | Common Name | Federal Status | State Status | Global Rank | State Rank |
|--|--------------------------------|-------------------|-----------------|----------------|---------------|
| Ranunculus aquatilis | | | | | |
| var. diffusus | white water crowfoot | _ | INV | G5T5 | S2S3 |
| Ranunculus flabellaris | vellow water crowfoot | _ | INV | G5 15 | S3 |
| Thalictrum arkansanum | Arkansas meadow-rue | _ | ST | G2Q | S2 |
| Thalictrum arkansanum Thalictrum dioicum | early meadow-rue | - | INV | G2Q G5 | S1 |
| Trautvetteria caroliniensis | false bugbane | - | INV | G5 | S1 S1 |
| RHAMNACEAE | Buckthorn Family | | | | |
| Condalia hookeri | bluewood | _ | INV | G5 | S1 |
| | | | 1111 | G5 | 51 |
| ROSACEAE | Rose Family | | | | |
| Crataegus brachyacantha | blueberry hawthorn | - | INV | G4 | S2 |
| Crataegus coccinioides | Kansas hawthorn | - | INV | G4? | SH |
| Crataegus macrosperma | fan-leaf hawthorn | - | INV | G5 | S1 |
| Crataegus phaenopyrum | Washington hawthorn | - | INV | G4? | S1 |
| Crataegus triflora | three-flower hawthorn | - | INV | G2G3 | S1 |
| Crataegus ×canescens | Stern's medlar | _ | INV | G1 | S1 |
| Drymocallis arguta | tall cinquefoil | _ | ST | G5 | S1S2 |
| Gillenia trifoliata | Bowman's-root | _ | INV | G4G5 | S1 |
| Neviusia alabamensis | Alabama snow-wreath | _ | ST | G2 | S1S2 |
| Photinia melanocarpa | black chokeberry | _ | INV | G5 | S1 S1 |
| Prunus gracilis | Oklahoma plum | _ | INV | G4G5 | S1 |
| Prunus pumila | Oktationia pium | _ | 114 4 | 0403 | 51 |
| | and aborry | | ST | G5T4 | S1 |
| var. susquehanae | sand cherry | - | | | |
| Rosa foliolosa | white prairie rose | - | INV | G5 | S2 |
| Sanguisorba annua | prairie burnet | - | INV | G4 | S1 |
| Spiraea tomentosa | hardhack | - | INV | G5 | S2 |
| Waldsteinia fragarioides | barren-strawberry | - | INV | G5 | S1 |
| RUBIACEAE | Madder Family | | | | |
| Galium arkansanum | | | | | |
| var. <i>pubiflorum</i> | hairy-flower Arkansas bedstraw | - | INV | G5TNR | S2 |
| Galium texense | Texas bedstraw | - | INV | G4 | S1 |
| Houstonia ouachitana | Ouachita bluet | _ | INV | G3 | S3 |
| Houstonia parviflora | Greenman's bluet | - | INV | G3 | S1 |
| SALICACEAE | Willow Family | | | | |
| Salix sericea | silky willow | - | SE | G5 | SH |
| SAPINDACEAE | Soapberry Family | | | | |
| Acer saccharum | | | | | |
| var. leucoderme | chalk maple | _ | INV | G5T5 | S2S3 |
| Acer saccharum | Chair map io | | | 3010 | 3233 |
| var. nigrum | black maple | - | INV | G5T5 | S1S2 |
| SAXIFRAGACEAE | Saxifrage Family | | | | |
| Heuchera villosa | | | | | |
| var. arkansana | Arkansas alumroot | | INIV | C5T2O | S3 |
| | | - | INV | G5T3Q | |
| Micranthes virginiensis | early saxifrage | - | INV | G5 | S1S2 |
| Mitella diphylla | miterwort | - | INV | G5 | S2 |

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|--|---|-------------------|-------------------|------------------------|----------------------|
| SCHISANDRACEAE | Star-vine Family | | | | |
| Schisandra glabra | bay star-vine | - | INV | G3 | S2S3 |
| SIMAROUBACEAE | Quassia Family | | | | |
| Leitneria floridana | corkwood | - | INV | G3 | S3 |
| SOLANACEAE | Nightshade Family | | | | |
| Physalis cinerascens var. cinerascens Physalis missouriensis Physalis pumila | small-flower ground-cherry Missouri ground-cherry prairie ground-cherry | - | INV INV INV | G4G5T3T5 G5? G5 | 5 S1 SH S1 |
| STYRACACEAE | Storax Family | | | | |
| Halesia diptera | two-wing silverbell | - | SE | G5 | SH |
| THEACEAE | Tea Family | | | | |
| Stewartia malacodendron | silky-camellia | - | SE | G4 | S1 |
| THYMELAEACEAE | Leatherwood Family | | | | |
| Dirca decipiens | Ozark leatherwood | - | INV | G1G2 | S1? |
| ULMACEAE | Elm Family | | | | |
| Ulmus thomasii | rock elm | - | INV | G5 | S2 |
| VALERIANACEAE | Cornsalad Family | | | | |
| Valerianella amarella Valerianella nuttallii Valerianella ozarkana Valerianella palmeri | hairy cornsalad Nuttall's cornsalad Ozark cornsalad Palmer's cornsalad | - | INV INV INV | GNR G2? G3 G3 | S1 S2 S3 S3 |
| VERBENACEAE | Vervain Family | | | | |
| Glandularia bipinnatifida var. bipinnatifida | Dakota vervain | - | INV | G5T5 | S2 |
| VIOLACEAE | Violet Family | | | | |
| Viola canadensis var. canadensis Viola pedatifida Viola walteri VITACEAE | Canadian white violet prairie violet Walter's violet Grape Family | - - - | INV INV INV | G5T5 G5 G4G5 | S2 S2 S1S2 |
| Vitis rupestris | sand grape | - | INV | G3 | S3 |

| Name | Common Name | Federal Status | State Status | Global Rank | State Rank |
|--|---|-------------------|--|--|---|
| ANGIOSPERMS (MONOCOTS | S) | | | | |
| AGAVACEAE | Agave Family | | | | |
| Camassia angusta Schoenolirion wrightii | prairie wild hyacinth Texas sunnybell | - - | INV ST | G5?Q G3 | S2S3 S2S3 |
| ALISMATACEAE | Water-plantain Family | | | | |
| Echinodorus berteroi Sagittaria rigida | upright burhead stiff arrowhead | - - | INV INV | G5 G5 | S1S3 SH |
| ALLIACEAE | Onion Family | | | | |
| Allium canadense var. lavendulare Allium cernuum Allium drummondii | tall pink glade onion nodding wild onion Drummond's wild onion | - - - | INV INV INV | G5TNR G5 G5 | S2 SH S1 |
| AMARYLLIDACEAE | Amaryllis Family | | DIV | C.F. | 6162 |
| Cooperia drummondii | rain-lily | - | INV | G5 | S1S2 |
| BURMANNIACEAE | Bluethread Family | | | | |
| Burmannia biflora | northern bluethread | - | INV | G4G5 | S1 |
| COLCHICACEAE | Bellwort Family | | | | |
| Uvularia perfoliata | perfoliate bellwort | - | INV | G5 | S3 |
| COMMELINACEAE | Spiderwort Family | | | | |
| Tradescantia bracteata Tradescantia longipes Tradescantia ozarkana Tradescantia paludosa Tradescantia reverchonii Tradescantia subaspera Tradescantia virginiana | long-bract spiderwort dwarf spiderwort Ozark spiderwort Confederate spiderwort Reverchon's spiderwort zigzag spiderwort Virginia spiderwort | | INV INV INV INV INV INV | G5 G4 G3 G4?Q G4 G5 G5 | \$2 \$2 \$3 \$1\$2 \$3 \$1\$3 \$1 |
| CYPERACEAE | Sedge Family | | | | |
| Bolboschoenus robustus Bulbostylis ciliatifolia var. coarctata Carex aggregata | salt-marsh bulrush fringe-leaf hairsedge cluster sedge | - | INV INV INV | G5 G5T3T5 G5 | S1 S1S2 S1 |
| Carex algregata Carex alata Carex arkansana Carex atlantica | broad-wing sedge Arkansas sedge | - - - | INV INV | G5 G4 | S1 S1 S1 |
| subsp. atlantica Carex bicknellii Carex bromoides subsp. bromoides | prickly bog sedge Bicknell's sedge brome sedge | - - | INV INV | G5T4 G5 G5T5 | S2 S1 S2 |
| Subsp. bromoiaes Carex bullata Carex buxbaumii | brome sedge button sedge brown bog sedge | - - - | INV INV INV | G515 G5 G5 | S1 S1 |

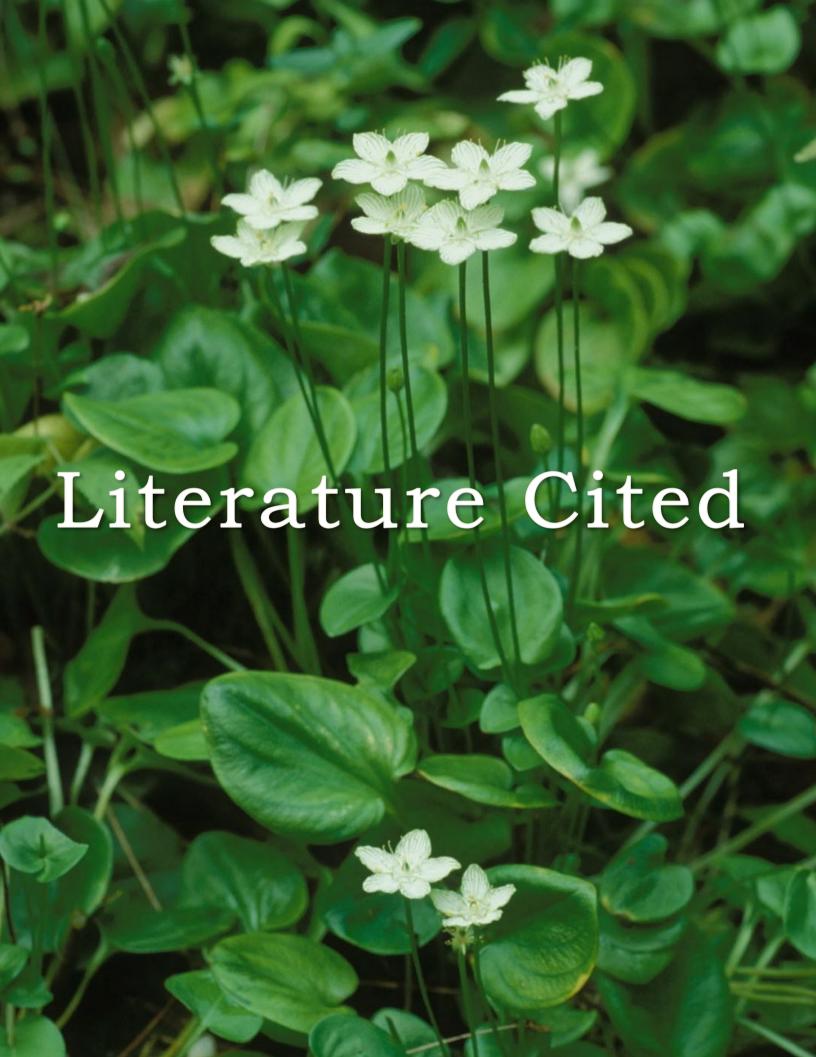
| Name | Common Name | Federal Status | State Status | Global Rank | State Rank |
|---|-------------------------|-------------------|-----------------|----------------|---------------|
| Carex careyana | Carey's sedge | _ | INV | G4G5 | S3 |
| Carex careyana Carex comosa | bottle-brush sedge | - | INV | G5 | S1S2 |
| Carex comosa Carex conjuncta | soft fox sedge | - | INV | G4G5 | S132 |
| Carex conjuncta Carex conoidea | open-field sedge | - | INV | G5 | S1 |
| Carex conoided Carex cumberlandensis | Cumberland sedge | - | INV | GNR | S1 |
| Carex davisii | Davis' sedge | - | INV | GA G4 | S3 |
| Carex decomposita | cypress-knee sedge | _ | INV | G3G4 | S2 |
| Carex emoryi | Emory's sedge | - | INV | G5 | S1 |
| Carex fissa | Emory 3 seage | _ | 1111 | G5 | 51 |
| var. fissa | hammock sedge | _ | INV | G4?T3T4 | S1 |
| Carex gigantea | giant sedge | _ | INV | G4 | S1S2 |
| Carex glaucescens | southern waxy sedge | _ | INV | G4 | S1 S1 |
| Carex gracilescens | slender wood sedge | _ | INV | G5? | S2 |
| Carex gracillima | graceful sedge | _ | INV | G5 | S1 |
| Carex gravida | heavy sedge | _ | INV | G5 | S2S3 |
| Carex hirtifolia | hairy sedge | _ | INV | G5 | S3 |
| Carex hitchcockiana | Hitchcock's sedge | _ | INV | G5 | S1S2 |
| Carex interior | inland star sedge | _ | INV | G5 | S1 S1 |
| Carex kraliana | Kral's sedge | _ | INV | G5 | S1S2 |
| Carex laevivaginata | smooth-sheath sedge | _ | INV | G5 | S132 S2 |
| Carex latebracteata | Waterfall's sedge | _ | ST | G3 | S3 |
| Carex leptalea | bristly-stalk sedge | _ | INV | G5 | S2S3 |
| Carex lupuliformis | false hop sedge | _ | INV | G3 G4 | S1S2 |
| Carex nuskingumensis | palm sedge | _ | INV | G4 | S132 |
| Carex muskingumensis Carex normalis | spreading oval sedge | - | INV | G5 | S1 |
| Carex opaca | opaque prairie sedge | - | SE | G3 G4 | S2S3 |
| Carex opaca Carex pellita | woolly sedge | - | INV | G5 | S1S2 |
| Carex pennul Carex pensylvanica | Pennsylvania sedge | - | INV | G5 | S132 S3 |
| Carex planostachys | cedar sedge | - | INV | G5 | S1 |
| Carex prasina | drooping sedge | - | INV | G3 G4 | SH |
| Carex prasma Carex radiata | eastern star sedge | - | INV | G4 G4 | S11 |
| Carex radiala Carex reznicekii | Reznicek's sedge | - | INV | G5 | S2? |
| Carex scoparia | Rezilieck 5 sedge | - | 11 N V | G5 | 32! |
| var. scoparia | pointed broom sedge | | INV | G5T5 | S1S2 |
| Val. scoparia Carex seorsa | swamp star sedge | - | INV | G313 G4 | SH |
| Carex shinnersii | Shinners' sedge | - | INV | G3 | S11 |
| Carex sninnersu Carex sparganioides | bur-reed sedge | - | INV | G5 | S3 |
| Carex stricta | tussock sedge | - | INV | G5 | S3 |
| Carex suberecta | prairie straw sedge | - | INV | G3 G4 | S2 |
| Carex timida | timid sedge | - | INV | G2G3 | S2S3 |
| Carex umua Carex willdenowii | Willdenow's sedge | _ | INV | G2G3 G5 | S2S3 |
| Cladium jamaicense | saw-grass | - | INV | G5 | SH |
| Cyperus grayoides | Illinois flatsedge | _ | INV | G3 | S11 |
| Cyperus haspan | haspan flatsedge | - | INV | G5 | S2 |
| Cyperus hystricinus | bristly flatsedge | - | INV | G3 G4 | S2S3 |
| Cyperus retrofractus | rough flatsedge | - | INV | G5 | S1? |
| Dulichium arundinaceum | rough matseage | - | 11 N V | G5 | 51! |
| var. arundinaceum | three way sadge | | INV | G5TNR | S2S3 |
| | three-way sedge | - | | G31NK G4 | |
| Eleocharis equisetoides | horsetail spike-rush | - | INV | U4 | SH |
| Eleocharis flavescens | vallow spiles much | | INI | C5T5 | \$152 |
| var. flavescens | yellow spike-rush | - | INV | G5T5 | S1S2 |
| Eleocharis flavescens | huight angan! | | INIV | CETATE | C1 |
| var. olivacea | bright-green spike-rush | - | INV | G5T4T5 | S1 |
| Eleocharis montevidensis | sand spike-rush | - | INV | G5 | S1 |
| Eleocharis wolfii | Wolf's spike-rush | - | INV | G3G4 | S3 |

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|---|-----------------------------|-------------------|-----------------|----------------|---------------|
| Fuirena bushii | Bush's umbrella sedge | _ | INV | G5 | S3 |
| Fuirena pumila | dwarf umbrella sedge | _ | INV | G4 | SH |
| Fuirena simplex | awar amerena seage | | 22 1 1 | 0. | 511 |
| var. aristulata | western umbrella sedge | - | INV | G5T4 | S1 |
| Fuirena squarrosa | hairy umbrella sedge | - | INV | G4G5 | S1 |
| Lipocarpha drummondii | Drummond's halfchaff sedge | - | INV | G4G5 | SH |
| Rhynchospora capillacea | capillary beaksedge | - | INV | G4 | S2 |
| Rhynchospora colorata | white-top sedge | - | SE | G5 | S1 |
| Rhynchospora globularis | | | ~ | | ~ - |
| var. globularis | globe beaksedge | - | INV | G5?T5? | S2 |
| Rhynchospora gracilenta | slender beaksedge | - | INV | G5 | S2 |
| Rhynchospora macrostachya | prairie horned beaksedge | _ | INV | G4 | S2 |
| Rhynchospora microcarpa | southern beaksedge | - | INV | G5 | S1 |
| Rhynchospora plumosa | plumed beaksedge | - | INV | G5 | S1 |
| Rhynchospora rariflora | few-flower beaksedge | - | ST | G5 | S1S2 |
| Rhynchospora scirpoides | long-beak bald-rush | - | INV | G4 | S1 |
| Schoenoplectus acutus | iong ocur outu tush | | 1111 | 0. | 51 |
| var. acutus | hard-stem bulrush | - | INV | G5T5 | S1 |
| Schoenoplectus californicus | California bulrush | _ | INV | G5 | S1S2 |
| Scirpus divaricatus | spreading bulrush | _ | INV | G5 | SH |
| Scirpus polyphyllus | leafy bulrush | _ | INV | G5 | S2 |
| Scleria muehlenbergii | Muhlenberg's nut-rush | _ | INV | G5 | S1S2 |
| Scleria verticillata | whorled nut-rush | _ | ST | G5 | S152 |
| Trichophorum planifolium | bashful bulrush | _ | INV | G4G5 | S1 |
| | | | 11,1 | 0.00 | |
| ERIOCAULACEAE | Pipewort Family | | | | |
| Eriocaulon decangulare | large-head pipewort | - | INV | G5 | S1S2 |
| Eriocaulon koernickianum | small-head pipewort | - | SE | G2 | S2 |
| HYDROCHARITACEAE | Frog's-bit Family | | | | |
| Vallisneria americana | eel-grass | - | INV | G5 | S1 |
| HYPOXIDACEAE | Star-grass Family | | | | |
| Hypoxis curtissii | Curtiss' star-grass | _ | INV | G4? | S1 |
| Hypoxis sessilis | glossy-seed star-grass | - | INV | G4 | S1 |
| IRIDACEAE | Iris Family | | | | |
| IRIDACEAE | IIIS Family | | | | |
| Alophia drummondii | pinewoods-lily | - | INV | G4 | S2 |
| Iris verna | | | | | |
| var. <i>smalliana</i> | dwarf iris | - | INV | G5T4T5 | S2 |
| Nemastylis geminiflora | celestial-lily | - | INV | G4 | S3 |
| Nemastylis nuttallii | Nuttall's pleat-leaf | - | INV | G4 | S2 |
| Sisyrinchium minus | dwarf blue-eyed-grass | - | INV | G5? | S1 |
| Sisyrinchium sagittiferum | spear-bract blue-eyed-grass | - | INV | G4? | SH |
| JUNCACEAE | Rush Family | | | | |
| Juncus brachyphyllus | tufted-stem rush | _ | INV | G5 | S1 |
| Juncus oracnyphytius Juncus canadensis | Canadian rush | - | INV | G5 | S1 S1 |
| Juncus canaaensis Juncus subcaudatus | fen rush | - | INV | G5 | S1 S1 |
| Luzula acuminata | 1011 14311 | - | 11 N N | G5 | 91 |
| var. carolinae | Carolina wood-rush | - | INV | G5T4T5 | S2 |

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|--|----------------------------------|-------------------|-----------------|----------------|---------------|
| LILIACEAE | Lily Family | | | | |
| Erythronium mesochoreum | prairie trout-lily | _ | INV | G4G5 | S1S2 |
| Lilium superbum | Turk's-cap lily | - | INV | G5 | S1 |
| Prosartes lanuginosa | yellow mandarin | - | INV | G5 | S2 |
| MELANTHIACEAE | Bunchflower Family | | | | |
| Stenanthium gramineum | featherbells | - | INV | G4G5 | S3 |
| Veratrum latifolium | bunchflower | - | INV | G5 | SH |
| Veratrum woodii | Wood's false hellebore | - | INV | G5 | S3 |
| NARTHECIACEAE | Colicroot Family | | | | |
| Aletris aurea | golden colicroot | - | INV | G5 | S1S2 |
| ORCHIDACEAE | Orchid Family | | | | |
| Calopogon oklahomensis | Oklahoma grass-pink | - | INV | G3 | S2 |
| Calopogon tuberosus var. tuberosus | tuberous grass-pink | _ | INV | G5T5 | S1 |
| Cypripedium kentuckiense | Kentucky lady's-slipper | _ | INV | G3 13 | S3 |
| Cypripedium reginae | showy lady's-slipper | _ | SE | G4 | S1 |
| Hexalectris spicata | 2220 mg 2 222pp 22 | | ~- | | |
| var. <i>spicata</i> | crested-coralroot | - | INV | G5T4T5 | S2 |
| Liparis loeselii | Loesel's twayblade | - | ST | G5 | S1 |
| Platanthera cristata Platanthera flava | crested fringed orchid | - | INV | G5 | S1S2 |
| var. <i>flava</i> | southern rein orchid | - | ST | G4?T4?Q | S2S3 |
| Platanthera nivea | snowy orchid | - | SE | G5 | SH |
| Platanthera peramoena | purple fringeless orchid | - | ST | G5 | S2 |
| Platanthera ×channellii | Channell's fringed orchid | - | INV | GNA | S1 |
| Pogonia ophioglossoides Spiranthes lacera | rose pogonia | - | ST | G5 | S2 |
| var. <i>lacera</i> | northern slender ladies'-tresses | - | INV | G5T5 | S1 |
| Spiranthes lucida | shining ladies'-tresses | - | INV | G5 | S2 |
| Spiranthes magnicamporum | Great Plains ladies'-tresses | - | INV | G4 | S1S2 |
| Spiranthes odorata Spiranthes ovalis | fragrant ladies'-tresses | - | INV | G5 | S1 |
| var. erostellata | northern oval ladies'-tresses | _ | INV | G5?T4? | S1 |
| Spiranthes praecox | giant ladies'-tresses | - | INV | G5 | S1S2 |
| POACEAE | Grass Family | | | | |
| Andropogon virginicus | | | | | |
| var. glaucus | chalky bluestem | - | INV | G5T4T5 | S1 |
| Anthenantia texana | Kral's silkyscale | - | INV | G3G4 | S3 |
| Aristida desmantha | curly three-awn | - | INV | G5 | S1 |
| Aristida lanosa | woolly three-awn | - | INV | G5 | S2 |
| Aristida purpurea | | | | _ | |
| var. purpurea Bouteloua hirsuta | purple three-awn | - | INV | G5T5 | S1 |
| subsp. hirsuta | hairy grama | - | SE | G5T5 | S1 |
| Bouteloua rigidiseta | Texas grama | - | SE | G5 | S1 |
| Bromus nottowayanus | satin brome | - | INV | G3G5 | S2 |
| Calamagrostis porteri | | | | | |
| subsp. insperata | Porter's reed grass | - | SE | G4T3 | SH |
| Calamovilfa arcuata | Cumberland sand-reed | - | INV | G2G3 | S1 |
| Coelorachis rugosa | wrinkled joint-tail | - | INV | G5 | S2 |

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|---|---------------------------------------|-------------------|-----------------|----------------|---------------|
| Danthonia sericea | downy oat grass | - | INV | G5? | S1 |
| Deschampsia flexuosa | wavy hair grass | - | INV | G5 | S2S3 |
| Dichanthelium consanguineum Dichanthelium dichotomum | blood rosette grass | - | INV | G5 | SH |
| subsp. roanokense | Roanoke rosette grass | - | INV | G5TNR | S1 |
| Dichanthelium scabriusculum | tall swamp rosette grass | - | INV | G4 | S1S2 |
| Distichlis spicata | salt grass | - | INV | G5 | S1 |
| Elymus churchii | Church's wild rye | - | INV | G2G3 | S2? |
| Elymus glaucus | | | | | |
| subsp. mackenzii | Mackenzie's blue wild rye | - | INV | G5TNR | S1 |
| Elymus riparius | river-bank wild rye | - | INV | G5 | S1S2 |
| Elymus virginicus | | | | | |
| var. intermedius | intermediate wild rye | - | INV | G5TNR | S1 |
| Festuca versuta | Texas fescue | - | INV | G3 | S1 |
| Glyceria acutiflora | creeping manna grass | - | INV | G5 | S1 |
| Gymnopogon brevifolius | short-leaf skeleton grass | - | INV | G5 | S2 |
| Koeleria macrantha | prairie June grass | - | INV | G5 | S2 |
| Leersia hexandra | southern cut grass | - | INV | G5 | S1 |
| Limnodea arkansana | Ozark grass | - | INV | G4? | SH |
| Muhlenbergia bushii | nodding muhly | - | INV | G5 | S2 |
| Muhlenbergia cuspidata | plains muhly | - | INV | G4 | SH |
| Muhlenbergia glabrifloris | inland muhly | - | INV | G4? | S1 |
| Nassella leucotricha | Texas winter grass | - | INV | G5 | SH |
| Panicum hemitomon | maiden-cane | - | INV | G5? | S1 |
| Panicum rigidulum | | | | | |
| subsp. pubescens | red-top panic grass | - | INV | G5T5? | S1 |
| Paspalum bifidum | pitchfork paspalum | - | INV | G5 | SH |
| Paspalum boscianum | bull paspalum | - | INV | G5 | S1 |
| Paspalum praecox | early paspalum | - | INV | G4 | S1S2 |
| Poa wolfii | Wolf's blue grass | - | INV | G4 | S2 |
| Schedonnardus paniculatus | tumble grass | - | INV | G5 | S2 |
| Setaria magna | giant bristle grass | - | INV | G4G5 | SH |
| Sphenopholis filiformis | long-leaf wedgescale | - | INV | G4? | SH |
| Sphenopholis longiflora | Texas wedgescale | - | INV | G4 | S1? |
| Sporobolus junceus | pineywoods dropseed | - | ST | G5 | S1S2 |
| Sporobolus pyramidatus | whorled dropseed | - | ST | G5 | S2 |
| Tridens muticus | | | | | |
| var. <i>elongatus</i> | slim tridens | - | INV | G5T4? | S1 |
| Vulpia sciurea | squirrel-tail six-weeks grass | - | INV | G5 | S1 |
| Zizania palustris | | | | | |
| var. interior | interior wild rice | - | INV | G4G5T47 | T5 SH |
| POTAMOGETONACEAE | Pondweed Family | | | | |
| Zannichellia palustris | horned-pondweed | - | INV | G5 | S2S3 |
| RUSCACEAE | Solomon's-seal Family | | | | |
| Maianthemum stellatum | starry false Solomon's-seal | - | INV | G5 | S1 |
| SMILACACEAE | Greenbrier Family | | | | |
| Smilax ecirrhata Smilax walteri | carrion-flower red-berried greenbrier | - - | INV INV | G5? G5 | SH S2S3 |
| TRILLIACEAE | Trillium Family | | | | |
| T | | | | ~ - | 7.1 |
| Trillium flexipes | white trillium | - | INV | G5 | S1 |
| Trillium ozarkanum | Ozark trillium | - | INV | G3 | S3 |

| Name | Common Name | Federal | State | Global | State |
|--|---------------------------------|---------|--------|--------|-------|
| | | Status | Status | Rank | Rank |
| Турнаселе | Cat-tail Family | | | | |
| Sparganium androcladum | branched bur-reed | - | INV | G4G5 | S1 |
| XYRIDACEAE | Yellow-eyed-grass Family | | | | |
| Xyris ambigua | Coastal Plain yellow-eyed-grass | - | INV | G5 | S2S3 |
| Xyris baldwiniana | Baldwin's yellow-eyed-grass | - | ST | G5 | S1 |
| Xyris difformis vat. curtissii Xyris difformis | Curtiss' yellow-eyed-grass | - | INV | G5T5 | S1 |
| var. difformis | bog yellow-eyed-grass | - | INV | G5T5 | S2 |





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The accepted scientific names of vascular plants known to occur in Arkansas are given in [bold Roman type]. Family scientific names are given in [BOLD CAPS]. Synonyms as used by Smith (1988, 1994) or in the Checklist (AVFC 2006) are given in [italics]. Unless otherwise explained in Appendix IV or V, in cases where the name used by Smith or in the Checklist represents a misapplication of the name, it is followed by "(misapp.)" and the correctly applied name for the Arkansas taxon. In cases where the name used by Smith is an orthographic variant (unaccepted variation in spelling) or a typographical error, the name is followed by "(orth. var.)" and the accepted spelling. In one instance, an unpublished and therefore unavailable name used by Smith is followed by "(unpubl.)" and the correctly applied name. Scientific names of taxa reported but unconfirmed for the state, as well as taxa previously reported but now excluded from the state flora are given in [Roman type]. Common names are given in [SMALL CAPS]. In cases where the common name is the same as the generic name, the common name follows the generic name. Major Group names are given in [BOLD CAPS]. Proper names, places, and terms found in the Introduction are given in [Roman type].

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TAMARICACEAE

TETRACHONDRACEAE

CONVOLVULACEAE THEACEAE CORNACEAE MYRSINACEAE THELYPTERIDACEAE THEMIDACEAE CRASSULACEAE NARTHECIACEAE THEOPHRASTACEAE CUCURBITACEAE NELUMBONACEAE CUPRESSACEAE NYCTAGINACEAE THYMELAEACEAE CYPERACEAE NYMPHAEACEAE TRILLIACEAE ТҮРНАСЕАЕ DENNSTAEDTIACEAE NYSSACEAE DIOSCOREACEAE **OLEACEAE** Ulmaceae DIPSACACEAE ONAGRACEAE URTICACEAE Droseraceae ONOCLEACEAE VALERIANACEAE DRYOPTERIDACEAE OPHIOGLOSSACEAE VERBENACEAE VIOLACEAE **EBENACEAE** ORCHIDACEAE ELAEAGNACEAE **OROBANCHACEAE** VITACEAE ELATINACEAE OSMUNDACEAE WOODSIACEAE EQUISETACEAE OXALIDACEAE XYRIDACEAE ZYGOPHYLLACEAE ERICACEAE PAPAVERACEAE

ERIOCAULACEAE PARNASSIACEAE **EUPHORBIACEAE** PASSIFLORACEAE

CLEOMACEAE COLCHICACEAE

COMMELINACEAE

