

The Office of Kentucky Nature Preserves and Kentucky Heritage Land Conservation Fund



2019 Annual Report
Conserving Kentucky's Natural Heritage

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- Pam Gibson, page 20
- Cellular Tracking Technologies, page 15
- Boone County Library: page 49

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The Kentucky Heritage Land Conservation Fund Board

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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.

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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

The end of another exciting year for the Office of Kentucky Nature Preserves (KNP) and the Kentucky Heritage Land Conservation Fund (KHLCF) is upon us. In the following pages you'll learn a little about how we've spent our time conserving Kentucky's wild places and the species that call them home, as well as how you can help.

First up you'll read about the recent successes of the KHLCF Board to fund the purchase and conservation of natural areas using proceeds from your purchase of "Nature's Finest" license plates and other sources. During the Fiscal Year ending on June 30, 2019, we successfully purchased nearly 1,000 acres in Bullitt County at Knobs State Forest and Bernheim Forest, plus another 500 acres at natural areas ranging from Perryville Battlefield to the Green River State Natural Area. The KHLCF is working on over 20 other projects that will conserve another 5,000 acres.



KNP Executive Director Zeb Weese with a pair of hard-working trail volunteers.

Next, KNP has stepped up its natural areas management program. Since July 2018 our Natural Areas Branch has doubled from six to 12 filled positions, a record. We've hired a new full-time Trails Specialist to improve our hiking trail safety and infrastructure throughout the state, and created two new full-time natural areas manager positions to focus on rare species habitat management, as well as two additional seasonal natural areas technicians positions. However, these positions are dependent on grant funding. We secured an important grant from the National Fish and Wildlife Foundation for shortleaf pine restoration, but much of our land management funding comes from donations to the [Kentucky Heritage Land Conservation Fund](#), the [Keith MacAdam Trail Endowment for Kentucky Nature Preserves](#), and the [Nature and Wildlife Tax-Checkoff Fund](#), so your individual donations are vitally important to care for Kentucky's nature preserves.

In addition to donating funds, you can also donate your time. You'll find information on our new volunteer and outreach program, thanks to our outreach specialist, the other newly created Natural Areas Branch position. Folks that love nature also love to discover new places. Our new webpage at <http://eec.ky.gov/> includes an online map to make our hiking areas easier to find for your quiet enjoyment. To keep up-to-date on all our projects and progress, including our expanded schedule of guided hikes, just follow us at <https://www.facebook.com/KentuckyNaturePreserves/>.

Of course, in addition to managing our own natural areas we also work on rare species inventories, restoration, and recovery on other lands. KNP is Kentucky's official cooperator with the U.S. Fish and Wildlife Service for federally endangered and at-risk plants under Section 6 of the federal Endangered Species Act. This year we created a new Rare Plant Conservation Section to focus on these efforts, and created three new full-time botanist positions. Again, these are dependent on grants and we are grateful for our partnerships with the U.S. Fish and Wildlife Service, U.S. Forest Service, Kentucky Department of Fish and Wildlife Resources, Kentucky Department of Agriculture, Kentucky Department of Transportation, and many others. The partnerships help us to document the occurrences of rare plants in the Commonwealth and guide their management and

restoration. Our ultimate goal is to stabilize or increase populations of Kentucky's rare species so they are no longer at risk of extinction.

Our Biological Assessment Branch has also expanded this year, thanks in part to a new partnership with the Natural Resource Conservation Service. KNP's decades of ecological data will be used to assist in assessing federal Farm Bill applications, as our endangered species data has for several years. We're also very excited about our new web-based conservation planning tool, the [Kentucky Biological Assessment Tool](#), which has made accessing location-based rare species information much easier and faster. Our zoologists continue to add important records to our database through new projects like the [Kentucky Land Snail Citizen Science Project](#), which could also use your participation.

Finally, we're very proud of the team we've put together at the Office of Kentucky Nature Preserves, so please check out our staff listings at the end of the report. These are some of the best and most dedicated in their fields, we are all fortunate to have them working to conserve Kentucky's natural wonders.

I hope you enjoy learning a bit about what we do, and consider how you can help us continue our work conserving Kentucky's natural areas and rare species. Of course, this report focuses on the last Fiscal Year and we have a lot of great projects that we're just starting, from a statewide roadside pollinator habitat inventory to our "Kentucky Naturally" sequel. Stay tuned! - Zeb Weese

Award-winning Conservation

The KHLCF Board's efforts have been recognized this year in a couple of very different ways. In May we were one of only two recipients of the "State Preservation Leadership Award" by the American Battlefield Trust at their Annual Conference in appreciation of our efforts to preserve thousands of acres that protect *both* significant historic sites *and* rare species habitat.



Zeb Weese, WKU's Neil Purcell and Cheryl Beckley, and KDFWR's Zack Couch co-produced *Kentucky Naturally*.

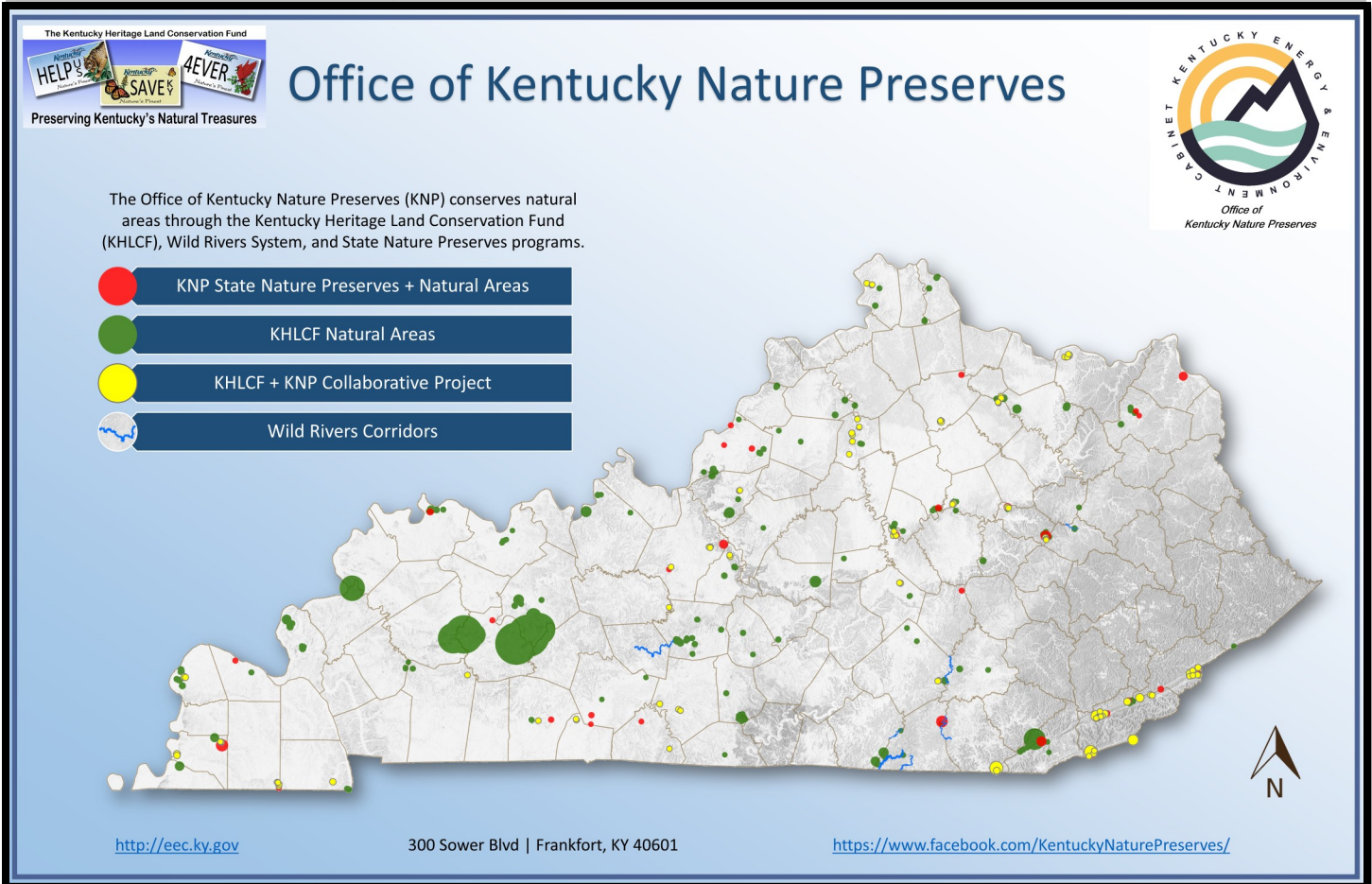


Zeb Weese accepted the State Preservation Leadership Award from ABT President Jim Lighthizer .

That was followed by a regional EMMY Award for our television special [Kentucky Naturally](#) co-produced with our friends at WKU PBS, which featured KHLCF natural areas throughout the state from State Nature Preserves to local parks.

We've already begun a sequel that will combine these two great ideas—our new PBS special will focus on KHLCF-funded historic sites like Perryville Battlefield and Blue Licks Battlefield.

KNP Natural Areas Map



KNP manages four distinct programs to conserve Kentucky's natural areas. While they each have some things in common—rare species habitat, environmental education opportunities, and conserving the 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, 2019, Office of Kentucky Nature Preserves programs include:

- 19,217 acres owned by KNP in 41 State Nature Preserves
- 6,417 acres owned by KNP in 6 State Natural Areas
- 7,324 acres dedicated by KNP in 22 State Nature Preserves owned by partnering agencies
- 12,641 acres in conservation easements at 54 KHLCF natural areas owned by local concerns
- 60,110 acres of deed restrictions 26 KHLCF natural areas owned by other state agencies
- 8,260 acres owned by private landowners and other agencies in 59 Registered Natural Areas
- 26,382 acres owned by private landowners and other agencies in 9 Wild Rivers Corridors

While the grand total of 113,000 acres in these programs is an impressive number, it is only 0.45% of Kentucky's 25 million acres! Appendix I has lists of KNP natural areas by county and status.

Kentucky Heritage Land Conservation Fund

The Kentucky Heritage Land Conservation Fund (KHLCF) is the primary source of state funding for the purchase and management of natural areas. Each property funded by the KHLCF is protected in perpetuity by a conservation easement or deed restriction. The fund was established by the Kentucky Heritage Land Conservation Act in 1990. This legislation established four priorities for land conservation.

The Four Priorities for Heritage Land Funding

- **Natural areas that possess unique features such as habitat for rare and endangered species;**
- **Areas important to migratory birds;**
- **Areas that perform important natural functions subject to alteration or loss;**
- **Areas to be preserved in their natural state for public use, outdoor recreation and education.**

The fund is managed by the nine member Kentucky Heritage Land Conservation Fund Board appointed by the governor. Revenue for the fund comes from the state portion of the unmined minerals tax on coal, environmental fines, sale of Kentucky nature license plates and interest. The KHLCF is administratively managed by KNP.

KHLCF funds are distributed quarterly as follows by statute:

- **10% Department of Fish and Wildlife Resources**
- **10% Department of Parks**
- **10% Division of Forestry**
- **10% Office of Kentucky Nature Preserves**
- **10% Kentucky Wild Rivers Program**
- **50% Competitive Funding for Local Governments, Colleges, Nonprofit Land Trusts, and Agencies**

The Kentucky Heritage Land Conservation Fund

Preserving Kentucky's Natural Treasures



Office of Kentucky Nature Preserves - eec.ky.gov

Kentucky Heritage Land Conservation Fund—Conserving Kentucky's Forests

The Kentucky Heritage Land Conservation Fund (KHLCF) program conserved over 1,000 acres of forest in October 2018 for both habitat and hiking. The Jeffrey's Cliff Natural Area was created in Hancock County, along with additions to both Knobs State Forest and the nearby Bernheim Arboretum and Research Forest in Bullitt County.



The 494-acre addition to Bernheim Forest and 496-acre addition to Knobs State Forest are part of an effort to create a wildlife corridor

linking the nearby Apple Valley Glades State Nature Preserve, Bernheim Forest, Knobs State Forest, Fort Knox, and other natural areas. These Bullitt County natural areas also have restoration potential for Kentucky gladecress, an endemic federally endangered plant found at Apple Valley.

Bernheim Forest is Kentucky's largest private nonprofit conservation area, and has been open to the public for environmental education since the 1950s. The KHLCF funded a 95 acres addition to Bernheim in 2015.

Knobs State Forest is managed by the Kentucky Division of Forestry. The KHLCF helped fund the original 1,540 acre tract that established the State Forest in the 1990s.

The 137-acre Jeffrey's Cliff conserves several rare species and ecological communities on a sandstone cliff system that is unusual in Western Kentucky. Another 140 acres will be added to the area within the next year. Approximately four miles of hiking trails are planned for the site, which will be managed by the Hancock County Fiscal Court under a KHLCF Board-approved management plan. This is the first project in Hancock County for the KHLCF.

The KHLCF funded all of the Jeffrey's Cliff and Knobs State Forest projects, and half of the Bernheim Forest project. Additional funding for Bernheim Forest was provided by the Imperiled Bat Conservation Fund. As a result of these projects the KHLCF Board now holds conservation easements on the Jeffrey's Cliff and Bernheim Forest tracts and a deed restriction on Knobs State Forest, to ensure they are managed for conservation purposes.

These natural areas are great examples of compatible habitat conservation and ecotourism. Not only does each provide important places for Kentucky's native wildlife and plants to thrive, but also scenic places to hike and enjoy nature, which plays an increasingly important part in Kentucky's quality-of-life and \$12 billion dollar outdoor recreation economy.

Kentucky Heritage Land Conservation Fund—Historic Accomplishments

Since 1995, the Kentucky Heritage Land Conservation Fund Board has played an integral part to protect and conserve over 92,000 acres of Kentucky's natural areas and habitats on 164 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 2019 | | | |
|--|-----------------------|-------------------|-------------------------|
| 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 | 44 | 10,313.73 | \$ 8,977,297.42 |
| Department of Parks | 15 | 3,306.18 | \$ 5,514,824.89 |
| Wild Rivers Program | 16 | 6,428.61 | \$ 8,369,489.94 |
| Multiple Agency Partners | 6 | 14,781.09 | \$ 11,673,455.86 |
| County Governments | 33 | 7,070.11 | \$ 13,208,398.19 |
| City Governments | 10 | 542.55 | \$ 1,709,119.25 |
| Metro Governments | 7 | 993.24 | \$ 3,268,294.45 |
| Colleges/Universities | 7 | 1,985.70 | \$ 4,735,308.15 |
| Conservation Districts | 8 | 1,484.44 | \$ 4,589,972.66 |
| Non-Profit | 4 | 764.477 | \$ 1,557,385.50 |
| Totals: | 164 | 92,034.08 | \$ 77,732,651.25 |

Note: Includes both acquisition and management costs.



Kentucky Heritage Land Conservation Fund—New Projects

These properties were successfully acquired in FY2019, out of thirty approved active projects.

| FY 2019 KHLCF ACQUISITIONS | | | |
|--|----------------------|---------------|--------------|
| PROJECT | AGENCY | COUNTY | ACRES |
| Little South Fork State Natural Area—MBC Tract | KNP | Wayne | 56.6 |
| Green River State Natural Area—Timberlake | KNP | Hart | 115.75 |
| Bernheim Forest—Simon Tract | Bernheim | Bullitt | 494.33 |
| Perryville Battlefield— Graves Tract | Parks | Boyle | 57.63 |
| Hancock County—Jeffrey’s Cliff | Hancock Fiscal Court | Hancock | 137.43 |
| Knob State Forest—Kuhns Tract | KDF | Bullitt | 496.2 |
| Future Fund—Floyd’s Fork Glory Road | Future Fund | Bullitt | 115 |
| | | Total: | 1,472 |

Ten project applications were reviewed by the KHLCF Board in FY 2019, and all received some level of support. Support totaling \$1,581,520 were approved for 1,372 acres for projects in Clark, Hancock, Henry, Hart, Wayne and Powell counties.

However, due to an overall decline in revenue coupled with General Fund sweeps, these awards were made contingent upon future available funding. Some funds were available from refunds from 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.

| GRANTS AWARDED | COUNTIES | AWARD |
|---|----------|-------------------------|
| Competitive (local governments, colleges, land trusts, etc.) | | \$781,200 |
| Clark County Fiscal Court—Lower Howards Creek—Smith Tract | Clark | \$323,200 |
| Western Kentucky University—Mucignat Tract | Hart | \$260,000 |
| Hancock County Fiscal Court | Hancock | \$38,000 + \$160,000 |
| State Agency Grants | | \$800,320 |
| Office of Kentucky Nature Preserves—Eastview—Ashlock | Hardin | \$35,000 + \$380,000 |
| Office of Kentucky Nature Preserves—Gritter Ridge | Powell | \$255,000 |
| Office of Kentucky Nature Preserves—Drennon Creek | Henry | \$40,000 |
| Wild Rivers Program –Little South Fork—Garrison III | Wayne | \$64,320 |
| Wild Rivers Program –Gritter Ridge | Powell | \$26,000 |
| GRAND TOTAL | | \$1,581,520 |

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:



- Campbellsville University was awarded the annual Kentucky Heritage Land Conservation Fund Stewardship Award in recognition for their outstanding environmental education programs at Clay Hill Memorial Forest in Taylor County. Clay Hill partnered with the KHLCF this year to sponsor an AmeriCorps Environmental Education member, who lead programs at natural areas and libraries throughout the Green River region
- Over 51,500 people hiked at Lexington's Raven Run Nature Sanctuary in FY19. Scientific research included studies of the invasive Emerald ash borer and European paper wasp by the University of Kentucky Department of Entomology. The UK Lewis Honors College set up vegetative monitoring plots to assess impacts of invasive bush honeysuckle on spring ephemeral wildflowers.
- Since January 2019, the KSU Environmental Education and Research Center in Henry County has hosted over 600 individuals of all ages: three high school field trips; seven middle school field trips; seven elementary school field trips; 20 non-formal/community field trips; one Boy Scout Troop camp-out; Educational capacity continues to grow at the EERC as programming is developed and outreach efforts continue.
- The William Whitley House State Historic Site was transferred to Lincoln County Fiscal Court in March 2019. Over 1,000 students have visited this year. A migratory bird watching event was held in May. Milkweed is growing on Sportsmans Hill for monarch butterflies, and a new wetland will be installed in the coming months.

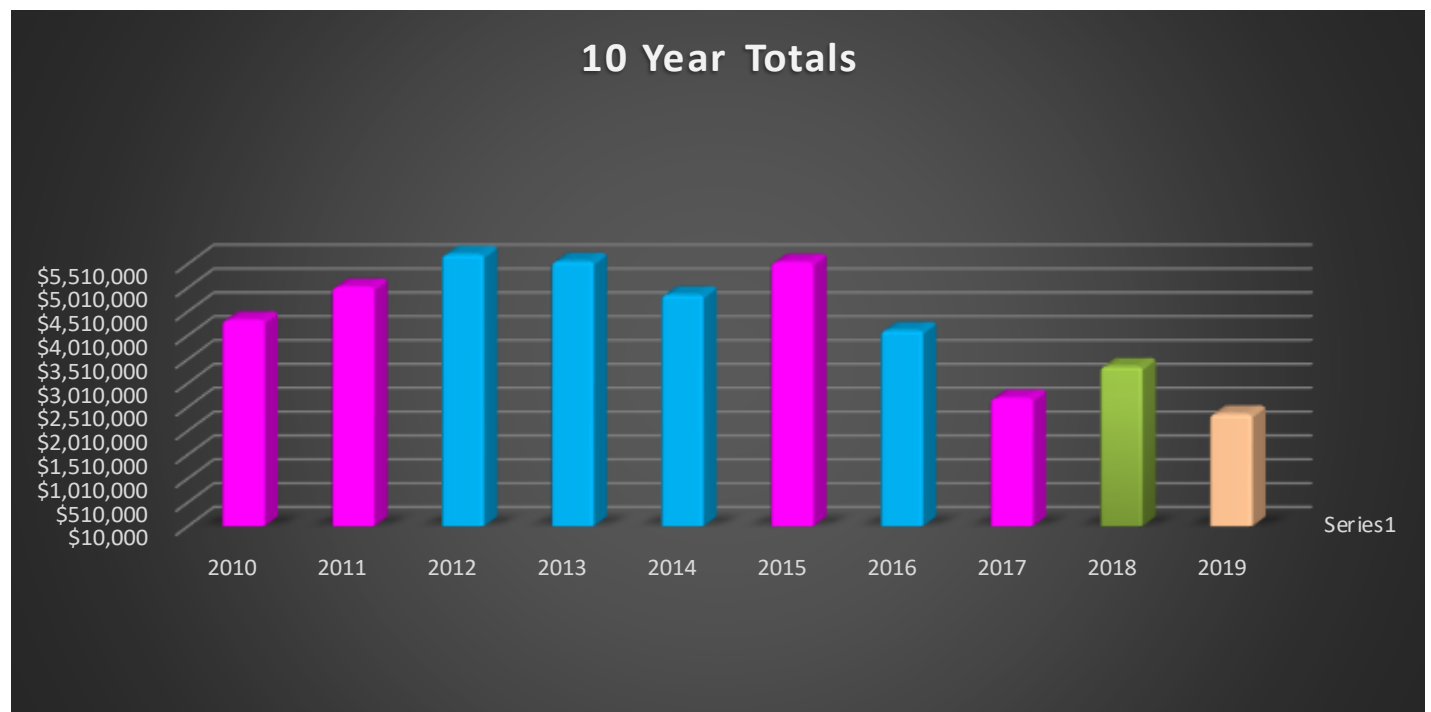


Kentucky Heritage Land Conservation Fund—Annual Revenue

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 FY2019 the unmined mineral tax only generated \$333,392 all of which was transferred to the Office of Energy Policy. Therefore of the \$2,369,141 in receipts generated by these sources, the KHLCF retained \$1,885,750.

However, in Fiscal Year 2019 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 2019 general fund sweep, the annual revenue for the KHLCF was \$610,659 to the negative. Awards made and projects completed in FY 2019 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.

| 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 |



Conserving Kentucky's History



Tebb's Bend Battlefield in Taylor County and the Green River State Natural Area at the Rowlett's Station Battlefield are KHLCF areas that protect important Civil War sites as well as riparian buffer along the Green River—home to one of the nation's most diverse mussel populations.

Kentucky has a rich human history tied to the land. While the KHLCF focuses on natural areas, rare species, wildlife viewing, and hiking, in many cases our natural areas also protect important historic resources. In fact, this year our efforts were recognized by the [American Battlefield Trust](#)—the nation's leading nonprofit organization dedicated to preserving America's Civil War and Revolutionary War battlefields. The KHLCF received the "State Preservation Leadership Award" our work preserving additions to the Perryville Battlefield, Blue Licks Battlefield, Camp Nelson National Monument, Tebb's Bend Battlefield, Lincoln Boyhood Home, and many other significant historic sites.



The KHLCF joined the American Battlefield Trust on this hike on the Perryville Battlefield, which protects important habitat for the monarch butterfly as well one of the most contiguous battlefields in the nation. The KNP is working with Kentucky State Parks to manage this habitat, and conserve and additional 384 acres in 2020.



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 nature scenery. Conserving these high quality areas often reduces the risk that 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.



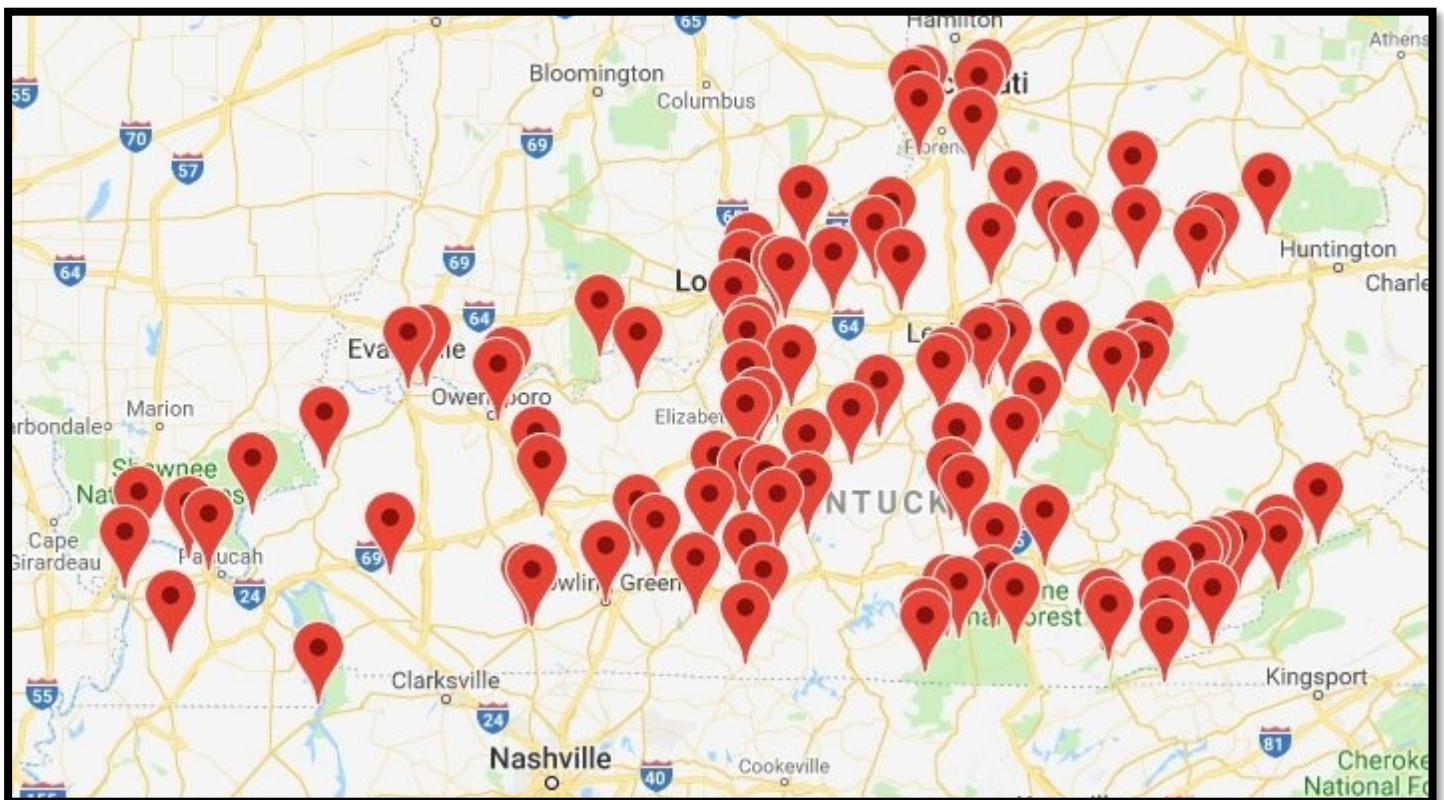
Habitat management in the KNP system requires specialized expertise in ecosystem restoration techniques such as prescribed burning and invasive plant control. Activities range from research on the viability of a rare species population, to creating educational materials for the public, to building and 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 developing new trails in the future.

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



Find your new favorite hiking spot now at

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

Our Trail Manager is also updating signage at trailheads and working on improving the information found in kiosk at parking areas, in addition to getting the trails themselves in better shape.

Hiking on State Nature Preserves

Kentucky River Palisades/Tom Dorman State Nature Preserve

Tom Dorman SNP in Garrard County is a short drive from Lexington and lets users see the beauty of the Kentucky River Palisades and the surrounding forests. This year, KNP has added an additional 1.3 miles of trails that will soon lead to a new parking lot off Highway 27. The existing parking lot is still being maintained, as is the trail-head and areas where the power line crosses the trails. Hazardous trees were removed and trees across the trails were cleared. The trails and parking lot areas are now



on a routine maintenance schedule, which allows us to make any necessary repairs and keep trails cleared.



Little Sandy/Jesse Stuart State Nature Preserve, Greenup County

Jesse Stuart SNP in Greenup County has an extensive trail system with close to 10 miles of trails, and KNP has made it a priority to make the trails more user-friendly. The trails have been cleared of downed trees and pruned. The parking lots have been cleared of overgrown foliage and we plan to install a new fence next year. We will also install a kiosk at the trailhead with updated trail maps and information specific to the area. Later a bridge will be replaced to make the trail safer and more accessible to

hikers. Trail were rerouted to avoid hazards and slippery slopes. A new sign was added to the parking lot and trail signage will be added later this year. The trails will be blazed and maps will be updated to assist users.

Metropolis Lake State Nature Preserve

Metropolis Lake SNP in McCracken County consists of a 123-acre tract containing forested uplands, Ohio River floodplain, and 50-acre natural floodplain-lake. The MacAdam Fund allowed us to do significant work at this site last year, and as a result, the area is in great shape. The area is used recreationally for hiking, fishing, and outdoor education. A new parking lot sign will be added to the property soon while routine maintenance is performed.

Hiking on State Nature Preserves

Quiet Trails State Nature Preserve

Quiet Trails SNP in Harrison County is another short drive from Lexington and offers visitors five miles of hiking trails. New signage was added this year at the parking lot to make the area a little easier to identify. Future plans call for water dips to be installed and for signage upgrades on the trails. This year, we will be cutting a tree at the end of Deep Hollow Trail and removing barbed wire along the trail for safety. Guided hikes are frequently led by our staff and local volunteers in Harrison County. Trail access to the Licking River allows our staff to provide additional educational programs about the aquatic life, including the rare mussels found nearby.

Pilot Knob State Nature Preserve

Hiking up the trail at Pilot Knob SNP allows users to reach the pinnacle where it is believed Daniel Boone first looked upon the Bluegrass region of Kentucky. The 360-degree view allows hikers to look westward into the Bluegrass region toward Lexington and east toward the Cumberland Plateau region. Pilot Knob SNP is one of the most used trails in the area. Trail reroutes are continuing when necessary, new signage has been installed in the parking lot, and trails are kept clear of downed trees. We are in the process of making the first creek crossing more user-friendly and blazing the trail system with a new uniformed marker. In the next few months, we will add new trail signs and a new kiosk for specific information about this preserve.

Brigadoon State Nature Preserve

Brigadoon SNP trail system was put on a regular maintenance schedule which allowed us to cut and remove hazardous snags along the trail and prune overgrown trails. KNP is fortunate to have a very dedicated volunteer here. We are happy to now be able to assist him more often. We were able to install a new sign in the parking lot to identify our preserve and a new kiosk will be installed this year. The preserve provides our users with a great, easy hike.



Hiking on State Nature Preserves

Hall Hill/Vernon Douglas State Nature Preserve This preserve can easily be found off the Bluegrass Parkway and offers the public 4.5 miles of hiking trails. Vernon Douglas SNP offers hikers a moderate hike up to the ridge top that descends down to creek, before a short spur that finishes at the pinnacle. We have been able to keep the trails cleared from fallen trees and blazed to assist hikers. This year, we were able to replace three log bridges at the beginning of the trail with the help of volunteers from our Earth Day event held in April. We also were able to perform some side hill maintenance on the trails along with pruning and litter cleanup. A new sign was added to the parking lot that is visible from the parkway. We also added a new bridge at a creek crossing, thanks to local Boy Scouts.



Bad Branch State Nature Preserve

Bad Branch SNP is one of our most used trail systems. Visitors come from all over the state and country to see Bad Branch Falls and hike up the south face of Pine Mountain to High Rocks. We built a set of steps last year at the preserve to help with erosion issues, and this year we will be replacing two foot bridges along the trail that are at the end of their useful lives. The bridge replacements are scheduled for October of this year. A new sign has been installed in the parking lot. Thanks to the continued assistance from the Cumberland Chapter of the Sierra Club, which has helped maintain this site with regular volunteer days.

Blanton Forest State Nature Preserve

Blanton SNP in Harlan County is another amazing place to hike on Pine Mountain, and to enjoy the largest remaining old-growth forest in Kentucky. The trail system makes you feel as if you have stepped back in time. This year, KNP was able to repair a bridge on the trail that was beginning to fall into disrepair. We credit the Kentucky Natural Lands Trust for coordinating an AmeriCorps team to aid us by carrying material to the bridge. A new kiosk and sign have also been installed.

Hiking on State Nature Preserves

Upcoming trail projects:

- Bad Branch SNP: Two bridge replacements.
- Jesse Stuart SNP: Bridge replacement, trail blazing, installation of a fence around the parking lot, a kiosk, and trail signage.
- Kentucky River Palisades SNP: New parking lot, trail signs, kiosk, and additional loop trail to connect trails.
- Blanton Forest SNP: Installation of a bench at the end of Watts Creek Trail and an informational sign.
- Quiet Trails SNP: Installation of a new kiosk and the repair of drainage issues.
- Pilot Knob SNP: New blazes and stabilization of a creek crossing.
- Brigadoon SNP: Installation of a new kiosk and the re-blasting of trails.
- All areas will receive updated signage.



KNP Trail Specialist Doug Wilder instructs other agencies on equipment safety at workshops throughout the state, like this one at Blue Licks Battlefield State Park in 2019.



Habitat Management on KNP Lands

We often rely on partnerships with other state, federal, and non-profit organizations to reach our goals. Since 2016, KNP has relied on these partnerships to help implement prescribed fire activities, remove invasive species to improve habitat for native animals and plants, and educate the public on conservation issues in Kentucky. In 2019, we worked with the Kentucky Division of Forestry (KDF) to implement several prescribed fires on state natural areas and nature preserves. Working together, we were able to provide training and new experiences for staff while having one of our most productive years of burning. More than 575 acres on 9 natural areas were burned. In addition, a grant received by the National Fish and Wildlife Foundation allowed KNP to use KDF seasonal firefighters to install firebreaks and to assist with mid-story removal projects on several natural areas. We also partnered with Western Kentucky University, Kentucky State University, Kentucky State Parks,

Natural Areas Manager Josh Lillpop with KDFWR's Michaela Rogers and KYTC's Ellen Mullins at the regional Monarch Joint Venture Meeting; tree planting on the Green River State Natural Area and Blackacre State Nature Preserve; Rare Plant Conservation Supervisor Tara Littlefield leading a staff training at Blue Licks State Park Nature Preserve; Green River Manager Heather Drake with a researcher at Flat Rock Glade State SNP.





Pine Barrens Restoration

KNP received a two-year grant from the National Fish and Wildlife Foundation to restore shortleaf pine barrens habitat on the Cumberland Plateau. The project focuses on three nature preserves and includes practices like 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. These photos are examples of what KNP has accomplished on these significant ecological communities.



KNP Pine Mountain Manager Kyle Napier has led the restoration of Hi Lewis Pine Barrens State Nature Preserve under a National Fish and Wildlife Foundation grant project KNP initiated in 2017.

Prescribed Fire on KNP Lands

The suppression of natural fire events and the introduction of invasive species have put many native fire-dependent species at risk of disappearing. Kentucky Nature Preserves has a long history of using fire to control invasive species, manage successional stages of vegetation, improve soil chemistry, and promote fire-dependent plant communities. The application of this tool must be done in an appropriate method to facilitate the desired outcomes while also accounting for public safety, budgetary constraints, and management goals. All KNP prescribed fires are led by KNP burn bosses certified by the Kentucky Prescribed Fire Council. In 2019, KNP had its most productive spring fire season on record thanks to increased staff with appropriate training, and an expanded partnership with the Kentucky Division of Forestry. Thirteen burns were implemented on nine natural areas or nature preserves in 10 counties for a total of 575 acres.

Bouteloua Barrens State Nature Preserve

Size: 260 acres

County: Lincoln

Burn Unit Size: 25 acres

Objectives: Maintain grassland habitat, reduce woody encroachment of cedars, and facilitate invasive species treatments.

Rare Species: *Onosmodium molle* ssp. *hispidissimum*, *Carex crawei*, *Bouteloua curtipendula*, *Viola septemloba* var. *eggelstonii*, *Spiranthes magnicamporum* and *Lespedeza capitata*

Bouteloua Barrens State Nature Preserve protects the largest native grassland remnant in the Bluegrass region of Kentucky and one of



the largest known in the state. It is named for the side-oats gramma grass (*Bouteloua curtipendula*) that co-dominates several of the big and little bluestem grasslands on the preserve. Like many of Kentucky's natural grassland communities, fire plays an important role in reducing woody trees, invigorating grasses and forbs, and improving mycorrhizae fungi beneficial to native grassland species. Fire was used to control invasive species and discourage woody vegetation that would shade out sun-loving prairie plants.

Larue County Environmental Education Center

Property Size: 225 acres

County: Larue

Burn Unit Size: 40 acres

Objectives: Kill/Injure woody vegetation, improve nesting habitat for songbirds and ground nesting birds, facilitate invasive treatments, improve native grass/pollinator plantings.

Prescribed Fire on KNP Lands

Rare Species: Loggerhead Shrike The Larue County Environmental Education Center, also known as Pearman Forest, is owned and managed by the Larue County Fiscal Court under a KHLCF conservation easement on the property. KNP works with the county to implement sound habitat management practices that benefit rare or declining grassland species and provide educational opportunity for local students and families. This particular site had woody trees, briars, and several invasive species invading the grassland, and the county was in need of assistance to implement a prescribed fire. KNP was able to implement a fire and work with the county to identify follow-up herbicide treatments and management actions to help maintain a good example of a native warm season grassland. The area is visited by locals who hike the trail and youth groups from local schools, clubs, and churches. This partnership aims to improve the county's knowledge and ability to effectively manage the area and increases quality examples of Kentucky grassland plants and animals.



Sinking Creek State Natural Area

Natural Area Size: 300 acres

County: Pulaski

Burn Unit Size: 26 acres

Goals: Control invasive species and facilitate herbicide treatments, improve natural grassland species composition, injure/reduce Virginia pine and encourage shortleaf pine.

Ecological Significance: Rockcastle Wild River Corridor This area was acquired through the Wild Rivers program and hosts high-quality drainages with exceptional amphibian and salamander populations scattered amongst hemlock and rhododendron canopies. The ridge top is an older reclaimed strip filled with numerous invasive species, but also has several indicators of an existing natural seed bank. Logistically, this area has proven difficult to burn due to the remote location, and the need for a large amount of fuel and personnel. This year, however, the Kentucky Division of Forestry provided the additional resources to help conduct a prescribed fire. KDF installed firebreaks using wildfire suppression equipment, and several apprentice burn bosses developed a burn plan under KNP mentorship. The burn was implemented cooperatively, providing valuable training and experience for both agencies. This management practice was also part of a larger national Fish and Wildlife Foundation grant used to promote better management and regeneration of pine barrens within the Cumberland Plateau.



Prescribed Fire on KNP Lands

Green River State Natural Area

Natural Area Size: 140 acres

County: Hart

Burn Unit Size: 25 acres

Goals: Reduce dead thatch on site for invasive treatments. Encourage Callery Pear sapling mortality

Rare Species: None. The site is important for grassland birds, bats, and pollinators. This area was acquired in order to protect and promote riparian reforestation along the Green River, a biodiversity hot spot that has

been affected by land-use practices like farming and deforestation. Efforts on the site aim to replant the riparian buffer and promote pollinator habitat in the upland fields to compensate for the large agricultural presence in this part of the state. Due to the removal of agriculture practices immediately after the purchase of the property, an explosion of Callery Pear occurred. Within five years, a thicket of undesirable tree species developed. A burn was conducted in an effort to facilitate removal of the pears and gauge effectiveness. Follow-up treatments and removal of trees from the area will further improve the amount of available pollinator habitat on the site and allow for the control of invasive trees. This site is part of a longer-term restoration project and fire will be used regularly on the site.

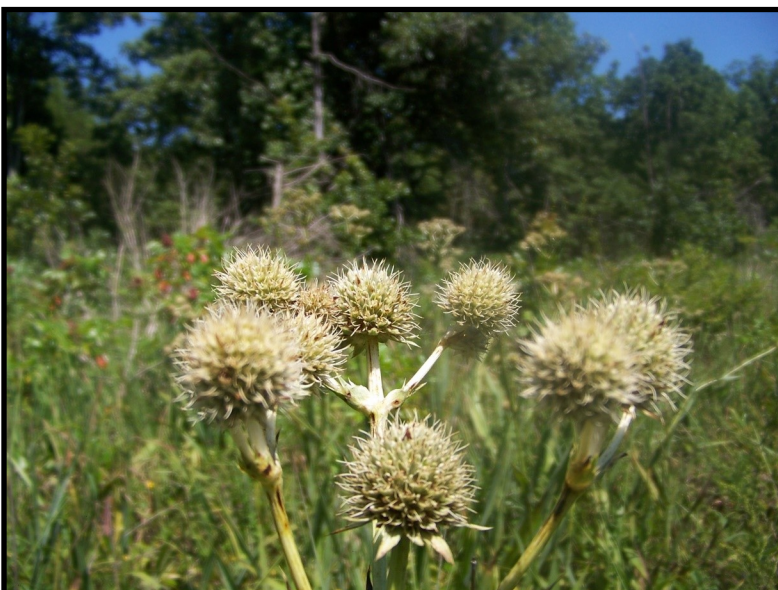


Eastview Barrens State Nature Preserve

Natural Area Size: 120 acres

County: Hardin

Burn Unit Size: 16.9 acres



Goals: Habitat improvement for rare species by opening woodlands, thinning the canopy, and preventing woody stem advances into currently open areas. Increasing native grasslands and stimulating the germination of rare plant species. **Rare Species:** A priority species for management onsite is the Rattlesnake Master Borer Moth (*Papaipema eryngii*) which depends on the fire dependent Rattlesnake Master (*Eryngium yuccifolium*) for survival. This species of moth is a candidate for listing with USFWS. The oak barrens community at Eastview Barrens provides habitat for several

Prescribed Fire on KNP Lands

other rare species. These include silky aster (*Symphotrichum pratense*), skeleton grass (*Gymnopogon ambiguous*), prairie gentian (*Gentiana puberulenta*), plains frostweed (*Helianthemum bicknellii*), Eggert's sunflower (*Helianthus eggertii*), long-haired hawkweed (*Hieracium longipilum*), globe beaked-rush (*Rhynchospora globularis*), fringed nutrush (*Scleria ciliata*), Great Plains ladies tresses (*Spiranthes magnicamporum*), glade violet (*Viola septemloba* var. *egglestonii*), and the slender glass lizard (*Ophisaurus attenuatus*). Eastview is of particular importance due to the presence of numerous rare plant species, communities and insects. Fire serves a major role in helping maintain open canopy and allowing these rare species to persist. When dealing with sensitive habitat, it's important to never burn the entirety of available habitat at any one time. Special consideration must be given to provide refuge areas for insect populations to recover and recolonize the newly burned areas.

Blue Licks State Park Nature Preserve

Natural Area Size: 52.71 acres in three tracts

County: Robertson and Nicholas

Burn Unit Size: Two units (8 acres, 8.5 acres)

Goals: To enhance Short's Goldenrod (*Solidago shortii*) habitat and stimulate/release native fire-dependent plants by reducing woody competition and suppressing exotic species.

Rare Species: Short's goldenrod (*Solidago shortii*), Great Plains ladies'-tresses (*Spiranthes magnicamporum*), and Yellow Gentian (*Gentiana alba*) The preserve was dedicated into the nature preserves system for the protection of Short's goldenrod (*Solidago shortii*), a rare member of the aster family. Until a recent discovery of the species in southern Indiana, it was known only to exist in approximately 13 sites within two square-miles of Blue Licks Battlefield State Park in Robertson, Nicholas and Fleming counties (KSNPC 1997). Because of its extremely limited known range, small population, and potential threats to its habitat, the U.S. Fish and Wildlife Service listed Short's goldenrod as federally endangered in 1985 (USFWS 1985). The species has been considered a state endangered species since 1981 by the KNP and the Kentucky Academy of Science (KSNPC 1996). KNP is using fire to create and improve the available habitat for Short's goldenrod and encouraging many other sun-loving plants at the same time.



Prescribed Fire on KNP Lands

Red River State Natural Area

Natural Area Size: 301 acres

County: Wolfe

Burn Unit Size: 250 acres

Goals: Reduce woody debris throughout the woodland, remove dead thatch in grassland to facilitate herbicide application, and reduce mid-story stem density of white pine and maple throughout woodland.

Rare Species: Spotted Skunk (*Spilogale putorius*), green salamander (*Aneides aeneus*)



The Red River SNA is part of our pine barren restoration program. A prescribed burn was completed this spring with assistance from the Kentucky Division of Forestry to discourage the white pines and red maples that have flourished in the understory with the absence of fire. Long-term goals aim to improve the amount of shortleaf pine on the site through plantings and continued fire to increase the amount of herbaceous vegetation found throughout the woodlands. These activities will benefit not only the plant communities, but also the rare spotted skunk which KNP documented on the site in 2017.

Little South Fork State Natural Area- Steele Hollow Management Unit

Natural Area Size: 1708.78

County: McCreary/Wayne

Burn Unit Size: 180.5 acres

Goals: Encourage development of open fire tolerant pine/oak woodland, discourage fire intolerant species, and reduce fuel load while allowing for firefighter training.

Rare Species: The property was purchased and is managed to benefit bat species like Rafinesque and Indiana bat which use a variety of foraging habitats like open woodlands, forest edge, and early successional habitat. Other rare species may exist, KNP is currently conducting biological inventories to identify additional species of concern.



The Little South Fork SNA sits within the Cumberland Plateau, a part of the state that once supported shortleaf pine and has a long history of fire. A portion of the site was heavily logged prior to acquisition and fire is being used to help promote fire tolerant tree species that would have historically occurred in that area. The Kentucky Division of Forestry assisted KNP on this burn and had an apprentice burn boss lead the burn. This provided a great opportunity for both agencies to work together and learn from each other.

Kentucky Wild Rivers Program

To preserve the unique scenic, fish and wildlife, botanical, geological, cultural and recreational values of its most pristine rivers, the Kentucky Wild Rivers Act of 1972 established nine wild rivers corridors, including specific sections of exceptional quality and aesthetic character:

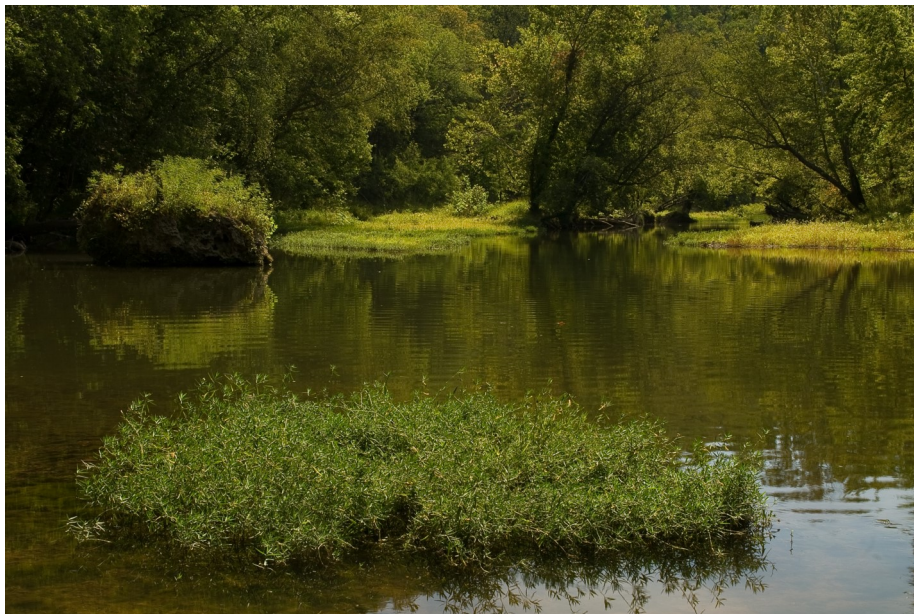
- | | |
|---|--|
| • The Cumberland River | • The Red River |
| • The Green River | • The Rockcastle River |
| • The Big South Fork of the Cumberland River | • The Little South Fork of the Cumberland River |
| • Rock Creek | • Bad Branch |
| • Martin's Fork | |

Each Wild River is actually a linear corridor encompassing all visible land on each side of the river up to a distance of 2,000 feet.

While much of the land surrounding the wild river corridors is privately owned, public land includes:

- Mammoth Cave National Park
- The Red River National Geological Area
- The Big South Fork National Recreation Area
- The Daniel Boone National Forest
- Bad Branch State Nature Preserve
- Martin's Fork State Nature Preserve
- Little South Fork State Natural Area
- Cumberland Falls State Park

Not only do these free-flowing waters provide important habitat for native species, but wilderness recreation and paddling set Kentucky's Wild Rivers apart. These scenic settings are havens for people seeking solitude and tranquility in nature. Their waters provide healthy sport fisheries, cool pools for swimming, serene floats, and in some cases, white-water rapids for more adventurous paddlers.



Environmental Education and Outreach

KNP has been refining their Environmental Education Program, and recently hired a full-time outreach and education specialist. We have been able to dedicate more time to teaching our youth about the importance of the natural world around us and the great responsibility of taking care of it.



The year 2019 has been the year of citizen science for Kentucky Nature Preserves. We have worked to establish a volunteer system, and have hosted many community and educational events.

[See our website to get involved!](#)



KNP staff led many environmental education programs this year with KHLCF partners, including:

- Three water quality and habitat assessment days
- Four iNaturalist training programs
- A rare plant and habitat appreciation day
- A freshwater mussels of Kentucky workshop
- Nature at Night: Moth surveys
- Three landsnails of Kentucky training workshops
- 18 Library programs
- 21 school visits and community events
- A KY Excel partner citizen science hike
- The Wildflower Weekend at Natural Bridge State Park
- Two KNP Earth Day celebration activities and cleanup days
- Louisville Zoo Earth Day Party for the Planet

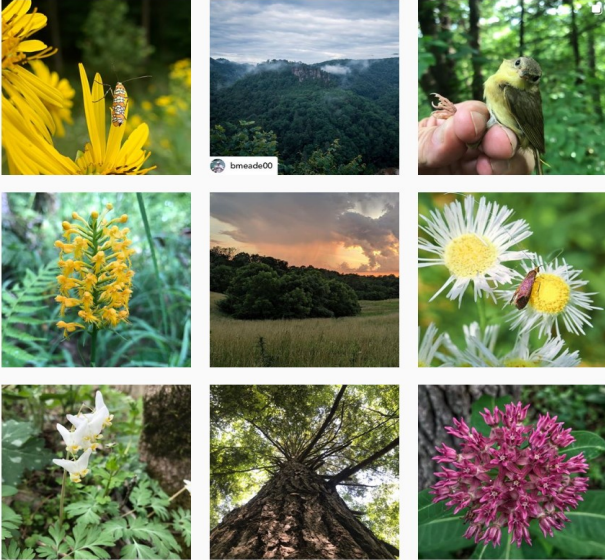


Environmental Education and Outreach



Environmental Education and Outreach

Presence on Social Media



Since 2018, we have almost tripled our audiences and reach on social media. We have created an environment for people to submit photos through photography contests, ask questions, discover new natural areas to visit, learn about our staff, learn new species, share outdoor/recreation events, volunteer, and learn about the mission and work of the agency.



[Facebook.com/KentuckyNaturePreserves](https://www.facebook.com/KentuckyNaturePreserves)



@Kentucky_nature_preserves

Kentucky Nature Preserves protects the best remaining examples of Kentucky's natural heritage and offers a wealth of opportunity for research. The preserves can be considered living museums of undisturbed natural communities. Our natural areas are also utilized for organized, hiking, painting, birding, and other recreational events put on by local schools and recreation groups. KNP issued over 20 research and user permits throughout 2019 that include (but not limited to):

- *Kentucky Seasons*, an upcoming KET documentary showcasing the beauty of Kentucky;
- Identifying Lepidoptera populations
- Fish genetic studies
- Trail Runs
- Nature and Art workshops
- Creating living arboretum collections
- Lichen, Butterfly, Golden Mouse, Spotted Skunk and other population studies.
- Tick Disease research



If you just can't make it outside, you can get a glimpse of KNP's natural areas on our [YouTube page](#), with videos from Western Kentucky University's PBS affiliate, including:

- *Kentucky Naturally*, our EMMY award-winning 30-minute program featuring KHLCF sites throughout the state from Pine Mountain to the Mississippi River.
- *Kentucky Wild Rivers: Secrets of Discovery*, a 30-minute program featuring all nine Wild River corridors.
- Extras from both programs, featuring Audubon Wetlands, Martin's Fork, Blanton Forest, and many other sites.
- Links to KNP biodiversity segments from KET's *Kentucky Life*.

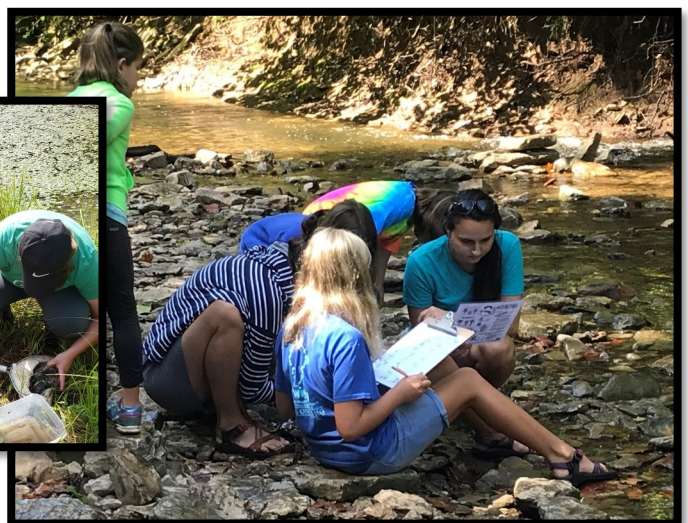


Environmental Education and Outreach

Citizen Science Opportunities

Children and adults across the Commonwealth have contributed valuable scientific data through our Kentucky Land Snail, iNaturalist, and Water quality/habitat assessment Programs.

- The [Kentucky Land Snail Project](#) provides opportunity for citizen scientists to participate in a ground-breaking biodiversity study focusing on terrestrial molluscs. In Kentucky, snails are a food/calcium source and important to the food chain. While there is global evidence that landsnails are more important to the ecosystem than we imagined, we don't know much about Kentucky species. This projects allows the average hiker and special interest groups to collect unoccupied shells to be identified by biologists, thus mapping the biodiversity of landsnails across the state.
- Hikers, birdwatchers, and naturalists alike can use [iNaturalist](#) as a tool to better their identification skills as well as contribute valuable biodiversity data to science! This app connects the largest community of naturalists in the world! Download it and join our project **Documenting the Natural Heritage of Kentucky**.
- Sign up for our next [Water Quality and Habitat Assessment Day](#). Participants will learn about pollution, test the pH, and sample for macroinvertebrates to determine the overall quality of a stream and its ability to support wildlife. This data will be reported to Watershed Watch Kentucky.
- **Follow us on Facebook to be informed of our next event at**



www.facebook.com/NaturePreserves/

Kentucky Land Snail Project

Kentucky snails come in many shapes and sizes, and KNP is working to identify these often overlooked and understudied species. In the first six months of this two-year project over 60 citizen scientists have collected snail shells at 205 sites. So far we've identified:

- 457 new county records
- four Kentucky state record;
- two species potentially new to science
- and genetically confirmed that *Anguispira rugoderma* and *Anguispira knoxensis* are the same species, and not at-risk of extinction.



This jar contains over 1,700 snail shells, many of them only a few millimeters wide, all collected from the base of a single maple tree by KNP Zoologist Shelby Fulton.

Nocturnal Insect Biodiversity



KNP zoologists use a black light to attract moths to a white sheet where they can be identified. There are over 2,000 species of moths in Kentucky, ranging from the very small (a wingspan of about 3 mm) to the very large (a wingspan of about 150 mm). A recent survey at Floracliff Nature Sanctuary State Nature Preserve documented over 100 species in a single night.

Bird Banding and Telemetry Project

In the summer of 2019 KNP began an innovative 10-year bird inventory project with [Bernheim Arboretum and Research Forest](#). We installed three Cellular Tracking Technologies (CTT) SensorStations, 25 CTT Nodes, and deployed CTT LifeTags™ on five species—Purple martin, Kentucky warbler, Wood thrush, Indigo bunting, and Louisiana waterthrush- establishing Kentucky's first station in the global [MOTUS Wildlife Tracking System](#).



Kentucky warblers and Indigo buntings banded at Bernheim in this project.



KNP's Maddy Heredia and Zeb Weese with Bernheim's Andrew Berry, who are coordinating this project.

Protected natural areas are increasingly important for migratory songbird populations as habitat loss increases throughout their ranges. With this technology we'll get very specific information on the arrival and departure of these neotropical migrants as well as learn more about their use of habitat during the breeding season. Data collected daily will exponentially increase our understanding of their patterns and facilitate networking with other researchers using MOTUS. In



years to come, it will also provide outreach and education opportunities to Bernheim's visitors.

LifeTags are tiny solar-powered transmitters that communicate with the MOTUS network through the stations and nodes installed at Bernheim. They allow birds to be tracked through multiple migrations, year after year. The sub-gram weight and battery-free design of allows for tagging smaller animals while not compromising the duration of the project. Each LifeTag contains a globally unique digital ID, allowing researchers to discern between individual animals and differentiate between projects and studies. Banding on this project is done by KNP's federally permitted bird-banders, Zeb Weese and Maddy Heredia, with field assistance by Andrew Berry, Bernheim's Conservation Director. While they are experienced banders, CTT's Michael Lanzone trained them on safe deployment of Lifetags

Hand-held antenna are used with cellphone apps to track birds with Lifetags, like this Louisiana waterthrush. KNP and Bernheim are working to develop environmental education programs focusing on these birds.



Aquatic Animal Species Conservation

Kentucky ranks fourth nationally in aquatic biodiversity with approximately 245 native fishes, more than 100 different kinds of freshwater mussels, and 60 species of crayfish. The Cumberland and Green rivers, both part of the Kentucky Wild Rivers system, are two of the most biologically diverse. KNP has worked in these drainages on several projects recently to document, protect, and conserve imperiled species.



Green River Dam Removal Project

KNP aquatic staff, led by KNP Zoologist Mike Compton, continues 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, 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 infrastructures. Intensive data gathering from approximately 75 km of river are obtained for fish, mussels, macroinvertebrates, riparian zone vegetation, and instream habitat. Preliminary results indicate that the river has a relatively high biological diversity despite being impounded for many decades. However, the community structure is comprised mostly of species tolerant of impoundment and often associated with disturbed habitats. Continued monitoring is expected for the next several years and it is expected the community structure will shift to more natural communities associated

Aquatic Animal Species Conservation

with a free-flowing river.

Kentucky Creekshell (*Leunio 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 data has suggested the species might be more widespread and actually occur in the Cumberland River and within Tennessee. The species is still considered uncommon to rare across its range, but the population is poorly understood. KNP staff is 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. KNP staff are also involved in a variety of other aquatic projects:



- Status review and population size estimate of the federally endangered Relict Darter in western Kentucky. This is an ongoing project and the estimated population size of the species is approximately 15,000-20,000 individuals within approximately 12 km of stream in the Bayou de Chien system.
- Survey of the Eagle Creek mussels in the central Kentucky. Eagle Creek is a tributary of the Kentucky River and has historically had a rich assemblage of mussels, however the data for the system is dated and the status of the mussel fauna is poorly understood.
- Aquatic surveys of the Nolin River associated with the Rose Barrens property in central Kentucky. To date, one new fish species, Spotted Darter, has been discovered from this section of river.
- Species Status Assessment (SSA) of two federally endangered mussels, Fluted Kidneyshell and Slabside Pearylmussel. SSAs are comprehensive reports that incorporate both historical and current data associated with a species, and threats and future projections associated with land use changes, climate change, and population demographics. The SSAs provide a consistent and objective framework to allow resource managers to make determinations of the species status based on all the available data.
- Monitoring of the Moore Creek Cumberland Papershell population associated with a recent coal mining operation and the augmentation of the Cumberland Papershell population in Mill Branch in Knox County, Kentucky. Moore Creek is a stream threaten from land-use activities and individuals from the stream were tagged and relocated into the adjacent Mill Branch which was restored 10 years ago. Monitoring for 2019 indicated that the mussel still persists within Moore Creek and that some of the relocated mussels in Mill Branch survived and appear to be established.
- Analysis of the mountain headwater fish communities in the Cumberland and Kentucky rivers in eastern Kentucky and Tennessee, with a focus on the federally listed species, Blackside Dace, Kentucky Arrow darter, and Cumberland darter. Working with USGS partners, an assessment of fishes is being made and associated with environmental variables to enhance our understanding of the impacts within a stream system and the effects they have of fish communities.

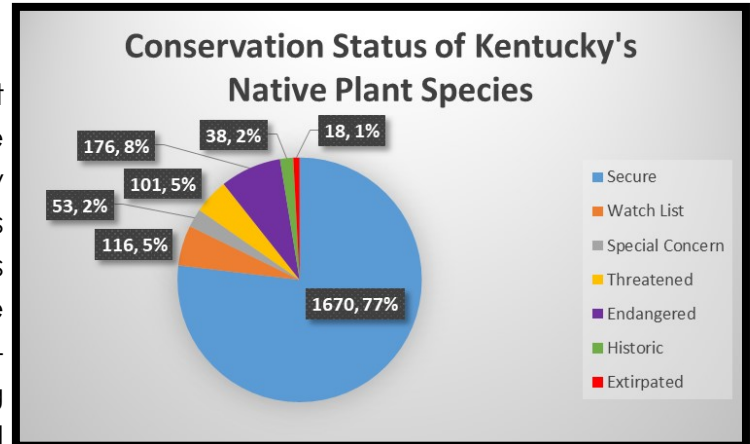
Rare Plant Conservation Section

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.

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. We collaborate with partners across the state, including universities, state and federal agencies, land trusts and nonprofits to assess rare plants. This list, along with photographs, distribution maps, herbarium specimens, and other associated information is available online via our rare plant database and biological assessment tool. In 2018, we revised our rare plant list, which can be accessed on our website at EEC.ky.gov. Currently, we track 176 state endangered plants and 101 state threatened plants, and provide detailed information on an additional 225 plants.



KNP conducts annual monitoring of the federally endangered running buffalo clover on several natural areas 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 management studies and by surveying for new populations. *Thanks to our partnerships, running buffalo clover has been proposed for delisting, and by 2021 will likely no longer be federally endangered!* However, we will continue to manage appropriate habitat on our natural areas and nature preserves to ensure our populations remain secure.

Rare Plant Conservation Section

~ Surveys ~ Monitoring ~ Management ~ Seed banking ~

~ Propagation ~ Introductions ~ Research ~ Education ~

Globally rare plant surveys on the Wild Rivers of Kentucky's Cumberland Plateau Region

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 two years has been on Kentucky's populations of Barbara's Buttons (*Marshallia grandiflora*), Rockcastle Aster (*Eurbyia saxicastellii*) and Tennessee Pondweed (*Potamogeton tennesseensis*). We also collect



data on threats such as invasive species. Data generated from this project includes current, accurate information on the distribution, ecology, conservation status, threats and conservation strategies of these at risk plants. This information is then shared with our partners and used to make science-based conservation decisions on federal and state endangered species lists, habitat management, and conservation planning.



Kentucky Forest Biodiversity Assessment Program

In partnership with the Kentucky Department of Agriculture, KNP botanists and ecologists have been conducting surveys of rare plants in forested natural communities across the state. In 2019, we conducted forest assessments in approximately 20 percent of Kentucky's counties and plan to complete the statewide inventory after five years. We have been focusing on rare and conservative forested plant

surveys, forest community diversity and structure, herbaceous diversity, forest medicinal/species of commercial concern, invasive species, and other threats.



Natural area and floristic inventory projects on National Forests

In partnership with the Daniel Boone National Forest and Land between the Lakes, KNP botanists and ecologists have been conducting natural area inventories and rare plant/community surveys in Kentucky's National Forests. In 2019, within the Daniel Boone National Forest, we focused our efforts in the Red Bird District,



conducting mostly rare plant surveys and forest community assessments. Within the Land Between the Lakes, we assisted with the price's potato bean surveys,

surveyed and mapped high quality grassland remnants, and helped to coordinate plant conservation efforts. These efforts will help to conserve rare plant and communities on these important conservation lands and biodiversity hot-spots.



Updated botanical inventories conducted on state nature preserves

In an effort to update our rare plant 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 2019. This information is updated in the heritage database and preserve management plans and is used to help guide land management.



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 setting up long-term monitoring of vegetation plots. This allows us to track how rare plants and communities respond to different management techniques, such as seasonality of prescribed burns, and how these plants change over time due to varying 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 2019 has been on setting up monitoring plots in mountain bogs, headwater seeps, pine oak forests, and grassland communities.

Kentucky Orchid Restoration Program

Orchids are the 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, 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.



Rare plant surveys along roadsides in the Daniel Boone National Forest (DBNF)



KNP has been surveying rare plants and natural community remnants on roadsides throughout the DBNF in partnership with the Kentucky Transportation Cabinet (KYTC) and the forest service. 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.

KNP continues with white fringeless orchid restoration in the Cumberland Plateau

KNP continues to monitor, manage and restore populations of the federally-listed white fringeless orchid in the state nature preserves. The recovery effort has proven successful. In 2019, we partnered with the Daniel Boone National



Forest and USFWS on additional restoration projects within the forest, which complements our shortleaf pine restoration project. We hope to apply similar monitoring and management techniques to restore the hydrology and increase the white fringeless orchid population size and natural community quality.



Rare plant propagation, seed banking, research, and reintroductions

KNP works closely with dozens of 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.

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.



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.



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!

The KNP Biological Assessment Database

To date, KNP's natural heritage database contains an impressive 16,595 species and rare community occurrence records, and 20,674 species and rare community site specific records. A total of 1,643 species and community occurrence records were added or updated in this biennium alone. KNP tracks 879 species and ecological communities and monitors 190 more on a watch-list. KNP's data-base also contains 781 high-quality site records, including caves, and 824 conservation lands records.

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 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 KNP Natural Heritage Database includes 20,674 high quality source features records and 16,595 element occurrence records of the 879 species and communities we track.

The Kentucky Biological Assessment Tool (KY-BAT) is a self-service conservation planning tool that allows customers to submit projects and receive data within minutes at [KYNaturePreserves.org](https://kynaturepreserves.org)

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.

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.

By Popular Demand...

They're BACK!



Preserve the GREAT OUTDOORS with GREAT PLATES from the past.

Drive home your support for the great outdoors.

Kentucky Heritage Land Conservation Fund
HeritageLand.Ky.gov

**BLUE GRASS
COMMUNITY
FOUNDATION**
WE'RE IN IT FOR GOOD

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!



**Check Nature and Wildlife Fund
on your Kentucky Tax Return.
It's the Natural Tax Shelter.**

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 years 2018 and 2019.

| Project Name |
|--|
| 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- Creekshell Species Status Assessment |
| 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 |
| |

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



Martina Hines
Branch Manager

Mike Compton
Aquatic Zoologist

Shelby Fulton
Terrestrial Zoologist

Nour Salam
Data Specialist



Courtney Hayes
Environmental Scientist

Liz Mason
Geoprocessing Specialist

Mikayla Groce
AmeriCorps Environmental
Educator

Natural Areas and Recovery Branch



Josh Lillpop
Branch Manager



Kyle Napier
Pine Mountain Manager



Brent Frazier
Land Protection Specialist



Heather Drake
Green River Manager



Maddy Heredia
KHLCF/Outreach Specialist



Cliff Hull
Cumberland Plateau Manager



Doug Wilder
Trails Manager



Jess Slade
Bluegrass Manager

Rare Plant Conservation Section



Tara Littlefield
Section Supervisor



Devin Rodgers
Botanist



Heidi Braunreiter
Botanist



Kendal McDonald
Botanist



Tony Romano
Botanist

Natural Areas Technicians



Ryan Fortenberry



Lance Hostetler



Hunter Loyall



Ethan Steele

In Memorium

Since the last annual report, three former dedicated members of the Kentucky Heritage Land Conservation Board have passed:

George William Little, Jr. joined the KHLCF Board in 2003 as the appointed representative of conservation organizations designated by statute including the Audubon Society, of which he was a member. Everyone knew him as “Bill”, friendly to all and faithful to the land conservation mission of the KHLCF Board. He was active on several committees over the years with his favorite being the Project Review Committee that visited the proposed lands and reported to the full Board regarding the land's importance in meeting the conservation goals and values that were (and still are) required for funding. For the last decade he served as the Treasurer and Vice-Chairman of the Board, being ever active and going on site visits and representing the Board until his health began to fail. Because of his health, he had to retire from the Board in 2018. He had the attributes of a man of good character—telling the truth, keeping his word and being dependable. He could be counted on to provide frank opinions and sound guidance and advice to the Board. Bill Little loved the forests, fields, and waters of Kentucky and he made a solid contribution to their conservation and preservation for generations to come.



Bill Little and his wife, Brenda, at the construction of the boardwalk at Audubon Wetlands in Henderson, one of his favorite projects.

William Horace Brown was a faithful member of the KHLCF Board serving with near perfect attendance at all Board meetings from his first days as a charter member in 1994 until his retirement in 2017. In all those years, he was the Chairman of the Kentucky Environmental Education Council, then a designated ex-officio position on the Board. He represented the Council well, pointing out the importance of the projects and preserved acres as outdoor laboratories for environmental education in the public schools across the state. “This is the best Board I have ever served on ...” was a sentiment that Horace expressed frequently at meetings because he was so pleased to see

Horace Brown at the dedication of WKU's Upper Green River Biological Preserve.

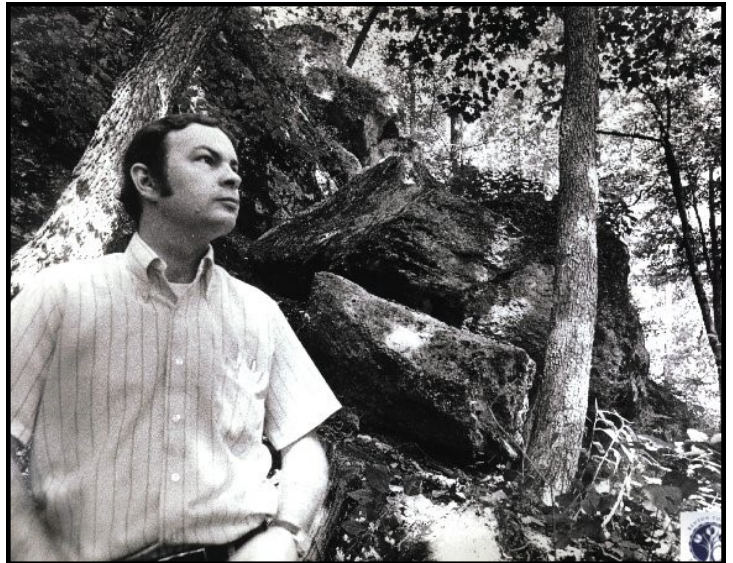


land being conserved across the state and he was so proud to be playing an active role in meeting the expressed goals of the Board that assured that places large and small were being preserved. He thoroughly enjoyed the meetings and field trips and being able to contribute his knowledge of particular projects with which he was familiar as the applications were being considered. Horace enjoyed several assignments to Board activities and business but he most enjoyed reporting on the sales of license plates that he had helped design. He would proudly announce that they were number one in sales of specialty plates for many years. Horace was the ornithologist of the Board. He used his extensive knowledge of birds to champion the cause of bird conservation through habitat preservation. He wrote numerous, informative newspaper and magazine articles about birds in general and the decline of

In Memorium by Dr. Bill Martin

species that should be of concern to Kentuckians because of the loss of their breeding, nesting, and feeding habitats. He was particularly concerned about the status of bob white quail and other species of unmanaged open fields as those fields were being developed for residential and commercial use or for more intensive farming. Horace was an avid nature photographer. His color photographs of birds were superb and he prepared enlarged, framed photographs of his birds for special conservation events and awards that were presented by state agencies and non-profit organizations. In addition to being the Chairman of the Environmental Education Council, he served for a number of years as the Chairman of the state's Environmental Quality Commission.

Dr. William S. Bryant was also a charter member of the Board serving from 1994 to 1996 as a representative of the Kentucky Academy of Science (KAS) as our statute required. The then-Department of Natural Resources and Environmental Protection wanted the Board to have scientists who could objectively evaluate the lands that would be acquired by the Board on behalf of the Commonwealth. Bill was appointed because of his knowledge of the natural ecosystems of the state and his long term record of commitment to land preservation and conservation across Kentucky. Bill conducted years of field research in Kentucky's forests publishing the results in numerous papers, describing the diversity, history and composition of those forests. He also served on the Board of the Kenton County Soil Conservation District for over 20 years and was Chairman of that board most of that time. Bill's love of Kentucky, science, and nature are illustrated by his additional service to the Kentucky Chapter of The Nature Conservancy as a charter member of the Chapter in the early '70s and then serving as the Chapter Chairman in the late 1970s. He also served on the governing board of KAS for several years and as President in 1996. He was instrumental in preserving a number of natural areas including



Bill Bryant at what is now Boone County Cliffs State Nature Preserve.

Boone County Cliffs Nature Preserve, the Dinsmore Homestead in northern Kentucky and Floracliff Nature Sanctuary, the preserve created by his friend and colleague, Dr. Mary Wharton. For years, Bill gave talks about Kentucky's land and wildlife and led numerous field trips, particularly at Shakertown and in the Great Smoky Mountains National Park. His particular service to the KHLCF Board was serving as the first chairman of the Project Review Committee, setting the standard for the necessary field review of project applications.

Kentucky has now lost three of its most dedicated conservationists whose love of the natural world led them to contribute significantly to the preservation and conservation of this state's natural lands and native wildlife for their generation and for posterity. As the George Jones song says, "Who's gonna fill their shoes?" Here, in Kentucky, these men made a difference!

- Dr. William H. Martin, founding KHLCF Chairman

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. In 2018, the establishment of the Keith MacAdam Endowment for Kentucky Nature Preserves helped KNP address some of the backlog of work on hiking trails, but there is much work to be done to make our natural areas safe and attractive for visitors. This also does not address the work needed on the KHLCF natural areas owned and managed by local governments.

To that end, our strongest recommendation 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 KHLCF 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 others sites. Many agencies depend on grant funding from the KHLCF to complete trail improvement projects and habitat management initiatives.

Since the KHLCF does not receive federal funding, KHLCF proceeds are used by many agencies as “non -federal match” for grant applications. Each dollar through KHLCF can be used to leverage several dollars in outside funding. For the first time, revenue in 2019 was significantly less than the general fund sweep enacted in the biennial budget. If sweeps are included in future biennial budgets, this important work simply won't get done. Endangered species will remain listed, and popular hiking and outdoor recreation areas will go unmaintained.

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



Supporting the KHLCF 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 .

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 | 555.48 | 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 | |

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| | 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 | |

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| | 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 | Pennyrite 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 | Rockcross Hills SNP | 66.66 | 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 | 137.43 | 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 | 1,524.67 | 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 | 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 Latemeau 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 | |
| 84 | Jefferson | Pope Lick Park | 214.65 | 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 |
|----|-----------|---|--------|-------------------------------------|----------------|------------|
| 85 | Jefferson | Beargrass Creek SNP | 41.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 86 | Jefferson | Blackacre SNP | 175.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 87 | Jefferson | Six Mile Island SNP | 81.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 88 | Jessamine | Camp Nelson | 58.53 | Jessamine County Fiscal Court | KHLCF Easement | |
| 89 | Jessamine | Jessamine Creek Gorge | 268.77 | Jessamine County Fiscal Court | KHLCF Easement | |
| 90 | Jessamine | Tom Dorman SNP | 143.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 91 | Kenton | Morningview Heritage Land | 222.66 | Kenton County Conservation District | KHLCF Easement | |
| 92 | Larue | LaRue County Environmental Education Center | 191.00 | Larue County Fiscal Court | KHLCF Easement | |
| 93 | Larue | Lincoln Boyhood Home | 224.97 | Larue County Fiscal Court | KHLCF Easement | |
| 94 | Larue | Thompson Creek Glades SNP | 169.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 95 | Larue | Thompson Creek Glade SNP | 105.26 | Office of Kentucky Nature Preserves | KHLCF Deed | |
| 96 | Laurel | Whitley Branch Preservation | 75.57 | City of London | KHLCF Easement | |
| 97 | Laurel | Sinking Creek Conservation Area | 300.97 | Office of Kentucky Nature Preserves | | KNP owned |
| 98 | 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 |
|-----|------------|--|----------|--|----------------|---------------|
| 99 | Letcher | Kingdom Come SPNP | 225.00 | Kentucky State Parks | | KNP dedicated |
| 100 | Letcher | Bad Branch SNP | 2,785.00 | Office of Kentucky Nature Preserves | KHLCF Deed | KNP owned |
| 101 | Lewis | Crooked Creek SNP | 693.47 | Office of Kentucky Nature Preserves | KHLCF Deed | KNP owned |
| 102 | Lincoln | William Whitley House | 80.24 | Lincoln County Fiscal Court | KHLCF Deed | |
| 103 | Lincoln | Bouteloua Barrens SNP | 261.00 | Office of Kentucky Nature Preserves | KHLCF Deed | KNP owned |
| 104 | Livingston | Livingston County Natural Areas | 2,429.92 | Livingston County Fiscal Court | KHLCF Easement | KNP dedicated |
| 105 | Logan | Baker Natural Area | 66.15 | Logan County Conservation District | KHLCF Easement | |
| 106 | Logan | Logan County Glade SNP | 42.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 107 | Logan | Raymond Athey Barrens SNP | 156.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 108 | Marion | Marion County WMA | 1,293.20 | Marion County Fiscal Court, Kentucky Division of Forestry, Kentucky Department for Fish and Wildlife Resources | KHLCF Easement | |
| 109 | McCracken | Perkins Creek | 80.27 | City of Paducah | KHLCF Easement | |
| 110 | McCracken | Metropolis Lake SNP | 123.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 111 | McCreary | Cumberland Falls SNP | 1,294.00 | Kentucky State Parks | | KNP dedicated |
| 112 | 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 |
|-----|---------------------------|---|-----------|---|----------------|---------------|
| 113 | Menifee | Broke Leg Falls | 14.82 | Menifee County Fiscal Court | KHLCF Easement | |
| 114 | Metcalfe | Dry Fork Gorge | 79.97 | Metcalfe County Fiscal Court | KHLCF Easement | |
| 115 | Metcalfe, Cumberland | Marrowbone State Forest | 1,955.47 | Kentucky Division of Forestry and Kentucky Department for Fish and Wildlife Resources | KHLCF Deed | |
| 116 | Monroe | Old Mulkey Meeting House | 19.02 | Kentucky State Parks | KHLCF Deed | |
| 117 | Muhlenberg | Cypress Creek SNP | 98.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 118 | Muhlenberg, Hopkins, Ohio | Peabody WMA | 34,560.00 | Kentucky Department of Fish and Wildlife Resources | KHLCF Deed | |
| 119 | Nelson | Town Creek Greenway | 16.01 | City of Bardstown | KHLCF Easement | |
| 120 | Ohio | Highview Hill | 256.71 | Ohio County Fiscal Court | KHLCF Easement | |
| 121 | Ohio | Ohio County Nature Park | 191.25 | Ohio County Fiscal Court | KHLCF Easement | |
| 122 | Oldham | Morgan Conservation Park | 227.59 | Oldham County Fiscal Court | KHLCF Easement | |
| 123 | Powell | Natural Bridge State Park Nature Preserve | 1,188.00 | Kentucky State Parks | | KNP dedicated |
| 124 | Powell | Natural Bridge State Park | 471.00 | Kentucky State Parks | KHLCF Deed | |
| 125 | Powell | Pilot Knob SNP | 742.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 126 | 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 |
|-----|------------------------------|------------------------------------|--------|-------------------------------------|----------------|---------------|
| 127 | Pulaski | Francis Johnson Palk SNP | 233.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 128 | Pulaski | William H Martin Conservation Area | 458.96 | Office of Kentucky Nature Preserves | | KNP owned |
| 129 | Pulaski | Mount Victory Seeps | 238.66 | Office of Kentucky Nature Preserves | KHLCF Deed | |
| 130 | Pulaski | Buck Creek Preserve | 35.26 | Pulaski County Fiscal Court | KHLCF Easement | |
| 131 | Pulaski | Hazeldell Meadow | 39.35 | Pulaski County Fiscal Court | KHLCF Easement | |
| 132 | Robertson | Blue Licks SPNP | 53.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 133 | Robertson, Nicholas, Fleming | Blue Licks State Park | 905.45 | Kentucky State Parks | KHLCF Deed | |
| 134 | Rockcastle | John B. Stephenson SNP | 123.00 | Berea College | | KNP dedicated |
| 135 | Shelby | Clear Creek Park Greenway | 27.02 | Shelby County Fiscal Court | KHLCF Easement | |
| 136 | Shelby | Shelby Trails Park Addition | 75.00 | Shelby County Fiscal Court | KHLCF Easement | |
| 137 | Simpson | Flat Rock Glade SNP | 99.00 | Office of Kentucky Nature Preserves | KHLCF Deed | KNP owned |
| 138 | Taylor | Clay Hill Memorial Forest | 103.00 | Campbellsville University | KHLCF Easement | |
| 139 | Taylor | Tebbs Bend | 138.92 | Taylor County Fiscal Court | KHLCF Easement | |

| | County | Project | Acres | Managing Agency | KHLCF Status | KNP Status |
|--------------------|-------------------|--------------------------------------|----------|---|----------------|------------|
| 140 | Union, Crittenden | Big Rivers WMA and SF | 6,724.00 | Kentucky Division of Forestry and Kentucky Department for Fish and Wildlife Resources | KHLCF Deed | |
| 141 | Warren | Chaney Lake SNP | 169.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 142 | Warren | Woodburn Glade SNP | 20.00 | Office of Kentucky Nature Preserves | | KNP owned |
| 143 | Warren | Lost River Cave | 2.25 | Warren County Fiscal Court | KHLCF Easement | |
| 144 | Warren | Cave Springs | 2.01 | Western Kentucky University | KHLCF Easement | |
| 145 | Wayne, McCreary | Little South Fork State Natural Area | 3,202.02 | Office of Kentucky Nature Preserves | | KNP owned |
| 146 | Whitley | Archer-Benge SNP | 1,863.00 | Office of Kentucky Nature Preserves | KHLCF Deed | KNP owned |
| 147 | Wolfe | Red River State Natural Area | 301.26 | Office of Kentucky Nature Preserves | | KNP owned |
| Total Acres | | | | 105,775.108 | | |

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)

Appendix I: 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 61 landowners are enrolled in the registry program, encompassing 8,662.47 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 biennium.

| | 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 | Central Kentucky Wildlife Refuge | 389.72 | Private | Southern Knobs Forest |
| 5 | Boyle | Harberson's Station Cave | 2.88 | City of Perryville | Rare Species |
| 6 | Bullitt | Rocky Run Glade | 15.71 | Private | Rare Species |
| 7 | Bullitt | Jefferson County Sportsmen Club | 12.61 | Private | Rare Species |
| 8 | Calloway | Panther Creek Swamp | 126.57 | TVA | Wetland, Rare Species |
| 9 | Carlisle | Back Slough/Laketon | 45.09 | Private | Wetland Community |
| 10 | Casey | Bradley Lewis Weddle | 73.11 | Private | Rare Species |
| 11 | Carter | Tierney Tygart | 10.57 | Private | Rare Species |
| 12 | Christian | Pennyrile SF-Clifty Creek | 74.93 | KDF | Rare Species |
| 13 | Clinton | Seventy-six Falls | 0.74 | USACE | Rare Species |

Appendix I: Registered Natural Areas

| | County | Project | ACRES | Ownership | Significance |
|----|------------|---------------------------------|--------|-----------|--------------------------|
| 14 | Crittenden | Goodman/Clouser Sandstone Glade | 7.23 | Private | Glades |
| 15 | Edmonson | White's Cave | 2.5 | NPS | Rare Species |
| 16 | Estill | Camp Burnamwood | 472.13 | Church | Upland Native Forest |
| 17 | Fayette | Raven Run | 477.83 | LFUCG | Kentucky River Palisades |
| 18 | Fayette | Boone Creek | 259.10 | Private | Rare Species |
| 19 | Fayette | Ashland | 18.31 | Private | Rare Species |
| 20 | Franklin | Camp Pleasant Woods | 68.55 | Private | Rare Species |
| 21 | Franklin | Strohmeiers Hill | 58.4 | Private | Rare Species |
| 22 | Franklin | Tucker Creek | 30.61 | Private | Rare Species |
| 23 | Franklin | Far Side Farm | 29.76 | Private | Rare Species |
| 24 | Franklin | Leeland Valley | 35.21 | Private | Rare Species |
| 25 | Franklin | Rockcress Woods (Greene/Adams) | 19.57 | Private | Rare Species |
| 26 | Franklin | Rockcress Woods (Bryan) | 6.56 | Private | Rare Species |
| 27 | Garrard | Terrapin Barrens | 39 | SCC | Native Grassland |
| 28 | Grayson | Big Clifty Prairie | 2.89 | KYTC | Prairie Remnant |
| 29 | Hardin | Knights Barrens | 355.71 | Private | Barrens Community |
| 30 | Hardin | Dowell | 25.30 | Private | Rare Species |
| 31 | Hardin | Hardin Cedar Glade | 12.11 | Private | Rare Species |
| 32 | Hardin | Hayden Glade | 4.7 | Private | Glade Community |
| 33 | Hart | Big Woods | 293.10 | NPS | Old-growth Woods |

Appendix I: Registered Natural Areas

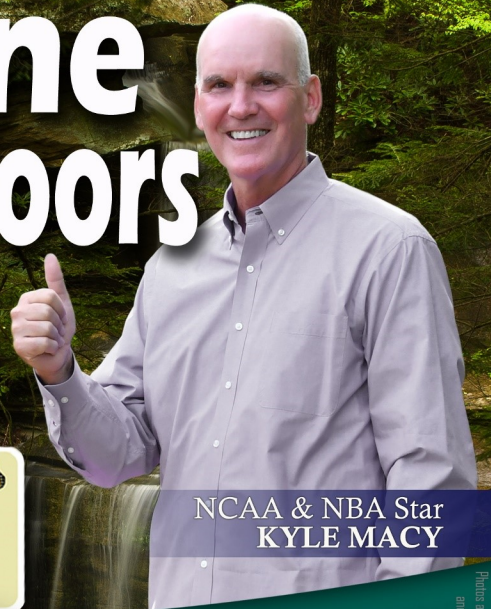
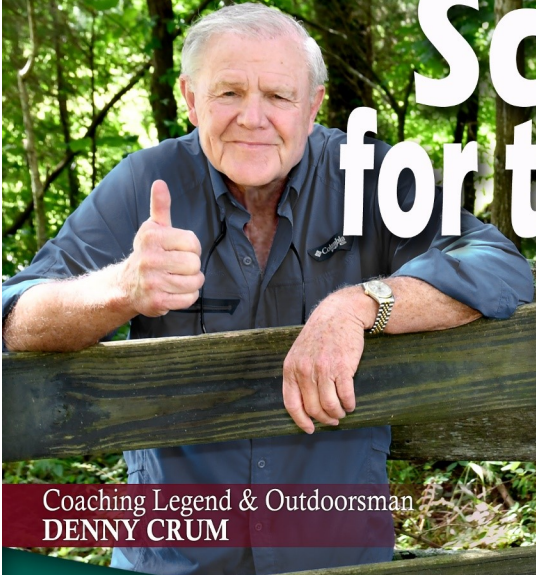
| | County | Project | ACRES | Ownership | Significance |
|----|------------|-------------------------------------|---------|------------------------|---------------------------------|
| 34 | Hart | Riders Mill Cave | 266.76 | Private | Rare Species |
| 35 | Jefferson | Jefferson Memorial Forest | 2471.87 | Louisville Metro Parks | Maturing Quality Forest |
| 36 | Jefferson | Surrey Hills Woods | 34.56 | Private | Mature Forest |
| 37 | Jefferson | Shippingport Island Rookery | 8.02 | USACE | Heron Rookery |
| 38 | Jessamine | R. J. Corman Natural Area | 64.64 | Private | Jessamine Creek Gorge Tributary |
| 39 | Larue | Crady Creek Hill Prairies (Ewing) | 31.97 | Private | Grassland Remnant |
| 40 | Larue | Crady Creek Hill Prairies (Clayton) | 15.7 | Private | Grassland Remnant |
| 41 | Letcher | Bad Branch (Crawford) | 244.15 | Private | Rare Species |
| 42 | Letcher | Bad Branch (Gatton) | 116.93 | Private | Rare Species |
| 43 | Letcher | Poor Fork Wetland | 36.80 | USFS | Rare Species |
| 44 | Livingston | Corley Farm | 101.59 | Private | Rare Species |
| 45 | Logan | Log House Prairie | 4.73 | Private | Prairie Remnant |
| 46 | Logan | Katie White Barrens (Lockett) | 13.99 | Private | Glades/Barrens Communities |
| 47 | Logan | Katie White Barrens (Webb) | 13.23 | Private | Glades/Barrens Communities |
| 48 | Lyon | Cannon Springs Woods | 281.95 | USACE | Recovering Woods |
| 49 | Madison | Jean's Glade | 6.07 | Private | Rare Species |
| 50 | Marion | Tatum Cave | 26.55 | Private | Rare Species |
| 51 | Marshall | Bear Creek Rookery | 17.28 | TVA | Heron Rookery |
| 52 | McCracken | Bayou Creek Ridge | 169.29 | TVA/KDFWR | Old-growth Woods |

Appendix I: Registered Natural Areas

| | County | Project | ACRES | Ownership | Significance |
|--------------------|------------------------------|------------------------------------|-----------------|------------------|---------------------|
| 53 | McCracken | Metropolis Lake | 1.68 | TVA | Natural Lake |
| 54 | McLean | Floyd Woods | 23.53 | Private | Old-growth Woods |
| 55 | Metcalfe | Sulphur Creek Cave | 6.59 | Private | Rare Species |
| 56 | Muhlenburg | Cornett Woods | 296.78 | Private | Wetland Communities |
| 57 | Nicholas | Kingsolver Golden-rod | 2.32 | Private | Rare Species |
| 58 | Nicholas, Fleming, Robertson | Blue Licks Highway | 42.13 | KTC | Rare Species |
| 59 | Nicholas | Abnee Goldenrod | 1.69 | Private | Rare Species |
| 60 | Owsley | Morris Kentucky Ladyslipper | 13.88 | Private | Rare Species |
| 61 | Perry | Stillhouse Branch | 100.77 | USACE | Mature Forest |
| 62 | Pulaski | Blowing Cave | 10.14 | Private | Rare Species |
| 63 | Russell, Pulaski, Wayne | Lake Cumberland (7 discrete sites) | 189.54 | USACE | Rare Species |
| 64 | Russell | Sundew Meadow | 12.66 | Private | Rare Species |
| 65 | Taylor | Blue Knob | 29.33 | Private | Glades, Barrens |
| 66 | Trigg | Lake Barkley Rookery | 13.25 | USACE | Heron Rookery |
| 67 | Todd | North Elk Fork Woods | 29.63 | Private | Old-growth Woods |
| 68 | Todd | South Elk Fork Woods | 26.77 | Private | Old-growth Woods |
| 69 | Warren | Shanty Hollow Cave | 2.69 | Private | Rare Species |
| 70 | Warren | Greenhill Woods | 0.44 | Private | Rare Species |
| 71 | Whitley | Grove Powerline | 20.95 | Utility | Pine Barren Remnant |
| Total Acres | | | 8,662.56 | | |



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