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Cover image: Longview Saline Natural Area

Key to the abbreviations used in this report:

ADEQ - Arkansas Department of Environmental Quality

ADPT - Arkansas Department of Parks and Tourism

AFC - Arkansas Forestry Commission

AGFC - Arkansas Game and Fish Commission

ANHC - Arkansas Natural Heritage Commission

ASP - Arkansas State Parks

ASU - Arkansas State University

DAH - Department of Arkansas Heritage

NCRC - Natural and Cultural Resources Council

TNC - The Nature Conservancy in Arkansas

USFWS - U.S. Fish and Wildlife Service

WRNWR - White River National Wildlife Refuge

YCC - Youth Conservation Corps



#### STATE OF ARKANSAS MIKE BEEBE GOVERNOR

As Arkansans, we are proud to say that we live in the "Natural State", so named for our woods, mountains, and streams and for our fields, prairies, and rivers. These areas remain as reminders of our past and of our long-term obligation to protect and preserve them. Today, the diversity of our original landscape is safeguarded in the 70 natural areas administered by the Arkansas Natural Heritage Commission. These protected areas serve as visible evidence of the care we take as full-time guardians of our living, bountiful natural heritage.

The work of the commission goes beyond the protection of specific sites to the conservation of landscape corridors and the healthy, diverse, functional ecosystems that can be defined by the six main natural divisions of our state. This annual report highlights the work of the commission in the Ozarks, the Ouachitas, the Arkansas Valley, the Coastal Plain, the Mississippi Alluvial Plain, and Crowley's Ridge. In the decades to come, future generations will be thankful for the commission's responsible stewardship.

Sincerely,

Mike Beebe

MB:jb

## Ozark Mountains

Two consecutive years of high-water events damaged the parking area and trail, and eroded the stream banks at Kings River **Falls Natural Area** (right). In partnership with Madison County Judge Frank Weaver, technicians from the **Arkansas Game and** Fish Commission, and the Arkansas **Department of Environmental Quality,** we developed plans for a stream bank stabilization project and began public access improvements for one of the most visited sites in the System of Natural Areas.

Even after decades of intense field studies and close monitoring of stewardship results, another rare plant was found at Baker Prairie Natural Area this year. Commission botanists located a population of early goldenrod (above), only known from one other site in Arkansas beforehand.

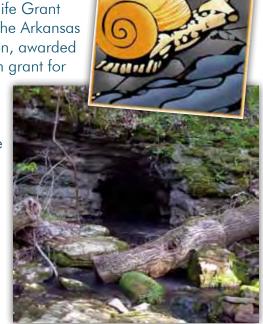


#### **Noteworthy Funding for Newest Natural Area**

The commission's reputation for grants management garnered federal funding from the Outdoor Recreation Grants Program administered by the Arkansas Department

of Parks and Tourism to acquire one of the most biologically diverse caves in the state that is now protected as Foushee Cave Natural Area (bottom right). Additionally, the State Wildlife Grant program, administered by the Arkansas Game and Fish Commission, awarded its first-ever land acquisition grant for

the site. The 2,732-acre natural area protects the cave, a significant portion of the cave's recharge zone (the land that contributes water to the cave and streams that flow through it), and 10 rare species, including the Foushee cavesnail (top right).





**Management Benefits Rare Plant** 

Commission staff conducted field studies of Missouri bladderpod (left), a threatened plant only known to occur in nine counties in Arkansas and Missouri, on land near Beaver Lake owned by the U.S. Army Corps of Engineers. In partnership with The Nature Conservancy and the U.S. Fish and Wildlife Service, they documented that restoration techniques, such as reducing invasive plant species, thinning woodlands, and re-introducing fire to the landscape, can greatly benefit Missouri bladderpod habitat. The positive results can be shared with Missouri's land managers as they work to improve habitat for this and other rare

Keeping Staff Safe in the Field

glade plants.

Most properties in the System of Natural Areas have limited access, rugged terrain, and are hours from the nearest emergency room. Our land stewards and field staff regularly work in these situations. In 2012, fourteen employees completed a two-day Basic Wilderness First Aid



course. Ozark Safety and Rescue Educators taught basic procedures such as patient assessment and stabilization (above), and emergency treatment of issues such as hypothermia, trauma, lacerations, and snakebites. Staff also learned to decide when and how an evacuation should be attempted and to keep themselves (as rescuers) safe during a variety of emergency scenarios.

Conservation
partnerships
are an important
aspect of our
mission, and so
is being a good
neighbor.



When an adjacent landowner at Devil's **Knob-Devil's Backbone** Natural Area (above) became concerned about the placement of a new parking area, commission staff consulted Izard County road crews and the landowner, Randy Crumby, to select an alternate location. Mr. Crumby attended our November 2011 commission meeting in Mountain View to publicly express his appreciation.

## **Arkansas Valley**

The NatureServe Network's Facebook wall highlighted one of our feature stories, bringing international attention to the commission's website and Enewsletter. The article reported that **Arkansas Natural Heritage** Commission scientists, while conducting field inventory studies, discovered a population of Greenman's bluet (right), a plant that was previously only known from Texas. NatureServe's marketing director chose this story to showcase during the **Biodiversity Without Boundaries** Conference in Portland, Oregon, for our ability to communicate complicated scientific information by making points that were quite interesting, very clear, and easy to understand.



#### **Eco-literacy at the Library**

The commission's educational programming is a natural fit for public library summer reading programs. Aimed at improving literacy, the programs give children and their parents an incentive to spend time reading each day. This can help reduce "summer learning loss," in which children sometimes lose some of what they learned during the school year over summer vacation. For several years, we

have been presenting at libraries in the central Arkansas area, combining nature information with well-loved children's books. These programs are geared to families with young children and help introduce these audiences to Arkansas-specific science facts that relate to the books they are reading. This summer, we expanded our outreach to libraries in other areas of the state. We reached 392 people with 16 programs in nine different cities, including our first visit to the Conway County Library in Morrilton (left).





#### **Restoring Fire's Natural Role**

For every natural area, a management plan outlines appropriate stewardship techniques for each particular ecosystem. Prescribed fire (below) is an important management tool for the commission since many native prairie plant species require an open habitat. Regular, controlled fires limit shrubs, small trees, and woody vines that compete with grasses and flowers for nutrients and sunlight. Following a prescribed fire, sunlight on bare

ground warms the soil, stimulating plant growth (bottom left), seed germination, and soil microbial activity. Some seeds break dormancy following exposure to high

temperatures during a fire, and, in some species, certain chemicals in smoke and ash signal seeds to germinate. Afterwards, sometimes rare plants appear that have not been seen in decades.

soil, signant (botto seed and signant follows)

In FY2012, we provided 200 rare species records to the U.S. Army Environmental Command.
They use this information to minimize the impact on rare species located on Department of Defense properties. Many government agencies and industrial users rely on reports from the Arkansas biodiversity database to make informed decisions.



Natural areas are living laboratories. Many people use natural areas to research Arkansas's ecology and biological diversity; however, a permit is required to conduct research on natural areas and for the collection or removal of specimens. This year, 19 permits covered activities on 36 natural areas in the System. Eight of them permitted work related to Arkansas Natural **Heritage Commission**owned prairies in the Arkansas Valley.



Researchers collected seeds related to restoration projects, took soil samples at different prairies, and inventoried several insect species, including the rare prairie mole cricket (above), the largest mole cricket in the U.S.

## Ouachita Mountains

**Our springtime media** strategy incorporated traditional and innovative approaches. We used printed advertisements to enhance name recognition in two magazines: County **Lines** targeted elected officials and Arkansas Livina reached out to rural

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EXCLUSIVE CONTENT!

**Arkansans in every corner** 

of the state. We developed a short video

to connect new constituents to nature, the commission, and Arkansas's natural heritage. The video "What Color is Your Natural Heritage?" was featured in our Enewsletter and on our Facebook page. In the Department of Arkansas Heritage's Storyline newsletter and Arkansas Business Publishing Group's Green Guide magazine, a quick response or QR code (above), when scanned with a cell phone, literally brought nature to your hand.



#### Expert Staff Lead the Way

In the state and beyond our borders, our expertise is often sought. Chosen to speak at the 2011 Annual Red-cockaded Woodpecker Translocation Meeting for the West Gulf Coastal Plain, Chief of Research Bill Holimon showcased our habitat restoration accomplishments. Botanist Theo Witsell was selected to write the Arkansas component of a multi-state Glade Assessment for the Central Hardwoods Joint Venture. The Arkansas Environmental Education Association contacted Education and Outreach Coordinator Jane Jones-Schulz to facilitate a portion of a workshop focusing on upland hardwood forests and the Ozark Mountains for educators from around the state. Agency staff also led field trips for organizations such as the Arkansas Native Plant Society (left) and published work in professional publications such as the Journal of the Botanical Research Institute of Texas.



#### **Restoration Partnership Recognized**

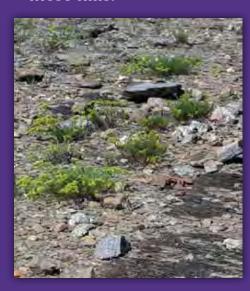
Greenwire reporter Paul Voosen reached out to the commission for help with Arkansas-related information for an article about the changes taking place in eastern forests after decades of fire suppression.

Arkansas Natural Heritage Commission (ANHC) Botanist Theo Witsell facilitated a two-day media tour of forests in the Ozark and Ouachita Mountains (below) with the Arkansas Oak Ecosystem Restoration Team, one of the most aggressive forest restoration teams in the country. This team, including ANHC scientists and land managers, along with staff from the Arkansas Game and Fish Commission, the U.S. Forest Service, the Arkansas Wildlife Foundation, the University of Arkansas Cooperative Extension Service, The Nature Conservancy, and Ouachita Timber Purchasers Group, works to create large-scale, multi-ownership demonstration

projects to build support for oak ecosystem restoration. Prescribed fire and targeted herbicides are important management tools in their efforts. Voosen saw restored and unrestored sites side-byside, noting that the restored sites were strikingly more diverse. Voosen's article titled "Cascading species shift looms in fire-starved Eastern woods" was published online May 29, 2012.

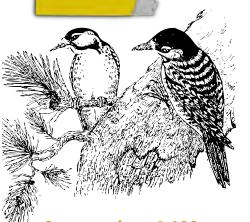
Our expertise and demonstrated results allow us to compete well for grants on a national level. Rare plant monitoring and research are significant components of our federal grant-funded work. Endangered Species Act funding through the U.S. Fish and Wildlife Service supports field work to observe and monitor populations of rare plants such as the Ouachita twistflower (right) and to search for new locations of federally-listed plant species.

**Scattered** through the **Ouachita** Mountains are pockets of amazina plant diversity called shale barrens (below). Being on shale barrens feels a bit like being in an old western movie hot, dry, and gritty. With crumbling rock, copperheads, and open sky, all that's missing is the withered old prospector. But you won't find any gold in these hills.



The hidden treasure
of the shale barrens
is the collection of
rare plants, including
22 species of global
conservation concern
- more than any other
habitat in Arkansas.
Commission botanists
have documented
630 different plant
species here
including several
species that are
new to science.

## **Coastal Plain**



At more than 4,600 acres, Warren Prairie Natural Area's mosaic of salt slicks, saline prairies, pine flatwoods, and bottomland forests serves as an example of conservation at a landscape scale. Harboring two federally-protected species, the Red-cockaded Woodpecker (above) and the plant geocarpon, the area's size and significance provide opportunities to initiate conservation partnerships. Working with the Arkansas Game and Fish Commission, The Nature **Conservancy, the National** Wild Turkey Federation, and the U.S. Fish and Wildlife Service, significant habitat restoration work here benefits rare species and common wildlife species alike. Popular game animals such as northern bobwhite, wild turkey, and whitetailed deer can be found throughout the natural area and are a popular draw for sportsmen.

#### **National Seed Bank Preserves Arkansas Plant**

Researchers from the Missouri Botanical Garden's Center for Plant Conservation collected seeds from geocarpon, a

federally threatened plant, at Warren Prairie Natural Area (right). They will add them to the seed bank maintained as the National Collection of Endangered Plants, preserving genetic diversity and safeguarding against the possible extinction of this and other rare species.



#### **Unique Trail Enhances Visitor Experience**

Logoly State Park was Arkansas's first environmental education state park. Logoly Natural Area, approximately 200 acres within the state park, protects a valuable remnant of the Coastal Plain, including forests of hardwood and very large loblolly pine trees. The area's natural resources provide a

living laboratory for students. Together, the commission and Arkansas State Parks created 19 new wayside exhibits (right) along three trails. The Natural and Cultural Resources Council helped fund the work. Each exhibit panel is supported by a one-of-a-kind stand crafted in Arkansas by welding and metal fabrication students at local technical schools.





"It is a special day for me to be back in my home county in an area that I remember growing up in."

- Morril Harriman, Governor Mike Beebe's Chief of Staff



On April 30th, more than sixty people celebrated the addition of Longview Saline Natural Area to Arkansas's System of Natural Areas. Morril Harriman (left), chief of staff for Governor Mike Beebe, led the dedication ceremony,

acknowledging the commitment we all share to preserve our state's precious natural heritage. Conservation partnerships with The Nature Conservancy, the Arkansas Game and Fish Commission, the U.S. Fish and Wildlife Service, and others provided the opportunity for effective cost sharing and increased connectivity to other protected lands. The natural area is located within a 25-mile string of "pearls" of more than 85,000 acres of publicly-owned land managed for conservation. It protects habitat for the federally endangered Redcockaded Woodpecker and for two federally endangered mussels, the winged mapleleaf and the pink mucket, that are found within a stretch of the Saline River bordering the natural area.

Miller County
Sandhills Natural
Area (right), a
prime example
of a sandhill
ecosystem in
Arkansas, features
globally rare
sandhill woodland,
barrens, and seep
habitats. Thirty-five
rare plant species



have been recorded on the natural area, including five found nowhere else in Arkansas. In FY2012 we added 52 acres to this diverse and ecologically significant property.



Introduced to the U.S. in 1876 from Japan, the invasive plant kudzu (above) kills other plants by smothering them under a solid blanket of leaves, by girdling tree trunks, and by breaking branches or uprooting entire trees and shrubs through the sheer force of its weight. Once established, kudzu plants grow rapidly, extending as much as one foot per day. At Nacatoch **Ravines Natural Area in** Hempstead County, our stewardship staff used aerial application of a specific herbicide and hand spraying resprouts, followed by prescribed burning, to reduce the 15acre encroachment of kudzu on this special remnant of the Coastal Plain.

## Mississippi Alluvial Plain

**Byrd Lake Natural** Area, 144 acres located within Pine Bluff's city limits, provides unique opportunities in an urban setting. The **Byrd Lake trail winds** through upland pinehardwood forests and cypress swamps. Visitors can rest on benches (right) that overlook the 16-acre oxbow lake, a remnant of the previous course of Bayou Bartholomew.

A recently awarded \$66,000 Wildlife Observation Trail Grant, funded by the Arkansas Game and Fish Commission, will repair the trail and parking lot, and enhance wayside exhibits, offering views of a wide array of wildlife species interacting in a natural setting.





#### Milestone for Rare Woodpeckers

First documented in the late 1970s, the population of endangered Red-cockaded Woodpeckers at Pine City Natural Area (below left) has seldom been greater than six individuals, but it has persisted. Two breeding groups nested for the first time in 2004 and continued each year since. Breeding groups typically include a pair of breeding birds and helpers, usually young males from the previous year, that help incubate the eggs and raise young. Juvenile females generally leave the group earlier than young male birds.

In 2009, mechanical forest management on the north tract of the natural area opened up the pine flatwoods, allowing sunlight to reach the ground and stimulate the growth of flowers and grasses. This prairie-like ground cover attracts lots of insects, the main source of food for Red-cockaded Woodpeckers. Within a week, a young male began roosting in the restored habitat and defending it as his territory. In April 2012, a young female was translocated from the Ouachita National Forest. Their successful pairing gives Pine City Natural Area a third breeding pair for the very first time.



#### New Trail Showcases Bottomland Habitat

A new loop trail
extends a mile through
Striplin Woods Natural
Area (right) within the
bottomland hardwood
forest of the White River
National Wildlife Refuge.
Led by refuge staff, a team
of Youth Conservation
Corps (YCC) workers
cleared the trail, and
designed, constructed,
and installed three
wooden benches. YCC
is a summer employment



program for young men and women (ages 15-18) who learn and earn together by working on public land. An earlier cooperative project contributed to the observation deck at the rear of the refuge's visitor center that overlooks the natural area.



A historic marker (bottom left) within Louisiana Purchase Natural Area/Louisiana Purchase State Park honors the first

surveyors of the land that would become Arkansas. Their field notes from 200 years ago guide our stewardship efforts today. Looking back at these historic landscape descriptions helps our ecologists assess current conditions and plan for future restoration work throughout the System of Natural Areas.

The American eel (below) is currently being considered for listing as a federally threatened animal species. This fish begins its life in the ocean, matures in freshwater streams and rivers, and then returns to the ocean to reproduce. Dams, hydropower plant turbines, and contaminants are a few of the hazards American eels now face when migrating to and from suitable habitats. Populations are in decline, but the extent of decline is currently unknown.



This year, Jason Throneberry our aquatic species biologist, assisted the U.S. Fish and Wildlife Service and the Arkansas Game and Fish Commission in performing American eel surveys on the White and Arkansas Rivers. **Observing that some** were making it past migration barriers, these fish were found on the White River in Arkansas. These **locations of American** eels are now tracked in Arkansas's biodiversity database.

## Crowley's Ridge

**Crowley's Ridge** (right) is the smallest but also the least studied of all of the natural divisions. The commission recently contracted with Arkansas **State University to** conduct plant and natural community field surveys on the ridge. This year, we reviewed their results, including over 1,200 plant specimens collected



at five sites on Crowley's Ridge. The additions to our herbarium and other documentation give

details on new locations as well as sites that had been studied in the past. Commission researchers will use this information to refine future field studies and guide conservation actions.



#### **Education Outreach A to Z**

We link the commission's technical information and data to teachers and students of all ages, abilities, and backgrounds. This year, our efforts ranged from lectures and field trips for University of Central Arkansas students to "Arkansas Animal ABCs" for kindergarten classrooms at Corning's Park Elementary in Clay County. Each summer we work with the Department of Arkansas Heritage to conduct a series of workshops for educators, focusing on the current Heritage Month theme. For the fifth year, we reached out to high school students by sponsoring four natural heritage awards at the Arkansas State Science Fair. Again this year, we cooperated with the U.S. Fish and Wildlife Service to celebrate Endangered Species Day with an art contest (left) focusing on Arkansas's threatened and endangered plants, animals, and ecosystems.



**Training Master Naturalists** 

We have been conducting workshops on botany, bird identification, endangered species, and natural divisions for Arkansas Master Naturalists since the group's very first training session in 2006, and have watched them grow from one chapter to six. This year, we provided training and materials to 100 new members, including the newest



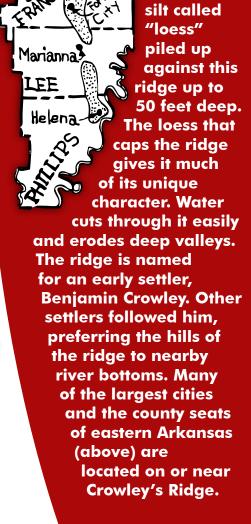
chapter, the Northeast Arkansas Master Naturalists (below), at Village Creek State Park. This corps of well-informed volunteers provides



education, outreach, and service for the beneficial management of natural resources and natural areas within their communities. Master Naturalists have logged many hours of volunteer service activities for the commission, such as removing invasive species at Cave Springs Cave

Natural Area, leading a trash pick-up at Searles Prairie Natural Area, and preserving plant species for the Arkansas Natural Heritage Commission herbarium.

Crowley's Ridge is home to the only native tulip trees in Arkansas. Tulip trees, one of the tallest of eastern hardwoods, are rarely found west of the Mississippi River. They are in the magnolia family, are fast growing, and used extensively for landscaping. The wood is prized for pipes in organs. The name refers to the flowers (right) which are thought to resemble tulips.



Both Crowley's Ridge and the surrounding Delta

The

mighty

rivers of

the Delta

narrow

material

them. Later,

wind-blown

between

left a long,

ridge of this

started out as ocean-bottom from an early, larger Gulf

of Mexico.

CLAY

**CROSS** 

WYNNE !

# Status of the Registry of Natural Areas

Additions to the Plant List FY 2011-2012	
Scientific Name	Common Name
Elymus virginicus var. intermedius	intermediate wild rye
Houstonia parviflora	Greenman's blue!
Gillenia trifaliata	Bowman's-rool
Polygala incarnata	pink milkwort
Gentiana alba	pale gentian
Humulus lupulus var. pubescens	wild hop
Vernonia lindheimeri	waally iranweed
Prenanthes alba	white rattlesnake-root
Ptilimnium texense	Texas mock bishop's weed
Juneus brochyphyllus	lufted-stem rush
Viburnum ocerifolium	maple-leaf viburnum

Additions to the Animal List FY 2011-2012	
Scientilia Name	Common Name
Macrobrachium ohione	Ohio shrimp
Anguilla rostrala	American eel
Cottus immaeulatus	knoblin sculpin
Etheostoma mihileze	stippled darter
Etheostoma autumnale	autumn darter
Beameria venosa	a concealed-tymbal cicada
Epioblasma triquetra	snuffbox

There are currently 901 species tracked in Arkansas's biodiversity database (534 plants, 212 invertebrates, 155 vertebrates). These plants and animals are uncommon in Arkansas; some are known from only one or two locations in the state and nowhere else in the entire world. Twenty-nine species are listed as endangered or threatened by the U.S. Fish and Wildlife Service. This total includes only those species believed to still occur in the state; it excludes historic and transient species. Four Arkansas species were added to the federal endangered species list this fiscal year: the Ozark hellbender, the yellowcheek darter, the snuffbox mussel, and the spectaclecase mussel. Three Arkansas species are on the federal "candidate" list which means they are being evaluated for possible listing as endangered or threatened: the Arkansas darter, the rabbitsfoot mussel, and the Neosho mucket. The agency's list of tracked species for the state is more dynamic than the federal list and changes from year to year as new information becomes available. In FY2012, eleven plants and seven animals were added to the list (left).

While being a part of the NatureServe network remains an important goal, the commission has developed and adopted a "scaled-back" version of NatureServe's data management system. The system is built on a less expensive platform, is easier to operate, is more compatible with other agency data systems, and is easier to upgrade to new software. Efficient and cost-effective database management is critical as more and more information on rare species becomes available in electronic formats. This year, the agency obtained several large data sets:

- 594 plant specimen records from the herbaria at the University of Arkansas at Fayetteville and the University of Central Arkansas.
- 1,229 specimen records for tracked species through our herbarium database.
- 224 collection records were extracted from the Arkansas Department of Environmental Quality's online fish sampling database.
- 285 amphibian and reptile records acquired from Drexel University.

Throughout the year, the agency's data management staff works to evaluate and integrate these records into the biodiversity database.

It is also essential for the most current data to be readily available for government agencies, land managers, and land use planners who use our Environmental Review/Information Sharing Program. During FY2012, staff handled 780 requests for information, including sharing the newly acquired, large data sets with users like the Arkansas State Highway and Transportation Department to help with road projects, timber companies to support growing sustainable commercial forests, and energy developers to evaluate potential wind projects in Arkansas. Hundreds of smaller projects, such as natural gas pipelines, sewer improvement projects, telecommunication towers, wetland conversion permit applications, and university researchers, also rely on the commission's accurate, up-to-date species information.

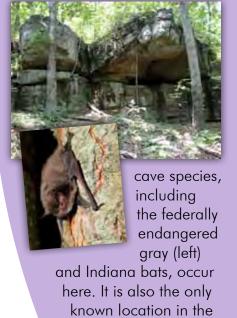
# Status of the System of Natural Areas

Lands within the System of Natural Areas represent some of the best and last examples of the state's natural heritage. As of June 30, 2012, the System consisted of 58,082 acres at 70 different sites across 46 counties. Strategic conservation planning and research serve as the foundation for land acquisition efforts. In addition to Foushee Cave (featured at right), the commission added 2,133 acres at existing natural areas this year, including:

- 160 acres at Slippery Hollow Natural Area includes a cave and essential foraging habitat for endangered Ozark big-eared bats.
- 60 acres at Warren Prairie Natural Area conserves additional pine flatwoods in cooperation with The Nature Conservancy.
- 20 acres at Poison Springs Natural Area protects sandhill habitat in cooperation with the Arkansas Forestry Commission.
- 40 acres at Pine City Natural Area consolidates land holdings and provides restoration opportunities to increase Red-cockaded Woodpecker habitat.
- 52 acres at Miller County Sandhills Natural Area protects additional sandhill habitat.
- 1,688 acres at Longview Saline Natural Area conserves habitat for three federally-endangered species along the Saline River.
- 113 acres at Kings River Falls Natural Area increases river protection and public access opportunities at one of our most visited natural areas.

Current ownership within the system is divided almost equally between conservation easements and fee title ownership. Stewardship activities for each natural area are directed by a management plan that considers ownership type (fee title or easement) and includes methodical steps to restore ecosystem functions and maintain or enhance habitat conditions. Plans are updated in a regular review cycle, integrating new research findings and changes on the landscape. In FY2012, the commission approved 24 updated plans.

The System grew to 70 sites in FY2012, with the addition of Foushee Cave Natural Area (below). This 2,732-acre natural area in Independence County protects one of the most biologically diverse caves in the state along with 80 percent of the direct recharge zone of the cave and the associated forest communities. Ten significant



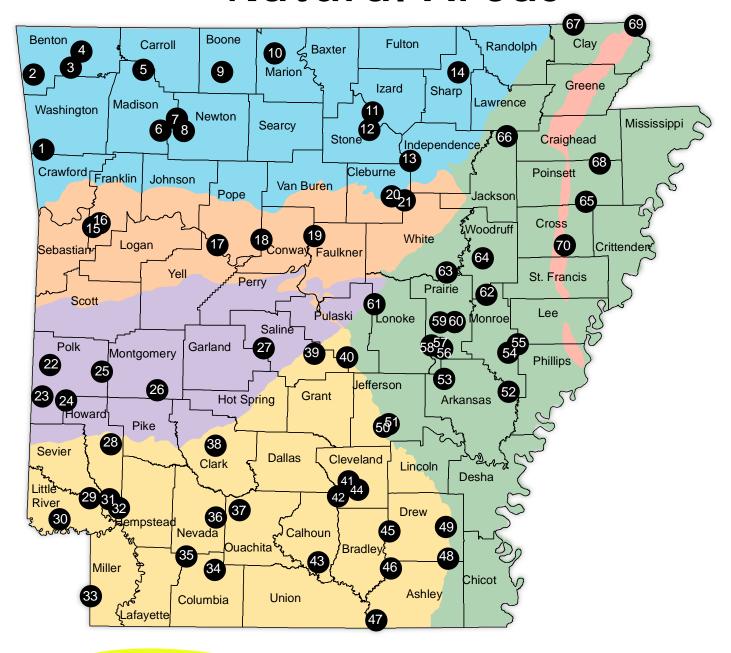
world for the Foushee

cavesnail.

Each natural area management plan provides site-specific stewardship objectives such as boundary demarcation, invasive species removal, and prescribed fire. Additional work, such as removing trash, installing trails and parking areas, conducting research, and leading educational field trips was completed this year by commission staff, contractors, volunteers, and conservation partners. Significant stewardship highlights for FY2012 include:

- Prescribed burns were conducted on 6,927 acres at 20 natural areas to maintain and restore fire dependent natural communities.
- Habitat management and partnerships to relocate birds from other lands resulted in increased Redcockaded Woodpecker populations at Warren Prairie, Pine City, and Moro Big Pine Natural Areas.
- Monitoring of bat populations at four natural area caves revealed no occurrence of White-nose Syndrome, a devastating disease affecting hibernating bats in eastern North America.
- Parking areas were installed at three natural areas to improve public access.
- Intensive invasive plant species eradication has improved habitat at Cove Creek, Byrd Lake, and Nacatoch Ravines Natural Areas.

# System of Natural Areas



As of June 30, 2012, the System of Natural Areas consisted of 70 sites totaling 58,082 acres in 46 counties across the state. In the map above, natural areas are notated by numbered dots. Each numbered dot has a corresponding natural area in the list on the facing page.

Detailed reports, including county location, driving directions, site description, and status of each site within the System can be found in the green pages section of the coil-bound document.



- Garrett Hollow Natural Area
- 2 Chesney Prairie Natural Area
- 3 Cave Springs Cave Natural Area
- 4 Searles Prairie Natural Area
- 5 Bear Hollow Natural Area
- 6 Kings River Falls Natural Area
- 7 Sweden Creek Falls Natural Area
- 8 Pine Hollow Natural Area
- 9 Baker Prairie Natural Area
- 10 Slippery Hollow Natural Area
- 11 Devil's Knob-Devil's Backbone Natural Area
- 12 Hell Creek Natural Area
- 13 Foushee Cave Natural Area
- 14 Rock Creek Natural Area
- 15 Cherokee Prairie Natural Area
- 16 H. E. Flanagan Prairie Natural Area
- 17 Dardanelle Rock Natural Area
- 18 Goose Pond Natural Area
- 19 Cove Creek Natural Area
- 20 Cow Shoals Riverfront Forest Natural Area
- 21 Big Creek Natural Area
- 22 Iron Mountain Natural Area
- 23 Fernwood Seep Natural Area
- 24 Cossatot River State Park-Natural Area
- 25 Big Fork Creek Natural Area
- 26 Gap Creek Natural Area
- 27 Middle Fork Barrens Natural Area
- 28 Stone Road Glade Natural Area
- 29 White Cliffs Natural Area
- 30 Palmetto Flats Natural Area
- 31 Saratoga Blackland Prairie Natural Area
- 32 Nacatoch Ravines Natural Area
- 33 Miller County Sandhills Natural Area
- 34 Logoly Natural Area
- 35 Falcon Bottoms Natural Area

- 36 Arkansas Oak Natural Area
- 37 Poison Springs State Forest Sand Barren & Oak-Pine Forest Preserve
- 38 Terre Noire Natural Area
- 39 Mills Park Natural Area
- 40 Lorance Creek Natural Area
- 41 Kingsland Prairie Natural Area
- 42 Moro Creek Bottoms Natural Area
- 43 Moro Big Pine Natural Area-Wildlife Management Area
- 44 Hall Creek Barrens Natural Area
- 45 Warren Prairie Natural Area
- 46 Longview Saline Natural Area
- 47 Coffee Prairie Natural Area
- 48 Cut-off Creek Ravines Natural Area
- 49 Seven Devils Swamp Natural Area
- 50 Byrd Lake Natural Area
- 51 Taylor Woodlands Natural Area
- 52 Striplin Woods Natural Area
- 53 Roth Prairie Natural Area
- 54 Pine City Natural Area
- 55 Louisiana Purchase Natural Area
- 56 Konecny Prairie Natural Area
- 57 Konecny Grove Natural Area
- 58 Smoke Hole Natural Area
- 59 Railroad Prairie Natural Area
- 60 Downs Prairie Natural Area
- 61 Holland Bottoms Willow Oak Forest Preserve
- 62 Benson Creek Natural Area
- 63 Holloway Memorial Natural Area
- 64 Cache River Natural Area
- 65 Singer Forest Natural Area
- 66 Swifton Sand Ponds Natural Area
- 67 Stateline Sand Ponds Natural Area
- 68 St. Francis Sunken Lands Natural Area
- 69 Chalk Bluff Natural Area
- 70 Wittsburg Natural Area

### Web-based Outreach

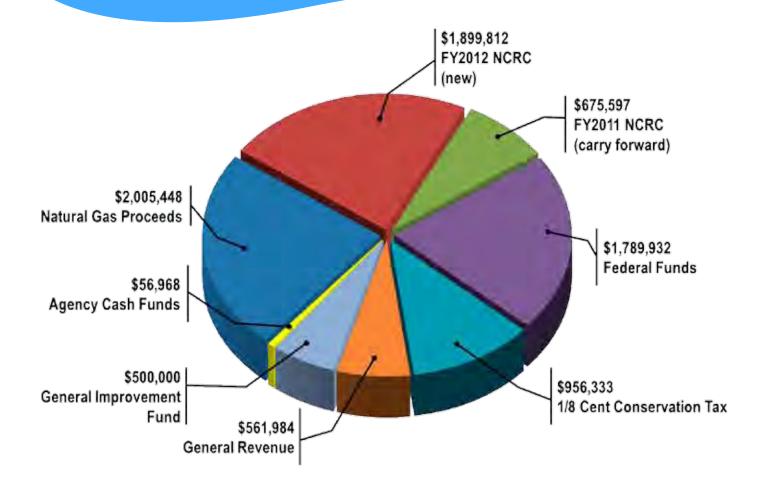


In FY2012, we began using new tracking programs to learn more about our audiences and the most effective formats to reach them. Among other characteristics for this year, we found that:

- Most of our website visits originate from Arkansas, followed by Texas, California, and Missouri.
- Lesson plans are the most often downloaded materials from the website.
- The number of visits to the website from mobile devices is growing significantly.
- On average, 36 percent of our subscribers open the Enewsletter each month, and this is well above the reported national averages, ranging between 23-25 percent, for similar electronic publications.
- Twenty percent of our Enewsletter subscribers have email addresses tied to a government agency or conservation organization.
- Facebook fans generated approximately 36,800 likes, comments, and shares with the 165 posts we made this year.
- Most of our Facebook fans are 24 to 54 years old, and a higher percentage of the fans that share our Facebook posts are female.

We use these ongoing evaluations and assessments to ensure that we disseminate accurate and timely information, maintain a consistent message, and broaden the public knowledge and perception of the ANHC and our endeavors.

## Financial Report



#### Fiscal Year 2012 Expenditures = \$8,446,074

A significant influx of one-time monies greatly enhanced the commission's financial status for Fiscal Year 2012. FY2012 expenditures spiked upwards to \$8,446,074 related to three distinct funding streams:

- General Improvement funding of \$500,000, released by Governor Beebe late in FY2011, contributed to the acquisition of Foushee Cave Natural Area this year.
- Expenditures of natural gas proceeds escalated as the leases administered by the State Land
  Commissioner's Office produced \$2,005,448. With conservation of pristine habitat always our first
  concern, we utilized one-time signing bonuses for land acquisition projects. Additionally, monthly
  royalty payments defrayed portions of our payroll costs and outsourced contracts for natural area
  stewardship.
- State funds were combined to attract two federal grants contributing to the land acquisition costs at Longview Saline and Foushee Cave Natural Areas.

Our FY2012 allocation of the 1/8 Cent Conservation Sales Tax budget for land acquisition was reduced by \$450,000; however, Department of Arkansas Heritage (DAH) leaders have continued to direct Natural and Cultural Resources Council (NCRC) grant funds to the commission. For the last two years (FY2011 and FY2012) the Arkansas Natural Heritage Commission, one of six DAH agencies eligible for NCRC grant funds, received 40 percent of the grant funds awarded to the department.

## Administration

Commissioners participate in quarterly meetings, provide the approvals required by law, and offer oversight to protect the public's interest. In addition, commissioners help to heighten the visibility of the Department of Arkansas Heritage and the commission, and encourage the support of our mission, projects, and programs.

Christian "Trey" Ashcraft Pine Bluff, AR
Manuel Barnes Bentonville, AR
Robert Bevis Scott, AR
Jim Daniels McGehee, AR
Lucien Gillham Sherwood, AR
Robin Lockhart Little Rock, AR

Mark Karnes Arkadelphia, AR Chairman

**Ann Cornwell** *Little Rock, AR* Vice-Chairman

Curtis Adams, Jr. Fort Smith, AR Secretary

Sally McLarty Newport, AR
Stephen Morley North Little Rock, AR
Neill Sloan Lake Village, AR
Gerry Soltz Morrilton, AR
Doug Swann Little Rock, AR
Sharon Walker Lake Village, AR

#### DEPARTMENT OF ARKANSAS HERITAGE

Cathie Matthews Director

Marynell Branch Deputy Director for Heritage Resources

#### ARKANSAS NATURAL HERITAGE COMMISSION

Karen Smith Director
Chris Colclasure Assistant Director
Toni Snow Administrative Specialist
Bob Spraggins Business Operations Specialist

Bryan Rupar Chief of Acquisitions & Stewardship
Doug Fletcher Chief of Stewardship
John O'Dell Stewardship Field Ecologist
Patrick Solomon Stewardship Field Ecologist
Toby Von Rembow Stewardship Field Ecologist

Bill Holimon Chief of Research & Inventory
Tom Foti Biologist, Extra Help
Cindy Osborne Heritage Program Data Manager
Theo Witsell Botanist
Jennifer Akin Conservation Biologist
Scotty Winningham Assistant Data Manager
Brent Baker Botanist

Jason Throneberry Aquatic Species Biologist Katie Shannon Assistant Data Manager

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# Natural Divisions of Arkansas

Up to 40 miles wide at some points, the **ARKANSAS VALLEY** features dissected plateaus similar to those found in the Ozark Mountains

to the north and ridges like those found in the Ouachita Mountains to the south. The Arkansas River and its tributaries formed wide bottomlands and flat terraces that contribute to the distinctive character and natural communities of the valley.

Created by violent folding of the Earth's crust, the **OUACHITA MOUNTAINS** 

are characterized by narrow ridges that sometimes run over 100 miles long. These ridges are generally arranged from east to west with hot, dry south-facing slopes and cooler, damper north-facing slopes.

The **OZARK MOUNTAINS** are generally characterized as uplifted level plateaus with deep, stream-cut valleys. Three distinct areas within the Ozarks differ in topography, geology, and vegetation; the Boston Mountains, the Springfield Plateau, and the Salem Plateau.

#### **OZARK MOUNTAINS**

ARKANSAS VALLEY

OUACHITA MOUNTAINS

COASTAL PLAIN

The **COASTAL PLAIN** was once covered by the Gulf of Mexico. After the water retreated, the sand and gravel that once formed the Gulf's floor was left behind. The rolling landscape is also known for chalk outcrops made from the shells of marine animals. As large rivers began coursing through the area they created wide floodplains and terraces.

#### **CROWLEY'S RIDGE**,

the smallest of Arkansas's natural divisions, is 150 miles long and ranges from 1/2 to 20 miles wide. Rising 200 feet above the surrounding Delta, the ridge was formed as rivers carved valleys. Wind-blown

silt (called *loess*) created by the last glaciers tops the ridge.

Often called the Delta, the MISSISSIPPI ALLUVIAL

the eastern third of Arkansas. Also once covered by the Gulf of Mexico, big rivers such as the White, the Mississippi, the Arkansas, and even the Ohio, have flowed through the area, sweeping away the ocean bottom and replacing it with sand, silt, and clay.

CROWLEY'S RID

**MISSISSIPPI** 

**ALLUVIAL** 

**PLAIN**