



## Birds of the Lower Fox

I have been observing wildlife in Kendall county for over seven years now with a specific interest in woodland and grassland birds. Because of my focus on upland birds, I have only occasionally scanned the Fox River for birdlife— until last year. I took my first canoe trip down the river with the Lower Fox River Coalition and found a new interest in the birds that seek refuge there.



*Fish-eating birds, commonly referred to as waders, walk the river and spear unsuspecting fish with their long thick beaks.*

We can only begin to imagine what bird habitat of Kendall and LaSalle counties was like 150 years ago. The area

was covered by a vast prairie wilderness of varying moisture gradients ranging from wet to dry. The prairies, impeded only by a few scattered trees or groves, gently intermingled across the ancient landscape. As the grand prairie bullishly approached the lower Fox River valley, it was abruptly stopped by slopes, thick timber, cliffs and floodplain of the shallow Fox River. This small waterway, however, posed only a temporary interruption to the sturdy native herbage. The prairie, like wind and fire that created it, was unsuppressed. It easily resumed on the other side of the river and advanced into the distant horizon. But the riparian intrusion left its mark on the landscape. It was all that was necessary to form a significant gap in the prairie where forest and wetland bird specialists could thrive. The valley became an oasis for numerous birds anxious to escape the endless open plain.

Historical writings refer to an abundance of birds in Kendall and LaSalle counties, including those which are now extremely rare in Illinois such as bald eagle, osprey, peregrine falcon, barn owl, sandhill crane, and prairie chicken. During migration the fertile valley even saw flocks of passenger pigeon, now extinct. But not all birds are scarce. Many of the familiar birds recorded in the 1800s still occur here today.

A canoe trip down the Fox River can be quite eventful even for the most proficient

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## Lost Maramech

In the early 1700s, Fox Indians were attacking the French and their allied Indian tribes in the Illinois country and it was decided by all to remove this threat once and for all. After several ineffectual attempts to subdue them, a major military campaign was planned and executed in 1730. A force of about 1400 French and their allies besieged the Fox from the 17th of August till the 8th of September, when, under the cover of a violent thunderstorm that night, the Fox nation escaped from their fortification. Their flight was noticed when the cry of a child was heard and they were pursued at the first light of dawn. Most were killed, men, women and children, and only about fifty or sixty escaped. The Fox threat was broken.

The Fox River was called the Buffalo River on the earliest French maps, spelled Pestekouy on Franquelin's map of 1684. That name is preserved to this day as Pistakee Lake and the river itself renamed the Fox in honor of the tribe that once lived along its banks.

In the town of Plano, not far from the Fox, lived John F. Steward, who was an assistant geologist of the Colorado River exploratory party of 1871, later to become a member of the Illinois Historical Society and the Chicago Academy of Sciences and president of the Maramech Historical Society of Kendall County. He discovered what seemed to be an ancient fortification atop Maramech Hill between Big Rock

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# The Lower Fox River, A Gem Beneath the Surface

The lower Fox presents a wonderful vista to the eye. Downriver, it is a series of scenic bluffs, grown over by native evergreens and encrusted by liverworts in damp shady places. Botanists tell me that there are some strange and rare plants to be found along its course, and the historical and prehistoric traces of human activities are relatively numerous and at least partially intact. However, few know the secrets that the water hides here.

The lower Fox is a shallow river, with some spots that make you get out and drag your canoe over them during the parched summer months. One would think that the shallowness alone would preclude the development of rich or large aquatic life. But there are enough deeper pockets and holes, carved into the sandstone bottom to shelter quite a nice variety of fish and other water dwellers.

It is hard to paddle down on a summer's day without seeing at least a few red-eared sliders out on a large snag, soaking up the heat of the sun. They may or may not be joined by the painted turtle on the same log, and all usually plop into the water well in advance of even the quietest boatman. Underwater lurks the soft-shell turtle, a very aquatic species with a leathery shell the size of a dinner plate. You may see the elongated head, pointed nose and snake-like neck of this turtle poking from the water for a brief instant, but you will be lucky indeed to see it out of the water. The perpetually smiling mouth belies the sharp bite it can produce.

The water *moccasins* seen are not the venomous *cottonmouths* that can be found in far southern Illinois, but are the common watersnakes, *Natrix*, which sun themselves right at the water's edge. Part of their stout body stays in the water, so that they may partake of an unwary, green frog that hasn't paid attention to the snake's motionless, and camouflaged body. This snake is a fisherman too. Any foraging species can be grabbed in an instant if the fish approaches too closely to the again motionless, but this time completely submerged body. I once saw a six inch bullhead, with its pectoral spines sticking straight out from its sides so it couldn't be swallowed by the 18 inch long, watersnake, which had it by the head. The snake had pulled the hapless fish onshore without loosening its grip, and I doubted that the fish would escape.

The bite from the watersnake is painful, but not poisonous, though it is one of our few snakes which seems fearless, and will bite with the least provocation.



*Peter Nyamena, of the Kenya National Museum, records water quality data and examines a collection of mussels, on the lower Fox.*

Peter Nyamena from the *National Museum of Kenya* and I did two surveys on the Fox last year, while he was here on a study program. He is an excellent herpetologist, and an accomplished ichthyologist with his own fauna back home at Lake Victoria, Africa. He was eager to learn more about the life of our rivers. We let the current push us downriver while we sampled the water for basic chemistry, and took in the sights. Every so often we would stop at selected spots, our regular sampling stations, and hunt for native mussel shells, often called freshwater clams, which the muskrats had eaten, and the high water had redeposited. Peter was amused at the "official," common names bestowed upon the mussels. We encountered the following species on our survey; Giant Floater, Paper Pondshell, Wabash Pigtoe, Plain Pocketbook, White Heelsplitter, Pimpleback, and Mapleleaf. These whimsical names are adopted without change from the old-time river men who could identify difficult species on sight by the sometimes subtle differences in their shell shape or color.

The native mussels are a great indicator of the health of the river. They are sensitive to pollutants, and are often one of the first types of animal to disappear from chronically polluted rivers. They are able to close up their shell tightly, and survive those rare, catastrophic pollution events, like an oil or toxic spill, which can wipe out all of the fish or unprotected inverte-

brates in a matter of hours. Being an invertebrate, they are more sensitive to constant low levels of toxins, which would not visibly bother the fish. A mussel bed which is suddenly found dead or dying is something of deep concern for the health of the river, and should be viewed as a warning gong that something is seriously out of whack. The trouble is, most mussel beds are invisible from the surface. Those that have died can remain partially buried in place, with empty shells agape. Eventually, they are washed out by the next year's spring flood or its equivalent, and deposited on the shallow bars, where they will be exposed at the summer's low water.

Mussels have no following as a food resource because they are gritty, poor tasting, and can concentrate some toxins in their meat. Commercially, they were harvested by every river mother's son at the turn of the century for their pearls. Freshwater pearls used to command a high price for their rarity back then, and untold hundreds of thousands of tons of live mussels were pulled from every river and stream across the nation, in the hope that the lucky shucker would make his fortune on some wondrous pearl. A few souls found their pearls of great price, but most didn't. All of the mussels were shucked, examined for pearls, then discarded completely. The cultured pearl industry of the 1940s greatly lowered the price of all native pearls.

Shells of some thick shelled species were harvested to make mother of pearl buttons for about 50 years, and quite a thriving business was made of this especially in the Midwest. Eventually this industry collapsed with the introduction of plastic buttons in the 1940s. However, a third boom started for freshwater mussels driven by the demand for shells by the cultured pearl industry. The best *seed* pearls are made from certain species of thick shelled mussels, found only in North America. This seed pearl is placed into the living pearl oyster which is allowed to grow for several years before harvest. The Japanese cultured pearl industry is perhaps more concerned with the decline and disappearance of the native mussels than we are, since it can affect them to the tune of several hundreds of millions of dollars each year.

What else is a mussel useful for, other Fox's, gem beneath the surface...continued on page 3

## Fox's Gem Beneath the Surface

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than its pearls or shell? No one really knows. Like most other species on Earth, the mussels have hardly been studied. Do they possess some biochemical secrets of longevity? One of the European mussels can live for 140 years! Do mussels get cancers? Apparently not, but no one knows if they have some built in mechanism to prevent this disease from infecting them. It would be a great loss to have a group of animals disappear before we understand their uniqueness, and once we understand their value, we would not allow that loss to occur.

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***“A mussel bed which is suddenly found dead or dying is something of deep concern for the health of the river...”***

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Pollution and siltation from development have taken their toll on the Fox River mussels. Peter and I found eight species of shells on our survey, but none was older than 18 years. Some of these local mussels can live for 80 years. These *old timers* are gone, with many having been lost to pearlbers. The last of them were wiped out by the rampant pollution that was poured into the river for decades, before water pollution laws were enacted. Now, it appears that they are coming back to the Fox, and they have probably hitched a ride into the lower river on fish from the Illinois river.

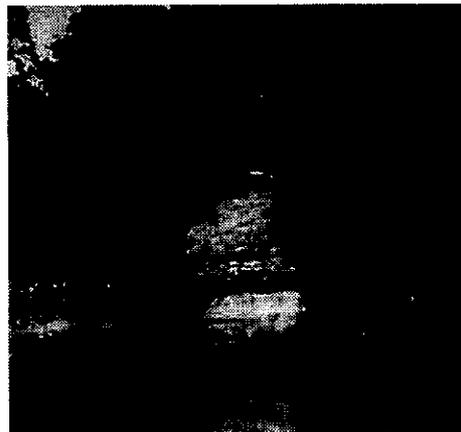
When mussels spawn, the larvae attach to a suitable fish host, and are carried around for days to weeks before they detach and settle to the bottom. The Illinois used to be a flourishing mussel river, but siltation from barge traffic, loss of current from locks and dams, and pollution have all contributed to wipe out the majority of its mussels, especially in the upper reaches. The lower Fox mussels are making a comeback, thanks to the water quality legislation enacted about 20 years ago. While it used to harbor upwards of 20 species around the turn of the century, it now has eight or nine, and some of these are rarely seen. However, with a little protection from pollution and siltation, these river mussels can flourish and rebuild their populations, to take their rightful place in a healthy, well functioning ecosystem.

—Roger Klocek, Conservation Curator of the John C. Shedd Aquarium

## 500 Million Year-Old Bluffs

Last year, we did a survey. “Where was this picture taken?” (Similar to the photo below.) Most responded, the Wisconsin Dells. One in the over 300 replies to the question knew—this is the Bellrose Dells along the lower Fox River. The clues to unravel the geologic history of the Fox River Dells can be in the rocks.

One of the best ways to see the scenic bluffs along the lower Fox River is floating by them. From the river, you can get a good perception of the dimensions and features. Most noticeable are the layering and large angular lines. These record the depositional surface. The cross-bedding (herringbone feature) indicates that the sediment accumulated along an inclined surface. There are smaller features showing scouring and ripples.



*The white sandstone bluffs between Sheridan and Wedron are of a rock formation geologists refer to as the St. Peter's sandstone.*

The white sandstone bluffs between Sheridan and Wedron are of a rock formation geologists refer to as the St. Peter's Sandstone. The sandstone is a sedimentary rock, formed at the earth's surface. Where the sandstones of the Wisconsin Dells were formed nearly 600 years ago, the St. Peter sandstone of the lower Fox occurred between 425 and 500 million years ago (during the Ordovician geologic time period) when the central United States was covered by a readvancing sea. There is some debate whether all the unit represents a near shore environment. The large cross-beds and weakly frosted grains may also form in a dune setting.

A blanket of sand was laid down over what is now Minnesota, Iowa, Missouri, Oklahoma, Wisconsin, Illinois, Michigan and Indiana. There are some locations

where deep scours accumulated 700 feet of sand. Most of northern Illinois' St. Peter sandstone averages 100 to 200 feet in thickness. Locally, outcrops of the bedrock are exposed along the lower Fox and the Illinois River at Starved Rock State Park.

Closer examination of the bluffs reveals they are composed of fine to medium grained, well sorted, well rounded, weakly cemented quartz sandstone. Some of the quartz grains are etched and pitted giving them a “frosted” appearance. Geologists have traced the base (beginning) of the St. Peter to an erosional contact, usually marked by a conglomerate of chert, shale and pieces of sandstone from the underlying rocks. It grades upward to marine sediments.

Where did all that sand come from? To answer that question, you need to step back in time and see what was going on. Just before the sea invaded the Midwest again, the region had undergone a period of intense erosion. The continent was being warped from collisions on the east coast with the African plate. The previous sea had left sandstones, whose source material were sandstones eroded from other sands. This “recycling” of sedimentary rocks, weathered out all but the very stable quartz minerals. The grains continue to be further sorted and rounded by the action of water or wind.

The sandstone breaks up relatively easily, even crumbling in your hand. This indicates that the grains are poorly cemented. A feature of the St. Peter's is that it is both porous (with spaces) and permeable (allows movement through the spaces). Where the sandstone is bordered by impermeable layers such as shales, it functions as an aquifer (water bearing rock). Recharge areas are along surface exposures.

The nearly pure nature of the sandstone also makes it economically desirable for as source for glass, as a mold for steel, for abrasives and refractory lining, and even water filters. There is some commercial mining of the sandstone along the lower Fox.

The bluffs of the lower Fox and Illinois river were carved out of the valley during post glacial flooding. Today they provide habitats for unique canyon and cliff communities.

—by Valerie Dillon

# The Lower Fox River Coalition Joins the Illinois RiverWatch Network

by Ernst Streng, Regional Coordinator Illinois RiverWatch Network



The Lower Fox River Coalition and the Illinois RiverWatch Network (IRWN) are working together to monitor, restore, and protect the Fox River. Members of the Coalition are being trained by RiverWatch staff to monitor the tributaries found in the Fox River watershed between Yorkville and Wedron. Monitoring will take place on an annual basis and requires volunteers to return to the same site each year. The goal is to obtain long term data about the quality of these streams and to assess the health of the surrounding environment.

"We are very excited about working with the RiverWatch Network and are delighted to have the opportunity to play an important role in the monitoring of our lower Fox River," said Rosa Campbell, member of the Lower Fox River Coalition and manager of the Whispering Oaks Girl Scout Camp located along the Fox River, "The data that we will collect from the Fox River and its tributaries will help us keep track of the quality of these sites. It is also a great way to educate many of the local residents about the natural resources that the Lower Fox River Coalition is trying to preserve."

The primary objectives of the Illinois RiverWatch Network are to establish an extensive statewide stream monitoring network, inform and educate the public about aquatic resources, and enhance communication between various groups about environmental concerns. As a statewide affiliation of existing and newly formed river organizations, the

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RiverWatch Network provides new opportunities for citizens to participate in a broad range of watershed monitoring activities. The Illinois RiverWatch Network is involved with outreach to individuals, community organizations, landowners, businesses, and schools.

Currently in its second year of operation, RiverWatch addresses a number of environmental protection and education needs. As Citizen Scientists, RiverWatch volunteers collect stream habitat data and sample and identify aquatic insects and other organisms which serve as key indicators of ecological conditions. In doing so, Citizen Scientists not only learn about

the ecology of stream systems, but have a direct role in monitoring the health of their local river or stream. The RiverWatch Network is coordinated through the Illinois Department of Natural Resources (IDNR) and is part of the AmeriCorps National Service Program.

Once a volunteer has received training and is certified Citizen Scientist, he or she is responsible for monitoring the same stream site on an annual basis during May and June. Monitoring consists of a biological survey and a stream habitat survey. Biological monitoring involves the collection and identification of aquatic macroinvertebrates. The habitat survey examines the physical characteristics of the stream channel and the surrounding riparian zone. The habitat survey provides a framework within which the results of the biological monitoring can be judged. Taken together, the data obtained from these two monitoring procedures provides a reliable estimate of the quality of a stream site.

Data collected by Citizen Scientists is posted to an electronic bulletin board and will be used by the scientific community to gauge long term trends in the environment. Called EcoForum, the bulletin board was established by IDNR to facilitate an on-going electronic discussion about environmental trends, ecological indicators, energy conservation, and regulatory issues. In addition to up-to-the-minute information on activities of the Illinois RiverWatch Network, the bulletin board system contains text and data from a variety of recent reports prepared by IDNR, including the Critical Trends Assessment Project. To access EcoForum, use your computer modem to call 1-217-782-8447, or toll free 1-800-528-5486. Data and other information about the RiverWatch Network are also available through IDNR's home page on the world wide web (<http://dnr.state.il.us>).

The Lower Fox River Coalition will hold their first monitoring session on May 22 along Mission Creek, a tributary of the Fox River. Other monitoring activities will occur throughout the months of May and June. The Illinois RiverWatch Network also is planning to be part of the Lower Fox River Coalition's River Weekend which will be held on June 23. For more information about the Illinois RiverWatch Network, please call 847-635-6450.



***Working together to monitor, restore and protect the Lower Fox River.***

*—Photo courtesy of the Nature of Illinois Foundation.*

FOR IMMEDIATE RELEASE

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## RIVER APPRECIATION WEEKEND PLANNED

The Lower Fox River Coalition invites the public to learn about the natural history and cultural heritage of the Lower Fox River Valley. The educational program is part of the River Appreciation Weekend to acquaint people with the scenic beauty and ecological treasures of the Lower Fox River. Presentations on Saturday, June 22th will begin at 8 PM in the Mallard Bend Campground Pavilion. Mallard Bend (815/496-2496) is located between Sandwich and Sheridan, along the west side of the Fox River. The entrance is off N4351.

The Lower Fox River Coalition is a diverse group of conservation-minded organizations and individuals brought together by their love and concern for the river. The Coalition believes that education about the unique features and habitat will lead to good stewardship and wise use of the resources. The mission of the Coalition is "to conserve the ecological, historical and recreational integrity of the lower Fox River."

*The Riverine*, a publication about the lower Fox River will be available at the program. The publication includes articles about the natural history, retells some of the area's historic moments, and promotes conservation. (Printing funded by a grant from the Illinois Wildlife Preservation Fund.)

June 22nd evening program promises to be fun and informative. Steve Pescitelli, Streams Manager based at Silver Springs State Park (Illinois Department of Natural Resources) will provide some insights about river ecology and the fish of the lower Fox River. Ralph Frese, historian and river advocate will show slides of the natural beauty and share stories about the historic Fox Valley.

For more information about the Lower Fox River Appreciation Weekend contact the Coalition members assisting with the event coordination:

- \* Saturday evening program -- Chicagoland Canoe Base (312) 777-1489.
- \* Reservations to camp at Mallard Bend Campground -- (815) 496-2496.
- \* For help in organizing a paddling trip -- Illinois Paddling Council (312) 975-7095.
- \* Inquiries about joining the Coalition should be directed to Lower Fox River Coalition at 5950 Oakwood Dr. #1C, Lisle, IL 60532 or call (708) 960-0956.

Other information:

Natural Area Guardians, Prairie State Canoeist, Chicago Area Sea Kayakers Association and Boy Scouts are coordinating river paddle trips for the weekend to celebrate the lower Fox River. On the river demonstrations and information points are planned between Sheridan and Wedron for the June 23rd paddle.

**Coalition organization members as of 5/96:** Chicago Area Sea Kayakers Association, Chicagoland Canoe Base, Foxpath Association, Fox Valley Land Foundation, Friends of the Fox River, Illinois Audubon Society, Illinois Native Plant Society, Illinois Paddling Council, Izaak Walton League - Elgin Chapter, John G. Shedd Aquarium, Kendall Natural Area Guardians, LaSalle County Natural Area Guardians, Mallard Bend Campground, Openlands, Prairie State Canoeist, Save the Prairie Society, Smith's Stonehouse Park, The Nature Conservancy of Illinois, Whispering Oaks Girl Scout Council.

## Lost Maramech...continued from page 1



*Convinced that this was the site of the great battle of 1730, Steward had a huge granite boulder placed atop the hill as a monument and commissioned a stonecarver to letter upon it the story of the affair. It reads as follows:*

*"In this stockaded fort 300 Fox warriors, with women and children, were besieged by 1300 French and allies, August 17, 1730; escaped September 9th. Captured—Tortured—Killed.*

Creek and Little Rock Creek near Plano that seemed to fit the descriptions of the lay of the land described in the old French records. The hill itself was separated from the high lands back from the river by an old stream channel offering a defensible retreat. The top of the hill had a sunken depression as if it had been dug out as an earthwork or fortification. Convinced that it was the site of the great battle of 1730, Steward had a huge granite boulder placed atop the hill as a monument and commissioned a stonecarver to letter upon it the story of the affair. It reads as follows: "In this stockaded fort 300 Fox warriors, with women and children, were besieged by 1300 French and allies, August 17, 1730; escaped September 9th. Captured—Tortured—Killed. French trenches on north end of hill. 'The Rock' spoken of by Ferland (Histoire du Canada), two miles south, is partly quarried away. The Maramech of Franquelin's map of 1684, was near. Site identified and stone placed by John F. Steward, 1874-1900." His book, *Lost Maramech and Earliest Chicago*, published in 1903, details much of his research and sources of information. Whether or not Maramech Hill is the true site of this historic conflict is the subject of ongoing controversy. Several other locations have also been suggested but due to the inaccurate maps and descriptions of the 1700s, the real site may never be discovered.

Today, 48 acres of Maramech Hill is now protected as the Maramech Woods Nature Preserve owned by the Kendall County Forest Preserve District, with an additional 37.7 acres as a buffer. The preserve is a complex of sedge dominated wet savanna and northern flatwoods, seep springs and wet-mesic to dry-mesic upland forest with associated successional fields, upland forest and small pine plantation as buffer. In spring, there is a striking display of marsh marigolds and the site serves to draw attention to the oft ignored French and Indian heritage in the Illinois country.

—Ralph C. Frese, historian

## The Lower Fox River Coalition is Growing

by Barbara Marquardt - President, Fox Valley Land Foundation

The *Lower Fox River Coalition* is a group of organizations and individuals who appreciate the lower Fox River corridor but are worried about its future. Our members include LaSalle and Kendall County residents and organizations, like the Girl Scouts, the Audubon Society, and the Natural Area Guardians. But the river is a regional, state, and even national treasure, and its advocates are not limited to residents. Among our members there are also many canoeists, amateur naturalists, and historians. There are regional and national environmental organizations. There are individuals who just love beautiful scenery. All are fascinated by the unique ecological, scenic, and historical treasures that line the shores of the lower Fox. All of us have in the past watched other areas we loved become unrecognizable and degraded or lost to careless development.

We commend most owners of land along the lower Fox. They are good stewards. But we know how fast that can change when land is sold for development. Before it is too late, we want to call attention to the need for a plan to preserve this special area.

The Coalition is now one and a half years old and has 18 organizational members, in addition to many individual members. We have attained nonprofit incorporation in Illinois and are also seeking Federal 501(c)(3) status as a public charity, so that we may apply for grants and qualify our donors for tax exemptions. We already have received a \$1,000 grant for the distribution of this newsletter from the Illinois Department of Natural Resources. The Fox Valley Land Foundation applied for this grant for us and is caretaker of our funds until we have our own 501 (c)(3) status.

**In June of 1995 we sponsored a successful River Appreciation weekend, and this event will be repeated in 1996, on the weekend of June 22-23.** Again there will be a Saturday night educational program, and the opportunity to join groups of canoeists on either Saturday or Sunday, or both. Camping sites and rental canoes are available. Those interested may either ask to link up with a group or may informally join the activity at any time, on their own.

In the past year we have distributed 3,000 copies of our original newsletter. We also have completed a nine minute video, created and donated by Mike Slawin, and we have so far distributed about 50 copies of this video, mostly to organizations and to employees of the DNR. Ralph Frese, of the Chicagoland Canoe Base, has given slide lectures on the lower Fox to interested organizations.

To obtain copies of the video, information about the Coalition or the lower Fox, or to request a slide show presentation, call 708-960-0956.

Current organizational members of the Coalition are: Chicago Area Sea Kayakers Association; Chicagoland Canoe Base, Inc.; Foxpath Association; Fox Valley Land Foundation; Friends of the Fox River; Illinois Audubon Society; Illinois Native Plant Society; Illinois Paddling Council; Izaak Walton League, Elgin Chapter; John G. Shedd Aquarium; Kendall County Natural Area Guardians; LaSalle County Natural Area Guardians; Mallard Bend Campground; Open Lands Project; Nature Conservancy of Illinois; Prairie State Canoeists; Save the Prairie Society; and Whispering Oaks Girl Scout Council.

## LFRC'S Dual Goals: Good Stewardship and Permanent Preservation

by Barbara Marquardt - President, Fox Valley Land Foundation

The first step to keeping the lower Fox River watershed in its current good condition is to acknowledge the good stewardship that already exists — the owners that are doing the right things with their property and the visitors, mostly canoeists, who are courteous and who pass through the area without adversely affecting it. We need to praise and publicize their good works, and advertise the many ways we can keep this region scenic and healthy for both people and wildlife. We need to acquaint those who own property with strategies to manage vegetation to attract wildlife or to discourage erosion. There are state programs that can help, such as Acres for Wildlife or DNR's forestry program.

*"We need to educate those who may take for granted the treasure in their neighborhood."*

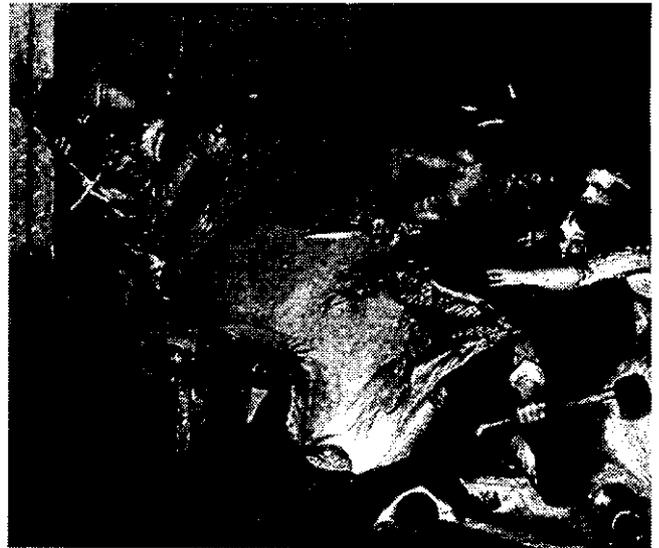
We need to educate those who may take for granted the treasure in their neighborhood. They should understand that what may be familiar and ordinary to them is extraordinary for Illinois — it is as close as our state comes to having a Grand Canyon. In addition to the slide shows, our video, and written education materials we have available, we need to offer service activities so that residents can see for themselves what the river has to offer and what it means to keep it in good condition. River cleanups to get rid of trash, and monitoring of macro invertebrates, by local volunteers, are two important ways that concerned groups can benefit the river. We will be scheduling these activities in coming months.

Ultimately, the goal must be permanent preservation. This does not necessarily mean state ownership, although we encourage IDNR to purchase large properties as they become available, and to then create preserves with trails, picnic and camping sites, and canoe launches. Outside of ownership by DNR, or voluntary Illinois Nature Preserve status for pristine natural areas, the best way to ensure that the watershed will be enhanced and not degraded is to protect it with conservation easements.

Conservation easements are voluntary contracts on land, written in perpetuity, that limit activities to those that are environmentally sound. Easements may be sold or may be donated for tax incentives. The DNR can hold such easements, but so can private land trusts, like the Fox Valley Land Foundation or The Nature Conservancy. Land protected by such an easement is still in private ownership and use, and can be sold or transferred in the usual ways. All of the normal ownership activities can continue, including new construction, but those activities must not be harmful to the shoreline or river. The definition of what will be allowed or forbidden is individually decided for each contract, according to the owner's desires and the ecological issues involved.

Conservation easements are the only method currently available to the owner who wants to be sure that future owners do not destroy his land's environmental assets. Covenants, deed restrictions, and zoning all are subject to change. Usually the donation or sale of a conservation easement makes the land and neighboring properties even more desirable to prospective buyers who want to be sure that their view will stay beautiful. Many river corridors in eastern and western states have been preserved by conservation easements, a method relatively unfamiliar in the Midwest but with great potential.

## Affair at Indian Creek



*On the 20th day of May, while the men were working on a mill dam, a scream was heard from the house where they discovered the doorway full of Indians.*

In 1832, during the so-called Blackhawk War, a number of settlers, having been warned by Shabona, the Pottawatomie peace chief, that the Sac and Fox Indians would probably raid and murder settlers, gathered at the Davis place on Indian Creek to defend themselves against such a possibility. On the 20th day of May, while the men were working on a mill dam, a scream was heard from the house and they discovered the doorway full of Indians. A five year old child was swung by its feet and its brains dashed out against a tree. The tomahawk soon ended the cries in the house and a volley of shots were fired toward the workers. Young John Hall, seeing his father killed and the others fleeing, jumped down a 12 foot embankment into Indian Creek and under cover of the high bank fled downstream. He successfully eluded the fifty or so Indians and made his way with several other survivors to Ottawa.

The next morning, he and others went back to the scene of the carnage. They passed some of the troops defeated at Stillman's Run and pleaded with them to go back with them to help bury the dead, but the troops refused and passed on to Ottawa. When they reached the Davis place, they beheld some of the victims had their hearts cut out and others cut and lacerated in a shocking manner. All were buried in a common grave. Fifteen persons were killed in all.

When the foray began with the murder of the families in the house, two girls, Sylvia Hall, age 17, and Rachel Hall, age 15, were taken alive by the Indians as captives. They were eventually given into the hands of some friendly Winnebagos who ransomed them to the agent, Henry Gratiot. They were safely returned and reunited with their brother and uncles who also survived. After the Indian Creek massacre, four other persons died at the hands of the Indians along the lower Fox after which the natives moved west and left the valley in the hands of the settlers.

—Ralph C. Frese

Source: *History of LaSalle County*—by Baldwin; 1877.

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birder. Birds of prey are seen regularly. Several red-tailed hawk nests occupy the trees along the river and occasionally a bald eagle or osprey is reported wandering the river valley. Other fish-eating birds, commonly referred to as waders, walk the river and spear unsuspecting fish with their long thick beaks. These birds include great blue heron, great egret and their smaller crow-sized cousin, the green-backed heron. Belted kingfishers also eat fish but they station themselves on limbs, watch for small aquatic morsels, then plunge into the water after their prey.

Bottomland timber and backwater areas provide quieter habitat for cavity nesting birds such as prothonotary warbler, wood duck, barred owl and a variety of woodpeckers. Many species of warbler, flycatcher and wren are easily flushed from these timbered areas as well. Occasionally sensitive forest interior species such as scarlet tanager, ovenbird, red-eyed vireo, and veery are noted, especially during migration.

### *"Historical writings refer to an abundance of birds in Kendall and LaSalle counties."*

In all, perhaps the most interesting and obvious species seen while canoeing is the cliff swallow. These agile birds plaster pellets of clay and mud on cliffs to form gourd-shaped nests. Cliff swallows are colonial birds so 20-50 nests side by side on one wall is common. Bank swallows are similar colonial nesters but they burrow into the soft upper banks of the river.

The lower Fox River is a haven for many species of birds. Whether by canoe, by foot at Silver Springs State Park, or by air (as I once had the pleasure of doing) you will find an avian journey down the lower Fox River a pleasurable and tranquil experience.

—Maggie Cole, Division of Natural Heritage, Silver Springs State Park

**Join Us For the Fox River Appreciation Weekend, June 22-23**  
Call 312-777-1489 for information

## Conifers Along the Lower Fox

The Lower Fox is the only natural area in Illinois that can boast of having five native conifers. As the glacial era ended and the weather warmed, most evergreen species retreated northward. A few managed to survive the change in climate.

The red cedar, *Juniperus virginiana*, is commonly found all over Illinois but not often in dense stands as found along the Fox. Many growing on almost inaccessible bluff faces are hundreds of years old. A Rand McNally map dated June 3rd, 1877 shows the location of a cedar professed to be 1800 years old. The *Arbor vitae* or white cedar, *Thuja occidentalis*, is also found along the bluffs of the lower Fox and its tributary, Indian Creek. It is listed as one of Illinois' endangered species and should be protected where found. A specimen near Wedron measured six feet in circumference and fifty feet in height.

Botanists tell us that wherever the American yew, *Taxus canadensis*, is found growing this far south and at such a low altitude as the lower Fox, it indicates a relic forest and should be preserved. A shady bluff, hidden by an island and shaded from the hot afternoon sun by forest cover, offers a cooler micro climate for this Fox River colony to survive. The yew is not listed in a catalog of plants found in LaSalle County published in 1877, but its secretive location may be responsible for its omission.

The stately white pine, *Pinus strobus*, is found in many of our state parks and other natural areas in Illinois. While not overly abundant along the lower Fox bluffs, they

create a lovely contrast to the other foliage. They often are found growing out of seemingly impossible cliff faces and the number of young seedlings observed indicate that there is hope they will continue to grow there.

The red pine, *Pinus resinosa*, is common in the northern coniferous forests and rarely occurs beyond the limits of the prevailing evergreen forests. The extreme southern range is Prairie du Chien, Wisconsin, many miles to the north. At the west end of the Fox River bridge west of Sheridan, growing out of a sandstone bluff on the north side of the bridge, are two red pines about two hundred years old. As far as is known, they are the only native red pines in Illinois. Just downstream are a couple of young specimens atop a small bluff. With the prevailing winds from the west, seeds are usually blown out over the river. Few fall on suitable growing sites. When the bridge was rebuilt some years ago, the construction crews damaged the roots of the two parent trees and today, one is dead and the remaining one is feebly trying to survive.

We are told that the Illinois red pines have yellow pollen and so are slightly different than the northern ones which have white pollen. If so, then they are among our most rare and endangered plants. *Pinus Resinosa* is sometimes also called the Norway pine, so it is fitting that our little colony is found near the Fox valley community of Norway, Illinois, the first permanent Norwegian settlement in America.

—Ralph C. Frese, historian



Dick Young discovers an *Arbor vitae*, an endangered species, with a six foot girth along the lower Fox in the Bellrose Dells.

# Corridor of Flora Through Time

By the middle of summer the lower Fox River is a vista of greens. Here and there, splashes of color announce some of the wildflowers. A closer look at the plants reveal species that live in very different conditions — from subarctic to desert — on cliffs, in wetlands, forests and prairies. These diverse communities are influenced by the past and present earth history — glacial history, climate shifts, flooding, fire as well as terrain, drainage and substrate.

The cool lush canyons along the lower Fox River are very inviting on a hot summer day. These spots are not just a haven for the paddlers. Many birds can be heard singing and chatting from the trees and bushes. More surprising is finding harebell, bunchberry, mountain holly, wintergreen, and snowberry. These subarctic and boreal forest species are what biologists refer to as *relics*, leftovers from a past climate. In this case, these northern species hint of the post glacial community that once dominated the region. As the cool moist climate shifted to warmer and dryer, microclimates persisted in the shade of the canyons.

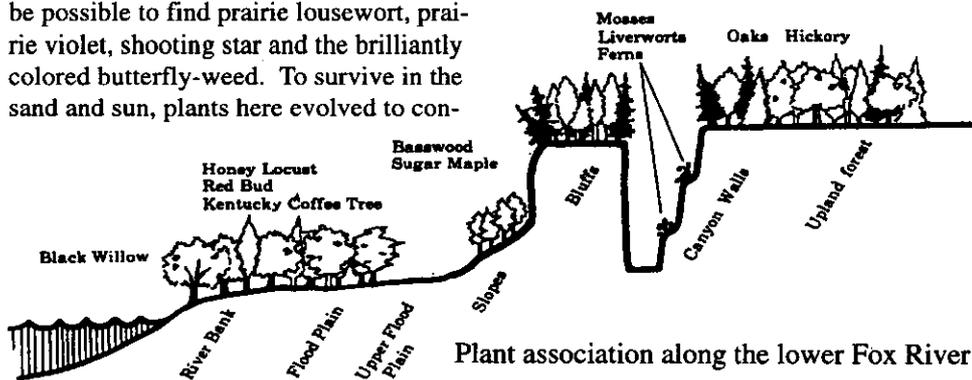
Tucked between forested uplands, on steep sided sunny slopes are hill top prairies. The soils are sandy and well drained. Some of these sites evolved on glacial flood deposits. In the absence of fire, woody plants are encroaching the sites and some have been grazed. The hill prairie is a transient habitat. They are thought to have originated during a hotter, drier period (some 8,000 years ago) and survive on extreme sites. Indicator species include pinweed, leadplant, little bluestem, and false boneset. It might also be possible to find prairie lousewort, prairie violet, shooting star and the brilliantly colored butterfly-weed. To survive in the sand and sun, plants here evolved to con-

serve moisture by reducing their exposed surface or adding a protective cover. Long tap roots reach deep to find water. There are even a few mats of prickly pear cactus scattered among the lupine in secluded sections of the Fox.

Seeps can be spotted along the river. These are places where ground water percolates to the surface creating soggy soils. Sometime enough water collects and trickles down to the shore. Find the skunk cabbage (usually you can smell it too), marsh marigolds, rushes and sedges. A closer look may reveal blue flag and orchids. Do beware of the jewelweed, also known as "touch-me-not" for the irritating juices in broken stems. The seeps are favorite spots for mink and muskrat since they favor the juicy stems of the vegetation growing along the waterline.

Stretches of the river are shaded by sycamore and silver maple. A little further inland the canopy may include: Ohio buckeye, ash, hackberry, Kentucky coffee tree, sugar maple, basswood and walnut. Before the trees leaf out, you can spot the red of the redbud. The wooded floodplains are carpeted with wildflowers in the spring and early summer. Stands of mayapples, Virginia bluebells and Dutchman's breeches flourish in prairie groves. As the summer progresses, the shade transforms the floor into stinging nettle and jewelweed.

Biologists believe these groves evolved where prairie fires didn't clear out all the trees. Waterway wetlands and fire-resistant trees in valleys are thought to have served as firebreaks. Eventually, more and more trees grew, forming islands of forest in the prairie.



Plant association along the lower Fox River

The uplands are forested with the oaks and hickory. This is considered the most advanced stage of succession for the drier uplands. So it is a surprise to see bluff tops populated with white cedar, red cedar and white pine. These relic stands of the post glacial boreal forest (such as now exists north of Lake Superior) provide a unique habitat along a river that flows through prairie and farmlands.

There is so much more to see — ferns galore, canyon wall community, aquatic vegetation, mushrooms, mosses, liverworts (looks like frog skin lining the cool canyon walls). Check around and you will also notice the prairie elements. But please remember this botanical paradise also harbors poison ivy, recognized by three shiny leaves and can be found crawling up trees or freestanding. The Fox River is a corridor of flora through time. Watch where the birds, butterflies and insects go ... they may lead you to some new treasure. —by Valerie Dillon

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Vierling, P. 1978. *Starved Rock Trails*. (Guidebook #3) Illinois Country Outdoor Guides, Chicago, IL. p. 124.

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**Harebell**—a relic of the tundra surviving in the cool canyons of a prairie river. The beautiful violet bells bloom June through September. A visit in the late summer will be rewarded with composites (sunflowers, daisies and asters).



# Getting to Know the Fox

Early French explorers named it Pestekouy, the Indians name for the buffalo that grazed the great plains and the river valley. The first settlers began calling it the River of the Rocks. By 1784, the name, Fox River, appeared on maps, commemorating the Fox Indians.

The Fox River formed during the end of the last ice age. The upper Fox channel formed under the glacial ice while the lower most section was scoured by torrents of meltwater. The drainage continues to be influenced by the landscape sculpted by the glacier. Water drains from the moraine highlands. The terrain and bedrock influence the path of least resistance through which the river carves its valley.

The starting point of the Fox can be traced to a lake basin 15 miles northwest of Milwaukee, Wisconsin. The Fox enters Illinois around the Fox, Chain-of-Lakes and then meanders southward. The river runs a total of 185 miles (about 100 miles are in Illinois) and drops some 470 feet before it joins the Illinois River near Ottawa. Most of that gradient is within the lower Fox—dropping nearly 200 feet in the last 60 miles.

A unique feature about the lower Fox River is that base level—the lowest level to which the stream can erode its channel (usually the base level is the elevation at the mouth of the river)—has been radically altered. Today there are a few intermediate base levels set by dams along the Fox but the most important events were a series of releases from glacial lakes that eroded deep channels in the Illinois River and some of the tributaries.

The major base level changes in the Illinois had a domino effect. Flooding widened the valley and in places cut down to the bedrock. The discharges also carried large volumes of sand and gravel, even boulders. This sediment was deposited in the river valley, only to be later eroded by new streams, leaving terraces of sand and gravel along the valley wall.

Downcutting continues today. Some is a response to human modifications and natural river processes that change the amount of water and sediment in the river. Superimposed, are adjustments to crustal rebound. Remember that glacier that used to be here—it was a mile high and heavy. So as the river bed is abraded, the land is rising and results in entrenched meanders.

The lower Fox River is also known for the numerous islands along the course. The source material is from the sand and gravel left around by the glacial processes. Some of the deposits are quarried. Bars and islands build up where the water velocity is no longer sufficient to move the sediment load. All it takes is some baffling action to slow down the flow. Point bars develop in the slack waters on the inside of meanders. An obstacle can collect river debris. Aquatic vegetation such as water willow stems trap sediment.

The water hints at what to expect and distribution of the river's energy. Riffles indicate a change in gradient. This commonly occurs near a tributary where more sediment is moved into the channel. Water pools behind underwater obstacles. Meanders grow and migrate by erosion on

the outside of the bend (cut bank) and by deposition on the inside bank. The fastest part of the current is usually along the outer curve. In a straightway, the main course shows where there is the least drag and faster current.

Advice to the paddler—the stream can best carry you if you know how to read it. The river can take an inattentive paddler for quite a ride. Be wary of beaching on unexpected sandbars, hanging up on rocks or running into the cut bank. High water is full of swirls and eddies as well as debris washed into the river. Low water can turn some sections into a wading pool. There are pockets that run strong and deep.

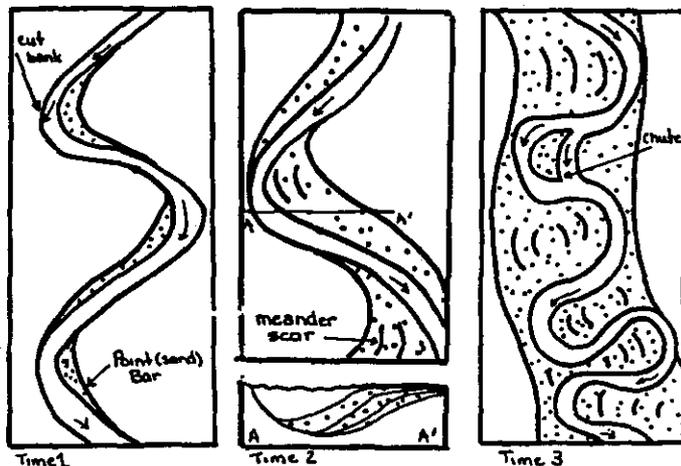
The Fox River is young, geologically speaking. But it has had an interesting life—so it has mixed features. The meanders of a more mature watershed, and the narrow valley of a young river system. Actually the floodplain varies significantly along the course of the river. It is sometimes overlooked because water is not always present or the active channel is within an older channel.

The floodplain is part of the river and a critical element of the fluvial processes. It helps to absorb the changing energies of the river and redistributes sediment. The vegetation along the river also influences the erosion and flow.

Wetlands act like sponges. Prairie grasses anchor the soils and promote infiltration. So what grows along the river can influence the drainage and ultimately the stream habitat. The good news is that some of the lower Fox River is now upgraded to a "B" quality stream —by Valerie Dillon

*The diagrams show the sequence of stages through which a river may change its form.*

*See any of these changes along the Fox River?*



Earth History Information for the Fox River valley. There may be more current editions. Some features or accesses may have changed since the areas studies. Paull, R.K. and Paull, R.A., 1977. *Geology of Wisconsin and Upper Michigan—including parts of adjacent states*. Kendall/Hunt Publishing Company, Dubuque, Iowa. pp. 232. Provides regional overview and information on the drainage of the Fox River.

Schuberth, C.J., 1986. *A View of the Past—An Introduction to Illinois Geology*. Illinois State Museum, Springfield, Illinois. pp 181.

Readable overview of geological history and features in Illinois; includes maps, charts and pictures.

Vierling, P.E., 1978. *Starved Rock Trails* (second edition.) Guidebook Number Three. Illinois County Outdoor Guides. 440 N. Merrimac Ave., Chicago, Illinois 60630. pp 124.

Good review of the trails, geology and natural communities in Starved Rock State Park (bluffs along the Illinois River), similar geology and natural history to the Fox River bluffs.

Straight stream channels are very rare in nature—instead, streams tend to follow a winding path or meander. Then bends of the river are in turn called meanders. Meanders grow and migrate by erosion on the outside of the bend (cut bank) and by deposition on the inside bank.

# River Appreciation Weekend, June 22-23

*Fox River Coalition, please send me information.*

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Fox Coalition

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If you would like to contribute to the next newsletter, or would like any extra copies of this newsletter, please call or write Rita Frese, Fox Coalition, Illinois, 847-470-1100.

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