

AD-A122 537 INVENTORY OF RARE OF ENDANGERED VASCULAR PLANTS
OCCURRING IN THE FLOODPLA. (U) SOUTHERN ILLINOIS UNIV
CARBONDALE DEPT OF BOTANY R H MOHLENBROCK JAN 75
UNCLASSIFIED LMSD-75-1260 F/G 6/3

INVENTORY OF RARE OF ENDANGERED VASCULAR PLANTS
OCCURRING IN THE FLOODPLA. (U) SOUTHERN ILLINOIS UNIV
CARBONDALE DEPT OF BOTANY R H MOHLENBROCK JAN 75
LM55D-75-1260 F/G 6/3

1/1

UNCLASSIFIED

F/G 6/3

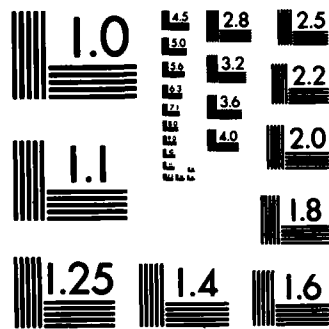
NL

END

FILE MORE ON

• 82

OTC

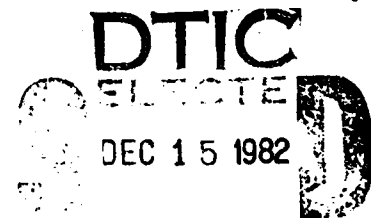


MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

INVENTORY OF RARE OR ENDANGERED
VASCULAR PLANTS OCCURRING
IN THE FLOODPLAIN OF THE MISSISSIPPI
RIVER BETWEEN CAIRO, ILLINOIS, AND
ST. PAUL, MINNESOTA, AND IN THE FLOODPLAIN
OF THE ILLINOIS RIVER BETWEEN GRAFTON,
ILLINOIS, AND CHICAGO

By

Robert H. Mohlenbrock
Department of Botany
Southern Illinois University
Carbondale, Illinois



A

January, 1975

Sponsored by the U. S. Army Engineer District, St. Louis

under

Contract No. LMSSD 75-1260

82 12 15 067

AD A 122537

FILE COPY

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. A122537	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Inventory of Rare or Endangered Vascular Plants Occurring in the Floodplain of the Mississippi River Between Cairo, IL and St. Paul, MN, and in the Floodplain of the Illinois River Between Grafton, IL and Chicago		5. TYPE OF REPORT & PERIOD COVERED
7. AUTHOR(s) Robert H. Mohlenbrock		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Southern Illinois University Department of Botany Carbondale, IL		8. CONTRACT OR GRANT NUMBER(s) LMSSD 75-1260
11. CONTROLLING OFFICE NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) U.S. Army Engineer District, St. Louis 210 Tucker Boulevard, North St. Louis, Missouri 63101		12. REPORT DATE January 1975
		13. NUMBER OF PAGES 89
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
16. DISTRIBUTION STATEMENT (of this Report) Approved for release; distribution unlimited.		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) <p>✓ The primary objective of this study was to determine which species of rare or endangered vascular plants occur in the Illinois and Mississippi River floodplains. Other objectives were to describe the habitats in which these species occur, and to discuss the overall distribution of each species. An attempt was made to indicate the distribution of each species by navigational pools, but the precise distributions data were not sufficient.</p>		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

Introduction

The St. Louis District, United States Army Corps of Engineers, is developing a list of rare and endangered species of vascular plants which occur in the floodplain of the Mississippi River between Cairo, Illinois, and St. Paul, Minnesota, and in the floodplain of the Illinois River between Grafton, Illinois, and Chicago. A survey of the available literature, together with the investigator's own personal observations in the field for twenty-five years, has provided the foundation for this study.

The primary objective was to determine which species of rare or endangered vascular plants occur in the Illinois and Mississippi River floodplains. Other objectives were to describe the habitats in which these species occur, and to discuss the overall distribution of each species. An attempt was to be made to indicate the distribution of each species by navigational pools, but the precise distributional data were not sufficient.

The floodplain was considered to be the area from bluff to bluff on either side of the Mississippi and Illinois Rivers. It included both protected and unprotected habitats. Seventy-one counties in five states comprised the study area.

A total of nearly 1700 species of vascular plants was ascertained to occur in the floodplains of the Mississippi River from Cairo to St. Paul and the Illinois River from Grafton to Chicago. Of these, 86 have been determined to be rare or endangered, and one is protected by state law. Five of the rare or endangered species are naturalized, rather than native.

[illegible]

For this study, a species is considered rare if it is rare throughout its entire range, if it reaches its natural range limits in the floodplains and has limited distribution in the study area, if it is rare in any of the five states of the study area, or if it represents a disjunct or relict population.

A species is considered endangered if it may be depleted by overcollecting or if it is known from a very few stations which are in danger of being destroyed.

While several publications recently have dealt with rare and endangered species of animals and efforts to legislate to protect these species, little has been done to establish a list of rare and endangered plants.

The Missouri Department of Conservation, in conjunction with the United States Department of Agriculture Soil Conservation Service, has published "Rare and Endangered Species of Missouri" (1974). Several plant and animal groups are enumerated in this publication.

The Wisconsin Department of Natural Resources has released a booklet entitled "Endangered Animals in Wisconsin" (1973). A brief section describing uncommon plants and plant communities is included. Similarly, the state of Minnesota has published a small booklet on endangered animals of Minnesota. A list of protected plant species in Minnesota is appended to this publication.

Illinois has prepared an unpublished "Preliminary List of Extinct, Rare, and Endangered Plants in Illinois" (1974).

The references listed above are referred to in the enumeration of rare and endangered species of vascular plants in the floodplains of

the Mississippi and Illinois Rivers. Additional publications referring to plants of rare or endangered species in the floodplains of the Mississippi and Illinois Rivers follow the enumerations.

The discussion of the rare and endangered species of vascular plants follows. Nomenclature is that of Mohlenbrock (1975). When this nomenclature differs from that found in Fernald (1950), Jones (1963), or Steyermark (1969), it is indicated. Only native species are included in the discussion, although a brief list of rare adventive floodplain species is appended.

Sagittaria calycina Engelm.

Arrowhead

Family Alismataceae

Status: Not rare nor endangered.

This usually robust species is known from all five states in the study area. It occurs at several stations all along the Mississippi River from Cairo to St. Paul. It is particularly abundant on the Missouri side of the Mississippi River from Ralls County to Cape Girardeau County. It is less common in the floodplains of the other states in the study area. For example, it is known in Illinois only from Alexander, Calhoun, and Henderson counties in the floodplain. This species is listed as both Rare and Endangered on the Illinois Nature Preserves Commission list (1974). I have recorded this species from several stations both in and out of the study area and conclude that it is neither rare nor endangered.

Sagittaria calycina occurs in shallow water or along the edges of pools. It is sometimes found along muddy borders of streams tributary to the Mississippi River. It is also found in a number of backwater sloughs, particularly on the Missouri side of the river.

Steyermark (1969) calls this plant Sagittaria montevidensis Cham. & Schlecht. ssp. calycina (Engelm.) Bogin. It also occurs in dwarf forms (f. depauperatus) and robust forms (f. maximus). It flowers from June to September.

Limnobium spongia (Bosc) Steud.

Frogbits

Family Hydrocharitaceae

Status: Rare (Illinois).

This is a Coastal Plain species which ranges from Texas to Florida and then follows the Atlantic seaboard as far north as New Jersey and the Mississippi River as far north as southwestern Illinois and southeastern Missouri.

Frogbits is an inhabitant of swamps where it grows in standing water. It also occupies wet woods, ditches, and swales. It flowers from June to September.

In Illinois, this species occurs in four counties, with Alexander and Union being located along the Mississippi River. At both stations in these counties, this species is far enough away from the river proper so that it is in no particular danger from any activity on the Mississippi River.

Frogbits is known from five counties in the Missouri bootheel, but none is adjacent to the Mississippi River.

This species is listed as rare and endangered in Illinois (1974) and rare in Missouri (1974).

Scheuchzeria palustris L. var. americana Fern.

Arrowgrass

Family Juncaginaceae

Status: Rare and endangered (Illinois).

This is primarily a boreal species occurring from Newfoundland across to Washington, south to California, then eastward across Illinois to New Jersey.

The habitat for the Arrowgrass is bogs or sandy depressions. In Illinois, Wisconsin, and Minnesota, it usually occurs in bogs away from the study area of the floodplains. The only site in the study area where this species occurs is in a sandy depression along the Illinois River in Fulton County. Because of the few specimens known at the Fulton County station, this species should be considered endangered in the study area.

Illinois (1974) has listed this species as rare. It is not uncommon, however, in some of the boreal areas of North America.

Triglochin palustris L.

Arrowgrass

Family Juncaginaceae

Status: Rare and endangered (Illinois).

This species is a wide-ranging boreal species of both the Eastern and Western Hemispheres. It occurs from Greenland westward to Alaska, south to California, eastward across Nebraska and Illinois to New York. It also is found in Europe and Asia.

Triglochin palustris grows in a variety of wetland habitats, but shows a distinct preference for bogs and sandy depressions.

In the floodplains of the Illinois River, this species is found in sandy depressions in Peoria and Tazewell counties. In both counties it is extremely rare and should be considered endangered in this situation. Elsewhere throughout its range, it is not particularly rare.

Illinois (1974) lists it as rare.

Triglochin maritimum L.

Arrowgrass

Family Juncaginaceae

Status: Rare and endangered (Illinois).

This Arrowgrass has a very wide distribution. In North America it occurs from Labrador across to Alaska, south to California and New Mexico, then eastward across Nebraska and Illinois to New Jersey. It also occurs in Mexico, Europe, Asia, and Africa.

In the study area it is known only from a single station along the Illinois River in Peoria County where it occurs in a sandy depression. Because of this rare occurrence, it is endangered in the study area.

Elsewhere in Illinois it is found in four counties in the northeastern corner of the state. It also occurs in Wisconsin and Minnesota but not along the Mississippi River.

Triglochin maritimum occurs in bogs, sandy depressions, wet ditches, swamps, and along sandy shores.

Heteranthera reniformis Ruiz & Pavon

Mud Plantain

Family Pontederiaceae

Status: Rare (Illinois).

This is a dwarf aquatic found in a variety of wetland habitats. It occurs in sloughs, ditches, swampy depressions, and oxbow lakes.

In Illinois, this species is found along the Mississippi River in Union and St. Clair counties, as well as three other counties in other parts of the state. Illinois (1974) lists it as a rare species.

This Mud Plantain is scattered throughout Missouri. It is found in four counties (Lincoln, St. Charles, St. Louis, and Jefferson) along the Mississippi River.

In Iowa, this species is uncommon and has not been collected thus far along the Mississippi River.

Heteranthera reniformis is found from Connecticut and New York eastward across Kentucky and Illinois to Nebraska, south to Texas and Florida. It also is known from Mexico, the West Indies, Central America, and South America.

Heteranthera limosa (Sw.) Willd.

Mud Plantain

Family Pontederiaceae

Status: Rare (Illinois).

This Mud Plantain is a species of sloughs, wet ditches, ponds, and stream banks. It is wide-ranging in its overall distribution, where it is known from both North and South America. In North America, it occurs from Minnesota southward to Kentucky, Illinois, Missouri, Nebraska, and Florida. It also is found in Colorado and New Mexico, as well as Mexico, the West Indies, and most Central American countries.

In the five-state study area, it is relatively rare. In Illinois, it occurs along the Mississippi River in Alexander and St. Clair counties, and one other county elsewhere in the state. It is designated rare for Illinois (1974). This species is more widely scattered in Missouri and Iowa, with some stations occurring along the Mississippi River (St. Louis and Jefferson counties in Missouri, Muscatine and Scott counties in Iowa). Heteranthera limosa is known from Minnesota, but thus far has not been collected in the Mississippi River floodplain.

This species flowers from June to September.

Zosterella dubia (Jacq.) Small

Water Stargrass

Family Pontederiaceae

Status: Not rare nor endangered.

The Water Stargrass ranges all across the United States from Maine to Minnesota to Washington, south to California, Texas, and Florida. It also occurs in Quebec and Ontario, Canada, as well as in Mexico.

It is known from all five states in the study area where it may be considered relatively rare (Illinois) to moderately common (Missouri, Iowa, Minnesota, Wisconsin). In all five states it occurs in the floodplain of the Mississippi River, although in Illinois it has been found only in Carroll County.

Zosterella dubia is moderately common in the floodplain of the Illinois River.

The habitats for this species include sloughs, springs, stream banks, and river banks. It flowers from June to September.

Steyermark (1963) and Jones (1963) both call this species Heteranthera dubia (Jacq.) MacM.

Potamogeton diversifolius Raf.

Pondweed

Family Pontederiaceae

Status: Rare (Wisconsin).

This Pondweed occurs from Pennsylvania, westward across Wisconsin to Montana and Oregon, southward and eastward to Texas and Florida. It is known also from Mexico.

Potamogeton diversifolius is common throughout most of its range, including much of the five-state study area. Only in Wisconsin is it of rare occurrence, where it is known from four counties. Two of these (Grant and Crawford) border the Mississippi River.

This species occurs primarily in ponds and lakes, but it also may be found in backwater sloughs and slow-flowing tributaries to major rivers. It flowers from May to October.

Najas guadalupensis (Spreng.) Magnus

Naiad

Family Najadaceae

Status: Rare (Wisconsin).

This aquatic Naiad occurs in backwater sloughs, in marshes, and in lakes and ponds. It has a sporadic distribution throughout the five-state study area, but this may be attributed to poor collecting and sampling in the area. Only in Wisconsin is this species to be considered rare, where it is known only from Grant County along the Mississippi River.

Najas guadalupensis is a wide ranging species of the tropics, extending northward to Massachusetts, New York, Pennsylvania, Michigan, Minnesota, South Dakota, and Oregon.

Careful collecting of this species may remove it from the list of rare species.

This species flowers from July to October.

Zannichellia palustris L.

Horned Pondweed

Family Zannichelliaceae

Status: Rare (Wisconsin).

The Horned Pondweed is a species of ponds, lakes, backwater sloughs, and marshes. Its inconspicuous nature probably accounts for its sparse and sporadic distribution. It is scattered throughout Illinois, Missouri, Iowa, and Minnesota. In Wisconsin, it is known from seven counties, with the Crawford County station being in the floodplain of the Mississippi River.

The overall range for this species is from Newfoundland to Quebec, south to Oklahoma and Florida. It also occurs in California, Mexico, the West Indies, South America, Europe, Asia, and Africa. It is not considered to be a rare species throughout most of its range.

Zannichellia palustris flowers from May until October.

Juncus scirpoides Lam.

Rush

Family Juncaceae

Status: Rare (Illinois, Missouri).

Juncus scirpoides ranges from New York westward to Michigan, south to Texas, east to Florida. It is not common in most of its range, and it is particularly rare in the five-state study area.

In Illinois, it occurs in Cass County along the Illinois River and two other counties in the state. Its Missouri distribution is scattered in eight counties. Two of these, St. Louis and Mississippi counties, border along the Mississippi River.

The primary habitat for this rush is in wet, sandy ground in the vicinity of rivers and streams.

Because of its close resemblance to the much more common J. brachycarpus, it may not always be distinguished by plant collectors.

The flowers are produced from June to October.

Eragrostis trichodes (Nutt.) Wood var. pilifera (Scheele) Fern.

Sand Lovegrass

Family Poaceae

Status: Rare (Illinois).

This slender Lovegrass has an unusual geographical distribution. It occurs from Nebraska south to eastern Texas and western Louisiana. It has outlying stations in the sand hills along the Illinois River in Illinois. It is unknown from Iowa and Missouri, even though it occurs in states on either side of them.

Because of the several stations where this plant is found in the sand hills along the Illinois River, it cannot be considered endangered, although the status of rare is certainly justified.

This plant flowers from July to October. Some botanists prefer to treat it as a distinct species, calling it Eragrostis pilifera Scheele.

Eragrostis reptans (Michx.) Nees

Pony Grass

Family Poaceae

Status: Endangered or possibly extinct (Illinois).

This low-growing grass is distributed from Kentucky, Illinois, and Missouri south to Texas and Louisiana. It is also found as an extension into South Dakota to the north and Mexico to the south.

In the five-state study area, it is known only from Missouri and Indiana. The Missouri stations are all in the western part of the state along the Missouri River. In Illinois, this species is known from eleven counties, including Hancock along the Mississippi River and Peoria along the Illinois River. Most of the Illinois collections are old ones and the species may not occur at all of them any more. This is particularly true of the Hancock and Peoria county stations. Although extremely rare, this species is not listed as rare or endangered by Illinois (1974).

The habitat for Eragrostis reptans is sand bars and muddy shores of lakes and ponds, and muddy banks of streams and rivers.

This species flowers from August to October.

Glyceria arkansana Fern.

Arkansas Manna Grass

Family Poaceae

Status: Rare (Illinois).

The Arkansas Manna Grass is a species normally found along the Mississippi River from Louisiana to southern Illinois and southern Missouri. It is also known from Virginia, and there is a specimen questionably collected from New York.

In southern Illinois, this species is confined to a spring-fed swamp in Union County in the protected floodplain. There are five records from Missouri, but none is in the river floodplain.

In addition to spring-fed swamps, this species grows in river sloughs. It flowers from May to July.

Steyermark (1969) relegates this plant to varietal status, calling it Glyceria septentrionalis Hitchc. var. arkansana (Fern.) Steyermark & Kucera.

Paspalum dissectum (L.) L.

Beadgrass

Family Poaceae

Status: Rare or perhaps extinct (Illinois).

This is perhaps one of the rarest species occurring in the floodplain of the Mississippi River, if it still exists at all in that area. It was found on the sandy banks of the Mississippi River in St. Clair County, Illinois, in 1850. I have been unable to relocate it there in recent years. It is known from two additional stations in Illinois as well, thus being one of the rarest species in the state.

Paspalum dissectum occurs in five counties in southern Missouri, but none is along the Mississippi River.

The range of this species is New Jersey south to Tennessee and Florida, west to Missouri and Texas.

This beadgrass occurs in backwater sloughs, wet ditches, along the muddy margins of streams, and along the borders of upland sink-hole ponds. It flowers from July to October.

Panicum hians Ell.

Panic Grass

Family Poaceae

Status: Rare and endangered (Illinois).

This is a species of the southern United States where it occurs from Florida to Texas and New Mexico, then north to Virginia, southwestern Illinois, southeastern Missouri, and Oklahoma. It is also reported from Mexico.

Panicum hians is known only from Illinois and Missouri in the five-state study area. In Missouri it is recorded from five counties in the southeastern corner of the state, but none borders along the Mississippi River.

This species is known in Illinois only from a single station in Alexander County, only a short distance from the Mississippi River. At the Alexander County station, this species grows in a wet roadside ditch.

Other habitats for Panicum hians are swamps, along streams, wet woods, and swaley ground. It flowers from June to October.

Aristida tuberculosa Nutt.

Sand Three-awn

Family Poaceae

Status: Rare (Illinois, Minnesota, Iowa, Wisconsin).

The Sand Three-awn is well named because it grows in extremely sandy soil primarily along major rivers in its range.

In Illinois, *Aristida tuberculosa* occurs in every county bordering the Mississippi River from JoDaviess County to Hancock County. This includes also Carroll, Whiteside, Rock Island, Mercer, and Henderson counties. It also occurs in Mason and Cass counties along the Illinois River. In addition it is found sparingly in Iowa, Wisconsin, and Minnesota in counties bordering the Mississippi River. It is unknown from Missouri.

Total range of *Aristida tuberculosa* covers an area from Massachusetts to Minnesota, south to Iowa, central Illinois, central Indiana, and Georgia. It flowers from August to October.

Aristida desmantha Trin. & Rupr.

Three-awn

Family Poaceae

Status: Rare (Illinois).

This species is restricted to a rather small area in the midwest. It is known from Nebraska south to Texas, with outlying stations in Illinois.

In Illinois, Aristida desmantha is found only in three counties bordering the Illinois River, these being Cass, Mason, and Morgan.

At the Illinois stations, it is found in sandy soil where it occurs very sparingly. This species grows in the vicinity of several other rare plants restricted in Illinois to sandy soil along the Illinois River.

Three-awn flowers from August to September.

Brachiaria platyphylla (Griseb.) Nash

Brachiaria

Family Poaceae

Status: Rare (Missouri).

Brachiaria platyphylla is a southern species found only from Florida to Texas, north to Missouri and Oklahoma. It occurs in sandy fields, primarily along the Mississippi River. It also grows in wet ditches. It is much more common in the southernmost part of its range.

In the five-state study area this species is found only in Missouri. It is known from Scott County in the floodplain of the Mississippi River. It also occurs in one county in the bootheel of Missouri.

This species flowers from August to November.

Leptochloa attenuata (Nutt.) Steud.

Sprangle-top

Family Poaceae

Status: Rare (Illinois).

This grass has a restricted geographical distribution, occurring from Illinois southward to Louisiana and Texas.

In the five-state study area, Leptochloa attenuata is known only from Illinois and Missouri. In Illinois, it has been recorded only from four counties, three of which (Alexander, Union, and Jackson) border the Mississippi River.

Leptochloa attenuata is not uncommon in Missouri, occurring in many counties throughout the southern half of the state. In counties bordering the Mississippi River, it is known from Pike, Lincoln, St. Charles, St. Louis, Ste. Genevieve, and Perry counties. Steyermark (1969) refers to this plant as Leptochloa filiformis (Lam.) Beauv. var. attenuata (Nutt.) Steyermark & Kucera.

This species occurs on sandy shores, mud flats, along alluvial banks, and in floodplains.

Leptochloa attenuata flowers from July to October.

Leptochloa panicoides (Presl) Hitchc.

Salt Meadow Grass

Family Poaceae

Status: Rare and endangered (Illinois).

Salt Meadow Grass is a species which grows on sandy banks along major waterways throughout its range.

In Illinois, this species has been found along the Illinois River only in Pike and Calhoun counties. Illinois (1974) lists it as both rare and endangered.

In Missouri, the only other state in the study area where this species occurs, it is known only from a single county (New Madrid), but this is south of the area covered in this inventory.

The overall range of this species is Indiana, Illinois, and Missouri, south to Texas and Florida. It also grows in Mexico, Guatemala, and Brazil.

Steyermark (1969) calls this species Diplachne halei Nash. It flowers from August to October.

Cyperus diandrus Torr.

Sedge

Family Cyperaceae

Status: Rare (Illinois, Minnesota).

This very low-growing sedge is a species of river banks, sandy shores, and swampy meadows.

Cyperus diandrus is not uncommon in either Missouri or Iowa, where it is scattered throughout each state, including counties bordering the Mississippi River.

In Illinois and Minnesota, this species is uncommon to rare, being known only from less than a dozen counties. In both of these states, however, it has been found very sparingly in sandy soil along the Mississippi River.

The range for this sedge is from Quebec and Maine to Minnesota and North Dakota, south to Missouri, Illinois, Indiana, and South Carolina.

It flowers from June to October.

Cyperus grayioides Mohlenbrock

Sand Prairie Sedge

Family Cyperaceae

Status: Rare (Illinois).

Cyperus grayioides is one of the rarest species in North America, known only from three counties in two states. It also is one of the more recent species to be described, having been named within the last decade.

This species occurs in sand prairies in Illinois in Whiteside County, along the Mississippi River, and in Mason County, along the Illinois River. It grows in shallow, moist depressions in the sand. It also has been collected once in Kentucky.

Scirpus smithii Gray

Smith's Bulrush

Family Cyperaceae

Status: Rare and endangered (Illinois), rare (Wisconsin, Minnesota).

This rather inconspicuous bulrush ranges from Quebec across Ontario to Minnesota, then south to Illinois and Virginia.

In the five-state study area, it is known from Minnesota, Wisconsin, and Illinois, although it is not common in any of these states. In Wisconsin, one of its stations is along the Mississippi River in Grant County, while in Minnesota, it is in the Mississippi River floodplain of Ramsey County.

Although there are several old records of this sedge from Illinois, the only extant location is in the Illinois River floodplain in Cass County.

The usual habitat for Scirpus smithii is along wet shores of rivers and streams.

Scirpus hallii Gray

Hall's Bulrush

Family Cyperaceae

Status: Rare (Illinois).

Scirpus hallii is rare throughout its entire range. It has been found in Massachusetts, Georgia, Florida, Illinois, Missouri, Texas, Michigan, Wisconsin, Nebraska, and Oregon.

In Illinois, this sedge occurs in sand-bottomed ponds in the floodplain of the Illinois River in Mason, Menard, and Cass counties. It is rare in each of these counties, and its existence in Illinois is precarious.

In Missouri, the only record for Scirpus hallii is from a sink-hole pond in Howell County, away from the study area. The Wisconsin records for this species are also away from the Mississippi River floodplain.

This rare sedge flowers from August until October.

Scirpus heterochaetus Chase

Tall Bulrush

Family Cyperaceae

Status: Rare (Missouri).

This rather coarse sedge is generally distributed from Quebec and Massachusetts to Wisconsin and North Dakota, south to Oklahoma, Missouri, and Kentucky. It also occurs in Idaho, Washington, and Oregon.

This species grows in shallow water at the edges of ponds, in backwater sloughs, along rivers, in floodplains, and around oxbow lakes.

It occurs in all five counties in the study area, and is not uncommon in the floodplain of the Mississippi River, except in Missouri and southern Illinois. In Missouri, Scirpus heterochaetus is known only from seven counties, with two of them (St. Charles and Scott) bordering the Mississippi River.

The Tall Bulrush flowers from May to September.

Scirpus micranthus Vahl

Dwarf Bulrush

Family Cyperaceae

Status: Rare (Illinois, Iowa, Wisconsin, Minnesota).

Scirpus micranthus is a wide ranging species occurring from Maine and Ontario to Minnesota, south to Texas and Florida. It is also found in New Mexico, Arizona, Mexico, Central America, South America, and the West Indies.

Despite its broad distribution, this species is not common in the study area, except in Missouri where it is scattered throughout the state. Its general rarity may be due to its being overlooked because of its small stature.

In Illinois and Iowa, Scirpus micranthus occurs sparingly in several counties bordering the Mississippi River.

The Dwarf Bulrush grows on sand bars, along the sandy banks of rivers, and along the muddy borders of lakes and ponds. In Missouri, it sometimes is found in moist depressions of limestone glades.

Most botanists until recently have called this plant Hemicarpha micrantha (Vahl) Pax. Flowering time for this species is July to October.

Scirpus micranthus Vahl var. drummondii (Nees) Mohlenbrock

Drummond's Dwarf Bulrush

Family Cyperaceae

Status: Rare (Missouri).

Drummond's Dwarf Bulrush is much less common throughout its entire range than Scirpus micranthus Vahl.

Its overall distribution includes Minnesota, Ohio, Indiana, Illinois, and Missouri, as well as Washington, Oregon, and California.

The usual habitat for this plant is along the sandy margins of rivers and streams, although in Missouri it has been found on limestone glades.

Of the five localities for this plant in Missouri, only one in St. Louis is in the Mississippi River floodplain. Neither of the two Illinois localities for this plant is from along the Mississippi or the Illinois Rivers. In Minnesota, where this plant is uncommon, it does not occur along the floodplain of the Mississippi River.

Some botanists call this plant Hemicarpha drummondii Nees. It flowers from July to October.

Eriophorum viridi-carinatum (Engelm.) Fern.

Cotton Sedge

Family Cyperaceae

Status: Rare (Illinois, Wisconsin).

Like most members of the genus Eriophorum, this species has a generally boreal distribution. It occurs from Labrador across to Alaska, south to British Columbia, Wyoming, Iowa, and New York.

In Wisconsin, where this species is known from thirteen counties, it occurs in the Mississippi River floodplain only in Trembeleau County.

Eriophorum viridi-carinatum is even rarer in Illinois, where it is known from Lake and Rock Island counties. In Rock Island County, it occurred in the floodplain of the Mississippi River, but it may be extinct at that station today.

This Cotton Sedge grows in swamps, sedge marshes, and bogs.

Scleria reticularis Michx.

White Nut Sedge

Family Cyperaceae

Status: Rare and endangered (Illinois).

This very rare sedge is primarily a species of the Atlantic seaboard where it occurs from Massachusetts to Delaware and again from South Carolina to Florida. It also is known from Mexico and two isolated inland stations in Indiana and Illinois.

In Illinois, it occurs near the Illinois River in Cass County, where it grows along the sandy shores of a pond. Because of its very precarious existence in Illinois, it should be considered an endangered species for that state.

Scleria verticillata Muhl.

Whorled White Nut Sedge

Family Cyperaceae

Status: Rare and endangered (Illinois).

This species is distributed sparingly in the eastern half of the United States, where it occurs from New York across to Minnesota, south to Texas and Florida.

It is known from Minnesota and Illinois in the five-state study area, but in Minnesota it occurs away from the Mississippi River floodplain.

In Illinois, Scleria verticillata is found in Lake, Cook, and Mason counties. In the latter county it occurs in sandy soil in the floodplain of the Illinois River. Because of its rare occurrence and limited availability of a suitable habitat along the rivers, it should be considered endangered.

Scleria verticillata grows in bogs, marshes, and along sandy borders of ponds.

Carex diandra Schrank

Sedge

Family Cyperaceae

Status: Rare (Illinois).

This primarily northern species is distributed from Labrador across to Alaska, south to California, Nebraska, Iowa, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey. It also ranges in Europe and Asia.

It is scattered in occurrence in Iowa, Minnesota, and Wisconsin. In Illinois, it is known from nine counties in the northern half of the state. In Fulton and Peoria counties, Carex diandra occurs in sandy, swampy ground in the Illinois River floodplain. This species is apparently absent from Missouri.

It flowers from May to August.

Sisyrinchium mucronatum Michx.

Blue-eyed Grass

Family Iridaceae

Status: Rare and endangered (Illinois).

This species of Blue-eyed Grass grows almost exclusively in sandy prairies.

In Illinois it is known only from Mason County where it was collected in a sand prairie along the Illinois River. It was found along the Mississippi River in Hancock County over a hundred years ago, but this station no longer exists.

The overall range of this species is from Maine to Minnesota, south to New Mexico and Louisiana.

Urtica chamaedryoides Pursh

Riverbank Nettle

Family Urticaceae

Status: Rare (Illinois).

This species ranges from West Virginia across Kentucky and Missouri to Oklahoma, south to Texas and Florida. It also has been collected in Massachusetts, as well as Mexico.

In Illinois, this species is known only from the banks of the Mississippi River in Alexander and Jackson counties. Illinois (1974) lists it as rare for the state.

In Missouri, Urtica chamaedryoides is known from five southern counties, but none is along the Mississippi River.

This species occurs in alluvial soil, along river banks, and in low, rich woods. It flowers from April to September.

Rumex maritimus L. var. fueginus (Phil.) Dusen

Golden Dock

Family Polygonaceae

Status: Rare (Missouri).

This plant ranges from Quebec across to British Columbia, south to California, Arizona, New Mexico, Arkansas, and New York. It also occurs in South America.

Rumex maritimus var. fueginus is limited in Missouri to a few stations along the Missouri River, as well as to two localities in the Mississippi River floodplain in St. Louis and Jefferson counties.

In Illinois, Iowa, Wisconsin, and Minnesota, this plant is scattered throughout each state, with several stations along the Mississippi River. It also is known from along the Illinois River in Tazewell County.

This plant grows on sandbars, mud flats, and in alluvial soil in the five-state area. It flowers from May to July.

Corispermum hyssopifolium L.

Bugseed

Family Chenopodiaceae

Status: Rare (Illinois, Missouri).

Corispermum hyssopifolium is distributed from Quebec to Washington, south to Arizona, New Mexico, Oklahoma, Missouri, Illinois, and Indiana.

In Illinois, this species is known from Mason County along the Illinois River and from Whiteside County along the Mississippi River. It occurs in three other Illinois counties, as well.

In Missouri, Corispermum hyssopifolium is found along the Mississippi River in St. Louis and Perry counties, as well as in three counties in the western part of the state.

This species is scattered in Iowa, Minnesota, and Wisconsin. It is found primarily on sand flats and sand dunes. It flowers from July to October.

Ceratophyllum echinatum Gray

Prickly Coontail

Family Ceratophyllaceae

Status: Rare (Missouri).

This species is found in oxbow lakes, ponds, sloughs, sinkhole ponds, river bottoms, and in sluggish streams.

It is distributed from Maine and Quebec across to Michigan and Wisconsin, south through Kansas to Texas, east to Florida.

In the five-state study area, it is known only from Wisconsin, Missouri, and Illinois. In Wisconsin, it does not occur adjacent to the Mississippi River, and in Illinois, only two of its stations (in Union and Alexander counties) are in the floodplain of the Mississippi River.

This species is rarest in Missouri where it is known from St. Charles County in the Mississippi River floodplain and from Oregon County. It flowers from July to October.

Nelumbo lutea (Willd.) Pers.

American Lotus

Family Nelumbonaceae

Status: Protected by law (Minnesota).

This handsome, large-flowered species is found in oxbow lakes, ponds, sloughs, sinkhole ponds, and river floodplains. It is relatively common in the five-state study area, but is protected from picking or collecting in Minnesota by State Law.

The overall range for Nelumbo lutea is from Massachusetts and Ontario to Minnesota, south to Texas and Florida. It flowers from late June until September.

Corydalis halei (Small) Fern. & Schub.

Hale's Fumitory

Family Papaveraceae

Status: Rare and endangered (Illinois, Missouri).

This southern species ranges from Florida to Texas, north to southeastern Missouri, southwestern Illinois, and Virginia. It is extremely rare in the northern part of its range.

In Illinois, it is known from a single station at the base of limestone cliffs in the Mississippi River floodplains in Monroe County. Although its distance from the river proper is sufficient to cause no threat to its existence, it should be considered endangered because of the very few specimens which occur.

In Missouri, this species is known from two counties, with Scott being adjacent to the Mississippi River. It is listed as an endangered species by Missouri (1974).

The usual habitat for Corydalis halei is in sandy soil. It flowers during April and May.

Rorippa islandica (Oeder) Borbas

Marsh Yellow Cress

Family Cruciferae

Status: Rare (Illinois).

Rorippa islandica is distributed from Quebec through New Jersey to Michigan, south to Missouri, southern Illinois, and Pennsylvania.

In Illinois, it is known only from sandy flats along the Mississippi River in Jackson County. Although the area is frequently inundated, this species continues to maintain itself.

The only record for this species in Missouri is from Harrison County, out of the study area.

This species occurs in muddy alluvial soil or on sandy flats. It flowers from May to October.

Rorippa truncata (Jepson) Stuckey

Blunt-leaved Yellow Cress

Family Cruciferae

Status: Rare (Illinois, Missouri).

This species has a disjunct distribution. It is known from West Virginia, through Ohio and Illinois, to Missouri, south to Texas. It also occurs along the Pacific Coast from British Columbia to California.

It is found in the five-state study area only from Illinois and Missouri. In Illinois, it is known from a single locality along the Mississippi River in St. Clair County. In Missouri, it occurs in a similar habitat in St. Louis County, in addition to three other localities in the state.

This species generally occurs in sand flats and along muddy banks. It flowers from May to September.

Steyermark (1969) calls this species Rorippa obtusa (Nutt.) Britt.

Lesquerella ludoviciana (Nutt.) S. Wats.

Bladder Pod

Family Cruciferae

Status: Rare (Illinois).

This species has a disjunct pattern of distribution. It occurs from Minnesota to Montana; it also occurs from Kansas to Colorado and Arizona; it has one isolated station in Illinois.

Lesquerella ludoviciana occurs in sandy soil of prairies and flats adjacent to rivers and streams.

In Illinois, it is found in a sandy prairie along the Illinois River in Mason County. It is listed as rare by Illinois (1974). Although it is known from Minnesota, it does not occur in the floodplain of the Mississippi River.

It flowers from May to August.

Polanisia jamesii (Torr. & Gray) Iltis

Sand Clammyweed

Family Capparidaceae

Status: Rare (Illinois).

The range of this species is from Illinois to Colorado, south to Texas and Louisiana. Although Iowa would be included in this range, it is apparently unknown from that state.

In Illinois, this species is found along the Mississippi River in Carroll and JoDaviess counties, and along the Illinois River in Mason County. It is known from no other Illinois localities.

This species grows in sandy soil of prairies and flatlands along streams and rivers. It blooms from June to August.

Crataegus marshallii Egglest.

Parsley Hawthorn

Family Rosaceae

Status: Rare (Illinois).

This is one of a very few rare woody species which occurs in the floodplain of the Mississippi River.

In Illinois, this species is known only from Jackson County in a low pin-oak woods in the protected Mississippi River floodplain.

This Hawthorn is more common in Missouri, although it is confined to the Missouri bootheel where it grows in low, alluvial ground. None of the Missouri counties is adjacent to the Mississippi River.

The total range for Crataegus marshallii is Virginia to Florida, west to Texas, and up the Mississippi Embayment area to southern Missouri and southern Illinois.

This species flowers during May.

Crataegus collina Chapm.

Swamp Hawthorn

Family Rosaceae

Status: Rare (Illinois).

The Swamp Hawthorn grows in a variety of habitats, including low woods, open woods, and thickets.

It ranges from Virginia, across Indiana, Illinois, and Missouri to Oklahoma, then eastward to Arkansas and Georgia.

It is known in the five-state area only from Illinois and Missouri.

In Illinois, Crataegus collina is known only from two localities, both in floodplain woods in the Mississippi River floodplain in St. Clair and Union counties. Illinois (1974) lists it as rare.

In Missouri, the Swamp Hawthorn is scattered throughout the southern half of the state, including St. Louis, Ste. Genevieve, and Cape Girardeau counties bordering the Mississippi River.

The flowering time for this species is May.

Potentilla nicoletii (S. Wats.) Sheldon

Cinquefoil

Family Rosaceae

Status: Rare (Minnesota, Missouri).

This rare Cinquefoil is not always differentiated by botanists from Potentilla paradoxa Nutt., although I believe the two are distinct.

Potentilla nicoletii is a species of the central United States, occurring from Minnesota and North Dakota, south to Kansas and Missouri.

In Missouri, this species occurs in the Mississippi River floodplain in Perry County, and in two western counties along the Missouri River.

This species also grows in the Mississippi River floodplain in Ramsey County, Minnesota.

Potentilla nicoletii flowers from May to August.

Potentilla paradoxa Nutt.

Riverbank Cinquefoil

Family Rosaceae

Status: Rare (Illinois).

This small Cinquefoil is found in alluvial soil of river banks and floodplains and on sand flats along rivers and streams.

It ranges from Ontario to British Columbia, south to New Mexico, Kansas, Missouri, Illinois, Ohio, Pennsylvania, and New York. It reportedly occurs in Asia, as well.

In Illinois, this species is known only from Jackson, Randolph, and St. Clair counties where it occurs near the edge of the Mississippi River.

Potentilla paradoxa is rather common in Missouri and Iowa, where it is scattered throughout both states as well as along the Mississippi River.

This species flowers from May to September.

Potentilla millegrana Engelm.

Cinquefoil

Family Rosaceae

Status: Rare (Illinois, Missouri).

This Cinquefoil occurs in each of the five states of the study area, and in each state it is found along the Mississippi River. It is extremely rare, however, in Illinois, and moderately rare in Missouri.

In Illinois, it has been found in St. Clair County (along the Mississippi River), and one other county. In Missouri, it is known from six counties, including two along the Mississippi River (Jefferson and St. Charles).

Potentilla millegrana grows on wet, open soils, or sometimes in disturbed areas. It flowers from May to August.

Sesbania exaltata (Raf.) Cory

Sesbania

Family Leguminosae

Status: Rare (Illinois).

This is a species of low, sandy fields, sandbars, alluvial ground, borders of oxbows, and waste ground.

It is a southern species ranging from Illinois, Missouri, and Oklahoma, south to Texas and Alabama.

In Illinois, this species is known only from Alexander and Pulaski counties. In Alexander County, it grows along the Mississippi River.

This species is scattered in the southern half of Missouri, particularly in the bootheel. It also occurs in St. Louis County along the Mississippi River.

Sesbania exaltata flowers from July to October.

Petalostemum foliosum Gray

Leafy Prairie Clover

Family Leguminosae

Status: Rare (Illinois).

Until its recent discovery in 1974 in a sandy prairie near Lockport, in Will County, along the Illinois and Michigan Canal (an extension of the Illinois River), this species was thought to be extinct in the state.

Although Petalostemum foliosum had been collected several times during the last one hundred years in northern Illinois, all of these stations were thought to be destroyed.

This species is also known from glades in Tennessee.

At the Will County station, several specimens occur.

Poinsettia cyathophora (Murr.) Kl. & Garcke

Wild Poinsettia

Family Euphorbiaceae

Status: Rare (Wisconsin).

This species is relatively common in all states of the study area except Wisconsin. In Wisconsin, it is known only from Grant, Buffalo, and Pike counties, all along the Mississippi River.

The range for Poinsettia cyathophora is from Virginia to Minnesota and South Dakota, south to Texas and Florida.

This species grows in alluvial soils, on mud flats, in rocky woods, and even in disturbed areas.

Steyermark (1965) calls this plant Euphorbia heterophylla L.

The Wild Poinsettia flowers from July to October.

Chamaesyce serpens (HBK.) Small

Low Spurge.

Family Euphorbiaceae

Status: Rare (Illinois).

This species is distributed from Ontario to Montana, south to New Mexico, Texas, Louisiana, and Alabama.

It is found in all five states in the study area, and in each it occurs along the Mississippi River. Only in Illinois is this species rare.

In Illinois, it is known sparingly from Union, Jackson, Randolph, and St. Clair counties along the Mississippi River, and from Mason and Fulton counties along the Illinois River. In addition, it is known from four other counties in the state.

Chamaesyce serpens grows in moist alluvial soils, on sandy flats, and around oxbow lakes. It flowers from May to October.

Steyermark (1968) calls this species Euphorbia serpens HBK.

Chamaesyce geyeri (Engelm.) Small

Geyer's Spurge

Family Euphorbiaceae

Status: Rare (Iowa, Missouri).

This Spurge is a species of sandy prairies, primarily along major rivers and streams.

It ranges from Wisconsin to North Dakota, south to New Mexico, Texas, Missouri, Illinois, and Indiana.

This species occurs in the Mississippi River floodplain in Muscatine County, Iowa, and in Clark County, Missouri. It is the only locality in each state for this species.

In Illinois, this species is found in several counties along the Mississippi and Illinois Rivers.

Chamaesyce geyeri flowers from July to October.

Steyermark (1968) calls this species Euphorbia geyeri Engelm.

Chamaesyce polygonifolia (L.) Small

Seaside Spurge

Family Euphorbiaceae

Status: Rare (Illinois).

This species is known from the Atlantic Coast from New Brunswick to Georgia. It is also found around the edge of several of the Great Lakes.

In Illinois, it is found in Cook and Lake counties around Lake Michigan, and at one unusual station along the Illinois River in Fulton County. Illinois (1974) lists it as a rare species.

The habitats for the Seaside Spurge are sandy beaches and sand dunes.

This species flowers from July to September.

Sida elliotii Torr. & Gray

Elliott's Sida

Family Malvaceae

Status: Rare (Illinois, Missouri).

This species has a southern distribution, known from South Carolina across to southeastern Missouri, south to Alabama and Florida.

In Missouri, where it is considered endangered (1974), it is known from Scott County, where it occurs in the floodplain of the Mississippi River, and from two other counties in the Missouri bootheel.

In Illinois, this species has been found only in Alexander County from the protected floodplain of the Mississippi River.

This species grows in sandy, open ground. It flowers from August to October.

Ampelopsis arborea (L.) Koehne

Pepper Vine

Family Vitaceae

Status: Rare (Illinois).

This southern species is distributed from Maryland, across Illinois and Missouri, to Oklahoma, south to Texas and Florida. It also occurs in Mexico.

In Illinois, this species is known from five counties in the extreme southern part of the state. Four of these (Alexander, Union, Jackson, and Randolph) are bordering the Mississippi River.

This species is relatively common in Missouri, both in the Ozark section of the state and along the Mississippi River from St. Louis County southward.

Pepper Vine grows in alluvial soils, on river floodplains, and in rocky soil. It flowers from June to August.

Jussiaea leptocarpa Nutt.

Water Primrose

Family Onagraceae

Status: Rare (Illinois, Missouri).

This species occurs on mud flats and in backwater sloughs along generally large rivers.

It ranges from Illinois, Missouri, and Oklahoma south to Texas, Georgia, and Florida.

In Illinois, Jussiaea leptocarpa is known only from the Mississippi River floodplain in Jackson, Union, and Alexander counties.

In Missouri, it is known from Ste. Genevieve County (along the Mississippi River) and from Pemiscott County in the bootheel.

This species flowers from August to October.

Berula pusilla (Nutt.) Fern.

Berula

Family Umbelliferae

Status: Rare (Illinois).

This species ranges from Ontario to British Columbia, south to California, New Mexico, Oklahoma, Illinois, and Michigan.

Berula pusilla is scattered in Minnesota, Wisconsin, and Iowa.

It is rare in Illinois, absent from Missouri.

In Illinois, it is known from Peoria, Tazewell, and Mason counties along the Illinois River, in addition to three other counties elsewhere in the state.

This is a species of sand flats, marshes, and backwater sloughs. It flowers from July to September.

Ptilimnium costatum (Ell.) Raf.

Mock Bishop's-weed

Family Umbelliferae

Status: Rare (Illinois).

Ptilimnium costatum is a species of swampy meadows, wooded swamps, low wet woods, sloughs, and bayous.

This species ranges from North Carolina, across Illinois and Missouri, to Oklahoma, south to Texas, Louisiana, and Georgia.

In Illinois, the Mock Bishop's-weed occurs in the protected Mississippi River floodplain in Jackson County, as well as three other counties in Illinois. Illinois (1974) lists it as rare and endangered.

In Missouri, this species is scattered in the Ozark section of the state, with three of the records from St. Louis, Jefferson, and Scott counties. These last three counties border the Mississippi River.

This species flowers from July to September.

Cynosciadium digitatum DC.

Cynosciadium

Family Umbelliferae

Status: Rare (Illinois).

This southern species ranges from Illinois to Oklahoma, south to Texas and Mississippi.

It is known from a single station in Illinois from the protected floodplain of the Mississippi River in Jackson County.

In Missouri, it is found only in the bootheel in counties away from the Mississippi River.

The habitats for this species are swamps, low wet woods, bayous, and backwater sloughs. It flowers during May and June.

Polypremum procumbens L.

Polypremum

Family Loganiaceae

Status: Rare (Illinois, Missouri).

The range of this species is from New York to Missouri, south to Texas and Florida. It also occurs in tropical America.

Polypremum procumbens grows in open sandy ground, often in fields no longer under cultivation.

In Illinois, it occurs in the Mississippi River floodplain only in Alexander County.

In Missouri, it is found along the Mississippi River in Scott County, as well as in four other counties in the bootheel. There is an old record from Clark County, Missouri.

It flowers from June to October.

Stylisma pickeringii (Torr.) Gray var. pattersonii (Fern. & Schub.) Myint

Sand Morning-glory

Family Convolvulaceae

Status: Rare (Illinois, Iowa).

This is a very rare plant of sand prairies. It is known from along the Mississippi and Illinois Rivers in Illinois, from Muscatine County, Iowa, and from Kansas, Oklahoma, and Texas.

In Illinois, it is limited to Cass and Mason counties along the Illinois River and from Henderson County along the Mississippi River. It is also known from along the Mississippi River in Muscatine County, Iowa.

The original location for this plant when it was first discovered was along the Mississippi River in Henderson County, Illinois.

Some botanists refer to this plant as Breweria pickeringii (Torr.) Gray var. pattersonii Fern. & Schub.

This plant flowers in July and August.

Cuscuta cuspidata Engelm.

Dodder

Family Convolvulaceae

Status: Rare (Illinois, Wisconsin).

This Dodder grows primarily over species of Ambrosia and Iva in low open woods, along the borders of streams, and in river bottoms.

It ranges from Indiana, Wisconsin, and North Dakota, south to Colorado, Texas, and Louisiana.

In Wisconsin, Cuscuta cuspidata is known only from Grant County in the Mississippi River floodplain.

In Illinois, this species occurs in five counties. Four of these (Madison, St. Clair, Jackson, and Union) are counties bordering the Mississippi River, while the other county (Tazewell) borders the Illinois River.

In the other three states in the study area, this species is scattered. It flowers from July to October.

Cuscuta pentagona Engelm.

Dodder

Family Convolvulaceae

Status: Rare (Wisconsin).

The range of this Dodder extends from Massachusetts and Ontario to Montana, south to California and Florida.

It grows over a variety of species, particularly members of the genus Solidago, Erigeron, and Verbena.

This species is extremely rare only in Wisconsin where it is known from Grant County in the Mississippi River floodplain.

In Missouri, Illinois, Iowa, and Minnesota, Cuscuta pentagona is scattered in its distribution.

This species flowers from June to October.

Asclepias perennis Walt.

Swamp Milkweed

Family Asclepiadaceae

Status: Rare (Missouri).

The Swamp Milkweed is a southern species ranging from South Carolina across to Missouri, south to Texas and Florida.

In Missouri, it is restricted to the bootheel region of the state, as well as a single station along the Mississippi River in Cape Girardeau County.

In Illinois, this species is known from ten counties in the southern third of the state. Three of these counties, Alexander, Union, and Jackson, border the Mississippi River.

Asclepias perennis grows in low wet woods, bayous, swamps, backwater sloughs, and along the borders of lakes and streams. It flowers from May to September.

Physostegia intermedia (Nutt.) Engelm. & Gray

False Dragonhead

Family Labiatae

Status: Rare (Illinois, Missouri).

This species ranges from Kentucky across to Oklahoma, south to Texas and Alabama. It occurs only in Illinois and Missouri in the study area.

In Illinois, it is known only from near the Mississippi River in Adams County.

In Missouri, Physostegia intermedia occurs in four counties in the bootheel and Cape Girardeau County, where it grows along the Mississippi River.

Habitats for this species include swamps, sloughs, low wet woods, and wet ditches. It flowers from May to July.

Stachys hyssopifolia Michx. var. ambigua Gray

Water Hyssop

Family Labiatae

Status: Rare (Iowa, Missouri).

The range of this plant is from Pennsylvania to Iowa, south to Missouri, Kentucky, Georgia, and Florida. It apparently does not occur in Wisconsin or Minnesota.

In Iowa, this plant is rare, with one of its locations near the Mississippi River in Lee County.

In Missouri, it is known only from St. Louis County, where it also grows in the floodplain of the Mississippi River.

This plant is not uncommon in the northern half of Illinois. It occurs in almost every Illinois county bordering the Mississippi River north of Calhoun County.

The habitat for Stachys hyssopifolia Michx. var. ambigua is low moist ground. It flowers from June to August.

Jones (1963) calls this plant Stachys aspera Michx.

Stachys tenuifolia Willd.

Hedge Nettle

Family Labiatae

Status: Rare (Wisconsin).

This species ranges from New York to Minnesota, south to Texas, Louisiana, and South Carolina. It is common throughout much of Illinois, Missouri, and Iowa, and is moderately common in Minnesota.

In Wisconsin, Stachys tenuifolia occurs in LaCrosse and Grant counties, along the Mississippi River, and three other counties.

The habitats for this species are low wet woods, backwater sloughs, swamps, wet alluvial soils, banks of streams and rivers, and borders of ponds and lakes.

It flowers from June to September.

Monarda punctata L.

Dotted Monarda

Family Labiatae

Status: Rare (Iowa, Missouri).

The Dotted Monarda is a species of the central United States, where it is found from Illinois to Kansas, south to New Mexico and Texas.

In Missouri, three of its four known stations are from along the Mississippi River, in Clark, Pike, and Scott counties.

In Iowa, it is not common, but occurs in two counties (Lee and Scott) bordering the Mississippi River.

This species is not uncommon in the northern half of Illinois.

Almost any open habitat with sandy soil is suitable for this species. It flowers from June to October.

Satureja arkansana (Nutt.) Briq.

Low Calamint

Family Labiatae

Status: Rare (Wisconsin).

This species has a distribution covering Ontario to Minnesota, south to Texas, Arkansas, Illinois, Ohio, and New York.

Its distribution in the five-state study area is peculiar. It occurs throughout the Ozark section of Missouri. In Illinois, it is restricted to the northeastern corner of the state. It is apparently not known from Iowa.

In Wisconsin, it occurs in four widely scattered counties, one of which is Vernon where it grows on limestone outcroppings next to the Mississippi River.

This species is sometimes called Calamintha glabella (Michx.) Benth. var. angustifolia (Torr.) DeWolf. It flowers from May to October.

Penstemon alluviorum Pennell

Lowland Foxglove

Family Scrophulariaceae

Status: Rare (Illinois, Missouri).

This is a species of the Mississippi Embayment, occurring from Mississippi and Arkansas north to Indiana, Illinois, and Missouri. It does not occur in Iowa, Minnesota, or Wisconsin.

In Illinois, this species has been found only in the protected floodplain in Union County.

In Missouri, Penstemon alluviorum is known from four counties in the bootheel region of the state and one station along the Mississippi River in Cape Girardeau County.

This species grows in swamps, low wet woods, and backwater sloughs. It flowers during May and June.

Diodia virginiana L.

Buttonweed

Family Rubiaceae

Status: Rare (Illinois).

Buttonweed is distributed from New Jersey, across Illinois and Missouri to Oklahoma, south to Texas and Florida. It does not occur in Iowa, Minnesota, or Wisconsin.

In Missouri, this species is found all across the southern fifth of the state, including Cape Girardeau and Scott counties, which border the Mississippi River.

In Illinois, this species occurs in eight counties in the southern tip of the state. Of these, Alexander and Jackson counties are in the floodplain of the Mississippi River.

Diodia virginiana grows in swampy meadows, swamps, backwater sloughs, swales, low fields, margins of ponds, and sinkhole ponds. It flowers from June to September.

Melothria pendula L.

Creeping Cucumber

Family Cucurbitaceae

Status: Rare (Illinois).

The range for the Creeping Cucumber is from Virginia across to Oklahoma, south to Texas and Florida. It does not occur in Iowa, Minnesota, and Wisconsin.

In Missouri, this species occurs all across the southernmost tier of counties, including Scott County along the Mississippi River.

In Illinois, Melothria pendula occurs along the Mississippi River in Alexander and Jackson counties, in addition to one other county in the southern tip of the state.

This species grows in alluvial soil, low rocky woods, and on bluffs. It flowers from July to September.

Eupatorium cuneifolium Willd. var. semiserratum (DC.) Fern. & Grisc.

Boneset

Family Compositae

Status: Rare (Missouri).

This southern plant is distributed from Florida to Texas, north to Virginia, Tennessee, and Missouri. It is known in the study area only from Missouri.

In Missouri, this plant is found in three counties in the boot-heel and St. Louis County, where it occurs along the Mississippi River.

This plant grows in low meadows, low fields, swamps, low open woods, and wet prairies. It flowers during August and September.

Boltonia asteroides (L.) L'Her.

False Aster

Family Compositae

Status: Rare (Illinois, Missouri).

This plant has one of the most restricted ranges of any species in the study area. It is known only from Illinois and Missouri, and is limited in its distribution in each of these states.

In Illinois, it is found in nine counties, all along the Illinois River.

In Missouri, it is known only from along the Mississippi River in Lincoln, St. Charles, and St. Louis counties.

This plant grows in sloughs, wet ditches, around ponds, and along streams.

Fernald (1950) calls this plant Boltonia latisquama Gray var. de-currens (Torr. & Gray) Fern. & Grisc.

Solidago odora Ait.

Sweet Goldenrod

Family Compositae

Status: Rare (Missouri).

The Sweet Goldenrod is found from New Hampshire, across to New York, Ohio, Missouri, and Oklahoma, south to Texas and Florida. It occurs only in Missouri in the study area.

In Missouri, it is found in the Ozark region of the state where it is known from six counties. One of these is Scott County, where Solidago odora is found in the protected floodplain.

This species grows in sandy woods and along the base of bluffs. It flowers from July to September.

Helianthus angustifolius L.

Narrow-leaved Sunflower

Family Compositae

Status: Rare (Missouri).

The range for this species is from New York, across to Pennsylvania and Kentucky to Missouri, south to Texas and Florida. It does not occur in Iowa, Minnesota, or Wisconsin. In Illinois, it is found in two southern counties not in the study area.

In Missouri, this species occurs in four counties in the Ozark region of the state. One of these counties is Scott, where this Sunflower occurs along the Mississippi River.

Helianthus angustifolius grows in low sandy ground and in sandy prairies. It flowers from August to October.

Artemisia caudata Michx.

Wild Wormwood

Family Compositae

Status: Rare (Missouri).

The Wild Wormwood ranges from Quebec to Manitoba, south to Texas and Florida.

In the five-state study area, this species is rare only in Missouri. In Missouri, it occurs in four counties in the central Ozarks and in two counties (St. Louis and Jefferson) along the Mississippi River.

The habitats for this species include sand bars, bluffs, and ledges. It flowers from July to October.

Hymenoxys acaulis (Pursh) Parker

Lakeside Daisy

Family Compositae

Status: Rare and endangered (Illinois).

This is one of the rarest species in North America. It is known only from Manitoulin Island (Ontario), Ottawa County (Ohio), and two counties (Will and Mason) in Illinois.

In Mason County, Illinois, it is found on dry gravelly banks of the Illinois River. Because of the extreme rarity of this species, it is endangered throughout its entire range.

Hymenoxys acaulis flowers from May to July.

This species is sometimes called Actinea herbacea (Greene) B. L. Robins.

Adventive Species in the Floodplains of the Study Area

Many species not native to the five-state study area have adapted themselves to the local conditions and survive well as members of the flora. Some of these adventive species are extremely rare in the floodplains. The more unusual are listed below:

Family Poaceae

Eriochloa contracta Hitchc. Missouri (St. Louis, Pike, and 5 other counties); Illinois (Jackson, Union).

Eriochloa gracilis (Fourn.) Hitchc. Illinois (Union).

Andropogon saccharoides Sw. Illinois (Alexander, and 3 other counties).

Family Cyperaceae

Cyperus iria L. Illinois (Alexander).

Family Ranunculaceae

Ranunculus sardous Crantz. Illinois (Jackson, Union).

Family Scrophulariaceae

Veronica hederaefolia L. Illinois (Jackson).

References

- Anderson, E. 1948. Gravel bars evolve their own flood control. Bulletin of the Missouri Botanical Garden 36:54-57.
- Ashby, W. C. & R. Kelting. 1963. Vegetation of the Pine Hills Field Station in southwestern Illinois. Transactions of the Illinois State Academy of Science 56(4):188-201.
- Clark, H. W. 1917. Dwarf shore floras. Transactions of the Illinois State Academy of Science 10:145-159.
- Dietz, R. 1952. The evolution of a gravel bar. Annals of the Missouri Botanical Garden 39:249-254.
- Evans, D. K. 1971. The vegetation of the Mississippi River and mud flats in Jackson County, Illinois. M.S. Thesis. Southern Illinois University, Carbondale. 66 pp.
- Evans, D. K., R. C. Anderson, & R. H. Mohlenbrock. 1972. Floristic studies in the Greentree Reservoir of southern Illinois. Unpublished report.
- Evers, R. A. 1959. Illinois Flora: Notes on Eriochloa and Jussiaea. Rhodora 61:307-309.
- Evers, R. A. 1963. Some unusual natural areas in Illinois and a few of their plants. Illinois Natural History Survey Biological Notes 50:1-32.
- Gleason, H. A. 1910. The vegetation of inland sand deposits of Illinois. Bulletin of the Illinois State Laboratory of Natural History 9(3):23-174.

- Hart, C. A. & H. A. Gleason. 1907. On the biology of the sand areas of Illinois. Bulletin of the Illinois State Laboratory of Natural History 7(7):137-273.
- Hendricks, C. J. 1970. LaRue-Pine Hills ecological area management plan. Shawnee National Forest, USDA Forest Service. 33 pp.
- Hus, H. 1908. An ecological cross section of the Mississippi River in the region of St. Louis, Missouri. Annual Report of the Missouri Botanical Garden 19:127-258.
- Huston, J. S. 1972. The vascular flora of Horseshoe Lake, Alexander County, Illinois. M.A. Thesis. Southern Illinois University, Carbondale. 92 pp.
- Illinois Nature Preserves Commission. 1974. Rare and endangered species of Illinois. Unpublished.
- Jones, G. N. 1963. Flora of Illinois, third edition. The University of Notre Dame Press, South Bend, Indiana. 402 pp.
- Jones, G. N., H. A. Ahles, G. D. Fuller, & G. S. Winterringer. 1951. Additional records of some Illinois vascular plants. American Midland Naturalist 45(2):500-503.
- Jones, G. N. & G. D. Fuller. 1955. Vascular plants of Illinois. University of Illinois Press, Urbana. 593 pp.
- Klein, W. M., et al. 1974. The Floodplain Vegetation of the Middle Mississippi above St. Louis and the Lower Illinois Rivers. Missouri Botanical Garden, St. Louis. 42 pp.
- Koelling, A. C. 1968. The plant community at Horseshoe Lake. The Living Museum 30(5):36, 39.

- Kunshek, R. J. 1971. Vegetational studies of two Mississippi River floodplains in west-central Illinois. M.S. Thesis. Western Illinois University, Macomb. 126 pp.
- Ledgerwood, M. 1931. The American Bottoms and the characteristic plants of the region. Bulletin of the Missouri Botanical Garden 19(6):99-109.
- Missouri Department of Conservation. 1974. Rare and endangered species of Missouri. 76 pp.
- Mohlenbrock, R. H. 1959. A floristic study of a southern Illinois swampy area. Ohio Journal of Science 59(2):89-100.
- Mohlenbrock, R. H. 1967. The illustrated flora of Illinois: Ferns. Southern Illinois University Press, Carbondale. 191 pp.
- Mohlenbrock, R. H. 1970a. The illustrated flora of Illinois: Flowering plants: Flowering rush to rushes. Southern Illinois University Press, Carbondale. 272 pp.
- Mohlenbrock, R. H. 1970b. The illustrated flora of Illinois: Flowering plants: Lilies to orchids. Southern Illinois University Press, Carbondale. 288 pp.
- Mohlenbrock, R. H. 1972. The illustrated flora of Illinois: Grasses: Bromus to Paspalum. Southern Illinois University Press, Carbondale. 332 pp.
- Mohlenbrock, R. H. 1973. The illustrated flora of Illinois: Grasses: Panicum to Danthonia. Southern Illinois University Press, Carbondale. 378 pp.
- Mohlenbrock, R. H. 1975. Guide to the Vascular Flora of Illinois. Southern Illinois University, Carbondale.

- Mohlenbrock, R. H. & J. H. Engh. 1964. Ferns and fern allies of the Pine Hills Field Station and environs (Illinois). *American Fern Journal* 54(7):25-38.
- Mohlenbrock, R. H. & J. W. Voigt. 1959. A flora of southern Illinois. Southern Illinois University Press, Carbondale. 390 pp.
- Mohlenbrock, R. H. & J. W. Voigt. 1965. An annotated checklist of vascular plants of the Southern Illinois University Pine Hills Field Station and environs. *Transactions of the Illinois State Academy of Science* 58(4):268-301.
- Schwegman, J. E. 1970. The natural divisions of Illinois. Illinois Department of Conservation, Springfield.
- Steyermark, J. A. 1963. Flora of Missouri. Iowa State University Press, Ames. 1725 pp.
- Terpening, V. A., L. J. Hunt, D. K. Evans, S. J. Bleiweiss, and R. C. Zoanetti. 1973. A Survey of the Fauna and Flora Occurring in the Mississippi River Floodplain between St. Louis, Missouri, and Cairo, Illinois. U. S. Army Engineer District, St. Louis. 383 pp.
- Terpening, V. A., J. R. Nawrot, M. J. Sweet, D. L. Damrau. 1975. Inventory of Floodplain Animals and their Habitats Along Portions of the Mississippi and Illinois Rivers. U. S. Army Engineer District, St. Louis. 128 pp., + appendices.
- Thompson, P. 1971. An ecological investigation of the Oakwood Bottoms Greentree Reservoir in Illinois. M. S. Thesis, Southern Illinois University, Carbondale. 73 pp.
- Ugent, D. & R. C. Anderson. 1969. The climatic tension zones of Illinois and their bearings on plant distributions. Abstract of Botanical Papers, 62nd Annual Illinois State Academy of Science. Mimeographed.

- Voigt, J. W. & R. H. Mohlenbrock. 1964. Plant communities of southern Illinois. Southern Illinois University Press, Carbondale. 202 pp.
- Winterringer, G. S. & R. A. Evers. 1960. New records of Illinois vascular plants. Illinois State Museum, Springfield, Science Paper Series 11:1-135.
- Wisconsin Department of Natural Resources. 1973. Endangered Animals in Wisconsin. 32 pp.

in the floodplain of the Mississippi River.

Diodia virginiana grows in swampy meadows, swamps, backwater sloughs, swales, low fields, margins of ponds, and sinkhole ponds. It flowers from June to September.

END

FILMED