

LAND AND WATER RESERVE PROPOSAL:

**A Proposal to register the
Cache River State Natural Area in
Johnson and Pulaski Counties, Illinois.**

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1.0 Statement of Significance

General Information

The proposed Cache River Land and Water Reserve (Reserve) includes 9,274.89 acres in Johnson and Pulaski Counties located within the Cache River Watershed in extreme southern Illinois. Land to be included in the Register of Land and Water Reserves occurs within the 11,768 acre Cache River State Natural Area (CRSNA), which is owned and managed by the Illinois Department of Natural Resources (IDNR).

No IDNR site contains the diversity of wildlife and wild places that can be found in the Cache River Watershed. The area is one of only six places in the country where four or more physiographic provinces (Ozark Plateaus, Central Lowlands, Interior Lowlands, Coastal Plain) overlap. Two of these ecological regions (Interior Lowlands, and Coastal Plain) intersect within the boundaries of the Reserve (a map illustrating the Natural Divisions and Sections of Illinois is given in Appendix 12.1). Each of these ecological units formed under a geographically unique blend of climate, bedrock, soils, and topography.

Another factor affecting the natural character of the area is the Ohio and Mississippi Rivers. These two great rivers bound southern Illinois on the west, east, and south, each flowing southward until they meet at the southern tip of the state. The Cache River floodplain was formed by the catastrophic flow events of these two rivers. In fact, the Cache River valley was once the ancient bed of the Ohio River. As this big river receded and adopted its present day course, it left the underfit Cache River to meander sluggishly across a vast, wetland-rich floodplain.

This heterogenous blend of physical, chemical, and biological conditions has created and still sustains a diversity of natural features matched nowhere else in Illinois. Sixty Illinois Natural Area Inventory sites, and 8 Illinois Nature Preserves occur within the confines of the Cache River watershed. Within the boundaries of the Reserve, limestone and sandstone barrens dominated by plants more commonly associated with the prairies of the southern till plain overlook a vast floodplain which contains bald cypress and tupelo swamps similar to those found in coastal plain areas of the deep south. Many natural communities within the proposed Reserve are at the edge of their geographic range, and contain species rarely encountered elsewhere in the state. Plants and animals listed in Appendices 12.3 to 12.9 illustrate the diversity of natural features found throughout the Cache River watershed. Of these species, 102 are considered threatened or endangered in Illinois (Appendix 12.2).

Wetland communities within the proposed Reserve, together with others owned and managed by the U.S. Fish and Wildlife Service - Cypress Creek National Wildlife Refuge, and The Nature Conservancy - Limekiln Springs Reserve are collectively known as the Cache River - Cypress Creek Wetlands. The area received international recognition when the United Nations Educational, Scientific, and Cultural Organization added this site to its list of "Wetlands of International Importance Especially as Waterfowl Habitat" in November of 1994. This designation recognized critical wetland habitat remaining throughout the world, concentrating on

those areas which provide habitat essential for the continued survival of migratory waterfowl and shorebirds. The Cache River - Cypress Creek Wetlands are one of only 15 sites selected in the United States. Most of the wetlands within this "Ramsar Site" occur within the proposed Reserve.

The proposed Reserve is divided into two primary management units, which include the Little Black Slough Unit and the Lower Cache River Unit. Management Areas within these larger units include the Upper Cache River Channel, Lower Cache River Channel, and Boss Island Areas. Both management units are located within the Little Black Slough-Heron Pond Area and the Lower Cache River Swamp Area identified by the Illinois Natural Areas Inventory. Land within these two Inventory sites includes property owned and managed by IDNR, The Nature Conservancy, the U.S. Fish and Wildlife Service, and private landowners. A third management unit called Glass Hill occurs just west of the Little Black Slough Unit. This site was added to the Illinois Natural Areas Inventory in 1997.

Little Black Slough Unit

The Little Black Slough Unit encompasses 7,614 acres within the lower reaches of the floodplain of the Cache River upstream of the Post Creek Cutoff. It contains the last remnants of the extensive forested swamps and floodplain forests which blanketed extreme southern Illinois prior to settlement. The Coastal Plain Province reaches its northernmost extension on the continent in this part of the watershed, extending into the southern edge of the Interior Low Plateau Province-Shawnee Hills Natural Division. However, recent studies of the bedrock, soils, and vegetation within this site suggest it is actually part of the Interior Low Plateau Province.

The most significant swamps, floodplain forests, and upland forests are in the adjacent Heron Pond-Little Black Slough Nature Preserve, but high quality natural communities exist throughout the Reserve. Exceptional quality old second growth woods exist on the lower slopes of Wildcat Bluff, and limestone glades and dry upland forest with little evidence of disturbance occur along its dry southern slopes. Approximately one-half of the total acreage of Little Black Slough supports high quality forested swamps dominated by bald cypress and water tupelo. The swamps of Heron Pond and Goose Pond (Heron Pond-Little Black Slough Nature Preserve) constitute the best representatives of the bald cypress dominated community, and high quality swamps dominated by water tupelo occur just north of Boss Island. In both community types, the trees are large and old and appear to be even-aged. Shrub swamps dominated by buttonbush also occur in shallow water areas. Deep, open water habitat can be found in the river channel, meander scars, and oxbows. Many off-channel wetlands have been drained or are threatened due to channel incision and lateral gullyng.

There are no protected areas within the Bottomlands Section of the Coastal Plain Natural Division, or the Shawnee Hills Natural Division (Interior Low Plateau Province) that contain such expansive wetlands and floodplain forests as those found in the Heron Pond-Little Black Slough Nature Preserve and the Little Black Slough Unit of the proposed Cache River Land and Water

Reserve. Mermet Swamp, Massac Forest, and Horseshoe Lake have similar, though smaller, examples of riparian natural communities which were once commonly encountered in this physiographic region. Other Nature Preserves within the Coastal Plain Division include the Cretaceous Hills Nature Preserve and Chestnut Hills Nature Preserve, however, these are in the Cretaceous Hills Section of that Division.

Little Black Slough contains critical habitats for eight Illinois-threatened, thirteen state-endangered, and two federally endangered species (a complete list of Illinois threatened and endangered species is given in Appendix 12.2). Other rare or uncommon species that occur within the area are generally species associated with wetlands of the deep south, or prairie species associated with the till plain region located north of the Shawnee Hills Natural Division.

Lower Cache River Swamp Unit

The Lower Cache River Swamp Unit of the proposed Cache River Land and Water Reserve contains 4,154 acres within the Bottomlands Section of Coastal Plain Natural Division. Habitat within this management is low-wet land with extensive floodplain forests, forested swamps, and ponds. The Lower Cache River Swamp occurs in a low depression within the alluvial floodplain of the Cache River valley, and contains some of the finest baldcypress, water tupelo, and shrub swamps remaining in Illinois.

Significant natural communities within the Lower Cache River Swamp Unit include high quality examples of floodplain forest, forested swamp, shrub swamp, ponds and areas within the river channel that contain permanent deep water, and southern flatwoods. The Section 8 Woods Nature Preserve (328.4 acres) occurs within this part of the Reserve. Twenty-three species of plants and animals listed as threatened or endangered in Illinois occur on the site. Two federally endangered bats (grey bat, Indiana bat) have been documented in this part of the Cache River watershed. The Indiana bat breeds within the Lower Cache River Swamps.

2.0 Identification

This area will be known as the Cache River Land and Water Reserve. Portions of the Reserve are within site number 610 - Lower Cache River Swamp Area, and site number 1059 - Little Black Slough-Heron Pond Area identified by the Illinois Natural Area Inventory. Glass Hill (added to the Natural Areas Inventory in 1997) is also included in the Reserve.

3.0 Size

The proposed Cache River Land and Water Reserve will include 9,274.89 acres of the 11,768 acre Cache River State Natural Area in Johnson and Pulaski Counties, Illinois. Areas excluded from the Reserve include the land adjacent to the CRSNA headquarters (40 acres), Heron Pond-Little Black Slough Nature Preserve (1,939 acres), Section 8 Woods Nature Preserve (326.8 acres), the area where the proposed Cache River Visitor Center will be constructed (95.1 acres), and the Cache River-Tunnel Hill Trail (92.21 acres - Union Pacific Railroad ROW).

4.0 Location

The Little Black Slough and Glass Hill Management Units of the Reserve are located four miles south of Vienna near the town of Cypress in southern Johnson County. The site lies within Sections 14, 15, 21-30, and 34, 35, and 36 of Township 13 South, Range 2 East, and in Sections 19, 20, 21, and 28 through 31 of Township 13 South, Range 3 East of the Third Principal Meridian. This portion of the Reserve is illustrated on the Cypress, Karnak, and Vienna 7.5 minute USGS topographic maps.

The Lower Cache River Swamp Unit of the Reserve is located three miles south of the Little Black Slough Unit in northeastern Pulaski County and southwestern Johnson County in extreme southern Illinois. The site lies within Sections 7-11 and 14-18 of Township 14 South, Range 2 East, and Sections 11-16 and 21-24 of Township 14 South, Range 1 East of the Third Principal Meridian. This portion of the Reserve is illustrated on the Cypress and Karnak 7.5 minute USGS topographic maps.

This Reserve is within the 59th Illinois Legislative (Senatorial) District, and the 118th Representative District. Nearby towns include Karnak, Perks, and Belknap. The largest nearby cities include Paducah, Kentucky; Cape Girardeau, Missouri; Marion, Illinois; and Carbondale, Illinois. It is administered by Dist. 26, Region 5 of the Illinois Department of Natural Resources (Regional Office, Dist. 21-26, 11731 State Highway 37, Benton, IL 62818). Maps included in section 12.0 show the location of the Reserve.

5.0 Ownership

The Proposed Cache River Land and Water Reserve occurs within the Cache River State Natural Area which is owned and managed by the Illinois Department of Natural Resources. The local contact person is the Site Superintendent, Cache River State Natural Area, 930 Sunflower Lane, Belknap, Illinois 62908, phone: (618) 634-9678.

6.0 Agency Contacts

Site Superintendent, Cache River State Natural Area, 930 Sunflower Lane, Belknap, IL 62908, phone: 618-634-9678.

District 26 Natural Heritage Biologist, 0139 Rustic Campus Drive, Ullin, IL 62992, phone: 618-634-2545.

Natural Areas Preservation Specialist, 4648 Highway 127, Carbondale, IL 62901, phone: 618-684-2660.

7.0 Qualifying Features

Following is a list of natural features found within the Cache River State Natural Area that qualify it for the Register of Land and Water Reserves.

1. INAI sites: The Illinois Natural Areas Inventory recognized the Little Black Slough-Heron Pond Area (INAI #1059-6,722 acres), the Lower Cache River Swamp (INAI # 610-3,026 acres), and Glass Hill (no number assigned - 160 acres) as natural areas with significant/exceptional features in Categories I, II, IV, VI, VIc, VII (INAI Categories and significant/exceptional features listed in Appendix 15.0).

2. Threatened plant sites: The Cache River Watershed provides habitat for 47 threatened or endangered plant species. Sixteen state threatened or endangered species have been documented from within the Reserve (Master Management Plans Lower Cache River State Natural Area and the Little Black Slough Unit).

Sedge (<i>Carex intumescens</i>)	E
Sedge (<i>Carex oxylepis</i>)	E
Nuttall's oak (<i>Quercus nuttallii</i>)	E
Willow oak (<i>Quercus phellos</i>)	T
Narrow-leaved snakeroot (<i>Aristolochia serpentaria</i> var. <i>hastata</i>)	E
Storax (<i>Styrax americana</i>)	T
Strawberry bush (<i>Euonymus americana</i>)	T
Mock Bishop's-weed (<i>Ptilimnium nuttallii</i>)	E
Creeping loosestrife (<i>Lysimachia radicans</i>)	E
Water elm (<i>Planera aquatica</i>)	T
Swamp red iris (<i>Iris fulva</i>)	T
Baldwin's fimbriistylis (<i>Fimbristylis annua</i>)	E
Panic grass (<i>Panicum joori</i>)	E
Leatherflower (<i>Clematis viorna</i>)	E
Tubercled orchid (<i>Platanthera flava</i> var. <i>flava</i>)	E
Thoroughwort (<i>Eupatorium incarnatum</i>)	E

3. Forests at least 100 acres in size: the Reserve contains 8,534 acres of terrestrial habitat. Over 6,000 acres of this is forested. The Reserve provides the largest relatively unfragmented forested habitat in Illinois outside of the Shawnee National Forest.

4. Wetlands at least 50 acres in size or a complex of wetlands: The Reserve contains nearly 4,000 acres of wetland habitat, which includes forested swamps, shrub swamps, ponds, and aquatic habitat within the river channel. This habitat occurs throughout the riparian corridor of the Cache River. The highest quality remnants of these swamps occur within the Heron Pond-Little Black Slough Nature Preserve, Section 8 Woods Nature Preserve, and the proposed Cache River Land and Water Reserve. Of wetlands within the Reserve, the largest include Little Black Slough (3,073 acres), and the Lower Cache River Swamp (3,171 acres).

5. Wildlife concentration areas: The relatively unfragmented corridor of upland forests, floodplain forests, and swamp forests protected within the Reserve provide habitat for numerous migratory songbirds. The Reserve supports breeding populations of virtually all

songbirds found in the Cache River Watershed. The only documented populations of American redstarts (10-15 pairs) and cerulean warblers (20-50 pairs) in the watershed occur within the Reserve. The Reserve also provides essential habitat for migratory waterfowl and shorebirds. This includes over 50,000 ducks annually (up to 40,000 mallards), 200,000 Canada geese, and 100,000 snow/blue geese. A heron rookery occurs within Little Black Slough that contains over 1,000 nests (900 great blue heron, 100 great egret). Bald eagles are seen year round in the Reserve, and have nested successfully in Little Black Slough.

6. Wetland restoration sites: Over 150 acres of wetlands have been restored in the Reserve on the Juncker Tract-Lower Cache River Swamp Management Unit (map of Juncker Tract given in section 12.8). In addition to this, the U. S. Army Corps of Engineers and the Illinois Department of Natural Resources are cost-share partners in a study of habitat restoration alternatives designed to accomplish hydrologic restoration throughout the Lower Cache River.

7. Significant archaeological areas: The Glass Hill Management Unit is a significant archaeological area. Soils on top of the knob and around the base of the knob contain large quantities of flint, pottery, and animal bones typically associated with prolonged occupation by Native Americans.

8.0 Synopsis of Registered Area's Significance

Areas within the proposed Cache River Land and Water Reserve contain the following category I natural communities: pond, swamp, wet floodplain forest, wet-mesic floodplain forest, mesic floodplain forest, mesic upland forest, dry-mesic upland forest, limestone glade, and sandstone cliff community. Numerous threatened, endangered, rare, and uncommon plants and animals occur within these high quality habitats. Two Nature Preserves occur within the proposed registry site (Heron Pond-Little Black Slough NP, Section 8 Woods NP), as well as two sites designated as National Natural Landmarks by the U.S. Park Service (Heron Pond, Buttonland Swamp).

The Cache River watershed is one of 30 sites in Illinois identified by the Illinois Department of Natural Resources as a Resource Rich Area. This basin contains over 20 unique plant communities, 128 species of native breeding birds, 49 species of mammals, 32 amphibian species, and 43 reptile species. Nearly three-fourths of the amphibian and reptile species that occur in Illinois can be found in this watershed. Aquatic species which can be found throughout the Cache River and its tributaries include 84 species of freshwater fish (native and introduced), 47 native mussels, 34 species of crustaceans, and more than 430 species of freshwater macroinvertebrates (in addition to crustaceans and mussels). The proposed Reserve provides essential habitat for all of these species.

Because the area harbors such a rich diversity of biologically significant natural communities and species the Cache River basin has received international recognition. In 1994 the United Nations Educational, Scientific, and Cultural Organization added the Cache River - Cypress Creek

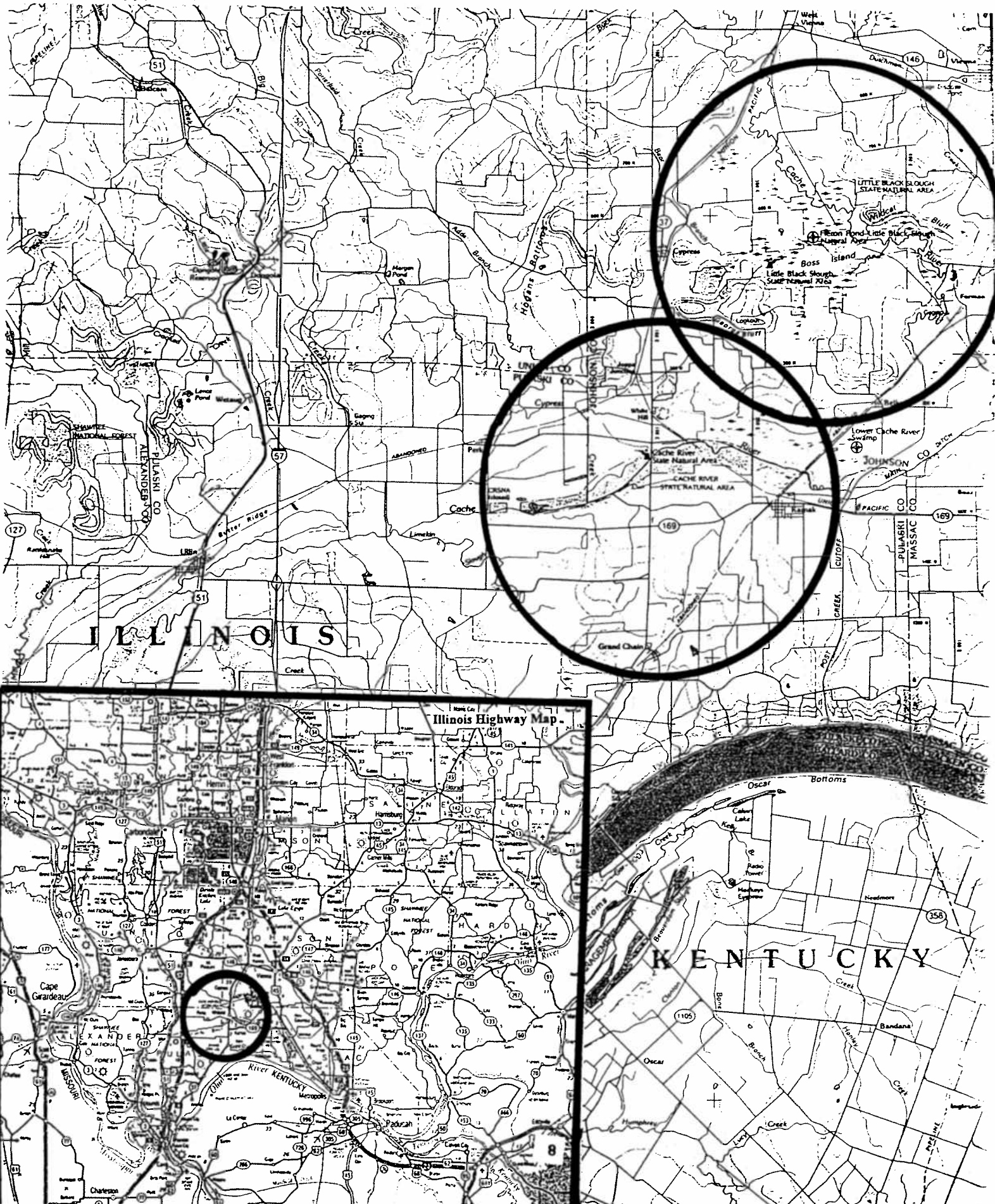
wetlands to its list of 15 "Wetlands of International Importance" because of their crucial role in sustaining migratory waterfowl and shorebirds found in the Mississippi Flyway. This designation ranks the Cache River-Cypress Creek Wetlands with more famous U.S. wetlands such as the Florida Everglades and the Okefenokee Swamp.

9.0 Boundary Determinations

The boundaries of the proposed Cache River Land and Water Reserve include all land within the Cache River State Natural Area currently owned and managed by the Illinois Department Of Natural Resources. This area is delineated in the maps shown in Section 12.0. Total acreage within the site includes 11,768 acres (7,454 acres in the Little Black Slough Unit, 4,154 acres in the Lower Cache River Swamps Unit, and 160 acres in the Glass Hill Unit). Of this, 8,554 acres are terrestrial habitat, 3,214 acres are aquatic habitat. Acreage not included in the registry proposal includes the Heron Pond-Little Black Slough Nature Preserve (1,939 acres), Section 8 Woods Nature Preserve (326.8 acres), the area around the CRSNA headquarters (40 acres), the site of a proposed Cache River Visitor/Education Center (95.1 acres), and the Cache River-Tunnel Hill Trail (92.21 acres - Union Pacific Railroad ROW). Total acreage of the CRSNA to be registered in the Land and Water Reserves program is 9,274.89 acres. Areas in the Reserve that are not included in an INAI boundary are included within the registry boundary because they provide buffer areas or are necessary to accomplish natural community or hydrologic restoration.

10.0 Maps

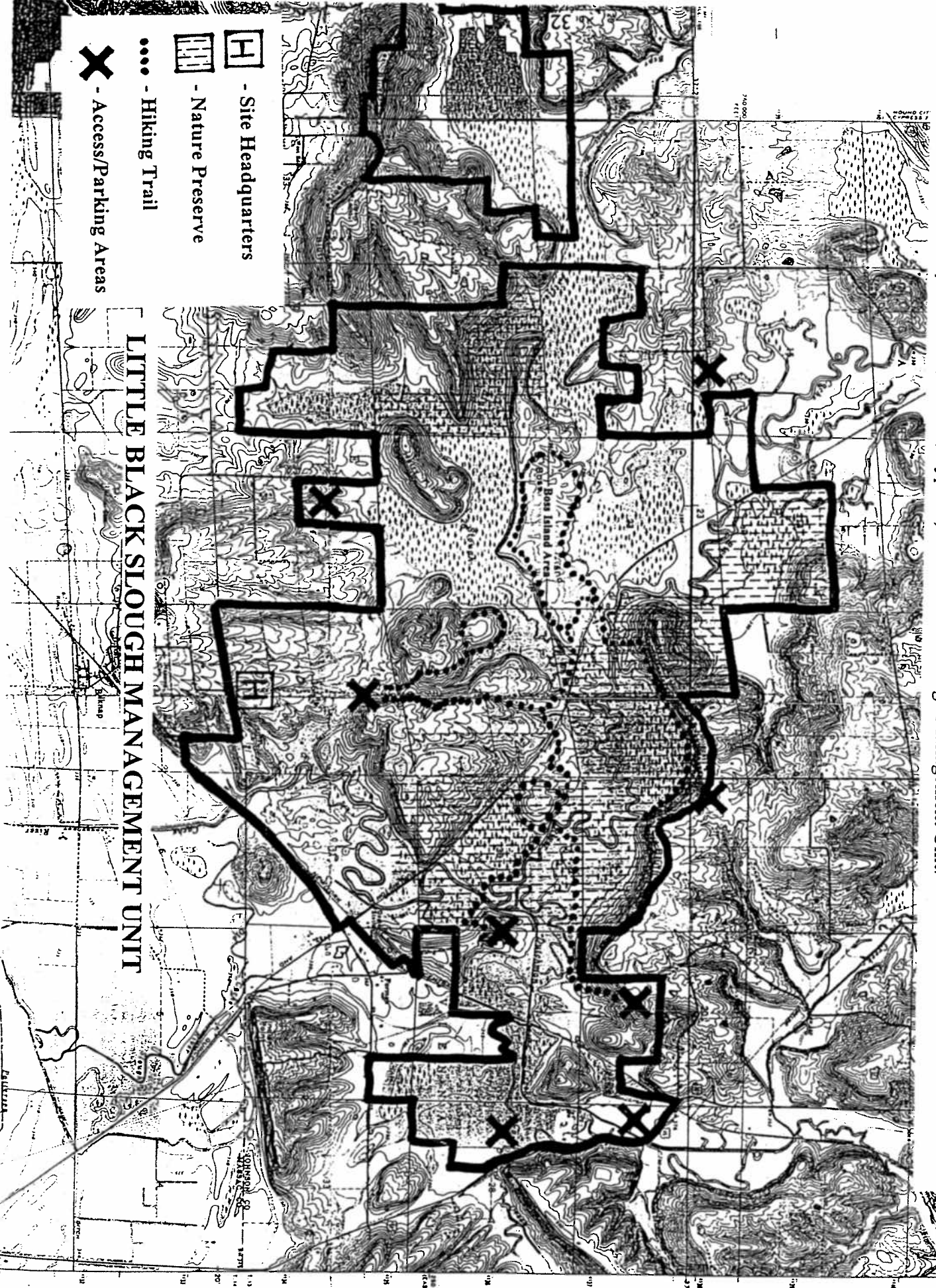
10.1 Regional Context - Illinois Atlas and Gazetteer.



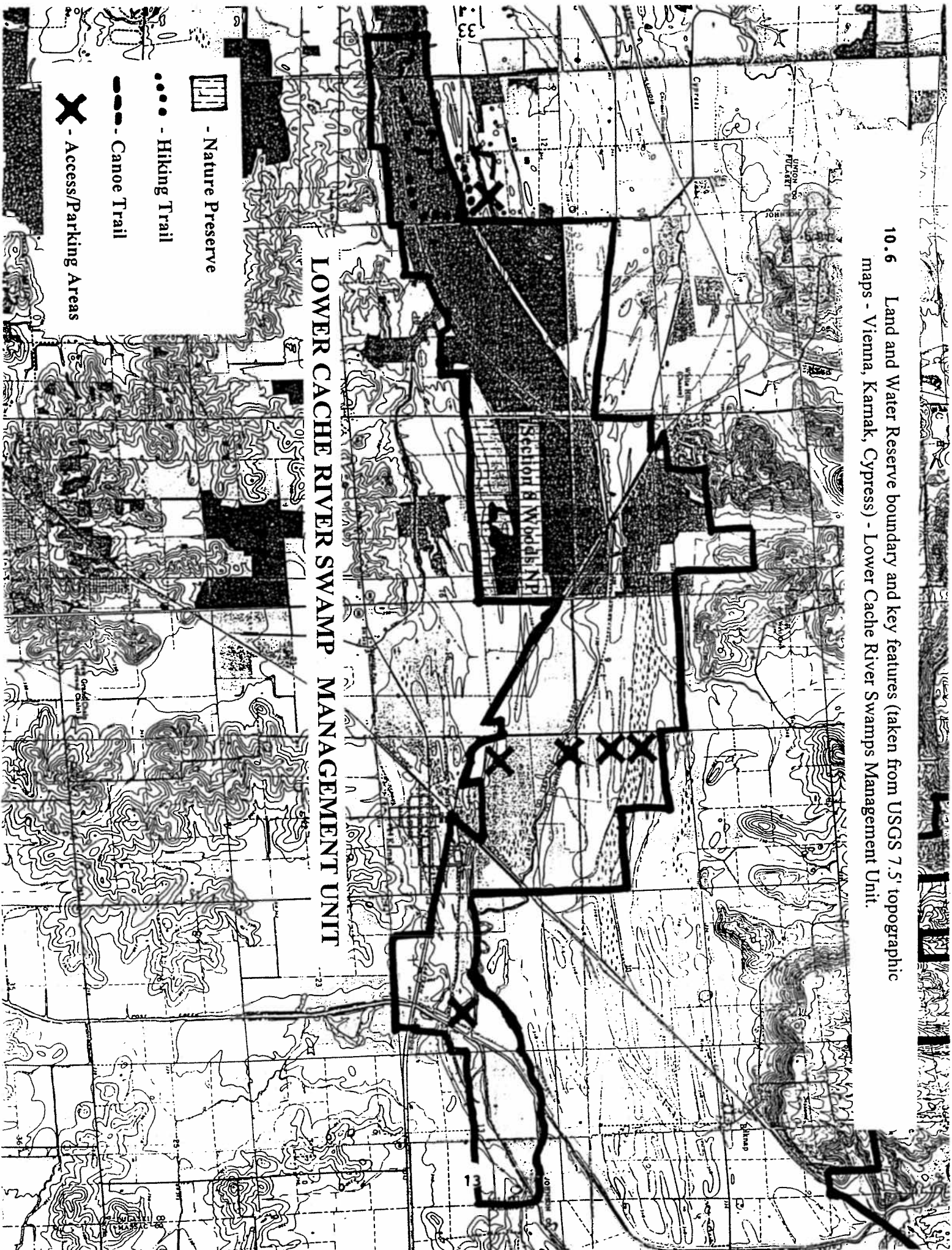
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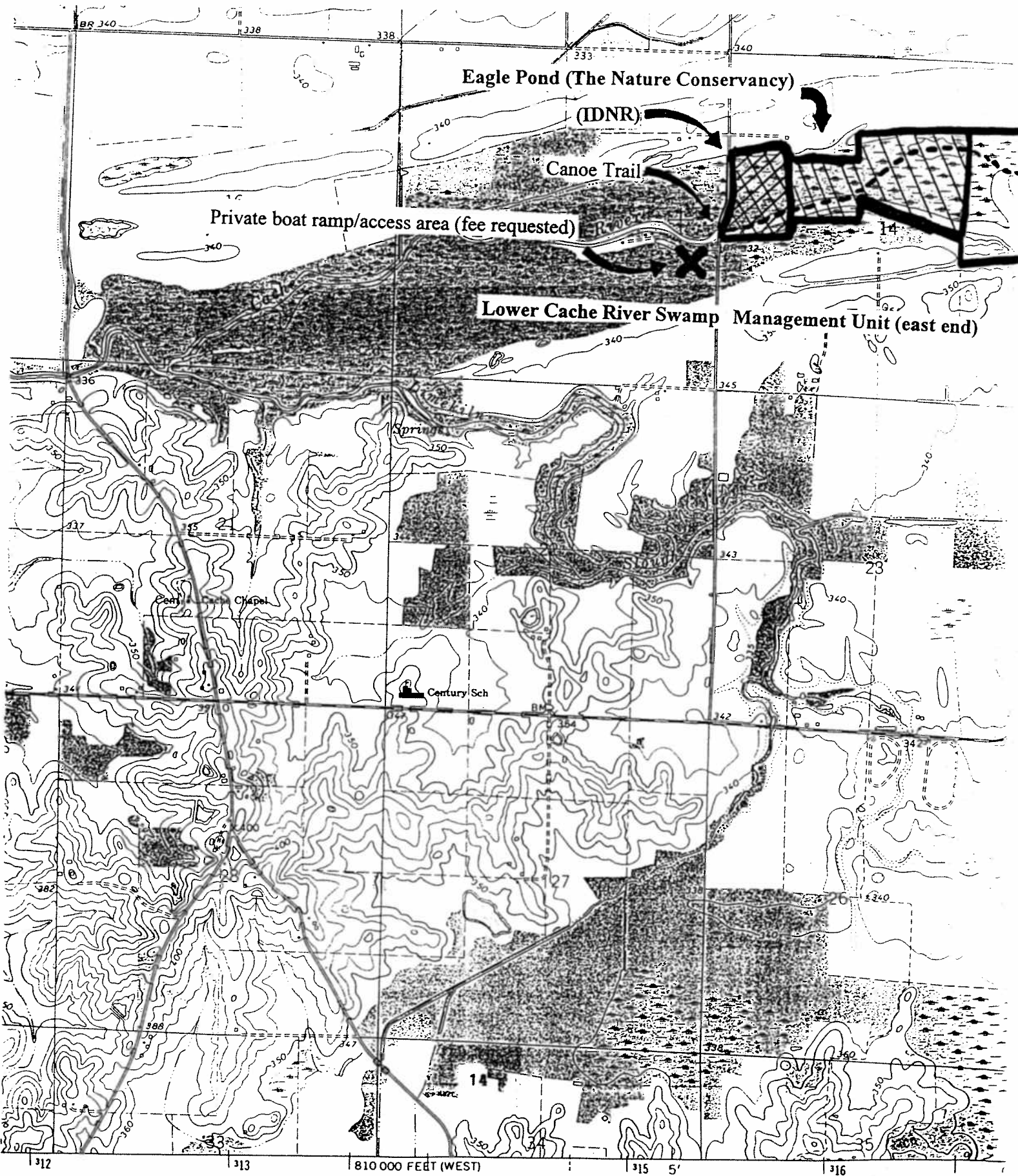
10.5 Land and Water Reserve boundary and key features (taken from USGS 7.5' topographic maps - Vienna, Karnak, Cypress) - Little Black Slough Management Unit.



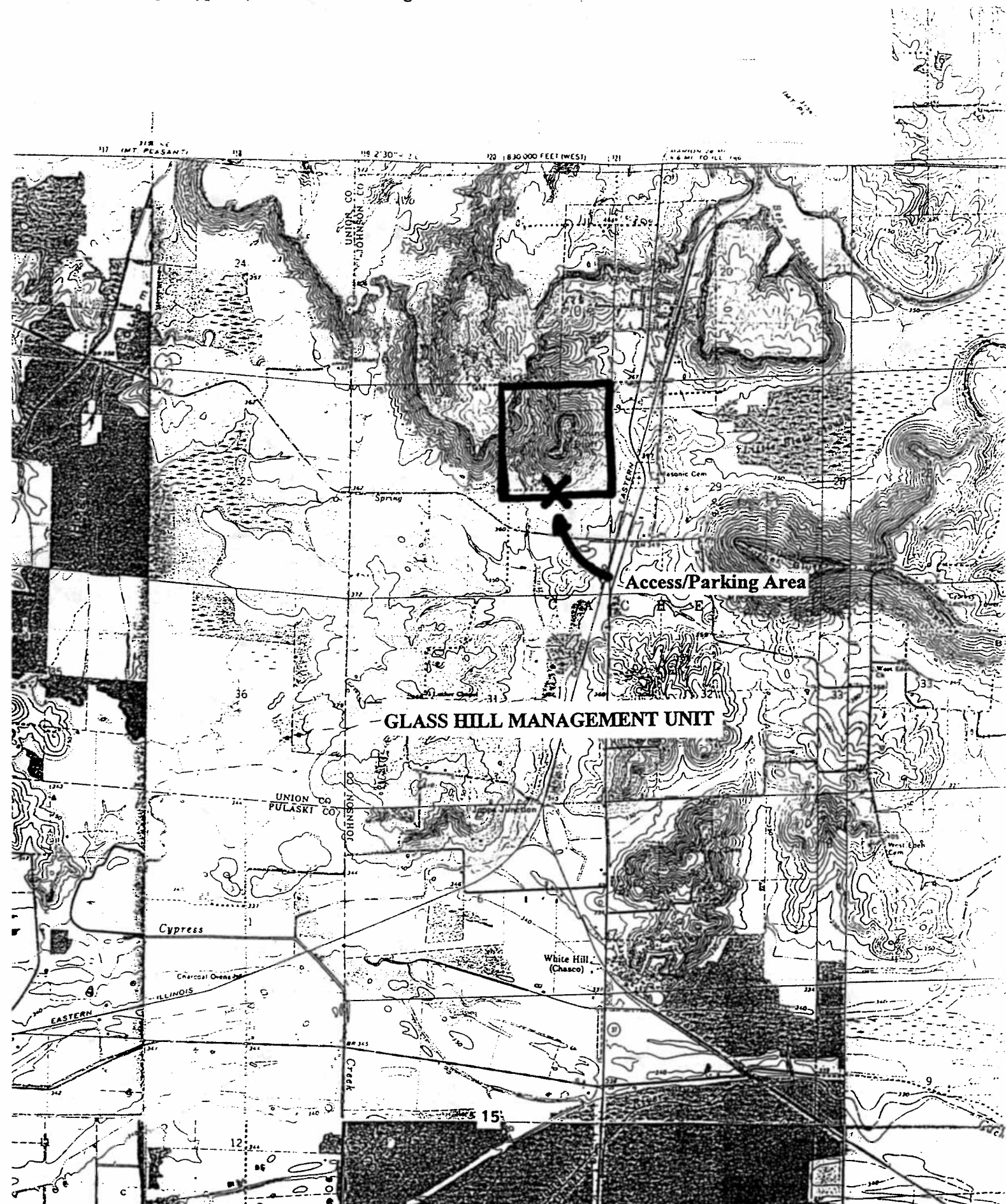
10.6 Land and Water Reserve boundary and key features (taken from USGS 7.5' topographic maps - Vienna, Karnak, Cypress) - Lower Cache River Swamps Management Unit.



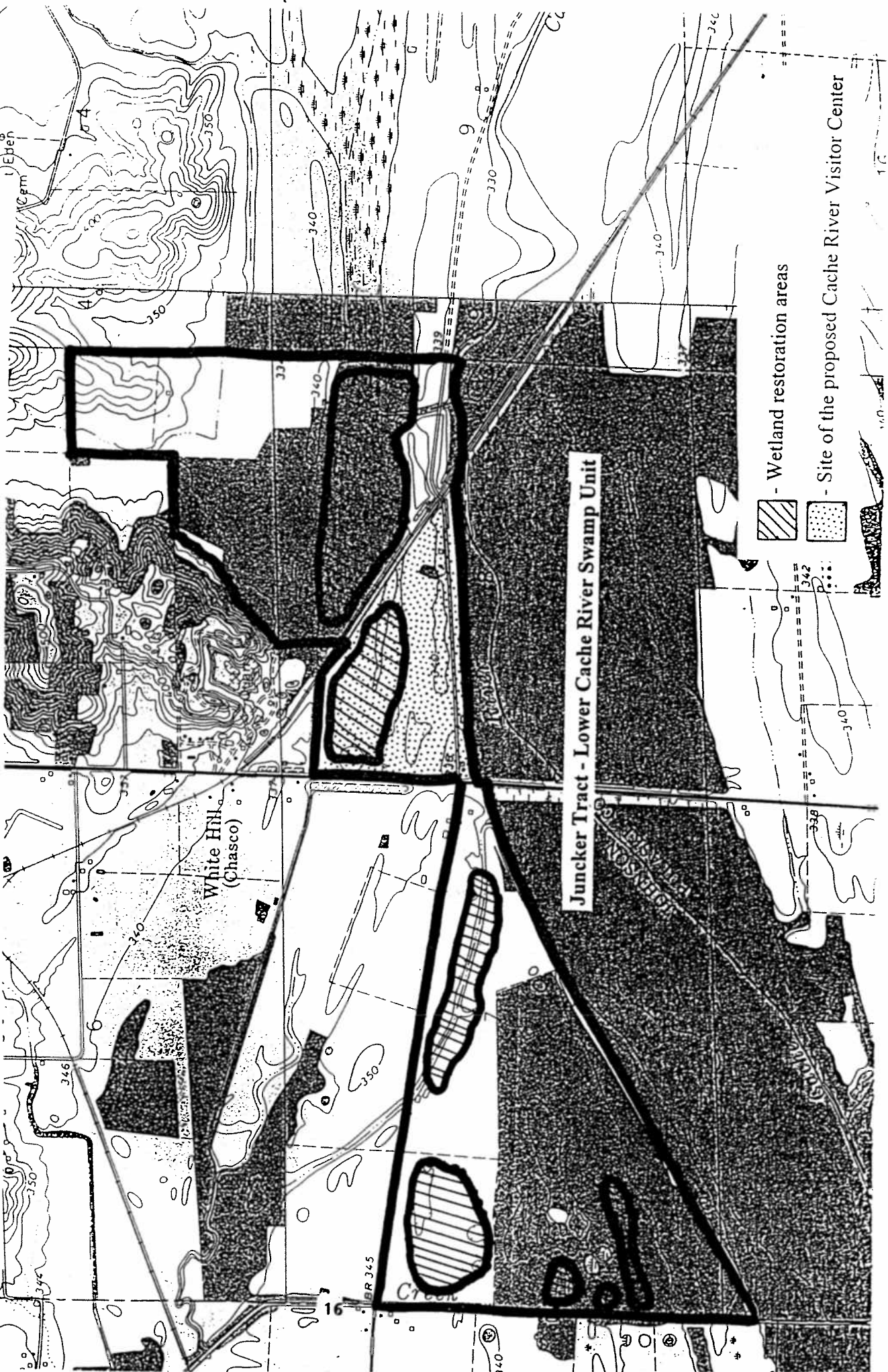
10.7 Land and Water Reserve boundary and key features (taken from USGS 7.5' topographic map - Cypress) - Lower Cache River Swamp Unit, west end.



10.8 Land and Water Reserve boundary and key features (taken from USGS 7.5' topographic map - Cypress) - Glass Hill Management Unit.



10.9 Map of the Junker Tract (located in the Lower Cache River Swamp Unit) illustrating wetland restoration areas and the location of the proposed Cache River Visitor Center.



11.0 References

11.0 References

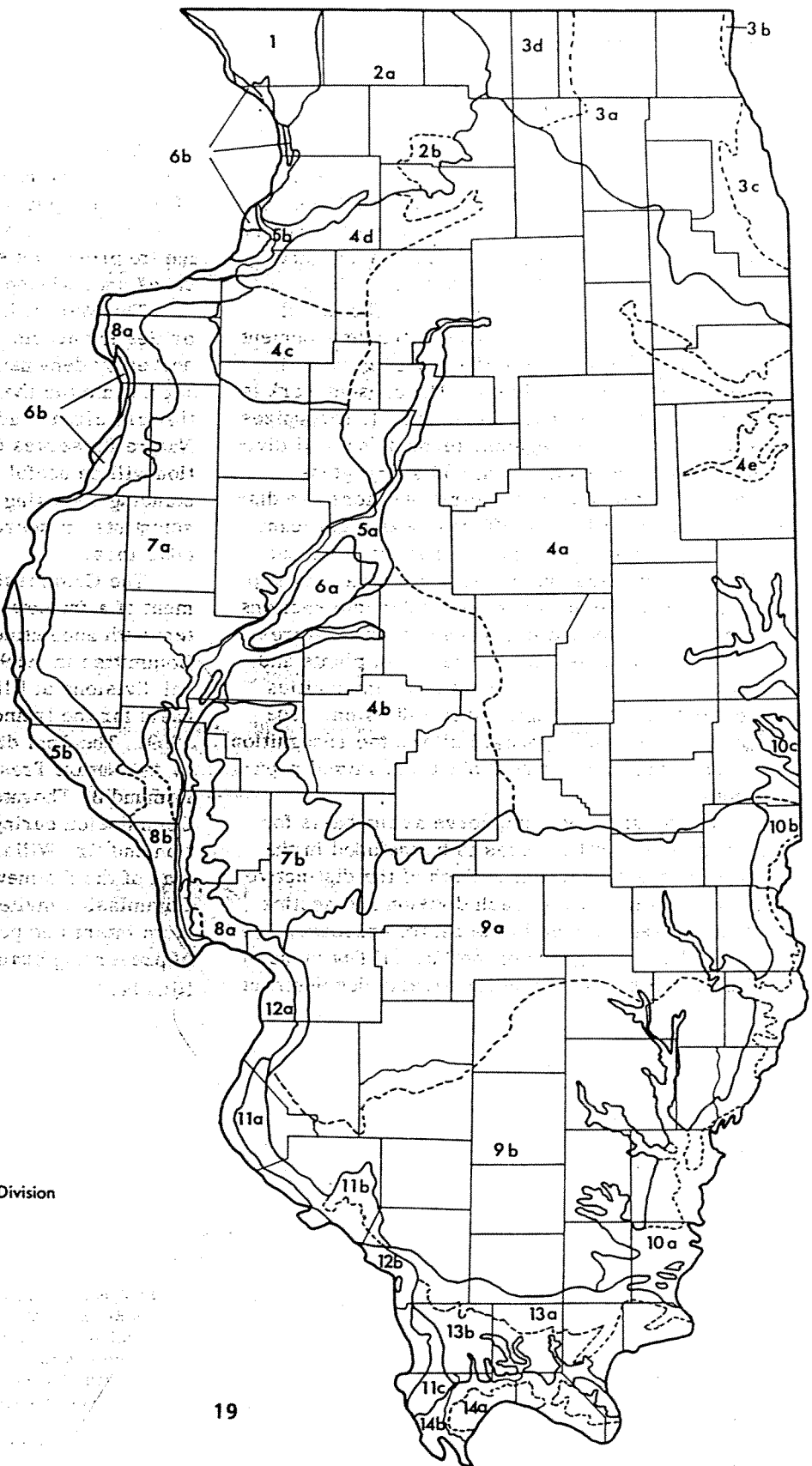
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12.0 Appendices

Appendix 12.1. The Natural Divisions of Illinois.

- 1 Wisconsin Driftless Division
- 2 Rock River Hill Country Division
 - a Freeport Section
 - b Oregon Section
- 3 Northeastern Morainal Division
 - a Morainal Section
 - b Lake Michigan Dunes Section
 - c Chicago Lake-Plain Section
 - d Winnebago Drift Section
- 4 Grand Prairie Division
 - a Grand Prairie Section
 - b Springfield Section
 - c Western Section
 - d Green River Lowland Section
 - e Kankakee Sand Area Section
- 5 Upper Mississippi River and Illinois River Bottomlands Division
 - a Illinois River Section
 - b Mississippi River Section
- 6 Illinois River and Mississippi River Sand Areas Division
 - a Illinois River Section
 - b Mississippi River Section
- 7 Western Forest-Prairie Division
 - a Galesburg Section
 - b Carlville Section
- 8 Middle Mississippi Border Division
 - a Glaciated Section
 - b Driftless Section
- 9 Southern Till Plain Division
 - a Effingham Plain Section
 - b Mt Vernon Hill Country Section
- 10 Wabash Border Division
 - a Bottomlands Section
 - b Southern Uplands Section
 - c Vermilion River Section
- 11 Ozark Division
 - a Northern Section
 - b Central Section
 - c Southern Section
- 12 Lower Mississippi River Bottomlands Division
 - a Northern Section
 - b Southern Section
- 13 Shawnee Hills Division
 - a Greater Shawnee Hills Section
 - b Lesser Shawnee Hills Section
- 14 Coastal Plain Division
 - a Cretaceous Hills Section
 - b Bottomlands Section



Appendix 12.2. State Listed Threatened and Endangered Species

State threatened or endangered species reported from the four counties (Union, Johnson, Alexander, and Pulaski) encompassing the Cache River Wetlands area, which includes the proposed Cache River Land and Water Reserve.

E = Endangered T = Threatened

*Species known to occur with the project area

<u>Status</u>	<u>Scientific Name</u>	<u>Common Name</u>
<u>Plants</u>		
E*	<i>Aristolochia serpentaria</i> var. <i>hastata</i>	Virginia snakeroot
T	<i>Asplenium bradleyi</i>	Bradley's spleenwort
T*	<i>Asplenium resiliens</i>	black spleenwort
E*	<i>Bartonia paniculata</i>	screwstem
E	<i>Botrychium biternatum</i>	southern grape fern
E*	<i>Carex decomposita</i>	sedge
E	<i>Carex gigantea</i>	sedge
E*	<i>Carex intumescens</i>	sedge
E*	<i>Carex oxylepis</i>	sedge
E	<i>Carex physorhyncha</i>	sedge
E	<i>Carex prasina</i>	sedge
E	<i>Carex striatula</i>	sedge
E	<i>Carya pallida</i>	pale hickory
E	<i>Castanea dentata</i>	American chestnut
E	<i>Cladrastis lutea</i>	yellowwood
E*	<i>Clematis crispa</i>	blue jasmine
E*	<i>Clematis viorna</i>	leatherflower
E*	<i>Cyperus lancastriensis</i>	galingale
T*	<i>Dennstaedtia punctilobula</i>	hay-scented fern
E*	<i>Dryopteris celsa</i>	log fern
T*	<i>Euonymus americanus</i>	strawberry bush
E*	<i>Eupatorium incarnatum</i>	thoroughwort
E*	<i>Fimbristylis baldwiniana</i>	Baldwin's fimbriatylis
E	<i>Glyceria arkansana</i>	manna grass
E*	<i>Habenaria flava</i>	tubercled orchid
E*	<i>Halesia carolina</i>	silverbell tree
T*	<i>Helianthus angustifolius</i>	narrow-leaved sunflower
E	<i>Heteranthera reniformis</i>	mud plantain

T*	<i>Hydrastis canadensis</i>	goldenseal
E*	<i>Hydrolea uniflora</i>	one-flowered hydrolea
E*	<i>Hypericum densiflorum</i>	St. John's-wort
E*	<i>Iresine rhizomatosa</i>	bloodleaf
T*	<i>Iris fulva</i>	swamp red iris
E	<i>Juniperus horizontalis</i>	trailing juniper
E*	<i>Justicia ovata</i>	water willow
E*	<i>Lysimachia radicans</i>	creeping loosestrife
E*	<i>Melanthera nivea</i>	white melanthera
E*	<i>Melothria pendula</i>	squirting cucumber
T*	<i>Panax quinquefolius</i>	ginseng
E	<i>Panicum hians</i>	panic grass
E	<i>Panicum jooi</i>	panic grass
E	<i>Panicum ravenelii</i>	panic grass
E	<i>Panicum stipitatum</i>	panic grass
E	<i>Panicum yadkinense</i>	panic grass
E	<i>Paspalum bushii</i>	hairy bead grass
E	<i>Paspalum dissectum</i>	bead grass
E*	<i>Paspalum lentiferum</i>	bead grass
E	<i>Pinus echinata</i>	shortleaf pine
T*	<i>Planera aquatica</i>	water elm
E	<i>Plantago heterophylla</i>	small plantain
E*	<i>Polygonum longistylum</i>	smartweed
E	<i>Potentilla millegrana</i>	cinquefoil
E*	<i>Ptilimnium costatum</i>	mock bishop's weed
E*	<i>Ptilimnium nuttallii</i>	mock bishop's weed
E	<i>Puccinellia pallida</i>	grass
E	<i>Pycnanthemum albescens</i>	white mountain mint
E	<i>Pycnanthemum torrei</i>	mountain mint
E*	<i>Quercus nuttallii</i>	Nuttall's oak
T*	<i>Quercus phellos</i>	willow oak
T	<i>Quercus prinus</i>	rock chestnut oak
E	<i>Rhynchospora macrostachya</i>	beak rush
E	<i>Rubus enslenii</i>	arching dewberry
E*	<i>Sagittaria longirostra</i>	arrowhead
T*	<i>Salvia azurea</i> subsp. <i>pitcheri</i>	blue sage
T*	<i>Scirpus polyphyllus</i>	bulrush
E*	<i>Scirpus verecundus</i>	bulrush
E	<i>Solidago arguta</i>	goldenrod
E	<i>Sparganium chlorocarpum</i>	green-fruited burreed
E	<i>Spiranthes vernalis</i>	spring ladies' tresses
E	<i>Stachys clingmanii</i>	hedge nettle
T	<i>Stenanthium gramineum</i>	grass-leaved lily
T*	<i>Styrax americana</i>	storax

E*	<i>Styrax grandifolia</i>	bigleaf snowball bush
E*	<i>Thalia dealbata</i>	powdery thalia
E	<i>Thelypteris phegopteris</i>	long beech fern
E*	<i>Tilia heterophylla</i>	white basswood
E	<i>Trillium cuneatum</i>	trillium
T	<i>Trillium viride</i>	green trillium
E*	<i>Urtica chamaedryoides</i>	nettle

Mammals

T*	<i>Lynx rufus</i>	bobcat
T*	<i>Lutra canadensis</i>	river otter
E	<i>Neotoma floridana</i>	eastern woodrat
T*	<i>Ochrotomys nuttalli</i>	golden mouse
T*	<i>Oryzomys palustris</i>	rice rat

Birds

E*	<i>Accipiter cooperii</i>	Cooper's hawk
E	<i>Aimophila aestivalis</i>	Bachman's sparrow
E*	<i>Buteo lineatus</i>	red-shouldered hawk
E	<i>Casmerodius albus</i>	great egret
E*	<i>Circus cyoneus</i>	northern harrier
E*	<i>Ictinia mississippiensis</i>	Mississippi kite
T*	<i>Lanius ludovicianus</i>	loggerhead shrike
T*	<i>Limnothlypis swainsonii</i>	Swainson's warbler
T*	<i>Thryomanes bewickii</i>	Bewick's wren
E*	<i>Tyto alba</i>	barn owl

Amphibians

E*	<i>Desmognathus fuscus</i>	dusky salamander
T*	<i>Pseudacris streckeri</i>	Strecker's chorus frog

Reptiles

E*	<i>Thamnophis sauritis</i> subsp. <i>septentrionalis</i>	eastern ribbon snake
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Fish

T*	<i>Lepisosteus spatula</i>	alligator gar
T*	<i>Lepomis symmetricus</i>	bantam sunfish
E*	<i>Notropis hubbsi</i>	bluehead shiner

Source: U. S. Fish and Wildlife Service. 1990. Cypress Creek National Wildlife Refuge: environmental assessment. 236 p.

Appendix 12.3. Native Woody Plant Species

Native woody plants (trees, shrubs, and vines) found in the four counties (Union, Johnson, Alexander, and Pulaski) encompassing the Cache River Wetlands area, which includes the proposed Cache River Land and Water Reserve.

<u>Scientific Name</u>	<u>Common Name</u>
<i>Acer negundo</i>	box elder
<i>Acer saccharinum</i>	silver maple
<i>Acer saccharum</i>	sugar maple
<i>Acer rubrum</i>	red maple
<i>Acer rubrum</i> var. <i>drummondii</i>	swamp red maple
<i>Aesculus discolor</i>	Ohio buckeye
<i>Amelanchier arborea</i>	shadbush
<i>Amorpha fruticosa</i>	indigo bush
<i>Ampelopsis cordata</i>	raccoon grape
<i>Aralia spinosa</i>	Hercules club
<i>Aristolochia serpentaria</i> var. <i>hastata</i>	Virginia snakeroot
<i>Arundinaria gigantea</i>	giant cane
<i>Asimina triloba</i>	pawpaw
<i>Betula nigra</i>	river birch
<i>Bignonia capreolata</i>	cross vine
<i>Brunnichia cirrhosa</i>	lady's eardrops
<i>Campsis radicans</i>	trumpet creeper
<i>Carpinus caroliniana</i>	blue beech
<i>Carya aquatica</i>	water hickory
<i>Carya cordiformis</i>	bitternut hickory
<i>Carya glabra</i>	pignut hickory
<i>Carya illinoensis</i>	pecan
<i>Carya laciniosa</i>	kingnut hickory
<i>Carya ovalis</i>	sweet pignut hickory
<i>Carya tomentosa</i>	mockernut hickory
<i>Catalpa speciosa</i>	catalpa
<i>Celastrus scandens</i>	bittersweet
<i>Celtis laevigata</i>	southern hackberry
<i>Celtis occidentalis</i>	hackberry
<i>Cephalanthus occidentalis</i>	buttonbush
<i>Cercis canadensis</i>	redbud
<i>Cocculus carolinus</i>	snailseed
<i>Cornus amomum</i>	swamp dogwood
<i>Cornus drummondii</i>	rough-leaved dogwood
<i>Cornus florida</i>	flowering dogwood

Cornus foemina
Corylus americana
Crataegus phaenopyrum
Crataegus viridis
Diospyros virginiana
Euonymus americanus
Euonymus atropurpureus
Euonymus obovatus
Fagus grandifolia
Forestiera acuminata
Fraxinus americana
Fraxinus pennsylvanica
Fraxinus tomentosa
Gleditsia aquatica
Gleditsia triacanthos
Hypericum spathulatum
Ilex decidua
Itea virginica
Juglans cinerea
Juglans nigra
Lindera benzoin
Liquidambar styraciflua
Liriodendron tulipifera
Lonicera japonica
Lonicera maackii
Menispermum canadensis
Mikania scandens
Morus rubra
Nyssa aquatica
Nyssa sylvatica
Ostrya virginiana
Parthenocissus quinquefolia
Phoradendron flavescens
Planera aquatica
Platanus occidentalis
Populus deltoides
Populus heterophylla
Prunus americana
Prunus serotina
Ptelea trifoliata
Quercus alba
Quercus bicolor
Quercus falcata
Quercus falcata var. *pagodaefolia*

dogwood
 hazelnut
 hawthorn
 green hawthorn
 persimmon
 strawberry bush
 wahoo (burning bush)
 running strawberry bush
 beech
 swamp privet
 white ash
 green ash
 pumpkin ash
 water locust
 honey locust
 shrubby St. John's-wort
 deciduous holly
 Virginia willow
 butternut
 black walnut
 spicebush
 sweet gum
 tulip tree (yellow poplar)
 Japanese honeysuckle
 amur honeysuckle
 moonseed
 climbing hemp
 mulberry
 tupelo gum
 black gum
 hop hornbeam
 Virginia creeper
 mistletoe
 water elm
 sycamore
 cottonwood
 swamp cottonwood
 American plum
 wild black cherry
 wafer ash (hoptree)
 white oak
 swamp white oak
 southern red oak
 cherrybark oak

<i>Quercus lyrata</i>	overcup oak
<i>Quercus macrocarpa</i>	bur oak
<i>Quercus michauxii</i>	swamp chestnut oak
<i>Quercus muhlenbergii</i>	chinkapin oak
<i>Quercus palustris</i>	pin oak
<i>Quercus phellos</i>	willow oak
<i>Quercus rubra</i>	red oak
<i>Quercus shumardii</i>	Shumard's red oak
<i>Quercus stellata</i>	post oak
<i>Quercus velutina</i>	black oak
<i>Rhus copallina</i>	winged sumac
<i>Rhus glabra</i>	smooth sumac
<i>Robinia pseudoacacia</i>	black locust
<i>Rosa palustris</i>	swamp rose
<i>Rubus allegheniensis</i>	blackberry
<i>Rubus occidentalis</i>	raspberry
<i>Salix nigra</i>	black willow
<i>Sambucus canadensis</i>	elderberry
<i>Sassafras albidum</i>	sassafras
<i>Smilax bona-nox</i>	catbrier
<i>Smilax hispida</i>	catbrier
<i>Smilax rotundifolia</i>	round-leaved catbrier
<i>Smilax</i> sp.	catbrier
<i>Staphylea trifolia</i>	bladdernut
<i>Styrax americana</i>	storax
<i>Taxodium distichum</i>	baldcypress
<i>Tilia americana</i>	basswood
<i>Toxicodendron radicans</i>	poison ivy
<i>Trachelospermum difforme</i>	climbing dogbane
<i>Ulmus alata</i>	winged elm
<i>Ulmus americana</i>	American elm
<i>Ulmus rubra</i>	slippery elm
<i>Viburnum prunifolium</i>	black haw
<i>Vitis cinerea</i>	sweet winter grape
<i>Vitis palmata</i>	catbird grape
<i>Vitis riparia</i>	riverbank grape
<i>Vitis vulpina</i>	frost grape
<i>Wisteria macrostachia</i>	wisteria
<i>Zanthoxylum americanum</i>	prickly ash

Source: U. S. Fish and Wildlife Service. 1990. Cypress Creek National Wildlife Refuge: environmental assessment. 236 p.

Appendix 12.4. Aquatic and Non-Woody Plant Species

Aquatic and other vascular plant species found in the four counties (Union, Johnson, Alexander, and Pulaski) encompassing the Cache River Wetlands area, which includes the proposed Cache River Land and Water Reserve.

<u>Scientific Name</u>	<u>Common Name</u>
<i>Acalypha gracilens</i>	slender three-seeded mercury
<i>Acalypha ostryaefolia</i>	three-seeded mercury
<i>Acalypha virginica</i>	Virginia three-seeded mercury
<i>Achillia millefolium</i>	yarrow
<i>Agrimonia rostellata</i>	agrimony
<i>Alisma subcordatum</i>	water plantain
<i>Allium canadense</i>	wild onion
<i>Allium vineale</i>	field garlic
<i>Amaranthus tuberculatus</i>	water hemp
<i>Ambrosia artemisiifolia</i>	common ragweed
<i>Ambrosia trifida</i>	giant ragweed
<i>Ammania coccinea</i>	loosestrife
<i>Ampelamus albidus</i>	climbing bluevine
<i>Anemone virginiana</i>	common anemone
<i>Apios americana</i>	groundnut
<i>Apocynum cannabinum</i>	Indian hemp
<i>Arisaema dracontium</i>	green dragon
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit
<i>Aristolochia serpentaria</i>	Virginia snakeroot
<i>Artemisia annua</i>	annual wormwood
<i>Arundinaria gigantea</i>	giant cane
<i>Asarum canadensis</i>	wild ginger
<i>Asclepias perennis</i>	swamp milkweed
<i>Asclepias syrica</i>	common milkweed
<i>Aster spp.</i>	aster
<i>Bidens aristosa</i>	swamp marigold
<i>Bidens connata</i>	beggars-tick
<i>Bidens frondosa</i>	common beggars-tick
<i>Blephilic hirsuta</i>	pagoda plant
<i>Boehmeria cylindrica</i>	false nettle
<i>Brunnichia cirrhosa</i>	climbing buckwheat
<i>Cacalia atriplicifolia</i>	Indian plantain
<i>Campanula americana</i>	bellflower
<i>Capsella bursa-pastoris</i>	shepherds purse
<i>Cardomine parviflora</i>	small-flowered letter-cress

<i>Carex crus-corvi</i>	sedge
<i>Carex frankii</i>	sedge
<i>Carex grayii</i>	sedge
<i>Carex lupuliformis</i>	sedge
<i>Carex lupulina</i>	sedge
<i>Carex muskingumensis</i>	sedge
<i>Carex rosea</i>	sedge
<i>Carex squarrosa</i>	sedge
<i>Carex tribuloides</i>	sedge
<i>Carex typhina</i>	sedge
<i>Carex vulpinoidea</i>	sedge
<i>Chasmanthium latifolium</i>	sea-oats
<i>Chenopodium album</i>	lambs-quarters
<i>Chrysanthemum leucanthemum</i>	ox-eye daisy
<i>Cicuta maculata</i>	water hemlock
<i>Cinna arundinacea</i>	wood reedgrass
<i>Cocculus carolinus</i>	snailseed
<i>Convolvulus arvensis</i>	field bindweed
<i>Cryptotaenia canadensis</i>	honewort
<i>Cuscuta coryli</i>	dodder
<i>Cynoglossum virginianum</i>	wild comfrey
<i>Cyperus erythrorhizos</i>	sedge
<i>Cyperus esculentus</i>	sedge
<i>Cyperus ovularis</i>	sedge
<i>Cyperus strigosus</i>	sedge
<i>Daucus carota</i>	Queen Anne's lace
<i>Dentaria laciniata</i>	toothwort
<i>Desmodium</i> sp.	tick-trefoil
<i>Dicliptera brachiata</i>	acanthus
<i>Dioscorea quaternata</i>	wild yam
<i>Dioscorea villosa</i>	wild yam
<i>Echinochloa pungens</i>	barnyard grass
<i>Echinodorus cordifolius</i>	water plantain
<i>Echinodorus radicans</i>	water plantain
<i>Eclipta alba</i>	small daisy
<i>Eleocharis acicularis</i>	spike rush
<i>Eleocharis obtusa</i>	spike rush
<i>Eleocharis tenuis</i>	spike rush
<i>Elephantopus carolinianus</i>	elephant's foot
<i>Elymus villosus</i>	slender rye root
<i>Elymus virginicus</i>	wild rye
<i>Eragrostis hypnoides</i>	love-grass
<i>Erigeron annuus</i>	daisy fleabane
<i>Erigeron philadelphicus</i>	fleabane

Eupatorium coelestinum
Eupatorium serotinum
Euphorbia corollata
Festuca pratensis
Festuca obtusa
Gallium aparine
Galium circaezans
Galium obtusum
Geranium carolinianum
Geranium maculatum
Geum canadense
Geum vernum
Glyceria striata
Hedeoma pulegioides
Helenium flexuosum
Heliotropium indicum
Heuchera hirsoticavlis
Hibiscus militaris
Hordeum pusillum
Hottonia inflata
Hydrangea arborescens
Hymenocallis occidentalis
Hypericum mutilum
Hypericum punctatum
Impatiens punctatum
Ipomoea hederacea
Ipomoea lacunosa
Ipomoea pandurata
Iris spp.
Isopyrum biternatum
Itea virginica
Juncus acuminatus
Juncus biflorus
Juncus brachycarpus
Juncus effusus
Juncus interior
Juncus tenuis
Juncus torreyi
Jussiaea diffusa
Jussiaea repens
Justicia americana
Lactuca floridana
Leersia oryzoides
Leersia virginica

mistflower
white snakeroot
flowering spurge
meadow fescue
nodding fescue
goosegrass
wild licorice
bedstraw
wild cranesbill
wild geranium
avens
avens
fowl meadow grass
mock pennyroyal
sneezewood
heliotrope
tall alumroot
halberd-leaved rose mallow
little barley
featherfoil
hydrangea
spiderlily
St. John's-wort
spotted St. John's-wort
orange spotted touch-me-not
ivy-leaved morning glory
small-flowered morning glory
wild sweet potato
iris
false rue-anemone
Virginia willow
rush
rush
rush
rush
rush
rush
rush
water evening primrose
creeping primrose willow
water willow
woodland lettuce
rice cut grass
white grass

Lemna minor
Lepidium virginicum
Leucospora multifida
Limnobiium spongia
Lindernia anagallidea
Lindernia dubia
Lippia lanceolata
Lithospermum latifolium
Lobelia cardinalis
Lobelia inflata
Lobelia siphilitica
Ludwigia palustris
Lycopus americana
Lysimachia ciliata
Lysimachia nummularia
Melilotus officinalis
Mikania scandens
Mimulus alatus
Mollugo verticillata
Monarda fistulosa
Oenothera biennis
Oxalis stricta
Panicum boscii
Panicum microcarpon
Paronychia canadensis
Paspalum dissectum
Paspalum fluitans
Peltandra virginica
Penstemon digitalis
Penthorum sedoides
Phalaris arundinacea
Phlox divaricata
Phlox glaberrima
Phlox paniculata
Phryma leptostachya
Physalis subglabrata
Phytolacca americana
Plantago rugellii
Pluchea camphorata
Poa pratensis
Podophyllum peltatum
Polemonium reptans
Polygonatum biflorum
Polygonum hydropiperoides

duckweed
 common peppergrass
 figwort
 sponge plant
 figwort
 false pimpernel
 —
 American gromwell
 cardinal flower
 Indian tobacco
 great blue cardinal flower
 seedbox
 common water horehound
 fringed loosestrife
 moneywort
 yellow sweet clover
 climbing hempweed
 monkey-flower
 carpetweed
 wild bergamot
 evening primrose
 wood sorrel
 panic grass
 small panic grass
 forked chickweed
 creeping paspalum
 swamp beadgrass
 arrow-arum
 foxglove penstemon
 ditch stonecrop
 reed canary grass
 blue phlox
 smooth phlox
 garden phlox
 lopseed
 smooth ground cherry
 pokeweed
 Rugel's plantain
 marsh fleabane
 Kentucky bluegrass
 mayapple
 Jacob's ladder
 Solomon's seal
 mild water pepper

<i>Polygonum lapathifolium</i>	smartweed
<i>Polygonum pennsylvanicum</i>	smartweed
<i>Polygonum punctatum</i>	smartweed
<i>Polygonum setaceum</i>	smartweed
<i>Polygonum virginianum</i>	Virginia's knotweed
<i>Potentilla recta</i>	cinquefoil
<i>Prunella vulgaris</i>	selfheal
<i>Pycnanthemum flexuosum</i>	mountain-mint
<i>Pycnanthemum pycnanthemoides</i>	mountain-mint
<i>Ranunculus abortivus</i>	small-flowered buttercup
<i>Ranunculus scleratus</i>	cursed crowfoot
<i>Ranunculus septentrionalis</i>	swamp crowfoot
<i>Rhynchospora corniculata</i>	beaked rush
<i>Rorippa islandica</i>	marsh yellow-cress
<i>Rorippa sylvestris</i>	creeping yellow-cress
<i>Rosa carolina</i>	pasture rose
<i>Rotala ramosior</i>	loosestrife
<i>Rudbeckia laciniata</i>	goldenglow
<i>Rumex crispus</i>	curly dock
<i>Rumex obtusifolia</i>	bitter dock
<i>Rumex verticillata</i>	swamp dock
<i>Sagittaria latifolia</i>	duck potato
<i>Sanguinaria canadensis</i>	bloodroot
<i>Sanicula canadensis</i>	short-styled snakeroot
<i>Sanicula gregaria</i>	common snakeroot
<i>Saururus cernuus</i>	lizard-tail
<i>Scirpus atrovirens</i>	bulrush
<i>Scirpus cyperinus</i>	bulrush
<i>Scutellaria incana</i>	downy skullcap
<i>Scutellaria lateriflora</i>	mad-dog skullcap
<i>Scutellaria ovata</i>	heart-leaved skullcap
<i>Senecio aureus</i>	golden ragwort
<i>Senecio glabellus</i>	butterweed
<i>Setaria faberii</i>	foxtail
<i>Setaria lutescens</i>	foxtail
<i>Seymeria macrophylla</i>	mullein foxglove
<i>Sicyos angulatus</i>	bur cucumber
<i>Silene stellata</i>	widow's frill
<i>Sisyrinchium angustifolium</i>	blue-eyed grass
<i>Smilacina racemosa</i>	false Solomon's seal
<i>Solanum americanum</i>	American nightshade
<i>Solanum carolinense</i>	horse nettle
<i>Solidago</i> spp.	goldenrod
<i>Sonchus oleraceus</i>	common sow-thistle

Sorghum halepense
Spermacoce glabra
Spigelia marilandica
Spirodella spp.
Stachys clingmanii
Stachys tenuifolia
Stylophorum diphyllum
Teucrium canadense
Trachelospermum difforme
Tradescantia subaspera
Triadenum walteri
Trifolium dubium
Trifolium incarnatum
Trifolium repens
Triodanis perfoliata
Triticum vulgare
Uniola latifolia
Urtica gracilis
Valerianella radiata
Verbena urticifolia
Verbesina alternifolia
Vernonia fasciculata
Veronica serpyllifolia
Viola papilionacea
Wisteria macrostachya
Wolffia spp.
Xanthium strumarium

Johnsongrass
 smooth buttonweed
 Indian pink
 duckweed
 hedge-nettle
 common hedge-nettle
 celadine poppy
 wood sage
 climbing dogbane
 spiderwort
 marsh St. John's-wort
 little hop-clover
 crimson clover
 white clover
 Venus looking-glass
 wheat
 sea-oats
 nettle
 corn salad
 white vervain
 yellow ironweed
 ironweed
 thyme-leaved speedwell
 violet
 wisteria
 water-meal
 cocklebur

Ferns

Adiantum pedatum
Asplenium platyneuron
Azolla mexicana
Botrychium dissectum
Botrychium virginianum
Cystopteris fragilis
Dryopteris hexagonoptera
Equisetum arvense
Onoclea sensibilis
Polypodium polypodioides
Polystichum acrostichoides

maidenhair
 ebony spleenwort
 mosquito fern
 cat-leaved grape fern
 rattlesnake fern
 fragile fern
 broad beech fern
 common horsetail
 sensitive fern
 resurrection fern
 Christmas fern

Source: U. S. Fish and Wildlife Service. 1990. Cypress Creek National Wildlife Refuge: environmental assessment. 236 p.

Appendix 12.5. Fish Species

Fish species found in the four counties (Union, Johnson, Alexander, and Pulaski) encompassing the Cache River Wetlands area, which includes the proposed Cache River Land and Water Reserve.

<u>Scientific Name</u>	<u>Common Name</u>
<i>Ambloplites rupestris</i>	rock bass
<i>Amia calva</i>	bowfin
<i>Aphredoderus sayanus</i>	pirate perch
<i>Aplodinotus grunniens</i>	freshwater drum
<i>Campostoma anomalum</i>	central stoneroller
<i>Carpiodes carpio</i>	river carpsucker
<i>Catostomus commersoni</i>	white sucker
<i>Centrarchus macropterus</i>	flier
<i>Chologaster agassizi</i>	spring cavefish
<i>Cottus carolinae</i>	banded sculpin
<i>Cyprinus carpio</i>	common carp
<i>Dorosoma cepedianum</i>	gizzard shad
<i>Elassoma zonatum</i>	banded pygmy sunfish
<i>Erimyzon oblongus</i>	creek chubsucker
<i>Esox americanus</i>	grass pickerel
<i>Etheostoma asprigene</i>	mud darter
<i>Etheostoma chlorosomum</i>	bluntnose darter
<i>Etheostoma flabellare</i>	fantail darter
<i>Etheostoma gracile</i>	slough darter
<i>Etheostoma kennicotti</i>	stripetail darter
<i>Etheostoma nigrum</i>	Johnny darter
<i>Etheostoma proelaire</i>	cypress darter
<i>Etheostoma spectabile</i>	orange throat darter
<i>Etheostoma squamiceps</i>	spottail darter
<i>Fundulus notatus</i>	blackstripe topminnow
<i>Fundulus olivaceus</i>	blackspotted topminnow
<i>Gambusia affinis</i>	mosquitofish
<i>Hiodon tergisus</i>	mooneye
<i>Hybognathus hayi</i>	cypress minnow
<i>Hybognathus nuchalis</i>	silvery minnow
<i>Hybopsis gracilis</i>	flathead chub
<i>Hybopsis storeriana</i>	silver chub
<i>Ictalurus melas</i>	black bullhead
<i>Ictalurus natalis</i>	yellow bullhead
<i>Ictalurus nebulosus</i>	brown bullhead
<i>Ictalurus punctatus</i>	channel catfish

<i>Ictiobus bubalus</i>	smallmouth buffalo
<i>Ictiobus cyprinellus</i>	bigmouth buffalo
<i>Ictiobus niger</i>	black buffalo
<i>Labidesthes sicculus</i>	brook silverside
<i>Lepisosteum oculatus</i>	spotted gar
<i>Lepisosteus platostomus</i>	shortnose gar
<i>Lepomis cyanellus</i>	green sunfish
<i>Lepomis gibbosus</i>	pumpkinseed
<i>Lepomis gulosus</i>	warmouth
<i>Lepomis humilis</i>	orange spotted sunfish
<i>Lepomis macrochirus</i>	bluegill
<i>Lepomis megalotis</i>	longear sunfish
<i>Lepomis microlophus</i>	redeer sunfish
<i>Lepomis punctatus</i>	spotted sunfish
<i>Lepomis symmetricus</i>	bantam sunfish
<i>Micropterus punctulatus</i>	spotted bass
<i>Micropterus salmoides</i>	largemouth bass
<i>Minytrema melanops</i>	spotted sucker
<i>Morone chrysops</i>	white bass
<i>Moxostoma erythrurum</i>	golden redhorse
<i>Notemigonus crysoleucas</i>	golden shiner
<i>Notropis atherinoides</i>	emerald shiner
<i>Notropis bleinius</i>	river shiner
<i>Notropis boops</i>	bigeye shiner
<i>Notropis buchanani</i>	ghost shiner
<i>Notropis chrysocephalus</i>	striped shiner
<i>Notropis emiliae</i>	pugnose shiner
<i>Notropis fumeus</i>	ribbon shiner
<i>Notropis lutrensis</i>	red shiner
<i>Notropis spilopterus</i>	spotfin shiner
<i>Notropis umbratilis</i>	redfin shiner
<i>Notropis venustus</i>	blacktail shiner
<i>Notropis volucellus</i>	mimic shiner
<i>Notropis whipplei</i>	steelcolor shiner
<i>Noturus gyrinus</i>	tadpole madtom
<i>Noturus miurus</i>	brindled madtom
<i>Noturus nocturnus</i>	freckled madtom
<i>Percina caprodes</i>	logperch
<i>Percina maculata</i>	blackside darter
<i>Percina phoxocephala</i>	slenderhead darter
<i>Phenacobius mirabilis</i>	suckermouth minnow
<i>Pimephales notatus</i>	bluntnose minnow
<i>Pemephales promelas</i>	fathead minnow
<i>Pimephales vigilax</i>	bullhead minnow

<i>Pomoxis annularis</i>	white crappie
<i>Pomoxis nigromaculatus</i>	black crappie
<i>Pylodictis olivaris</i>	flathead catfish
<i>Semotilus atromaculatus</i>	creek chub
<i>Umbra limi</i>	central mudminnow

Source: U. S. Fish and Wildlife Service. 1990. Cypress Creek National Wildlife Refuge: environmental assessment. 236 p.

Appendix 12.6. Mussel Species

Mussel species found in the four counties (Union, Johnson, Alexander, and Pulaski) encompassing the Cache River Wetlands area, which includes the proposed Cache River Land and Water Reserve.

<u>Scientific Name</u>	<u>Common Name</u>
<i>Amblema plicata</i>	threeridge
<i>Anodonta grandis</i>	giant floater
<i>Anodonta imbecilis</i>	paper pondshell
<i>Anodonta suborbiculata</i>	flat floater
<i>Arcidens confragosus</i>	rock-pocketbook
<i>Corbicula fluminea</i>	unknown
<i>Lampsilis orbiculata</i>	pink mucket pearly mussel
<i>Lampsilis teres</i>	yellow sandshell
<i>Lasmigona complanata</i>	white heelsplitter
<i>Ligumia subrostrata</i>	pondmussel
<i>Loptodea fragilis</i>	fragile papershell
<i>Megaloniaias nervosa</i>	washboard
<i>Plethobasis cooperianus</i>	orange-footed pearly mussel
<i>Potamilus alatus</i>	pink heelsplitter
<i>Quadrula quadrula</i>	mapleleaf
<i>Toxolasma parvus</i>	lilliput
<i>Toxolasma texasensis</i>	Texas lilliput
<i>Tritogonia verrucosa</i>	unknown
<i>Truncilla truncata</i>	deertoe

Source: U. S. Fish and Wildlife Service. 1990. Cypress Creek National Wildlife Refuge: environmental assessment. 236 p.

Appendix 12.7. Bird Species

Bird species found in the four counties (Union, Johnson, Alexander, and Pulaski) encompassing the Cache River Wetlands area, which includes the proposed Cache River Land and Water Reserve.

<u>Scientific Name</u>	<u>Common Name</u>
<i>Actitis macularia</i>	least sandpiper
<i>Agelaius phoeniceus</i>	red-winged blackbird
<i>Aix sponsa</i>	wood duck
<i>Ammodramus savenarum</i>	grasshopper sparrow
<i>Anas acuta</i>	common pintail
<i>Anas americana</i>	American widgeon
<i>Anas clypeata</i>	northern shoveler
<i>Anas crecca</i>	green-winged teal
<i>Anas discors</i>	blue-winged teal
<i>Anas platyrhynchos</i>	mallard
<i>Anas rubripes</i>	American black duck
<i>Anas strepera</i>	gadwall
<i>Archilochus colubris</i>	ruby-throated hummingbird
<i>Ardea herodias</i>	great blue heron
<i>Aythya affinis</i>	lesser scaup
<i>Bombycilla cedrorum</i>	cedar waxwing
<i>Branta canadensis</i>	Canada goose
<i>Bubo virginianus</i>	great horned owl
<i>Bubulcus ibis</i>	cattle egret
<i>Bucephala albeola</i>	bufflehead
<i>Buteo lagopus</i>	rough-legged hawk
<i>Buteo lineatus</i>	red-shouldered hawk
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Buteo platypterus</i>	broad-winged hawk
<i>Butorides striatus</i>	green-backed heron
<i>Calidris melanotos</i>	pectoral sandpiper
<i>Calidris minutilla</i>	least sandpiper
<i>Calidris pusilla</i>	semipalmated sandpiper
<i>Capella gallinago</i>	common snipe
<i>Caprimulgus carolinensis</i>	Chuck-will's-widow
<i>Caprimulgus vociferus</i>	whip-poor-will
<i>Cardinalis cardinalis</i>	northern cardinal
<i>Carduelis pinus</i>	pine siskin
<i>Carduelis tristis</i>	American goldfinch
<i>Carpodacus purpureus</i>	purple finch
<i>Casmerodius albus</i>	great egret

Cathartes aura
Catharus fuscescens
Catharus guttatus
Catharus minimus
Catharus ustulatus
Ceryle alcyon
Chaetura pelagica
Charadrius vociferus
Chen caerulescens
Chordeiles minor
Circus cyaneus
Coccothraustes vespertinus
Coccyzus americanus
Coccyzus erythrophthalmus
Colaptes auratus
Colinus virginianus
Columbia livia
Contopus virens
Coragyps atratus
Corvus brachyrhynchos
Corvus ossifragus
Cyanocitta cristata
Dendroica caerulea
Dendroica caerulescens
Dendroica castanea
Dendroica coronata
Dendroica discolor
Dendroica dominica
Dendroica fusca
Dendroica magnolia
Dendroica palmarum
Dendroica pensylvanica
Dendroica petechia
Dendroica pinus
Dendroica striata
Dendroica virens
Dryocopus pileatus
Dumetella carolinensis
Egretta caerulea
Empidonax alnorum
Empidonax minimus
Empidonax traillii
Empidonax virescens
Eremophila alpestris

turkey vulture
veery
hermit thrush
gray-cheeked thrush
Swainson's thrush
belted kingfisher
chimney swift
killdeer
snow goose
common nighthawk
northern harrier
evening grosbeak
yellow-billed cuckoo
black-billed cuckoo
northern flicker
northern bobwhite
rock dove
eastern wood-pewee
black vulture
American crow
fish crow
blue jay
cerulean warbler
black-throated blue warbler
bay-breasted warbler
yellow-rumped warbler
prairie warbler
yellow-throated warbler
blackburnian warbler
magnolia warbler
palm warbler
chestnut-sided warbler
yellow warbler
pine warbler
blackpoll warbler
black-throated green warbler
pileated woodpecker
grey catbird
little blue heron
alder flycatcher
least flycatcher
willow flycatcher
acadian flycatcher
horned lark

Euphagus carolinus
Falco sparverius
Fulica americana
Geothlypis trichas
Guiraca caerulea
Haliaeetus leucocephalus
Helmitheros vermivorus
Hirundo rustica
Hyocichla mustelina
Icteria virens
Icterus galbula
Icterus spurius
Ictinia mississippiensis
Junco hyemalis
Lanius ludovicianus
Larus delawarensis
Limnithlypis swainsonii
Lophodytes cucullatus
Melanerpes carolinus
Melanerpes erythrocephalus
Meleagris gallopavo
Melospiza georgiana
Melospiza lincolnii
Melospiza melodia
Mimus polyglottus
Mniotilta varia
Molothrus ater
Myiarchus crinitus
Nyctanassa violacea
Olor columbianus
Oporornis formosus
Oxyura jamaicensis
Pandion haliaetus
Parula americana
Parus bicolor
Parus carolinensis
Passer domesticus
Passerella iliaca
Passerina cyanea
Pheucticus ludovicianus
Philohela minor
Picoides pubescens
Picoides villosus
Pipilo erythrophthalmus

rusty blackbird
 American kestrel
 American coot
 common yellowthroat
 blue grosbeak
 bald eagle
 worm-eating warbler
 barn swallow
 wood thrush
 yellow-breasted chat
 northern oriole
 orchard oriole
 Mississippi kite
 dark-eyed junco
 loggerhead shrike
 ring-billed gull
 Swainson's warbler
 hooded merganser
 red-bellied woodpecker
 red-headed woodpecker
 wild turkey
 swamp sparrow
 Lincoln's sparrow
 song sparrow
 northern mockingbird
 black-and-white warbler
 brown-headed cowbird
 great crested flycatcher
 yellow-crowned night heron
 tundra swan
 Kentucky warbler
 ruddy duck
 osprey
 northern parula
 tufted titmouse
 Carolina chickadee
 house sparrow
 fox sparrow
 indigo bunting
 rose-breasted grosbeak
 common snipe
 downy woodpecker
 hairy woodpecker
 rufous-sided towhee

Podilymbus podiceps
Poliophtila caerulea
Prianga olivacea
Prianga rubra
Progne subis
Prothonotaria citres
Quiscalus quiscula
Regulus calendula
Regulus satrapa
Sayornis phoebe
Seiurus aurocapillus
Seiurus motacilla
Seiurus noveboracensis
Setophaga ruticilla
Sialia sialis
Sitta carolinensis
Sphyrapicus varius
Spiza americana
Spizella arborea
Spizella passerina
Spizella pusilla
Stelgidopteryx ruficollis
Sterna antillarum
Strix varia
Sturnella magna
Sturnus vulgaris
Tachycineta bicolor
Thryothorus ludovicianus
Toxostoma rufum
Tringa flavipes
Tringa melanoleuca
Tringa solitaria
Troglodytes aedon
Troglodytes troglodytes
Turdus migratorius
Tyrannus tyrannus
Tyto alba
Vermivora celata
Vermivora chrysoptern
Vermivora peregrina
Vermivora pinus
Vermivora ruficapilla
Vireo flavifrons
Vireo gilvus

pied-billed grebe
 blue-gray gnatcatcher
 scarlet tanager
 summer tanager
 purple martin
 prothonotary warbler
 common grackle
 ruby-crowned kinglet
 golden-crowned kinglet
 eastern phoebe
 ovenbird
 Louisiana waterthrush
 northern waterthrush
 American redstart
 eastern bluebird
 white-breasted nuthatch
 yellow-bellied sapsucker
 dickcissel
 American tree sparrow
 chipping sparrow
 field sparrow
 northern rough-winged swallow
 least tern
 barred owl
 eastern meadowlark
 European starling
 tree swallow
 Carolina wren
 brown thrasher
 lesser yellowlegs
 greater yellowlegs
 solitary sandpiper
 house wren
 winter wren
 American robin
 eastern kingbird
 common barn owl
 orange-crowned warbler
 golden-winged warbler
 Tennessee warbler
 blue-winged warbler
 Nashville warbler
 yellow-throated vireo
 warbling vireo

<i>Vireo griseus</i>	white-eyed vireo
<i>Vireo olivaceus</i>	red-eyed vireo
<i>Vireo philadelphicus</i>	Philadelphia vireo
<i>Vireo solitarius</i>	solitary vireo
<i>Wilsonia canadensis</i>	Canada warbler
<i>Wilsonia citrina</i>	hooded warbler
<i>Wilsonia pusilla</i>	Wilson's warbler
<i>Zenaida macroura</i>	mourning dove
<i>Zonotrichia albicollis</i>	white-throated sparrow
<i>Zonotrichia leucophrys</i>	white-crowned sparrow

Source: U. S. Fish and Wildlife Service. 1990. Cypress Creek National Wildlife Refuge: environmental assessment. 236 p.

Appendix 12.8. Mammal Species

Mammal species found in the four counties (Union, Johnson, Alexander, and Pulaski) encompassing the Cache River Wetlands area, which includes the proposed Cache River Land and Water Reserve.

<u>Scientific Name</u>	<u>Common Name</u>
<i>Blarina brevicauda</i>	short-tailed shrew
<i>Canis latrans</i>	coyote
<i>Castor canadensis</i>	beaver
<i>Cryptotis parva</i>	least shrew
<i>Didelphis virginiana</i>	Virginia opossum
<i>Eptesicus fuscus</i>	big brown bat
<i>Glaucomys volans</i>	southern flying squirrel
<i>Lasiurus borealis</i>	red bat
<i>Lasiurus cinereus</i>	hoary bat
<i>Lutra canadensis</i>	river otter
<i>Lynx rufus</i>	bobcat
<i>Marmota monax</i>	woodchuck
<i>Mephitis mephitis</i>	striped skunk
<i>Microtus pennsylvanicus</i>	meadow vole
<i>Mus musculus</i>	house mouse
<i>Mustela frenata</i>	long-tailed weasel
<i>Mustela vison</i>	mink
<i>Myotis austroriparius</i>	southeastern bat
<i>Myotis grisescens</i>	gray bat
<i>Myotis keenii</i>	Keen's bat
<i>Myotis licifugus</i>	little brown bat
<i>Myotis sodalis</i>	Indiana bat
<i>Neotoma floridana</i>	eastern woodrat
<i>Nycticeius humeralis</i>	evening bat
<i>Ochrotomys nuttalli</i>	golden mouse
<i>Odocoileus virginianus</i>	white-tailed deer
<i>Ondatra zibethicus</i>	muskrat
<i>Oryzomys palustris</i>	rice rat
<i>Peromyscus gossypinus</i>	cotton mouse
<i>Peromyscus leucopus</i>	white footed mouse
<i>Peromyscus maniculatus</i>	deer mouse
<i>Pipistrellus subflavus</i>	eastern pipistrel
<i>Pitymys pinetorum</i>	woodland vole
<i>Plecotus rafinesquii</i>	southeastern big-eared bat
<i>Procyon lotor</i>	raccoon
<i>Rattus norvegicus</i>	Norway rat

<i>Scalopus aquaticus</i>	eastern mole
<i>Sciurus carolinensis</i>	eastern gray squirrel
<i>Sciurus niger</i>	eastern fox squirrel
<i>Sorex longirostris</i>	southeastern shrew
<i>Sylvilagus aquaticus</i>	swamp rabbit
<i>Sylvilagus floridanus</i>	eastern cottontail
<i>Synaptomys cooperi</i>	southern bog lemming
<i>Tamias striatus</i>	eastern chipmunk
<i>Urocyon cinereoargenteus</i>	grey fox
<i>Vulpes vulpes</i>	red fox
<i>Zapus hudsonius</i>	meadow jumping mouse

Source: U. S. Fish and Wildlife Service. 1990. Cypress Creek National Wildlife Refuge: environmental assessment. 236 p.

Appendix 12.9. Reptile and Amphibian Species

Reptile and amphibian species found in the four counties (Union, Johnson, Alexander, and Pulaski) encompassing the Cache River Wetlands area, which includes the proposed Cache River Land and Water Reserve.

<u>Scientific Name</u>	<u>Common Name</u>
<i>Acris crepitans blanchardi</i>	Blanchard's cricket frog
<i>Agkistrodon contortrix mokasen</i>	northern copperhead
<i>Agkistrodon piscivorus leucostoma</i>	western cottonmouth
<i>Ambystoma maculatum</i>	spotted salamander
<i>Ambystoma opacum</i>	marbled salamander
<i>Ambystoma talpoideum</i>	mole salamander
<i>Ambystoma texanum</i>	small-mouthed salamander
<i>Ambystoma tigrinum tigrinum</i>	tiger salamander
<i>Bufo americanus charlesmithi</i>	drawf American toad
<i>Bufo woodhousii fowleri</i>	Fowler's toad
<i>Carphophis amoenus</i>	worm snake
<i>Chelydra serpentina</i>	common snapping turtle
<i>Chrysemys picta marginata</i>	midland painted turtle
<i>Cnemidophorus sexlineatus sexlineatus</i>	six-lined racerunner
<i>Coluber constrictor flaviventris</i>	blue racer
<i>Crotalus horridus</i>	timber rattlesnake
<i>Desmognathus fuscus</i>	dusky salamander
<i>Diadophis punctatus</i> subsp.	ringneck snake
<i>Elaphe obsoleta spiloides</i>	gray rat snake
<i>Eumeces fasciatus</i>	five-lined skink
<i>Eumeces laticeps</i>	broad-headed skink
<i>Eurycea longicauda longicauda</i>	long-tailed salamander
<i>Eurycea lucifuga</i>	cave salamander
<i>Farancia abacura reinwardtii</i>	western mud snake
<i>Heterodon platirhinus</i>	eastern hognose snake
<i>Hyla avivoca</i>	bird-voiced treefrog
<i>Hyla cinerea</i>	green treefrog
<i>Hyla versicolor</i>	gray treefrog
<i>Kinosternon subrubrum subrubrum</i>	eastern mud turtle
<i>Lampropeltis getulus</i> subsp.	kingsnake
<i>Nerodia erythrogaster nelglecta</i>	copperbelly water snake
<i>Nerodia rhombifera rhombifera</i>	diamond-backed water snake
<i>Nerodia sipedon pleuralis</i>	midland-water snake
<i>Notophthalmus viridescens louisianensis</i>	red-spotted newt
<i>Opheodrys aestivus</i>	rough green snake

<i>Plethodon glutinosus</i>	slimy salamander
<i>Pseudacris crucifer</i>	spring peeper
<i>Pseudacris feriarum feriarum</i>	upland chorus frog
<i>Pseudacris streckeri</i>	Strecker's chorus frog
<i>Rana areolata circulosa</i>	gopher frog
<i>Rana clamitans melanota</i>	green frog
<i>Rana sphenocephala</i>	southern leopard frog
<i>Scaphiopus holbrookii</i>	eastern spadefoot
<i>Sceloporus undulatus hyacinthinus</i>	northern fence lizard
<i>Scincella lateralis</i>	ground skink
<i>Siren intermedia nettingi</i>	western lesser siren
<i>Sternotherus odoratus</i>	stinkpot
<i>Terrapene carolina carolina</i>	eastern box turtle
<i>Thamnophis sauritus</i> subsp. <i>septentrionalis</i>	eastern ribbon snake
<i>Thamnophis sirtalis sirtalis</i>	eastern garter snake
<i>Trachemys scripta elegans</i>	red-eared turtle
<i>Trionyx spiniferus spiniferus</i>	eastern spiny softshell
<i>Virginia valeriae elegans</i>	western earth snake

Source: U. S. Fish and Wildlife Service. 1990. Cypress Creek National Wildlife Refuge: environmental assessment. 236 p.

Appendix 12.10. Natural Area Categories and Significant/Exceptional Features

Natural area categories and significant/exceptional features found in the Little Black Slough-Heron Pond Area (INAI # 1059) and the Lower Cache River Swamp Area (INAI #610), which includes land within the proposed Cache River Land and Water Reserve.

LITTLE BLACK SLOUGH-HERON POND AREA

Natural Area Categories and Significant Features

<u>Category</u>	<u>Description</u>
I	Grades A & B swamp, pond
I	Grades A & B wet floodplain forest, wet-mesic floodplain forest, mesic floodplain forest, mesic upland forest, dry-mesic upland forest
I	Grade A limestone glade
II	<i>Dryopteris celsa</i> (wet-mesic bottomland forest)
II	<i>Clematis viorna</i> (fallen tree in floodplain forest)
II	<i>Carex oxylepis</i> (wet thicket in abandoned field)
II	<i>Aristolochia serpentaria</i> var. <i>hastata</i> (mesic and dry-mesic upland forest, wet bottomland forest)
II	<i>Fimbristylis baldwiniana</i> (moist open ground in floodplain forest)
II	<i>Habenaria flava</i> var. <i>flava</i> (wet and wet-mesic bottomland forest)
II	<i>Hottonia inflata</i> (cypress swamp)
II	<i>Lysimachia radicans</i> (wet and wet-mesic bottomland forest)
II	<i>Panicum jooi</i> (wet-mesic bottomland forest)
II	<i>Planera aquatica</i> (wet-mesic bottomland forest)
V	Illinois Nature Preserve
V	National Natural Landmark

Exceptional Features

<u>Category</u>	<u>Description</u>
I	Grade A sandstone cliff community
II	<i>Quercus phellos</i> (wet bottomland forest)
II	<i>Styrax americana</i> (swamp)
II	<i>Habenaria peramoena</i> (wet-mesic bottomland forest)
II	<i>Euonymus americanus</i> (mesic upland and bottomland forest)
II	<i>Carya aquatica</i> (wet-mesic floodplain forest)
II	<i>Carex socialis</i> (mesic bottomland forest)
II	Swamp
II	River otter (frequents bottomland forest)
II	Bobcat (may breed on Boss Island)
II	Eastern big-eared bat (nursery colony in old building)
II	Bird-voiced treefrog (swamp)
II	Mole salamander (floodplain forest)

II	Mud snake (bottomland forest and swamp)
II	Swainson's warbler (bottomland forest)
II	Brown creeper (bottomland forest)
II	Yellow-crowned night heron (bottomland forest)
II	Hooded merganser (swamp)
II	Red-shouldered hawk (bottomland forest)
II	Timber rattlesnake (upland and bottomland forest)
IV	Sandstone cliffs and overhangs
VII	Swamp
VII	Perennial stream
VII	Intermittent stream
VII	Spring

LOWER CACHE RIVER SWAMPS AREA

Natural Area Categories and Significant Features

<u>Category</u>	<u>Description</u>
I	Grades B & C swamp
II	<i>Aristolochia serpentaria</i> var. <i>hastata</i> (wet bottomland forest)
II	<i>Planera aquatica</i> (swamp and wet bottomland forest)
VI	Stand with huge bald cypresses and tupelos

Exceptional Features

<u>Category</u>	<u>Description</u>
II	<i>Carya aquatica</i> (swamp and wet bottomland forest)
II	<i>Styrax americana</i> (wet bottomland forest)
Vic	Archaeological site (flint, arrowheads, etc.)
VII	Swamp
VII	Perennial stream
VII	Intermittent stream

**REGISTRATION AGREEMENT
CACHE RIVER LAND AND WATER RESERVE**

KNOW ALL PEOPLE BY THESE PRESENTS, that this Registration Agreement in the form of a Grant of Conservation Right and Easement pursuant to the Real Property Conservation Rights Act, 765 ILCS 120, as amended, is made that _____ day of _____, 19__.

WITNESSETH:

WHEREAS, the Illinois Department of Natural Resources, an agency of the state, whose address is 524 South Second Street, Springfield, Illinois (hereinafter with its heirs and assigns, called the "Grantor[s]"), is the owner in fee simple of certain real property (hereinafter called "Registered Reserve") which supports natural heritage resources or archaeological resources of Statewide significance and is described as follows:

DESCRIPTION LITTLE BLACK SLOUGH UNIT (UPPER CACHE)

The North Half of the Northeast Quarter of Section 15, Township 13 South, Range 2 East of the Third Principal Meridian EXCEPT 8 acres off of the East end of said tract heretofore sold to the Herrin & Southern Railroad. ALSO EXCEPT coal, oil, gas and other minerals with the right to mine and remove the same, and SUBJECT to all other rights and easements in favor of the owner of the mineral estate or of any party claiming by, through or under said estate.

ALSO, the Northwest Quarter of the Southeast Quarter; the Southwest Quarter of the Northeast Quarter, and the Southeast Quarter of the Northwest Quarter of Section 15, Township 13 South, Range 2 East of the Third Principal Meridian.

All situated in the County of Johnson, State of Illinois.

The Northeast Quarter of the Southwest Quarter, the South Half of the Southwest Quarter (except that part taken for the C. B. & Q. Railroad right of way), and the Southeast Quarter of Section 14; The Southeast Quarter of the Southeast Quarter of Section 15; The North Half of the Northwest Quarter, the North Half of the Southeast

Quarter of the Northwest Quarter, and the East Half of Section 23, (except that part taken for the C. B. & Q. Railroad right of way); The Northwest Quarter (except that part of the Southeast Quarter of the Northwest Quarter which lies South of the centerline of the public road on top of Wildcat Bluff), and the West Half of the Southwest Quarter (except that part taken for the C. B. & Q. Railroad right of way) of Section 24; the Northwest Quarter of the Northwest Quarter of Section 25; the Northeast Quarter and the West Half of the Southeast Quarter of Section 26; All in Township 13 South, Range 2 East of the Third Principal Meridian, Situated in the County of Johnson in the State of Illinois.

The Southwest Quarter of the Southeast Quarter and that part of the Southeast Quarter of the Southeast Quarter, lying North of the bluff, containing 26 1/4 acres, more or less, of Section 21; The South Half of the South Half and the Northwest Quarter of the Southwest Quarter of Section 22; The Southwest Quarter, the Southwest Quarter of the Northwest Quarter, and the South Half of the Southeast Quarter of the Northwest Quarter of Section 23; The Northwest Quarter of Section 26; The Northeast Quarter, the East Half of the Northwest Quarter, the Northwest Quarter of the Northwest Quarter, and the East Half of the Southeast Quarter of Section 27; The Northwest Quarter and the Northwest Quarter of the Northeast Quarter of Section 28; The East Half of the Northeast Quarter (except 5 acres in the Southwest corner and 6 acres in the Northwest corner) of Section 29, All in Township 13 South, Range 2 East of the Third Principal Meridian, situated in the County of Johnson in the State of Illinois.

A part of the Northwest Quarter of the Northeast Quarter of Section 22, and a part of the Southwest Quarter of the Southeast Quarter of Section 15, all in Township 13 South, Range 2 East of the Third Principal Meridian, described as follows:

Beginning at the Northwest corner of the said Northwest Quarter of the Northeast Quarter of Section 22; thence South along the West Line of the said Northwest Quarter of the Northeast Quarter a distance of 50.02 feet to a point; thence Southeasterly along a line with a deflection angle of 89 degrees 12 Minutes 45 seconds, a distance of 200.99 feet to a point; thence Easterly along a line with a deflection angle of 7 degrees 17 minutes 46 seconds to the left, a distance of 640.70 feet to a point; thence Easterly along a line with a deflection angle of 5 degrees 04 minutes 56 seconds to the left, a distance of 478.82 feet to a point in the East line of the said Northwest Quarter of the Northeast Quarter; thence North along the said East line of the Northwest Quarter of the Northeast Quarter with a deflection angle of 78 degrees 24 minutes 33 seconds, a distance of 15.31 feet to the Northeast corner of the said Northwest Quarter of the Northeast Quarter; thence North along the East line of the Southwest Quarter of the Southeast Quarter of the said Section 15, a distance of 35.73 feet to a point; thence Southwesterly along a line with a deflection angle of 101 degrees 35 minutes 27 seconds, a distance of 486.85 feet to a point; thence Westerly along a line with a deflection angle of 5 degrees 04 minutes 56 seconds to the right, a distance of 635.26 feet to a point; thence Westerly along a line with a deflection angle of 7 degrees 17 minutes 46 seconds to the right, a distance of 196.78 feet to the point of beginning, situated in the County of Johnson, in the State of Illinois.

That part of the Northwest 1/4 of Section 19, Township 13, South Range 3 East of the 3rd P.M. that lies south of the center line of the public road on top of Wildcat Bluff.

That part of the Northwest 1/4 of Section 24, in Township 13 South, Range 2 East of the 3rd P.M., that lies South of the centerline of the public road on top of Wildcat Bluff, containing 65 acres, more or less.

West 1/2 Southwest 1/4 Section 19; West 1/2 Northwest 1/4, West 1/2 Southeast 1/4, Southeast 1/4 Southeast 1/4, and Southwest 1/4 of Section 30; North 1/2 Northwest 1/4 Northeast 1/4, and North 1/2 Northeast 1/4 Northwest 1/4 of Section 31 all in Township 13 South Range 3 East of the 3rd P.M.; and also the Southeast 1/4 and East 1/2 Southwest 1/4 of Section 24 Township 13 South and Range 2 East of the 3rd P.M., containing 636.29 acres more or less, except the right-of-way of the Chicago Burlington and Quincy Railroad as it now exists and subject to easements of record for roads.

The East 1/2 Northwest 1/4, West 1/2 Northeast 1/4, Northeast 1/4 Southeast 1/4, and South 1/2 Southeast 1/4 Northeast 1/4, Section 30 of Township 13 South, Range 3 East of the 3rd P.M.; and West 1/2 Northwest 1/4 Southwest 1/4 Section 29 of Township 13 South, Range 3 East of the 3rd P.M.; and also that part of the Southeast 1/4 Northwest 1/4 Section 24 of Township 13 South Range 2 East of the 3rd P.M., that lies South of the Center Line of the Public Road on top of Wildcat Bluff; Subject to the right-of-way of Shell Pipeline Company across Section 29 and the right of Grantors to the use of existing public roads to Grantors land North and East of the above described land.

The East 1/2 Southwest 1/4, West 1/2 West 1/2 Southeast 1/4, that part of the East 1/2 West 1/2 Southeast 1/4 that lies South of the center line of the public road on top of Wildcat Bluff, and that part of the East 1/2 Southeast 1/4 that lies South of the centerline of the public road on top of Wildcat Bluff, all in Section 19 of township 13, South range 3 East of the 3rd P.M.; and also a strip of land 7.93 chains wide along the North side of the Northeast 1/4 Northeast 1/4 Section 30 of township 13 South range 3 East of the 3rd P.M.

The Southeast Quarter of the southwest Quarter, EXCEPT 2 acres for a cemetery in the Northwest corner thereof, and the southwest Quarter of the Southeast Quarter, EXCEPT the right of way of the railroad, all in section 20, and the Northwest Quarter of the Northeast Quarter lying West of the railroad, and 10 acres off the East side of the Northeast Quarter of the Northwest Quarter in Section 29, all being in Township 13 South, Range 3 East of the 3rd Principal Meridian, EXCEPT an undivided 1/3 interest in the oil, gas and other minerals and EXCEPT life estate of Harry Hitchcock and Mae Hitchcock, husband and wife, in and to 1/3 of oil, gas and other minerals.

ALSO, the Northwest Quarter of the southeast Quarter, and the Northeast Quarter of the Southwest Quarter, EXCEPT a strip of land described as 17 rods from the East and to the West and 5 rods wide from the North to the South in the Northwest corner of last so

described tract of land for cemetery purposes all in Section 20, Township 13 South, Range 3 East of the 3rd Principal Meridian.

ALSO, that part of the following described land lying West of U.S. Highway No. 45; The West half of the Northeast Quarter of the Southwest Quarter, and the southeast Quarter of the Northwest Quarter, EXCEPT a triangular tract in the Southeast corner thereof bounded as, Beginning at the Southeast corner and running thence North on the East line thereof 16 feet; thence Southwesterly to a point 16 feet West of the beginning point; thence East on the South line of said tract to the place of beginning, all in Section 28, Township 13 South, Range 3 East of the 3rd Principal Meridian, EXCEPT one half of the gas, oil and other minerals with right to mine and remove the same, and SUBJECT to all other rights and easements in favor of the owner of the mineral estate or of any party claiming by, through or under said estate, situated in Johnson County, Illinois.

ALSO, the West half of the Southwest Quarter of Section 28, and the East half of the Southeast Quarter of Section 29, and the Northeast Quarter of the Northeast Quarter of Section 32, the Northwest Quarter EXCEPT 10 acres across the East side of the Northeast Quarter of the Northwest Quarter, and the East 3/4 of the North half of the southwest Quarter of Section 29, the Northwest corner of the Southwest Quarter of the Northeast Quarter of Section 29 described as follows: Beginning at the Northwest corner of said tract and running East to the right of way surveyed and owned by the Cleveland, Cincinnati, Chicago and St. Louis Railroad, known as the Big Four; thence in a southwesterly direction to the half Section line; thence due North to the place of beginning. All situated in Township 13 South, Range 3 East of the 3rd Principal Meridian.

ALSO, the East half of the Northeast Quarter of the Southeast Quarter, and the Southeast Quarter of the Southeast Quarter of Section 20, and all that part of the Southwest Quarter of Section 21 that lies West of U.S. Hardroad No. 45, and the West half of the Northwest Quarter of Section 28, and the East half of the Northeast Quarter of Section 29, and the East half of the Northwest Quarter of the Northeast Quarter of Section 29, and all that part of the Northeast Quarter of the Northwest Quarter of Section 28 lying West of the Hardroad, all in Township 13 South, Range 3 East of the 3rd Principal Meridian.

All situated in the County of Johnson, State of Illinois.

A part of the Northwest Quarter of Section 19, Township 13 South, Range 3 East of the Third Principal Meridian, more particularly described as follows:

Beginning at the intersection of the Vienna township and old Cache township road; thence North along the East right-of-way of said Vienna township road 387 feet; thence East 150 feet; thence South to the North right-of-way of the Vienna township road, known as the old Wildcat Bluff road; thence in a Northwesterly direction along said North right-of-way to the point of beginning, SITUATED IN THE COUNTY OF

JOHNSON, STATE OF ILLINOIS.

Section 25, Township 13 South, Range 2 East of the Third Principal Meridian, EXCEPT the Northwest Quarter of the Northwest Quarter and ALSO EXCEPT the right-of way of the Chicago, Burlington and Quincy Railroad Company.

ALSO, all that part of the Northwest Quarter of the Northwest Quarter of Section 32, Township 13 South, Range 3 East of the Third Principal Meridian, lying North and West of the public road that extends from the North line of said Quarter Quarter Section and curves Westerly, terminating at the Burlington and Northern Railroad right-of-way in the Northeast Quarter of Section 31, Township 13 South, Range 3 East of the Third Principal Meridian, EXCEPTING THEREFROM the following: A part of the Northwest Quarter of the Northwest Quarter of Section 32, Township 13 South, Range 3 East of the Third Principal Meridian, described as beginning at the Southwest corner of said Northwest Quarter of the Northwest Quarter; thence North 88 degrees East, 320 feet; thence North 47 degrees 31 minutes East, 176 feet, to Humphrey's line; thence North 48 degrees 45 minutes West along Humphrey's line, 316 feet to the Northwest corner of the Humphrey property; thence South 32 degrees West, 395 feet to the point of beginning.

ALSO EXCEPTING THEREFROM, a part of the Northwest Quarter of the Northwest Quarter of Section 32, Township 13 South, Range 3 East of the Third Principal Meridian, described as beginning at the intersection of the centerlines of the Big Four and the C.B. & Q. Railroads; thence North with the centerline of said Big Four Railroad, 25.00 chains; thence North 49 degrees 30 minutes West, 0.76 chains to the point of beginning and running thence North 49 degrees 30 minutes West, 5.15 chains; thence North 34 degrees 20 minutes East, 9.00 chains; thence South 10 degrees 15 minutes West, 2.34 chains; thence South 75 degrees 45 minutes East, 3.67 chains; thence South 29 degrees 40 minutes West, 8.70 chains with the West right-of-way line of said Big Four Railroad to the place of beginning, EXCEPT a strip 40 feet wide parallel with and adjoining the said railroad right-of-way for road purposes.

ALSO EXCEPTING THEREFROM, a part of the Northwest Quarter of the Northwest Quarter of Section 32, Township 13 South, Range 3 East of the Third Principal Meridian, described as follows: From the intersection of the centerlines of the Big Four and the C.B. & Q. Railroads, run North with the centerline of said Big Four Railroad, 25.00 chains; thence North 49 degrees 30 minutes West, 5.91 chains for a beginning point; thence North 34 degrees 20 minutes East, 36 rods; thence North 49 degrees 30 minutes West, 22.25 rods; thence South 34 degrees 20 minutes West, 36 rods; thence South 49 degrees 30 minutes East, 22.25 rods to the place of beginning.

ALSO EXCEPTING THEREFROM, a part of the Northwest Quarter of the Northwest Quarter of Section 32, Township 13 South, Range 3 East of the Third Principal Meridian, described as follows: Beginning on the North line of the Big Four Railroad right-of-way, 1130 feet Easterly from the junction of the Big Four and the C.B. & Q.

Railroad; thence North 49 degrees West, 346.5 feet; thence North 41 degrees East, 520 feet; thence South 49 degrees East, to the Big Four Railroad right-of-way; thence in a Southwesterly direction 520 feet to the place of beginning.

ALSO EXCEPTING THEREFROM, a part of the Northwest Quarter of the Northwest Quarter of Section 32, Township 13 South, Range 3 East of the Third Principal Meridian, described as follows: Beginning at a point 2.98 chains South 32 degrees 30 minutes West of the Northeast corner of the Northwest Quarter of the Northwest Quarter of said Section 32; thence South 22 degrees West, 2.29 chains; thence North 75 degrees 45 minutes West, 3.14 chains; thence North 10 degrees 15 minutes East, 2.34 chains; thence South 80 degrees 50 minutes East, 2.22 chains; thence South 64 degrees East, 1.44 chains to the place of beginning.

ALSO EXCEPTING THEREFROM, all that part of the Northwest Quarter of the Northwest Quarter of Section 32, Township 13 South, Range 3 East of the Third Principal Meridian which lies Easterly of the five (5) exceptions described hereinabove and westerly of the aforesaid public road that extend's from the North line of said Quarter Quarter Section and curves Westerly, terminating at the Burlington and Northern Railroad right-of-way in the Northeast Quarter of Section 31, Township 13 South, Range 3 East of the Third Principal Meridian.

All situated in the County of Johnson and State of Illinois.

All of Section 36, Township 13 South, Range 2 East of the Third Principal Meridian, EXCEPT the west one-half of the southwest one-fourth of the southeast one-fourth and the east one-half of the southeast one-fourth of the southwest one-fourth.

ALSO, that part of the East One-half of the Northeast Quarter and that part of the Northeast Quarter of the Southeast Quarter of Section 1, Township 14 South, Range 2 East of the Third Principal Meridian, lying North of the county road, EXCEPT that portion used as railroad Right-of-Way.

ALSO, that part of the North One-half of the Northwest Quarter of Section 6, Township 14 South, Range 3 East of the Third Principal Meridian, lying North of the county road, EXCEPT that portion used as railroad Right of-way.

ALSO, all of Section 31, Township 13 South, Range 3 East of the Third Principal Meridian, EXCEPT the North One-half of the Northeast Quarter of the Northwest Quarter; ALSO EXCEPT the North One-half of the Northwest Quarter of the Northeast Quarter of said Section 31; ALSO EXCEPT that part lying South of the county road; ALSO EXCEPT all that part West of the East Section line, East of the Right-of-Way of the Chicago, Burlington & Quincy Railway and South of the Big 4 Railway Right-of-Way in the Southeast Quarter of the Northeast Quarter of said Section 31; ALSO EXCEPT that part of the East Half of the Northeast Quarter of Section

31, Township 13 South, Range 3 East of the Third Principal Meridian described as follows: Beginning at the junction of the Westerly Right-of-Way line of the Cleveland, Cincinnati, Chicago and St. Louis Railroad and the Northerly Right-of-Way line of the Chicago, Burlington and Quincy Railroad and running Northwesterly with said Chicago, Burlington and Quincy Right-of-Way line, 665 feet; thence North 51 degrees East, 510 feet; thence South 52 degrees 15 minutes East, 573 feet, extending into the Southwest Quarter of the Northwest Quarter of Section 32, Township 13 South, Range 3 East of the Third Principal Meridian, to the Northerly Right-of-Way line of said Cleveland, Cincinnati, Chicago and St. Louis Railroad; thence Southwesterly with said Right-Of-Way line, 650 feet to the place of beginning; ALSO EXCEPT that portion used as railroad Right of-Way.

The above described parcels of land contain a total of 1,141.0 acres, more or less, subject to survey and are all situated in the County of Johnson, State of Illinois.

The Southwest Quarter of Section 26, Township 13 South, Range 2 East of the Third Principal Meridian, except oil and mineral rights with the right and privilege to direct the drilling and exploration, containing 167.818 acres, more or less. Situated in Johnson County, Illinois.

The East Half of the Southeast Quarter of Section 26, Township 13 South, Range 2 East of the Third Principal Meridian, containing 83.74 acres, more or less. ALSO,

A perpetual easement for ingress and egress across part of the Northeast Quarter of Section 35, Township 13 South, Range 2 East of the Third Principal Meridian, more particularly described as follows: Commencing at the Southeast corner of the Northeast Quarter of said Section 35; thence westerly on the South line of the said Northeast Quarter, a distance of 147.58 feet to the Southwest corner of Wilhelm Cemetery and the Point of Beginning for this description; thence continuing on the last described course, a distance of 597.00 feet; thence northerly with a deflection angle to the right of 95 degrees 32 minutes 26 seconds, a distance of 30.00 feet; thence easterly parallel to the South line of the said Northeast Quarter with a deflection angle to the right of 84 degrees 27 minutes 34 seconds, a distance of 567.00 feet; thence northerly parallel to the East line of the said Northeast Quarter with a deflection angle to the left of 84 degrees 27 minutes 34 seconds, a distance of 147.58 feet; thence easterly parallel with the South line of the said Northeast Quarter with a deflection angle to the right of 84 degrees 27 minutes 34 seconds, a distance of 147.58 feet; thence northerly parallel to the East line of the said Northeast Quarter with a deflection angle to the left of 84 degrees 27 minutes 34 seconds, a distance of 2,486.40 feet to the North line of the said Northeast Quarter; thence easterly on the said North line with a deflection angle to the right of 83 degrees 52 minutes 50 seconds, a distance of 30.03 feet to the Northeast corner of said Section 35; thence southerly on the East line of the said Northeast Quarter with a deflection angle to the right of 96 degrees 07 minutes 10 seconds, a

distance of 2,516.70 feet to the Northeast corner of Wilhelm Cemetery; thence westerly with a deflection angle to the right of 84 degrees 27 minutes 34 seconds, a distance of 147.58 feet to the Northwest corner of Wilhelm Cemetery; thence southerly with a deflection angle to the left of 84 degrees 27 minutes 34 seconds, a distance of 147.58 feet to the Point of Beginning, containing 2.316 acres, more or less.

All situated in JOHNSON COUNTY, ILLINOIS.

Twenty acres off of the West side of the 25 acres on the East side of the Southeast Quarter of the Northwest Quarter of Section 35, Township 13 South, Range 2 East of the Third Principal Meridian;

ALSO, the East part of the Northeast Quarter of the Northwest Quarter of Section 35, Township 13 South, Range 2 East of the Third Principal Meridian, Beginning at the Northeast corner of said 40; thence South 80 rods; thence West 50 rods; thence North 80 rods; thence East 50 rods to the Point of Beginning;

ALSO, 5 acres off of the East side of the Southeast Quarter of the Northwest Quarter of Section 35, Township 13 South, Range 2 East of the Third Principal Meridian, Beginning at the Northeast corner of said 40; thence South 80 rods; thence West 10 rods; thence North 80 rods; thence East 10 rods to the Point of Beginning;

All situated in the County of Johnson and the State of Illinois.

The East Half of the Northeast Quarter of Section 34, Township 13 South, Range 2 East of the Third Principal Meridian, the Northeast Quarter of the Southeast Quarter of said Section 34, together with a perpetual easement for ingress and egress across a strip of land 30 feet in even width off of the entire West side of the Southeast Quarter of the Southeast Quarter of said Section 34.

All situated in Johnson County, Illinois.

The West One-Half of the Southeast Quarter and the East One-Half of the Southwest Quarter of Section 27, Township 13 South, Range 2 East of the Third Principal Meridian.

ALSO, the Northwest Quarter of the Northeast Quarter of Section 34, Township 13 South, Range 2 East of the Third Principal Meridian.

ALSO, a perpetual, non-exclusive easement for ingress and egress across the South Side of the Northeast Quarter of the Northwest Quarter of Section 34, Township 13 South, Range 2 East of the Third Principal Meridian, for the benefit of the above described lands, said easement being 15 feet in even width on both sides of the following described centerline, to wit: Commencing at the Southeast corner of the Northeast Quarter of the Northwest Quarter of said Section 34; thence

North 00 degrees 42 minutes 15 seconds East (an assumed bearing) on the East line of said Quarter Quarter Section, 177.05 feet to a point on the centerline of an existing field road, said point being the Beginning of the easement centerline; thence South 55 degrees 20 minutes 34 seconds West on the centerline of said field road, 30.21 feet; thence South 23 degrees 40 minutes 45 seconds West on the centerline of said field road, 91.24 feet; thence South 79 degrees 47 minutes 17 seconds West on the centerline of said field road, 152.52 feet; thence South 71 degrees 00 minutes 05 seconds West on the centerline of said field road, 140.44 feet; thence South 87 degrees 04 minutes 28 seconds West on the centerline of said field road, 375.89 feet; thence South 87 degrees 23 minutes 54 seconds West on a line departing from the centerline of said field road (the centerline of said field road bears South 85 degrees 23 minutes 29 seconds West), 631.47 feet to a point in the Public Road, said point being the terminus of the easement centerline.

All situated in the County of Johnson and the State of Illinois.

The Northwest Quarter of the Southeast Quarter of Section 22, Township 13 South, Range 2 East of the Third Principal Meridian; situated in the County of Johnson, in the State of Illinois.

The South one-half of the Southwest Quarter of Section 21; Thirteen (13) acres off of the South side of the Southeast Quarter of the Southeast Quarter of Section 20 and the North Six (6) acres off of the North side of the Northeast Quarter of the Northeast Quarter of Section 29, all in Township 13 South, Range 2 East of the Third Principal Meridian.

The North Half of the Northeast Quarter of Section 30, Township 13 South, Range 2 East of the Third Principal Meridian, EXCEPT 1 and ½ acres off of the Northwest corner thereof, described as follows: Beginning at the Northwest corner of the Northwest Quarter of the Northeast Quarter of Section 30, thence South on the West line of said tract to the bluff; thence meandering in a Northeasterly direction with the said bluff to the North line of said tract; thence West on said North line to the place of beginning.

Situated in the County of Johnson, State of Illinois.

The South Half of the Northeast Quarter of Section 30, Township 13 South, Range 2 East of the Third Principal Meridian, situated in the County of Johnson, State of Illinois.

The East Half of the Northeast Quarter of the southwest Quarter and the West Half of the Northwest Quarter of the Southeast Quarter, subject to a 20-foot strip of land across the North side of above described land for road purposes, in Section 29, Township 13 South, Range 2 East of the 3rd P.M., containing 40 acres, more or less;

ALSO, the South part of the East part of the East Half of the Southeast Quarter of Section 29, bounded as follows: Beginning at a point 46 rods East of the Southeast Quarter land line; thence following the bluff running in a Southeasterly direction about 34 rods; thence South on the land line to the South side of bluff; thence Southwest along bluff line about 34 rods to a point 46 rods West of land line; thence North about 40 rods to the place of beginning, all lying on top of the bluff;

ALSO, the East Half of the Northwest Quarter of the Southeast Quarter and the West part of the East Half of the Southeast Quarter bounded as follows: Beginning at the Northwest corner of the Northeast Quarter of the Southeast Quarter and run East on land line 46 rods; thence South 140 rods; thence West 46 rods to the west line of said tract; thence North on land line 140 rods to the place of beginning, containing in all 60 acres, more or less, in Section 29, Township 13 South, Range 2 East of the 3rd P.M. Subject to a 20-foot strip of land across the North side of above described land herein for road purposes and also subject to an 8-foot strip along the North side to spring branch about 4 rods for a cattle drive;

ALSO, a part of the East Half of the Southeast Quarter of Section 29, described as follows: Beginning at a point 46 rods East of the Northwest corner of said tract, thence running South 100 rods, more or less, to the bluff; thence following the bluff Easterly to the East line of said tract; then North 100 rods, more or less, to the Northeast corner of said tract; thence West to the place of beginning, containing 22.4 acres, more or less, all in Township 13 South of the base line in Range 2 East of the 3rd P.M.

ALSO, all that part of the Northeast Quarter of the Southwest Quarter of Section 28, lying under the bluff, containing 36 acres, more or less;

ALSO, 25 acres off the West side of the Northwest Quarter of the Southwest Quarter of Section 28;

ALSO, 12 acres, more or less, lying North of the bluff in the Northwest corner of the Southwest Quarter of the Southwest Quarter of Section 28;

ALSO, the South side of the Southwest Quarter of the Southwest Quarter in section 28, described as follows: Beginning on the West land line of the Southwest Quarter of the Southwest Quarter at a point on top of the bluff running Southeast along the bluff about 50 rods; thence Southwest along the bluff to the West line of this Southwest Quarter of the Southwest Quarter; thence North along the line to the place of beginning, containing 11.1 acres, more or less. All said land being in Township 13 South, Range 2 East of the 3rd P.M..

ALSO, 15 acres of even width off and across entire East side of the Southwest Quarter of the Southwest Quarter, and 15 acres of even width off and across the entire East side of the Northwest Quarter of the Southwest Quarter, all in Section 28, Township 13 South, Range 2 East containing 30 acres in all.

All of the above described tracts contain a total of 245.0 acres, more or less.

All situated in the County of Johnson, in the State of Illinois.

The Northwest Quarter of the Northeast Quarter of Section 29, Township 13 South, Range 2 East of the Third Principal Meridian, EXCEPT that part thereof described as follows: Beginning at the Northwest corner of said Quarter Quarter Section; thence Southerly on the West line of said Quarter Quarter Section, a distance of 562.17 feet to a point; thence Easterly parallel with the North line of said Quarter Quarter Section with a deflection angle to the left of 90 degrees 41 minutes 42 seconds, 630.00 feet to a point; thence Northerly with a deflection angle to the left of 90 degrees 00 minutes 00 seconds, a distance of 262.13 feet to a point; thence Easterly parallel with the North line of said Quarter Quarter Section with a deflection angle to the right of 90 degrees 00 minutes 00 seconds, 688.31 ' feet to a point; thence Northerly with a deflection angle to the left of 90 degrees 04 minutes 11 seconds, 300.00 feet to a point on the North line of said Quarter Quarter Section; thence Westerly on the North line of said Quarter Quarter Section with a deflection angle to the left of 89 degrees 55 minutes 49 seconds, a distance of 1311.13 feet to the Point of Beginning, containing a net area of 28.567 acres, more or less.

All situated in the County of Johnson and the State of Illinois.

The Southwest Quarter of the Northeast Quarter of Section 29, Township 13 south, Range 2 East of the Third Principal Meridian.

ALSO, a strip of land 50 feet in even width off of the South side of the Southeast Quarter of the Northwest Quarter and the Southwest Quarter of the Northwest Quarter of Section 29, Township 13 South, Range 2 East of the Third Principal Meridian lying Easterly of the East line of a Public Highway, being more particularly described as follows:

Beginning at the Southeast corner of the Southeast quarter of the Northwest Quarter of said Section 29; thence West, along the South line of said Southeast Quarter of the Northwest Quarter to the Southeast corner of the Southwest Quarter of the Northwest Quarter of said Section 29; thence continuing West along the South line of said Southwest Quarter of the Northwest Quarter, 150 feet, more or less, to the East line of a Public Highway; thence Northerly along the East line of said Public Highway, to a point 50 feet Perpendicularly North of the South line of said Southwest Quarter of the Northwest Quarter of Section 29; thence East, along a line 50 feet North of and parallel to the South line of the Southwest Quarter of the Northwest Quarter and the Southeast Quarter of the Northwest Quarter of said Section 29, to the East line of said Southeast Quarter of the Northwest Quarter of Section 29; thence South, along said East line, 50 feet, more or less, to the Point of Beginning.

All situated in the County of Johnson, State of Illinois.

A parcel of land off the Southwest corner of the Southeast Quarter of the Northeast Quarter of Section 29, Township 13 South, Range 2 East of the Third Principal Meridian, described as follows, to-wit: Beginning at the Southwest corner of said tract; thence running East 53 rods; thence North 5 rods; thence West along the pond 62 rods; thence South 24 rods to the place of beginning.

All situated in the County of Johnson. State of Illinois.

DESCRIPTION LOWER CACHE RIVER SWAMP UNIT (LOWER CACHE)

All that part of the Northwest Quarter of the Southwest Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, lying North of the Cache River, containing in all 14.474 acres, more or less, with 1.049 acres, more or less, being in the bed of the Cache River, and with 2.923 acres, more or less, being in the Right-of-Way of S.B.I. Route 147 (Illinois Route 37).

ALSO, all that part of the North Half of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, lying North of the Cache River, Southwesterly of the Southwesterly Right-of-Way line of the Chicago and Eastern Illinois Railroad and Southerly of the centerline of the existing public road running from Rago to Perks, said centerline extending from its intersection with the Southwesterly Right-of-Way line of the Chicago and Eastern Illinois Railroad Westerly to its intersection with the West line of the North Half of said Section 8, EXCEPT that part of the North Half of said Section 8, lying South of the Cache River Drainage Ditch known as Cut-Off No. 2, Lower Cache River Improvement and North of the Cache River, ALSO EXCEPT part of the Southwest Quarter of the Northwest Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, described as follows: Beginning at a point 65.00 feet (Radial Distance) East of the centerline of S.B.I. Route 147 (Illinois Route 37) on the South Right-of-Way line of the public road running from Rago to Perks; thence Easterly on the South Right-of-Way line of said public road, a distance of 600.00 feet; thence South parallel to the West line of the Northwest Quarter of said Section 8, a distance of 350.00 feet; thence West with a deflection angle to the right of 90 degrees 00 minutes 00 seconds, to a point 65.00 feet (radial distance) East of the centerline of S.B.I. Route 147 (Illinois Route 37); thence Northerly along a curve 65.00 feet (radial distance) East of the centerline of S.B.I. Route 147 (Illinois Route 37), to the Point of Beginning of this exception, containing in all 29.476 acres, more or less, with 0.626 acres, more or less, being in the bed of the Cache River, and with 0.843 acres, more or less, being in the bed of said Cache River Drainage Ditch, and with 1.643 acres, more or less, being in the Right-of-Way of said public road running from Rago to Perks, and with 1.053 acres, more or less, being in the Right-of-Way of S.B.I. Route 147 (Illinois Route 37).

ALSO, all that part of the North Half of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, lying South of the Cache River Drainage Ditch known as Cut-Off No. 2, Lower Cache River Improvement and North of the Cache River,

containing in all 4.824 acres, more or less, with 1.274 acres, more or less, being in the bed of the Cache River and the Cache River Drainage Ditch known as Cut-Off No. 2, Lower Cache River Improvement.

ALSO, part of the Northeast Quarter of the Southwest Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, described as follows: Beginning at the Northwest corner of the Northeast Quarter of the Southwest Quarter of said Section 8; thence from the Point of Beginning, North 76 degrees 31 minutes 56 seconds East along the North line of the Northeast Quarter of the Southwest Quarter of said Section 8, 187.32 feet to its intersection with the Cache River; thence Southwesterly along the Cache River to its intersection with the West line of the Northeast Quarter of the Southwest Quarter of said Section 8; thence North 8 degrees 44 minutes 58 seconds West along the West line of the Northeast Quarter of the Southwest Quarter of said Section 8, 52.64 Feet to the Point of Beginning, containing in all 0.113 acres, more or less, with 0.081 acres, more or less, being in the bed of the Cache River.

ALSO, part of the Northeast Quarter of the Southwest Quarter and part of the Northwest Quarter of the Southeast Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, being described as follows: Beginning at the Northwest corner of the Northwest Quarter of the Southeast Quarter of said Section 8; thence from the Point of Beginning, North 76 degrees 31 minutes 56 seconds East along the North line of the Northwest Quarter of the Southeast Quarter of said Section 8, 130.60 feet to its intersection with the Cache River; thence Southwesterly and Northwesterly along the Cache River to its intersection with the North line of the Northeast Quarter of the Southwest Quarter of said Section 8; thence North 76 degrees 31 minutes 56 seconds East along the North line of the Northeast Quarter of the Southwest Quarter of said Section 8, 680.93 feet to the Point of Beginning, containing in all 1.707 acres, more or less, with 0.505 acres, more or less, being in the bed of the Cache River.

Situated in the County of Johnson, in the State of Illinois.

All that part of the Northeast Quarter of the Northwest Quarter of Section 18, Township 14 South, Range 2 East of the Third Principal Meridian, lying South of the Cache River, containing in all 2.222 acres, more or less, with 0.417 acres, more or less, being in the bed of the Cache River.

ALSO, all that part of the Northwest Quarter of the Northeast Quarter of Section. 18, Township 14 South, Range 2 East of the Third Principal Meridian, lying South of the Cache River, containing in all 30.143 acres, more or less, with 0.786 acres, more or less, being in the bed of the Cache River.

ALSO, all that part of the South Half of the Southeast Quarter of Section 7, Township 14 South, Range 2 East of the Third Principal Meridian, lying South of the Cache River, containing in all 31.571 acres, more or less, with 1.199 acres, more or less, being in the bed of the Cache River and with 0.025 acres, more or less, being in the Right-of-Way of

S.B.I. Route 147 (Illinois Route 37).

ALSO, all that part of the Northeast Quarter of the Southeast Quarter of Section 7, Township 14 South, Range 2 East of the Third Principal Meridian, lying south of the Cache River containing in all 1.056 acres, more or less, with 0.252 acres, more or less, being in the bed of the Cache River and with 0.048 acres, more or less, being in the Right-of-Way of S.B.I. Route 147 (Illinois Route 37).

ALSO, all that part of the Southeast Quarter of the Northwest Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, lying Southerly of the Cache River, containing in all 0.576 acres, more or less, with 0.313 acres, more or less, being in the bed of the Cache River.

ALSO, all that part of the South Half of the Northeast Quarter of Section 8, Township 14 South Range 2 East of the Third Principal Meridian, lying South of the Cache River, EXCEPTING THEREFROM the Right-of-Way of the Chicago and Eastern Illinois Railroad, containing in all 13.780 acres, more or less, with 1.334 acres, more or less, being in the bed of the Cache River.

ALSO, all that part of the Southwest Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, lying South of the Cache River, EXCEPTING THEREFROM the Right-of-Way of the Chicago and Eastern Illinois Railroad, containing in all 166.916 acres, more or less, with 0.086 acres, more or less, being in the bed of the Cache River.

ALSO, all that part of the Southwest Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, lying South of the Cache River containing in all 160.327 acres, more or less, with 1.564 acres, more or less, being in the bed of the Cache River and with 5.608 acres, more or less, being in the Right-of-Way of S.B.I. Route 147 (Illinois Route 37).

ALSO, all that part of the Southwest Quarter of the Northwest Quarter of Section 9, Township 14 South, Range 2 East of the Third Principal Meridian, lying South of the Cache River, containing in all 1.786 acres, more or less, with 0.307 acres, more or less, being in the bed of the Cache River.

ALSO, all that part of the Northeast Quarter of the Southeast Quarter of Section 9, Township 14 South, Range 2 East of the Third Principal Meridian, lying South of the Cache River, containing in all 11.518 acres, more or less, with 0.854 acres, more or less, being in the bed of the Cache River.

ALSO, all that part of the Southwest Quarter, the South Half of the Southeast Quarter and the Northwest Quarter of the Southeast Quarter of Section 9, Township 14 South, Range 2 East of the Third Principal Meridian, lying South of the Cache River and North of the North Right-of-Way line of the Chicago and Eastern Illinois Railroad, containing in all 172.609 acres, more or less, with 2.656 acres, more or less, being in the bed of

the Cache River.

ALSO, all that part of the Northwest Quarter of the Southeast Quarter and the Northeast Quarter of the Southwest Quarter of Section 15, Township 14 South, Range 2 East of the Third Principal Meridian, lying Northwesternly of the Northwesternly Right-of-Way line of the Penn Central Railroad and Northerly of the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad, more particularly described as follows:

Commencing at the Center of Section 15, Township 14 South, Range 2 East of the Third Principal Meridian, said Center of Section 15 to be the Point of Beginning of the tract to be described:

From the Point of Beginning, thence North 76 degrees 21 minutes 43 seconds East along the North line of the Southeast Quarter of Section 15, 102.94 feet to the intersection of said North line with the Northwesternly Right-of-Way line of the Penn Central Railroad; thence South 35 degrees 18 minutes 58 seconds West along the Northwesternly Right-of-Way line of the Penn Central Railroad, 104.70 feet to the intersection of said Northwesternly Right-of-Way line with the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad; thence North 87 degrees 35 minutes 20 seconds West along the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad, 248.70 feet to the intersection of said Northerly Right-of-Way line with the North line of the Southwest Quarter of Section 15; thence North 76 degrees 21 minutes 43 seconds East along the North line of the Southwest Quarter of Section 15, 215.04 feet to the Center of Section 15 and the Point of Beginning, containing 0.259 acres, more or less.

ALSO, all that part of the South Half of the Southwest Quarter of Section 10, lying South of the centerline of the Cache River, and part of the North Half of Section 15, lying South of the centerline of the Cache River, North of the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad and Northwest of the Northwesternly Right-of-Way line of the Penn Central Railroad, all in Township 14 South, Range 2 East of the Third Principal Meridian, more particularly described as follows:

Commencing at the Southwest corner of the South Half of the Southwest Quarter of Section 10, said Southwest corner to be the Point of Beginning of the tract to be described:

From the Point of Beginning, thence North 9 degrees 54 minutes 32 seconds West along the West line of the South Half of the Southwest Quarter of Section 10, 1,212.74 feet to the intersection of said West line with the centerline of the Cache River; thence Southeasterly along the centerline of the Cache River, 2,934.89 feet, more or less, to the intersection of said centerline with the East line of the aforesaid South Half of the Southwest Quarter of Section 10; thence South 8 degrees 58 minutes 16 seconds East along the East line of the South Half of the Southwest Quarter of Section 10, 102.23 feet to the Southeast corner of the South Half of the Southwest Quarter of Section 10,

said Southeast corner also being the Northwest corner of the Northeast Quarter of Section 15; thence North 76 degrees 21 minutes 43 seconds East along the North line of the Northeast Quarter of Section 15, 168.93 feet to the intersection of said North line with the centerline of the Cache River; thence; southeasterly along the centerline of the Cache River, 2,221.81 feet, more or less, to the intersection of said centerline with the Northwestern Right-of-Way line of the Penn Central Railroad; thence South 35 degrees 18 minutes 58 seconds West along the Northwestern Right-of-Way line of the Penn Central Railroad, 3,020.60 feet to the intersection of said Northwestern Right-of-Way line with the South line of the Northeast Quarter of Section 15; thence South 76 degrees 21 minutes 43 seconds West along the South line of the Northeast Quarter of Section 15, 102.94 feet to the Center of Section 15; thence South 76 degrees 21 minutes 43 seconds West along the South line of the Northwest Quarter of Section 15, 215.04 feet to the intersection of said South line with the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad; thence North 87 degrees 35 minutes 20 seconds West along the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad, 557.57 feet; thence continuing Northwesternly along the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad on a tangent curve to the right with an arc distance of 925.25 feet, said curve having a radius of 3,669.77 feet and a chord bearing of North 80 degrees 21 minutes 57 seconds West and a chord length of 922.82 feet; thence South 16 degrees 51 minutes 27 seconds West along the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad on a line radial to the previously described curve, 75.00 feet; thence continuing Northwesternly along the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad on a curve to the right with an arc distance of 352.00 feet, said curve having a radius of 3,744.77 feet and a chord bearing of North 70 degrees 26 minutes 59 seconds West and a chord length of 351.87 feet; thence North 67 degrees 45 minutes 25 seconds West along the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad, 838.09 feet to the intersection of the said Northerly Right-of-Way line with the West line of the Northwest Quarter of said Section 15; thence North 9 degrees 54 minutes 32 seconds West along the West line of the Northwest Quarter of Section 15, 1,538.42 feet to the Northwest corner of Section 15 and the Point of Beginning, containing 257.116 acres, more or less, with 2.959 acres, more or less, being in the bed of the Cache River, all situated in Township 14 South, Range 2 East of the Third Principal Meridian, EXCEPTING THEREFROM part of the Northwest Quarter of the aforesaid Section 15, lying North of the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad, more particularly described as follows: Commencing at the intersection of the West line of the Northwest Quarter of Section 15 with the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad as said Northerly Right-of-Way line extends Southeasterly into Section 15, said intersection to be the Point of Beginning of the exception herein described:

From the Point of Beginning, thence North 9 degrees 54 minutes 32 seconds West along the West line of the Northwest Quarter of Section 15, 738.09 feet; thence North 88 degrees 54 minutes 47 seconds East, 844.20 feet; thence South 9 degrees 54 minutes 32 seconds East, parallel with the West line of the Northwest Quarter of Section 15, 452.75 feet; thence South 69 degrees 48 minutes 28 seconds East, 185.27

feet; thence North 80 degrees 44 minutes 16 seconds East, 598.73 feet; thence South 6 degrees 45 minutes 52 seconds East, 601.23 feet; thence South 75 degrees 09 minutes 16 seconds East, 217.81 feet; thence North 80 degrees 40 minutes 59 seconds East, 702.31 feet; thence South 0 degrees 56 minutes 13 seconds East, 146.55 feet; thence South 72 degrees 01 minute 24 seconds West, 523.23 feet to a point of tangent on the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad; thence Northwesterly along the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad on a curve to the right with an arc distance of 925.25 feet, said curve having a radius of 3,669.77 feet and a chord bearing of North 80 degrees 21 minutes 57 seconds West and a chord length of 922.82 feet; thence South 16 degrees 51 minutes 27 seconds West along the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad on a line radial to the previously described curve, 75.00 feet; thence continuing Northwesterly along the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad on a curve to the right with an arc distance of 352.00 feet, said curve having a radius of 3,744.77 feet and a chord bearing of North 70 degrees 26 minutes 59 seconds West and a chord length of 351.87 feet; thence North 67 degrees 45 minutes 25 seconds West along the Northerly Right-of-Way line of the Chicago and Eastern Illinois Railroad, 838.09 feet to the Point of Beginning, containing 33.868 acres, more or less, all situated in Township 14 South, Range 2 East of the Third Principal Meridian. The last described tract contains a total of 223.248 acres, more or less, with 2.959 acres, more or less, being in the bed of the Cache River.

All situated in the County of Pulaski, in the State of Illinois.

The East One-half of the Southeast Quarter of Section 5, the Southwest Quarter of the Southeast Quarter of Section 5, and the East One-half of the Southeast Quarter of the Southwest Quarter of Section 5, all in Township 14 South, Range 2 East of the Third Principal Meridian;

ALSO, that part of the North One-half of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, lying Northeasterly of the Northeasterly Right-of-Way line of the Chicago and Eastern Illinois Railroad and North of the Cache River;

EXCEPTING THEREFROM the following described real estate, to wit:

Part of the East One-half of the Southeast Quarter of the Southwest Quarter of Section 5, Township 14 South, Range 2 East of the Third Principal Meridian, Johnson County, Illinois, being more particularly described as follows: Commencing at a survey monument marking the Southwest corner of Section 5, Township 14 South, Range 2 East of the Third Principal Meridian; thence Easterly on the South line of Said section 5 on a bearing of North 77 degrees 04 minutes 22 seconds East, a distance of 2,006.39 feet to the Southwest corner of the East One-half of the Southeast Quarter of the Southwest Quarter of said Section 5 to a survey monument and the point of beginning for this description: thence Northerly on the West line of the said East One-half on a bearing of North 10 degrees 49 minutes 00 seconds West, a distance of 1,359.44 feet to the North line of the said East one-half;

thence Easterly on the said North line on a bearing of North 76 degrees 58 minutes 49 seconds East, a distance of 541.72 feet; thence Southwesterly on a bearing of South 6 degrees 00 minutes 04 seconds West, a distance of 1437.10 feet to the South line of said Section 5; thence Westerly on the said South line of Section 5 on a bearing of South 77degrees 04 minutes 22 seconds West, a distance of 125.61 feet to the point of beginning, containing 10.407 acres, more or less.

ALSO EXCEPTING THEREFROM,

Part of the North One-half of the Northwest Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, Johnson County, Illinois, being more particularly described as follows: Commencing at a survey monument marking the Northwest corner of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian; thence Easterly on the North line of said Section 8 on a bearing of North 77 degrees 04 minutes 22 seconds East, a distance of 718.69 feet to the Northeasterly Right-of-Way line of the Chicago and Eastern Illinois Railroad and the point of beginning for this description: thence continuing Easterly on the said North line of Section 8, a distance of 1,087.70 feet; thence Southeasterly on a bearing of South 70 degrees 45 minutes 33 seconds East, a distance of 724.56 feet to the said Northeasterly Right-of-Way line of the Chicago and Eastern Illinois Railroad; thence Northwesterly on the said Northeasterly Right-of-Way line on a bearing of North 67 degrees 45 minutes 25 seconds West, a distance of 1,179.04 feet to the point of curvature of a tangential curve to the right, having a radius of 2,764.84 feet and a curve length of 72.40 feet; thence Northwesterly on said curve a distance of 72.40 feet to the point of beginning, containing 9.022 acres, more or less.

ALSO EXCEPTING THEREFROM,

Beginning at the Northwest corner of section 8; thence South 20 rods to the North bank of the Cypress Creek; thence East 68 rods to the Right-of-Way of the C. & E.I. Railroad; thence Northwesterly along the West side of the C. & E.I. Railroad Right-of-Way to the place of beginning, containing 7.8 acres, more or less, in Section 8, Township 14 South, Range 2 East of the Third Principal Meridian.

ALSO, part of Section 7 and part of the Northwest Quarter of the Northwest Quarter of Section 18, all in Township 14 South, Range 2 East of the Third Principal Meridian, Johnson County, Illinois, being more particularly described as follows:

All of Section 7, EXCEPT that part lying North of the Northerly Right-of-Way line of Perks Road (F.A.S. 940) ; ALSO EXCEPT the rights-of-way of State Bond Issue 147 (Ill. Rte. 37) and Perks Road (F.A.S. Route 940) ; and ALSO EXCEPT all that part of Sections 7 and 18 lying South of the following described line: Beginning at the Southeast Corner of Section 7, Township 14 South, Range 2 East of the Third Principal Meridian; thence Easterly on the South Line of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, on a bearing of North 81 degrees 12 minutes 10 seconds East (said bearing and all bearings in this description of the described line are based on an assumed bearing of the West Line of said Section 8 as being North 8 degrees 08 minutes 36seconds West) a distance of 11.00 feet to the Westerly right-of-way line of S.B.I. Route 147 (Ill. Rte. 37) thence Northerly on a bearing of North 8 degrees 47 minutes 51seconds West a

distance of 2,701.60 feet to the Point of Curvature of a tangent curve to the left, concave to the Southwest, with a radius of 38,125.95 feet, a central angle of 00 degrees 17 minutes 44 seconds and a curve length of 196.67 feet; thence on said curve to the left a distance of 196.67 feet to the Point of Beginning of the above referenced and described line: thence Southwesterly along the existing power line on a bearing of South 65 degrees 47 minutes 08 seconds West a distance of 503.10 feet to a power pole; thence Southwesterly along said power line on a bearing of South 52 degrees 19 minutes 03 seconds West a distance of 1,997.43 feet to a power pole; thence Southwesterly along said power line on a bearing of South 46 degrees 52 minutes 31 seconds West a distance of 4,319.86 feet to a power pole; thence Southwesterly along said power line on a bearing of South 46 degrees 23 minutes 23 seconds West a distance of 398.58 feet to a power pole; thence Southwesterly along said power line on a bearing of South 57 degrees 09 minutes 22 seconds West a distance of 487.89 feet to the West Line of said Section 8 and the end of the above referenced described line;

All situated in Johnson County, Illinois.

Part of the southwest Quarter of the Northwest Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, described as follows
Beginning at a point 65.00 feet (radial distance) East of the centerline of S.B.I. Route 147 (Illinois Route 37) on the South. Right-of-Way line of the public road running from Rago to Perks; thence Easterly on the South Right-of-Way line of said public road, a distance of 600.00 feet; thence South parallel to the West line of the Northwest Quarter of Said Section 8, a distance of 350.00 feet; thence West with a deflection angle to the right of 90 degrees 00 minutes 00 seconds to a point 65.00 feet (radial distance) East of the centerline of S.B.I. Route 147 (Illinois Route 37); thence Northerly along a curve 65.00 feet (radial distance) East of the centerline of S.B.I. Route 147 (Illinois Route 37) to the Point of Beginning, containing in all 4.246 acres, more or less, with, 0.032 acres, more or less, being in the Right-of-Way of S.B.I. Route 147 (Illinois Route 37).

Description reference: Plat of Survey dated November 29, 1982 by Jack H. Bass, I.R.L.S. #1713.

Situated in the County of Johnson, in the state of Illinois

All that part of the Northeast Quarter of Section 16, Township 14 South, Range 2 East of the Third Principal Meridian, that lies North and East of the C. & E. 1. Railroad, containing 40.603 acres, more or less, EXCEPT the following described tract of land:

Beginning at the intersection of the East line of the Northeast Quarter of Section 16, Township 14 South, Range 2 East of the Third Principal Meridian and the Northerly Right-of-Way line of the C. & E. I. Railroad; thence Northwesterly on said Northerly Right-of-Way line, a distance of 661.11 feet; thence Northeasterly with a deflection angle to the right of 84 degrees 53 minutes 23 seconds, a distance of 511.01 feet; thence Easterly with a deflection angle to the right of 62 degrees 57 minutes 30 seconds, a distance of 327.40 feet to the East line of said Northeast Quarter of Section

16; thence Southerly on said East line with a deflection angle to the right of 90 degrees 00 minutes 00 seconds, a distance of 806.96 feet to the Point of Beginning, containing 6.895 acres more or less;

ALSO, a perpetual easement for ingress and egress across the above described exception, said easement being 30 feet in even width and being more particularly described as follows:

Beginning at the intersection of the East line of the Northeast Quarter of Section 16, Township 14 South, Range 2 East of the Third Principal Meridian and the Northerly Right-of-Way line of the C. & E. I. Railroad; thence Northwesterly on said Northerly Right-of-Way line, a distance of 661.11 feet; thence Northeasterly with a deflection angle to the right of 84 degrees 53 minutes 23 seconds, a distance of 30.12 feet; thence Southeasterly parallel with the Northerly Right-of-Way line of the C. & E. I. Railroad with a deflection angle to the right of 95 degrees 06 minutes 37 seconds, a distance of 644.94 feet to the East line of said Northeast Quarter of Section 16; thence Southerly on said East line with a deflection angle to the right of 57 degrees 50 minutes 53 seconds, a distance of 35.43 feet to the Point of Beginning, containing 0.45 acres, more or less;

All situated in the County of Pulaski in the State of Illinois.

All that part of Section 9, Township 14 South, Range 2 East of the Third Principal Meridian, lying North of the Cache River, EXCEPTING THEREFROM the following:

A parcel of land located in the Southeast Quarter of the Northeast Quarter and in the Northeast Quarter of the Southeast Quarter of Section 9, Township 14 South, Range 2 East of the Third Principal Meridian, more particularly described as follows:
Beginning at a point in the West right-of-way line of a public road situated on the Half Section line, 30 feet West of the Southeast corner of the Northeast Quarter of Section 9 aforesaid; thence North along the said West right-of-way line of the public road, a distance of 75 feet to a point; thence West with a deflection angle of 90 degrees 00 minutes, distance of 100 feet to a point; thence South with a deflection angle of 90 degrees 00 minutes, a distance of 150 feet to a point; thence East with a deflection angle of 90 degrees 00 minutes, a distance of 100 feet to a point in the West right-of-way line of the public road; thence North along the said right-of-way line, a distance of 75 feet to the Point of Beginning.

ALSO, the South Half of the Northwest Quarter; all that part of the Southwest Quarter lying North of the Cache river and all that part of the Southeast quarter lying North of the Cache River in Section 10, Township 14 South, Range 2 East of the Third Principal Meridian.

ALSO, all that part of the northeast Quarter of Section 15, Township 14 South, Range 2 East of the Third Principal Meridian, lying North of the Cache River, EXCEPTING THEREFROM the following:

A strip of land 100 feet in width, being 50 feet on each side of the centerline of the former Southern Railway Company Railroad's main track (now abandoned) and extending from the centerline of the Cache River Northeasterly 513 feet, more or less, to the East line of said Section 15.

ALL SITUATED IN THE COUNTY OF JOHNSON, STATE OF ILLINOIS.

Part of the North Half of the Northwest Quarter, part of the Northwest Quarter of the Northeast Quarter, and part of the South Half of the Northeast Quarter, all in Section 10, Township 14 South, Range 2 East of the 3rd Principal Meridian, being more particularly described as follows:

Commencing at a ½ inch diameter rebar with cap No. 3023 (found) at the Northwest corner of said Section 10; thence South 09 degrees 54 minutes 32 seconds East on the West line of the Northwest Quarter of said Section 10, 1118.72 feet to a ¾ inch diameter pipe with cap No. 3023 (set) for the Point of Beginning; thence from said Point of beginning, continuing South 09 degrees 54 minutes 32 seconds East, 226.27 feet to a ½ inch diameter rebar with cap No. 3023 (found) at the Southwest corner of the North Half of said Northwest Quarter; thence North 76 degrees 21 minutes 43 seconds East, 2615.77 feet to a ½ inch diameter rebar with cap No. 3023 (found) at the Southeast corner of the North Half of said Northwest Quarter; thence South 12 degrees 18 minutes 32 seconds East, 1334.60 feet to a 2 inch diameter shaft (found) at the mid-point or center of said section 10; thence North 76 degrees 31 minutes 41 seconds East, 2727.99 feet to a ½ inch diameter rebar with cap No. 3023 (found) at the Southeast corner of the Northeast Quarter of said Section 10; thence North 09 degrees 54 minutes 32 seconds West on the East line of said Northeast Quarter, 67.16 feet to a ¾ inch diameter pipe with cap No. 3023 (set); thence South 77 degrees 37 minutes 12 seconds West, 1276.46 feet to a ¾ inch diameter pipe with cap No. 3023 (set); thence North 79 degrees 22 minutes 27 seconds West, 1540.93 feet to a ¾ inch diameter pipe with cap No. 3023 (set); thence North 13 degrees 33 minutes 56 seconds West, 642.03 feet to a ¾ inch diameter pipe with cap No. 3023 (set); thence South 80 degrees 40 minutes 20 seconds West, 2629.73 feet to the Point of Beginning; Containing 24.195 acres, more or less, all situated in the County of Johnson and the State of Illinois.

All of the Northwest Quarter lying South of Cache River and all of the Northeast Quarter lying South of Cache River, both in Section 13, Township 14 South, Range 2 East of the Third Principal Meridian.

ALSO, all of the Northeast Quarter and all of the Northwest Quarter lying South of Cache River; the North One-Half of the Southeast Quarter; all that part of the Southwest Quarter of the Southeast Quarter lying North of the Chicago and Eastern Illinois Railroad right of way; that part of the Southeast Quarter of the Southeast Quarter lying North of the Chicago and Eastern Illinois Railroad right of way; all that part of the Southeast Quarter of the Southwest Quarter lying North of the Chicago and Eastern Illinois Railroad right of way; and the Northeast Quarter of the Southwest Quarter; all being in Section 14, Township 14 South, Range 2 East of the Third Principal

Meridian, EXCEPT 7.43 acres conveyed by Warranty Deed dated February 13, 1928, recorded in Book 78 at page 167 from Main Brothers Box and Lumber Company to Frank C. Altenberger;

ALSO EXCEPT one acre conveyed by Warranty Deed dated January 28, 1944, recorded in Book 94, page 183, from Main Brothers Box and Lumber Company to Road District #12;

ALSO EXCEPT 1.92 acres conveyed by Warranty Deed dated January 28, 1944, and recorded in Book 94, page 184, from Main Brothers Box and Lumber Company to C. J. Douglas;

ALSO EXCEPT 1.92 acres conveyed by Warranty Deed dated April 03, 1944, and recorded in Book 94, page 185 to C. J. Douglas;

ALSO EXCEPT 3.04 acres conveyed by Warranty Deed dated January 28, 1944, and recorded in Book 102, page 292, from Main Brothers Box and Lumber Company to Warren and Jesse Goins;

ALSO EXCEPT 3.79 acres conveyed by Warranty Deed dated January 28, 1944, recorded in Book 94, page 260, from Main Brothers Box and Lumber Company to Ira Altenberger; AND ALSO EXCEPT 2.787 acres conveyed by Warranty Deed dated October 03, 1950, recorded in Book 104, page 419, from Main Brothers Box and Lumber Company to Andy Goins. ALL OF THE ABOVE SITUATED IN PULASKI COUNTY, ILLINOIS.

All of that portion of Section 15, Township 14 South, Range 2 East of the Third Principal Meridian, lying South of the Cache River, North of the Chicago and Eastern Illinois Railroad right of way and Southeast of the former C. C. C. and St. L. Railroad (now Southern Railway) right of way, EXCEPT Blocks 1, 2, and 3 of the

East Karnak Addition to the Village of Karnak, as per recorded Plat;

ALSO EXCEPT that parcel of unplatted land in the Northeast Quarter of the Southeast Quarter of Section 15, bounded on the South by the right of way of the C. & E. I. Railroad, on the West by East 5th Street of the Village of Karnak, on the North by the South side of the alley of Block 2 of the East Karnak Addition, and on the East by the East Section line of Section 15;

AND ALSO EXCEPT that portion of land lying North of the C. & E. I. Railroad right of way previously conveyed by Warranty Deed dated April 07, 1971, and recorded in Book 139 at page 251, from Main Brothers Box and Lumber Company to the Martin Brothers Container & Timber Products Corporation.

ALL OF THE ABOVE SITUATED IN PULASKI COUNTY, ILLINOIS.

Part of the Northwest Quarter of Section 15, Township 14 South, Range 2 East of the Third Principal Meridian, lying North of the Northerly right of way line of Chicago and Eastern Railroad, more particularly described as follows:

Commencing at the intersection of the West line of the Northwest Quarter of Section 15 with the Northerly right of way line of the Chicago and Eastern Illinois Railroad as said Northerly right of way line extends Southeasterly into Section 15, said intersection to be the Point of Beginning of the tract herein described:

From the Point of Beginning, thence North 9 degrees 54 minutes 32 seconds West along the West line of the Northwest Quarter of Section 15, 738.09 feet; thence North 88 degrees 54 minutes 47 seconds East, 844.20 feet; thence South 9 degrees 54 minutes 32 seconds East, parallel with the West line of the Northwest Quarter of Section 15, 452.75 feet; thence South 69 degrees 48 minutes 28 seconds East, 185.27 feet; thence North 80 degrees 44 minutes 16 seconds East, 598.73 feet; thence South 6 degrees 45 minutes 52 seconds East, 601.23 feet; thence South 75 degrees 09 minutes 16 seconds East, 217.81 feet; thence North 80 degrees 40 minutes 59 seconds East, 702.31 feet; thence South 0 degrees 56 minutes 13 seconds East, 146.55 feet; thence South 72 degrees 01 minutes 24 seconds West, 523.23 feet to a point of tangent on the Northerly right of way line of the Chicago and Eastern Illinois Railroad; thence Northwesterly along the Northerly right of way line of the Chicago and Eastern Illinois Railroad on a curve to the right with an arc distance of 925.25 feet, said curve having a radius 3,669.77 feet and a chord bearing of North 80 degrees 21 minutes 57 seconds West and a chord length of 922.82 feet; thence South 16 degrees 51 minutes 27 seconds West along the Northerly right of way line of the Chicago and Eastern Illinois Railroad on a line radial to the previously described curve, 75.00 feet; thence continuing Northwesterly along the Northerly right of way line of the Chicago and Eastern Illinois Railroad on a curve to the right with an arc distance of 352.00 feet, said curve having a radius of 3,744.77 feet and a chord bearing of North 70 degrees 26 minutes 59 seconds West and a chord length of 351.87 feet; thence North 67 degrees 45 minutes 25 seconds West along the Northerly right of way line of the Chicago and Eastern Illinois Railroad, 838.09 feet to the Point of Beginning,

ALL THE ABOVE SITUATED IN PULASKI COUNTY, ILLINOIS.

Part of Sections 7 and 18, Township 14 South, Range 2 East of the Third Principal Meridian, more particularly described as follows:

Beginning at the Southeast Corner of Section 7, Township 14 South, Range 2 East of the Third Principal Meridian; Easterly on a bearing of North 81 degrees 12 minutes 10 seconds East a distance of 11.00 feet to the Westerly Right-of-Way line of S.B.I. Route 147 (Illinois Route 37); thence Northerly on the said West Right-of-Way Line on a bearing of North 8 degrees 47 minutes 51 seconds West a distance of 1,703.62 feet to the centerline of the Cache River and the point of beginning for this description: Thence continuing on the last described course a distance of 997.98 feet to the Point of

Curvature of a tangent curve to the left, concave to the Southwest, with a Radius of 38,125.95 feet, a central angle of 0 degrees 17 minutes 44 seconds and a curve length of 196.67 feet; thence on said curve to the left a distance of 196.67 feet; thence southwesterly along the existing power line on a bearing of South 65 degrees 47 minutes 08 seconds West a distance of 503.10 feet to a power pole; thence Southwesterly along said power line on a bearing of South 52 degrees 19 minutes 03 seconds West a distance of 1,997.43 feet to a power pole; thence Southwesterly along said power line on a bearing of South 46 degrees 52 minutes 31 seconds West a distance of 4,319.86 feet to a power pole; thence Southwesterly along said power line on a bearing of South 46 degrees 23 minutes 23 seconds West a distance of 398.58 feet to a power pole; thence Southwesterly along said power line on a bearing of South 57 degrees 09 minutes 22 seconds West a distance of 487.89 feet to the centerline of an existing drainage ditch; thence Southeasterly along the centerline of said drainage ditch on a bearing of South 10 degrees 34 minutes 19 seconds East a distance of 2,036.07 feet to the intersection of said ditch centerline and the centerline of the Cache River; thence Northeasterly along the meandering centerline of the Cache River on a bearing of North 63 degrees 15 minutes 40 seconds East a distance of 1,196.15 feet; thence Northeasterly along the meandering centerline of the Cache River on a bearing of North 56 degrees 35 minutes 17 seconds East a distance of 1,924.39 feet; thence Northeasterly along the meandering centerline of the Cache River on a bearing of North 47 degrees 41 minutes 22 seconds East a distance of 940.11 feet; thence Northeasterly along the meandering centerline of the Cache River on a bearing of North 33 degrees 35 minutes 10 seconds East a distance of 2,350.71 feet; thence Northeasterly along the meandering centerline of the Cache River on a bearing of North 34 degrees 57 minutes 17 seconds East a distance of 502.44 feet; thence Northeasterly along the meandering centerline of the Cache River on a bearing of North 38 degrees 35 minutes 06 seconds East a distance of 232.64 feet; thence Northeasterly along the meandering centerline of the Cache River on a bearing of North 31 degrees 57 minutes 34 seconds East a distance of 1,129.57 feet to the Point of Beginning, containing a total of 349.00 Acres, more or less, with 4.75 Acres, more or less, being in the bed of the Cache River.

Excepting all the coal, oil, gas and other minerals, owned by the Grantor as of the date of this deed, which underlies the above described tract with the right to mine and remove the same, but without the right to break, disturb or subside the surface of said tract;

Situated in the County of Johnson, in the State of Illinois.

All that part of the East One-Half of the South One-Half of the Northwest Quarter of Section 18, Township 14 South, Range 2 East of the Third Principal Meridian, lying North of the Cache River Ditch.

Situated in Pulaski County, Illinois.

Part of the Northeast Quarter of the Northeast Quarter of Section 18, Township 14 South, Range 2 East of the Third Principal Meridian, being more particularly described as follows:

Beginning at the Northeast corner of Section 18, Township 14 South, Range 2 East of the Third Principal Meridian; thence Westerly on the North line of the Northeast Quarter of the Northeast Quarter of said Section 18, a distance of 1325.52 feet to the Northwest corner of said Northeast Quarter of the Northeast Quarter; thence Southerly on the West line of said Northeast Quarter of the Northeast Quarter with a deflection angle to the left of 85 degrees 58 minutes 16 seconds, a distance of 877.49 feet; thence Northeasterly with a deflection angle to the left of 115 degrees 05 minutes 50 seconds, a distance of 1051.14 feet; thence Northerly with a deflection angle to the left of 76 degrees 40 minutes 27 seconds, a distance of 38.52 feet to an existing fence corner; thence Northeasterly with a deflection angle to the right of 75 degrees 56 minutes 10 seconds along an existing fence line, a distance of 420.20 feet to the East line of said Northeast Quarter of the Northeast Quarter; thence Northerly on said East line with a deflection angle to the left of 64 degrees 09 minutes 53 seconds, a distance of 303.95 feet to the Point of Beginning, containing 18.268 acres, more or less;

All situated in the County of Pulaski and the State of Illinois.

The Northwest Quarter of Section 13; the Northwest Quarter of the Northeast Quarter of Section 13; the Northeast Quarter of the Northeast Quarter of Section 13, and a strip of land 206 feet 3 inches wide off the South side of the South Half of Section 12, all in Township 14 South, Range 1 East of the Third Principal Meridian; EXCEPT THEREFROM a tract of land described as follows: Beginning at the Northwest corner of said Section 13, also being the Southwest corner of said Section 12; thence South 2 degrees 19 minutes 39 seconds West along the West line of said Section 13 a distance of 1066.06 feet; thence North 82 degrees 12 minutes 14 seconds East a distance of 1108.22 feet; thence North 75 degrees 30 minutes 16 seconds East a distance of 648.76 feet; thence North 78 degrees 34 minutes 38 seconds East a distance of 934.54 feet; thence North 58 degrees 56 minutes 20 seconds East a distance of 113.39 feet; thence North 80 degrees 02 minutes 04 seconds East a distance of 453.4 feet; thence North 70 degrees 35 minutes 15 seconds East a distance of 353.98 feet; thence North 43 degrees 17 minutes 13 seconds East a distance of 176.76 feet; thence North 68 degrees 57 minutes 33 seconds East a distance of 283.80 feet; thence South 81 degrees 06 minutes 21 seconds East a distance of 194.01 feet; thence North 75 degrees 43 minutes 52 seconds East a distance of 331.31 feet; thence North 56 degrees 38 minutes 59 seconds East a distance of 126.87 feet; thence North 14 degrees 22 minutes 41 seconds East a distance of 92.46 feet to a point on the North line of a strip of land 206 feet 3 inches wide off the South side of the South Half of said Section 12; thence North 88 degrees 56 minutes 03 seconds West along the North line of said strip of land a distance of 1918.47 feet to a point in the North-South Quarter Section line of said Section 12; thence North 89 degrees 04 minutes 24 seconds West along the North line of said strip of land a distance of 2586.67 feet to a point on the West line of said

Section 12; thence South 0 degrees 00 minutes 00 seconds East along the said West line a distance of 206.25 feet to the point of beginning.

ALSO, a perpetual easement for ingress and egress to the aforescribed real estate as provided in a Warranty Deed made by Roy Kerley, Jr. and Meryl Jean Kerley, his wife, to The Nature Conservancy, a non-profit corporation, which Deed was dated September 19, 1984, and recorded September 26, 1984, in Pulaski County records, book 165, page 866, as Document No. 5226, said easement being a 30 foot strip of even width generally following an existing roadway, the center line of which easement is described as follows:

Commencing at the Southwest corner of Section 12, Township 14 South, Range I East of the Third Principal Meridian; thence North 0 degrees 00 minutes 00 seconds East along the West line of said Section 12 a distance of 206.25 feet; thence South 89 degrees 04 minutes 24 seconds East a distance of 2586.67 feet to the center line of an existing public road and the point of beginning; thence South 6 degrees 20 minutes 10 seconds East a distance of 80.00 feet; thence South 31 degrees 32 minutes 34 seconds

East a distance of 97.14 feet; thence South 14 degrees 22 minutes 26 seconds West a distance of 116.99 feet; thence South 6 degrees 20 minutes 10 seconds East a distance of 420.00 feet to the South line of the land retained by Roy Kerley, Jr. and Meryl Jean Kerley, his wife, grantors in the aforementioned deed recorded in Book 165, page 866.

The South Half of the Northeast Quarter of Section 13, Township 14 South, Range I East of the Third Principal Meridian, EXCEPT the parcel described as follows: Beginning at the Southeast corner of the said Northeast Quarter; thence North 3 degrees 00 minutes 53 seconds West along the East line of said Section 13 a distance of 742.16 feet; thence South 73 degrees 26 minutes 35 seconds West a distance of 1033.39 feet; thence South 77 degrees 27 minutes 13 seconds West a distance of 594.12 feet; thence North 10 degrees 54 minutes 09 seconds West a distance of 68.97 feet; thence South 82 degrees 11 minutes 55 seconds West a distance of 1009.37 feet to the West line of the said Northeast Quarter; thence South 2 degrees 15 minutes 17 seconds east along the said West line a distance of 230.85 feet to the Southwest corner of the said Northeast Quarter; thence South 89 degrees 36 minutes 48 seconds East along the South line of the said Northeast Quarter a distance of 2613.55 feet to the point of beginning.

Situated in the County of Pulaski, in the State of Illinois.

Part of the Northeast Quarter of the Northwest Quarter of Section 13, part of the North Half of the Northeast Quarter of Section 13, and part of a strip of land 206 feet 3 inches wide off the South side of the South Half of Section 12, all in Township 14 South, Range 1 East of the Third Principal Meridian, described as follows: Commencing at the Southwest corner of said Section 12; thence North 00 degrees 00

minutes 00 seconds East along the West line of said Section 12 a distance of 206.25 feet; thence South 89 degrees 04 minutes 24 seconds East a distance of 2586.67 feet to the center line of an existing public road and the Point of Beginning; thence South 00 degrees 58 minutes 37 seconds East a distance of 190.00 feet; thence South 89 degrees 01 minutes 23 seconds West a distance of 300.00 feet; thence South 00 degrees 58 minutes 37 seconds East a distance of 300.00 feet; thence North 89 degrees 01 minutes 23 seconds East a distance of 300.00 feet; thence South 00 degrees 58 minutes 37 seconds East a distance of 242.01 feet; thence North 58 degrees 56 minutes 20 seconds East a distance of 113.39 feet; thence North 80 degrees 02 minutes 04 seconds East a distance of 453.74 feet; thence North 70 degrees 35 minutes 15 seconds East a distance of 353.98 feet; thence North 43 degrees 17 minutes 13 seconds East a distance of 176.76 feet; thence North 68 degrees 57 minutes 33 seconds East a distance of 283.80 feet; thence South 81 degrees 06 minutes 21 seconds East a distance of 194.01 feet; thence North 75 degrees 43 minutes 52 seconds East a distance of 331.31 feet; thence North 56 degrees 38 minutes 59 seconds East a distance of 126.87 feet; thence North 14 degrees 22 minutes 41 east a distance of 92.46 feet to a point on the North line of a strip of land 206 feet 3 inches wide off the South side of the South Half of the Southeast Quarter of Section 12; thence North 88 degrees 56 minutes 03 seconds West along the said North line a distance of 1918.47 feet to the Point of beginning, containing 19.85 acres, more or less;

EXCEPTING therefrom a tract being part of the Northeast Quarter of the Northwest Quarter and part of the Northwest Quarter of the Northeast Quarter of Section 13, and part of the South 206.25 feet of Section 12, all in Township 14 South, Range 1 East of the Third Principal Meridian, described as follows: Commencing at the Southwest corner of said Section 12; thence North 00 degrees 00 minutes East along the West line of Section 12, a distance of 206.25 feet; thence South 89 degrees 04 minutes 24 seconds East, a distance of 2586.67 feet to the Point of Beginning; thence South 00 degrees 58 minutes 37 seconds East, a distance of 125.99 feet; thence South 31 degrees 32 minutes 34 seconds East, a distance of 48.33 feet; thence South 14 degrees 22 minutes 26 seconds West, a distance of 109.76 feet; thence South 89 degrees 01 minutes 23 seconds West a distance of 295.52 feet; thence South 00 degrees 58 minutes 37 seconds East, a distance of 216.55 feet; thence North 89 degrees 01 minutes 23 seconds East, a distance of 300.00 feet; thence South 00 degrees 58 minutes 37 seconds East, a distance of 242.01 feet; thence North 58 degrees 56 minutes 20 seconds East, a distance of 108.30 feet; thence North 06 degrees 20 minutes 10 seconds West, a distance of 400.70 feet; thence North 14 degrees 22 minutes 26 seconds East, a distance of 124.22 feet; thence North 31 degrees 32 minutes 34 seconds West, a distance of 103.14 feet; thence North 06 degrees 20 minutes 10 seconds West a distance of 69.40 feet to the North line of the South 206.25 feet of said Section 12; thence North 88 degrees 56 minutes 03 seconds West, a distance of 30.25 feet to the Point of Beginning, containing 2.58 acres, more or less;

Containing a net area of 17.27 acres, more or less, and all being situated in the County of Pulaski and the State Illinois.

The Southeast Quarter of the Northeast Quarter of Section 14, Township 14 South, Range 1 East of the Third Principal Meridian, situated in PULASKI COUNTY, ILLINOIS.

The Southwest Quarter of the Northwest Quarter of Section 14, Township 14 South, Range I East of the Third Principal Meridian, EXCEPT the North 426.25 feet thereof.

Situated in PULASKI COUNTY, ILLINOIS.

EXCEPTING OUT all those lands which were previously dedicated as Illinois Nature preserves described as follows:

Section 8 Woods:

All that part of the Southeast Quarter of the Northwest Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, lying Southerly of the Cache River, containing in all 0.576 acres, more or less, with 0.313 acres, more or less, being in the bed of the Cache River;

ALSO, all that part of the South Half of the Northeast Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, lying south of the Cache River and southwesterly of the Southwesterly Right-of-Way line of the Chicago and Eastern Illinois Railroad, containing in all 7.389 acres, more or less, with 0.745 acres, more or less, being in the bed of the Cache River;

ALSO, all that part of the Southeast Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, lying south of the Cache River and southwesterly of the Southwesterly Right-of-Way line of the Chicago and Eastern Illinois Railroad, containing in all 164.212 acres, more or less, with 0.086 acres, more or less, being in the bed of the Cache River;

ALSO, all that part of the Southwest Quarter of Section 8, Township 14 South, Range 2 East of the Third Principal Meridian, lying south of the Cache River and east of the East Right-of-Way line of S.B.I. Route 147 (Illinois Route 37), containing in all 154.597 acres, more or less, with 1.456 acres, more or less, being in the bed of the Cache River.

All situated in the County of Pulaski, in the State of Illinois, and containing 326.774 acres, more or less.

Little Black Slough

Tract 1

That part of the SE1/4 of Section 14 lying north of Cache River; that part of the E1/2 SW1/4 Section 14 lying north of Cache River and east of the Burlington Northern Railroad right-of-way; that part of the NE1/4 Section 23 lying north and east of Cache River; and that part of the NW1/4

Section 24 lying north of a line from a point on its east line 1,900 feet south of its northeast corner southwestwardly to a point on its west line 2,400 feet south of its northwest corner, excepting therefrom the north 660 feet of the west 2,000 feet; all in Township 13 South, Range 2 East of the Third P.M., Johnson County, Illinois.

Tract 2

The NE1/4 excepting the north 900 feet of the east 700 feet, the E1/2 SE1/4, E1/2 NW1/4, and NW1/4 NW1/4 all in Section 27, Township 13 South, Range 2 East of the Third P.M., Johnson County, Illinois.

Dedicated Buffer:

The north 660 feet of the west 2,000 feet of the NW1/4 Section 24, Township 13 South, Range 2 East of the Third P.M., Johnson County, Illinois.

Heron Pond and Wildcat Bluff:

The Southeast 1/4, the East 1/2 of the Southwest 1/4, that part of the Northeast 1/4 lying south of the center line of the public road on top of Wildcat Bluff, and that part of the Southeast 1/4 of the Northwest 1/4 lying south of the center line of the public road on top of Wildcat Bluff, all in Section 24, Township 13 South, Range 2 East of the Third Principal Meridian; the Southwest 1/4, that part of the Northwest 1/4 lying south of the center line of the public road on top of Wildcat Bluff, and that part of the Southeast 1/4 lying south of the center line of the public road on top of Wildcat Bluff, in Section 19, Township 13 South, Range 3 East of the Third Principal Meridian; the West 3/4s, the Southeast 1/4 of the Southeast 1/4, the West 1/2 of the Northeast 1/4 of the Southeast 1/4, the South 1/4 of the East 1/2 of the Northeast 1/4 of the Southeast 1/4, that part of the North 3/4s of the East Half of the Northeast 1/4 of the Southeast 1/4 lying west of a line parallel to and 200 feet east of Dutchman Creek and Cache River, that part of the South 1/2 of the Southeast 1/4 of the Northeast 1/4 lying west of a line parallel to and 200 feet east of Dutchman Creek, and the North 7.93 chains of the Northeast 1/4 of the Northeast 1/4 in Section 30, Township 13 South, Range 3 East of the Third Principal Meridian; and the North 1/2 of the Northwest 1/4 of the Northeast 1/4 and the North 1/2 of the Northeast 1/4 of the Northwest 1/4 in Section 31, Township 13 South, Range 3 East of the Third Principal Meridian, all lands situated in Johnson County, Illinois.

Dedicated Buffer:

That Park of the West 1/2 of the Northwest 1/4 of the Southeast 1/4 of Section 19 North of the center line of the road on top of Wildcat Bluff, the West 1/2 of the Northwest 1/4 of the Southwest 1/4 of Section 29, that part of the North 3/4s of the East 1/2 of the Northeast 1/4 and that part of the South 1/2 of the Southeast 1/4 of the Northeast 1/4 lying east of a line parallel to and 200 feet east of Dutchman Creek and Cache River in Section 30, Township 13 South, Range 3 East of the Third Principal Meridian, situated in Johnson County, Illinois.

WHEREAS, The Illinois Nature Preserves Commission (hereinafter with its successors and assigns, called "Grantee"), is an agency of the State of Illinois with offices at 524 South Second Street, Springfield, Illinois; and

WHEREAS, The Grantor and Grantee, by this Registration Agreement and Conveyance to the Grantee of a Conservation Right and Easement on, over, and across the Registered Reserve, desire to conserve the natural heritage resources or archaeological resources thereof and prevent the use or development of the Registered Area for any purpose or in any manner that would conflict with the maintenance of the significant natural features and associated ecological processes thereof; and

WHEREAS, the Grantee is willing to accept this Grant of Conservation Right and Easement subject to the reservations and to the covenants, terms, conditions, and restrictions set out herein and imposed hereby; and

WHEREAS, the Registered Reserve is registered for the purposes, and shall be held, maintained and used, as provided for in the Illinois Natural Area Preservation Act and the rules entitled the Register of Land and Water Resources (17 Ill. Adm. Code, Part 4010) and as provided for in any amendment to that Act or rule, but no such amendment shall alter the commitment to the preservation of natural conditions of the Registered Reserve by the Grantor as of the date of this Registration Agreement;

NOW THEREFORE, The Grantor, for and in consideration of the above recitations and of the mutual covenants, terms, conditions, and restrictions hereinafter contained, and as an absolute and unconditional gift, does hereby give, grant, bargain, sell, and convey unto the Grantee, forever, a Conservation Right and Easement in perpetuity on, over, and across the Registered Reserve, consisting of the following:

1. The right to view the Registered Reserve in its natural, scenic, and open condition;
2. The right to enter the Registered Reserve at reasonable times upon reasonable notice to inspect the condition of the Registered Reserve; and
3. The right to enforce by proceedings at law or in equity the covenants set forth below, it being agreed that there shall be no waiver or forfeiture of the Grantee's right to ensure compliance with the covenants and conditions of this grant by reason of any prior failure to act.

And in furtherance of the above affirmative rights of the Grantee, the Grantor makes the following covenants which shall run with and bind the Registered Reserve, the Grantor shall not commit any act or omission in violation of the rules entitled by the Register of Land and Water Reserves, as amended (17 Ill. Adm. Code, Part 4010).

Grantor shall have prepared a Management Program in accordance with the Register of Land and Water Reserves, as amended. The Management Program is attached hereto and hereby

approved by Grantee.

Grantee shall be subject to the provisions of the Illinois Natural Areas Preservation Act, as amended, as that Act relates to registered areas, and the Register of Land and Water Reserves, as amended, and shall hold and exercise the rights and responsibilities described therein.

Grantor agrees to incorporate this Grant of Conservation Right and Easement by reference in any deed or other legal instrument by which it divests itself of any interest in all or a portion of the Registered Reserve and to use reasonable efforts to notify Grantee of any such transaction.

By their acceptance hereof the Grantee also agrees to be bound by the covenants binding on the Grantor as set forth above.

TO HAVE AND TO HOLD the said Conservation Easement unto the Grantee forever.

Except as expressly limited herein, the Grantor reserves all rights as owner of the Registered Reserve, including the right to use the Registered Reserve for purposes not inconsistent with this Grant.

The terms hereof shall be deemed to run with the land and be binding upon all successors and assigns of both the Grantor and the Grantee.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this ____ day of _____, 19____.

Director, Illinois Department
of Natural Resources

STATE OF ILLINOIS)
) SS
COUNTY OF _____)

I, the undersigned, a Notary Public, in and for the County and State aforesaid, Do

HEREBY CERTIFY that _____, Director of the Illinois Department of Natural Resources, an agency of the State, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that they signed, sealed, and delivered the said instrument as their free and voluntary act, for the uses and purposes herein set forth.

GIVEN under my hand and notarial seal, this ____ day of _____,
19____.

Notary Public

My Commission expires:

ACCEPTED:

Chairman, Illinois Nature Preserves
Commission

Date

Attest:

Secretary, Illinois Nature Preserves
Commission

Date

**SITE MANAGEMENT SCHEDULE FOR ILLINOIS
LAND AND WATER RESERVE -
MANAGEMENT GOALS**

Prepared By: Mark Guetersloh

Site Name: Cache River State Natural Area

County: Johnson, Pulaski

Landowner: Illinois Department of Natural Resources

Manager: Jim Waycuilis

OBJECTIVES FOR ESTABLISHING THE PRESERVE:

The primary objective for establishing the Cache River Land and Water Reserve (Reserve) is the preservation and restoration of wetland and aquatic natural communities along the riparian corridor of the Cache River. Special consideration is given to southern deepwater forested swamps dominated by baldcypress and water tupelo, which reach the northernmost extension of their range within the Coastal Plain Natural Division in extreme southern Illinois. Other high quality natural communities which will be protected within the registry site include wet floodplain forest, wet-mesic floodplain forest, mesic floodplain forest, dry upland forest, dry-mesic upland forest, limestone glade, and sandstone cliff communities. Designation of this site as a Registered Land and Water Reserve will protect existing significant and exceptional natural features, and assure restoration and management of the site are consistent with the preservation of the predisturbance natural character (communities and species) representative of this geographic region.

STATUS OR CONDITION OF NATURAL FEATURES PRESENT:

The Cache River Land and Water Reserve contains high quality examples (Grades A, B) of pond, swamp, wet floodplain forest, wet-mesic floodplain forest, mesic floodplain forest, mesic upland forest, dry-mesic upland forest, and sandstone cliff natural communities. The finest examples of these communities are protected within the Heron Pond-Little Black Slough Nature Preserve (includes portions of Wildcat Bluff), Section 8 Woods Nature Preserve, and the Buttonland Swamp National Natural Landmark (within the Lower Cache River Swamps Natural Area). Still other relatively undisturbed natural communities (terrestrial, wetland, and aquatic), restored wetlands, and upland/bottomland reforestation sites in various stages of succession occur within the the Reserve, and within the boundaries of land owned and managed by the other Joint Venture Partners (USFWS-Cypress Creek National Wildlife Refuge, and The Nature Conservancy). The geographic location, continuity of land in public ownership, and diversity of habitat found on these public lands eliminates habitat fragmentation, allows for hydrologic restoration, and provides buffer that is essential for the preservation of natural communities and species within the Reserve.

TYPES AND EXTENT OF DEGRADATION/ POTENTIAL FOR RESTORATION:

Preservation and restoration efforts continue to maintain and improve the natural character of the proposed Reserve. However, past and present drainage, logging, and land clearing activities disrupted the processes which sustain the natural character of habitat within the watershed. These human caused disturbances continue to affect the runoff and delivery of rainwater that falls in the basin by increasing the volume and velocity of flow within the Cache River and its tributaries. The result is channel incision, lateral gullying, stream bank instability, excessive sediment transport/deposition, increased depth of floodwater, and prolonged duration of flooding during periods of heavy rainfall. Conversely, drainage, logging, and land clearing also causes unnatural and excessive dewatering of wetland and aquatic habitats during seasonal dry periods and drought. Oak-dominated floodplain and upland forests that have had selective timber harvest in the past show some signs of invasion by sugar maple and sassafras. Forest openings and edges have considerable growths of Autumn Olive, Japanese Honeysuckle, and Multiflora Rose. Sandstone cliff communities remain relatively undisturbed. Massive restoration (terrestrial and aquatic) and reforestation efforts have been undertaken by the Cache River Wetlands Joint Venture Partners (Illinois Department of Natural Resources, U.S. Fish and Wildlife Service, The Nature Conservancy, and Ducks Unlimited). Restoration of disturbed land within the purchase boundaries of the Joint Venture Partners will require coordination between each agency. Because of the diversity of resources and the ecological complexity involved with landscape scale restoration, input from other divisions (Wildlife, Forestry, Streams, Fisheries, Land Management) will be required to assure the compatibility and sustainability of restoration efforts. Restoration within the Reserve will primarily involve returning disturbed areas to their predisturbance natural character. However, site specific intensive management for a particular species or range of species may be necessary or desirable where such management potential exists. Recreational use (consumptive and non-consumptive) of the area has increased dramatically each year since the site was created. Impacts from public use are minimal, but could become a problem if the number of users continues to increase.

AMOUNTS OF CURRENT/POTENTIAL VISITOR USE AS RELATED TO MANAGEMENT ISSUES:

Visitor use is moderate and seasonal, but will likely increase as the public becomes aware of available outdoor recreation opportunities at the site. The completion of the Cache River-Tunnel Hill Trail and Cache River Visitor/Education Center will also bring more people to the site. Use is highest during waterfowl, wild turkey, and whitetail deer seasons, but non-consumptive use (examples: hiking, wildlife observation) has increased dramatically during the last five years.

POTENTIAL LINKAGE WITH NEARBY LANDS/ACQUISITION BEING CONSIDERED:

The Cache River Land and Water Reserve includes 9,387.1 acres of land within the

Cache River State Natural Area. The purchase boundary of the Cache River State Natural Area is described in Master Management Plans completed by IDNR for the Little Black Slough Unit and the Lower Cache River Unit. This purchase boundary includes all acreage within the Heron Pond-Little Black Slough and Lower Cache River Swamp Natural Area Inventory Sites, and includes all land within the Reserve. These boundaries include areas which still contain significant forested tracts or wetlands, those areas with restoration potential, and acreage that provides essential buffer for existing high quality natural communities. The primary consideration for the establishment of a purchase boundary for each management unit was to preserve and protect existing high quality natural communities. Since this purchase boundary was established, management objectives for the Reserve have required modification to remain consistent with the concept of landscape scale ecosystem restoration. Primary reasons for this stem from the need for hydrologic restoration throughout the watershed, and recognition of the need to provide unfragmented forested habitat throughout the river corridor. A periodic assessment of management objectives and the purchase boundary for the Cache River State Natural Area should be conducted to assure they are sufficient to achieve long term preservation and restoration goals. All lands within the purchase boundary should be considered integral to the accomplishment of these goals. Currently, land within the Reserve (the Little Black Slough, Lower Cache River, and Glass Hill Management Units) are separated by a 2,234 acre tract of land owned by Jim Rose (Rose Farms). Acquisition of this parcel is essential to allow restoration of a unfragmented block of natural land along the riparian corridor of the Cache River, and to allow reconnection of the upper and lower segments of the River. This site also has tremendous potential for wetland restoration and reforestation. In addition to lands within the Reserve, the U. S. Fish and Wildlife Service-Cypress Creek National Wildlife Refuge also owns considerable land in the Cache River watershed, and have a purchase boundary of 35,320 acres (1,500 acres of land within the Refuge boundary are owned by the Illinois Department of Natural Resources). The Nature Conservancy (TNC) owns 1,100 acres within the Refuge purchase boundary (Limekiln Springs Preserve). Together, the project boundaries of the Joint Venture Partners encompass 60,000 acres within the Cache River watershed. Sites within this managed area include the Cache River State Natural Area (current ownership proposed for registry in the Land and Water Reserve Program), Horseshoe Lake State Conservation Area, Cypress Creek National Wildlife Refuge, and the Limekiln Springs Preserve. Of the 60,000 acres within the project boundary, 40,000 acres have been acquired.

THREATS TO INTEGRITY OF THE RESERVE:

Changes in flooding periodicity (increased depth and duration, and increased drainage), and excessive sediment deposition are the major threats to aquatic and wetland natural communities. Exotic and invasive species on forest edges and in openings disrupt natural regeneration of native species. Woody encroachment is a problem in limestone glades.

OVERALL MANAGEMENT GOALS (RANKED IN PRIORITY ORDER IF POSSIBLE):

- 1) Continue work with the Corps, USDA-Natural Resources Conservation Service, and the Joint Venture Partners to restore the hydrology of the Cache River to a level that will

assure the long-term sustainability of preservation and restoration efforts throughout the Cache River Wetlands.

2) Develop/implement plans to restore aquatic and wetland natural communities throughout the Reserve using a variety of site specific methods (weirs, levees, water control structures, ditch plugs, dredging).

3) Continue reforestation on all tracts which once supported forested communities.

4) Restore the predisturbance character of existing forested natural communities and glades using prescribed fire and herbicides to control invasive and exotic species.

5) Coordinate restoration of wetlands on disturbed sites with Wildlife Resources to provide maximum benefits for migratory waterfowl and shorebirds.

OTHER:

Existing activities, which include hunting, fishing, trapping, hiking, nature study, wildlife viewing, and photography, will be maintained on the Reserve. Hiking trails, boardwalks, parking lots, and other existing access areas will be maintained so that public use of the site does minimal damage to natural communities and species. Construction of a part of the Cache River-Tunnel Hill Trail will be allowed, as will a Visitor/Education Center. The Visitor/Education Center will be built on a 95 acre site east of Route 37, just north of the Section 8 Woods Nature Preserve.

This management schedule has been reviewed by (date indicates approval):

Director, Illinois Department of Natural Resources

Date

Chair, Illinois Nature Preserves Commission

Date

MANAGEMENT UNIT FEATURES

8/14/98

CACHE RIVER
MANAGEMENT UNIT

Author: MARK GUETERSLOH
FEATURES

A: General	Dry upland forest Dry-mesic upland forest Mesic upland forest Wet-mesic upland forest Mesic floodplain forest Wet-mesic floodplain forest Wet floodplain forest Swamp Shrub swamp Spring community Pond Low-gradient creek Low-gradient river Successional field Artificial pond Developed land Tree plantation Archaeological site
B: Upper Cache River Channel	Low-gradient river
C: Lower Cache River Channel	Low-gradient river
D: Little Black Slough	Mesic upland forest Wet-mesic upland forest Mesic floodplain forest Wet-mesic floodplain forest Wet floodplain forest Swamp Shrub swamp Spring community Pond Low-gradient creek Low-gradient river Successional field Artificial pond Tree plantation Developed land

E: Lower Cache River Swamp
Mesic floodplain forest
Wet-mesic floodplain forest
Wet floodplain forest
Southern flatwoods
Swamp
Shrub swamp
Low-gradient creek
Low-gradient river
Successional field
Artificial pond

F: Boss Island
Dry-mesic upland forest
Mesic upland forest
Wet-mesic upland forest
Tree plantation
Successional field

G: Glass Hill
Dry upland forest
Dry-mesic upland forest
Mesic upland forest
Tree plantation
Archaeological site

OTHER SITE INFORMATION

Natural Heritage Biologist: MARK GUETERSLOH

Natural Areas Preservation Specialist: JUDY FAULKNER

Volunteer Steward:

Topographic Map: Karnak, Vienna, and Cypress

Location: 13S02E; 13S03E; 14S01E; 14S02E

Sections: 14, 15, 21-30, 34-36; 19, 20, 21, 28-31; 11-16, 21-24; 7-11, 14-18

Natural Division: 013B, 014B

Legis. Dist: S59; R118

Dedication Date:

Size: 9,367.1

Features Report Form Version 1.0 1/27/95

12.12 Illinois Nature Preserve Commission Management Schedule **Cache River Land and Water Reserve**

INPC Approval Expires: 12/31/2000

Management Unit	Management Objective	Management Action	Start Date	End Date	Lead Agency(ies)	Lead Person(s)
A: General	Annual coordination with other IDNR divisions	Review Plan of Work at Site Resource Meeting.	10/15/1998	11/30/1998	IDNR	Guetersloh
A: General	Annual coordination with other IDNR divisions	Review Plan of Work at Site Resource Meeting.	10/15/1999	11/30/1999	IDNR	Guetersloh
A: General	Annual coordination with other IDNR divisions	Review Plan of Work at Site Resource Meeting.	10/15/2000	11/30/2000	IDNR	Guetersloh
A: General	Control Exotic Woody Vegetation (Autumn Olive)	Cut stump treatment with 50% Roundup or 20% Garlon 4 in oil. Use Rodeo in or near wetland or aquatic natural communities.	01/01/1998	12/31/1998	IDNR	Guetersloh
A: General	Control Exotic Woody Vegetation (Autumn Olive)	Cut stump treatment with 50% Roundup or 20% Garlon 4 in oil. Use Rodeo in or near wetland or aquatic natural communities.	01/01/1999	12/31/1999	IDNR	Guetersloh
A: General	Control Exotic Woody Vegetation (Autumn Olive)	Cut stump treatment with 50% Roundup or 20% Garlon 4 in oil. Use Rodeo in or near wetland or aquatic natural communities.	01/01/2000	12/31/2000	IDNR	Guetersloh
A: General	Control Herbaceous Exotic Vegetation	Use 2% Roundup foliar application for Japanese Honeysuckle. Wait until after killing frost, but before hard freeze.	11/01/1998	12/31/1998	IDNR	Guetersloh
A: General	Control Herbaceous Exotic Vegetation	Use 2% Roundup foliar application for Japanese Honeysuckle. Wait until after killing frost, but before hard freeze.	11/01/1999	12/31/1999	IDNR	Guetersloh
A: General	Control Herbaceous Exotic Vegetation	Use 2% Roundup foliar application for Japanese Honeysuckle. Wait until after killing frost, but before hard freeze.	11/01/2000	12/31/2000	IDNR	Guetersloh
A: General	Document changes due to management	Conduct general surveillance on a semi-annual basis (Boundary, Features, Plants, and Animals)	01/01/1998	12/31/1998	IDNR	Guetersloh

Illinois Nature Preserves Commission Management Schedule (Land and Water Reserve)

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Management Unit	Management Objective	Management Action	Start Date	End Date	Lead Agency(ies)	Lead Person(s)
A: General	Document changes due to management	Conduct general surveillance on a semi-annual basis (Boundary, Features, Plants, and Animals).	01/01/1999	12/31/1999	IDNR	Guetersloh
A: General	Document changes due to management	Conduct general surveillance on a semi-annual basis (Boundary, Features, Plants, and Animals).	01/01/2000	12/31/2000	IDNR	Guetersloh
A: General	Document changes due to management	Set up photo stations in management units; Photograph communities prior to management activity.	01/01/2000	12/31/2000	IDNR	Guetersloh
A: General	Maintain hunting program	Monitor hunter impacts to the site. Record hunter use/harvest data on sign-in sheets at each access area.	01/01/1998	12/31/1998	IDNR	Woodard
A: General	Maintain hunting program	Monitor hunter impacts to the site. Record hunter use/harvest data on sign-in sheets at each access area.	01/01/1999	12/31/1999	IDNR	Woodard
A: General	Maintain hunting program	Monitor hunter impacts to the site. Record hunter use/harvest data on sign-in sheets at each access area.	01/01/2000	12/31/2000	IDNR	Woodard
A: General	Allow trapping of nuisance animals	Allow trapping of nuisance animals as necessary. Trapping by permit only.	01/01/1998	12/31/1998	IDNR	Woodard; Guetersloh; Waycullis
A: General	Allow trapping of nuisance animals	Allow trapping of nuisance animals as necessary. Trapping by permit only.	01/01/1999	12/31/1999	IDNR	Woodard; Guetersloh; Waycullis
A: General	Allow trapping of nuisance animals	Allow trapping of nuisance animals as necessary. Trapping by permit only.	01/01/2000	12/31/2000	IDNR	Woodard; Guetersloh; Waycullis
A: General	Wetland restoration	Develop detailed site-specific plans to restore wetlands throughout the Reserve.	01/01/1998	12/31/1998	IDNR	Guetersloh; Woodard; Waycullis

Illinois Nature Preserves Commission Management Schedule (Land and Water Reserve)

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Management Unit	Management Objective	Management Action	Start Date	End Date	Lead Agency(ies)	Lead Person(s)
A: General	Wetland restoration	Develop detailed site-specific plans to restore wetlands throughout the Reserve.	01/01/1999	12/31/1999	IDNR	Guetersloh, Woolard, Waycullis
A: General	Wetland restoration	Develop detailed site-specific plans to restore wetlands throughout the Reserve.	01/01/2000	12/31/2000	IDNR	Guetersloh, Woolard, Waycullis
B: Upper Cache River Channel	Document changes in channel morphology	Measure changes in channel morphology at selected sites every three years.	01/01/1999	12/31/1999	IDNR	Guetersloh, Joint Venture Partners
B: Upper Cache River Channel	Document changes in water quality	Conduct monthly sampling of basic water chemistry at selected sites.	01/01/1998	12/31/1998	IDNR	Guetersloh, Joint Venture Partners
B: Upper Cache River Channel	Document changes in water quality	Conduct monthly sampling of basic water chemistry at selected sites.	01/01/1999	12/31/1999	IDNR	Guetersloh, Joint Venture Partners
B: Upper Cache River Channel	Document changes in water quality	Conduct monthly sampling of basic water chemistry at selected sites.	01/01/2000	12/31/2000	IDNR	Guetersloh, Joint Venture Partners
B: Upper Cache River Channel	Control channel incision	Install cross-channel weirs at selected locations.	01/01/1999	12/31/2000	IDNR, USACOE	Guetersloh, Waycullis
B: Upper Cache River Channel	Reconnect the upper and lower segments of the Cache River	Continue to work with the USACOE to develop and implement a structure to reconnect the river segments	01/01/1998	12/31/2000	IDNR, USACOE	Guetersloh, Waycullis
B: Upper Cache River Channel	Restore deepwater habitat	Utilize IDNR mudcat dredge to remove silt from the channel of the Cache River at selected locations.	01/01/1998	12/31/2000	IDNR	Guetersloh, Waycullis
C: Lower Cache River Channel	Document sediment deposition	Develop and implement a sediment monitoring protocol.	01/01/1998	12/31/2000	IDNR, ISWS, TNC	Guetersloh, Waycullis, Nelson (TNC)
C: Lower Cache River Channel	Document changes in water quality	Conduct monthly sampling of basic water chemistry at selected sites.	01/01/1998	12/31/1998	IDNR, TNC, USFWS	Guetersloh

Illinois Nature Preserves Commission Management Schedule (Land and Water Reserve)

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Management Unit	Management Objective	Management Action	Start Date	End Date	Lead Agency(ies)	Lead Person(s)
C: Lower Cache River Channel	Document changes in water quality	Conduct monthly sampling of basic water chemistry at selected sites.	01/01/1999	12/31/1999	IDNR, TNC, USFWS	Guetersloh
C: Lower Cache River Channel	Document changes in water quality	Conduct monthly sampling of basic water chemistry at selected sites.	01/01/2000	12/31/2000	IDNR, TNC, USFWS	Guetersloh
C: Lower Cache River Channel	Maintain the Diehl Dam	Remove sediment and organic debris from the site as needed. Maintain dam elevation at 328.4 msl.	01/01/1998	12/31/2000	IDNR	Waycullis
C: Lower Cache River Channel	Restore deepwater habitat	Utilize IDNR mudcat dredge to remove silt from the channel of the Cache River at selected locations.	01/01/1998	12/31/2000	IDNR, USFWS	Waycullis, Guetersloh
C: Lower Cache River Channel	Maintain low-water levels at 328.4 msl	Remove beaver dams, debris dams as required	01/01/1998	12/31/2000	IDNR	Waycullis, Guetersloh
C: Lower Cache River Channel	Monitor flow volume and velocity	Record data from Stevens water level recorders and staff gages. Develop stage discharge curves at selected sites.	01/01/1998	12/31/2000	IDNR	Guetersloh
C: Lower Cache River Channel	Document changes in stream fauna	Sample aquatic macroinvertebrates, fish, and shellfish at selected sites every three years.	01/01/1998	12/31/1998	IDNR, USFWS	Guetersloh
C: Lower Cache River Channel	Document changes in stream fauna	Sample aquatic macroinvertebrates, fish, and shellfish at selected sites every three years.	01/01/1999	12/31/1999	IDNR, USFWS	Guetersloh
D: Little Black Slough	Restore/maintain natural communities	Cut invasive/exotic woody vegetation on reforestation sites; treat with 20% Garlon 4A in oil carrier or 50% Roundup in water.	01/01/1998	12/31/1998	IDNR	Guetersloh
D: Little Black Slough	Restore/maintain natural communities	Cut invasive/exotic woody vegetation on reforestation sites; treat with 20% Garlon 4A in oil carrier or 50% Roundup in water.	01/01/1999	12/31/1999	IDNR	Guetersloh

Illinois Nature Preserves Commission Management Schedule (Land and Water Reserve)

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Management Unit	Management Objective	Management Action	Start Date	End Date	Lead Agency(ies)	Lead Person(s)
D: Little Black Slough	Restore/maintain natural communities	Cut invasive/exotic woody vegetation on reforestation sites; treat with 20% Garlon 4A in oil carrier or 50% Roundup in water.	01/01/2000	12/31/2000	IDNR	Guetersloh
D: Little Black Slough	Restore off-channel wetlands	Install retention structures in erosion gullies that are draining wetlands adjacent to the river channel.	01/01/1998	12/31/1998	IDNR	Guetersloh; Waycullis
D: Little Black Slough	Restore off-channel wetlands	Install retention structures in erosion gullies that are draining wetlands adjacent to the river channel.	01/01/1999	12/31/1999	IDNR	Guetersloh; Waycullis
D: Little Black Slough	Restore off-channel wetlands	Install retention structures in erosion gullies that are draining wetlands adjacent to the river channel.	01/01/2000	12/31/2000	IDNR	Guetersloh; Waycullis
E: Lower Cache River Swamp	Restore/maintain natural communities	Cut invasive/exotic woody vegetation; treat with 20% Garlon 4A in oil carrier or 50% Roundup in water.	01/01/1998	12/31/1998	IDNR	Guetersloh
E: Lower Cache River Swamp	Restore/maintain natural communities	Cut invasive/exotic woody vegetation; treat with 20% Garlon 4A in oil carrier or 50% Roundup in water.	01/01/1999	12/31/1999	IDNR	Guetersloh
E: Lower Cache River Swamp	Restore/maintain natural communities	Cut invasive/exotic woody vegetation; treat with 20% Garlon 4A in oil carrier or 50% Roundup in water.	01/01/2000	12/31/2000	IDNR	Guetersloh
E: Lower Cache River Swamp	Wetland restoration	Eliminate unnatural drainage of wetlands. Fill drainage ditches and/or install structures as needed.	01/01/1998	12/31/2000	IDNR	Guetersloh; Woolard; Waycullis
E: Lower Cache River Swamp	Maintain canoe trails	Conduct annual surveillance; remove buttonbush as needed; maintain trail markers.	01/01/1998	12/31/1998	IDNR	Waycullis
E: Lower Cache River Swamp	Maintain canoe trails	Conduct annual surveillance; remove buttonbush as needed; maintain trail markers.	01/01/1999	12/31/1999	IDNR	Waycullis

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Management Unit	Management Objective	Management Action	Start Date	End Date	Lead Agency(ies)	Lead Person(s)
E: Lower Cache River Swamp	Maintain canoe trails	Conduct annual surveillance; remove buttonbush as needed; maintain trail markers.	01/01/2000	12/31/2000	IDNR	Waycuilis
F: Boss Island	Develop a restoration plan	Coordinate with regional forester to develop a restoration plan for Boss Island.	01/01/1998	12/31/1998	IDNR	Guetersloh
F: Boss Island	Restore/maintain natural communities	Conduct prescribed burn; spring or fall timing; skip a year between burns; delineate unburned areas each year to provide habitat for insects.	01/01/1999	12/31/1999	IDNR	Guetersloh
F: Boss Island	Restore/maintain natural communities	Conduct prescribed burn; spring or fall timing; skip a year between burns; delineate unburned areas each year to provide habitat for insects.	01/01/2000	12/31/2000	IDNR	Guetersloh
F: Boss Island	Restore/maintain natural communities	Cut invasive/exotic woody vegetation; treat with 20% Garlon 4A in oil carrier or 50% Roundup in water.	01/01/1998	12/31/1998	IDNR	Guetersloh
F: Boss Island	Restore/maintain natural communities	Cut invasive/exotic woody vegetation; treat with 20% Garlon 4A in oil carrier or 50% Roundup in water.	01/01/1999	12/31/1999	IDNR	Guetersloh
F: Boss Island	Restore/maintain natural communities	Cut invasive/exotic woody vegetation; treat with 20% Garlon 4A in oil carrier or 50% Roundup in water.	01/01/1999	12/31/2000	IDNR	Guetersloh
F: Boss Island	Restore/maintain natural communities	Girdle 25% of non-native pines to allow for regeneration of native tree species.	01/01/1999	12/31/1999	IDNR	Pirtle; Guetersloh; Waycuilis
F: Boss Island	Restore/maintain natural communities	Girdle 25% of non-native pines to allow for regeneration of native tree species.	01/01/2000	12/31/2000	IDNR	Pirtle; Guetersloh; Waycuilis
G: Glass Hill	Semi-annual surveillance	Conduct surveillance 2x/year to monitor for illegal digging of artifacts.	01/01/1998	12/31/1998	IDNR	Guetersloh

Illinois Nature Preserves Commission Management Schedule (Land and Water Reserve)

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Management Unit	Management Objective	Management Action	Start Date	End Date	Lead Agency(ies)	Lead Person(s)
G: Glass Hill	Semi-annual surveillance	Conduct surveillance 2x/year to monitor for illegal digging of artifacts.	01/01/1999	12/31/1999	IDNR	Guetersloh
G: Glass Hill	Semi-annual surveillance	Conduct surveillance 2x/year to monitor for illegal digging of artifacts.	01/01/2000	12/31/2000	IDNR	Guetersloh
G: Glass Hill	Post boundaries	Place Land and Water Reserve signs at 330' intervals around site boundaries.	01/01/1998	12/31/1999	IDNR	Waycullis
H: Foot traffic only trails	Maintain trails	Routine trail maintenance; removal of fallen trees, limbs; repair or resurface as needed.	01/01/1998	12/31/2000	IDNR	Waycullis
H: Foot traffic only trails	Construct new trail	Construct new trail from Wildcat Bluff to the Heron Pond area on old county road bed.	01/01/1998	12/31/2000	IDNR	Waycullis
I: Parking lots	Maintain existing parking lots and hunter sign-in boxes	Routine maintenance--remove garbage, add gravel, smooth surface, replace hunter sign-in sheets as needed.	01/01/1998	12/31/2000	IDNR	Waycullis

