



Office of Kentucky Nature Preserves 2020 Annual Report



Preserving Kentucky's natural areas since 1972.



Map data: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, NOAA, NRCAN, GEBCO, NOAA, iNaturalist, etc.

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The Kentucky Heritage Land Conservation Fund Board

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Representing the Kentucky Department of Parks

Tony Wheatley

Representing the Kentucky Department for Fish and Wildlife Resources

This report is submitted to the Governor and the General Assembly as directed by KRS 146 and 418 KAR relating to the Office of Kentucky Nature Preserves, the Kentucky Heritage Land Conservation Fund, and the Rare Plant Recognition Act.



Duties of the Office of Kentucky Nature Preserves



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. KRS 146.440



To promote understanding and appreciation of the aesthetic, cultural, scientific and spiritual values of our unpolluted and unspoiled environment. KRS 146.410



To recognize endangered and threatened species of plants for human enjoyment, for scientific purposes, and to ensure their perpetuation as viable components of their ecosystems for the benefit of the people of Kentucky. KRS 146.600



To provide a central clearing house of information for environmental and conservation matters and maintain an inventory of natural types, flora, and fauna within the Commonwealth. KRS 146.485



To afford the citizens of the Commonwealth an opportunity to enjoy natural streams and to preserve for future generations the beauty of certain areas untrammelled by man through the Kentucky Wild Rivers Program. KRS 146.200-360

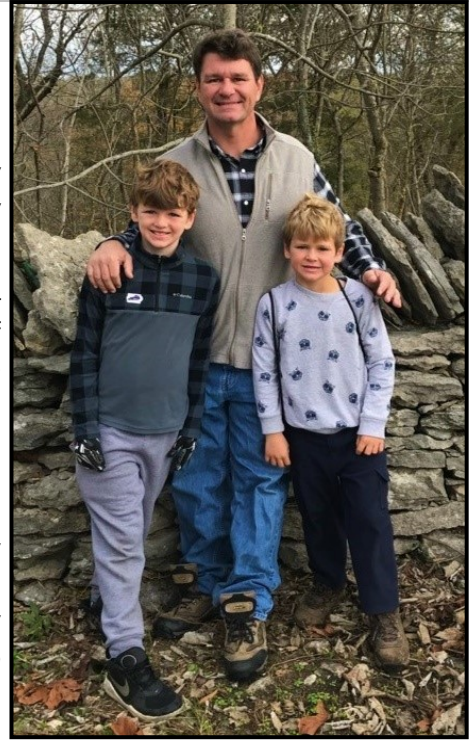


To benefit the citizens of Kentucky through the acquisition and maintenance of certain lands for use as state parks, recreation areas, state forests, nature preserves, wildlife management areas, and wetlands through administration of the Kentucky Heritage Land Conservation Fund . KRS 146.550-570

Executive Director's Message

So where do we start? As we all know, 2020 has presented everyone with some unexpected and unprecedented challenges—the Office of Kentucky Nature Preserves included. Thankfully, due to our exceptional team of staff and partners, we've been able to weather the storm. In this report you'll see how we've spent the last year on a wide variety of projects, both new and old.

First, the challenges. OKNP staff has largely faced the same COVID-19 issues that you have—working in isolation from home instead of with our office community, daily video conferences, home schooling our children, worrying about the health of our family and friends. But another challenge has been created by the explosion in visitation of Kentucky's trails and natural areas. OKNP's state-owned properties have remained open throughout the pandemic with social distancing policies in place, and thanks to our trail crew we've largely been able to keep up with this increase in use. However, some of our partners have not been as fortunate. Many of them closed during the spring and are only now beginning to open as I write this in early July. Others remain closed, unable to handle the increased pressure in an ecologically responsible way, and inundated with crowds that don't always follow COVID-19 protocols.

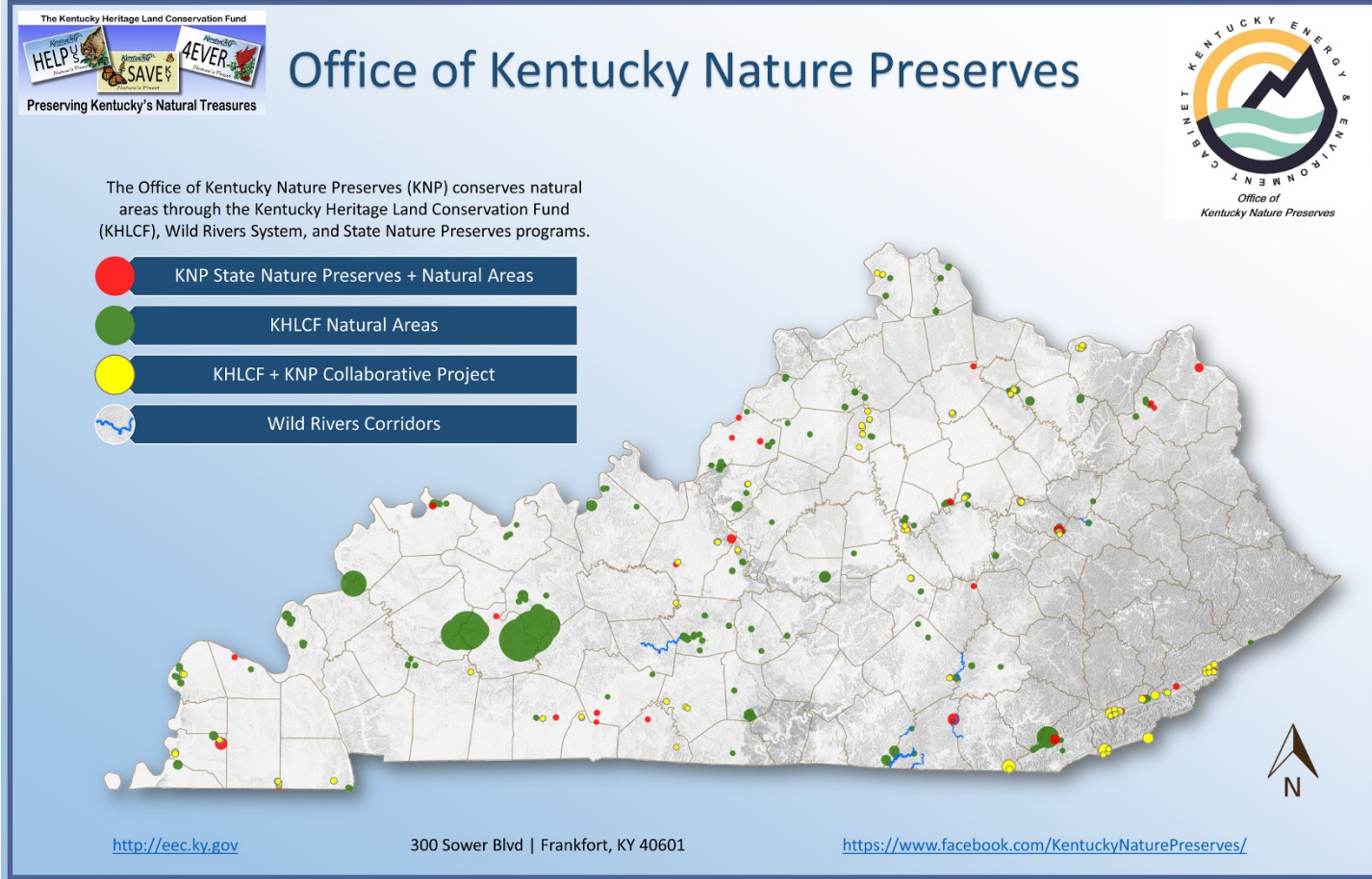


We urge you to remember to practice "Leave No Trace" anytime you visit a natural area, and place the highest priority on protecting the ecological integrity of the area—not necessarily what is convenient. Natural area parking lots are typically designed to limit capacity on purpose. If the lot is full, it is a good idea to go somewhere else for the day.

Now on to the good news! We've had some remarkable accomplishments this year. We established our first new State Nature Preserve in over a decade, thanks to the remarkable donation of over 300-acres by a more-than-generous couple who wanted to share their love of nature with Kentucky. We established a new shared staff position with the Natural Resource Conservation Service to more effectively use OKNP's rare and endangered species data to assess federal Farm Bill applications—which means more money in the pockets of farmers who want to improve habitat for those species on their property. We established other new partnerships: with the Office of Energy Policy to use our data to help site renewable energy projects, such as solar arrays, in areas that won't negatively impact rare species, and with the Kentucky Transportation Cabinet to assess rare plants and pollinator habitat along Kentucky roadways. And, in a cause very close to my heart, for the first time since 2014 the budget passed by the General Assembly and signed by Governor Beshear does not "sweep" any funds from the Kentucky Heritage Land Conservation Fund, leaving those funds to purchase and manage natural areas throughout the state. These are just some of the accomplishments you'll read about in these pages. Again, none of them would be possible without OKNP's remarkable staff and partners, committed to protecting Kentucky's rare species and natural habitats.

Kentucky will indeed get through this together.

KNP Natural Areas Map



KNP manages four distinct programs to conserve Kentucky's natural areas. While these programs all share common goals—rare species habitat, environmental education opportunities, and conserving natural areas through a combination of land acquisition, conservation easements, and public-private partnerships— they have some differences.

- **The Kentucky Heritage Land Conservation Fund**

Assists with funding conservation at the local and state level.

- **The State Nature Preserve System**

Prioritizes rare species habitat conservation and quiet enjoyment of natural areas.

- **The Natural Areas Registry**

Recognizes private landowners and others who own land with outstanding ecological attributes.

- **The Wild Rivers Program**

Focuses on riparian forest conservation and paddling opportunities on pristine rivers and streams.

As of July 1, 2020, Office of Kentucky Nature Preserves programs include:

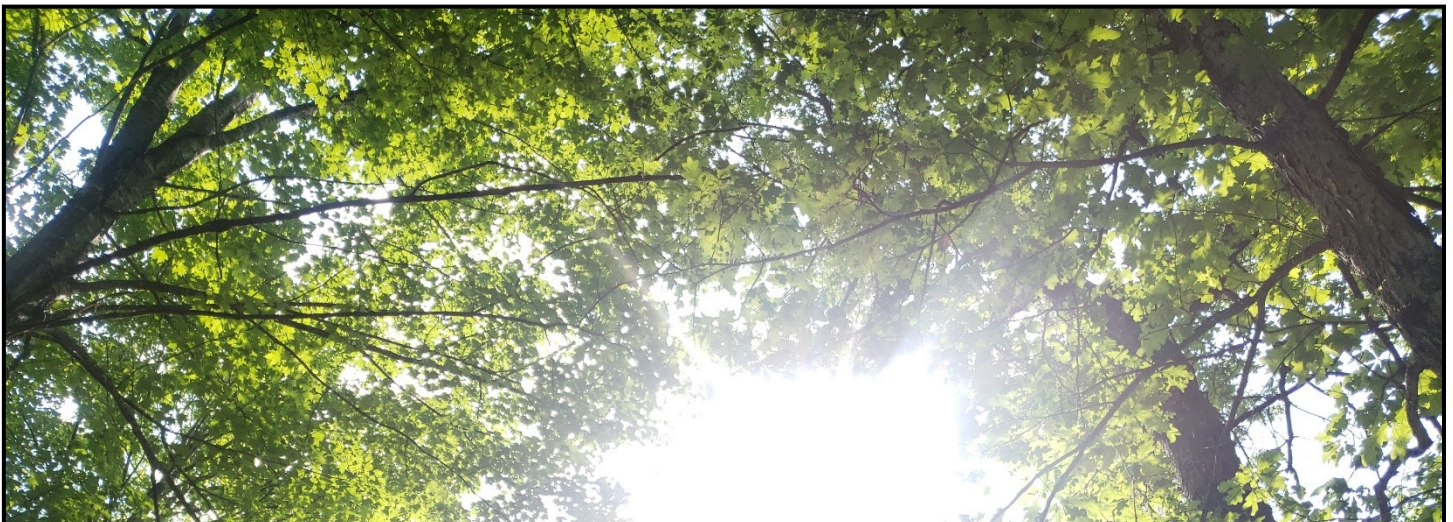
- 19,563 acres owned by KNP on 41 State Nature Preserves
- 6,417 acres owned by KNP on 6 State Natural Areas
- 7,324 acres dedicated by KNP on 22 State Nature Preserves owned by partnering agencies
- 13,017 acres on conservation easements at 54 KHLCF natural areas owned by local concerns
- 62,146 acres of deed restrictions on 26 KHLCF natural areas owned by other state agencies
- 8,586 acres owned by private landowners and other agencies on 59 Registered Natural Areas
- 26,382 acres owned by private landowners and other agencies on 9 Wild Rivers Corridors

While the grand total of 143,435 acres in these programs is an impressive number, it is less than 0.6% of Kentucky's 25 million acres! Appendix I has lists of KNP natural areas by county and status.

Kentucky Heritage Land Conservation Fund—Historic Accomplishments

Since 1995, the Kentucky Heritage Land Conservation Fund (KHLCF) Board has played an integral part in protecting and conserving over 94,000 acres of Kentucky's natural areas and habitats on 171 tracts in 67 counties. KHLCF funds both the acquisition of property and management, including hiking trail development and habitat improvement.

Summary of the Kentucky Heritage Land Conservation Fund Efforts as of 1995 - June 2020			
Applicant	Number of Projects	Acreage Conserved	Funding
Fish and Wildlife Resources	8	40,701.18	\$ 7,915,255.59
Division of Forestry	6	3,662.77	\$ 6,213,849.35
Kentucky Nature Preserves	46	10,660.57	\$ 9,087,297.42
Department of Parks	16	5,342.18	\$ 7,047,138.74
Wild Rivers Program	16	6,428.61	\$ 8,369,489.94
Multiple Agency Partners	6	14,781.09	\$ 11,673,455.86
County Governments	35	7,333.11	\$ 13,693,295.13
City Governments	10	542.55	\$ 1,709,119.25
Metro Governments	8	1013.24	\$ 3,288,294.45
Colleges/Universities	8	2,078.70	\$ 4,952,276.55
Conservation Districts	8	1,484.44	\$ 4,589,972.66
Non-Profit	4	764.477	\$ 1,557,385.50
Totals:	171	94,792.92	\$ 80,096,830.44
<i>Note: Includes both acquisition and management costs.</i>			



Kentucky Heritage Land Conservation Fund—Projects/Acquisitions

These properties were successfully acquired in FY2020, out of thirty approved active projects.

FY 2020 KHLCF ACQUISITIONS			
PROJECT	AGENCY	COUNTY	ACRES
Rockcress Hills SNP—Gatewood Tract	KNP	Franklin	19.061
Drennon Creek SNP—Lowe/Lacefield	KNP	Henry	327.78
McNeely Lake CE	Louisville Metro	Bullitt	20
Logan Hubble Park	Lincoln Fiscal Court	Lincoln	123
Jeffrey's Cliffs Expansion	Hancock Fiscal Court	Hancock	140
Green River Preserve—Vinegar Ridge	Western Kentucky U.	Hart	93
Pine Mountain Trail—Knuckles Tract	State Parks	Bell	2036
Total:			2,758.84

Due to an overall decline in revenue coupled with General Fund sweeps since 2014, awards have been made contingent upon future available funding. Some funds were available from refunds of previously approved projects that could not be acquired. It is unclear if all funding will be available for all projects as the acquisition process typically takes two years. Funding awarded was for land purchase, associated pre-acquisition costs (appraisals, title, and survey work), or approved management activities. Due to complexities of the land acquisition process it often takes several years for the KHLCF to successfully complete projects. In some case, projects are withdrawn by the seller and not completed. The following are active projects we are working towards completion, but with no guarantee of success or specific timeline.

GRANTS AWARDED	COUNTIES	AWARD
Competitive (local governments, colleges, land trusts, etc.)		\$720,000
Kentucky State University—EERC Expansion	Henry	\$460,000
Western Kentucky University—Mucignat Tract	Hart	\$260,000
State Agency Grants		\$1,419,315
Office of Kentucky Nature Preserves—Eastview—Ashlock	Hardin	\$125,000
Office of Kentucky Nature Preserves—Gritter Ridge	Powell	\$446,315
Office of Kentucky Nature Preserves—Cumberlands	Whitley	\$415,000
Perryville State Nature Area	Boyle	\$433,000
Kentucky State Parks—Pine Mountain Trail	multiple	
GRAND TOTAL		\$2,139,315

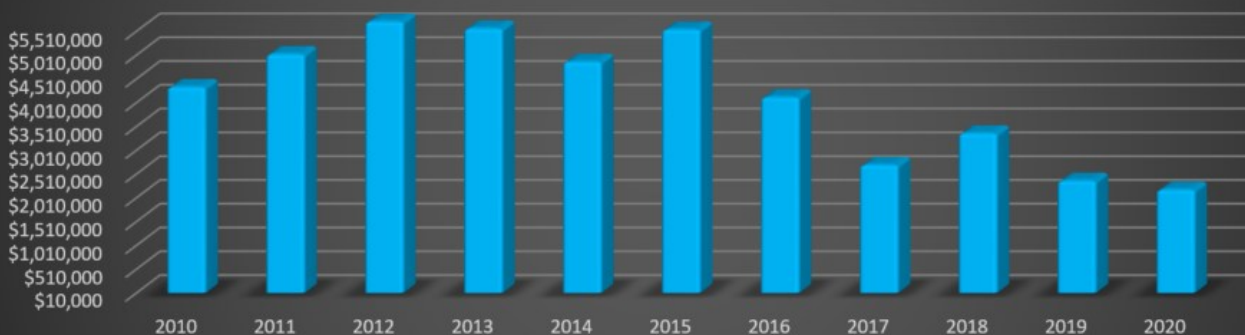
Kentucky Heritage Land Conservation Fund—Annual Revenue

Funding for the KHLCF is generated from the sale of nature license plates, the state portion of unmined mineral tax on coal, environmental fines, interest income, and donations. By statute, the Kentucky Environmental Education Council receives the first \$150,000 collected from environmental fines and the Office of Energy Policy receives the first \$400,000 of unmined minerals taxes. However, in FY2020 the unmined mineral tax only generated \$166,096.82 all of which was transferred to the Office of Energy Policy.

In Fiscal Year 2020 the enacted state budget swept \$2.5 million from the KHLCF into the state general fund. These general fund sweeps began in FY 2014. After the FY 2020 general fund sweep, the annual revenue for the KHLCF was \$717,962 to the negative. Awards made and projects completed in FY 2020 were made from a combination of revenue carried forward from previous years, funds returned from withdrawn projects, and license plate revenue. License plate revenue is in a separate account and to date has not been swept into the general fund. The 1-year FY21 budget developed by Governor Beshear and passed by the General Assembly in spring 2020 included no sweeps from the KHLCF for the first time since 2014.

FY	License Plates	Fines	Un-Mined Tax	Interest	Other	KEEC/OEP deductions	TOTALS
2010	\$678,117	\$1,363,884	\$2,102,783	\$193,245	\$1,100	(\$550,000)	\$3,789,129
2011	\$638,470	\$1,918,713	\$2,399,253	\$74,111		(\$550,000)	\$4,480,547
2012	\$571,970	\$2,199,708	\$2,870,186	\$74,111		(\$550,000)	\$5,165,974
2013	\$431,100	\$2,332,183	\$2,820,758	(\$14,433)		(\$550,000)	\$5,019,608
2014	\$412,370	\$1,709,373	\$2,676,912	\$71,526	\$71	(\$550,000)	\$4,320,251
2015	\$402,118	\$2,773,396	\$2,287,058	\$85,541	\$945	(\$550,000)	\$4,999,058
2016	\$288,182	\$2,070,527	\$1,637,571	\$126,302		(\$550,000)	\$3,572,581
2017	\$379,370	\$1,586,457	\$676,305	\$59,298	\$25	(\$550,000)	\$2,151,454
2018	\$365,590	\$2,262,555	\$636,307	\$100,261	\$385	(\$550,000)	\$2,815,097
2019	\$361,050	\$1,492,233	\$ 333,392	\$182,467		(\$483,392)	\$1,885,750
2020	\$361,460	\$1,909,592	\$166,097	\$60,986		(\$166,097)	\$2,182,037

10 Year Totals



Kentucky Heritage Land Conservation Fund—Conservation Easements

When KHLCF funding conserves a natural area at a county park, land trust site, or university research station, a permanent conservation easement is placed on that property. This ensures that the site will always be managed for conservation and nature-based recreation. KNP staff inspects each of these conservation easements annually, and our partners submit reports on their activities. Here are just a few highlights from some of our 54 conservation easement partners:



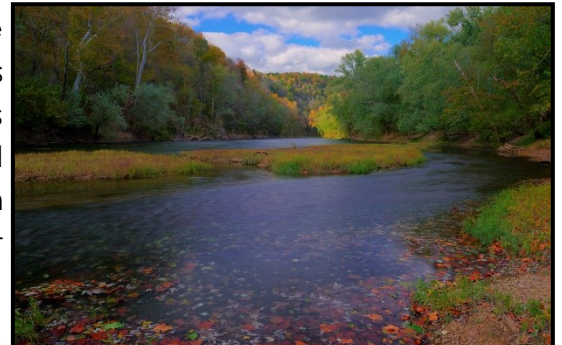
Aerial view of Jeffreys Cliffs Conservation and Recreation area.

- Jeffreys Cliffs Conservation and Recreation Area officially opened to the public in June of 2020. This 230-acre nature preserve is located in Hancock County and features approximately 5 miles of hiking trails through natural woods, cliffs, and large rock shelters. The cliffs formation is about three-quarters of a mile from the Ohio river and it consists of a sandstone plateau, rising out of the surrounding lands like an island. The cliff rises from approximately 550 ft at the base to an elevation of 700 ft at the highest point. They are made of sandstone put down over time when the area was a receding inland sea and their current configuration is the result of erosion over eons by the water and the river. The cliffs average height is 100 to 125 feet with a perimeter of approximately 4 miles, where they are flanked by several large caves and rock shelters.

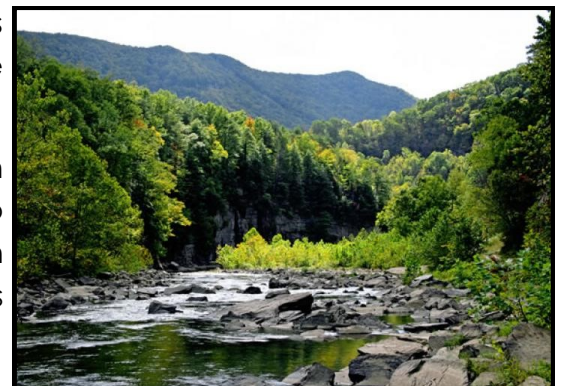


Jeffreys Cliffs

- Ninety two Acres were added to the Green River Preserve Managed by Western Kentucky University (WKU) and the WKU Research Foundation. This natural area hosts numerous research projects and classes in disciplines including ecology, biology, geology, folk studies and archeology. Several current and ongoing research projects from WKU graduate students will help benefit future conservation efforts.
- The KHLCF supported Kentucky State Parks in funding the hiking bridge at Breaks Interstate Park (a State Park that stretches across the Kentucky/Virginia state line). This proposed 720 foot long swinging bridge will be the longest in North America!
- Larue County Environmental Education and Research Center held 80 events, activities, and school group outings in the months prior to COVID-19. A weather station on site is utilized in school curriculum and data is accessed by students through their website.



Green River Preserve



Breaks Interstate Park

Introducing the Drennon Creek State Nature Preserve!

The land in rural Henry County had everything that Eugene Lacefield was looking for. It was an interesting plot complete with woods, hills and hollows, the last farm on a dead-end road. So, he and his wife Mary Margaret Lowe purchased the land in 1978.

Over the next few decades, they perfected their eco-friendly farmhouse. They spent afternoons picnicking next to Drennon Creek and evenings sitting on the porch, watching the sunset.



"As the years went by, we were growing more and more fond of this land — hiking it and building trails and enjoying it," Lacefield said. And it occurred to them, Lowe chimed in, that other people might enjoy it, too.

Three hundred and thirty-eight acres of land in Henry County were donated to create the Drennon Creek State Nature Preserve.

In 2018 Lowe and Lacefield decided to donate 338 of their 350 acres to the Office of Kentucky Nature Preserves, which will protect the land and use it to restore federally endangered species. In early 2020 the donation was complete and the land was dedicated as Drennon Creek State Nature Preserve under the ownership of OKNP. It now enjoys the highest level of legal conservation in the Commonwealth for protecting rare species. The donation has also earned Lowe and Lacefield the 2019 Kentucky Heritage Land Conservation Fund Stewardship Award. The KHLCF Board presents the annual award to individuals who exemplify responsible natural areas management.

A donation like this doesn't come along very often, said Zeb Weese, executive director of the Office of Kentucky Nature Preserves. What makes Lowe and Lacefield's land unique, he said, is its potential



Mary Margaret Lowe and Eugene Lacefield's generous donation created the first new State Nature Preserve in a decade.

for restoring Braun's rockcress, a federally endangered species. The U.S. Fish and Wildlife Service listed Braun's rockcress (*Boechera perstellata*) as endangered in 1995, and Nature Preserves botanists and managers have been working ever since to delist one of the Commonwealth's rarest plants.

Identifiable by its lanceolate leaves and the small white or lavender flowers produced in mid- to late-spring, Braun's rockcress is only found in three Kentucky counties — Franklin, Henry and Owen — and two counties in Tennessee. This new preserve is near the northernmost population in the world. It is sun intolerant and highly vulnerable to

Introducing the Drennon Creek State Nature Preserve!

competition from other plants, but it is often found along the steep slopes that lead to the Kentucky River and its tributaries. Drennon Creek is one such tributary.



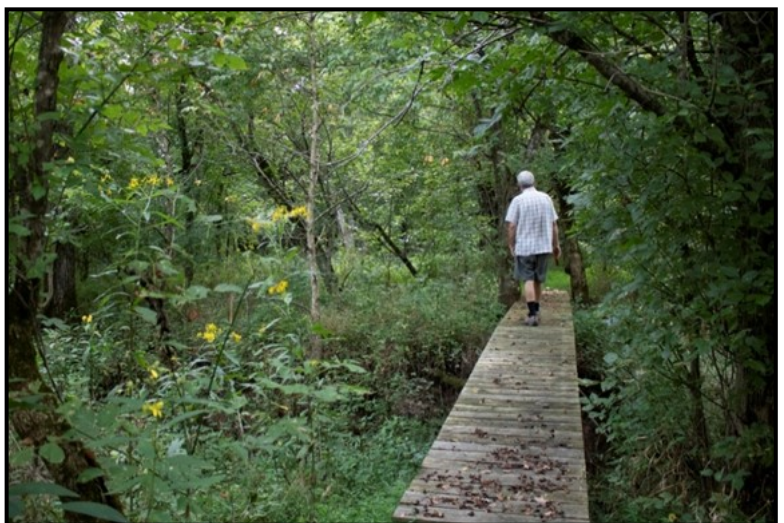
Braun's rockcress (*Boechera perstellata*)

Weese said the office will first focus on planting Braun's rockcress on the donated property and managing invasive competitors so the endangered species can thrive. Restoration is an important part of saving a species from extinction and removing its endangered status. The site also has potential for restoration of another federally endangered plant, globe bladderpod (*Physaria globosa*), and several rare mussel species. Once a healthy and sustainable population has been established, the Office will explore making the land accessible to the public with hiking trails and other amenities.

The Office of Kentucky Nature Preserves, within the Energy and Environment Cabinet, owns more than 19,000 acres protected as nature preserves across the Commonwealth. The office's mission is first and foremost to protect land recognized for its natural significance – including, Weese says, protecting rare species – but it also works to conserve land for “passive” recreational activities like hiking and bird watching. “We want folks to enjoy nature,” Weese said.

Lacefield and Lowe, who created hiking trails on their property for private use, offered to perform day-to-day maintenance of the property as volunteer stewards of the land after it officially becomes a nature preserve. For Lowe and Lacefield, who have a background in education and have always cared deeply about the environment, the decision to donate the land was rooted in a desire to do something that would benefit everybody. They are excited about the restoration potential of the donation but even more so about its potential for promoting outdoor recreation.

“We were amazed ... that two people could offer and provide a state nature preserve for all of Kentucky and surrounding peoples to come visit,” Lacefield said. They hope eventually to see picnic tables at Drennon Creek State Nature Preserve, as well as a small shelter and informational kiosks. The couple also hopes that their donation encourages others to think about ways they can make a difference. “Every person can be involved with improving, protecting and conserving the environment,” Lowe said.



The “new” Abbey of Gethsemani Registered Natural Area

Since 1848 the Abbey of Gethsemani has managed over 1,500 acres of field and forest in Nelson County, which include some uncommon native species and habitat. In 2019 the Office of Kentucky Nature Preserves recognized their historic stewardship by establishing the Abbey of Gethsemani Registered Natural Area.

“The Abbey of Gethsemani welcomes the opportunity to become a Registered Natural Area as a way of continuing and improving its stewardship of its land, much of which it has held for over 170 years. The most unspoiled parts of the property are grasslands and glades that will benefit from the expertise the Office of Kentucky Nature Preserves. We look forward to collaborating with the State of Kentucky in its efforts to preserve and enhance such natural areas,” stated Dom Elias Dietz, Abbot of Gethsemani.

The Natural Areas Registry is a voluntary, non-regulatory program designed to provide recognition for sound

ecological stewardship and awareness of the ecological significance of a landowner's property. Under the terms of the registry agreement, the landowner does not relinquish any rights to the property and simply agrees to protect it to the best of their ability. To be eligible for registration, a property must contain habitat for plants or animals that are rare or have declining populations in Kentucky or that contain an outstanding example of a Kentucky ecological community, such as an old growth forest, wetland, glade or prairie.

“The Abbey supports a complex of several high quality rocky grasslands called limestone slope glades, which is a rare natural community in Kentucky, “ says KNP botanist



Limestone prairie at the Abbey of Gethsemani

Devin Rodgers. “Rocky soils of these glades promote island-like openings with a rich diversity of native grasses, sedges, and wildflowers, many of which are absent in adjacent forests. These glades contained rare, charismatic grassland species like a large and robust population of prairie clover, white prairie clover, Eggleston's violet, Crawe's sedge, and cutleaf prairie dock. Glades at the Abbey are a unique example as a whole because of their high diversity of native grassland species, little disturbance from invasive species, close spatial proximity, dense clustering of a dozen high-quality openings, and their ownership by a conservation-minded landowner.”

KNP and the Kentucky Department of Fish and Wildlife Resources (KDFWR) will work together on the Registered Natural Area site to enhance the glades. Natural Resource Conservation Service “Farm Bill” programs designed to assist conservation practices on private property will likely be utilized.

“Part of the Office of Kentucky Nature Preserves' mandate is to promote the scientific and spiritual values of our unpolluted and unspoiled environment, and I can't think of a better place than Gethsemani to further those goals,” says Zeb Weese, KNP Executive Director. For more information on the Kentucky Natural Areas Registry, please go to https://eec.ky.gov/Nature-Preserves/conserving_natural_areas/.

Kentucky State Nature Preserves

The Kentucky Nature Preserves Act of 1976 established the State Nature Preserve system. State Nature Preserves contain the best remaining examples of rare species populations or natural communities known in the state, are particularly suited for environmental education, or preserve the Commonwealth's most spectacular natural scenery. Conserving these high quality areas reduces the risk that a species will become federally endangered, helps the recovery of already listed species, or moves species closer towards their delisting. These high quality areas are legally "dedicated" as "State Nature Preserves".

- Of **372** plant species listed as state endangered, threatened or special concern, **206** are conserved in perpetuity on KNP's state nature preserves and natural areas.
- Of **339** animal species listed as endangered, threatened or special concern, **172** have been conserved on KNP's state nature preserves and natural areas.
- Of Kentucky's **70** natural community types, **30** high-quality examples have been conserved on KNP's state nature preserves and natural areas.

State Nature Preserves with less sensitive habitats are open to the public for hiking, wildlife viewing, and passive recreation on a system of hiking trails.



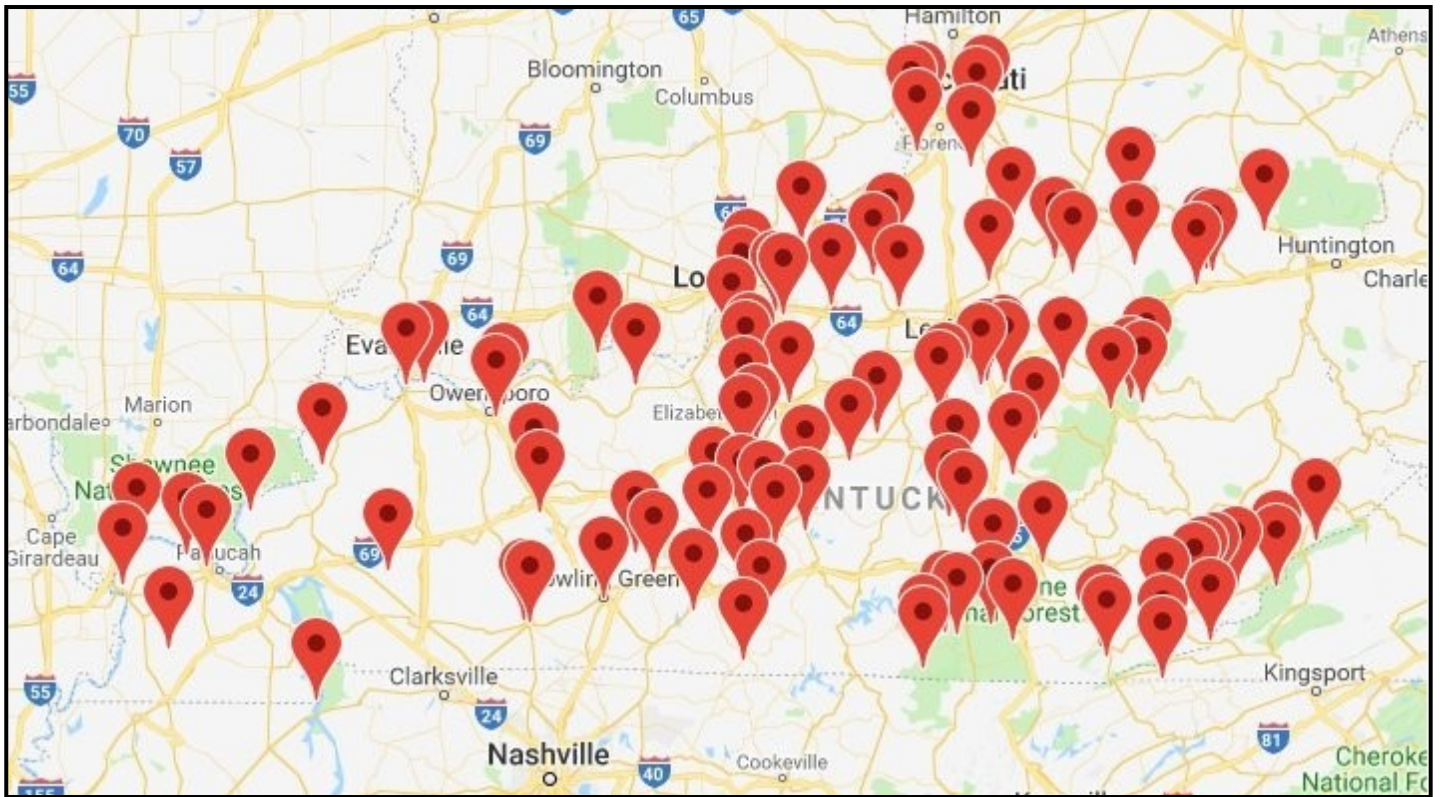
Habitat management in the KNP system requires specialized expertise in ecosystem restoration techniques such as prescribed burning and invasive plant control. Activities range from research on the viability of a rare species population, to creating educational materials for the public, to building and maintaining hiking trails. KNP's Natural Areas and Recovery Branch and Rare Plant Conservation Section work together on planning and implementation of habitat management.

Hiking on State Nature Preserves

In addition to conserving habitat for rare species, KNP strives to provide passive outdoor recreation opportunities to the citizens of Kentucky and tourists alike. KNP nature preserves and natural areas provide an opportunity for individuals, families, and groups to see, hear, explore, and connect with nature in its purest state possible and to experience what Kentucky may have looked like centuries ago. For the hiker, nature photographer, bird watcher, and those seeking solitude in pockets of wild Kentucky, State Nature Preserves, Wild Rivers, and Heritage Lands truly are some of the most cherished places in the state.

The [Keith MacAdam Trail Endowment for Kentucky Nature Preserves](#) was established in 2018 to assist with improvements on the KNP trail system. Through the financial support the endowment offers, and an increased focus on organizing volunteers, we have been able to make short and long term plans to maintain and improve the existing trail systems as well as develop new trails.

KNP has been able to make several notable improvements for hikers this year. One of the most notable changes is our new website, which includes an online tool making it easier to find information on our public sites.



Find your new favorite hiking spot now at

<https://eec.ky.gov/Nature-Preserves/Locations/>

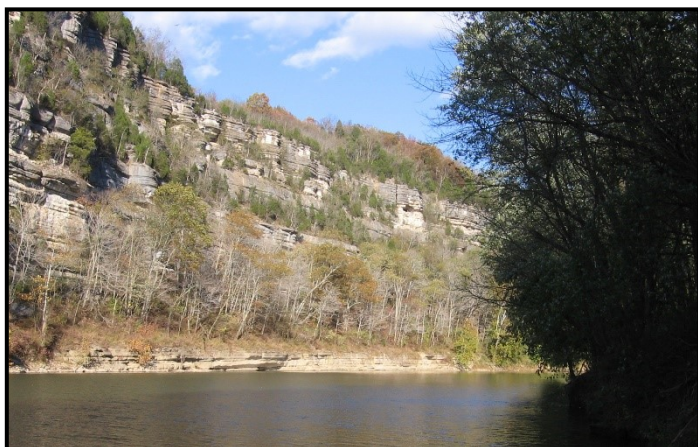
Hiking on State Nature Preserves

Over the last year KNP staff have been working hard on improving the trails system by installing new signs and kiosks with updated maps and area information, re-marking preserve boundaries installing new boundary signs, and blazing our trails with a new marker that pays homage to our old emblem.



Tom Dorman State Nature Preserve

Tom Dorman SNP is a short drive from the city of Lexington and lets users see the beauty of the Kentucky River Palisades and the forests around it. We are excited to announce that the new loop trail is open and has been heavily used by many visitors over the last 6 months. A new parking area off HWY 27 allows easy access from Lexington and Nicholasville. We have also installed a new kiosk and updated the trail maps and preserve brochures to reflect these changes. A large rock near the cliff edge has become a popular spot for hikers to take a break and enjoy the beauty of the palisades. In areas with multiple trails, different colored owl blazes are being used to help avoid confusion.



OFFICE OF KENTUCKY NATURE PRESERVES

Kentucky Heritage Land Conservation Fund

Kentucky Nature Preserves conserves about 100,000 acres of natural areas through the Kentucky Heritage Land Conservation Fund

Many of these protected areas are home to threatened and endangered species

HELP US

Nature's Finest

SAVE KY

Nature's Finest

4EVER

Nature's Finest

To learn more about what we do visit www.eec.ky.gov

By purchasing Nature's Finest License plates, you can help us to protect and manage important natural resources of Kentucky

Hiking on State Nature Preserves

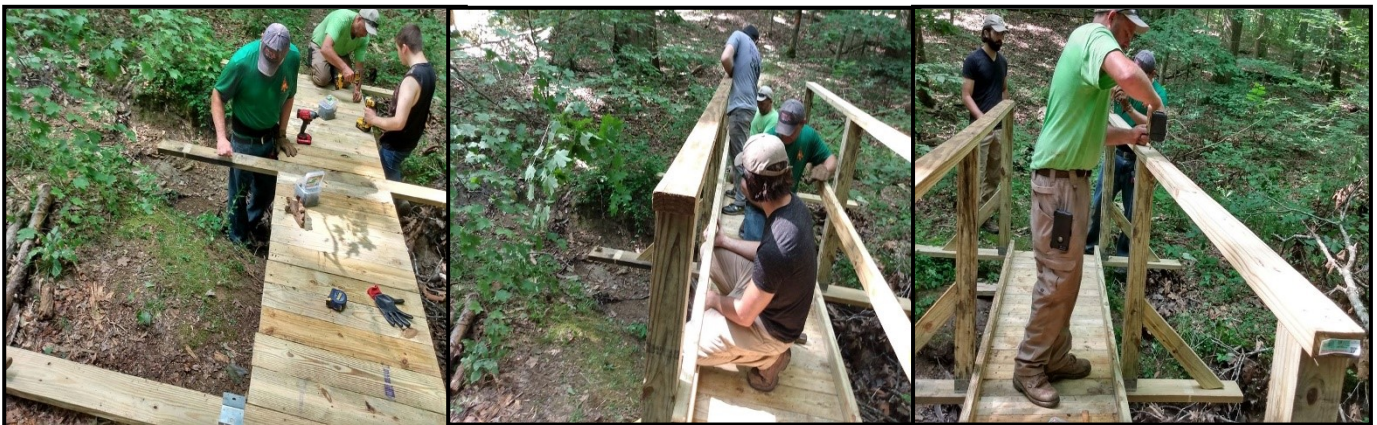
Bad Branch Falls State Nature Preserve

Bad Branch Falls SNP is one of our most popular trail systems we have in the state. Visitors come from all over the state and other countries to see this beautiful waterfall. The MacAdam Fund has allowed us to replace two- foot bridges along the trail that were at the end of their life cycle. The bridges were replaced with the help of VISTA AmeriCorps and should provide years of use. The parking area was improved with a new culvert and additional gravel. The trails were blazed with our new owl logo that corresponds with the new map designed for the trails. An updated informational poster was designed and installed at the kiosk for visitors to learn more about the preserve.



Vernon Douglas State Nature Preserve

This preserve can be easily found off the Bluegrass parkway and offers the public 4.5 miles of trails. Vernon Douglas SNP offers hikers a moderate hike up to the ridge top and ascends down the to the creek level with a short spur that goes to the pinnacle. We have been able to keep the trails cleared from fallen trees and blazed with our new owl logo to assist hikers in following the trail. This year with the help of a local Eagle Scout a new bridge was added to a creek crossing on the trail. A new kiosk was added to the trail head and updated informational poster was added as well as installation of our new interpretive signs. Trail maps were updated and are now available at the kiosk. Regular visits to the preserve by staff and the help of some local volunteers help maintain this area. Upcoming plans for this site include two new bridges and a re-route on the lower portion of the trail system.



Habitat Management on KNP Lands

Pine Barrens Restoration on the Cumberland Plateau

Over the past year, pine barrens restoration work has continued as KNP entered the second year of its two-year grant from the National Fish and Wildlife Foundation to restore pine barrens on the Cumberland Plateau. This project focuses on three nature preserves that have remnant pine-oak barrens communities. Management practices include mid-story removal, canopy thinning, and prescribed fire. Historically, these pine/oak barrens were open canopy systems maintained by fire that supported a diversity of herbaceous vegetation, including several species now considered rare or threatened. KNP currently tracks 21 rare or conservative species that are tied to these types of communities. This work will continue through 2021/22 thanks to another grant KNP recently received.



A management unit in Pulaski county that had the understory removed and holes punched through the canopy. In total we have treated 66 acres across 6 management units over the last two years. The increased sunlight that now reaches the forest floor will increase the diversity of the herbaceous layer and provide the necessary fuel to carry fire and maintain the area as an open woodland in the future.



This above panoramic image taken on the edge of a restoration unit is a great example of what these units look like both before and after treatments. Notice the change in stem density/sun exposure on the right-hand side of the image where no management has occurred.

Habitat Management on KNP Lands



A second site in Wolfe County received similar treatments on three ridge top units totaling 32 acres. KNP staff will begin selectively girdling less desirable over story trees to open the canopy even more over the next two years. Once understory vegetation has responded we will implement a prescribed fire that will help discourage hardwoods species from becoming established and again shading out the understory.



Above: Before and after images of several pine barrens restoration units following mid-story removal.

Habitat Management on KNP Lands

Pine Barrens Restoration on the Cumberland Plateau

Hi Lewis Pine Barrens is located on the south face of Pine Mountain in Harlan County. Historically wildfire has played a crucial role in maintaining this globally endangered pitch pine woodland only found on Pine Mountain. These fires created habitats that are more open, and supported an array of native grasses and other plants more adapted to prairie like conditions. However, in current years, fire has not been as common or intense enough to maintain the area efficiently. This has allowed many woody species to encroach upon what once was prime pine barren habitat. We have been removing these woody species to restore the structure to more open pine barrens. Thanks to OKNP staff and Kentucky Division of Forestry staff, approximately 12 acres were cleared of woody species this year. We also have plans for future control burns to aid in maintaining these unique habitats.

Also of note, the area supports several rare species that include Canada frostweed (top right), yellow wild indigo (middle right) and Virginia screwstem. A federally rare moth the frosted elfin has also been historically documented from the preserve and is a focal species for management.



Staff manually clear hardwood resprouts that shade out the sun loving plants.



A look at an area that has had the hardwood saplings removed.

Habitat Management on KNP Lands

Appalachian Seep/Bog Enhancement

In Kentucky, one of the rarest type of wetlands occurs along the crest of Pine Mountain. These are small open/wet areas tugged in basins at the heads of streams or springs. Referred to as mountain bogs, each appear to be different in species composition, making them truly unique. The wet soil gives rise to an unusual assemblage of mosses, ferns, and forbs, many of which, in Kentucky, only occur in these intact wetlands. Currently many of these bogs are enclosing with woody species and this threatens the more sun loving plants that survive here. We are removing smaller shrubs and girdling larger trees that threaten to invade on these sensitive communities. The Pine Mountain preserves involved in this project are Blanton Forest State Nature Preserve, Bad Branch State Nature Preserve and Lucy Braun State Nature Preserve.

Picture left: A Pine Mountain Bog. Right: Rose Pogonia Orchid (*Pogonia ophioglossoides*). Bottom: View of Cumberland Mountains.



Habitat Management on KNP Lands



Enhancing Barrens and Grassland Habitat

Crooked Creek State Nature Preserve in Lewis County protects a rare oak barrens and grassland ecosystem that is also known as the Bluegrass Cat Prairie. A 1.5 mile trail allows visitors to experience this unique natural area and see rare plants such as scarlet Indian paintbrush (*Castilleja coccinea*) and ear-leaf false foxglove (*Agalinis auriculata*).

Recent management work has included cedar removal throughout the preserve's natural openings in order to prevent the shading of these sun-loving communities and eventual succession. We have also prepared burn units for upcoming prescribed fires on the preserve. In the spring of 2020, James Wheat of the Beckham Bird Club led a bird survey on the preserve to assess what bird species are using the habitat now so that we can monitor changes following management work. Likewise, botanists and land managers have been working together to install vegetation monitoring plots in areas under active management. We are excited to see how the community changes following management work and expansion of the grassland habitat.



(Clockwise from left): Scarlet Indian paintbrush proliferates in an opening following cedar thinning; a Blackburnian Warbler spotted at the preserve this spring (photo by James Wheat); Ryan Fortenberry installs a fire break; land management technicians clear cedars by hand in one of the openings.

Habitat Management on KNP Lands

Short's Goldenrod Plant Community Restoration



Short's goldenrod (photo by R. Noss)

Short's goldenrod (*Solidago shortii*) is a federally endangered species that occurs on historic bison traces and river scour communities. The only remaining populations are in the three counties surrounding Blue Licks State Park in Kentucky and one county in Indiana. In the spring of 2020, KNP began a restoration project at Blue Licks State Park SNP in Robertson County, with the goal of restoring community associates of Short's goldenrod to a degraded old field where

a healthy population of the species occurs.

Our restoration work began with invasive species management of tall fescue, sericea lespedeza, and crown vetch. We have also begun collecting seed of associated plant species from nearby natural areas in order to restore these species to the site. We have already seen a great response by some of the native species on the site following fescue management, including butterfly milkweed (*Asclepias tuberosa*) and wild bergamot (*Monarda fistulosa*). Once the invasive species are under control, we will be adding local ecotype seed and plants to the site to restore the community and improve native plant diversity.



Butterfly milkweed blooming on the site following fescue management

Management for Braun's Rockcress



Every spring, KNP land managers and botanists work together to monitor Braun's rockcress populations and remove garlic mustard on two Franklin County nature preserves. Braun's rock cress (*Boechea perstellata*), a globally imperiled species in the mustard family, grows on steep wooded and rocky slopes, which can be a challenge for monitoring and management—our staff channel their inner mountain goats during Braun's rock cress season.



KNP staff removes garlic mustard while counting Braun's rockcress plants at Rockcress Hills State Nature Preserve (left); Braun's rockcress (right)

Habitat Management on KNP Lands



Restoration of a Bluegrass Savanna

In winter of 2020, KNP began a long-term restoration project at Julian Savanna State Nature Preserve in Franklin County. This preserve protects a historic bluegrass savanna community and some majestic veteran trees including blue ash, bur oak, and chinkapin oak.

The ultimate goal of this project is to restore the structure of the plant community which has recently grown in with many ruderal woody species such as black walnut, bush honeysuckle, and autumn olive. Thus far we have re-opened approximately 11 acres of the savanna through the removal of undesirable mid-story trees and saplings, forestry mowing, bush-hogging, and burn piles.



A veteran blue ash at Julian Savanna SNP (top); Images showing progress in restoring the structure of the savanna (bottom row)

Kentucky Glade Cress Management

Apple Valley Glades State Nature Preserve in Bullitt County features a glade complex that supports rare plant species such as the state-endemic Kentucky glade cress (*Leavenworthia exigua* var. *laciniata*) and Eggleston's violet (*Viola egglestonii*). Kentucky glade cress is threatened by development in the Louisville metro area, overgrazing in agricultural areas, cedar encroachment on glade habitat, and invasive species.

This year, land management staff spent time removing encroaching cedars from around the glades in order to prevent succession and connect some of the individual glades. Because Eastern red cedars are extremely rot-resistant, they take years to degrade and must be burned on site to clear the debris.



KNP staff rakes out a cedar burn pile.



Kentucky glade cress
(*Leavenworthia exigua*
var. *laciniata*)

Habitat Management on KNP Lands

Restoring Grasslands and Reforestation along the Green River

Rush Island Bottoms Green River State Natural Area has been experiencing a multitude of exciting changes over the past two years, the first improvement being the removal of invasive Callery Pear through a partnership with Kentucky Division of Forestry. Callery Pear trees had invaded much of the 60 acre upland area on Rush Island. These pears were dozed, piled, and burned to allow for native vegetation to reclaim the open area. While it will be a few years before Rush Island is able to resemble its former glory, it is well on its way. The upland portion is also undergoing an experimental study regarding brush piles by partnering with the Kentucky Department of Transportation. This study will provide information about the efficacy of new pesticide in managing undesirable woody species on rights of ways and roadsides. Once this study is concluded, Office of Kentucky Nature Preserves will proceed with a native grass species planting.

Before



After



Another exciting partnership that has benefitted Rush Island is with One Tree Planted, a non-profit organization responsible for donating trees to organizations such as KNP. Through this partnership, we were able to plant 5,600 trees at Rush Island over the past two years alone! This riparian restoration project hopes to restore the entire bottomland to a mixed-species forest over the next two to three years by planting an additional 8,000 trees at Rush Island. Two other Green River properties will also be restored throughout the riparian corridor. The combined total of all trees will reach upwards of 25,000 individual saplings by the end of plantings in 2023.

The final update on Rush Island worth mentioning is the partnership with Hart County Historical Society and PBS. The neighboring historical site of Battle for the Bridge will be featured in a PBS special along with Rush Island's Green River corridor. These two sites will showcase the importance of grassland and historical battle sites with environmental and ecological health as well as cultural significance.

Kentucky Nature Summit

At Pine Mountain



Kentucky Nature Preserves is organizing the first annual Nature Summit hosted at Pine Mountain State Resort Park. This will be a gathering of naturalists of all ages to celebrate and explore the biodiversity in the Pine Mountain region.


Partners from many conservation agencies will be joining forces to host day and night field trips to nearby natural areas focusing on: Herpetology, Birding, Wildflowers, Fire and Forest Management, Water Quality, Invertebrates, Mammals, and much more (transportation provided).

Bring the whole Family! There are activities for all ages and experience levels.

**April
23th-25th
2021**

SAVE THE DATE!!

Field trips, registration, and more information can be found on our website:
tinyurl.com/oknpnaturesummit

Follow:  Office of Kentucky Nature Preserves, for more updates



Outreach and Education

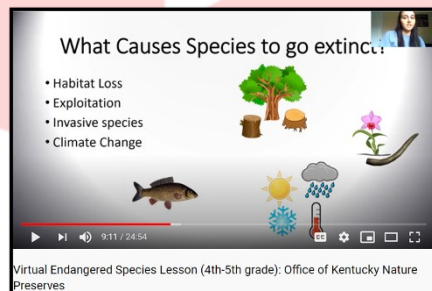
For health and safety reasons, the First Annual 2020 Nature Summit was rescheduled for April 23rd-25th 2021! This 3 day event at Pine Mountain is a gathering of naturalists of all ages to explore the biodiversity in the Pine Mountain region. Partners from many conservation agencies will be joining forces to host day and night field trips to nearby natural areas focusing on: Herpetology, Birding, Wildflowers, Fire and Forest Management, Water Quality, Invertebrates, Mammals, and much more (transportation provided). Prior to cancellation, the 2020 Nature Summit had over 80 registered participants and Pine Mountain State Resort Lodge was completely booked.

- 3 Days
- 20+ Field trips/ activities led by experts
- 12+ Conservation agencies
- Presentations
- Kids and family friendly activities
- Exclusive nocturnal animal field trips

Virtual Outreach

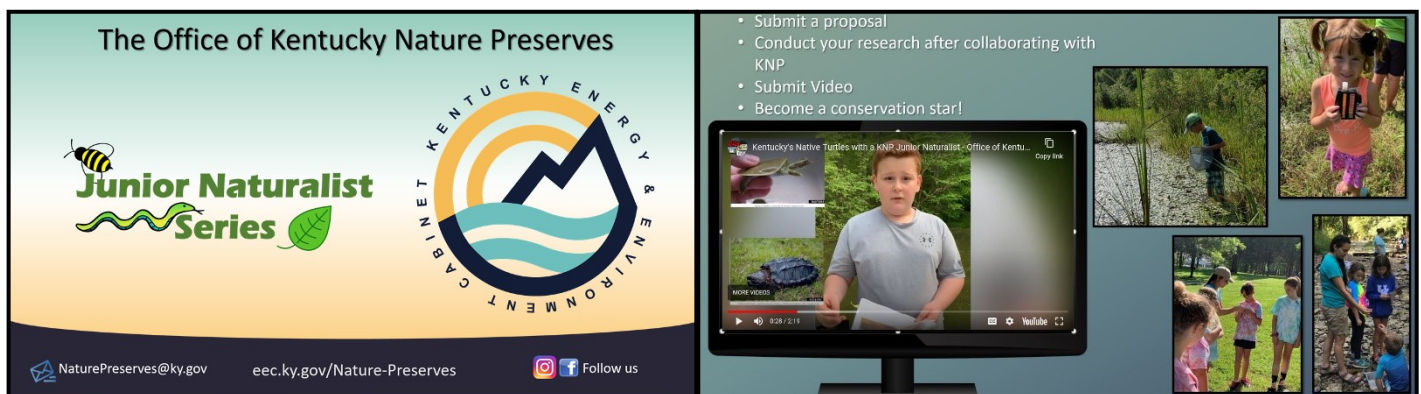
[#teamkentucky](#) [#togetherkentucky](#) [#healthyathome](#)

Due to the inability to gather in person, KNP used creativity to engage and educate the public during difficult times. Interactive online activities including a daily photo challenge, Springtime Bingo, online lectures, online biodiversity classrooms, and educational video series were created. Since March, KNP has produced 27 videos for Facebook and YouTube including educational series covering wildflowers, bird identification, and hiking trails of Kentucky.



Junior Naturalist Series

While we have had a lot of fun recording educational material, we wanted to share the experience with young and aspiring naturalists. The Junior Naturalist series was created to share the wonder, appreciation, and love for conservation of our natural world.



Follow our Social media accounts: [Youtube](#) and [Facebook](#)- Office of Kentucky Nature Preserves, [Instagram](#)- kentucky_nature_preserves.

Outreach and Education

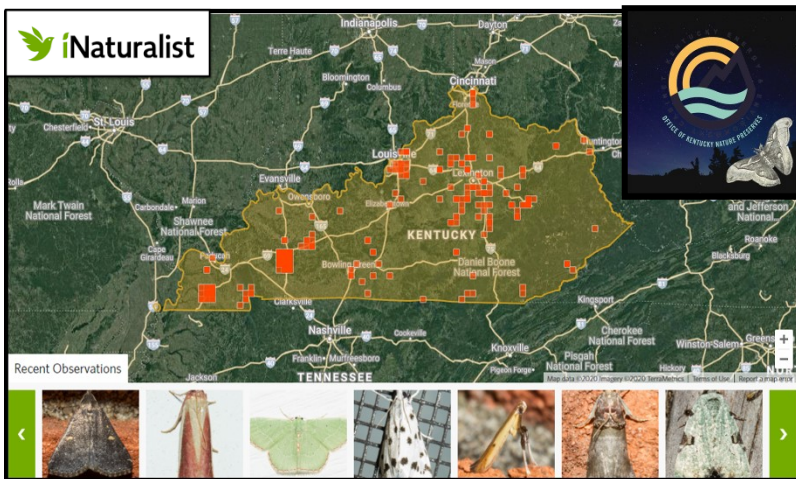
Earth Day

Earth day 2020 was a special year as it was the 50th annual Earth Day. Despite having to cancel our in person gatherings, volunteers and KNP staff were still able to connect and take action towards helping the planet. We registered a virtual Earth Day event with earthday.org and KNP used Facebook to post daily call to action prompts for the entire week. These prompts included: ways to reduce waste, create new wildlife habitat, remove invasive species, cleaning up trash from a natural area and more. Participants were encouraged to share photos of their experiences completing the challenges.



National Moth Week

KNP hosted a virtual Bioblitz by utilizing iNaturalist to survey moths across the state of KY during international moth week. Participants were instructed on home moth sampling techniques and encouraged to submit as much data as they could throughout the week. This event yielded a total collection of 1,087 observations, and over 360 species. Through citizen science generated data we were able to discover a rare species and two new state records of *Platynota semiustana* and *Redectis pygmaea*. Join our other ongoing iNaturalist project "Documenting the Natural Heritage of Kentucky".



Environmental Education Recognition

KNP's Outreach specialist, Maddy Heredia, was awarded the Kentucky Association for Environmental Education's (KAEE) Rising Star in Environmental Education Award for 2020. "Maddy is the first full-time environmental educator in the 40-year history of Kentucky Nature Preserves. In her first year she has initiated new partnerships with natural areas throughout the state for field trips, overseen new citizen science projects, expanded social media presence, developed interpretive signage, and developed KNP's Kentucky Nature Summit—the largest multi-agency EE event in the agency's history. Maddy does all this with a smile and positive attitude and is an incredible ambassador for Kentucky's biodiversity and natural areas."



Outreach and Education

Rebranding

Throughout 2020, KNP has worked hard on updating outreach publications and signage to unify our natural areas across the state.



The Kentucky Heritage Land Conservation Fund

Preserving Kentucky's Natural Treasures



Office of Kentucky Nature Preserves [-eec.ky.gov](http://eec.ky.gov)



Kentucky Heritage Land Conservation Fund



eec.ky.gov/Nature-Preserves

Kentucky River Palisades

Office of Kentucky Nature Preserves

The lofty palisade cliffs rise 220 feet above the Kentucky River in mosaic shades of yellows, grays and white, cutting through the limestone, exposing the layers of rock visible today. Laid down hundreds of millions of years ago, these rock layers are full of marine fossils dating back to when this part of Kentucky was at the bottom of a warm, shallow sea. The limestone here is the oldest exposed rock in the state.



1. Preserves are open sunrise to sunset.
2. Trails are open to foot traffic only.
3. Visitors must stay from the trails.
4. Possession of drugs or alcohol is prohibited.
5. Collecting plants, animals, rocks, artifacts are prohibited.
6. To ensure the natural beauty of each preserve and to promote visitor safety and enjoyment, camping, picnicking, building fires, auto equipment and pets are not permitted.
7. Remember to carry out your trash.

www.facebook.com/KentuckyNaturePreserves
@kentucky_nature_preserves
<http://eec.ky.gov/Nature-Preserves>



OFFICE OF KENTUCKY NATURE PRESERVES

Kentucky Heritage Land Conservation Fund

Kentucky Nature Preserves conserves (acres) of natural areas through the Kentucky Heritage Land Conservation Fund



Many of these protected areas are home to threatened and endangered wildlife species.



To learn more about what we do visit www.eec.ky.gov/Nature-Preserves

By purchasing Nature's Finest License plates, you can help us to protect and manage important lands for wildlife all across Kentucky.

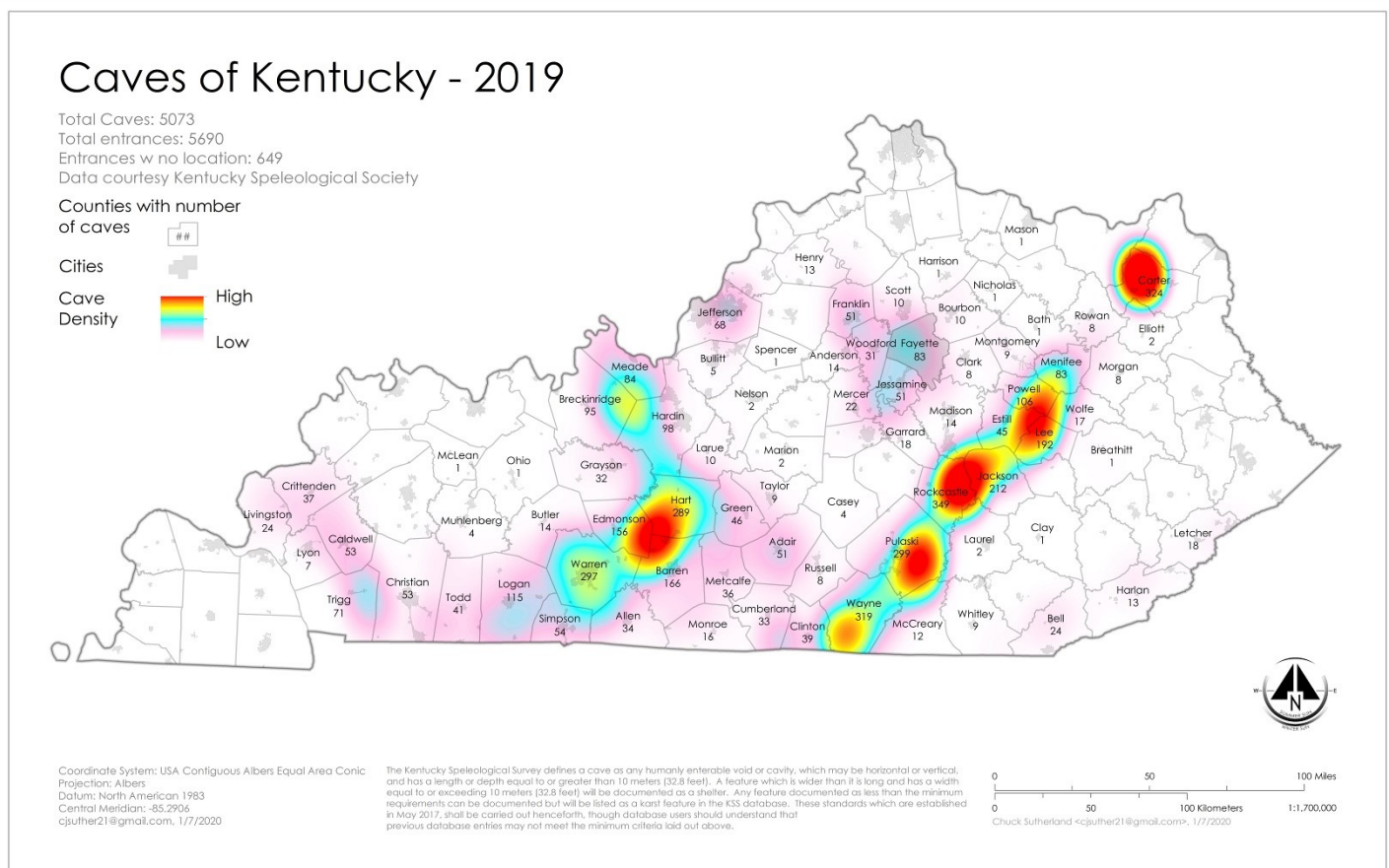


Created by Maddy Heredia 2013

Establishment of First Cave and Karst Working Group in Kentucky

OKNP Helps Establish First Cave and Karst Working Group for Kentucky.

Most folks are well aware of the presence of the world's longest cave system in Kentucky, Mammoth Cave, but did you know that our state has over 5000 additional caves? That is more caves than most other states. These caves formed within the extensive limestone karst areas of Kentucky. Caves provide habitat for many interesting species. While several bat species inhabit caves, Kentucky's caves support species as diverse as cave fish, cave crayfish, and numerous cave invertebrates, such as beetles, spiders and millipedes. Many of these species are only known from a single cave, while many others occur only in Kentucky. Cave habitats are sensitive and small changes in temperature or water quality can easily impact these special places and rare species associated with them. Most caves have never been visited by a biologist and much more work is needed to truly understand these systems and how to protect them. Exploring caves requires special expertise and can be very time consuming. That is why we decided to partner with several other organizations including the Kentucky Speleological Survey, the Kentucky Geological Survey, University of Kentucky, Western Kentucky University and Mammoth Cave National Park. Through this collaborative effort we will be able to create a better knowledge base for cave biology in our state and protect these valuable natural resources more effectively.



Cartography by Chuck Sutherland, courtesy of the KSS.

Aquatic Animal Conservation

River Dam Removal Project

KNP aquatic staff continued to monitor the Green River in central Kentucky associated with the removal of lock and dam #6 and the pending removal of lock and dam #5. The project is led by KNP, but relies on its partnership with several state and federal agencies to accomplish the numerous components of the project, including the Division of Water, Kentucky Fish and Wildlife, Mammoth Cave National Park, and U.S. Fish and Wildlife Service. The goal of the project is to document and assess the biological and physical recovery of the river following the removal of the barriers. Intensive data gathering from approximately 75 km of river are obtained for fish, mussels, macroinvertebrates, riparian zone, and instream habitat.



Over 60 species of fish and over 30 species of mussels have been encountered. Preliminary results indicate that the river has a relatively high biological diversity despite being impounded for many decades. Notably, four federally endangered mussels have been encountered and will likely benefit from the removal of the dams. However, the mussel community structure is comprised mostly of species tolerant of impoundment and often associated with disturbed habitats. Vegetation surveys along the riparian zone also indicate early succession, but a few unique habitat types have been discovered and further examination of them is planned.

Continued monitoring is expected for the next several years and it is expected the flora and fauna will resemble more natural communities associated with free-flowing rivers in time.



Aquatic Animal Conservation

Kentucky Creekshell (*Leaunio ortmanni*) Distributional, Status, and population genetic study

The Kentucky Creekshell was once considered endemic to the Green River and restricted solely within Kentucky, however, recent genetic data suggested the species might be more widespread and actually occur in the Cumberland River and within Tennessee. KNP staff are working with the USFWS and Virginia Tech University to delineate its distribution and assess its status. In addition, a genetic analysis of the species from the various populations is being conducted to determine the genetic diversity and genetic structure of the species. The information gathered from this study will be used to determine if the species warrants federal protection and to guide conservation measures that would enhance its persistence. Preliminary results indicate the distribution and abundance of the species has decreased greatly from historical records. Survey efforts often yield no live mussels from stream reaches that once harbored the species. However, a couple new stream systems have been discovered to contain the species. The project is ongoing and more surveys will continue through 2021.



Kentucky Creekshell (*Leaunio ortmanni*).

Status Review of the Relict Darter (*Etheostoma chienense*)

The Relict Darter is a federally endangered fish endemic to Kentucky and has one of the smallest ranges, only occurring within Bayou de Chien in western Kentucky. Over the last ten years KNP biologists have partnered with USFWS to monitor and estimate the population size of the species. These efforts estimate 15,000 – 20,000 individuals occur within approximately 30 km of stream in the Bayou de Chien system. The surveys also indicated that the species appears to be stable, despite its narrow range. The species is currently under review by USFWS to determine if down-listing from endangered to threatened status is warranted and the recent work will be used to make a final determination.



Relict Darter (*Etheostoma chienense*). Photo by Matt Thomas.

Biological Inventories for Terrestrial Vertebrates and Invertebrates

In 2020, KNP's zoologist conducted biological inventories for terrestrial vertebrates and invertebrates in Boyle, Bullitt, Fayette, Hancock, Hardin, Harlan, Henry, and Lewis Counties. During these inventories, a wide variety of reptiles, amphibians, birds, and insects were encountered. Building and maintaining species lists for natural areas across the state allows us to assess biodiversity, monitor population trends, and set conservation priorities.



An Eastern Hognose Snake at Springhouse Barrens SNP in Hardin County.



An Eastern Fence Lizard at Hi Lewis SNP in Harlan County.

Focus on Native Pollinators

Insect surveys targeted native pollinators, including bees, butterflies, and moths. Little is known about the diversity and conservation status of native bees in Kentucky, and there is no formal list of bee species for the state. Efforts to document native bees are ongoing and, pending consultation with expert bee biologists, will allow such a list to be generated.



Native bees on butterfly milkweed in Bullitt County.

Biological Inventories for Terrestrial Vertebrates and Invertebrates

Although moths and butterflies have been studied extensively in Kentucky, the composition of communities and stability of populations are dynamic. Ongoing monitoring of butterflies and moths ensures that appropriate responses to conservation concerns can be undertaken in a timely manner.

Did you know? There are over 2,500 species of butterflies and moths known from Kentucky. They come in diverse shapes, sizes, and colors. Many species of butterflies and caterpillars can be encountered naturally by systematically walking through suitable habitat, but moths are commonly lured directly to scientists using artificial lights or sugary liquid baits.



Roadside Pollinator Initiative

Documenting Important Pollinator Habitat/Grassland Remnants along Roadsides in KY

Vegetated roadsides are increasingly recognized by biologists and land managers for their significant conservation value. Roadsides can provide important habitat for many pollinating insects, including at-risk species like the monarch butterfly and rusty patched bumble bee. In addition to pollinator habitat, roadsides can provide important habitat for remnant grassland communities.

Historically, grasslands were once much more widespread in Kentucky. Most of Kentucky's native grasslands have since been put into agriculture or slowly converted to forest due to lack of disturbance from fires and large herds of grazing animals. Kentucky's remaining grasslands are now rare, but because they are maintained in an open condition, our roadsides can contain remnants of the original grassland communities that were once common. Importantly, research shows that intact, high-quality, grasslands provide some of the best habitat for pollinators due to the abundance and diversity of plant species that occur in these communities.



Purple milkweed (*Asclepias purpurascens*, state special concern) with great spangled fritillary butterfly (*Speyeria cybele*).



In partnership with Kentucky Transportation Cabinet (KYTC), OKNP botanists have been surveying roadside right-of-ways along Kentucky's state highways to identify and document high-quality pollinator habitat and rare grassland communities. Our surveys include a habitat scorecard, developed by the Monarch Joint Venture, which provides a numerical score for potential pollinator habitat. This scorecard allows us to quantify and prioritize roadsides for conservation action.



Eastern Prairie blue wild indigo (*Baptisia aberrans*), state endangered, with a bumble bee (*Bombus* sp.)



Green milkweed (*Asclepias viridiflora*, a native conservative plant, with a bumble bee (*Bombus* sp.)

Roadside Pollinator Initiative

In 2020, we conducted roadside surveys in 23 counties including approximately 7,000 miles of roads. We plan to complete the statewide inventory over 5 years. So far, our survey teams have documented over 20 high-quality remnant grasslands that provide excellent habitat for pollinating insects. Many of these sites contained rare plants including wild blue indigo (*Baptisia aberrans*), cut-leaf prairie dock (*Silphium pinnatifidum*), royal catchfly (*Silene regia*), and purple milkweed (*Asclepias purpurascens*).

In line with the goals outlined in the Kentucky Pollinator Protection Plan (2019), this information will be shared with our partners to inform management of important habitat.



Royal catchfly (*Silene regia*), State endangered.



Cut-leaf prairie dock (*Silphium pinnatifidum*), conservative native plant.



Eastern Prairie blue wild indigo (*Baptisia aberrans*), state endangered.



Kentucky beardtongue (*Penstemon tenuiflorus*), conservative native plant.

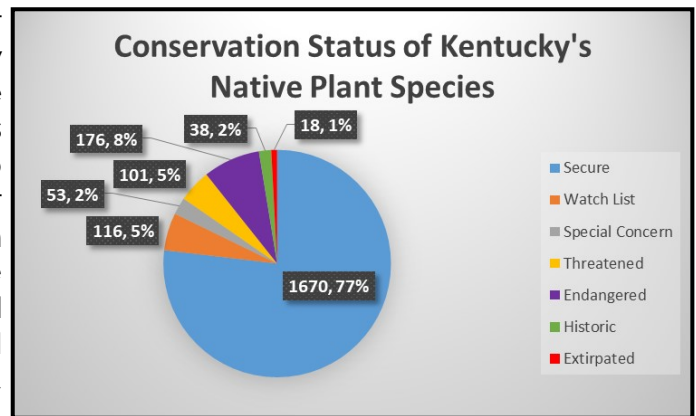
Rare Plant and Natural Community Conservation

The Office of Kentucky Nature Preserves is the listing authority for rare and endangered plants. The ability to legally list plants as threatened or endangered is derived from the Rare Plant Recognition Act of 1994. OKNP is also the state's natural heritage program.

"The General Assembly finds and declares that it is the policy of the Commonwealth to recognize endangered and threatened species of plants for human enjoyment, for scientific purposes, and to ensure their perpetuation as viable components of their ecosystems for the benefit of the people of Kentucky. ~~~ Kentucky Rare Plant Recognition Act, KRS 146.600"

Rare Plant List

The KNP is the clearinghouse for native plant information in Kentucky and has created the only plant conservation program in Kentucky state government. With close to 2,900 species of plants in Kentucky, assessing their status is challenging. To fulfill our mandate, we revise our rare plant list every four years, with the next update published in 2022. We collaborate with partners across the state, including universities, state and federal agencies, land trusts and nonprofits to assess and conserve rare and native plants. The rare plants, along with photographs, distribution maps, herbarium specimens, and other associated information is available online via our rare plant database and biological assessment tool. In 2020 we revised our rare plant list, which can be accessed on our website at eec.ky.gov/Nature-Preserves. Currently, we track 176 state endangered plants and 101 state threatened plants, and provide detailed information on an additional 225 plants.



New and Improved Version of Kentucky's Plant Community Classification

In response to growing interest from other organizations, we have revised our plant community classification to comply with national and global naming standards and ranks. Plant communities define distinct habitats for wildlife and plant species. Many rare species' survival depends on availability of these habitats. For example, the Rockcastle aster only grows on high quality river scours and compass plants only survive in tallgrass prairie remnants. Kentucky offers a wide variety of natural habitats, ranging from the extensive tall forests of the mountains, to prairie remnants in the Pennyryle Plain and cypress swamps in far

western Kentucky. Some of these plant communities, such as Appalachian mixed mesophytic forest, can cover 100s or even 1000s of acres, whereas others, such as the dolomitic limestone glades near Louisville are often less than an acre in size. We currently recognize 67 different plant communities for Kentucky. Of these, 22 have a global rank of G1 or G2, meaning they are globally imperiled and in danger of disappearing. Our goal is to protect examples of each of these plant communities in a nature preserve, and we are actively working with many partner organizations to restore and protect important remnants within our state.

Rare Plant and Natural Community Conservation—Exciting Discoveries!



Interesting Botanical Discoveries for 2020!

Kentucky is floristically rich and our natural areas still hold hidden botanical (biological) treasures waiting to be found. Over the past year, KNP botanists and ecologists have discovered dozens of new populations of listed plants on both public and private land, including eastern featherbells (*Stenanthium gramineum*), spoon leaf sundew (*Drosera intermedia*), bog twayblade (*Liparis loeselii*) and riverscour ragwort (*Packera paupercula* var. *paupercula*).

Perhaps the most exciting discovery in 2020 was an interesting new state record plant (one that has never been documented to grow in our state). A disjunct population of the fourangled rose gentian (*Sabatia quadrangula*) was found growing in a xerohydric prairie in the eastern highland rim area of Pulaski county. This species grows in the coastal plain region of Florida, South Carolina, North Carolina, and Virginia. This discovery not only led to the first time this plant was documented in Kentucky, but the first time it has been documented west of the Appalachian mountains. The xerohydric prairie itself is a rare community and was discovered by KNP botanists in 2019. OKNP staff are now focusing efforts on the conservation of these important and under-surveyed communities and rare plants.



Spoon leaf sundew (*Drosera intermedia*), state endangered.



Four angled rose gentian (*Sabatia quadrangula*), state endangered.



Packera paupercula var. *paupercula* (river scour ragwort), state threatened.

Rare Plant and Natural Community Conservation—Federally listed Plants

Running Buffalo Clover (*Trifolium stoloniferum*) Surveys

KNP conducts annual monitoring of the federally endangered running buffalo clover on several natural areas, private and public, in the Bluegrass region. This monitoring work often involves “acting like a buffalo,” as we concurrently create much needed bison-like disturbance as we count rooted plants and remove invasive plants. We are working with the U.S. Fish and Wildlife Service, universities and state partners to recover this plant through monitoring and management studies of extant populations as well as surveying for new populations. Thanks to increased monitoring and inventory, running buffalo clover has been recovering and is proposed for delisting. We are looking forward to continuing our work on recovering this iconic plant of the Bluegrass state!



Running Buffalo Clover (*Trifolium stoloniferum*).



In 2020, OKNP completed a state-wide assessment of all accessible populations in Kentucky to determine the potential effects delisting will have on this species. The majority of populations in Kentucky are relatively stable, maintaining the number of plants from previous surveys. Of the 61 sites surveyed over the past two years, over half (59%) are either stable or increasing in size.



Big news for running buffalo clover was the discovery of a site in Clark County with over 6,000 plants. On average, running buffalo clover populations in Kentucky have between a couple dozen to a couple hundred plants. The two largest populations in Kentucky prior to this discovery top out at 2,000 plants, making this a significant find. Also, a population was rediscovered at Clark County's Lower Howard's Creek SNP, making it the only population in the state to occur on one of our protected state nature preserves.

Rare Plant and Natural Community Conservation—Federally listed Plants

Price's Potato Bean (*Apios priceana*)

Over a decade of partnering with the US Forest Service at Land Between the Lakes NRA on conservation of the federally threatened Price's Potato Bean (*Apios priceana*) has yielded a productive collaboration toward recovery of the plant in Kentucky. This has led to collaborative, more efficient field surveys and an exchange of ideas about habitat management that we are using to improve habitat of the plant on one of our State Nature Preserves.



Price's Potato Bean (*Apios priceana*), federally threatened/state threatened.



Braun's Rockcress (*Boechera perstellata*)

OKNP staff led a multi-faceted strategy to monitor and manage populations of the federally endangered Braun's Rockcress (*Boechera perstellata*) in the rocky hills of the Kentucky River Valley surrounding Frankfort. This multi-year effort included revisiting 40+ sites for improved data collection and removing invasive species on State Nature Preserves and HLCF Conservation Easement sites, all active steps we are taking towards recovery of the species.



Braun's Rockcress (*Boechera perstellata*), federally threatened/state threatened.

Rare Plant and Natural Community Conservation—Kentucky's Endemic Plants

Plants that are only found within a small geographic area within our state are defined as being endemic to the state. Kentucky is home to 3 endemic plants, White haired goldenrod (*Solidago albopilosa*), Kentucky glade cress (*Leavenworthia exigua* var. *laciniata*), and Kentucky clover (*Trifolium kentuckiense*)

White Haired Goldenrod (*Solidago albopilosa*)

OKNP has worked for decades on the conservation of white haired goldenrod, a plant that is restricted to the sandstone rockhouses of the Red River Gorge. Our work surveying, monitoring and managing white haired goldenrod populations has led to the recovery of this species and resulted in its removal from the Federal endangered species list in 2016. Over the past few years, we have been working with Daniel Boone National Forest and USFWS on a post-delisting monitoring plan to ensure this species is protected and stays off the federal endangered list. We are also excited about a new program we are developing to engage citizen scientists in the monitoring of white haired goldenrod along with other unique features in the sandstone rockhouses of the Red River Gorge.



White Haired Goldenrod (*Solidago albopilosa*).

Kentucky Glade Cress (*Leavenworthia exigua* var. *laciniata*)

Over the past 2 years, we have been working with USWFS on the species status assessment and recovery plan for this species. These important documents assist in guiding our conservation efforts in order to recover this species. We have been systematically updating our known populations to make sure we are accurately capturing population trends, as well as setting up management effects monitoring plots on our nature preserves in Bullitt county so we can study how to best manage for this species. A new partnership with Louisville metro at McNeely Lake has started this past two years on the restoration of Kentucky Glade Cress and dolomite glade communities and we are excited to work together over the coming years on the restoration of this plant and its habitat in Jefferson County.



Kentucky Glade Cress (*Leavenworthia exigua* var. *laciniata*).

Kentucky Clover (*Trifolium kentuckiense*)

OKNP has been instrumental in the conservation of this rare and endemic clover, from the discovery of populations, to annual monitoring, management of sites and working with conservation horticulturists to propagate this plant. This clover was only recently discovered and described new to science. Over the past few years, we have continued our annual monitoring of the only 2 known populations, led the Kentucky Clover Recovery Team on developing strategies to conserve this clover, worked with conservation horticulture partners at the Cincinnati Zoo to propagate this plant so that we can introduce it to our protected natural areas, and surveyed for new populations across the Bluegrass.



Kentucky Clover (*Trifolium kentuckiense*).

Rare Plant and Natural Community Conservation—Forest Biodiversity and National Forests

Kentucky Forest Biodiversity Assessment Program

In partnership with the Kentucky Department of Agriculture, KNP botanists and ecologists have been conducting surveys in forested natural communities across the state for the Kentucky Forest Biodiversity Assessment Program. This long term monitoring program assesses the biodiversity of Kentucky's forested landscapes, surveying 20% of counties per year in order to have a complete state inventory within 5 years. Since starting the surveys in 2019, KNP has successfully surveyed 40% of Kentucky counties, resulting in discovering several new rare plant records, mapping significant plant communities, and developing a better understanding of the threats to Kentucky forests. The surveys focus on rare and conservative forested plant species, forest community diversity and structure, herbaceous diversity, forest medicinals/species of commercial concern, as well as invasive species and other threats.



American ginseng (*Panax quinquefolia*).



Forests of the Cumberland Plateau are particularly diverse and can contain rich spring wildflower displays including several ladyslipper orchids (*Cypripedium* sp.).

Natural Area and Floristic Inventory Projects on National Forests

Daniel Boone National Forest: In partnership with the Daniel Boone National Forest and Land Between the Lakes, KNP botanists and ecologists have been conducting natural area inventories and plant community surveys in Kentucky's National Forests. In 2019 and 2020, within the Daniel Boone National Forest, we focused our efforts in the Red Bird District, conducting mostly rare plant surveys and forest community assessments. In addition, KNP has been surveying rare plants and natural community remnants on roadsides in the London and Stearns district of the DBNF. Rare grassland plants such as the wood lily (*Lilium philadelphicum*), Pine Barrens aster (*Symphyotrichum concolor*), and skeleton grass (*Gymnopogon ambiguous*) can be found along these roadsides. The plants make up critical pollinator habitat for species like the monarch butterfly and native bees. Information found will be shared with our partners to make conservation decisions.

Land Between the Lakes: A multi-year attempt to improve prairie mapping and documentation at Land Between the Lakes NRA continued this year. Results are indicating that these small areas of prairie contain higher biodiversity (100+ species per acre!) and rare plant concentrations in one acre than adjacent forests contain over tens of acres. Improved data on these sites inform management at LBL and are relevant to accelerating interest in pollinator habitats.



Rattlesnake master (*Eryngium yuccifolium*) and other conservative native grassland plants growing along roadsides in the Land Between the Lakes.

Rare Plant and Natural Community Conservation—Kentucky's Wild Rivers



Cumberland Plateau Wild Rivers-Rockcastle and Big South Fork

In Partnership with USFWS (United States Fish and Wildlife Service) and our counterparts at the Tennessee Division of Natural Areas, KNP botanists and ecologists have been surveying the Cumberland Plateau river scour communities in the Big South Fork NRA and Daniel Boone National Forest in search of globally rare and at-risk plants and natural communities. At-risk simply means that these plants are globally rare and at risk of needing federal protection. Our focus for the past several years has been on Kentucky's populations of Barbara's Buttons (*Marshallia pulchra*), Rockcastle Aster (*Eurbyia saxicastellii*) and Tennessee Pondweed (*Potamogeton tennesseensis*). We also collect data on threats such as invasive species. In addition, we collect data on the globally rare river scour communities of these wild rivers and work



Barbara's buttons (*Marshallia pulchra*), globally rare, state endangered.

with partners in Tennessee to more accurately describe these rare communities. This information is shared with our partners and used to make science-based conservation decisions on federal and state endangered species lists, habitat management, and conservation planning.

Interior Low Plateau-Green River

In partnership with the USFWS and Mammoth Cave National Park, OKNP has been working on the Green river to study the vegetation of the riparian areas pre- and post-dam removal. With monitoring plots scattered across 45 miles of river, we documented undescribed sandstone and limestone river scour communities, collected floristic data on the mud flats of the Green River, as well as continued documenting the changes that are occurring along the riparian area as the river rewilds itself after the dams are removed.



Rare Plant and Natural Community Conservation—Monitoring and Inventory on our Highest Quality State Nature Preserves

Updated botanical inventories conducted on State Nature Preserves

In an effort to update our rare plant and natural community records throughout the Kentucky State Nature Preserves system, we have focused on inventories of preserves that have not been systematically updated for more than 20 years. KNP inventoried several grassland preserves and pine mountain preserves in 2020, including Crooked Creek State Nature Preserve, Raymond Athey



Indian paintbrush (*Castilleja coccinea*), state endangered.



Small white ladyslipper (*Cypripedium candidum*), globally rare, state endangered.

State Nature Preserve, Hi Lewis State Nature Preserve, Bad Branch State Nature Preserve, Mt Victory State Nature Preserve, Thompson Creek SNP, Eastview SNP, Obion Creek SNP, Jim Scudder SNP, Chaney Lake SNP, and Flat Rock Glade SNP. This information is updated in the heritage database and preserve management plans and

is critical for guiding our land management to ensure we are protecting our rare species and communities. Several newly documented state and federally listed plants were discovered on state nature preserves for the first time in 2020, including bog twayblade (*Liparis loeselii*), running buffalo clover (*Trifolium stoloniferum*) and snow trillium (*Trillium nivale*).

Long-term vegetation monitoring plots established on State Nature Preserves and Natural Areas

In order to more effectively manage the rare plants and communities on state nature preserves, KNP botanists, ecologists, and land managers have been installing long-term vegetation monitoring plots on our state nature preserves and natural areas. This allows us to track how rare plants and communities respond to different management techniques, such as seasonality of prescribed fire, canopy and midstory removal techniques as well as changes in annual or seasonal temperature and precipitation. This unique partnership among botanists, ecologists and land managers allows our management to be adaptive as we work toward the goal of restoring rare plants and natural communities throughout the state. The focus in 2020 has been on setting up monitoring plots in mountain bogs, headwater seeps, pine oak forests, and grassland communities. Over the past 3 years, over 100 long-term monitoring plots were installed on over a dozen state nature preserves and natural areas.



KNP staff collecting data from quantitative plots in one of the high quality mountain bogs on Pine Mountain.

Rare Plant and Natural Community Conservation—Pine Barrens and Savannahs

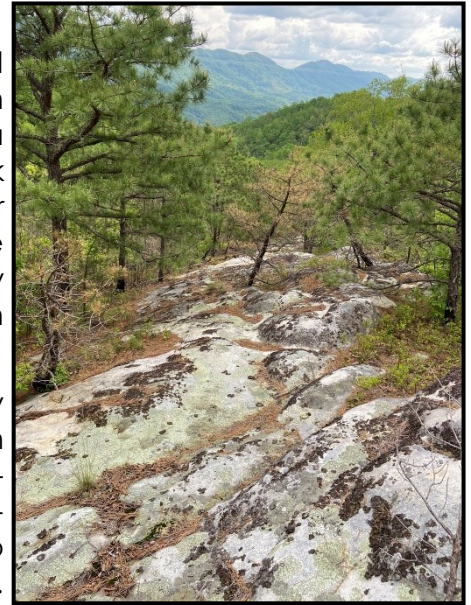
Cumberland Plateau Pine Barrens/Savannah surveys

OKNP botanists continued work studying and documenting the globally-rare Pine Barrens of the Cumberland Plateau in southeast Kentucky. These places harbor high concentrations of biodiversity and rare species that bear a closer ecological resemblance to coastal ecosystems than anything else in the state. Field work included mapping rare species and natural communities, which was combined with existing data to provide an updated status and distribution on prairies, wetlands, and pine-oak savanna. Improvement in data collection and data organization for these systems provide the crucial empirical baseline for regional conservation planning across multiple state and federal agencies. Results from this work also complement OKNP efforts to restore these habitats, improve rare native orchid populations, and introduce rare species from vulnerable sites into protected areas.



Pine Mountain Pitch Pine Barrens and yellow wild indigo Surveys

In 2020, OKNP botanists began a multiyear project surveying and documenting the globally rare pitch pine barrens community on Pine Mountain. Pine barrens are open woodlands made up of a mixture of sandstone outcrops, grasslands, and open pine-oak woodlands with an understory full of grasses and forbs. One of our main target rare plants that occurs within this habitat is the state threatened yellow wild indigo (*Baptisia tinctoria*), which is the only host plant in Kentucky for the globally rare butterfly frosted elfin (*Callophrys irus*).



All of the known populations of yellow wild indigo in Kentucky along Pine Mountain were visited in 2020 by OKNP staff to assess their populations, as well as to document the associated community type and to search for signs of the elusive butterfly.



yellow wild indigo
(*Baptisia tinctoria*).

The yellow wild indigo populations in Kentucky are relatively stable, with only a few known populations not re-located during 2020 surveys. However, their populations are greatly influenced by fire on the landscape and it is thought that lack of fire in these communities leads to their decline. The largest population of yellow wild indigo by far, with almost 900 plants, was found at one of our state nature preserves in some of the highest quality remaining pitch pine barrens in the state. This preserve was burned in 2018. We also have collected seed of yellow wild indigo in order to propagate and use in our pine barrens restoration projects. Over the next few years, we will continue to survey for additional quality pine barrens remnants across pine mountain along with yellow wild indigo populations and expand on our long term monitoring plots in order to study the effects of prescribed fire and canopy/midstory removal on this community and the rare species that live there.

Rare Plant and Natural Community Conservation—Orchid Conservation

Kentucky Orchid Restoration Program

Orchids are one of the most charismatic and diverse groups of plants in the world. With their beauty and unique adaptations to pollinators and fungi, it's no wonder they can captivate any audience. North America is home to more than 200 orchid species, and more than half are endangered or threatened somewhere in their native range. There are 43 species of orchids known from Kentucky, with 30 of those species being of conservation concern. Of those 30, 18 are federal or state listed and an additional 12 orchid species are either globally rare or declining in the state. In partnership with the North American Orchid Conservation Center, we have been working with researchers on seed banking, genetic analysis, and mycorrhizal research and banking of the rarest orchids. In 2019 and 2020, we worked on the Kentucky Ladyslipper (*Cypripedium kentuckiense*), white fringeless orchid (*Platanthera integrilabia*), rose pogonia (*Pogonia ophioglossoides*) and small white ladyslipper (*Cypripedium candidum*). Another important goal of this program is to begin propagation of these orchids and restore them into suitable habitat in natural areas.



Kentucky ladyslipper (*Cypripedium kentuckiense*), globally rare, state endangered.

KNP Continues with White Fringeless Orchid Restoration in the Cumberland Plateau



White fringeless orchid (*Platanthera integrilabia*), state endangered, federally threatened.

KNP has been monitoring, managing and restoring populations of the federally-listed white fringeless orchid on our state nature preserves for over a decade. Our recovery efforts of woody removal and restoring the hydrology of our seeps has proven successful and is serving as a model for white fringeless orchid restoration across the southeast. To expand on these projects, In 2019 and 2020, we partnered with the Daniel Boone National Forest and USFWS on additional seep restoration projects within the forest. We have set up monitoring and management on 2 additional seeps within the DBNF to restore the hydrology and increase



the white fringeless orchid population size and natural community quality. We are also partnering with the Atlanta Botanical Garden on growing white fringeless orchids for an eventual introduction in Kentucky in the future, stay tuned!

Rare Plant and Natural Community Conservation—Seed banking and Reintroductions

KNP works closely with several conservation partners on *ex situ* conservation strategies that provide further insurance to protect declining rare plants. Collaborative activities include seed banking, genetic research, rare plant propagation, translocation, and reintroduction of rare plant populations. Partners include Missouri Botanical Garden, Cincinnati Zoo, Atlanta Botanical Garden, and Dropseed Nursery.

Wood Lily

KNP has been working with the U.S. Forest Service on a project to protect, connect, and restore populations of the state endangered wood lily of the Cumberland Plateau and its habitat. This charismatic barrens plant of grassland and woodland has declined by more than 90 percent in the past 40 years due to habitat loss, lack of fire, mowing, and excessive herbivory. The wood lily, along with numerous other plants in its community, make up critical pollinator habitat for species such as the monarch butterfly and native bees. We are working with partners to bring this plant and its habitat back from the brink of extinction by coordinating and implementing monitoring, management and restoration efforts. Currently, we are working on propagation, with more than 200 seedlings currently growing in a greenhouse. Plants will soon be transplanted to suitable habitat on KNP natural areas and the Daniel Boone National Forest.



Wood Lily (*Lilium philadelphicum*), state threatened.

Reintroductions

We have also been working with land managers at Cove Springs Park, a KHLCF natural area in Frankfort, to create a new population of the federally threatened globe bladderpod. It took several years, but population numbers are reaching sustainable levels, making this population an important part of its recovery. Through projects like these, rare plants will recover and become delisted!

Seedbanking

KNP has partnered with Missouri Botanical Garden and Atlanta Botanical Garden to seed bank several federally listed and at-risk plants. Seed banking is an important conservation tool that provides an additional insurance against extinction. In recent years we have seed banked Kentucky glade cress, white fringeless orchid, and globe bladderpod.



Globe bladderpod (*Physaria globosa*), federally threatened, state threatened.

Data Management

Data Management and Field Work Updates

2020 has brought major changes to the way KNP collects data and manages information in the field. Thanks to our GIS specialists, staff now utilize handheld electronic devices to view and enter data directly in the field using ESRI tools such as Survey 123 and Collector for ArcGIS. This new methodology not only ensures easy access to important existing data layers, such as rare species occurrences and management units, but also enables streamlined data collection, improved data consistency and reduced time needed for data processing. To support this new workflow, our GIS specialist and data manager



are creating a biodiversity database for KNP staff to utilize. This enables our office to collect data on all species, not just threatened and endangered species. This will help our staff obtain a better understanding of site biodiversity, and potential conservation needs and management actions, while allowing us to get a better overall picture of a locations significance and health.

- Of 378 plant species listed as state endangered, threatened or special concern, 221 are conserved in perpetuity on KNP's state nature preserves and natural areas.
- Of 343 animal species listed as endangered, threatened or special concern, 184 have been conserved on KNP's state nature preserves and natural areas.
- Of Kentucky's 80 natural community types, 61 high-quality examples have been conserved on KNP's state nature preserves and natural areas. State Nature Preserves with less sensitive habitats are open to the public for hiking, wildlife viewing, and passive recreation on a system of hiking trails.

Office of Kentucky Nature Preserves Observations

▼

Element

Search Type *

☒ Element
 ☐ Higher Taxonomy

Element Type: *

☐ Animal
 ☐ Plant
 ☐ Community

Search by: *

☒ Scientific Name
 ☐ Common Name

Scientific Name: *

Common Name:

Subnational Rank:

Track Status

View in Explorer

▼

Data Sensitive

Data Sensitive *

☐ Yes - always sensitive
 ☒ No - never sensitive
 ☐ Conditional - depends on how data are being used

▶

Condition

▼

Mapping

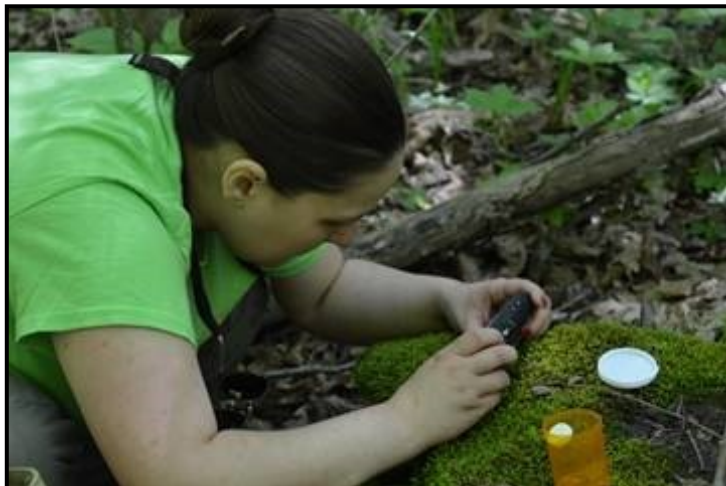
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Data Management

KNP Natural Heritage Database

To date, KNP's natural heritage database contains an impressive 16,456 species and rare community occurrence records, and 20,751 species and rare community site specific records. A total of 1,395 species and community occurrence records were added or updated in this biennium alone. KNP tracks 908 species and ecological communities and monitors 191 more on a watch-list. KNP's database also contains 782 high-quality site records, including caves, and 791 conservation lands records.



The KNP Natural Heritage Database includes 20,751 high quality source features records and 16,456 element occurrence records of the 908 species and communities we track.

New Collaboration with Natural Resources Conservation Service

KNP is constantly searching for ways to increase availability of our information resources to more users. By forming a new collaboration with the Natural Resources Conservation Service (NRCS) we have been able to exponentially increase the use of our data. KNP is working with NRCS to better inform landowners while protecting Kentucky's natural resources. Last year, KNP and NRCS created a jointly funded data steward position to develop, organize, and facilitate sharing of ecological data between the two organizations. Data from KNP's



natural heritage database have been integrated in the Kentucky Interagency Coordination Tool (KICT), a tool used by NRCS conservation planners to ensure compliance with the National Environmental Policy Act (NEPA). As of August 2020, 8,001 reports were already run by approximately 210 different NRCS planners and biologists for 4,997 different landowners.

The KNP Biological Assessment Database

Private sector industries, the military, and conservation groups all trust KNP data to make important economic development, infrastructure investments, and land conservation decisions.

KNP is the state affiliate of NatureServe, an international network of natural heritage programs that gathers, organizes and distributes standardized, detailed information on biological diversity across all 50 states, Canada, Mexico, and parts of Latin America. By partnering with Nature-Serve, KNP can track the status of a species or natural habitat type at global, national, and state scales and



assign objective and sound conservation ranks. KNP data also provides the NatureServe Explorer website with accurate information on Kentucky species. This resource is used by educators and professionals all over the world, and can be accessed at

explorer.natureserve.org.

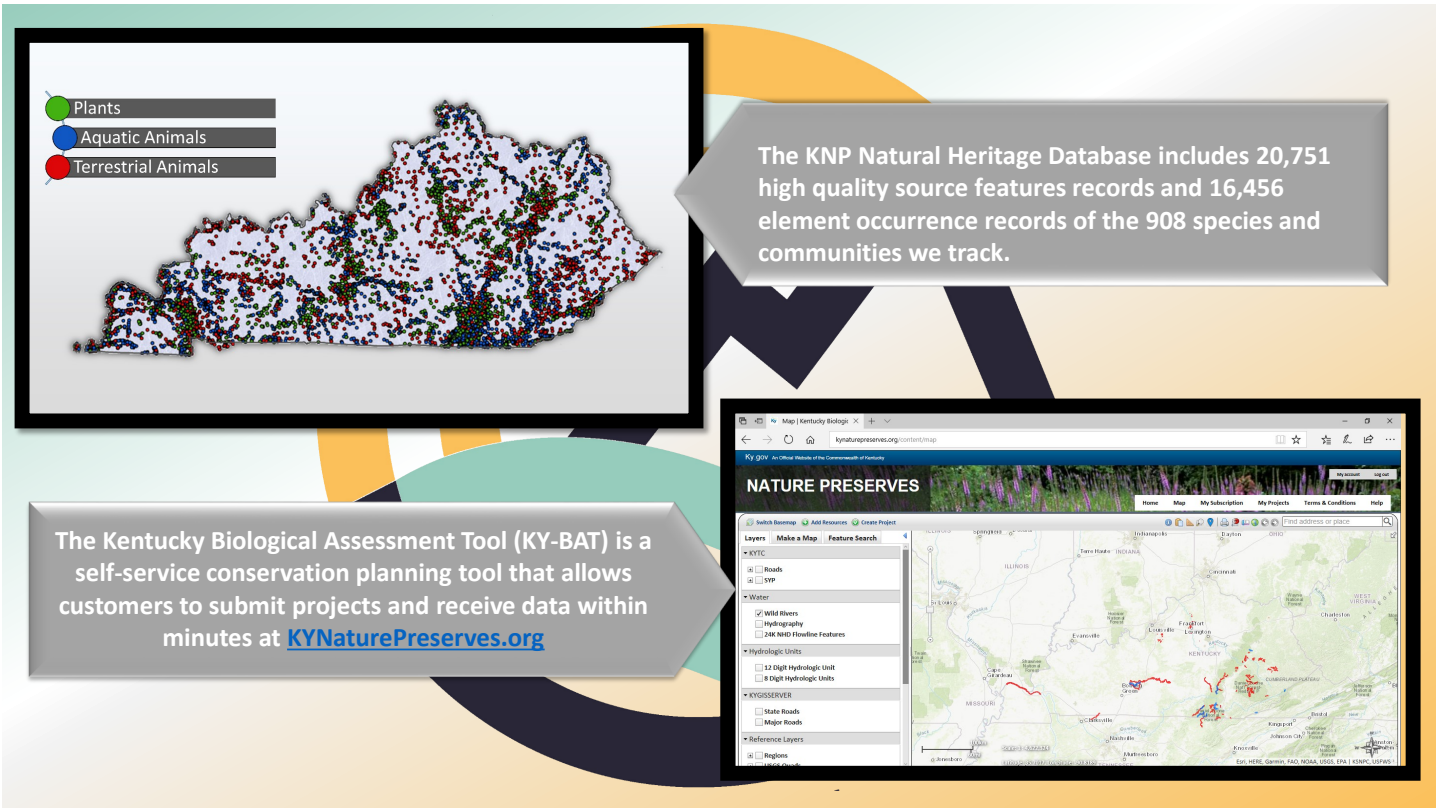
The software applications created by the KNP streamlined the process for reviewing surface coal mining permits by the Department for Natural Resources and reclamation reviews for the Division of Abandoned Mine Lands. These agencies now have real-time access to the latest imagery and spatial data. This saves time and money while facilitating projects for the coal mining industry by accelerating project reviews.

The Natural Resource Conservation Service used KNP data over 4,000 times to assess Farm Bill practices on farms throughout Kentucky during the biennial application periods. KNP data help determine what Farm Bill-funded conservation practices are appropriate on farms throughout the Commonwealth.

KNP's data enables land managers and developers, in both private and public sectors, to make decisions more efficiently and to benefit society and the economy by avoiding impacts on sensitive areas. KNP provides information that facilitates ecologically sound development and infrastructure projects, like pipeline corridors, roads, communication towers, and municipal utility projects. During the biennium our data managers responded to more than 234 large-scale and site-specific data requests from private consultants, utilities, conservation groups, federal, state, and local government, forest management groups, land trusts, and researchers, up from 175 the previous biennium.

The KNP Biological Assessment Database

The Kentucky Biological Assessment Tool, accessible at <https://kynaturepreserves.org/>, allows customers to have real-time access to KNP data, and was made available to the public in 2018 as a part of our commitment to providing timely, creative, high-quality solutions to a wide variety of environmental and developmental planning needs.



The Kentucky Biological Assessment Tool (KY-BAT), an environmental review tool developed by KNP in cooperation with NatureServe, went live in 2018. KY-BAT allows clients to submit projects and receive reports with information on rare species and communities, conservation lands, and other natural resources within the project area within minutes. KNP now utilizes annual subscription licenses with reduced fees for our clients who submit multiple data requests per year. Various map resources have been made available for anyone to view on KY-BAT, whether they are interested in land use or conservation planning or interested in information about state resources. KNP is developing additional resources to make available to the public on KY-BAT.

KNP is a leader in the biological and environmental data field. KNP biologists are recognized for their field experience and commitment to complete, accurate data. Data analysts respond to numerous large-scale and site-specific information requests which guide land-use planning, development, conservation efforts, and research. KY-BAT is the most accurate database of rare species, natural habitats, and conservation lands available in Kentucky and is updated regularly. It is the result of 40 years of research and on-the-ground inventories by KNP biologists, plus a compilation of herbarium records, museum records, and data from other agency and organizations.

KNP is committed to providing timely, creative, high-quality solutions to a wide variety of environmental and developmental planning needs. Data systems are linked with powerful mapping tools - now accessible on line 24/7 through the KY-BAT.

KY-BAT and Renewable Energy

In June 2020, Kentucky Energy and Environment Cabinet Secretary Rebecca Goodman announced a new partnership between the Office of Energy Policy (OEP) and the Office of Kentucky Nature Preserves to provide a free, data analysis service to energy developers. The Kentucky Biological Assessment Tool (KY-BAT), developed and maintained by KNP, provides information to help projects avoid and minimize potential impacts to sensitive plants, animals and natural communities.

"This partnership is a great example of state agencies working together for a common goal," Goodman said. "As we continue to work Healthy at Home, our staff continues to identify new and innovative opportunities to fulfill our mission, supporting economic growth while protecting the environment."

"I'm excited about this project that helps us move toward a sustainable future while also protecting our current ecological communities," said Gov. Andy Beshear. "All Kentuckians benefit when we safeguard our state's beautiful natural environments."

Zeb Weese, Executive Director of KNP, said this partnership is an important link between endangered species and renewable energy.

"Many environmentally-minded citizens interested in renewable energy are also interested in the conservation of endangered species," Weese said. "KNP's natural heritage database contains over 20,000 species and rare community site-specific records. We track or monitor nearly 1,000 species and ecological communities, as well as natural areas throughout the state."

By using this data, Weese said, OEP will be able to identify ecologically sensitive areas and help site energy projects appropriately. Kenya Stump, OEP Executive Director, said providing great customer service is at the heart of what the energy office does for the commonwealth.

"Many renewable energy projects being developed are supporting those businesses operating in Kentucky with sustainability goals," Stump said. "These energy projects directly and indirectly support jobs in Kentucky and we want to be prepared to assist and streamline the process."

The KY-BAT project offered through this partnership provides data services at no cost, but it is limited to 20 projects on a first-come, first-serve basis.

For more information, or to submit a project for this free data service, please email

Kenya.Stump@ky.gov.



Photo by Eileen Hardy from <https://landairwater.me/2017/06/23/fort-campbell-goes-green-solar-array-project-completed/>

Funding Conservation at KNP

As a state agency, KNP does receive general fund dollars. However, these cover about half of our operating expenses, such as staffing and equipment. No general fund dollars go toward land purchases. We depend on a wide variety of sources and voluntary support to help pay for habitat management and land conservation.

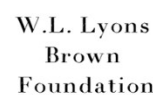
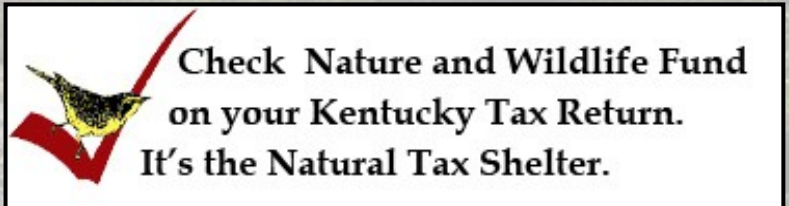
Each time you register a "Nature's Finest" license plate for your vehicle at your local County Clerk's office or renew online, \$10 goes to the Kentucky Heritage Land Conservation Fund for habitat management and land conservation.

Kentucky Heritage Land Conservation Fund



You can also make a tax-deductible donation directly to the [Keith MacAdam Trail Endowment](#) for Kentucky Nature Preserves on the Blue Grass Community Foundation website and help keep your favorite hiking spot in good shape.

When tax refund time comes, look for the Nature and Wildlife Fund box on your Form 740 and donate some of your refund to KNP Natural Areas Management and the KDFWR Wildlife Diversity programs!



Funding Conservation at KNP

KNP secures outside grants and contract work to generate agency receipts to balance the KNP's budget, increase capacity, and complete quality work efficiently. This table lists some of the major projects undertaken by the KNP for fiscal year 2020.

Kentucky Department for Natural Resources— database information

US Fish and Wildlife –Critical Habitat mapping

US Fish and Wildlife—Bat record data entry

National Fish and Wildlife Federation Grant - Restoring Shortleaf Pine in Kentucky

USDA-NRCS- database information

KY Department for Fish and Wildlife Resources —Obion Creek botanical inventories

KY Department of Agriculture—statewide ginseng monitoring

US Fish and Wildlife Service- Green River aquatic species assessment

US Fish and Wildlife Service—Section 6 annual rare plant funding

US Fish and Wildlife Service—Ft. Knox Military Base ecological community inventory

US Fish and Wildlife Service - Kentucky Gladecress management

Beckham Bird Club Grant - annual award for bird habitat improvement

Keith MacAdam Trail Endowment– annual gift

Kentucky Transportation Cabinet - roadside botanical surveys

Rare Plant Restoration Funds

Imperiled Bat Conservation Fund—habitat management and inventories

Daniel Boone National Forest—Challenge Cost Share Rare Plant Inventory

Daniel Boone National Forest-Good Neighbor Agreement for White fringeless orchid

Daniel Boone National Forest -South Redbird Botanical Project

Louisville Audubon Society— annual award for bird habitat improvement

Kentucky Natural Lands Awareness Day– March 3, 2020

OKNP was happy to join partners from the Kentucky Conservation Committee, Bernheim Arboretum and Research Forest, the Kentucky Nature Lands Trust, the Explore Kentucky Initiative, the Nature Conservancy of Kentucky, Wilderness Louisville, and others at the state capitol to celebrate the resolution declaring Kentucky Natural Lands Awareness Day on March 3, 2020.

The resolution, sponsored by Sen. Steve Meredith and Rep. Daniel Elliot, highlighted some of the benefits of natural areas:

- **WHEREAS, the Commonwealth has funded the conservation of nearly 95,000 acres in 165 projects statewide through the Kentucky Heritage Land Conservation Fund since 1994, consisting of areas to be preserved in their natural state for the protection of our state's natural heritage, public enjoyment, outdoor recreation and education;**
- **WHEREAS, Kentucky's natural lands protect important water resources across the state that rank fourth nationally in aquatic biodiversity, including approximately 245 native fishes, over 100 different kinds of freshwater mussels, and nearly 60 species of 10 crayfish, all of which provide important healthy-stream functions such as water purification and flood control buffers;**
- **WHEREAS, Kentucky's natural lands are critical to support healthy and diverse forests and habitat for our most rare and endangered species, as well as the state's most natural scenic wonders from Blanton Forest State Nature Preserve in Harlan County to the Audubon State Park in Henderson County;**
- **WHEREAS, Kentucky's natural lands enhance important historical landmarks such as the Abraham Lincoln Birthplace National Historic Park in Larue County, visited by over 260,000 tourists in the past year and providing over \$20 million in benefits and 227 jobs to the local economy, and includes 225 acres funded by the Kentucky Heritage Land Fund ;**
- **WHEREAS, Mammoth Cave National Park visitors spent \$45 million in 2018, helping support nearly 600 local jobs and generate \$61.6 million into nearby economies, including the Green River protected by the Kentucky Wild Rivers program;**
- **WHEREAS, Kentucky's natural lands are an important corridor for migratory birds, bringing in an estimated 827,000 birdwatchers to our rural communities;**
- **WHEREAS, Kentucky's natural lands provide non-consumptive wildlife-watching recreation for 1.3 million people in the Commonwealth, providing an estimated \$773 million to local economies;**
- **WHEREAS, Kentucky's natural lands are important components for tourism initiatives that bring national recognition to Kentucky, including the Pine Mountain State Scenic Trail and Bernheim/Fort Knox Wildlands Corridor, as well as providing thousands of miles of passive recreational trails;**
- **WHEREAS, the 2019 Kentucky Outdoor Recreation Economy Report indicates that Kentucky generates a total of \$12.8 billion in consumer spending, 120,000 in direct jobs, \$3.6 billion in wages, and \$756 million in taxes annually from outdoor recreation.**

Speakers included OKNP Executive Director Zeb Weese, Sen. Morgan McGarvey, Bernheim Conservation Director Andrew Berry, Rep. Joe Graviss, KNLT Director Greg Abernathy and Explore Kentucky Initiative's Gerry James. For a full copy of the bill, go to <https://apps.legislature.ky.gov/record/20RS/sr188.html>.



The Future of Natural Areas Conservation

KRS 146.485(13) directs the KNP to report to the governor and General Assembly on matters which may significantly affect the natural ecology or the human environment, and to recommend actions to prevent significant adverse effects which would harm our quality of life.

Although the Office of Kentucky Nature Preserves aggressively pursues federal and nonprofit grants to conduct our work, funding for habitat management (trail maintenance, planting rare species, prescribed fire activity, etc.) is always an issue. Throughout this report, we've shown the important work we've been doing through partnerships and the generous support of volunteers and donors.



To that end, our strongest recommendation to Kentucky's leadership and to Kentucky's citizens is to

Support the efforts to manage natural lands through the Kentucky Heritage Land Conservation Fund.

Supporting the Kentucky Heritage Land Conservation Fund program is an effective *and popular* way to assist conservation and eco-tourism. The KHLCHF supports land management on existing natural areas as well as acquisition – not only KNP nature preserves and natural areas, but state parks, wildlife management areas, and many other sites. Many agencies depend on grant funding from the KHLCHF to complete trail improvement projects and habitat management initiatives.

Since the KHLCHF does not receive federal funding, KHLCHF proceeds are used by many agencies as “non -federal match” for grant applications. Each dollar through KHLCHF can be used to leverage several dollars in outside funding. In each state budget from 2014 through 2020, funds were “swept” from the KHLCHF into the General Fund. The 2021 budget passed this year did not sweep any funds, allowing the future revenue to fund natural areas management and acquisition as it was established to do.

Supporting the KHLCHF is simple– purchase a “Nature's Finest” license plate for your vehicle, and call your elected officials and let them know you appreciate their support of the KHLCHF.

A small investment today will go a long way to ensure that future generations are able to enjoy Kentucky's natural wonders forever.

Supporting the KHLCHF in turn supports efforts by a wide range of local communities and organizations dedicated to handing down Kentucky's natural heritage to their children, their grandchildren, and future generations .

Office of Kentucky Nature Preserves Staff

The Office of Kentucky Nature Preserves is committed to the conservation of the natural areas and species that help make Kentucky special, thanks to our exceptional staff.

Generating high quality and reliable biological data and managing Kentucky's most unique natural areas requires thorough knowledge of both species and habitat requirements.

In addition, our biologists and natural areas managers have to be well-networked with other experts to compile and screen outside data sources and determine relevance, and to evaluate the best management practices for a variety of habitat improvement projects.



Director's Office



Zeb Weese
Executive Director



Judy Cunningham
KNP Budget Specialist



Stephanie Ellis
KHLCF Purchasing Specialist

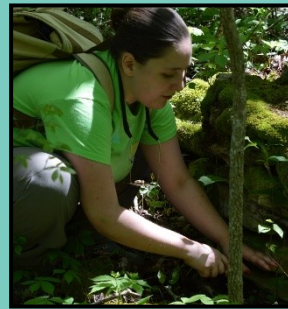
Biological Assessment Branch



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Branch Manager



Mike Compton
Aquatic Zoologist



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Terrestrial Zoologist



Valerie Jones
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Kyle Napier
Pine Mountain Manager



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Heather Drake
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Cliff Hull
Cumberland Plateau
Manager



Jess Slade
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Vanessa Voelker
Botany Technician



Appendix I: Office of Kentucky Nature Preserves Natural Areas and Nature Preserves

	County	Project	Acres	Managing Agency	KHLCF Status	KNP Status
1	Allen	Carpenter Cave CE	14.30	Office of Kentucky Nature Preserves	KHLCF Deed	KNP dedicated
2	Allen	Goodrum Cave SNP	51.00	Office of Kentucky Nature Preserves		KNP owned
3	Ballard	Ballard WMA	256.00	Kentucky Department of Fish and Wildlife Resources	KHLCF Deed	
4	Ballard	Boatwright WMA	1,177.00	Kentucky Department of Fish and Wildlife Resources	KHLCF Deed	
5	Ballard	Axe Lake Swamp SNP	458.00	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
6	Barren	Brigadoon SNP	184.00	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
7	Barren	Mutter's Cave CE	108.28	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
8	Bell	Kentucky Ridge State Forest and Wildlife Management Area	3,782.38	Kentucky Division of Forestry and Kentucky Department for Fish and Wildlife Resources	KHLCF Deed	
9	Bell	Pine Mountain State Park Nature Preserve	868.00	Kentucky State Parks		KNP dedicated
10	Bell, Pike, Harlan, Letcher	Pine Mountain State Scenic Trail	2591.48	Kentucky State Parks	KHLCF Deed	
11	Boone	Boone Cliffs SNP	75.42	Boone County Fiscal Court	KHLCF Easement	KNP dedicated
12	Boone	Dinsmore Woods SNP	107.00	Boone County Fiscal Court	KHLCF Easement	KNP dedicated
13	Boone	Gunpowder Creek	125.98	Boone County Fiscal Court	KHLCF Easement	
14	Boone	Big Bone Lick SP	228.52	Kentucky State Parks	KHLCF Deed	

Appendix I: Office of Kentucky Nature Preserves Natural Areas and Nature Preserves

	County	Project	Acres	Managing Agency	KHLCF Status	KNP Status
15	Boyle	Perryville Battlefield State Park	133.44	Kentucky State Parks	KHLCF Deed	
16	Breckinridge	Wildlife Education Park	25.19	Breckinridge County Fiscal Court	KHLCF Easement	
17	Breckinridge	Yellowbank WMA	1,332.31	Kentucky Department of Fish and Wildlife Resources	KHLCF Deed	
18	Bullitt	Cedar Grove Wildlife Corridor	589.48	Bernheim Arboretum and Research Forest	KHLCF Easement	
19	Bullitt	Knobs State Forest	2,035.80	Kentucky Division of Forestry	KHLCF Deed	
20	Bullitt	Apple Valley Glades SNP	69.23	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
21	Bullitt	Floyd's Fork—Glory Road	115	Future Fund	KHLCF Easement	
22	Calloway	Fort Heiman	167.00	Calloway County Fiscal Court	KHLCF Easement	
23	Calloway	Blood River SNP	192.56	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
24	Campbell	Hawthorne Crossing	134.69	Campbell County Conservation District	KHLCF Easement	
25	Campbell	St. Anne's Wetlands	165.00	Campbell County Conservation District	KHLCF Easement	
26	Carter	Olive Hill Reservoir	214.64	City of Olive Hill	KHLCF Easement	
27	Carter	Tygart State Forest	255.03	Kentucky Division of Forestry	KHLCF Deed	
28	Carter	Carter Caves State Park	107.54	Kentucky State Parks	KHLCF Deed	

Appendix I: Office of Kentucky Nature Preserves Natural Areas and Nature Preserves

	County	Project	Acres	Managing Agency	KHLCF Status	KNP Status
29	Carter	Bat Cave SNP	128.00	Kentucky State Parks		KNP dedicated
30	Carter	Cascade Caverns SNP	18.00	Kentucky State Parks		KNP dedicated
31	Christian	Bob Overton Cave	54.82	Office of Kentucky Nature Preserves	KHLCF Deed	KNP dedicated
31	Christian, Caldwell	Pennyrile State Forest	200.57	Kentucky Division of Forestry	KHLCF Deed	
33	Clark	Lower Howard's Creek Nature and Heritage Preserve	423.59	Clark County Fiscal Court	KHLCF Easement	KNP dedicated
34	Clark	Civil War Earthenworks Fort	25.38	Clark County Fiscal Court	KHLCF Easement	
35	Daviess	Greenbelt Trail	25.00	City of Owensboro	KHLCF Easement	
36	Daviess	Yellow Creek Park	1.43	Daviess County Fiscal Court	KHLCF Easement	
37	Estill	Lily Mountain Nature Preserve	561.15	Estill County Conservation District	KHLCF Easement	
38	Fayette	Floracliff SNP	347.00	Floracliff Nature Sanctuary	KHLCF Easement	KNP dedicated
39	Fayette	Raven Run Nature Sanctuary	353.38	Lexington-Fayette Urban County Government	KHLCF Easement	
40	Fleming	Park Lake Mountain Nature Preserve	861.13	Fleming County Fiscal Court	KHLCF Easement	
41	Fleming	Clay Wildlife WMA	811.03	Kentucky Department of Fish and Wildlife Resources	KHLCF Deed	
42	Fleming	Short's Goldenrod SNP	209.89	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned

Appendix I: Office of Kentucky Nature Preserves Natural Areas and Nature Preserves

	County	Project	Acres	Managing Agency	KHLCF Status	KNP Status
43	Franklin	Cove Springs Park	96.99	City of Frankfort	KHLCF Easement	
44	Franklin	Julian Savanna SNP	42.43	Office of Kentucky Nature Preserves	KHLCF Easement	KNP dedicated
45	Franklin	River Cliffs SNP	210.19	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
46	Franklin	Rockcress Hills SNP	85.67	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
47	Franklin	Swallowfield CE	64.35	Office of Kentucky Nature Preserves	KHLCF Easement	KNP dedicated
48	Franklin	Feindel CE	15.00	Private landowner	KHLCF Easement	KNP dedicated
49	Garrard	Kentucky River Palisades/Dorman SNP	802.95	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
50	Graves	Terrapin Creek SNP	268.00	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
51	Grayson	Lone Oak Glade SNP	33.53	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
52	Green	Glenview Natural Area	168.07	Green County Fiscal Court	KHLCF Easement	
53	Green	Wyatt Jeffries Woods	57.15	Green County Fiscal Court	KHLCF Easement	
54	Greenup	Jesse Stuart SNP	714.00	Office of Kentucky Nature Preserves		KNP owned
55	Hancock	Jeffery's Cliff/Expansion	228.35	Hancock County Fiscal Court	KHLCF Easement	
56	Hardin	Springhouse Barrens SNP	55.78	Office of Kentucky Nature Preserves	KHLCF Deed	KNP dedicated
57	Hardin	Eastview Barrens SNP	119.14	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned

Appendix I: Office of Kentucky Nature Preserves Natural Areas and Nature Preserves

	County	Project	Acres	Managing Agency	KHLCF Status	KNP Status
58	Hardin	Jim Scudder SNP	231.00	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
59	Hardin	Hall Hill/Vernon-Douglas SNP	730.00	Office of Kentucky Nature Preserves		KNP owned
60	Harlan	Kentenia State Forest	762.03	Kentucky Division of Forestry	KHLCF Deed	
61	Harlan	E. Lucy Braun SNP	609.00	Kentucky State Parks		KNP dedicated
62	Harlan	James E. Bickford SNP	347.84	Office of Kentucky Nature Preserves	KHLCF Deed	KNP dedicated
63	Harlan	Blanton Forest SNP	3,124.00	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
64	Harlan	Hi Lewis SNP	427.00	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
65	Harlan	Martin's Fork SNA	1,624.41	Office of Kentucky Nature Preserves		KNP owned
66	Harlan	Stone Mountain SNA	1,025.49	Office of Kentucky Nature Preserves and Kentucky Department for Fish and Wildlife Resources	KHLCF Deed	KNP owned
67	Harrison	Griffith Woods WMA	391.37	Kentucky Department of Fish and Wildlife Resources	KHLCF Deed	
68	Harrison	Quiet Trails SNP	165.00	Office of Kentucky Nature Preserves		KNP owned
69	Hart	Hidden River Cave	9.76	City of Horse Cave	KHLCF Easement	
70	Hart	Frenchman's Knob	64.00	Hart County Fiscal Court	KHLCF Easement	

Appendix I: Office of Kentucky Nature Preserves Natural Areas and Nature Preserves

	County	Project	Acres	Managing Agency	KHLCF Status	KNP Status
71	Hart	Green River State Natural Areas	440.758	Office of Kentucky Nature Preserves		KNP owned
72	Hart	Upper Green River Biological Reserve/ Vinegar Ridge	1,617.67	Western Kentucky University	KHLCF Easement	
73	Henderson	Green River State Forest	409.34	Kentucky Division of Forestry	KHLCF Deed	
74	Henderson	Audubon Wetlands	664.27	Kentucky State Parks	KHLCF Deed	
75	Henderson	John James Audubon SPNP	339.00	Kentucky State Parks		KNP dedicated
76	Henry	KSU Environmental Education and Research Center	305.99	Kentucky State University	KHLCF Easement	
77	Henry, Owen	Kentucky River WMA	533.28	Kentucky Department of Fish and Wildlife Resources	KHLCF Deed	
78	Henry	Drennon Creek SNP	327.78	Office of Kentucky Nature Preserve	KHLCF Deed	KNP Owned
78	Hickman	Obion Creek and Murphy's Pond SNP	1,601.00	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
79	Hickman	Three Ponds SNP	528.25	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
80	Hickman, Fulton	Obion Creek and Laterneau Woods WMA	1,640.19	Kentucky Department of Fish and Wildlife Resources	KHLCF Deed	
81	Jefferson	Putney Pond and Woodlands	24.31	City of Prospect	KHLCF Easement	
82	Jefferson	Jefferson Memorial Forest	686.15	Louisville Metro Government	KHLCF Easement	
83	Jefferson	Peterson Forest	98.13	Louisville Metro Government	KHLCF Easement	

Appendix I: Office of Kentucky Nature Preserves Natural Areas and Nature Preserves

	County	Project	Acres	Managing Agency	KHLCF Status	KNP Status
84	Jefferson	Pope Lick Park	214.65	Louisville Metro Government	KHLCF Easement	
85	Jefferson	McNeely Lake	20	Louisville Metro Government	KHLCF Easement	
86	Jefferson	Beargrass Creek SNP	41.00	Office of Kentucky Nature Preserves		KNP owned
87	Jefferson	Blackacre SNP	175.00	Office of Kentucky Nature Preserves		KNP owned
88	Jefferson	Six Mile Island SNP	81.00	Office of Kentucky Nature Preserves		KNP owned
89	Jessamine	Camp Nelson	58.53	Jessamine County Fiscal Court	KHLCF Easement	
90	Jessamine	Jessamine Creek Gorge	268.77	Jessamine County Fiscal Court	KHLCF Easement	
91	Jessamine	Tom Dorman SNP	143.00	Office of Kentucky Nature Preserves		KNP owned
92	Kenton	Morning View Heritage Land	222.66	Kenton County Conservation District	KHLCF Easement	
93	Larue	LaRue County Environmental Education Center	191.00	Larue County Fiscal Court	KHLCF Easement	
94	Larue	Lincoln Boyhood Home	224.97	Larue County Fiscal Court	KHLCF Easement	
95	Larue	Thompson Creek Glades SNP	169.00	Office of Kentucky Nature Preserves		KNP owned
96	Larue	Thompson Creek Glade SNP	105.26	Office of Kentucky Nature Preserves	KHLCF Deed	
97	Laurel	Whitley Branch Preservation	75.57	City of London	KHLCF Easement	
98	Laurel	Sinking Creek Conservation Area	300.97	Office of Kentucky Nature Preserves		KNP owned
99	Letcher	Lilley Cornett Woods	n/a	Eastern Kentucky University	KHLCF Easement	

Appendix I: Office of Kentucky Nature Preserves Natural Areas and Nature Preserves

	County	Project	Acres	Managing Agency	KHLCF Status	KNP Status
100	Letcher	Kingdom Come SPNP	225.00	Kentucky State Parks		KNP dedicated
101	Letcher	Bad Branch SNP	2,785.00	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
102	Lewis	Crooked Creek SNP	693.47	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
103	Lincoln	William Whitley House/Logan Huble	203.24	Lincoln County Fiscal Court	KHLCF Deed	
104	Lincoln	Bouteloua Barrens SNP	261.00	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
105	Livingston	Livingston County Natural Areas	2,429.92	Livingston County Fiscal Court	KHLCF Easement	KNP dedicated
106	Logan	Baker Natural Area	66.15	Logan County Conservation District	KHLCF Easement	
107	Logan	Logan County Glade SNP	42.00	Office of Kentucky Nature Preserves		KNP owned
108	Logan	Raymond Athey Barrens SNP	156.00	Office of Kentucky Nature Preserves		KNP owned
109	Marion	Marion County WMA	1,293.20	Marion County Fiscal Court, Kentucky Division of Forestry, Kentucky Department for Fish and Wildlife Resources	KHLCF Easement	
110	McCracken	Perkins Creek	80.27	City of Paducah	KHLCF Easement	
111	McCracken	Metropolis Lake SNP	123.00	Office of Kentucky Nature Preserves		KNP owned
112	McCreary	Cumberland Falls SNP	1,294.00	Kentucky State Parks		KNP dedicated
113	McCreary	Cumberland Falls Wild River Conservation	119.00	Office of Kentucky Nature Preserves	KHLCF Deed	KNP dedicated

Appendix I: Office of Kentucky Nature Preserves Natural Areas and Nature Preserves

	County	Project	Acres	Managing Agency	KHLCF Status	KNP Status
114	Menifee	Broke Leg Falls	14.82	Menifee County Fiscal Court	KHLCF Easement	
115	Metcalfe	Dry Fork Gorge	79.97	Metcalfe County Fiscal Court	KHLCF Easement	
116	Metcalfe, Cumberland	Marrowbone State Forest	1,955.47	Kentucky Division of Forestry and Kentucky Department for Fish and Wildlife Resources	KHLCF Deed	
117	Monroe	Old Mulkey Meeting House	19.02	Kentucky State Parks	KHLCF Deed	
118	Muhlenberg	Cypress Creek SNP	98.00	Office of Kentucky Nature Preserves		KNP owned
119	Muhlenberg, Hopkins, Ohio	Peabody WMA	34,560.00	Kentucky Department of Fish and Wildlife Resources	KHLCF Deed	
120	Nelson	Town Creek Greenway	16.01	City of Bardstown	KHLCF Easement	
121	Ohio	Highview Hill	256.71	Ohio County Fiscal Court	KHLCF Easement	
122	Ohio	Ohio County Nature Park	191.25	Ohio County Fiscal Court	KHLCF Easement	
123	Oldham	Morgan Conservation Park	227.59	Oldham County Fiscal Court	KHLCF Easement	
124	Powell	Natural Bridge State Park Nature Preserve	1,188.00	Kentucky State Parks		KNP dedicated
125	Powell	Natural Bridge State Park	471.00	Kentucky State Parks	KHLCF Deed	
126	Powell	Pilot Knob SNP	742.00	Office of Kentucky Nature Preserves		KNP owned
127	Powell	Pilot Knob SNP	515.93	Powell County Fiscal Court	KHLCF Easement	

Appendix I: Office of Kentucky Nature Preserves Natural Areas and Nature Preserves

	County	Project	Acres	Managing Agency	KHLCF Status	KNP Status
128	Pulaski	Francis Johnson Palk SNP	233.00	Office of Kentucky Nature Preserves		KNP owned
129	Pulaski	William H Martin Conservation Area	458.96	Office of Kentucky Nature Preserves		KNP owned
130	Pulaski	Mount Victory Seeps	238.66	Office of Kentucky Nature Preserves	KHLCF Deed	
131	Pulaski	Buck Creek Preserve	35.26	Pulaski County Fiscal Court	KHLCF Easement	
132	Pulaski	Hazeldell Meadow	39.35	Pulaski County Fiscal Court	KHLCF Easement	
133	Robertson	Blue Licks SPNP	53.00	Office of Kentucky Nature Preserves		KNP owned
134	Robertson, Nicholas, Fleming	Blue Licks State Park	905.45	Kentucky State Parks	KHLCF Deed	
135	Rockcastle	John B. Stephenson SNP	123.00	Berea College		KNP dedicated
136	Shelby	Clear Creek Park Greenway	27.02	Shelby County Fiscal Court	KHLCF Easement	
137	Shelby	Shelby Trails Park Addition	75.00	Shelby County Fiscal Court	KHLCF Easement	
138	Simpson	Flat Rock Glade SNP	99.00	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
139	Taylor	Clay Hill Memorial Forest	103.00	Campbellsville University	KHLCF Easement	
140	Taylor	Tebbs Bend	138.92	Taylor County Fiscal Court	KHLCF Easement	

	County	Project	Acres	Managing Agency	KHLCF Status	KNP Status
141	Union, Crittenden	Big Rivers WMA and SF	6,724.00	Kentucky Division of Forestry and Kentucky Department for Fish and Wildlife Resources	KHLCF Deed	
142	Warren	Chaney Lake SNP	169.00	Office of Kentucky Nature Preserves		KNP owned
143	Warren	Woodburn Glade SNP	20.00	Office of Kentucky Nature Preserves		KNP owned
144	Warren	Lost River Cave	2.25	Warren County Fiscal Court	KHLCF Easement	
145	Warren	Cave Springs	2.01	Western Kentucky University	KHLCF Easement	
146	Wayne, McCreary	Little South Fork State Natural Area	3,202.02	Office of Kentucky Nature Preserves		KNP owned
147	Whitley	Archer-Benge SNP	1,863.00	Office of Kentucky Nature Preserves	KHLCF Deed	KNP owned
148	Wolfe	Red River State Natural Area	301.26	Office of Kentucky Nature Preserves		KNP owned
Total Acres			108,480.949			

KHLCF Status: conservation easements are held by the KHLCF Board on property funded by the KHLCF but not owned by state government; on state government properties funded by the KHLCF, deed restriction are in place to ensure those properties abide by their approved management plans. KNP staff inspects both easements and deed restricted areas, but only manages those areas owned by KNP.

KNP Status: areas that are formally dedicated by KNP have the highest legal conservation protection in Kentucky; KNP has dedicated most of the property it owns and also dedicated natural areas owned by other entities. KNP staff inspects all dedicated areas, but only manages those areas owned by KNP.

SNP: State Nature Preserves

SPNP: State Park Nature Preserve (dedicated portion of a state park)

SF: State Forest

WMA: Wildlife Management Area

CE: Conservation Easement

Appendix II: Registered Natural Areas

The Kentucky Natural Areas Registry enrolls high quality natural areas owned by private individuals or other organizations to encourage them to provide stewardship of significant natural sites. The voluntary registry recognizes landowners who partner with KNP to conserve ecologically significant property. Since 93 percent of Kentucky is in private ownership, private sector involvement in conservation is crucial. The registry is educational for many landowners, who may not be aware of special qualities of their land. As such, the use of registries can help prevent the inadvertent destruction of important sites.

A total of 60 landowners are enrolled in the registry program, encompassing 8,342.95 acres. They provide voluntary conservation for 46 state-listed species and 21 of our natural community types. One private landowner entered their site into the Natural Areas Registry program in the last year.

	County	Project	ACRES	Ownership	Significance
1	Adair	Rosson-Mayne Woods	178.62	Private	Mature Woods
2	Ballard	Axe Lake	760.41	Private	Wetland Community
3	Boone	Dinsmore Foundation	2.18	Private	Rare Species
4	Boyle	Harberson's Station Cave	2.88	City of Perryville	Rare Species
5	Bullitt	Rocky Run Glade	15.71	Private	Rare Species
6	Bullitt	Jefferson County Sportsmen Club	12.61	Private	Rare Species
7	Calloway	Panther Creek Swamp	126.57	TVA	Wetland, Rare Species
8	Carlisle	Back Slough/Laketon	45.09	Private	Wetland Community
9	Casey	Bradley Lewis Weddle	73.11	Private	Rare Species
10	Carter	Tierney Tygart	10.57	Private	Rare Species
11	Christian	Pennyryle SF-Clifty Creek	74.93	KDF	Rare Species
12	Clinton	Seventy-six Falls	0.74	USACE	Rare Species

Appendix II: Registered Natural Areas

	County	Project	ACRES	Ownership	Significance
13	Crittenden	Goodman/Kissinger Sandstone Glade	7.23	Private	Glades
14	Edmonson	White's Cave	2.5	NPS	Rare Species
15	Estill	Camp Burnamwood	472.13	Church	Upland Native Forest
16	Fayette	Raven Run	477.83	LFUCG	Kentucky River Palisades
17	Fayette	Boone Creek	259.10	Private	Rare Species
18	Fayette	Ashland	18.31	Private	Rare Species
19	Franklin	Camp Pleasant Woods	68.55	SCC	Rare Species
20	Franklin	Strohmeiers Hill	58.4	Private	Rare Species
21	Franklin	Tucker Creek	30.61	Private	Rare Species
22	Franklin	Far Side Farm	29.76	Private	Rare Species
23	Franklin	Leeland Valley	35.21	Private	Rare Species
24	Franklin	Rockcress Woods (Greene/Adams)	19.57	Private	Rare Species
25	Franklin	Rockcress Woods (Bryan)	6.56	Private	Rare Species
26	Garrard	Terrapin Barrens	39	SCC	Native Grassland
27	Grayson	Big Clifty Prairie	2.89	KYTC	Prairie Remnant
28	Hardin	Knights Barrens	355.71	Private	Barrens Community
29	Hardin	Dowell	25.30	Private	Rare Species
30	Hardin	Hayden Glade	4.7	Private	Glade Community
31	Hart	Big Woods	293.10	NPS	Old-growth Woods

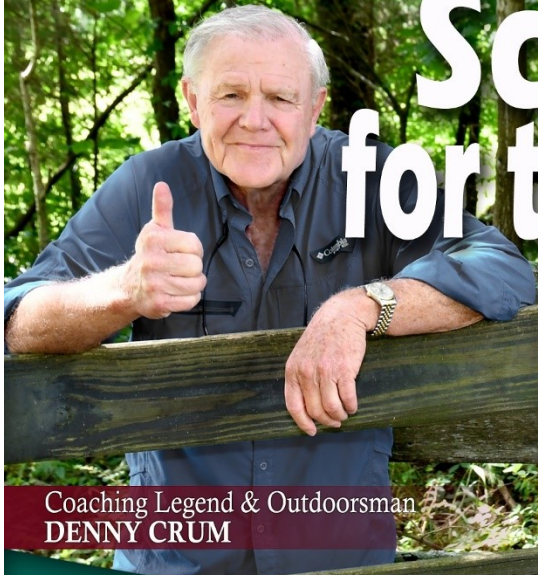
Appendix II: Registered Natural Areas

	County	Project	ACRES	Ownership	Significance
32	Hart	Riders Mill Cave	266.76	Private	Rare Species
33	Jefferson	Jefferson Memorial Forest	2471.87	Louisville Metro Parks	Maturing Quality Forest
34	Jefferson	Surrey Hills Woods	34.56	Private	Mature Forest
35	Jefferson	Shippingport Island Rookery	8.02	USACE	Heron Rookery
36	Jessamine	R. J. Corman Natural Area	64.64	Private	Jessamine Creek Gorge Tributary
37	Larue	Crady Creek Hill Prairies (Ewing)	31.97	Private	Grassland Remnant
38	Larue	Crady Creek Hill Prairies (Clayton)	15.7	Private	Grassland Remnant
39	Letcher	Bad Branch	116.93	Private	Rare Species
40	Letcher	Poor Fork Wetland	36.80	USFS	Rare Species
41	Livingston	Corley Farm	101.59	Private	Rare Species
42	Logan	Log House Prairie	4.73	Private	Prairie Remnant
43	Logan	Katie White Barrens (Luckett)	13.99	Private	Glades/Barrens Communities
44	Logan	Katie White Barrens (Webb)	13.23	Private	Glades/Barrens Communities
45	Lyon	Cannon Springs Woods	281.95	USACE	Recovering Woods
46	Madison	Jean's Glade	6.07	Private	Rare Species
47	Marion	Tatum Cave	26.55	Private	Rare Species
48	Marshall	Bear Creek Rookery	17.28	TVA	Heron Rookery
49	McCracken	Bayou Creek Ridge	169.29	TVA/KDFWR	Old-growth Woods

Appendix II: Registered Natural Areas

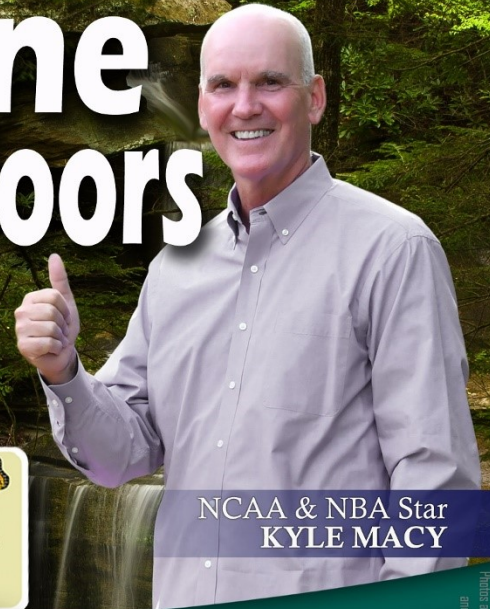
	County	Project	ACRES	Ownership	Significance
50	McCracken	Metropolis Lake	1.68	TVA	Natural Lake
51	McLean	Floyd Woods	23.53	Private	Old-growth Woods
52	Metcalfe	Sulphur Creek Cave	6.59	Private	Rare Species
53	Muhlenburg	Cornett Woods	296.78	Private	Wetland Communities
54	Nelson	Abbey of Gethsemani	326.369	Private	Grasslands/Glade Communities
55	Nicholas	Kingsolver Golden-rod	2.32	Private	Rare Species
56	Nicholas, Fleming, Robertson	Blue Licks Highway	42.13	KTC	Rare Species
57	Nicholas	Abnee Goldenrod	1.69	Private	Rare Species
58	Owsley	Morris Kentucky Ladyslipper	13.88	Private	Rare Species
59	Perry	Stillhouse Branch	100.77	USACE	Mature Forest
60	Pulaski	Blowing Cave	10.14	Private	Rare Species
61	Russell, Pulaski, Wayne	Lake Cumberland (7 discrete sites)	189.54	USACE	Rare Species
62	Russell	Sundew Meadow	12.66	Private	Rare Species
63	Taylor	Blue Knob	29.33	Private	Glades, Barrens
64	Trigg	Lake Barkley Rookery	13.25	USACE	Heron Rookery
65	Todd	North Elk Fork Woods	29.63	Private	Old-growth Woods
66	Todd	South Elk Fork Woods	26.77	Private	Old-growth Woods
67	Warren	Shanty Hollow Cave	2.69	Private	Rare Species
68	Warren	Greenhill Woods	0.44	Private	Rare Species
69	Whitley	Grove Powerline	20.95	Utility	Pine Barren Remnant
Total Acres			8,342.95		

Score one for the outdoors



Coaching Legend & Outdoorsman
DENNY CRUM

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