Naturally Kentucky

Summer/Fall 2011 Number 66

KSNPC Latest News: We are celebrating our 35th anniversary as a commission! Learn more about our history and accomplishments on Page 2. An anniversary party is being planned for Thursday, Sept. 8, Capitol Rotunda, Frankfort, from 1 – 4 p.m. Please come join us and see our new art exhibit.

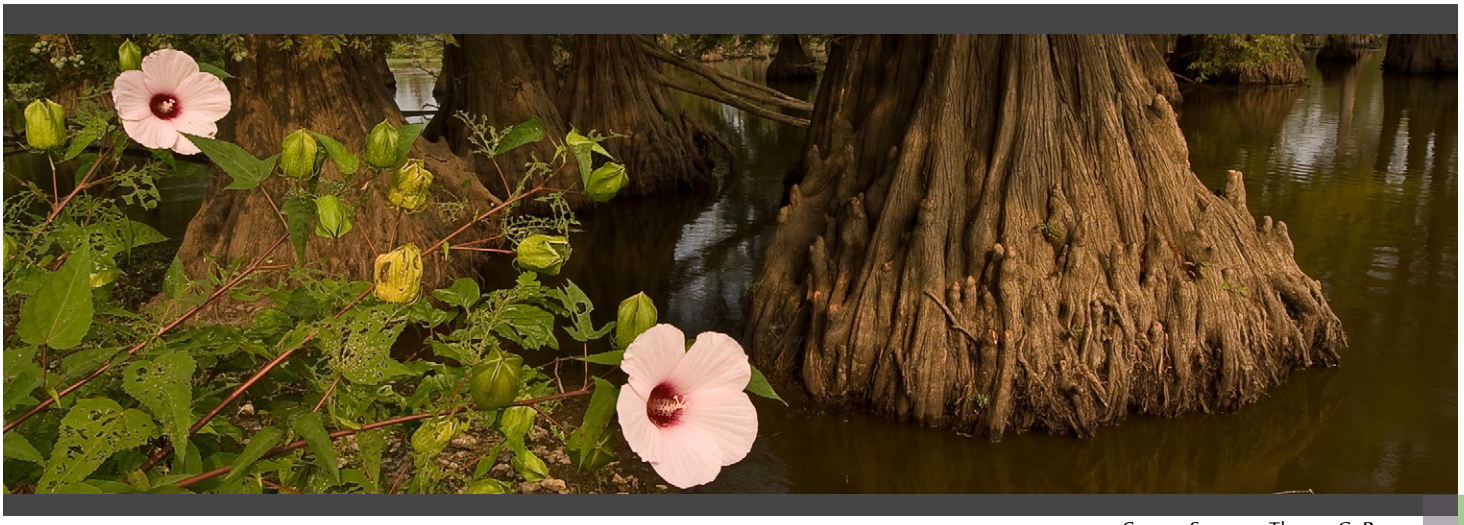
An additional 90 acres have been added to Tom Dorman State Nature Preserve bringing the total to 898 acres. This addition was provided by the Kentucky Department of Parks.

A new moth species in the genus Grapholita was found at Bouteloua Barrens State Nature Preserve (complete story on Page 8).

The Cumberland darter (*Etheostoma susanae*) has recently been federally listed as endangered. View our latest list of Rare & Extirpated Species & Natural Communities of Kentucky online at naturepreserves.ky.gov/pubs/Pages/reports.aspx.

KSNPC welcomes three new staff members: Aquatic Zoologist Mike Compton, Eastern Regional Nature Preserve Manager Dan Cox and Western Regional Nature Preserve Manager Libby Watt.

In This Edition:



Cypress Swamp ~ Thomas G. Barnes

Stone Mountain WMA and SNA ~ Marc Evans

Thirty-five Years of Biodiversity Protection

By Joyce Bender, Nature Preserves and Natural Areas Branch Manager

The Kentucky State Nature Preserves Commission celebrates its 35th anniversary this summer. We plan to commemorate the occasion at our next commission meeting on Sept. 8. Please join us as we reflect on our accomplishments and the people who have helped along the way. More details on the event will be on our website.

In July 1976, the statutes that arose from Senate Bill 155 went into effect. KRS 146.410(2) mandated the commission to "secure for the people of present and future generations the benefits of an enduring resource of natural areas by establishing a system of nature preserves, protecting these areas and gathering and disseminating information regarding them, establishing and maintaining a registry of natural areas, and otherwise encouraging and assisting in the preservation of natural areas and features." Previous staff as well as those presently employed, performed their jobs with this mandate as their marching orders.

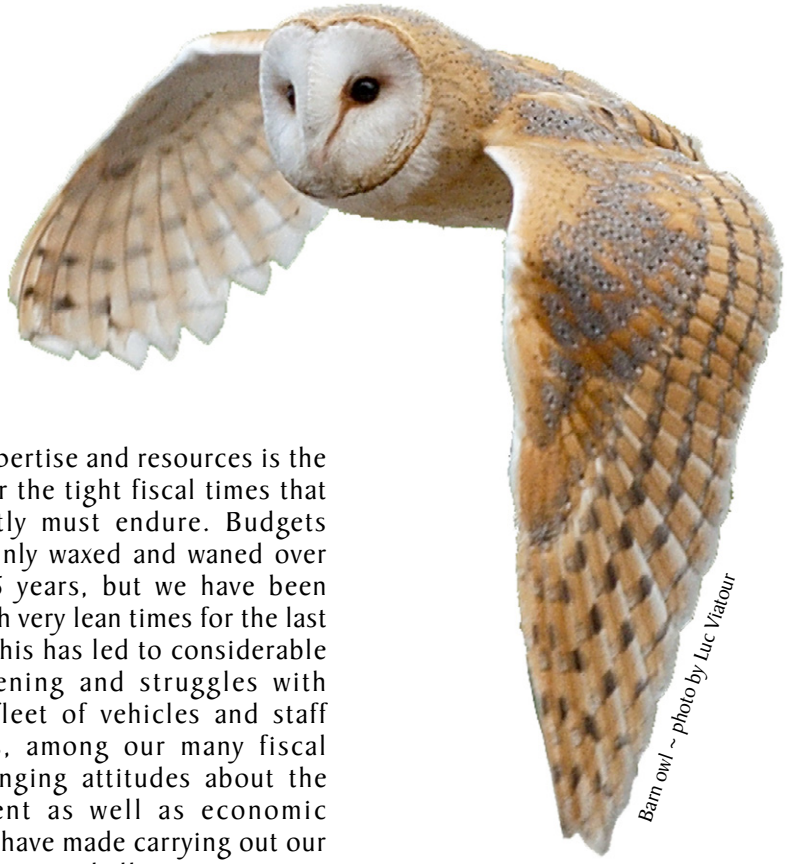
So much has happened over the past three and a half decades that it cannot be adequately summarized here. Fortunately, there is information available on our website to give a broader view of the commission's history. Former employee Tim Clarke did a great job compiling the highlights of our first 20 years and his synopsis can be viewed in a newsletter article he wrote at: naturepreserves.ky.gov/news/Newsletters/Natky18.pdf. Many of the commission's accomplishments are also summed up in more detail in our biennial reports to the legislature, some of which can be viewed at: naturepreserves.ky.gov/pubs/Pages/reports.aspx.

Leading an organization with such an all encompassing mission can be daunting, especially when most of your staff are quirky field biologists and funding is limited. We have had four executive directors since 1976. Only a few of their many contributions can be presented, but the following are offered as examples of how each man has aided the commission's growth. Donald F. Harker Jr. served as our first director. With an incredible vision to build capacity, he used several substantial grants to hire a number of field biologists to initiate inventories of the state. These surveys enabled the commission to lay the groundwork from which we started building a rare species database and a nature preserve system. Richard Hannan led the commission from 1982 until 1992. His tenure brought the first appropriation of funds from the General Assembly to purchase nature preserves. Prior to 1990, we dedicated state park properties and cobbled together funds from various sources and matched Land and Water Conservation Fund grants with land donations to reach a total of 18 preserves. The Natural Areas Inventory (NAI) had begun in 1988 and we spent the appropriation on a number of high quality sites that were the first fruits of the NAI process.

Upland burrowing crayfish ~ photo by Guenter Schuster

Robert McCance was the third director, serving from 1993 until 1997. The Rare Plant Recognition Act was passed during his term and we closed on the first tract at Blanton Forest State Nature Preserve, the state's largest old growth forest. The nature plate became available in 1995, providing the commission's first regular funding for the acquisition of natural areas. The pace of preserve acquisition really stepped up, resulting in several new preserves as well as key additions to existing preserves. Donald S. Dott Jr. became the fourth director in 1998 and after 13 years, he has the distinction of being the longest-serving director to date. In 1998, the commission moved ahead with new technology by acquiring Geographic Information System (GIS) capability. In 2001, the commission could finally say there were preserves from one end of the state to the other with the acquisition of 215 acres on the Mississippi River. Don oversaw the reorganization of the agency into two branches. He has also had the toughest series of budget cuts to contend with than did any of his predecessors.

Some current notable items that illustrate the breadth of our work include: protecting 60 state nature preserves and natural areas totaling over 25,000 acres, maintaining over 12,800 records of rare species and natural communities in the Natural Heritage Program database, publishing an amazing book that illustrates the Commonwealth's biological riches titled *Kentucky's Natural Heritage: An Illustrated Guide to Biodiversity*, and conducting inventories and supporting research that has resulted in finding some species new to science and a few species that have not been seen for almost a century. Many of these projects are the results of collaborations with state, federal and private conservation organizations and colleges and universities with whom we share common goals. The job is too big for any one agency, so success lies with strong partnerships.



Barn owl ~ photo by Luc Viatour

Pooling expertise and resources is the strategy for the tight fiscal times that we currently must endure. Budgets have certainly waxed and waned over the last 35 years, but we have been dealing with very lean times for the last 10 years. This has led to considerable belt tightening and struggles with an aging fleet of vehicles and staff reductions, among our many fiscal woes. Changing attitudes about the environment as well as economic downturns have made carrying out our work much more challenging.

One of the most significant changes to the commission has been the recent retirements of three of our longest-serving employees. Ronald Cicerello, aquatic zoologist; Marc Evans, staff ecologist; and Brainard Palmer-Ball Jr., terrestrial zoologist, constituted the majority of the wealth of biological knowledge that the commission depended upon for making wise decisions about rare species protection and land acquisition for the first 25 years. They built a solid foundation for the younger field biologists who have taken their places. Hopefully these young people will have just as many or more accomplishments to tally when they look back at the commission's 50th anniversary.

Looking ahead, our crystal ball is no clearer than anyone else's. One thing we know for sure, land alterations and invasion of non-native species will continue to take their toll on natural areas and rare species habitat. The impacts from global climate change are still hard to assess and plan for. The commission is working with partners to consider appropriate responses to the potential changes coming to Kentucky. We are trying to predict where best to designate protected corridors for species movement as conditions change and animal and plant populations shift in response. Outreach to the public remains an important part of our mission that we strive to expand. We need to ensure that all the citizens of Kentucky are aware of the great benefits derived from maintaining high quality natural areas across the Commonwealth. I think it's safe to say that the wild residents living in state nature preserves have that advantage already. The commission will continue to do all we can to sustain the vision that began in 1976.

In the Spotlight: *Limestone Slope Glades*

Have you ever heard of a glade before? Did you know glades are a good place to find scorpions, glass lizards and prickly-pear cactus?

Glades are open, exposed bedrock areas dominated by drought-adapted herbs and grasses in an otherwise woodland or forest setting (Nelson 2005). One of Kentucky's most unique natural communities (KSNPC-listed as state special concern =S3) is the limestone slope glade. Glades are mostly found on very dry hillsides that often face to the south and/or west. Most of the limestone slope glades naturally occur in west-central Kentucky, within a large physiographic area known as the Highland Rim (i.e. in an area ranging roughly from Bardstown west to Hopkinsville). Outside of Kentucky, communities similar to our limestone slope glades are found scattered throughout surrounding states from the Midwest and Southeast up through southern New England.

Kentucky's limestone slope glades are distinct from most of the limestone glades in other states. Although over 40 have been documented in Kentucky, most are extremely small (less than 4 acres) and many have been damaged by human disturbances (e.g. grazing and erosion). Due to this, NatureServe (the national authority on the status of rare species and natural communities) lists this community as globally vulnerable (=G3). How this community relates to similar limestone glades in surrounding regions is still being determined.

The limestone slope glade occurs on moderate to steep slopes with an aspect usually south and west. Soils are shallow to very shallow, very well drained and they are often gravelly with little organic content. Bedrock limestone is usually near or at the surface and bedrock ledges, slabs and rock fragments are usually abundant. Vegetation is characterized by moderate to incomplete grass cover with a good diversity of herbaceous species, including many annuals. Many prairie species can occur but are usually found on the margins or in pockets where soil is deeper. The glades can vary in size but often they are narrow and long in shape (i.e. linear) and follow the contour of the slope.

Woody plants are often absent or restricted in growth due to droughty, poor conditions. The trees and shrubs that do occur are usually gnarled and stunted. The most common trees and shrubs occurring in and surrounding glades include blackjack oak, Carolina buckthorn, chinquapin oak, eastern redbud, eastern red-cedar and post oak. The herb layer can range from sparse to sometimes dense, dominated by drought-tolerant plants. Common or characteristic graminoids (grasses) include big bluestem, yellow Indian-grass, little bluestem, poverty oat-grass, sheathed dropseed and side-oats grama. Common and characteristic wildflowers (forbs) include false aloe, false pennyroyal, hairy wild-petunia, pale purple coneflower, pale-spike lobelia, slender heliotrope, hoary puccoon, roundfruit, St. John's-wort and scaly gay-feather. Other less abundant but characteristic plants include bird's-foot violet, blue waxweed, Eggleston's violet, heart-leaved noseburn and prickly-pear cactus.

A unique feature of many slope glades (i.e. those with well-developed flat to gently sloping slabs of bedrock) is the development of seasonally wet areas which provide habitat for unique species to grow. These species thrive under the wet-saturated conditions of early spring but have adapted to survive the harsh, dry conditions throughout the rest of the growing season. Some of these species are extremely rare and include butler's quillwort, Crawe's sedge and necklace gladecress.

Limestone slope glades provide habitat for unique species of plants and animals found nowhere else in Kentucky. Nearly 50 KSNPC-listed species have been documented on or in close association with limestone slope glades (KSNPC 2011). Some additional rare species associated include the chestnut sedge, eastern slender glass lizard, scarlet Indian paintbrush, southeastern five-lined skink, eastern red-bellied tiger beetle, small white lady's-slipper, great plains ladies-tresses, stemless evening-primrose and whitewashed rabdotus (snail). Other unique critters often found in glades include fence lizards, indigo buntings, prairie warblers, scorpions, six-lined racerunners and numerous species of butterflies and moths.

Although more stable (disturbance tolerant) than other natural communities, due to abundant bedrock exposure and dominance by drought-hardy vegetation, glades are still vulnerable to human disturbance. Many glades have such thin soils that light grazing by cows or traffic by heavy machinery can initiate soil erosion that can scar the glade for years into the future. Consequently, the erosion and shifting soils provide ideal conditions for non-native species invasion (species like spotted knapweed and Japanese honeysuckle). The exposed bedrock also makes glades attractive for quarry operations. Also, many glades were originally larger in size but due to decades and sometimes centuries of fire suppression, they have been invaded by red-cedar, redbud and other drought tolerant trees. In these areas, fire plays a critical role in maintaining open conditions.

Limestone slope glade ~ KSNPC photo by Marc Evans

Eastern Red-bellied Tiger Beetle

Cicindela rufiventris rufiventris

KSNPC Status: None

USFWS Status: None

General Description: An approximately one-half inch long tiger beetle with the top of the head, thorax and abdomen dark brown to black, the latter usually with white or cream-colored spots on the front corners, just past the middle, and along the posterior edge. Underneath the dark wing covers is the abdomen, which is brownish red to orange.

Habitat: Dry upland with rocky outcroppings and sparsely vegetated openings in forests. In Kentucky it is often found in glades or barrens, but also occurs on rock outcrops in the eastern part of the state.

Flight Season: Adults are active during the summer.

Photo by Ellis Laudermilk, KSNPC

Range: The eastern subspecies occupies much of the eastern United States, but is absent from the Atlantic Coastal Plain in the southeast.

Great Plains Ladies'-tresses

Spirathes magnicamporum

KSNPC Status: Threatened

USFWS Status: None

General Description: Distinguished by having linear narrowly pointed leaves absent at the time of flowering, which is in the fall. The sweet smelling flowers are white and often having a pale yellowish cast, especially on the lip. They are arranged in a dense, cylindric spike. Lateral sepals of the flowers spread and arch above the upper petal tips.

Habitat: In Kentucky found in limestone glades and may also be found in closely related grassland communities.

Flowering Period: Fall, usually in October.

Range: Widely distributed in the central United States and into Canada, with scattered disjunct populations in the southwest and southeast United States. It is rare where it occurs in the eastern U.S.

KSNPC Photo by Nick Drozda

Reason for Protection Status: Loss of grasslands through land conversion (agriculture and other uses) and suppression of natural fire.

Eastern Slender Glass Lizard

Ophisaurus attenuatus longicaudus

KSNPC Status: Threatened

USFWS Status: None

General Description: A shiny, legless lizard similar in shape and movement to a snake. Unlike snakes, however, glass lizards have moveable eyelids, external ear openings, and inflexible jaws. They typically mature to 3 feet long. They are often rich brown above (along the back) with dark markings along the sides (below the lateral groove). These dark markings are typically a combination of light and dark dashes and/or stripes.

Habitat: Occupy prairies and glades in Kentucky as well as other open habitats like grassy or brushy fields and dry woodlands.

Range: Extends through the southeastern U.S. (east of the Mississippi River), reaching into southern Florida and extending north through the Coastal Plain of Virginia.

Photo by James Kiser

Reason for Protection Status: Kentucky populations of this subspecies are at the northern extent of the range. Their preferred habitat of native prairies, woodlands and glades is now extremely rare in Kentucky, with most of the remaining habitat severely fragmented.

Spotted Knapweed

Centaurea stoebe

Photo by Bruce Ackley, Bugwood.org

DESCRIPTION: Formerly *C. beibersteinii*, *C. maculosa*. A biennial or short-lived perennial that usually forms a basal rosette of light grey-green, deeply lobed leaves in its first year. In subsequent years, it produces flowers that are purple to pink, somewhat resembling a thistle. The plant grows 2 to 4 feet tall and bears alternate, pale green leaves that are 1 to 3 inches long. The upper leaves are linear in shape. Flowering stems are slender, erect, 8 to 50 inches tall, branched above the middle, and sparsely to densely hairy. The flowers are borne on tips of terminal or axillary stems. The flower petals are surrounded by stiff, black-tipped bracts, giving the flower head a spotted appearance. The plant has a stout taproot.

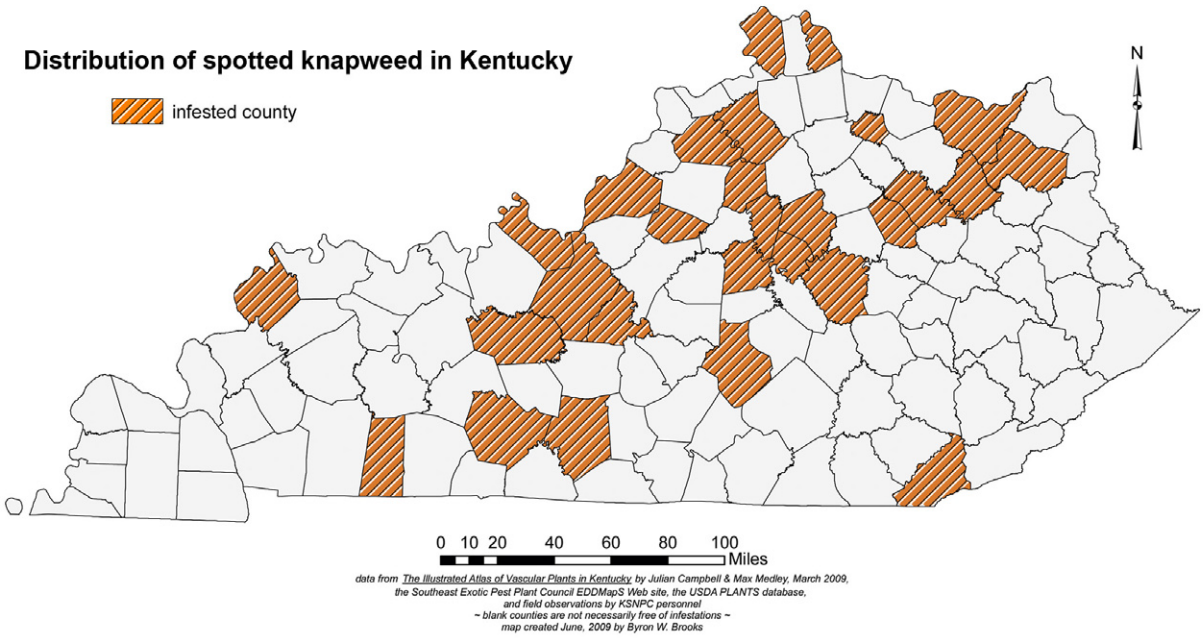
ORIGIN: The native range of spotted knapweed is central Europe, east to central Russia, Caucasia, and western Siberia. It was accidentally introduced to North America as a contaminant in alfalfa seed in the late 1800s.

EXTENT: Widely distributed species reported to occur throughout Canada and in every state in the U.S. except Alaska, Georgia, Mississippi, Oklahoma and Texas. It has been recorded in 28 counties in Kentucky. It prefers well-drained, light-textured soils that receive summer rainfall, including open forests, and prairie habitats. It is an aggressive plant that can rapidly invade any dry, gravelly or sandy sites.

IMPACT: Infested areas eventually become dominated by the plant, suppressing native plant communities and reducing the grazing value of grasslands. Considered a noxious weed in Kentucky, spotted knapweed plants generally live three to seven years but can live up to nine years or longer. Plants die back each year and re-grow from buds on the root crown. The plant uses seeds to reproduce, and a single plant averages 1,000 seeds but may produce up to 4,000 seeds per year. The brown, oval seeds are 1/16- to 1/8-inch long, with pale longitudinal lines and a short fringe on one end. They are easily transported by people, wildlife, livestock and vehicles. Spotted knapweed seeds can remain viable in the soil for five to eight years.

MANAGEMENT: Very small infestations of spotted knapweed can be controlled by hand-pulling; however the plant will resprout from its roots if not completely removed. Using gloves, pull the plant before it flowers and bag it after it has flowered. A foliar application of 2 percent 2,4-D can be effective. Herbicide needs to be reapplied yearly to control new plants germinating from the seed bank.

ADDITIONAL INFORMATION: Visit www.nps.gov/plants/alien/fact/cest1.htm to learn more



The Winds of Change

By Joyce Bender, Nature Preserves and Natural Areas Branch Manager

We know that nothing stays the same, but oh how we wish it could when everything is working just right. This year we said good-bye and best of luck to two of our regional preserve managers. The 50 state nature preserves and natural areas they managed were in good hands and we were sorry to see Lane and Zeb depart.

Lane Linnenkohl worked in Bowling Green and managed our western region's 25 state nature preserves. In addition to looking after 6,500 acres of barrens, glades, caves, floodplain lakes, and mature forests, Lane was responsible for our agency's burn program. Under his tenure we established a training program for all staff and volunteers. He ably served on the Kentucky Prescribed Fire Council's training and standards committee, helping to develop the requirements that future prescribed burn practitioners must meet to conduct burns in Kentucky. He worked regularly on joint projects with partners from several county governments, the Kentucky Department of Fish and Wildlife Resources and The Nature Conservancy. His office was graciously provided by the Biology Department at Western Kentucky University and he provided experiential education opportunities to a number of undergraduates. Lane was the face of the commission in western Kentucky and proved to be a good ambassador for us. As the number of preserves and acres increased with no increase in assistants or funds, he continued to do his best. I appreciated his positive outlook and professionalism. Lane returned to his native Illinois in March to be closer to family and to pursue his passion for sustainable farming.

Lane Linnenkohl

Zeb Weese

Zeb Weese started with the commission as the manager for 6,700 acres of forests, acid seeps, caves, islands, barrens and glades in the eastern region. He dug right in from the first day and accomplished a lot in his time with us. He took on the challenge of working within our limited budget and found grants to help accomplish what needed to be done on his 25 preserves. He initiated what we hope will continue to be a good relationship with Centre College for interns to help with field work. He, too, served as our link to many partners, especially the Department of Parks and Bat Conservation International. In the absence of a staff zoologist, Zeb conducted faunal surveys to aid the Heritage branch in surveying these mammals on other properties. He took the lead for our agency's response to White Nose Syndrome, the disease that is devastating bat populations in this part of the country. Zeb helped with outreach, engaging many with his enthusiastic delivery during guided hikes and programs. His "can do" attitude was truly appreciated. Zeb has taken a newly created position with the Kentucky Heritage Land Conservation Fund Board (KHLCFB), which provides funding to the commission for land purchases. We will still get to see Zeb since one of his duties will be inspecting properties purchased with Heritage Land money, which is our main source of revenue for land acquisition.

We wish the best to Lane and Zeb and express our appreciation for all their hard work in protecting and restoring the nature preserves under their care.

New Moth Species Found

By Joyce Bender, Nature Preserves and Natural Areas Branch Manager

A new moth species in the genus *Grapholita* was found at Bouteloua Barrens State Nature Preserve (SNP), Lincoln County, in mid-April. Loran Gibson, expert lepidopterist and long-time volunteer researcher for the commission had been working with a colleague in Illinois to identify pupae both had found rolled in the leaves of its host plant.

Last year Gibson was authorized by the commission to collect several pupae and was able to see a moth emerge from its cocoon in early April. After study, he and his colleague realized the moth was not described in any literature, making it a species new to science. Since our acquisition of Bouteloua Barrens SNP in 2004, a number of surprises have turned up regarding rare plant discoveries as well as another rare moth that had not been seen for 100 years. The state nature preserves system protects an amazing wealth of organisms and the habitats critical for their survival. When we dedicate an area into the preserve system, we think we have a good understanding of what occurs there; but then a discovery like this happens and we are once again humbled by our limited knowledge of the natural world. May it always be so.

Land Protection Report

By Brent Frazier, Land Protection Specialist

The commission is working on several new projects. A 90-acre addition to Tom Dorman State Nature Preserve (SNP) was dedicated at our June commission meeting. It was a transfer from the Kentucky Department of Parks and is the fourth addition to Tom Dorman SNP in Garrard County. The new property will allow us to expand the existing trail system and will eventually provide for greater public access to forested land in the palisades.

We are also working to acquire additional lands at Apple Valley Glades in Bullitt County and Blood River Seeps SNP in Calloway County. The tract at Apple Valley Glades would provide protection for the Kentucky gladecress (*Leavenworthia exigua var. laciniata*) that is known to exist only in Jefferson and Bullitt counties.

We are continuing a long effort to acquire land for a new preserve at Laurel Fork in Whitley County. We are currently working on obtaining legal access to the property. A good location for public access has been a difficulty in this very remote area. There are a couple of possible remedies for this and we expect the access issue will be resolved. This project is a partnership with the Kentucky Natural Lands Trust, Kentucky Department of Forestry, and the Kentucky Department of Fish and Wildlife Resources. These tracts contain significant natural areas that include federally listed mussels and uncommon species including the rock harlequin (*Corydalis sempervirens*), Cumberland arrow darter (*Etheostoma sagitta sagitta*), and state endangered blunt mountainmint (*Pycnanthemum muticum*). It is also part of one of the largest forest tracts in the state.

The Hardin County Fiscal Court has agreed to donate wooded acreage to the commission as an addition to Jim Scudder SNP. This donation is still making its way through county government channels for final approval. The acreage will add wooded buffer to the glades and include the land the trail passes through to get to the preserve.

We are also pursuing an addition at Bad Branch SNP in Letcher County. The owners have accepted our offer, but it appears they may not own the mineral rights. Details are still unclear at this point. This tract would expand protection in the Presley House Branch watershed. Threatened and/or rare species that have been found in the watershed close to the preserve's current boundary include several plants, two crayfishes and two small mammals. This tract is approximately 24 acres.

Kentucky gladecress ~ photo by Thomas G. Barnes

Director's *Notes*

By Don Dott, Executive Director

What's new at the commission you ask? There's good, bad, and sad. But as the saying goes, when you get lemons, you make lemonade!

The "Good": This is really good; we have a new preserve in Calloway County. Blood River State Nature Preserve (SNP) protects a Coastal Plain Forested Acid Seep, one of the state's most unique and rare natural communities (KSNPC-listed as state endangered). It's an unusual wetland community with soils that are often saturated year-round, and areas carpeted with beds of ferns and sphagnum moss. Our first acquisition does not encompass all of the acres we need to protect the endemic (found nowhere else on earth) Blood River crayfish, but we are on our way. Blood River's seeps, swamps, sloughs and streambeds are unmatched in Kentucky, supporting one of the most biologically diverse areas in the state (for more details, see KSNPC's Summer 2010 newsletter). Our acquisition of this preserve is a tribute to perseverance, as we had to work through a change of private owners before completing this project.

The Tom Dorman State Nature Preserve gained 90 acres, bringing it to a total of 898 acres. This addition was provided by the Kentucky Department of Parks, which continues to be a strong partner with the commission. The new acreage will enable us to protect forested clifflines and enhance public access to the scenic Kentucky River palisades in Garrard County.

The Kentucky General Assembly, at the behest of the state Department of Agriculture and sponsor Rep. Richard Henderson passed HB 362, which strengthens the regulations governing ginseng harvesting. Ginseng (*Panax quinquefolius*) has not yet become so uncommon as to necessitate it being listed as rare, but it continues to endure heavy harvesting from the wild. New provisions for licensing ginseng dealers and improved monitoring of wild collected roots should help prevent its over collection and decline. Kentucky is one of the largest sources of wild collected ginseng in the U.S. The Kentucky Department of Agriculture is currently revising the ginseng regulations to implement the changes authorized by HB 362.

Despite a spring burn season that was unusually stormy and wet we managed to conduct three prescribed burns. One was at Raymond Athey Barrens SNP in Logan County, one at Eastview Barrens SNP and the other at Blue Licks State Park Nature Preserve in Robertson County, just north of the Licking River. The Athey burn aids in restoring a mix of glades and woodlands that support several rare plants including prairie gentian, a wildflower of vibrant deep blue. The Eastview burn continues our efforts to improve habitat for rare plants and invertebrates dependent upon fire to maintain their populations. The Blue Licks burn reduced non-native plants like fescue and crown vetch and others that compete with Short's goldenrod (*Solidego shortii*), one of our rarest plants. It's almost a state endemic, with only one population found outside of Kentucky in southern Indiana. The Blue Licks populations are found along or near the bison traces that once brought multitudes of these animals to the salt licks.

Three new populations of the Olympia marble butterfly (*Euchloe olympia*) were found in three central eastern counties. If more populations are not found, it may need to be added to the list of rare biota, but hopefully that will not be the case. Surveys will continue.

The commission completed the biennial BIOTICS data exchange with NatureServe. This process keeps the taxonomy current and provides updates to NatureServe, which in turn, helps to keep the international database current, providing updates to the commission on the global rankings of species found in Kentucky.

The "Bad": White Nose Syndrome (WNS). The scourge of bats in the eastern U.S. was confirmed as present in Kentucky in April this year. It was found on a little brown bat (*Myotis lucifugus*) in a cave in Trigg County. WNS was first detected in New York State in February 2006 and in just five years has spread north to Quebec, Canada, and south to Tennessee. It is suspected as far west as Oklahoma. An extensive network of state and federal agencies is working to investigate the cause, source and transmission pathways of WNS, and to develop management strategies to reduce its impact. It has been responsible for killing 90 to 100 percent of bats in caves where it has been found, including rare bats such as the Indiana bat (*M. sodalis*) and the Eastern small-footed bat (*M. leibii*), as well as more common species such as little brown bats (*M. lucifugus*). The WNS investigation has three primary focus areas: research, monitoring/management and outreach. Much work is underway to nail down a cause and a treatment, but it's unlikely to happen before bat populations suffer heavy mortality. Bats are most beneficial to humans as the primary predator of night flying insects such as mosquitoes and others that cause damage to agricultural crops.

And lastly, the "Sad": We have had to bid good-bye this spring to the Eastern and Western Regional Preserves Managers Zeb Weese and Lane Linnenkohl, respectively. Both did an excellent job with their responsibilities of protecting and restoring the preserves in their respective regions. We wish them both much success in their new endeavors. Joyce Bender's article, "The Winds of Change," will give you a deeper appreciation of their contributions.

Meanwhile, we are in much need of preserve monitors. These are folks who volunteer to help us monitor the condition of our preserves, giving us extra eyes and ears. If this level of service appeals to you please contact Joyce Bender at the commission by email or phone.

Upcoming *Hikes* and *Events*

Please note that most events require preregistration. View our complete events calendar at naturepreserves.ky.gov/news/.

Aug. 27 Hike to Kitt's Hole at Lower Howard's Creek Heritage Park and SNP (Clark County)
Aug. 27 Explore a Stream with Woods and Waters Land Trust (Owen County)
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Sept. 8 KSNPC Quarterly Meeting (Frankfort, KY)
Sept. 8 KSNPC 35th Anniversary Celebration (Frankfort, KY)
Sept. 10 Fall Flowers Hike at Lower Howard's Creek Heritage Park and SNP (Clark County)
Sept. 10 Raptor Rehab at Blackacre SNP (Jefferson County)
Sept. 17 Clean The Cumberland! (Harlan County)
Sept. 17 Native Alternatives to Invasive Plants at Floracliff SNP (Fayette County)
Sept. 18 Insect Crawl at Blackacre SNP (Jefferson County)
Sept. 21 First Day of Autumn Hike at Lower Howard's Creek Heritage Park and SNP (Clark County)
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Oct. 1 Explore Lower Howard's Creek Heritage Park and SNP (Clark County)
Oct. 8 KSNPC's 35th Anniversary Celebratory Hike at Bad Branch SNP (Letcher County)
Oct. 22 Fall Colors Hike at Lower Howard's Creek Heritage Park and SNP (Clark County)
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Nov. 6 Fall Walk and Talk at Blackacre SNP (Jefferson County)
**More summer and fall events are planned so please check our online calendar for an up-to-date list.

Join the Friends of Kentucky Nature Preserves Today!

friendsofkynaturepreserves.org

DON'T FORGET TO DO SOMETHING WILD

ON YOUR STATE INCOME TAX RETURN AND USE THE CHECKOFF BOX TO DONATE TO THE NATURE AND WILDLIFE FUND!

Kentucky State Nature Preserves Commission Quarterly Public Meeting

Sept. 8, 2011
Paul Sawyier Public Library Frankfort, KY
10 a.m. EDT

Kentucky State Nature Preserves Commission
801 Schenkel Lane, Frankfort, KY 40601-1403
502-573-2886
naturepreserves@ky.gov
naturepreserves.ky.gov

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.
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