

Naturally Kentucky

Fall 2003

Number 40



It is the mission of the Kentucky State Nature Preserves Commission to protect Kentucky's natural heritage by: (1) identifying, acquiring and managing natural areas that represent the best known occurrences of rare native species, natural communities and significant natural features in a statewide nature preserves system; (2) working with others to protect biological diversity; and (3) educating Kentuckians as to the value and purpose of nature preserves and biodiversity.

Kentucky in the Days of Lewis and Clark Changes in Wildlife Habitat

by Deborah White
Botanist

This article originally provided to conservation publication for use in elementary schools by educators.

Two American explorers, Meriweather Lewis and William Clark, stopped at several locations in Kentucky at the beginning of their historic journey. What was Kentucky like in 1803 - two hundred years ago? Can you imagine what they saw?

It was said by early pioneers that a "squirrel could jump from tree to tree and never have to touch the ground from one end of Kentucky to the other." As you can see from the map on Page 2, almost our entire state was covered with forests, and most of these were old-growth - meaning the forests had never been cut for timber or other uses. Lewis and Clark would have seen gigantic trees that were part of these old-growth forests all along the Ohio River. One bird that they probably saw during this period was the passenger pigeon. It was so common that people said that the "sky was darkened like night for a full day while flocks of these birds passed overhead." They also saw herds of bison and deer, as well as bears, wolves and mountain lions.

If we wanted to travel to Missouri today, how would we get there? Most likely we would get in our cars and head for an interstate highway. At the time of the Lewis and Clark expedition, many travelers used the rivers since the road system was not yet constructed. Lewis and Clark used the free-flowing Ohio River to get to Missouri. Now there are locks and dams that have been constructed to allow large ships to navigate this river. With the construction of the dams, many species that required shallow rocky river bars as their habitat, like mussels and fish, declined.

Wetlands would have been much more abundant at the time of Lewis and Clark's trip, especially where smaller tributaries and rivers ran into the Ohio River. Wetlands occur on low ground where the water is pooled on the land for long periods. Only certain kinds of trees and other plants can live in these wet conditions. These swamps were once common from Louisville to Henderson and all the way past Paducah. Wetlands provided habitat for ivory-billed woodpeckers, now extinct or at least extirpated from the United States. Fortunately, our remaining wetlands still provide habitat for copperbelly watersnakes, swamp rabbits and many others now considered rare.

Lewis and Clark would certainly have seen a different Kentucky. At that time, Kentucky was known for an abundance of wildlife. Daniel Boone remarked that in Kentucky, he found "every abundance of wild beasts of all sorts, through this vast forest. The buffaloes were more frequent than I have seen cattle in the settlements sometimes we saw hundreds in a drove, and the numbers about the salt springs were amazing". Buffalo, or bison, are now extirpated from our state and can only be seen in captivity.

Unfortunately, the prosperity of settlement has changed Kentucky and it comes with a price to our natural habitats and wildlife. Some species have become extinct, like the passenger pigeon and ivory-billed woodpecker that were once native to Kentucky. Other plants and animals have become extremely rare as habitat has been changed from forest and prairie to pasture and cities. The maps show the difference in the amount of natural habitat in the early 1800s and now.

(continued on Page 2)

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Several state and federal agencies, along with private conservation organizations, work to preserve the remaining habitat for animals and plants that are endangered by land use and other changes in our state. The Kentucky State Nature Preserves Commission, the Kentucky Natural Resources and Environmental Protection Cabinet, the Kentucky Department of Fish and Wildlife Resources, and the U. S. Fish and Wildlife Service are just a few government agencies working to protect Kentucky's natural habitat. Private organizations like the Kentucky Natural Lands Trust, The Nature Conservancy, and a host of local, regional and national groups also work to protect our natural areas.

We can all assist Kentucky's wildlife populations by:

- Removing non-native "pest" plants that invade our natural areas and prevent our native species from thriving.
- Leaving natural habitat as a buffer along streams for birds, butterflies and insects.
- Recycling and reusing paper, metal and other materials to reduce impacts on forests and waterways.
- Conserving energy and using fuel-efficient vehicles to reduce our need for natural resource extraction.
- Learning about endangered species in your county, so you can encourage their protection.
- Planting native species at our schools, in our yards and throughout our farmlands, to enhance habitat and provide sources of food and homes for wildlife.

Another easy way to help protect our remaining wildlife and natural habitats in Kentucky is for every family to buy a nature license plate for their vehicles. The extra \$10 for a nature plate goes to the Kentucky Heritage Land Conservation Fund, which awards grants to state agencies, state and local government and state colleges and universities for the purchase and preservation of selected natural areas.

Kentucky will never return to the lush abundance and diversity of many species of plants and animals that were present when Lewis and Clark first visited. However, continued protection of our remaining natural areas and managing land development in a manner sensitive to environmental factors, can help ensure that our biologically diverse natural heritage will still be around for another 200 years.

For more information on Kentucky's species, visit these Web sites:

Kentucky State Nature Preserves Commission - <http://www.kynaturepreserves.org/>

Natural Resources and Environmental Protection Cabinet - <http://www.environment.ky.gov>

Kentucky Natural Lands Trust - <http://www.knlt.org>

Kentucky Environmental Education Council - <http://www.state.ky.us/agencies/envred/>

Kentucky Environmental Quality Commission - <http://www.kyeqc.net/>

Kentucky Department of Fish and Wildlife Resources - <http://www.kyafield.com>

U.S. Fish and Wildlife Service, Kentucky office - <http://frankfort.fws.gov/index.html>

Southeast Exotic Pest Plant Council - www.se-eppc.org

Kentucky Chapter The Nature Conservancy - <http://nature.org/wherewework/northamerica/states/kentucky/>

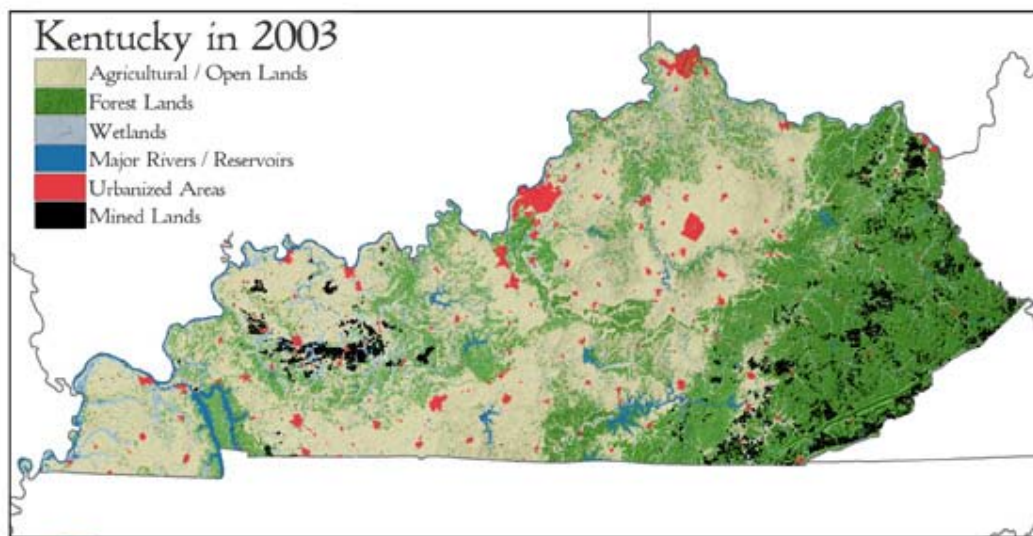
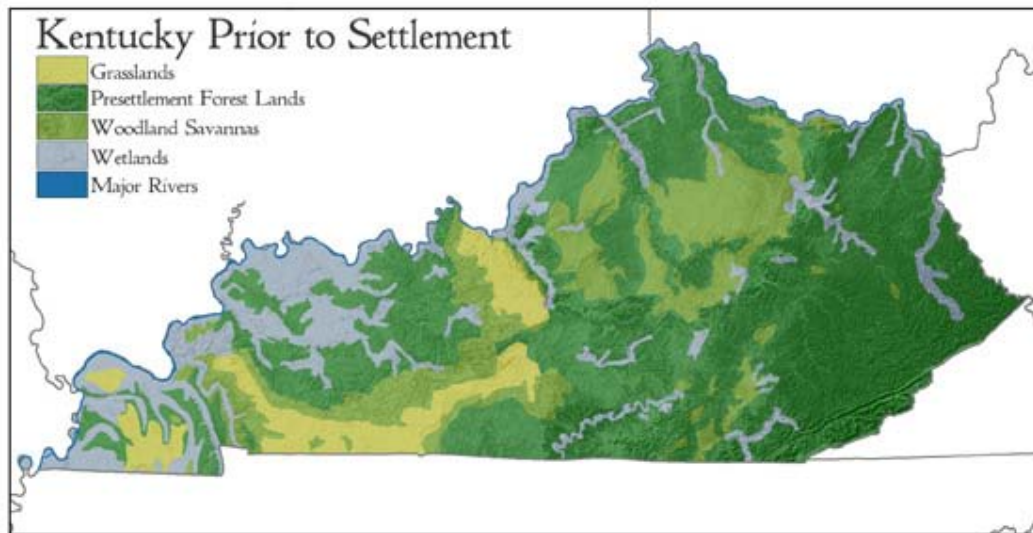
Kentucky Native Plant Society - <http://www.knps.org/>

Modern Explorers

You think there are no modern-day explorers like Lewis and Clark? Well think again! Today's field biologists are considered by many to be "explorers" who strive to locate remnants of remaining natural ecosystems and locate species that are vulnerable to extinction. These biologists travel to remote locations to inventory or explore for rare species and natural communities. Biologists may work in caves looking for seldom-seen beetles or they may fly in helicopters trying to locate stands of large, old trees. They may explore streams to document the native mussel species and their losses, or a biologist might net endangered bats at night. Biologists band birds to document their flight paths and home habitats. Certainly, biologists are explorers in every sense of the word.

You can thank biology teachers for educating current generations of explorers and teaching students what we've learned thus far about our natural frontiers. If you're interested in becoming an "explorer" yourself, share that wish with a biology teacher who will help direct you to be a pioneer in the field of biology.

KENTUCKY THEN & NOW



Less than 1% of the woodland savannas, grasslands (prairie and barrens) and presettlement forests that covered Kentucky 200 years ago occur here today (Kentucky Natural Heritage Database 2003). Kentucky has lost over 80% of its original wetland acreage (Dahl and Johnson 1991).



Did you know...

200 years ago, Kentucky had approximately 1.9 million acres of wetlands -
In 1995, Kentucky had approximately 650,000 acres.

200 years ago, Kentucky had 2.5 million acres of prairie -
Kentucky now has less than 1,000 acres.

200 years ago, Kentucky was estimated to have 22 million acres of old-growth forest -
Kentucky now has an estimated 5,000 acres and those few are fragmented.

Current statistics indicate that in Kentucky -
109 acres per day are converted from natural area to development or pasture.

Brigadoon State Nature Preserve Now Open for Public Use

by Lane Linnenkohl
Regional Nature Preserve Manager

Brigadoon: a place that is idyllic, unaffected by time, or remote from reality (Mirriam-Webster Dictionary)

An open house was conducted by the Kentucky State Nature Preserves Commission celebrating the opening of Brigadoon State Nature Preserve (SNP) to the public. The completion of a parking lot and a trail provides visitors with the ability to visit the preserve on their own rather than by guided hike, which previously was the only way to see the property. Brigadoon SNP is the 24th nature preserve to be opened to the public, sunrise to sunset, all year round. Several other preserves are open by guided hike.

Located in Barren County, Brigadoon SNP shares a special history with the region. The property was originally part of a Revolutionary War land grant issued to John Renfro, a war veteran from Virginia. The property remained under the ownership of the descendants of John Renfro until 1960, when Dr. and Mrs. Russell Starr purchased it. Russell and Faye Starr maintained the property as a private preserve, hideaway, and hobby farm until 1983 when they donated 90 acres to the Kentucky Chapter of The Nature Conservancy. KSNPC acquired the preserve in 1985. In June 2001, Brigadoon was expanded to 181 acres.



While I never had the privilege of meeting the Starrs, Dr. Starr was well known to many people around the Glasgow area. As a family physician, he tended, treated and delivered many people around Glasgow. He was well thought of and well respected, and after his passing, he is remembered fondly.

The Starrs felt that their sanctuary property was nothing short of a magical place, and so much so that they named it Brigadoon. We at KSNPC agree. Nestled on the shores of the Barren River Lake, Brigadoon SNP is composed of a mature western mesophytic forest containing old growth tulip poplar, beech and red oak trees. The thick, rich soils support an impressive springtime wildflower display with trillium, spring beauty, rue anemone, mayflower, jack-in-the-pulpit, bloodroot, hepatica and Dutchman's breeches. Brigadoon SNP also harbors a diverse bird population and is a great place to visit for those interested in birding.

Brigadoon SNP contains approximately one mile of hiking trail now open to the public. The trail is of moderate difficulty and runs along ridge tops, and through mature forest and scenic ravines. The preserve is open from sunrise to sunset. To get to Brigadoon, travel approximately 6 ¾ miles south of Cumberland Parkway on Highway 31E to Browning School Road. Travel east on Browning School Road for approximately 1.2 miles to Mutter Road. Turn right on Mutter Road and the gravel parking lot will be approximately ¼ mile on the west side of the road. Please be respectful of the preserve and follow the rules so that the preserve can be enjoyed by everyone who visits. Pets, horses, picnics, hunting, collecting, fishing, all vehicles and camping are not allowed. Peaceful nature observation and appreciation are encouraged!

Brigadoon photograph compliments of
Harold Kelley.

Director's Notes

by Don Dott

Executive Director

The September commission meeting at Mammoth Cave National Park was quite productive and enjoyable. The commission dedicated two buffer tracts to Blanton Forest SNP, perhaps not headline worthy additions, but nonetheless important pieces to the puzzle. And speaking of which, two new "puzzles" were approved by the commission for us to begin work on. I refer to preserve designs for Martin's Fork Wild River and Green Cave. Martin's Fork Wild River is found in Harlan County, adjoining the Virginia state line and bordering on Cumberland Gap National Historic Park. In addition to being the cradle of a state wild river, the Martin's Fork area contains numerous rare plant species, such as Rock Harlequin (*Corydalis sempervirens*) and Appalachian sandwort (*Minuartia glabra*) and is part of a very large contiguous forest block of 35,000 acres. The parcel we hope to dedicate is owned by the Kentucky Division of Water, Wild Rivers Program. The second preserve design approved by the Commission is Green Cave. The cave itself is located on the steep north face of Pine Mountain, but the preserve design encompasses land on both sides of the mountain in Letcher and Harlan counties. It too is home to several rare plants including Showy gentian (*Gentiana decora*), but is more significant for the fact that it is a winter hibernaculum for the Indiana bat (*Myotis sodalis*). The approved preserve designs enable the commission staff to begin working on land acquisitions, so we have two new preserves on our horizon. I refer to the preserve designs as puzzles, because it typically requires us to acquire land parcels from several different owners to complete one preserve design.

We were also able to report to the commissioners at the September meeting, a very interesting find by ecologist Martina Hines. This was Spoon-leaved sundew (*Drosera intermedia*) - one of Kentucky's few carnivorous plants. We will have more on this fascinating plant in our winter newsletter. Ellis Lauder milk, KSNPC's invertebrate zoologist reported three state records (i.e., first confirmed siting in the state) for the quarter, the Furtive forktail damselfly (*Ischnura prognata*) and two moths.

In Harrison County we continue to work with The Nature Conservancy (TNC), especially Julian Campbell, and the University of Kentucky, Tracy Farmer Center for the Environment, with Dr. Phil Crowley, on the university's application to the Heritage Land Conservation Fund Board for funding to purchase Griffith Woods. This site is the best known remaining tract of bluegrass savanna-woodland in the state. Another, smaller savanna remnant is found under KSNPC's protection at the Julian Savanna SNP in Franklin County. Both sites are in need of research to determine the composition of the understory, which is largely unknown at this point, and will also need much restoration work. We plan to participate in this work at Griffith Woods and expect to dedicate it as a state nature preserve. Having the two different sites to work with will be especially beneficial for research work on this globally rare ecosystem.

The U.S. Fish and Wildlife Service (USFWS) published a proposed critical habitat designation on June 2, 2003, for Braun's rockcress (*Arabis perstellata*) based on maps and input from our botanist Deborah White. We reviewed the proposed designation and submitted comments. It is uncertain when the rule will be finalized.

Unfortunate news comes from aquatic environs. Much work and money has been put into protecting and improving Horse Lick Creek and its watershed in eastern Kentucky. This is because it is an important refugia for more than 20 freshwater mussel species, including several considered rare by the USFWS and KSNPC. Horse Lick Creek is located in the Daniel Boone National Forest (DBNF) in Jackson and Rockcastle counties and is a tributary to the Rockcastle River. The Nature Conservancy established Horse Lick Creek as one of its first bioreserves, and has since expanded it to include the Rockcastle River. The DBNF has made numerous land acquisitions in the watershed with the assistance of TNC in an effort to protect the watershed and address water quality threats like sedimentation from degraded riparian areas and off road vehicles. However, despite these committed efforts, a recent intensive survey found living representatives of only about one-third of the number of mussel species known from Horse Lick Creek, and only a few individuals of each. Data from the study has not yet been analyzed nor a cause found, but this mussel community has been severely degraded. Mussels are the most at-risk group of species in the U.S. and the southeastern U.S. is the center of mussel species diversity. Kentucky is ranked third, behind Alabama and Tennessee in the number of freshwater mussel species. It appears much work remains to be done to facilitate the recovery of our freshwater mussels. Water quality and loss of habitat are certainly primary factors in their recovery. A new tact is also being investigated – the restocking of mussels from propagation facilities. The Kentucky Dept. of Fish and Wildlife Resources has established a mussel propagation facility near Frankfort on the Forks of the Elkhorn. (For an article on the conversion of the old fish hatchery, see the Spring 2003 issue of Kentucky Afield magazine.) Hopefully, propagation facilities will be a successful component in the recovery of Kentucky's freshwater mussels.

Land Protection Report

by Ron Scott
Land Protection Specialist

Although the Commission has only purchased two small additions to the state nature preserve system since the last edition of this newsletter – one at Terrapin Creek SNP in Graves County and the other at Blanton Forest SNP in Harlan County – there are a number of active land acquisition efforts currently underway. In the coming months, we expect to acquire a 68-acre addition at Bad Branch SNP in Letcher County, two additions totaling roughly 65 acres at Crooked Creek SNP in Lewis County, a 65-acre addition to the Frances J. Palk SNP in Pulaski County, a 120-acre addition to the Hi Lewis Pine Barrens SNP in Harlan County, and 100 more acres for the Jim Scudder SNP in Hardin County. In addition, the Commission is currently negotiating with the owners of ecologically significant property in Fleming, Lincoln and Hardin counties, which if successful, will lead to the establishment of three new state nature preserves. We are also working with the owners of two significant gray bat maternity caves in Allen and Barren counties in order to provide permanent legal protection of the land immediately surrounding the cave entrances.

Along with working to acquire additional land for the state nature preserve system, the Commission has also worked to enhance the range of protection options available for landowners within the Commonwealth. Kentucky has few private land trust organizations working to preserve open space, farmland and natural areas compared to many surrounding states, and those land trusts that do exist only provide service in a small portion of Kentucky's 120 counties. On Aug. 28, in an effort to address this deficiency, we hosted a one-day meeting of private land preservation organizations and government agencies to discuss issues of mutual interest and explore ways of expanding the private land trust movement in Kentucky. The meeting was held in Louisville and attended by 36 individuals representing 19 different organizations and agencies. Participants were enthused by the exchange of information and committed to continuing the discussions on a periodic basis, perhaps even ultimately forming a coalition of Kentucky land trust organizations.

KENTUCKY STATE NATURE PRESERVES COMMISSION

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Coming Soon...

KSNPC quarterly meeting on Dec. 2, 2003, 10 a.m. EST. Agenda includes presentation of awards to winners of Biological Diversity Protection Award and Volunteer Steward Award. Potluck meal to follow meeting. Everyone is welcome to attend both the meeting and meal. KSNPC encourages attendees to bring a canned food item, to be donated to the Frankfort Emergency Food Pantry. RSVP requested by phoning office.

How to contact the Kentucky State Nature Preserves Commission:

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