prairierivers network

UMR Current

A publication on the Upper Mississippi River by Prairie Rivers Network
The Illinois Affiliate of the National Wildlife Federation

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Update on WRDA

Water Resources Development Act

Both the House and Senate have passed versions of the WRDA bill, which contains NESP and other water resources related projects. Because the versions differ, the House and Senate needed to conference to resolve these differences, which they completed before the end of July. The full House passed WRDA before the August summer break but the Senate will not vote on the bill until they return from break in September. Corps reform remains a contentious issue.

If you would like to subscribe to the newsletter or contribute to its content please contact Brad Walker: River Restoration Program Coordinator at bwalker@prairierivers.org.❖

Inside This Issue

How About a Bit of Consistency

There seem to be two conflicting approaches regarding the Mississippi River floodplains between two Corps of Engineers Districts, both part of the Corps' Mississippi River Division. The Memphis District seems to want to continue the failed approach of the 19th and 20th centuries, disconnecting the river from its floodplain at every opportunity. The St. Louis District has apparently accepted that a floodplain river like the Mississippi actually needs a floodplain connected to it to function properly.

Conflicts in theoretical beliefs are not uncommon, but when putting one of those beliefs into action in the real world, major problems can be the result. It is likely that the conflicting beliefs of these two Districts will come into play on a section of the UMR around Cairo, Illinois, with potentially tragic results.

While the St. Louis District is promoting floodplain reconnection from St. Louis south to Cairo as one of the important goals in a collaboration called the Middle Mississippi River Partnership, the Memphis District is pursuing the closing of one of the last non-leveed sections of the Mississippi River floodplain through a project called the St. John's Bayou – New Madrid Floodway located in Missouri south of Cairo.

The St. John's Bayou – New Madrid Floodway project would involve the construction of a new 1,500-foot section of levee, closing an opening in an area of the Mississippi River floodplain that has never been closed. Although it purports to be a flood protection project for a small town called East Prairie, it is really being pursued to protect farmland owned by a handful of landowners within the New Madrid Floodway. Focusing on East Prairie provides some community development spin, diverting our attention from the true beneficiaries.

In the 1930s people recognized the need for a safety valve for large floods. This huge floodway area has served that important purpose benefiting people living upstream and especially in Cairo. The location of this floodway is no accident; it is directly below the confluence of the Upper Mississippi and Ohio Rivers and above a series of large leveed meanders in the Lower Mississippi River, an area very susceptible to

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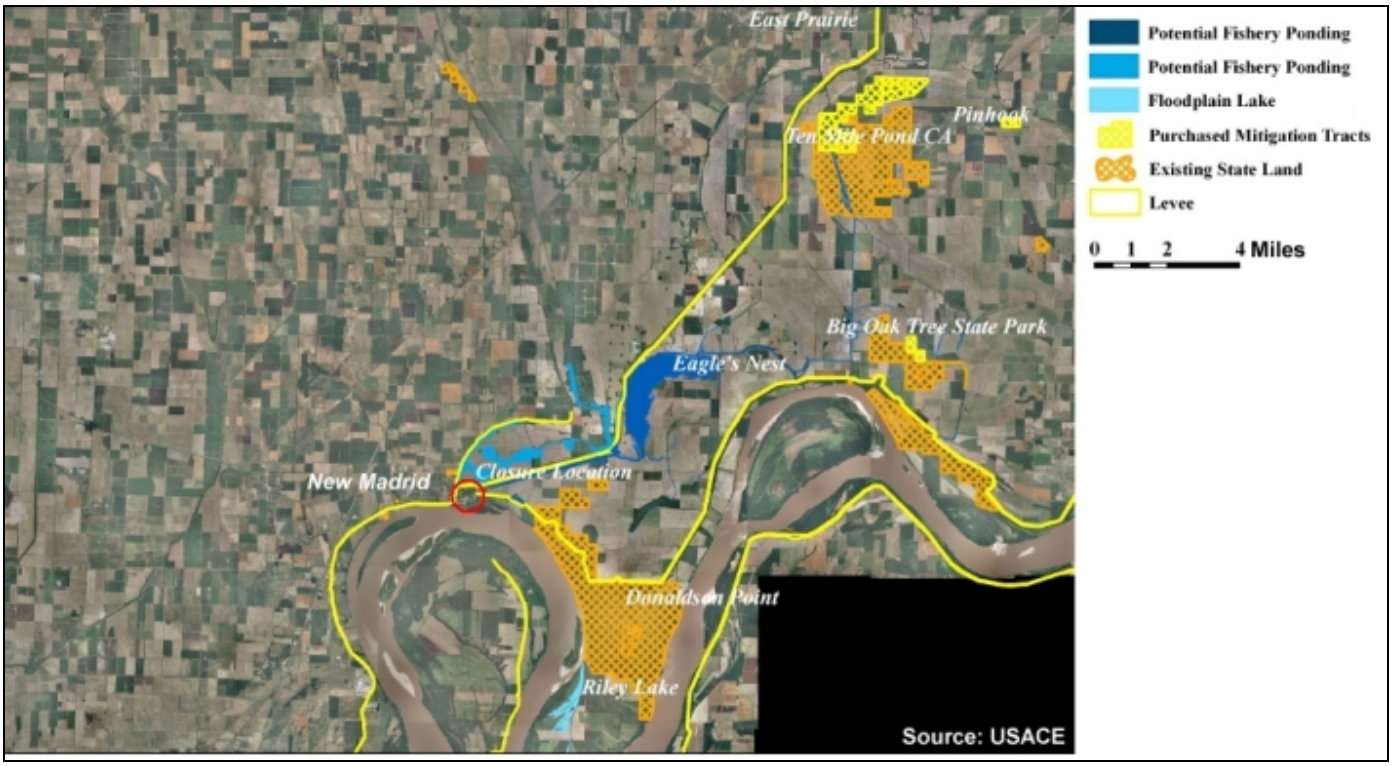
high river stages. [See Map Below] One wonders whether the New Madrid Floodway will have to be renamed if the project is built since it would likely no longer provide its intended floodway purpose.

The local Congresswoman promoting the project likes to call those who oppose the project environmental extremists. But the U.S. EPA, the U.S. Fish and Wildlife Service, and the Missouri Department of Conservation, typically not considered extremists, are among the organizations opposing it.

New Madrid Floodway – inside black/white line

Senator Bond has tried to move legislation, typically through the notorious earmark method, which would allow this $100 million project to proceed. Through every legitimate process thus far he has been thwarted. Now he has, with a back-handed agreement, attached a rider to a bill in the Energy and Water Development Appropriations Committee adding the project. Because of the environmental impact that this project would have it should have gone through the Environment and Public Works Committee. And in fact, Senator Bond attempted this and the project was rejected by that committee.

Not so coincidentally there is a lawsuit working its way through the federal courts on this project, in which the plaintiffs assert that the project violates several major environmental laws including the Clean Water Act and the National Environmental Policy Act. If the appropriations bill that contains the rider is approved by Congress the lawsuit would be moot and the project would no longer be subject to our environmental laws. We do not believe that this was the intent of law-makers who drafted these acts.



New Madrid Floodway Levee Closure – red circle area

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It has been estimated that by closing the levee opening [See Aerial Map above] and cutting off the river from its natural floodplain that up to 80,000 acres of floodplain and wetlands ecosystems would be damaged if not lost. The environmental mitigation offered by the Corps is not comparable – 9,000 acres of bottomland tree planting that will not be connected to the river. They will also install pump stations; their answer to nature's hydrological pulses, which will manipulate the areas water level. Although there is an indication that these pump stations will benefit wildlife through controlled flooding they are really being constructed primarily to drain farmland.

Promoting questionable projects is not new for the Corps but with their recent environmental awakening one would hope that they would be a little more particular in selecting them. ❖

Articles in upcoming issues

Articles we are planning for upcoming issues of the newsletter include: ecosystems of a typical UMRS pool, ecological status of the UMRS, detailed coverage of individual pools, and restoration funding. We will also include reoccurring articles on restoration issues, tourism and the status of the PRN Program.

Submission of articles by readers is also welcomed; inclusion will be subject to content and length limitations.

Calendar of Events

Rolling on the River: Illinois Ride for the Environment

Hoover Outdoor Education Center, Yorkville, IL

August 25, 2007

It's Our River Day

Riverfront Park in Downtown Alton, IL

September 15, 2007

Festival to celebrate Illinois Watersheds

Prairie Rivers Network River Retreat

Camp Timber Point, Bloomington, IL

October 27-28, 2007

Join PRN for a weekend of learning, networking, and a lot of fun!

Please advise us of important upcoming Upper Mississippi River events so we can include them in our Calendar of Events.

River Sedimentation

A natural and essential process within a river basin is sedimentation, the act of soils moving downstream as a result of erosion. This is a simple result of gravity where a soil particle takes a free ride with water while it flows to lower ground. This dynamic process shapes a river system, both its path and its topography, and creates rich and diverse ecosystems within and along the river's path.

On its path the soil particle may reach a point where the river flow slows down and the particle may settle to the bottom of the river, potentially being picked up again if the flow increases. The particle may find itself settling in a secondary channel or a backwater area. The particle may have been picked up during a flood event and settle in a floodplain along the river where there is normally no water flow. Some particles make the complete trip to the area where the river meets the ocean and settle out in its delta.

These particles form the structure of the river's ecosystems and the constant but pulsing dynamics of their settlement creates and replenishes the habitats that have developed. This is not to say that there is some sort of inherent balance of sedimentation flowing down the river because rainfall varies from year to year. And natural flowing rivers often change their course, sometimes quite abruptly.

The point is that the river basin ecosystems have evolved to accommodate a free-flowing sedimentation process. However, as with all living systems, their vitality is affected by how much sedimentation is received – the Goldilocks Principle. Too much sedimentation will tend to smother life, while too little will stifle it. But again, the systems have learned to survive through short-term periods of excess and deficiency and were doing apparently quite well.

Then humans came on the scene realizing that settling along rivers provided great advantages to them. Rivers are a vast source of most essential requirements for life; water, food and materials for shelter, and they also serve as a means of transportation and what seemed like an infinite depository for our unwanted waste. In time we humans multiplied many times and our demands upon the rivers increased along with our population. We became more innovative by developing tools and methods to increase our productivity. However, we did not consider our impact upon the rivers in the process.

Specifically within the Upper Mississippi River (UMR) basin we have proceeded upon a series of large-scale changes over the last 150 years that have had dramatic impacts to the river system.

Vast areas of forests were felled to build new houses and businesses to support population growth. Millions of

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acres of rich, fertile prairies and drained wetlands were plowed under to provide food and fiber.

One of the detrimental impacts of this development was a dramatic increase in the volume of sediments flowing into the river and its tributaries due to exposed highly erodible soils. By this time we were using the river to ship resources both upstream and downstream. The increased sediment volumes began filling in backwater areas and of greater concern to shippers the channels used for navigation. Ironically, the methods used to exploit these very resources, combined with the increasing intensity of their exploitation, were causing the problems within the river.

Rather than simply address the root causes we decided that manipulation of the river itself was the long-term solution. To increase water flow and depth in the area of the river used by ships, wing dams were constructed along the shores to force the river into a narrower channel. This succeeded in creating a more reliable navigation channel. It also filled-in areas between the wing dams creating new land areas. Most people believed that this was a positive change in the river's landscape. This was likely not the sentiment of the plants and animals that once lived within the habitats between the wing dams.

Sediment Accumulation Between Wing Dams
Photo Source: Missouri Department of Conservation

Concurrently with the growth of agriculture in the river basin farmers recognized the high fertility of the rivers' floodplains and plowed it under as well. As greater floodplain areas were developed, primarily for farming but also other human uses, the occasional natural flooding became less tolerated by landowners. Discounting the fact that it was the river flooding that created the soil's high fertility; hundreds of miles of the lower portions of the UMR and Illinois River were bordered by levees disconnecting the land from the river. This essentially eliminated the use of large segments of the floodplain for its evolved purposes; as a flood safety valve and a place to deposit sediment.

Sedimentation problems continued to increase due to our actions and the natural sedimentation-handling processes were being both overwhelmed and circumvented. Dredging of the navigation channel was being used to keep shipping moving. We were moving into the modern era of larger more powerful towboats that required even deeper channels. Dredging was no longer an adequate solution in keeping the ships moving. There was also a desire for year-round navigation in-spite of seasonal low river flow conditions. The ultimate solution was the construction of dams that raised the water level behind them and stored water for low flow periods.

This was essentially the final nail in the coffin of the rivers' natural sediment process. The dams not only created barriers that restricted sediments from reaching the delta area, the dams also slowed the flow during much of the year within the dam pools causing more sediment to settle out in backwater and channel areas. When the fine particles do settle to the bottom of the river they are easily re-suspended by boats on the river, primarily barge towboats.

Our altering of the sedimentation process within the UMR basin has had a dramatic, largely negative, effect upon the habitats of much of the UMR and its tributaries. Besides significantly changing or literally eliminating habitats, sediment also decreases water clarity, especially finer suspended particles. Aquatic species are dependent upon good water quality and clarity for their survival. Aquatic animals are dependent upon aquatic plants for habitat, especially for spawning and nursing. This network of dependency is becoming better understood by scientists but is made more difficult to fully understand because of the lack of a pristine control environment and the constant changes continuing to occur within the UMR basin.

The problems associated with sedimentation in the UMR must be seriously addressed and must be focused on a watershed basis, from the furthest upstream tributaries to the confluence with the Ohio River. A holistic review that objectively determines if we can actually accomplish significant improvements within the current constraints of a confined and impounded river must be completed. Ultimately, we must decide as a society if we can adequately perform this necessary work on a long-term basis within the financial and resource restraints that confront us. Our actions in this regard will reflect our values for generations to come.

In the long-term, as many economists like to say, we are all dead. But rivers will endure even beyond

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humanity. I hope that during our time here we can learn to appreciate one of the most beautiful and important rivers on the planet. ❖

Illinois EMP Projects

Congress established the Environmental Management Program (EMP) through the Upper Mississippi River Management Act of 1986. By this legislation Congress finally recognized that the UMRS was not only a commercial navigation system but also a "nationally significant ecosystem".

The five states bordering the UMRS; Illinois, Iowa, Minnesota, Missouri, and Wisconsin have assisted the federal government agencies in developing a plan to address restoration efforts within the system. Two specific subprograms were created within EMP:

- Habitat Rehabilitation and Enhancement Program (HREP) for the planning, construction, and evaluation of measures specifically for fish and wildlife ecosystems
- Long-term Resource Monitoring Program (LTRMP) for the monitoring, computerized data inventory and analysis, and applied research regarding the river ecosystems and the projects constructed through HREP.

The decision to go forward with a particular restoration project is a long-term process involving several studies before a design is developed and construction can proceed. Projects can take a decade or more from the time it is proposed to when construction is finally undertaken. This is due not only to the complexity of the scientific study required before a design can be produced but because of funding restrictions the program has had to endure since its creation.

The EMP is managed by the USACE (Corps) with appropriations of about $20 million per year for both programs, typically two thirds of the funding for HREP and the remaining third for LTRMP. Although in 2001 the funding authorization limit was raised to $33.5 million actual appropriation of funding has through 2006 never exceeded $21 Million. Actual funding over the last several years has dropped, with a low of $12.2 million in 2003 but in 2006 about $20 million was appropriated for EMP. Funding for 2007 is hoped to be increase to about $24.5 million.

According to the Corps 2006 EMP Design Handbook about $146 million had been received in project funding for 86 projects that will ultimately affect about 147,000 acres.

The Corps' Mississippi Valley Division office covers the entire Mississippi River geographic area. Three of its six District offices are located within the UMRS and because Illinois has the largest physical length of the UMR bordering it, more than 580 miles, two of the Mississippi Valley Divisions District offices manage projects within or adjacent to Illinois. These are the Rock Island District office in Rock Island, Illinois and the St. Louis District office in Missouri. The Rock Island District also covers portions of the Illinois River, which is also included in the EMP.

The Rock Island District has about 9 projects in various stages of completion either all or partially located within Illinois, four of these projects are located within the Illinois River watershed. The St. Louis District has about 10 projects in various stages of completion either all or partially located within Illinois, two of these projects are located completely within the lower area of the Illinois River watershed near the confluence with the Mississippi River.

There are several basic restoration project types that have been developed to address specific problems, however most projects actually address multiple problems and incorporate more than one of these restoration types. These basic types are:

1. *Sedimentation Control* – reducing and mitigating the excessive volumes of sediment and pollutants flowing downriver from tributaries and the unnatural collection of these sediments within the impounded pools created by dams.
2. *Island Building/Protection* – restoration of islands destroyed by erosion and the rehabilitation and protection of existing islands.
3. *Backwater/Side Channel Protection* – mitigating the constrictions and blockages of these channels that are causing them to fill with sediment.
4. *Habitat Rehabilitation* – creating conditions within degraded or destroyed forest, wetland, marsh and lake habitats that are more favorable for the survival of the species living within these habitats.
5. *Floodplain Reclamation/Reconnection* – rehabilitation and reconnection of floodplains separated from the river by levees.
6. *Fish Passages* – construction of artificial structures that would allow fish to move

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upstream around dams that block their migration.

Some examples of EMP restoration projects in Illinois managed by the St. Louis District office:

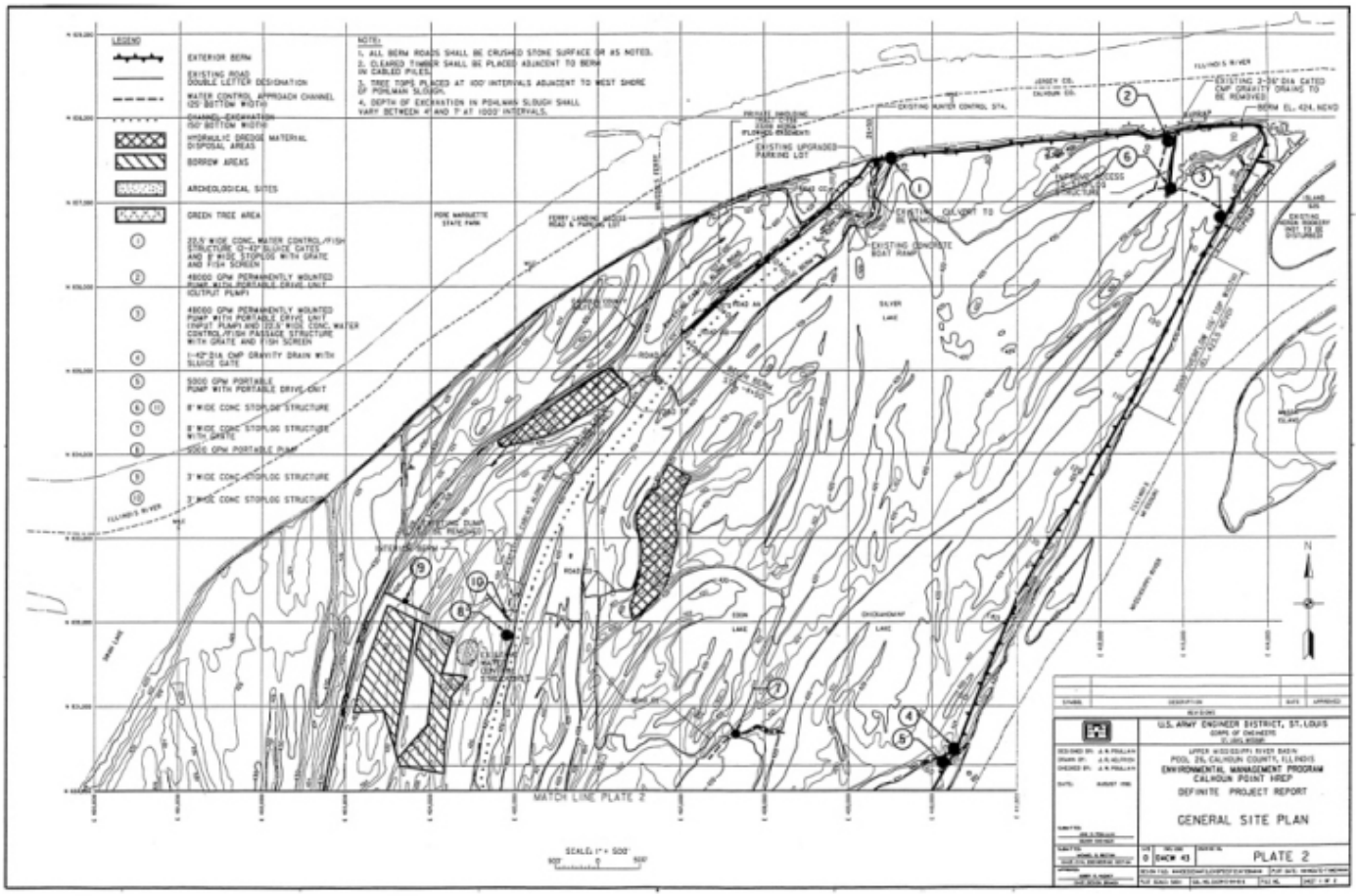
Stump Lake (Completed) – This project covered a large 2,958 acre area of various habitats: 1,221 acres of open wetlands, 1,485 acres of forest and 252 acres of cropland.

Stump Lake from Pere Marquette State Park

The lake was hampered by sedimentation and the loss of seasonal water level changes of a natural river. Several levees, gates and pump stations were constructed along with considerable dredging of the lakes. (Illinois River Miles: 7.2 to 12.7, Cost: $6 million – St. Louis District) The photo at the left was taken looking northwest from Pere Marquette State Park in 2007, and shows a portion of the completed project area.

Calhoun Point (Nearly Complete) – Decades of sedimentation decreased the water surface area of the wetlands within this 2,300 acre project. Rehabilitating and enhancing of the habitats will provide breeding, nesting, and feeding habitats for migrating waterfowl and other animals. It will also increase reproduction opportunities for fishes. Levees and water control structures were added and dredging in specific areas was performed. (River Miles: 220.0 to 223.0, Cost: $10 million – St. Louis District) The Calhoun Point project is somewhat unique in that it is bordered by both the Mississippi and Illinois Rivers.

The Corps site plan drawing below shows the project in detail indicating the complexity of the restoration efforts and components within a project. The project area is roughly about 2.5 miles by 1.5 miles. ❖



Calhoun Point EMP Project General Site Plan

River Wanderings

By Brad Walker

I grew up in northeastern Illinois, and other than the Fox River, the only Illinois body of water I was aware of was Lake Michigan. Almost all of that part of Illinois is flat and generally treeless, great farmland but not all that interesting. It seems to grow more buildings now than crops though. I was pretty naïve then because I thought all of Illinois looked just like where I lived, which probably made it easier to leave when I started my career. It was not until I moved back to Illinois much later that I realized how little I knew about the true variety of terrain within Illinois.

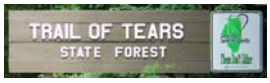
Having spent most of my adult life out west in Idaho, Hawaii, Nevada and then California I had become admittedly a bit of a landscape snob. From the aspect of scenery, coming back to Illinois in 1996 seemed a considerable letdown, as my limited knowledge of the state was still deeply seated in my biases.

But more recently I have come to appreciate that landscape does not have to be grand, majestic or unique to be beautiful or interesting.

I have been taking trips along the Mississippi River, primarily in Illinois, during the last year to see some of the many places that I had no idea existed. It has been eye opening as well as interesting to see some of the picturesque and varying landscape.

For those of you who have experienced places along the river all of your lives and maybe take them for granted this article is just a reminder of how special some of them are. To the rest who have never ventured to the western border of our state, maybe you should consider experiencing a few of them. They exist from the northern border all the way to Cairo at the Mississippi and Ohio River's confluence.

On a recent trip on a clear and not too hot day in July I headed south from my home in Edwardsville. I was traveling to investigate an area in southeastern Missouri for another article I was working on and decided to stop along the way at a few places I had never been to. Although I did not have more than a couple of hours to spend at each place it was enough time to drive around, take a bunch of pictures and get a feel for them. I am going to talk a little about two of these places.



The first one is Trails of Tears State Forest that is located about 20 miles south of Murphysboro in Union County, off of Illinois Route 127. The Illinois Department of Natural Resources (IDNR) operates the 5,114 acre park, which includes the 222 acre Ozarks Hill Nature Preserve. Hiking, horseback riding, hunting, picnicking and camping are allowed within the park but hunting, horses and cars are not allowed in the nature preserve.

Trail of Tears State Forest Facility

The park's roads are paved, but primarily by gravel and passable, though in many areas they are only a single lane width.

It is the rugged, hilly forest that attracted me to this park, which contains a diverse variety of hardwoods, shrubs, wildflowers, birds, mammals and a couple of species of rattlesnake.

Trail of Tears State Forest Southern Area

The area also has a rich history, though not all of it is pleasant. In the early 1800s the Native Americans were forced from the forest to areas south and west by European settlers. The next time Native Americans spent time in the forest was on the infamous "Trails of Tears" forced march by the U.S. Army when Cherokee, Chickasaw and Creek tribes camped through the 1838-1839 winter and hundreds died. Later in the 20th century a series of camps were built housing initially World War I veterans, then the Civilian Conservation Corps, World War II prisoners of war and finally youths from the state corrections system. In 1978 it officially became a state forest.

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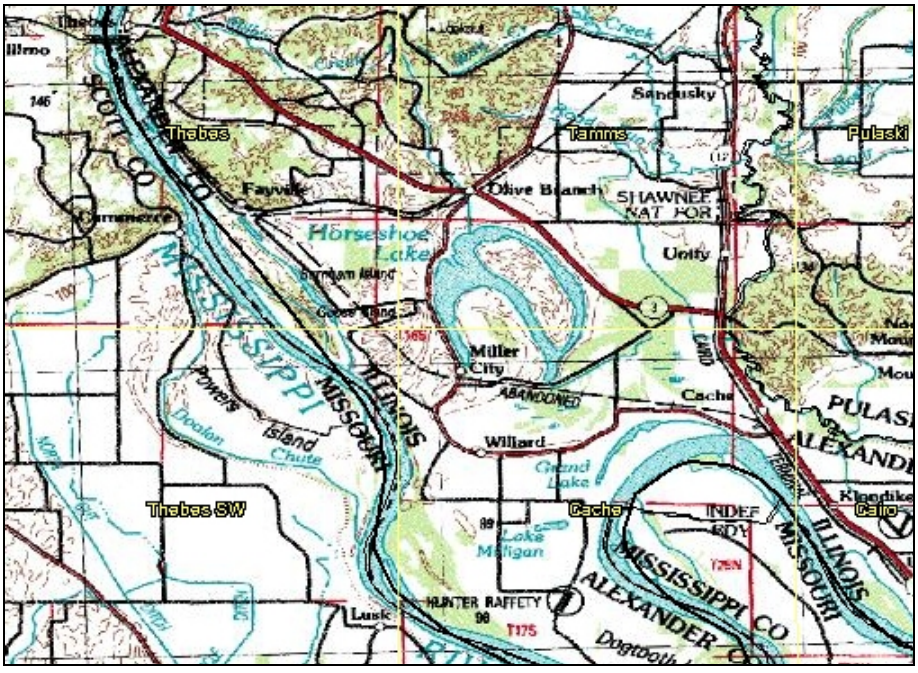
Later that day I took a tour of Horseshoe Lake Conservation Area, which is just south of Olive Branch and northwest of Cairo off of Illinois Route 3 in Alexander County. The contrast between the flat Horseshoe Lake Conservation Area and the hilly Trails of Tears State Park is stark and it is hard to believe that they are only about 30 miles apart.

Horseshoe Lake Conservation Area

When you drive into the 10,200-acre area you feel like you have been transported to a bayou in Louisiana with Lilly Pad covered water and cypress, tupelo and wild lotus trees. The 2,400-acre lake is actually an oxbow lake created from a separated meander of the Mississippi River, more apparent when one looks at it on a topographical map [See map below] or aerial photo.

Horseshoe Lake Conservation Area – Water Lilly

Horseshoe Lake Conservation Area - Geese



USGS Topographical Map of Horseshoe Lake Conservation Area

The Conservation Area is well known as a hunting area for Canadian geese, ducks and doves. It is estimated that 50,000 geese winter-over in the area.

Two nature preserves have been dedicated within the area to protect the native southern hardwood tree species and provide undisturbed forest for research.

Fishing, camping, hiking, biking and picnicking are other activities permitted. The area is also a unique place for bird-watching, especially for many migrating species as well as some rare birds found only here, within Illinois. ❖

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