

# **Illinois Endangered Species Protection Board**

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Citation: Nÿboer, R. W. and J. E. Ebinger, editors. 2004. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 3: 2004 Changes to the Illinois List of Endangered and Threatened Plant Species. Illinois Endangered Species Protection Board, Springfield, Illinois. 34 pp.

# ENDANGERED AND THREATENED SPECIES OF ILLINOIS: STATUS AND DISTRIBUTION

# VOLUME 3: 2004 CHANGES TO THE ILLINOIS LIST OF ENDANGERED AND THREATENED PLANT SPECIES

Randy W. Nÿboer and John E. Ebinger, Editors

# Published by ILLINOIS ENDANGERED SPECIES PROTECTION BOARD

2004

In 1981 the Illinois Endangered Species Protection Board published the first listing of the status and distribution of endangered and threatened plants and animals in Illinois (Sheviak and Thom 1981). This original listing was the culmination of a major effort entitled the Endangered Species Project. The Endangered Species Project was a comprehensive effort to determine the status of our native species through literature reviews, museum searches, personal contacts, and workshops. The status information compiled during this project served as the basis for the first official state lists of the endangered and threatened species, and was adopted by the Illinois Endangered Species Protection Board. This publication served as the most readily available source of information on endangered and threatened species in Illinois for a decade.

Since the original status and distribution book by Sheviak and Thom (1981), considerable information has been accumulated on our native species. As a result, a major revision of the official state list of endangered and threatened species was completed in 1989. This revision resulted in the Illinois Endangered Species Board publishing two updated volumes of the original status and distribution book, one volume concerning the endangered and threatened plants of Illinois (Herkert 1991), another listing the endangered and threatened animals of Illinois (Herkert 1992).

In January of 1994 the second major revision of the official state list of endangered and threatened species was completed. As a result of this revision a total of 511 species were officially recognized as endangered and threatened in Illinois. Herkert

(1994) summarized the changes that were made to the Illinois list during this list review and revision and provided status and distribution data for the species that were added to the official state list in 1994.

Since the days of the first Endangered Species Project, the process of determining species to be listed as endangered or threatened in Illinois has become increasingly complex. Listing revisions now are completed every five years, and these listing decisions must be based on scientific evidence. As a result, the list was reviewed and revised in 1999. For that listing process, the status and distribution of the endangered and threatened plant species of Illinois was completed (Herkert and Ebinger 2002). The status and distribution of the endangered and threatened animals of Illinois was not undertaken as there were relatively few changes in the list. This present volume is the result of the listing process that was completed in 2004. It contains the status and distribution of all of the changes made in the plant list during the listing process. As of the 2004 plant listing changes, there are 335 plants on the Illinois list; 259 endangered, 76 threatened.

While the listing process has changed over time, the interest of the people of Illinois in endangered species has not diminished. These volumes continue to be among the most popular among people seeking information on the status and distribution of Illinois' native species. The Illinois Endangered Species Protection Board appreciates this interest and support.

Randy W. Nÿboer Program Manager Illinois Endangered Species Protection Board

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# **ACKNOWLEDGMENTS**

We could not have produced this work without the effort given by those who produced the original book and the subsequent revisions. We owe a debt of thanks to everyone involved in these earlier publications, their efforts and dedication to endangered and threatened species are an inspiration to all who follow.

The Illinois Endangered Species Protection Board and the present editors are indebted to those who assisted in the listing process and in the preparation of this volume. Valuable assistance was given by the personnel of the Illinois Department of Natural Resource's Natural Heritage Database in providing updated information on species occurrences. Also, the efforts of the field staffs of the Illinois Department of Natural Resources, the Illinois Natural History Survey and the Illinois Nature Preserves Commission are greatly appreciated. Their work has contributed to the status and distribution data included in this volume, and their on-going work in the field has provided the foundation of Illinois' endangered species restoration and management efforts.

Many field botanists, both professionals and amateurs, have contributed to the completion of this volume. Their field efforts have been very helpful in understanding the distribution and status of the plant species listed. The time they spent in regional meetings, where they evaluated the many species being considered, is also greatly appreciated. Without their effort the results presented here could not have been accomplished. The efforts of the many early Illinois botanists, whose collections still exist in the many herbaria of the state, have been useful in determining the past distribution of the plant species listed. We appreciate these early efforts, for without their efforts it would be hard to understand the present, or prepare for the future.

Randy W. Nÿboer Program Manager Illinois Endangered Species Protection Board

# SPECIAL THANKS

Determining which plant species to list as endangered or threatened involved many individuals who devoted a great deal of time and energy in trying to make the correct listing decisions. This involved field studies, literature searches, herbarium searches, and contacting individuals that had information concerning particular species. More than 75 individuals have been involved, both amateur and professional botanists from all parts of Illinois and surrounding states. The efforts of these individuals are greatly appreciated by the Endangered Species Protection Board, and we thank them for their time and suggestions. In particular, members of the Plant Endangered Species Technical Advisory Committee (Plant ESTAC) have been extremely helpful in the listing process. Though the final listing decisions are the Board's, the evaluation of the numerous species reviewed and the recommendations of the Plant ESTAC members made the Board's job easier. The Illinois Endangered Species Protection Board would like to thank the members of the Plant ESTAC that are listed below for their help in making the decisions included in the present plant listing.

Susanne Masi, Research Botanist in the Institute for Plant Conservation at the Chicago Botanic Garden, manages the Garden's Nancy Poole Rich Herbarium, conducts surveys of several natural areas, and monitors rare and listed plant species. In 2000 she helped initiate Plants of Concern, a regional, volunteer-based rare plant monitoring program for northeastern Illinois. Presently her research focuses on regional native flora and she has conducted floristic surveys on several natural areas. Recently she co-authored The Sunflower Family in the Upper Midwest with Thomas Antonio. Ms. Masi received a B. S. in Philosophy from Loyola University, Chicago; an M. A. in Religion from Northwestern University, Evanston; and an M. A. in Environmental Studies from Northeastern Illinois University, Chicago. She is a current member of the Illinois Endangered Species Protection Board.

William E. McClain retired from the Illinois Department of Natural Resources in 2002 where he was Natural Areas Program Manager. He received his M. A. in Botany from Miami University, Oxford, Ohio in 1969 and his undergraduate degree from Eastern Illinois University, Charleston, Illinois in 1966. He is presently an Adjunct Research Associate with the Illinois State Museum in Springfield. His research interests include the fire history of Illinois vegetation, rare plant species, and invasive exotic plants. He is currently studying the vegetation of the Illinois sand deposits.

Loy R. Phillippe is Collections Manager for the vascular plants and fungi herbarium at the Illinois Natural History Survey, Champaign, Illinois. His primary duties include herbarium computerization, specimen preparation, specimen collecting, and the day-to-day operation of the herbarium. Dr. Phillippe earned a B. S. (1971) and M. S. (1973) in Botany from Eastern Illinois University, Charleston, Illinois, and a Ph. D. in Plant Taxonomy at the University of Tennessee, Knoxville, Tennessee in 1978.

Kenneth R. Robertson is a plant systematist with the Illinois Natural History Survey, and also an adjunct professor at the University of Illinois, Urbana, Illinois. He received his Ph. D. from Washington University and the Missouri Botanical Garden in 1971, and his M. S. and B. A. degrees from the University of Kansas. He did postdoctoral training at the Arnold Arboretum of Harvard University. His research specialties include the classification and evolutionary relationships of the rose family, especially the apple subfamily (Rosaceae subfamily Maloideae), the pigweed family (Amaranthaceae), and the genus Jacquemontia of the morning glory family (Convolvulaceae). He serves as a consultant to the Illinois Nature Preserves Commission.

John E. Schwegman is retired from the Illinois Department of Natural Resources where his career included both Natural Areas Conservation and Native Plant Conservation. He holds a B. A. in Zoology (1964) and a M. A. in Botany (1969) from Southern Illinois University, Carbondale, Illinois. He now resides in Metropolis, Illinois where he maintains a strong interest in the Illinois flora and fauna and the endangered and threatened species of

the state. John currently serves as Secretary of the Illinois Nature Preserves Commission.

Elizabeth Longo Shimp is a Botanist with the USDA Forest Service, Shawnee National Forest in southern Illinois. She received her M. S. in Botany (1990) and her B. A in Biological Sciences (1981) from Southern Illinois University, Carbondale. Her current work involves analyzing the effects of various projects on threatened, endangered, and sensitive plant species. She is also currently involved with the Forest Planning process, fire management of designated natural areas, and the on-the-ground closures of designated natural areas to certain recreational activities.

John B. Taft is a Research Scientist at the Illinois Natural History Survey, Champaign, Illinois since 1984. He received his Ph. D. from the University of Illinois in 1999 and M. S. and undergraduate degrees (Botany, Agriculture) from Southern Illinois University at Carbondale in 1982. His research involves the fire effects and patterns of species diversity in grasslands, barrens, and woodlands. He coordinates a program of biotic surveys throughout Illinois in Illinois Department of Transportation project areas, and is an adjunct assistant professor in the Department of Natural Resources and Environmental Sciences at the University of Illinois, Urbana.

Randy W. Nÿboer Program Manager Illinois Endangered Species Protection Board

# ABOUT THE EDITORS AND SECRETARY

John E. Ebinger is an Emeritus Professor of Botany at Eastern Illinois University, Charleston, Illinois. He received his Ph. D. from Yale University in 1961 and his undergraduate degree in 1955 from Miami University, Oxford, Ohio. His current research involves the composition and structure of the vegetation of the Illinois sand deposits. John is a current member of the Illinois Endangered Species Protection Board.

Randy W. Nÿboer is a Research Ecologist for the Illinois Natural History Survey, and is located at the Lost Mound Field Station (Savanna Army Depot) in northwestern Illinois. He worked for 25 years managing natural areas and endangered resources for the Division of Natural Heritage with the Illinois Department of Natural Resources. Prior to this he was a field ecologist with the Illinois Natural Areas Inventory. Randy received his undergraduate degree in Botany in 1974 and a M. S. in Botany in 1975, at Eastern Illinois University. His present work deals with protecting endangered species at the Savanna Army Depot and monitoring endangered and threatened plants in northwestern Illinois. Also, he is Program Manager for the Endangered Species Protection Board.

Janet M. Boyer is the Secretary for the Illinois Endangered Species Protection Board. She has served in this capacity for ten years and has been involved in editing the Illinois list since 1994. Her expertise in handling issues, meetings and other duties of the Board have been exceptionally valued during times of administrative transition. Janet's dedication to the IESPB and to the conservation of those plants and animals listed in Illinois, is unsurpassed and so noted here. Janet received her Bachelor's of Arts in Management from Sangamon State University in 1996.

Randy W. Nÿboer Program Manager Illinois Endangered Species Protection Board

# Summary of Changes to the Illinois Plant List

# I. ADDED AS ENDANGERED

Astragalus distortus Torr. & Gray (bent milk vetch) Fabaceae

Baptisia tinctoria (L.) R. Br. (yellow wild indigo) Fabaceae

Botrychium campestre W.H. Wagner & Farrar (prairie moonwort) Ophioglossaceae

Calopogon oklahomensis D.H. Goldman (Oklahoma grass pink orchid) Orchidaceae

Carex cumulata (L.H. Bailey) Mack. (sedge) Cyperaceae

Carex diandra Schrank. (sedge) Cyperaceae

Carex formosa Dewey (sedge) Cyperaceae

Chamaelirium luteum (L.) Gray (fairy wand) Liliaceae

Deschampsia flexuosa (L.) Trin. (hairgrass) Poaceae

Nemophila triloba (Raf.) Thieret (baby blue-eyes) Hydrophyllaceae

Penstemon tubaeflorus Nutt. (tube beardstongue) Scrophulariaceae

Rhexia mariana L. (dull meadow beauty) Melastomaceae

Sanicula smallii Bickn. (southern sanicula) Apiaceae

Scirpus microcarpus Presl. (small-fruited bulrush) Cyperaceae

Scleria muhlenbergii Steud. (Muhlenberg's nut rush) Cyperaceae

Scleria pauciflora Muhl. (Carolina whipgrass) Cyperaceae

Vaccinium stamineum L. (deerberry) Ericaceae

# II. ADDED AS THREATENED

Carex atlantica L.H. Bailey (sedge) Cyperaceae

Carex bromoides Schk. (sedge) Cyperaceae

Carva aquatica (Michx. f.) Nutt. (water hickory) Juglandaceae

Dodecatheon frenchii (Vasey) Rydb. (French's shooting-star) Primulaceae

Huperzia porophila (Lloyd & Underw.) Holub. (cliff clubmoss) Lycopodiaceae

Hymenopappus scabiosaeus L'Her. (old plainsman) Asteraceae

Menyanthes trifoliata L. (buckbean) Menyanthaceae

Sedum telephioides Michx. (American orpine) Crassulaceae

Talinum parviflorum Nutt. (small flower-of-an-hour) Portulacaceae

# III. REMOVED FROM ENDANGERED 1

Betula populifolia (gray birch)<sup>2</sup>

Gaultheria procumbens (wintergreen)<sup>3</sup>

Lysimachia fraseri (Fraser's loosestrife) 3,

Pycnanthemum torrei (mountain mint) 3

Scirpus verecundus (bashful bulrush) 3

Silphium trifoliatum (rosinweed)<sup>3</sup>

Spiranthes romanzoffiana (hooded ladies' tresses)<sup>3</sup>

Thalia dealbata (powdery thalia) 3

Viola viarum (plains violet)<sup>2</sup>

Waldsteinia fragarioides (barren strawberry)<sup>3</sup>

# IV. REMOVED FROM THREATENED

Aristolochia serpentaria var. hastata (Virginia snakeroot) 5

Cirsium hillii (Hill's thistle) 4

Erythronium mesochoreum (prairie trout-lily) 4

Eupatorium incarnatum (thoroughwort) 4

Galium labradoricum (bog bedstraw) 4

# IV. REMOVED FROM THREATENED (Cont.)

Lactuca hirsuta (wild lettuce) <sup>4</sup>
Thuja occidentalis (white cedar) <sup>4</sup>
Veratrum woodii (false hellebore) <sup>4</sup>

# V. STATUS CHANGED FROM ENDANGERED TO THREATENED

Amelanchier interior Nielson (shadbush) Rosaceae

Carex aurea Nutt. (golden sedge) Cyperaceae

Elymus trachycaulus (Link) Gould (bearded wheat grass) Poaceae

Phaeophyscia leana (Tuck.) Essl. (Lea's bog lichen) Physciaceae

Platanthera flava (L.) Lindl. var. herbiola (R. Br.) Luer (tubercled orchid) Orchidaceae

Rubus setosus Bigelow (as Rubus schneideri Bailey) (bristly blackberry) Rosaceae

Rudbeckia missouriensis Engelm. (Missouri orange coneflower) Asteraceae

Sisyrinchium atlanticum Bickn. (eastern blue-eyed grass) Iridaceae

Trifolium reflexum L. (buffalo clover) Fabaceae

Utricularia intermedia Hayne (flat-leaved bladderwort) Lentibulariaceae

# VI. STATUS CHANGED FROM THREATENED TO ENDANGERED

Trientalis borealis Raf. (star-flower) Primulaceae

# VII. OFFICIAL NAME CHANGED

Alnus rugosa (speckled alder) to Alnus incana (L.) Moench subsp. rugosa (DuRoi) Clausen

Arenaria patula (slender sandwort) to Minuartia patula (Michx.) Mattf.

Bidens beckii (water marigold) to Megalodonta beckii (Torr.) Greene

Botrychium matricariaefolium (daisyleaf grape fern) to Botrychium matricariifolium (Doll.) A. Br.

Carex heliophila (sedge) to Carex inops L.H. Bailey subsp. heliophila (Mack.) Crins

Ceanothus ovatus (redroot) to Ceanothus herbaceus Raf.

Cypripedium calceolus var. parviflorum (small yellow lady's slipper) to Cypripedium parviflorum Salisb. var. makasin (Farwell) Sheviak

Hackelia americana (stickseed) to Hackelia deflexa (Wahlenb.) Opiz var. americana (Gray)

Fern. & I.M. Johnston

Hymenoxys acaulis (lakeside daisy) to Tetraneuris herbacea Greene

Juncus alpinus (Richardson's rush) to Juncus alpinoarticulatus Chaix

Lycopodium inundatum (bog clubmoss) to Lycopodiella inundata (L.) Holub.

Microseris cuspidata (prairie dandelion) to Nothocalais cuspidata (Pursh) Sch.-Bip.

Panicum boreale (northern panic grass) to Dichanthelium boreale (Nash) Freckm.

Panicum columbianum (hemlock panic grass) to Dichanthelium portoricense (Desv.)Hansen & Wunderlin

Panicum joorii (panic grass) to Dichanthelium joorii (Vasey) Mohlenbr.

Panicum ravenelii (panic grass) to Dichanthelium ravenelii (Scribn. & Merrill) Gould

Panicum yadkinense (panic grass) to Dichanthelium yadkinense (Ashe) Mohlenbr.

Puccinellia pallida (pole manna-grass) to Torreyochloa pallida (Torr.) Church

Quercus nuttallii (Nuttall's oak) to Quercus texana Buckl.

Rubus setosus (bristly blackberry) to Rubus schneideri Bailey

Sagittaria longirostra (arrowhead) to Sagittaria australis (J. G. Sm.) Small

Sambucus pubens (red-berried elder) to Sambucus racemosa L. subsp. pubens (Michx.) House

Scirpus cespitosus (tufted bulrush) to Trichophorum cespitosum (L.) Schur

Scirpus hallii (Hall's bulrush) to Schoenoplectus hallii (Gray) S. G. Sm.

Scirpus paludosus (alkali bulrush) to Bolboschoenus maritimus (L.) Palla

Scirpus purshianus (weak bulrush) to Schoenoplectus purshianus (Fern.) M. T. Strong

Scirpus smithii (Smith's bulrush) to Schoenoplectus smithii (Gray) Sojak

# VII. OFFICIAL NAME CHANGED (Cont.)

Sparganium chlorocarpum (green-fruited burreed) to Sparganium emersum Rehmann Sullivantia renifolia (sullivantia) to Sullivantia sullivantii (Torr. & Gray) Britt.

Thelypteris phegopteris (long beech fern) to Phegopteris connectilis (Michx.) Watt. Viola incognita (hairy white violet) to Viola blanda Willd.

Zigadenus glauca (white camass) to Zigadenus elegans Pursh

# VII. SYNONYMS TO BE ADDED

Cladrastis lutea (yellowwood) - list Cladrastis kentukea (Dum.-Cours.) Rudd as a synonym Eleocharis olivacea (spikerush) - list Eleocharis flavescens (Poir.) Urban var. olivacea (Torr.) Gl. as a synonym

Eleocharis pauciflora (few-flowered spikerush) - list Eleocharis quinqueflora (Hartm.) Schwarz as a synonym

Zigadenus elegans Pursh - list Zigadenus venenosus S. Wats. var. gramineus (Rydb.) Walsh as a synonym

<sup>&</sup>lt;sup>1</sup> Primary reasons for delisting Endangered and Threatened species are designated by superscripts.

<sup>&</sup>lt;sup>2</sup> Now considered to be only a vagrant breeding species in Illinois.

<sup>&</sup>lt;sup>3</sup> All native populations are now considered to be extirpated in Illinois.

<sup>4</sup> Now known to be more common in Illinois than previously thought.

<sup>&</sup>lt;sup>5</sup> No longer considered a valid taxon.

# SPECIES ACCOUNTS FOR SPECIES ADDED TO THE STATE PLANT LIST

The purpose of this volume is to provide general information on plant species which are listed as endangered or threatened in Illinois and where they occur in the state. It is not intended to serve as a field guide for species identification, and for that reason no attempt has been made to illustrate each species. It should not be used for precise locational information where a particular species occurs, as this information is constantly being revised as data are collected, and may be out-of-date for some species at the time of publication. Anyone desiring precise information on endangered or threatened species occurrences in Illinois should contact the Illinois Department of Natural Resources' Natural Heritage Database, One Natural Resources Way, Springfield, IL 62702-1271. (See additional contact information on inside back cover).

# **MAP**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle.

# **ORGANIZATION OF TEXT**

Species have been arranged in the text alphabetically by scientific name. The Latin name, by which the species is officially listed under the Illinois Endangered Species Protection Act, is the primary name used in this volume.

Species classified as endangered or threatened are intermixed, rather than broken into two groupings; the status of each species is noted in the narrative for that species. Because not all readers will know the scientific name of a species, and since a few species may be known by more than one Latin name, readers can use the **Index** to look up species discussed in this volume. The Index gives both Latin and common names, as well as synonyms, allowing a species to be located in several ways.

The Cross Reference of Species to County (Appendix III) can be used to find in what counties a particular species occurs. Conversely, a county can be checked for which species occur there. CAUTION: Please remember that new data are being collected all the time. The information in the species/county cross references could be out-of-date for some species by the time this volume is printed. This Index, as is true of the entire book, should only be used to get a general picture of endangered and threatened plant status in Illinois. It should never be used as a sole source of locational information for any report, project, regional/local planning, or environmental impact assessment. For work of that nature, you must contact the Illinois Department of Natural Resources, Division of Habitat Resources, One Natural Resources Way, Springfield, IL 62702-1271.

# Genus species Author

**COMMON NAME** 

**FAMILY NAME** 

Status: Endangered or Threatened in Illinois Federal Status, if any, is also noted

Habit: General characteristics of the species.

Range: A verbal description of the species' general range in North America.

A short statement giving the habitat of the species, the species distribution in Illinois and the reason for its present status in Illinois.

References: Literature to obtain more information about the species. The complete citation is listed in the Literature Cited Section.



# BENT MILK VETCH

#### **FABACEAE**

Status: Endangered in Illinois

Habit: Perennial, taprooted herb, stems to 30 cm tall.

Range: South-central United States.

Astragalus distortus reaches its northeastern range limit in the sand areas of western and central Illinois. Based on herbarium records the number of extant populations of bent milk vetch in Illinois has declined from 23 in the 1950s to only six at the present time. Of these, four are located along roads and railroads, one is in a mowed cemetery, and one is located in a state nature preserve in Mason County. One of the roadside populations is located at the edge of another nature preserve in Mason County.

References: Jones and Fuller (1955), McClain and Ebinger (2003).



# Baptisia tinctoria (L.) R. Br.

# YELLOW WILD INDIGO

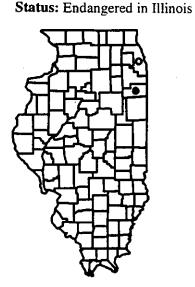
**FABACEAE** 

Habit: Perennial, rhizomatous, widely-branched herb to 1 m tall.

Range: Eastern United States and adjacent Canada.

Baptisia tinctoria, a species of dry, sterile, and sandy soils of open woodlands, and savannas, reaches its western range limit in the Kankakee Sand deposits of northeastern Illinois. Originally this species was listed as endangered in Illinois based on early collections and sightings in northeastern Illinois in the late 1800s and early 1900s. In the late 1900s, these populations could not be located and yellow wild indigo was removed from the state's endangered list. Two populations of the yellow wild indigo have been found recently in a disturbed sand savanna and sandy field at a state-owned natural area in Kankakee County.

**References:** Bowles et al. (1991), Carroll and Feist (2004), Sheviak and Thom (1981).



# PRAIRIE MOONWORT

#### **OPHIOGLOSSACEAE**

Habit: Perennial fern from fleshy roots, to 20 cm tall.

Range: North central United States and adjacent Canada.

The Illinois population of prairie moonwort is disjunct nearly 350 km east of its established range that extends from the western prairies into eastern Iowa. The only known Illinois population is located in an abandoned gravel pit that was mined in the early 1900s. The prairie moonwort occur in disturbed habitat along with several common prairie species. This gravel pit is located in a county forest preserve in Kane County.

References: Wagner, Jr. and Wagner (1993).



Status: Endangered in Illinois

# Calopogon oklahomensis D. H. Goldman

# OKLAHOMA GRASS PINK ORCHID

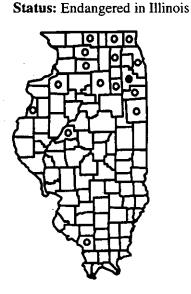
**ORCHIDACEAE** 

Habit: Perennial, bulbous herb, stems to 75 cm tall.

Range: South-central Midwestern United States.

Calopogon oklahomensis is a Midwestern species found in mesic, acidic, sandy-loam prairies. Until recently this species was considered a part of the state endangered Calopogon tuberosus (L.) BSP., being separated as a distinct species in 1995. It was originally abundant in Illinois but its range has been severely reduced by agriculture and urban development. Formerly known from 16 counties in the state, only two populations of the Oklahoma grass pink orchid are presently known, one from a state nature preserve in Will County.

References: Goldman (1995), Trapnell et al. (2004).



STAR SEDGE

**CYPERACEAE** 

Status: Threatened in Illinois

Habit: Perennial densely cespitose sedge, culms to 1 m tall.

Range: Eastern United States and adjacent Canada.

Carex atlantica is a common sedge of the coastal plain of eastern North America, but occurs sporadically inland in the Midwest to Illinois and Missouri. It is extremely rare in Illinois only being known from a few localities in the extreme southern part of the state. A species of wooded seeps, it is now known from Pope County in the Shawnee National Forest.

Note: Both subspecies atlantica and subspecies capillacea (L. H. Bailey) Reznicek are known from Illinois.

References: Reznicek (2002).



# Carex bromoides Schk.

SEDGE

**CYPERACEAE** 

Status: Threatened in Illinois

Habit: Perennial densely cespitose sedge, culms to 90 cm tall.

Range: Eastern United States and adjacent Canada.

Carex bromoides is relatively common throughout much of the eastern United States where it occurs in wet woods, swamps, and bogs. In Illinois it is known from scattered populations in the eastern part of the state. It persists in wet depressions in woods in two state nature preserves in Cook County, a county forest preserve in DuPage County, a state nature preserve in Kendall County and a natural area in Pope County. This species has also been found within the past 30 years in a seep spring in a state park in Lawrence County, and from a county park in Vermilion County.

References: Naczi (2002).



**SEDGE** 

**CYPERACEAE** 

Habit: Perennial densely cespitose sedge, culms to 80 cm tall.

Range: Northeastern United States and adjacent Canada.

Carex cumulata was removed from the Illinois endangered species list when it was thought to have been extirpated from the state. Populations of this species have recently been found in a disturbed field, a black oak sand savanna, and a xeric sand prairie on a private preserve in Kankakee County. Also, it has recently been found in a dry-mesic oak savanna in a state conservation area in Iroquois County.

References: Mastrogiuseppe et al. (2002), Sheviak and Thom (1981).



Status: Endangered in Illinois

# Carex diandra Schrank.

SEDGE

CYPERACEAE

Habit: Perennial densely cespitose sedge, culms to 80 cm tall.

Range: Circumboreal, throughout northern United States and most of Canada.

Carex diandra is occasional to rare throughout most of the northern United States where it occurs in swamps, wet meadows, fens, and peaty or marly shores of lakes and ponds. In Illinois it is restricted to the extreme northeastern part of the state. Presently populations of this species are known from floating vegetation mats of a lake in a state park in McHenry County and a privately-owned marsh in Lake County.

References: Cochrane (2002).



HANDSOME SEDGE

**CYPERACEAE** 

Status: Endangered in Illinois

Habit: Perennial densely cespitose sedge, culms to 80 cm tall.

Range: Northeastern United States and adjacent Canada.

Handsome sedge appears to be confined to areas with calcareous soils, making it uncommon and sparsely distributed throughout its range. It is usually associated with mesic to dry savannas and open forests but is also found in moist meadows where populations can become quite large. Carex formosa is restricted to extreme northeastern Illinois where it is known from three county forest preserves in Cook County and a roadside thicket in Lake County.

References: Waterway (2002).



# Carya aquatica (Michx. f.) Nutt.

# WATER HICKORY

**JUGLANDACEAE** 

Habit: Tree, to 45 m tall.

Range: Southeastern United States.

Carya aquatica reaches its northern range limit in the swamps and wet lowland woods of the Mississippi embayment of southern Illinois. Not uncommonly a large forest tree, water hickory is occasionally found at scattered sites along the Cache River. It has been found in a state conservation area in Alexander County, a state natural area in Johnson County, a state nature preserve in Pulaski County, and on private land in Gallatin, Massac, and Union counties.

References: Gleason and Cronquist (1991), Stone (1997).



Status: Threatened in Illinois

FAIRY WAND, DEVIL'S BIT

LILIACEAE

Status: Endangered in Illinois

Habit: Long-lived perennial, rhizomatous herb, stems to 1 m tall.

Range: Eastern United States.

Chamaelirium luteum is a dioecious species with terminal racemes of white flowers produced in the late spring and early summer. In Illinois, fairy wand is found rarely in moist meadows, thickets, and on rich wooded slopes in the extreme southern part of the state. Historically this species is known from 13 areas in Hardin, Massac, and Pope counties. Fairy Wand was recently found at three of these areas, one population in a state nature preserve in Hardin County.

References: Jones (2004), Utech (2002).



# Deschampsia flexuosa (L.) Trin.

# HAIRGRASS

**POACEAE** 

Habit: Perennial cespitose grass, culms 40-100 cm tall.

Range: Circumboreal, south into northeastern United States.

Deschampsia flexuosa is a wide-ranging species found throughout much of Canada and the northeastern United States in dry open woods, fields and sand hills. In the southeastern part of its range this species is becoming weedy and somewhat invasive. Hairgrass has only recently been found in Illinois. Presently it is known from an oak woodland on a west-facing morainal slope at the Chicago Botanic Garden in northern Cook County.

References: Gleason and Cronquist (1991), Hitchcock and Chase (1951).



# FRENCH'S SHOOTING-STAR

#### **PRIMULACEAE**

Status: Threatened in Illinois

**Habit:** Perennial herb with a basal rosette of leaves, scapes to 70 cm tall.

Range: Southern Illinois and adjacent Missouri, Arkansas, Indiana, and western Kentucky.

French's shooting-star is a rare Midwestern endemic that is found associated with sandstone ledges throughout its limited range. This species often grows in linear colonies in thin sandy soil in shade directly below the outer edges of overhanging sandstone ledges. These rocky shelters are commonly used by people which results in the trampling and loss of many shooting-star individuals and the extirpation of some populations. In Illinois this species is mostly restricted to the Shawnee Hills Natural Division where it is known from seven counties.

Note: Gleason and Cronquist (1991) consider the name of this taxon to be Dodecatheon meadia L. var. frenchii Vasey.

References: Mohlenbrock (1978), Olah and DeFilipps (1969), Voigt and Swayne (1955).



# Huperzia porophila (Lloyd & Underw.) Holub.

# **CLIFF CLUBMOSS**

LYCOPODIACEAE

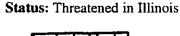
Synonym: Lycopodium porophilum Lloyd & Underw.

Habit: Perennial evergreen clubmoss from a creeping stem, erect stems to 15 cm tall.

Range: Northeastern United States.

A species of moist, shaded, acidic sandstone, *Huperzia porophila* is mostly restricted to cliff faces and ledges at scattered localities throughout the northeastern United States. Cliff clubmoss has been reported from three counties in northern Illinois (Lake, La Salle, and Ogle counties), and four in extreme southern Illinois (Gallatin, Jackson, Johnson and Pope counties). Presently no extant populations are known from northern Illinois and cliff clubmoss has only rarely been encountered in southern Illinois. All known populations are small and could easily be eliminated by rock climbers or natural disasters.

References: Wagner, Jr. and Beitel (1993).





**OLD PLAINSMAN** 

**ASTERACEAE** 

Status: Threatened in Illinois

Habit: Taprooted biennial herb, stems 30-70 cm tall.

Range: South-central and southeastern United States.

Hymenopappus scabiosaeus is a common species of dry prairies and open woods throughout much of its range. In Illinois the old plainsman is historically known from sand prairies and open sand forests in four counties in central Illinois (Cass, Iroquois, Kankakee, and Mason counties). This taxon is presently known from 16 populations in three counties, most in the Kankakee River Sand Area of eastern Illinois. Some populations contain large numbers of individuals, but 13 are located in disturbed, very marginal habitats such as roadsides and abandoned fields. One relatively large population occurs in a state nature preserve in Iroquois County.

References: Gleason and Cronquist (1991), McClain and Ebinger (2002).



# Menyanthes trifoliata L.

#### **BUCKBEAN**

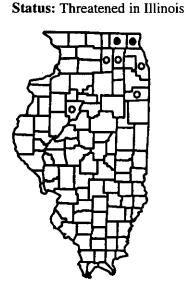
# **MENYANTHACEAE**

Habit: Aquatic, rhizomatous, perennial herb, scapes to 30 cm tall.

Range: Circumboreal, south to central United States.

Menyanthes trifoliata is an emergent aquatic species of shallow, quiet, cool waters being particularly common in bogs and marshes. Buckbean is mostly restricted to the extreme northeast part of the state with historic collections known from Cook, DeKalb, Kane, Kankakee, Lake, McHenry, and Peoria counties. This species is now mostly associated with bogs and marshes in Lake and McHenry counties where it is has been found in a state park and five state nature preserves.

References: Gleason and Cronquist (1991).



# **BABY BLUE-EYES**

## HYDROPHYLLACEAE

Status: Endangered in Illinois

Habit: Taprooted annual herb, stems to 30 cm tall.

Range: Southeastern United States.

Nemophila triloba occurs in damp rich woods, and reaches its northwestern range limits in extreme southern Illinois. Presently it is known from a single extensive population in the hills above the Ohio River in Massac County. It was first discovered in Illinois in 1997 and appears to be well established at this site.

References: Gleason and Conquist (1991).



# Penstemon tubaeflorus Nutt.

TUBE BEARDSTONGUE

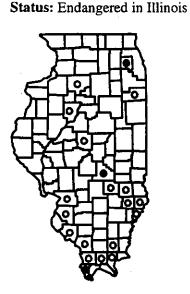
**SCROPHULARIACEAE** 

Habit: Perennial herb, stems to 1 m tall.

Range: Central and southeastern United States.

A species of rich prairies and moist, open woods, *Penstemon tubaeflorus* is presently very rare in Illinois. The tube beardstongue has been reported from 20 counties in the state. Most of these are historical reports from the southern counties that were made prior to 1965. Presently the only extant populations known in the southern half of Illinois are from a roadside in Shelby County and a cemetery in Alexander County. Recent reports of this species from restored prairies in two DuPage County forest preserves probably represent adventive individuals.

References: Gleason and Conquist (1991), Swink and Wilhelm (1994).



# **DULL MEADOW BEAUTY**

# **MELASTOMACEAE**

Status: Endangered in Illinois.

Habit: Freely branched rhizomatous perennial herb, stems to 1 m tall.

Range: Southeastern United States.

Rhexia mariana is commonly found in wet meadows and sandy fields with acidic soils in southeast United States. It reaches its northwestern range limit in southern Missouri and Illinois where it is occasionally found in wet meadows, around ponds, and in seep springs. Dull meadow beauty seems to be common in seep springs in the Cretaceous Hills Section of the Coastal Plain Division of southern Illinois. It has recently been reported from a state nature preserve in Pope County.

References: Gleason and Conquist (1991).



# Sanicula smallii Bickn.

# SOUTHERN SANICULA, SOUTHERN BLACK SNAKEROOT

**APIACEAE** 

Habit: Perennial herb with thickened cord-like roots, stems to 70 cm tall.

Range: Southeastern United States.

Sanicula smallii reaches its northwestern range limit in extreme southern Illinois. Extremely rare in Illinois, this taxon is known from only one population that is located in a dry-mesic upland forest in Hardin County. Southern sanicula was first found in Hardin County in 1998 and was recently relocated at the same site.

References: Gleason and Conquist (1991).



# SMALL-FRUITED BULRUSH

## **CYPERACEAE**

Status: Endangered in Illinois

Synonym: Scirpus rubrotinctus Fern.

Habit: Perennial, rhizomatous bulrush, stems to 1.4 m tall.

Range: Throughout most of Canada and the United States.

Scirpis microcarpus, a coarse, grass-like plant of low wet ground, marshes, and swamps, is found throughout much of North America. Historically this species was known from Illinois based on early collections from along the Lake Michigan shoreline. The small-fruited bulrush was last seen in Illinois in 1918, and was considered extirpated from the state. A small colony of this species was found in 1999 in a wet, sandy swale in a state park on the Lake Michigan shore, Lake County.

References: Jones and Fuller (1955), Whittemore and Schuyler (2002).



# Scleria muhlenbergii Steud.

# MUHLENBERG'S NUT RUSH

**CYPERACEAE** 

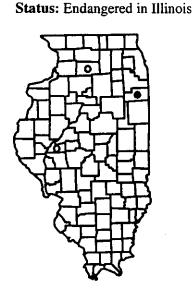
Synonym: Scleria reticulata Michx.

Habit: Annual, cespitose sedge, culms to 50 cm tall.

Range: Eastern United States.

In the United States, Scleria muhlenbergii is mostly a species of the coastal plain, becoming uncommon inland. It reaches its northwestern range limit in the sand deposits of Illinois. Originally this species was listed as endangered in Illinois based on early collections and sighting in the Cass County sand deposits in the 1950s and 1960s. These populations could not be located and Muhlenberg's nut rush was removed from the state's endangered list. Populations of this species have recently been located in a private preserve in the Kankakee sand deposits of northeastern Illinois.

References: Bowles et al. (1991), Herkert (1991), Reznicek et al. (2002).



# CAROLINA WHIPGRASS

# **CYPERACEAE**

Status: Endangered in Illinois

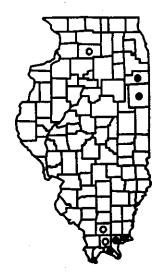
Habit: Perennial, rhizomatous sedge, culms to 50 cm tall.

Range: Eastern United States and adjacent Mexico.

A species of dry to moist sand deposits *Scleria pauciflora* has been reported from eight Illinois counties. Most Illinois populations are associated with open sandy woods, but this species has also been reported from barrens, glades, and disturbed field in southern Illinois. Many of the sightings of this species are more than 30 years old, but it has recently been reported from a private preserve and from a state nature preserve, both in the Kankakee sand deposits of northeastern Illinois.

**Note:** Both variety *pauciflora* and variety *caroliniana* (Willd.) Wood are known from Illinois.

References: Fairey (1969), Gleason and Cronquist (1991), Reznicek et al. (2002).



# Sedum telephioides Michx.

# **AMERICAN ORPINE**

CRASSULACEAE

Habit: Coarse perennial from a stout caudex, stems 20-60 cm tall.

Range: Eastern United States.

Sedum telephioides is relatively common on sandstone cliffs, and on dry rocky places mostly in the mountains from southern Pennsylvania to North Carolina. American orpine is disjunct in southern Illinois, adjacent Indiana, and western Kentucky where it occurs on sandstone cliffs, particularly along the Ohio River. This species is probably only native in extreme southern Illinois, sightings from the rest of the state represent cultivated and adventive individuals.

References: Gleason and Cronquist (1991).



Status: Threatened in Illinois

SMALL FLOWER-OF-AN-HOUR

**PORTULACACEAE** 

Status: Threatened in Illinois

Habit: Perennial herb, stems to 15 cm tall.

Range: Central United States and adjacent Mexico.

Talinum parviflorum, a species of exposed sandstone ledges and sand deposits, is near its eastern range limit in southern Illinois. Illinois populations of this species are mostly on exposed sandstone ledges in the Shawnee Hills Division. Many of these populations are in state parks and state natural areas commonly used by hikers and horse riders. This has resulted in the trampling and losses of many individuals and has contributed to the extirpation of some populations. Small flower-of-an-hour populations are presently known from Johnson and Pope counties where it is found in a few state parks and state natural areas.

References: Gleason and Cronquist (1991).



# Vaccinium stamineum L.

DEERBERRY, SQUAW HUCKLEBERRY

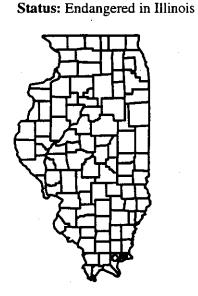
**ERICACEAE** 

Habit: Deciduous shrub, to 1.5 m tall.

Range: Eastern United States and adjacent Canada.

Vaccinium stamineum is a common species of dry woods and thickets in eastern North American. It is near its western range limit in extreme southern Illinois where it was first discovered in Pope County in 1962. Based on this early sighting, deerberry was listed as endangered in Illinois, and was subsequently delisted when that population could not be relocated. A small population of this species has recently been located in the Shawnee National Forest in Hardin County.

**References:** Bowles et al. (1991), Gleason and Cronquist (1991), Herkert (1991)



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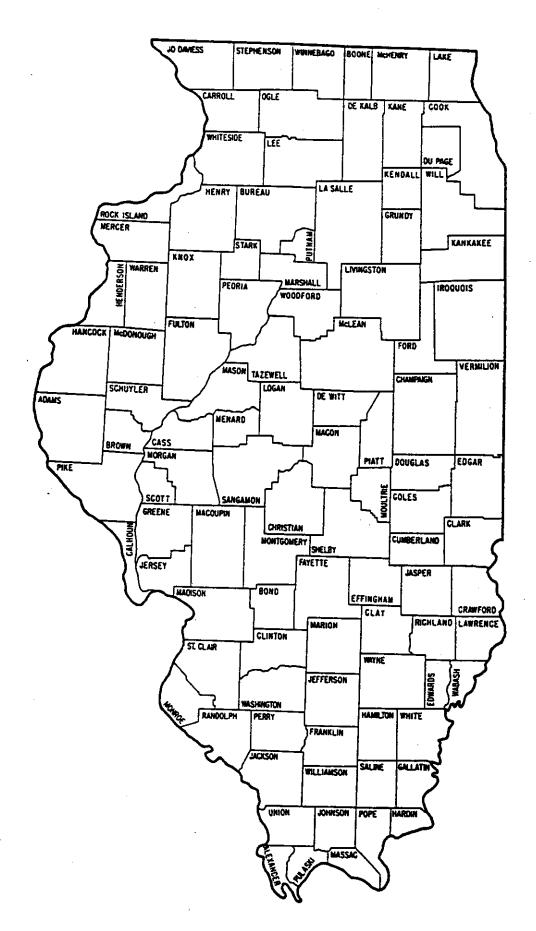
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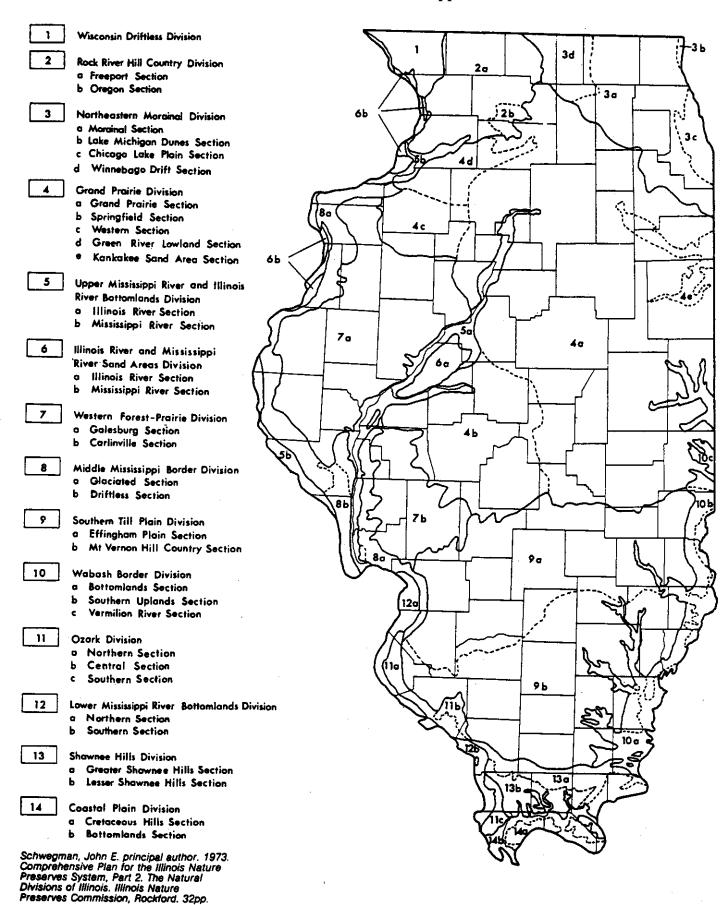
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APPENDIX III - Cross Reference of Species to County -- Species Listing

Counties with an asterisk (\*) after them have recent records (> 1994). Counties without an asterisk have only historic records (< 1994).

Astragalus distortus

Adams

Cass\*

Cook Mason\*

Mason\*

Menard

Pike

St. Clair

Scott\*
Whiteside

Baptisia tinctoria

Cook

Kankakee\*

Botrychium campestre

Kane\*

Calopogon oklahomensis

Cook

Grundy Henderson

Henry

Iroquois

Jackson

Kane

Kankakee

Lake

La Salle

Lee

Mason

McHenry

Ogle

Will\*

Winnebago

Carex atlantica

Pope\*

Carex bromoides

Boone Cook\*

DeKalb

Delkaid

DuPage\*

Fayette

Kendall\*

Lake\*

La Salle

Lawrence

Pope\*
Vermilion

\*\* 111116

Wabash

Winnebago

Carex cumulata

Iroquois\*

Kankakee\*

Carex diandra

Lake\*

McHenry\*

Carex formosa

Cook\*

Lake\*

Carya aquatica

Alexander\*

Gallatin

Johnson\*

Massac\*

Pulaski\*

Union

Chamaelirium luteum

Hardin\*

Massac

Pope\*

Deschampsia flexuosa

Cook\*

Dodecatheon frenchii

Hardin\*

Jackson\*

Johnson\*

Pope\*

Saline\*

Union\*

G7:11: \_ ...

Williamson\*

Huperzia porophila

Gallatin

Jackson

Johnson

Lake

La Salle

La Salle

Ogle

Pope\*

Hymenopappus scabiosaeus

Cass

Iroquois\*

Kankakee\*

Mason\*

Menyanthes trifoliata

Cook

DeKalb

Kane

Kankakee

Lake\*

McHenry\*

Peoria

Nemophila triloba

Massac\*

Penstemon tubaeflorus

Alexander\*

Bureau

DuPage\*

Durage\*

Effingham

Jackson Jasper

Juspei

Johnson

Kankakee

Lawrence

Logan

Madison

TVILLOIS C

Peoria

Pope

Randolph

Richland

St. Clair Saline

Shelby\*

Union

Wabash

wabash

Rhexia mariana

Hamilton

Jackson

Mason

Massac\*

Pope\* Williamson\*

Sanicula smallii

Hardin\*

Scirpus microcarpus

Lake\*

# Scleria muhlenbergii

Cass

Kankakee\*

Lee

# Scleria pauciflora

Hardin\*

Iroquois\*

Johnson

Kankakee\*

Lee

Massac\*

Pope\*

Williamson

# Sedum telephioides

Gallatin\*

Hardin

Pope

Saline\*

Wabash

# Talinum parviflorum

Calhoun

Johnson\*

Pope\*

Union

# Vaccinium stamineum

Hardin\*

Pope

. . . .

# **APPENDIX III - Cross Reference of Species to County -- County Listing**

Species with an asterisk (\*) after them represent recent records (> 1994). Species without an asterisk represent historic records (< 1994).

#### Adams

Astragalus distortus

#### Alexander

Carya aquatica\*
Penstemon tubaeflorus\*

## **Boone**

Carex bromoides

#### Bureau

Penstemon tubaeflorus

#### Calhoun

Talinum parviflorum

#### Cass

Astragalus distortus\* Hymenopappus scabiosaeus Scleria muhlenbergii

# Cook

Astragalus distortus
Baptisia tinctoria
Calopogon oklahomensis
Carex bromoides\*
Carex formosa\*
Deschampsia flexuosa\*
Menyanthes trifoliata

#### DeKalb

Carex bromoides Menyanthes trifoliata

#### **DuPage**

Carex bromoides\*
Penstemon tubaeflorus\*

# Effingham

Penstemon tubaeflorus

# **Fayette**

Carex bromoides

# Gallatin

Carya aquatica Huperzia porophila Sedum telephioides\*

# Grundy

Calopogon oklahomensis

#### Hamilton

Rhexia mariana

#### Hardin

Chamaelirium luteum\*
Dodecatheon frenchii\*
Sanicula smallii\*
Scleria pauciflora\*
Sedum telephioides
Vaccinium stamineum\*

#### Henderson

Calopogon oklahomensis

#### Henry

Calopogon oklahomensis

# **Iroquois**

Calopogon oklahomensis Carex cumulata\* Hymenopappus scabiosaeus\* Scleria pauciflora\*

# Jackson

Calopogon oklahomensis Dodecatheon frenchii\* Huperzia porophila Penstemon tubaeflorus Rhexia mariana

#### Jasper

Penstemon tubaeflorus

#### Johnson

Carya aquatica\*
Dodecatheon frenchii\*
Huperzia porophila
Penstemon tubaeflorus
Scleria pauciflora
Talinum parviflorum\*

#### Kane

Botrychium campestre\* Calopogon oklahomensis Menyanthes trifoliata

#### Kankakee

Baptisia tinctoria\*
Calopogon oklahomensis
Carex cumulata\*
Hymenopappus scabiosaeus\*

Menyanthes trifoliata Penstemon tubaeflorus Scleria muhlenbergii\* Scleria pauciflora\*

#### Kendall

Carex bromoides\*

#### Lake

Calopogon oklahomensis Carex bromoides\* Carex diandra\* Carex formosa\* Huperzia porophila Menyanthes trifoliata\* Scirpus microcarpus\*

#### La Salle

Calopogon oklahomensis Carex bromoides Huperzia porophila

#### Lawrence

Carex bromoides
Penstemon tubaeflorus

# Lee

Calopogon oklahomensis Scleria muhlenbergii Scleria pauciflora

# Logan

Penstemon tubaeflorus

# Madison

Penstemon tubaeflorus

#### Mason

Astragalus distortus\*
Calopogon oklahomensis
Hymenopappus scabiosaeus\*
Rhexia mariana

#### Massac

Carya aquatica\* Chamaelirium luteum Nemophila triloba\* Rhexia mariana\* Scleria pauciflora\*

# **McHenry**

Calopogon oklahomensis Carex diandra\* Menyanthes trifoliata\*

## Menard

Astragalus distortus

# Ogle

Calopogon oklahomensis Huperzia porophila

#### Peoria

Menyanthes trifoliata Penstemon tubaeflorus

#### Pike

Astragalus distortus

# Pope

Carex atlantica\*
Carex bromoides\*
Chamaelirium luteum\*
Dodecatheon frenchii\*
Huperzia porophila\*
Penstemon tubaeflorus
Rhexia mariana\*
Scleria pauciflora\*
Sedum telephioides
Talinum parviflorum\*
Vaccinium stamineum

# Pulaski

Carya aquatica\*

#### Randolph

Penstemon tubaeflorus

#### Richland

Penstemon tubaeflorus

# St. Clair

Astragalus distortus Penstemon tubaeflorus

#### Saline

Dodecatheon frenchii\* Penstemon tubaeflorus Sedum telephioides\*

#### Scott

Astragalus distortus\*

# Shelby

Penstemon tubaeflorus\*

#### Union

Carya aquatica
Dodecatheon frenchii\*
Penstemon tubaeflorus
Talinum parviflorum

#### Vermilion .

Carex bromoides

#### Wabash

Carex bromoides Penstemon tubaeflorus Sedum telephioides

## Whiteside

Astragalus distortus

# Will

Calopogon oklahomensis\*

# Williamson

Dodecatheon frenchii\* Rhexia mariana\* Scleria pauciflora

# Winnebago

Calopogon oklahomensis Carex bromoides

# Helpful Contacts Regarding Endangered and Threatened Species In Illinois

# Illinois Department of Natural Resources

Division of Habitat Resources: identification, protection, management, and recovery of endangered and threatened plants, natural areas, nature preserves 217/785-8774.

Terrestrial Endangered and Threatened Species Conservation Program: management and recovery of terrestrial endangered species 217/782-6384.

Aquatic Endangered and Threatened Species Conservation Program: management and recovery of aquatic endangered species 217/782-6424.

Division of Resource Review and Coordination: endangered species consultation (impact assessments) 217/785-5500.

Natural Heritage Database: computerized database of natural areas, endangered species, and other significant features in Illinois 217/785-8774.

Natural Areas Program: identification, acquisition, or management of natural areas 217/785-8774.

# Illinois Endangered Species Protection Board

Status and distribution of endangered and threatened species, listing of species as endangered or threatened 217/785-8687.

# **Illinois Nature Preserves Commission**

Protection and Dedication of state nature preserves or potential Nature Preserves 217/785-8686.

Equal opportunity to participate in programs of the Illinois Department of Natural Resources (IDNR), Illinois Endangered Species Protection Board, and those funded by the U.S. Fish and Wildlife Service and other agencies is available to all individuals regardless of race, sex, national origin, disability, age, religion, or other non-merit factors. If you believe you have been discriminated against, contact the funding source's civil rights office and/or the Equal Employment Opportunity Officer, IDNR, One Natural Resources Way, Springfield, IL 62702-1271; 217/785-0067; TTY 217/782-9175.



ILLINOIS ENDANGERED SPECIES PROTECTION BOARD