

## CHAPTER 1 - INTRODUCTION

Cypress Creek National Wildlife Refuge (Refuge) was authorized June 26, 1990 under the Emergency Wetlands Resources Act of 1986 (16 U.S.C. 3901 b, 100 Stat. 3583, PL 99-645). The primary purposes of the Refuge are 1). *to protect, restore and manage wetlands and bottomland forest habitats in support of the North American Waterfowl Management Plan;* 2). *to provide resting, nesting, feeding and wintering habitat for waterfowl and other migratory birds;* 3). *to protect endangered and threatened species and their habitats;* 4). *to provide for biodiversity;* 5) *to protect a National Natural Landmark;* 6). *and to increase public opportunities for compatible recreation and environmental education.*

The Refuge is also an important component of the New Madrid Wetlands Project initiative which is a part of the North American Waterfowl Management Plan (North American Plan). The North American Plan is an international accord between the United States, Canada, and Mexico; its purpose is to restore waterfowl populations and their habitats to levels that existed between 1970-79. *Under this authority of the North American Plan, the Refuge is responsible for the management and restoration of bottomland hardwood forests and wetlands habitat for migratory birds.* The Refuge, once fully restored, will include nearly 16% of the wetlands in the New Madrid Wetlands Project and provide invaluable habitat for migratory and resident wildlife.

The Refuge purposes and North American Plan responsibilities provide a foundation for this Comprehensive Management Plan (Plan). This document will guide management decisions and activities on the Refuge over the next 15 years.

## ***THE SETTING***

### ***NATIONAL WILDLIFE REFUGE SYSTEM***

The U. S. Fish and Wildlife Service (Service) is the principal agency responsible for conserving, protecting, and enhancing fish and wildlife and their habitats. The Service manages a diverse network of over 500 National Wildlife Refuges, a System which encompasses 92 million acres of lands and waters. National Wildlife Refuges are set-up for specific purposes and provide habitat for over 5,000 species of birds, mammals, fish, and insects. Cypress Creek National Wildlife Refuge is one of the most unique and diverse refuges in this System. Other National Wildlife Refuges within a 75 mile radius of Cypress Creek include: Crab Orchard, Patoka River, Mingo, Reelfoot, Cross Creeks, and the recently established Clark's River Refuge in Kentucky. Cypress Creek is in the Great Lakes - Big Rivers Region, with its office in Minneapolis.

*Refuges are "the only network of lands dedicated to preserving the quality of life for Americans by protecting their wildlife heritage."  
U.S. Fish and Wildlife Service*

### ***THE ECOSYSTEM***

Cypress Creek National Wildlife Refuge is in the **Upper Mississippi River/Tallgrass Prairie Ecosystem.** Future direction will emphasize the ecosystem approach to management with the Refuge being a focus area within this ecosystem.

In 1995, the Service designated 52 ecosystems for the United States. The Cache River watershed is located at the juncture of three ecosystems: the Ohio River Valley, the Lower Mississippi River, and the Upper Mississippi River/Tallgrass Prairie. There was good justification to place the Refuge in any one of these ecosystems as the Cache River empties into both the Ohio and Mississippi Rivers. As such, the Upper Mississippi River/Tallgrass Prairie Ecosystem was chosen to administratively associate the Refuge with several other Region 3 refuges located in the ecosystem.

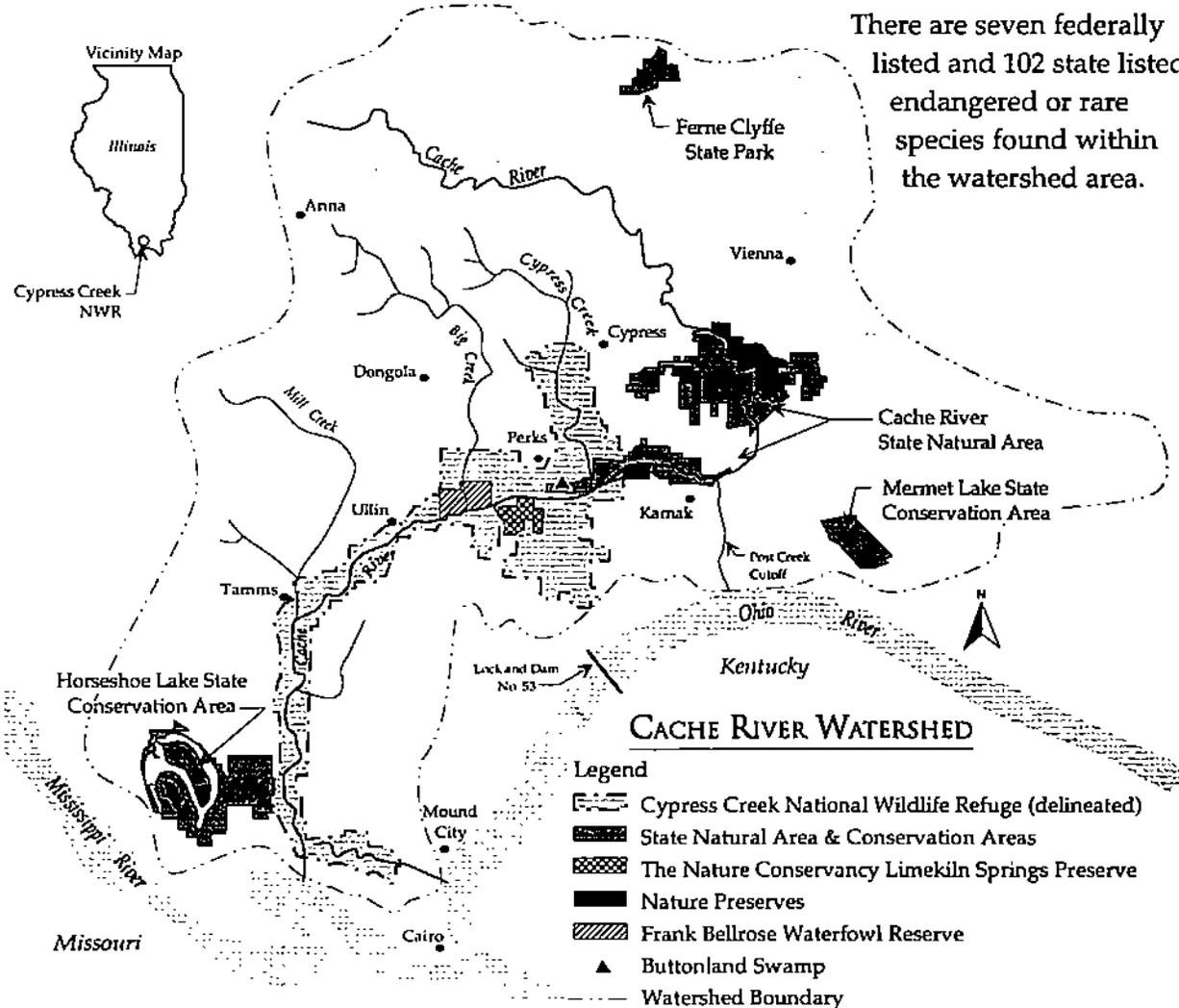
Within the United States there are only six areas where four or more physiographic provinces come together and intermingle their plant communities (Physiography of the

United States, Loomis, 1937). The Cache River watershed is probably the most diverse of these six. The four provinces that join in the Cache River watershed are: Central Lowlands, Interior Low Plateaus, Ozark Plateau, and Coastal Plain. Biological diversity of the Refuge is high compared to most of the Midwest due to this unusual combination of environmental influences.

***THE WATERSHED - THE CACHE RIVER BIORESERVE***

The 475,000 acre Cache River watershed is bounded on the west by the Ozark Hills, on the north and east by the Shawnee Hills and on the south by the Mississippi and Ohio Rivers. This watershed was designated the "Cache River Bioreserve" by the Nature Conservancy in 1991, the first to be so dedicated in the United States.

There are seven federally listed and 102 state listed endangered or rare species found within the watershed area.



Prior to 1916, the Cache River emptied into the Ohio River near Mound City. Today the Cache empties into the Ohio River near Grand Chain through the Post Creek Cutoff, the Mississippi River near Cache through the Diversion Ditch, and into the Ohio at the original location. The most dramatic unnatural feature associated with the hydrology of the watershed is the Post Creek Cutoff which was dug in 1915.

A Cache River Watershed Resource Plan was completed in 1995 by a Resource Planning Committee of local citizens with technical advice from agency personnel. The project was made possible by a grant from the U.S Environmental Protection Agency through the Illinois Department of Natural Resources, to The Nature Conservancy. Resource concerns identified by this team include:

1. *Erosion*
2. *Open Dumping*
3. *Private Property Rights*
4. *Water Quality*
5. *Continuation of Government Farm Conservation Programs*
6. *Post Creek Cutoff*
7. *Open Flow on the Cache*
8. *Disseminate Accurate and Timely Information Throughout the Watershed*
9. *Impacts of Wildlife on Farming and Vice-Versa 2*

Funding to address and correct these concerns will be sought through the Resource Planning Committee. A new program, Illinois Department of Natural Resources Conservation 2000, has great potential as a source of funding.

The U.S. Army Corps of Engineers, St. Louis District (Corps) is conducting The General Investigations Study of Alexander and Pulaski Counties, Illinois, focusing on the area between Vienna, Karnak, and Perks. This is a three year study with the Illinois Department of Natural Resources as the non-federal sponsor. Problems being addressed by the Corps include sedimentation in the Lower Cache River and entrenchment of the Post Creek cutoff.

*"A wetland is an ecosystem that depends on constant or recurrent shallow inundation or saturation at or near the surface of the substrate."*

*National Research  
Council Committee on Wetlands*

## *CACHE RIVER WETLANDS*

The core of the Bioreserve is the 60,000 acre land acquisition and management project being undertaken by the Joint Venture partners. Areas covered include: Cache River State Natural Area, Horseshoe Lake State Conservation Area, Cypress Creek National Wildlife Refuge, and Limekiln Springs Preserve. Of the 60,000 acres, approximately 40,000 acres have been acquired to date. This is the heart of the watershed relative to wetlands protection and ecological restoration.

The variety of plants, the quantity and size of old growth trees and woody shrubs in this middle Mississippi Valley location all contribute to the uniqueness of the ecological community that is found in the Cache River Wetlands. Buttonland Swamp, with its massive 1,000 year old cypress trees is a highlight of the Cache River Wetlands and is recognized as a National Natural Landmark.

### *RAMSAR - INTERNATIONAL DESIGNATION*

The Cache River -Cypress Creek Wetlands were designated as a "wetlands of international importance - especially as waterfowl habitat" on November 11, 1994 under terms of the Ramsar Convention. A celebration event in May 1996 was attended by national and international dignitaries. There are only 15 Ramsar sites in the United States; there are 390 sites in the world. This designation brings international attention to this area.

### *CYPRESS CREEK NATIONAL WILDLIFE REFUGE*

The Refuge will someday be a 35,320 acre contiguous tract of land pieced together from remnants of cypress-tupelo swamps, oak barrens, and vast stands of bottomland forests. The foreseeable future is one of land acquisition, intensive management, reforestation, education and citizen involvement in the restoration process.

The Refuge currently totals 13,000 acres acquired by the Service from willing sellers at a cost of \$10 million (average \$770/acre). From 1990-95 the annual land purchases averaged 2,000 acres. This average is expected to fall to

500-1,000 acres annually. Other Joint Venture Partners also own land within the Refuge purchase boundary. They include the Illinois Department of Natural Resources with 1,500 acres, and The Nature Conservancy with 1,100 acres.

To offset the loss of tax revenues to local counties the Service makes annual payments "in lieu of taxes" to counties under the Refuge Revenue Sharing Act of 1935. Payments represent 3/4 of 1% of the assessed land value. In 1995, payments totaled \$48,000 for 12,500 acres (average \$3.98/acre).

Executive Order 12996, Management and General Public Use of the National Wildlife Refuge System (signed March 25, 1996 by President Bill Clinton) sets the direction for National Wildlife Refuge public use, habitat improvement partnerships, and public involvement. Cypress Creek National Wildlife Refuge can be a model of the intent of this Executive Order. Implementation is well underway.

### ***EXISTING PARTNERSHIPS***

Partnering (cooperative action) is recognized as the best solution to the restoration of the Cache River Wetlands ecosystem. Existing partnerships include:

#### ***JOINT VENTURE - 1993 (PRINCIPAL LAND OWNERS IN THE CACHE RIVER WETLANDS)***

The U. S. Fish and Wildlife Service, Illinois Department of Natural Resources, The Nature Conservancy, and Ducks Unlimited entered into a Memorandum of Agreement forming a Joint Venture Partnership for protecting the biological diversity and improving the quality of the human environment in the Cache River Wetlands. Common purposes of the Joint Venture Partnership are to:



- ❖ protect natural habitat and endangered species and to restore and manage habitat for native species;
- ❖ assist in accomplishing the objectives of the North American Waterfowl Management Plan and the Illinois Natural Areas Plan;
- ❖ protect unique areas of ecological and cultural importance;
- ❖ protect important or unique natural features; and
- ❖ protect and improve the condition and functional integrity of the entire Cache River ecosystem.

#### *CACHE CONSORTIUM - 1994*

A group of federal and state agencies and a not-for-profit organization united as the Cache River Consortium. The signatories of the Memorandum of Agreement recognize that each has specific responsibilities for addressing the natural resource management challenges of the Cache River Basin. Currently membership in the Consortium consists of:

- ❖ Illinois Department of Natural Resources - including Natural History Survey and Water Survey.
- ❖ Illinois Environmental Protection Agency
- ❖ Illinois Nature Preserves Commission
- ❖ The Nature Conservancy
- ❖ U. S. Forest Service
- ❖ Natural Resources Conservation Service
- ❖ Southern Illinois University
- ❖ U. S. Army Corps of Engineers
- ❖ U. S. Fish and Wildlife Service

## *CITIZENS COMMITTEE TO SAVE THE CACHE RIVER - 1979*

A small private, local advocacy group of citizens became concerned about land clearing, erosion, and sedimentation along the Cache River and adjacent wetlands. They organized "to promote conservation practices in the Cache River Basin and to preserve the natural values of the Lower Cache River". Their objectives are to support: land acquisition funding, habitat protection and enhancement, public hunting and other compatible public uses, compatible development to boost the area economy, information and education, monitoring, and volunteering. The Citizens Committee to Save the Cache River has received national and international recognition.

## *LOCAL SCHOOLS PARTNERSHIPS- 1995*

Cypress Creek Refuge has partnership agreements with Bennett Elementary School of Cairo, Anna-Jonesboro High School, Egyptian Elementary School, and the JAMP Special Services office. Partnerships also exists with the Illinois State Museum in Springfield and the Regional Office of Education (Alexander, Johnson, Massac, Pulaski, and Union Counties).

## *HISTORIC CONTEXT*

Although the history of the area in and around the Cache River is both long and varied, the greatest changes began around the time that Joliet and Marquette first traveled the Mississippi River in 1673. A chronology of the major events since that time is provided below.

- |      |   |
|------|---|
| 1673 | Joliet and Marquette came down the Mississippi River. Habitat was a mix of upland forest, herbaceous wetlands, cypress-tupelo swamps, floodplain woods, and prairie remnants. |
| 1702 | French fur trading became active and thousands of buffalo hides were processed at Juchereau's tannery.  |
| 1795 | William Bird landed at Mississippi and Ohio Rivers confluence; present day Cairo.   |

*"Nowadays almost all man's improvements, so called, as the building of houses and the cutting down of the forest and of all large trees, simply deform the landscape, and make it more and more tame and cheap."*

*Henry David Thoreau*

- 1803 Southern Illinois is acquired by treaty from the Kaskasia Indians.
- 1804 Public Land Survey began in southern Illinois and first permanent settlers arrived in Cache Basin.
- 1811-12 Major destruction to area by New Madrid earthquakes.
- 1840's Farmsteads and small sawmills established and dams for navigation and mills; first levees and drainage ditches planned.
- 1870-1900 Logging, railroads, and Main Brothers Mill established.
- 1911-16 In an effort to control flooding and drain wetlands to support logging and agriculture the Cache River Drainage District formed, Post Creek Cutoff dug, Cypress Creek Ditch dug, ditching near Ullin, and levees constructed.
- 1920 & 30's Extensive clearing of bottomland forests and straightening of sections of Lower Cache River and Big Creek.
- 1937 Greatest flood on record from Ohio River, followed by extensive levee work.
- 1937 Biologists believe this is when the "point of equilibrium" in natural land conversion was reached in the Cache River Basin. All of the ground which was economical to farm was under cultivation, and wetlands were not greatly or adversely impacted.
- 1950-51 Diversion levee and cutoff from Cache River to Mississippi River constructed by Corps of Engineers; also Forman Floodway constructed which cut Cache River in two.
- 1950's Out-of-state farmers acquired large tracts of Cache bottomland.
- 1965 Illinois Nature Preserves Commission passed a resolution to support public land acquisition and nature preserve designation for Heron Pond area.
- 1969 Natural Land Institute, private conservation agency in Rockford, Illinois, acquired the first land along the Cache River for natural areas protection.

- 1970 Illinois Department of Conservation acquired first land as part of the Cache Project at Heron Pond.
- 1976 The Nature Conservancy became active in the Cache River wetlands preservation effort.
- 1978 Illinois Natural Areas Inventory was completed and documented 60 natural areas of state-wide significance within the Cache River watershed.
- 1979 The Citizens Committee to Save the Cache River formed.
- 1980 Buttonland Swamp is designated by the National Park Service as a National Natural Landmark.
- 1990 Cypress Creek National Wildlife Refuge established June 26.
- The Joint Venture office, Cypress Creek Refuge and The Nature Conservancy, was established on the campus of Shawnee Community College, November 4.
- Cache River State Natural Area staff and office established at Belknap.
- 1991 Cypress Creek Refuge dedication event attended by 500 people on May 18.
- Cache River Watershed designated a Bioserve by The Nature Conservancy.
- Ducks Unlimited developed the Frank Bellrose Waterfowl Reserve.
- 1994 Cache River - Cypress Creek Wetlands was designated a wetlands of international importance - especially for waterfowl - under the Ramsar Convention, November 1.
- 1996 Cache River - Cypress Creek Ramsar Site and 25th Convention Celebration was held May 4.

Cypress Creek Refuge has a staff of six with 13,000 acres acquired. Cache River State Natural Area has a staff of four with 10,500 acres acquired. The Nature Conservancy has a staff of five and currently owns 1,300 acres along the Cache River.

## *GEOGRAPHIC AND SOCIO-ECONOMIC CONTEXT*

The Cache River Basin, at the confluence of the Mississippi and Ohio Rivers, covers portions of Alexander, Johnson, Massac, Pulaski, and Union counties in southernmost Illinois. Topography of the 475,000-acre watershed varies from 280' above mean sea level to 890' above mean sea level. Climate includes warm, humid, summers and cool to cold winters. Average annual precipitation is 45 inches, average snowfall is 10 inches, and frost free days average 230. Temperatures range from -20° F. to 105° F.

### *SOCIO-ECONOMIC*

The counties of Johnson and Pulaski are in the 19th U.S. Congressional District while Union and Alexander Counties are in the 12th U.S. Congressional District. These counties are sparsely populated. The 1990 census was 62,000, with only four cities having more than 1,000 people. The largest city, Anna, has 4,700 people. The area is the most economically depressed in Illinois with unemployment averaging 14% and with 22% of the residents living below the national poverty level.

Agriculture is diversified and includes row cropping, haying, livestock grazing, and fruit and vegetable production. Agriculture is a major element of the landscape but is not a major contributor to personal income within the region. Farm income as a percentage of total personal income has been below six percent for the past 20 years in the region.

Tourism and recreation are industries that appear to be growing in southern Illinois. There are 20+ state and federal outdoor recreational facilities within a 50-mile radius of the Refuge. These other facilities complement the activities that are planned for the Refuge. "Although there appears to be an adequate supply of outdoor recreation areas in the region, the Refuge will offer an attraction and facilities that are not currently available or even planned." The Refuge will draw visitors interested in the unique natural features of the Cache River and the environmental educational opportunities provided by the Wetlands Center.

### *EDUCATIONAL INSTITUTIONS*

Shawnee Community College, which has an enrollment of 1,800 students, is located adjacent to the Refuge. Southern Illinois University - Carbondale, with 20,000 students, is 40 miles northwest of the Refuge. Century School is surrounded by the Refuge delineated boundary. Other schools in the vicinity include Anna-Jonesboro, #5 Community School, Cypress, Dongola, Vienna, Egyptian, Meridian, Bennett, Emerson and Cairo. The Regional Office of Education and JAMP Special Services offices are also located near the Refuge. Touch of Nature, a residential environmental education facility is located 30 miles to the northwest and is a part of Southern Illinois University. Facilities and access for environmental educational opportunities on the Refuge are currently very limited.