Monitoring and Evaluation Report

for the

Land and Resource Management Plan

Arkansas and Oklahoma

Fiscal Year 2014

October 1, 2013 - September 30, 2014

United States
Department of
Agriculture

Forest
Service

2014
Monitoring and Evaluation Report

Ouachita National Forest
Arkansas and Oklahoma

Arkansas Counties:
Ashley, Garland, Hot Spring, Howard, Logan, Montgomery,
Perry, Pike, Polk, Saline, Scott, Sebastian, Yell

Oklahoma Counties:
LeFlore, McCurtain

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Forest Supervisor's Certification

This is the eighth Monitoring and Evaluation Report for the Forest Land and Resource Management Plan (Forest Plan), the current version of which became effective December 2005. I have evaluated and endorsed the monitoring results and findings presented in this report.

Monitoring and evaluation are important tools in determining if management direction in the Forest Plan is effective in achieving desired conditions for the Ouachita National Forest, whether program priorities and objectives are being accomplished, and whether current Plan standards (design criteria) adequately guide project implementation. This and future monitoring and evaluation reports will contribute to review of and updates to the Forest Plan.

NORMAN L. WAGONER
Forest Supervisor

8/20/15
Date

Summary Including Priorities, Recommendations, and Focus Areas

As monitoring results are analyzed, trends are identified. Some trends reveal resource management concerns. Additionally, some focus areas are identified due to new research results. In the following discussions, there is a mix of both monitoring result-driven focus areas and emerging science-driven focus areas. Summaries of the topics are presented in the order they appear in the Monitoring and Evaluation Report. Data are presented by fiscal year, unless noted within the report as being for a calendar year. The fiscal year for the Federal Government (including the Forest Service) is from October 1 of one year to September 30 of the next year.

Implementation of the Forest Plan – Project Decisions

In 2014, 27 project decisions were signed, two with Decision Notices and 25 with Decision Memos. The projects addressed every facet of forest management. A list of project decisions is presented in Appendix B of this report.

Land Ownership and Land Administration

The boundary management accomplishment totaled approximately 57 miles in 2014. From 2006 through 2014, approximately 805 miles of National Forest System boundary have been maintained and/or marked. To protect land ownership title, nine encroachments were resolved in 2014. From 2006 through 2014, 70 land-related issues (encroachment, trespass, or unauthorized occupation) have been resolved.

Land Ownership Pattern and Land Exchanges

Overall, the total of National Forest System lands constituting the Ouachita NF has remained stable, increasing by only 4,710 acres from 2005 to 2014. There is likely to be a continued flat or stable trend in National Forest System acreage due to expected funding levels; however, if there is a need to exchange or purchase additional lands, the Forest will continue to apply the Land Ownership Strategy.

Transportation System and Access Management

During 2014, 1,283 miles of road were operated and maintained to meet objective maintenance levels and classes. Declining road maintenance funding is contributing to difficulties in meeting objective maintenance levels and classes. In addition to maintenance, 11.8 miles of arterial/collector roads were reconstructed (15 roads), and 11.8 miles of new arterial/collector roads were constructed. Plus, 13.77 miles of local roads were reconstructed and 84.33 miles of roads were removed from the system (decommissioned) during 2014. Road Maintenance funding for 2014 was $285,000 in regular appropriated funds and $485,000 in Emergency Relief for Federally Owned (ERFO) roads funds.

Bridge Inspections

There are 130 bridges on 73 roads under Ouachita National Forest management; approximately half of these bridges are inspected annually. For 2014, 76 bridges were inspected, and over 88% were found to be free of any structural deficiency. Those requiring maintenance will be addressed as funding is available or closed if a deficiency becomes a safety hazard.

Access/Travel Management

Five Motor Vehicle Use Maps (MVUMs), one for each set of combined Ranger Districts, were updated, displaying the routes and, in some cases, seasons designated for motor vehicle use.

During 2014, the Forest began work to identify the minimum road system necessary to serve the Forest and the public per Subpart A of the Travel Management Rule (administration of the Forest transportation system). This work is expected to be completed by the end of 2015.

Facility Operation and Maintenance

Little progress had been made in reducing or eliminating leased facilities by the end of FY 2014. Due to budget constraints, the Forest cannot predict when design or construction of the office needed for the Cold Springs-Poteau Ranger District will occur, although the land has been purchased. Some progress has been made to reduce the footprint of the five Ranger Districts, but there is a need to consolidate administrative facilities remnant from the administration of the 12 formerly separate Districts.

Special Uses

Certain uses of National Forest System lands are authorized by special use permits, easements and leases. There were 569 authorizations of various types on the Ouachita NF in 2014. Road access permit requests comprise the bulk of the special use requests. Communication and utility corridor uses comprise the next highest categories of use requests.

Commodity and Commercial Uses

Minerals and Energy Development

Potential threats from geologic hazards to human life or natural resources remain low on the Ouachita National Forest (NF) in both Arkansas and Oklahoma. Gas leases stayed consistent at 215 in 2014. Minerals cases totaled 139 for 2014.

Livestock Grazing/Range Activities

The Range program had been on a decline for several years but has been relatively stable for the past four years. Number of livestock remained steady at 116 and as did the number of active allotments at three. Permitees remained steady at four for 2014.

Timber Sale Program

Firewood: Demand for firewood remains high but decreased in 2014 when compared to previous years. The 828 cords of firewood that were sold were the lowest on record since adoption of the Forest Plan.

Commercial Timber Sales: The ASQ for the Ouachita NF is 27 million cubic feet per year (270,000 CCF). Volume sold that was chargeable towards the ASQ was 168,643 CCF in 2014. In 2014, 169,272 CCF was sold, higher than the 153,743 CCF sold in 2013, but not as high as the 178,426 CCF sold in 2012.

Air Quality

Within the Ouachita National Forest, air pollutants such as ozone, fine particulate matter, and acidic deposition can cause negative impacts to visibility, as well as water quality and aquatic and terrestrial habitats. Ambient monitoring of fine particulate matter, ozone, and visibility-impairing pollutants occurs on or near the Forest to evaluate any potential affects. Additionally, monitoring of acidic deposition levels occurs nearby and is representative of conditions on the Forest. All data are presented in calendar years.

Particulate Matter
No data were available for 2014 at the time of this report.

Ozone
Ozone is a pollutant formed by emissions of nitrogen oxides and volatile organic compounds in the presence of sunlight. At the two monitoring sites closest to the Forest (Polk County, AR and Sequoyah County, OK), both monitors have fallen below the NAAQS in both 2013 and 2014.

Acidic Deposition
Total sulfur and total nitrogen deposition trends for the Cherokee Nation (Adair County, OK) and Caddo Valley (Clark County, AR) monitoring locations are reported in the Clean Air Status and Trends Network database. No data were available for 2014 at the time of this report.

Terrestrial Ecosystems

Desired conditions for each terrestrial ecosystem type are described on pages 6-18 of the Forest Plan. Data regarding these ecological systems were presented in the first Five-Year Review (2010) of the current Forest Plan. The next evaluation will occur as part of the five-year review for 2011–2015. Many elements of terrestrial ecosystems, including habitat conditions, ecological restoration, management indicator species, and endangered species, are addressed in other sections.

Collaborative Forest Landscape Restoration Program (CFLRP)

Through the third year of implementation, direct CFLRP funding totaled $4,528,328. Through FY 2014, 143,000 acres had been treated with prescribed fire and 16,000 acres had been thinned non-commercially.

Chiefs' Joint Landscape Restoration Partnership

The Western Arkansas Woodland Restoration Project was undertaken in 2014 with joint funding from the Natural Resources Conservation Service (NRCS) and the FS (NRCS - $2,180,000; FS $800,000 on the Ouachita).

Good Neighbor Authority

The Good Neighbor Authority allows the Forest Service to enter into cooperative agreements or contracts with States to perform watershed restoration and forest management services on National Forest System (NFS) lands. In 2014, Congress passed two laws expanding Good Neighbor Authority (GNA): the FY 2014 Appropriations Act and the 2014 Farm Bill. The GNA authority was not used in FY 2014.

Soils
Over 500 acres of soil restoration was accomplished in 2014.

Soil and water resource assessments were conducted on 2,686 acres in 2014, which is nearly 150% more than was accomplished in 2012 and 2013 combined.

In 2014, a total of seven resource areas on over 500 acres were monitored, which included recreation management, vegetation management, roads management and fire management.

Fire Influences and Fuels

For 2014, 99,127 acres were credited to the prescribed fire program.

Under the Watershed Restoration and Enhancement Agreement Authority, popularly known as the Wyden Amendment, 2,828 acres were cooperatively treated with fire in 2014.

Terrestrial Non-native Invasive Species (NNIS)

The Ouachita NF collects data on invasive species infestations and enters that data into the Natural Resource Information System (NRIS) database. The NNIS inventories have been completed on 35,466 acres of wilderness inventory on four of the six wilderness areas within the Forest: Dry Creek, Poteau Mountain, Blackfork, and Flatside.

In 2014, over 500 acres of non-native invasive plants were treated and a total of 1,146 acres of new infestations were reported.

Insects and Disease

The ONF continues to participate in annual southern pine beetle (SPB) trapping that attracts and forecasts SPB activity and participates in the SPB prevention program that targets pine stands in need of thinning to keep them below the volume and spacing requirements known to contribute to SPB spot growth (timber loss).

The ONF is also dealing with the invasive “emerald ash borer” (EAB). As of the end of FY 2014, six counties in south central Arkansas had positive trap catches and those counties plus other buffer counties are now quarantined for the movement of hardwood timber products, including firewood.

Vegetation Management

The ONF primarily uses natural regeneration to propagate stands of native species and provide early seral stage vegetation. Seedtree and shelterwood cuts in Shortleaf Pine/Shortleaf Pine-Oak planned and contracted through commercial timber sales between 2006 -2014 resulted in 21,138 acres of regeneration.

Terrestrial Habitats (Seral Stages)

Early Seral Stage

The Forest Plan objective is to create 5,500 acres of early seral stage (grass/forb) habitat per year using even-aged methods. Forest-wide, less than 24,000 acres of early seral habitat have been created since 2005 (when the Plan was revised), averaging less than 3,000 acres per year. In 2014, 3,287 acres were salvaged; however, adding this to the acres of early seral created through green timber harvesting (606) would still not meet the plan objective.

Mid-Seral Stage

Mid-seral vegetation is tracked in FSVeg as a transitory stage between early and late seral stages; however, there are no species of concern that are considered obligates of this vegetation condition. This structural condition is prime for pole timber production and is a precursor to sawtimber production.

Late Seral Stage

The late seral vertical structure condition provides habitat and forage for a suite of habitat specialists such as the Scarlet Tanager and Cerulean Warbler that specifically require tall trees, as well as habitat generalists. From 2005 to 2014, the Forest increased in the late seral stage by over 160,000 acres.

Other Terrestrial Wildlife Habitat Components

Cave and Mine Habitat

During mine surveys in 2014, northern long-eared bats (a newly listed federal species) were identified in two mines. Most mines have been gated with bat-friendly gates.

Mast Production

There were 421,072 acres of hardwoods greater than 50 years old in 2014 compared to a slightly larger number of acres (423,961) in 2012-2013.

Habitat Capability Modeling

Modeling habitat capability using the Computerized Project Analysis and Tracking System (CompPATS) wildlife model and vegetative data from the Field Sampled Vegetation (FSVeg) is a tool to evaluate and estimate acres of suitable habitat to sustain healthy populations of native and desired non-native wildlife species on the Ouachita NF. Forest-wide habitat capability modeling shows that terrestrial MIS species are moving toward or have passed the projected desired habitat capability for 2015, with a few exceptions. Habitat for such early successional species as Northern Bobwhite increased slightly in 2014, after several years of decline. Habitat capability for Prairie Warbler has been declining since 2007, although there are some indications that the trend plateaued from 2011 through 2014. Habitat for such late successional species as Pileated Woodpecker remains above levels projected for 2015. Habitat capability for Scarlet Tanager declined from 2008 through 2010, but seems to have stabilized since then.

Terrestrial Management Indicator Species and Wildlife Habitat Management

The Forest Plan identified seven terrestrial MIS—all are bird species with the exception of white-tailed deer:

Eastern Wild Turkey

Habitat capability for 2014 was estimated at 14,809 turkeys, up slightly from 2013.

Northern Bobwhite

Estimated habitat capability for the Northern Bobwhite has shown a slight increase since 2006, with the last three years showing a decrease. There is an overall level capability over the last eight years.

Pileated Woodpecker

The Pileated Woodpecker and its habitat appear to be secure within the Ouachita NF. There are no indications of a need to alter management direction.

Prairie Warbler

Habitat capability for the Prairie Warbler on the Ouachita NF continues to show a downward trend, which is consistent with range-wide trends. Although habitat capability is declining on the ONF, it may have stabilized somewhat over 2011-2014 period, and the bird's population viability on the ONF should not be threatened.

Red-cockaded Woodpecker

Red-cockaded Woodpecker is an MIS but is discussed in the Threatened and Endangered Species section.

Scarlet Tanager

This species was selected as an MIS to help indicate the effects of management on mature forest communities. Landbird Points data collected from 2006-2014 suggest an overall decreasing trend for the Scarlet Tanager, with 2014 showing the lowest number of tanagers recorded in the last ten years, but the trend is not significant and could reflect natural variability. The continued long-term viability of this species does not appear to be in question.

White-tailed deer

The estimated habitat capability for deer for fiscal years 2008 through 2014 shows a downward trend, but one that leveled off between 2012 and 2014. The capability is within the range of the desired habitat capability of 38,105 acres for 2015. Deer are widespread, abundant, and there are no indications of a need for adjustment in current management practices.

R8 Sensitive Species and Terrestrial Species of Viability Concern

Species are categorized as being "sensitive" due to their endemic or restricted ranges and/or current or predicted downward trends in population numbers and/or available habitat, which raises concern about long-term viability. The following species listed on the Regional Forester's Sensitive Species list are regularly monitored:

Bald Eagle

Surveys in 2014 on the Ouachita NF showed four known nest sites (Irons Fork Lake, Lake Ouachita and North Fork Lake), and confirmed nest successes at the North Fork Lake and at a new site, Hatchery Lake near High Point Mountain.

Caddo, Rich, and Fourche Mountain Salamanders

No recent surveys for the Caddo and Fourche Mountain salamander species have been conducted; however, the Oklahoma RD surveyed a project area, and the USFWS and FS will be conducting status surveys during FY 2015.

Rich Mountain Slit-mouth Snail

Eight Rich Mountain slit-mouth snails were found during 30-minute searches of nine sites in FY 2014.

Eastern Small-footed Bat and Southeastern Myotis

The Ouachita NF initiated a bat acoustic survey protocol in 2009 to monitor bat population trends and assess the impacts of White Nose Syndrome (WNS) on the

summer distribution of bats. See the “Bats and White-Nosed Syndrome (WNS)” section under “R8 Sensitive Species and Terrestrial Species of Viability Concern.” Twenty-two Southeastern Myotis were found to occur in Chalk Mine during the FY 2014 mine monitoring efforts.

Terrestrial Proposed, Endangered, and Threatened Species Habitat

Proposed, Endangered and Threatened species include all federally listed species where their ranges include part or all of the Forest. There are 12 federally listed species that are considered as occurring on or potentially occurring on the ONF, and six are terrestrial species:

American Burying Beetle

In 2014, 36 transects were monitored using the current USFWS protocol for a total of 155 trap nights. No ABBs were captured on either Oklahoma or Poteau/Cold Springs Ranger Districts in 2014.

Indiana Bat

No surveys were conducted at Bear Den Cave in 2013 or 2014. Data from the Indiana Bat Recovery Team and other sources in the scientific literature show there are no records of this species reproducing within the Ouachita Mountain Regions of Arkansas or Oklahoma. Indiana bats typically travel north from Ozark Mountain summer maternity sites and winter hibernacula.

Bats and White-Nosed Syndrome (WNS)

Arkansas became the 23rd state to confirm WNS in bats May 2014. The fungus is transmitted primarily from bat to bat. Currently, WNS is found in 26 US states including northwest Arkansas within the caves on the Ozark NF, and five Canadian provinces. he Ouachita NF has gated most known mines or caves with bat-friendly gates to allow access for the bats and to prevent other disturbances, and continues to gate and perform maintenance work on existing gates as needed. In 2014, two new mine gates were installed, two mine gates were repaired, one gate was replaced and two mine shafts were closed.

Least Tern and Piping Plover

During 2014, Least Tern numbers at Red Slough rebounded with the highest number yet (82 individuals counted), alleviating concerns generated in 2012 by the fewest number of Least Terns reported. There were no Piping Plover observed at Red Slough in 2012, 2013 or 2014, with lower numbers attributable to drought conditions during 2011-2013.

Northern Long-eared Bat

In 2014, nine mines on the Caddo/Womble and Mena/Oden Ranger Districts were surveyed for bats; Northern Long-eared bats were found in two of the mines surveyed.

Red-cockaded Woodpecker

The Red-cockaded Woodpecker (RCW) is both a federally listed endangered species and an MIS for the Ouachita NF. RCW active territories increased from a low of 11 territories in 1996 to 70 active territories in 2014.

American Alligator

Surveys of the American alligator on the Oklahoma Ranger District in 2014 located 16 alligators in Red Slough and Ward Lake, only 50% of the record high 32 alligators counted in 2013.

Missouri Bladderpod

Missouri Bladderpod was monitored in 2013 and will be monitored in 2015. The population at the Avant Site was in full bloom. The population is small, as earlier reported and each individual had multiple flowers. During the 2013 review, there were no apparent signs of disease or damage.

Other Wildlife Management Considerations

In addition to managing for species viability and health, the Ouachita NF actively coordinates with the Arkansas Game and Fish Commission and the Oklahoma Department of Wildlife Conservation on all matters related to wildlife management.

Hunting

Hunting is permitted anywhere on the Ouachita National Forest except within developed recreation sites or otherwise posted areas. All state hunting and fishing regulations, fees, and seasons apply on National Forest System lands. Hunting with dogs is not allowed on Ouachita National Forest System lands within WMAs managed by either the Arkansas Game and Fish Commission or the Oklahoma Department of Wildlife Conservation. Hunting with dogs is still allowed on the general forest area of the Ouachita National Forest in Arkansas.

Wildlife Management Areas

In Arkansas, three WMAs are managed by the Arkansas Game and Fish Commission (AGFC) cooperatively with the Ouachita NF by Memorandum of Understanding between the land managing parties for the benefit of the hunting public.

Caney Creek WMA (85,000 acres) occupies portions of Howard, Montgomery, Pike, and Polk Counties. Maintainance for 2014 included mowing 125 acres of plots and planting 72 acres of plots. Most plots are maintained on a two-year rotation with the exception of plots within the Walk-In Turkey Area.

Muddy Creek WMA (150,000 acres) is located in Montgomery, Scott, and Yell Counties. Maintainance for 2014 included mowing and planting 162 acres of plots. Also, AGFC maintained a two-year rotation for maintainance with a few exceptions due to heavy rains washing out accesses in the Rockhouse Watershed area.

The Winona WMA (160,000 acres) is located on lands in Garland, Perry, and Saline Counties. Maintainance for 2014 included mowing and planting 160 acres of plots. Food plot maintenance in the Winona WMA is on a two-year rotation.

In Oklahoma, there are four Wildlife Management Areas on the ONF managed in cooperation with the Oklahoma Department of Wildlife Conservation (ODWC). Oklahoma is unique for the ONF in that all National Forest System lands within the two counties in Oklahama are contained within WMAs.

All of the National Forest System lands within LeFlore County are contained within either the **Ouachita LeFlore Unit WMA** (212,836 acres) or the **Cucumber Creek**

WMA (12,627 acres, with 3,514 owned by The Nature Conservancy). In the Ouachita LeFlore WMA, 130 food plots are maintained in cooperation with the ODWC and National Wild Turkey Federation (NWTF). For 2014, 45-50 acres of food plots were maintained.

All of the National Forest System lands within McCurtain County are contained within either the **McCurtain Unit WMA** (127,191 acres) or the **Red Slough WMA** (5,814 acres). The NWTF contributes to prescribed burning, which is on a three-year rotation allowing for almost continual new growth. During 2014, the ODWC accomplished removal of 106 feral hogs from Red Slough WMA along with their annual food plot maintenance.

The Red Slough WMA is cooperatively managed by the Ouachita NF, Natural Resources Conservation Service (NRCS), and ODWC. The Red Slough WMA bird surveys through 2014 revealed a total of 317 bird species (checklist available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5163358.pdf).

Walk-In Turkey Areas

There are nine Walk-In Turkey Areas on the Ouachita NF, seven in Arkansas and two in Oklahoma: Sharptop Mountain, Leader Mountain, Hogan Mountain, Fourche Mountain, Deckard Mountain, Shut-In Mountain, Chinquapin Mountain, Blue Mountain (OK) and Well Hollow (OK). Walk-In Turkey Areas were established at the request of turkey hunters who desired opportunities to hunt on public lands free of disturbance from motor vehicles.

In FY 2014, AGFC, in cooperation with the FS, removed eight feral hogs out of Sharptop in approximately 25 nights overall and five trap nights.

In OK, five food plots each (or ten acres/Area) are annually maintained in Well Hollow Walk-In Turkey Area and Blue Mountain Walk-In Turkey Area both within the Ouachita WMA, managed in cooperation with the ODWC.

Riparian and Aquatic Ecosystems and Habitat

Riparian and aquatic associated ecosystems comprise approximately 16% of the Forest, and are managed within designated Streamside Management Areas (SMAs) to protect and maintain water quality, productivity, channel stability, and habitat for riparian-dependent species. The desired condition is that watercourses are in proper functioning condition and support healthy populations of native species.

Aquatic Management Indicator Species (MIS)

Aquatic species are divided into Pond, Lake and Waterhole MIS and Stream and River MIS.

Pond, Lake, and Waterhole MIS

There are three pond, lake, and waterhole management indicator species (MIS) and these species are reported on a calendar year basis rather than a fiscal year basis: Bluegill, Largemouth Bass, and Redear Sunfish. White Crappie, Gizzard Shad, and Threadfin Shad are not designated MIS species, but they are discussed because they are helpful to determine catch and harvestability rates of other game fish or to assess potential hazards to sustainable sport fisheries.

Bluegill

There was an increase in the 2014 Bluegill electrofishing catch after historic lows in 2013 and 2011. Although there were some fluctuations between years, as sampled in all years through 2014, Bluegill populations across the Ouachita NF are at suitable and sustainable levels and their viability is not in question. No management changes are indicated by monitoring results.

Largemouth Bass

The 2014 catch rate was the second highest of the past five years. As sampled in 2014, Largemouth Bass populations across the Ouachita NF are at suitable and sustainable levels and their viability is not in question. No management changes are indicated from monitoring results.

Redear Sunfish

The spring electrofishing seasons in the past several years have been characterized as wet springs with temperatures cooler than normal with the result that Sunfish spawns have been missed. As sampled in 2014, the Redear Sunfish populations across the Ouachita NF are at suitable and sustainable levels and their viability is not in question. During seining, adequate reproduction was found for Redear Sunfish in most of the waters that were easily seined. No management changes are indicated from monitoring results.

White Crappie

While the White Crappie population was followed in this report for its cyclic nature, the population is stable and past trends continue; therefore, White Crappie will be dropped from discussion in future Monitoring Reports. Data continues to be studied in the course of evaluating the Dry Fork sampling results for all species caught. The pattern of low catch rates and high harvestability seems to be holding.

Gizzard Shad

There is concern that the Gizzard Shad population might be expanding in Cedar Lake to the detriment of the sport fishing species. The electrofished Gizzard Shad are generally too large to be consumed by all but the very largest Bass and Channel Catfish in Cedar Lake. Based on these results, it appears the large Shad should continue to be targeted with a reduction program to promote production of the smaller Gizzard Shad, continuing the work started by ODWC to achieve desired results. Trends in the Gizzard Shad population will continue to be monitored by gill netting and electrofishing in order to detect changes in abundance and length frequencies within the Gizzard Shad population.

Threadfin Shad

Threadfin Shad first appeared in samples in 2006; however, they disappeared by 2009. Therefore, it appears the threadfin Shad have likely died out. Monitoring protocols will be changed so that additional gill net sampling will not be conducted unless Threadfin Shad should appear in electrofishing or seining samples again.

Stream and River MIS

There are 14 species of fish associated with stream and river habitat. Monitoring for these MIS is to determine how well the stream and river aquatic habitat conditions are being maintained or enhanced.

Data indicate that the following populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question:

- Smallmouth Bass
- Green Sunfish
- Longear Sunfish
- Yellow Bullhead
- Northern Hog Sucker
- Highland Stoneroller
- Creek Chubsucker
- Striped Shiner
- Northern Studfish
- Orangebelly Darter
- Redfin Darter
- Pirate Perch

Johnny Darter

Johnny Darters are more typically found over fine gravel and sand substrates. While the winter of 2011 was fairly mild without much flooding, high rains and flooding occurred in April and May followed by the sixth worst drought since 1921. It was very wet in 2014, particularly for the Mountain Fork River drainage. Because of the variability between years and sites, several good water years without flushing flows should result in higher numbers of Johnny Darters.

Channel Darter

Numbers for most individual sites that could be surveyed in 2014 were near or below their median counts with the exception of two Glover River sites. Overall trend lines for Channel Darters show a downward trend that is statistically significant, but that significance is very low.

R8 Sensitive and Other Aquatic Species of Viability Concern

Ouachita Darter

A Forest Service snorkel survey for Ouachita Darters was not conducted in 2014 due to the short turnaround time for required training and reporting in the Watershed Interactive Tool (WIT) data base of record.

Aquatic Dependent Proposed, Endangered, Threatened, and Sensitive Species and Habitat

Listed Freshwater Mussels

There were no specific freshwater mussel surveys conducted on the Ouachita NF during 2014; however, mussel surveys are scheduled for 2015.

Leopard Darter

Leopard Darters have undergone a five-year Status Review by the US Fish and Wildlife Service and results have been released, with no recommendation to upgrade or downgrade its listing classification. Snorkel counts of Leopard Darters in 2014 were somewhat higher than those the summer of 2011, but were lower than counts in 2012 and 2013. Data indicate that the population is experiencing natural variations. There is a newly perceived threat to Leopard Darter survival of inadequate genetic variation between and within populations, which is under further scrutiny.

Harperella

During 2014, five of the known sites of Harperella on the forest were monitored. These sites in include one area along Fiddler Creek, one on Rainey Creek, one site on the South Fourche La Fave River, and two sites along the Irons Fork. Fiddler Creek was the only site where Harperella was observed during 2014. The other sites were visited on two different occasions and both times the sites were under water and no Harperella could be observed.

Other Aquatic Habitat Considerations

Game Fish Habitat

For 2014, annual Channel Catfish stocking continued in most managed recreational fishing waters in close coordination with the fish and game agencies of each state. In 2014, additional fish sampling was continued to monitor the Gizzard Shad population at Cedar Lake, and control measures were again undertaken as it appears the Gizzard Shad population continues to keep game fish populations in Cedar Lake from obtaining their optimal growth. The control measures, with limited sampling, appear to be helping with shifting some of the Gizzard Shad biomass to smaller sized Shad more available for game fish consumption.

Aquatic Habitat Enhancement Activities

In 2014, 23.6 miles of fish passage were restored at seven crossings and over 16.5 miles of sediment reduction/control was accomplished, mostly funded with Federal Highway's flood restoration dollars (ERFO). A total of 32 miles of stream inventory was accomplished. There were 44 wildlife waterholes constructed or reconstructed as ephemeral aquatic habitat particularly for amphibian spawning.

Watershed Function and Public Water Supply

Public water supply surface sources with lands on or near the Forest include Broken Bow and Wister Lakes in Oklahoma and the following source areas in Arkansas: South Fork Reservoir (Cedar Creek), Iron Forks, and James Fork Reservoirs; Hamilton, Nimrod, Ouachita, Waldron, Winona, and Square Rock Lakes; and the Caddo, Middle Fork Saline, Ouachita, Petit Jean, and Saline (eastern) Rivers.

Herbicide Monitoring

In 2014, one stream was monitored twice on the Mena-Oden RD for the presence of herbicides (Imazapyr and Triclopyr) below treated stands. This is an ongoing monitoring program where 10% of areas treated with herbicides are monitored for off-site movement. Lab results indicate that the presence of herbicides was insignificant for all sites. No changes to the monitoring protocols are recommended; however, samples need to be submitted to the lab for analysis and reported each year.

Recreation

Abundant opportunities exist for the public to use and enjoy the Ouachita NF. Areas or facilities reported in this section include those MAs having special emphasis on recreation and/or scenery and include developed recreation sites, semi-primitive and wilderness areas, and trails.

Fee Sites

Occupancy rates are not tracked at non-fee sites. Of the recreation sites that are operated as fee sites, occupancy rates are not relevant for the five day use areas (Cedar Lake, Lake Sylvia, Shady Lake, Little Pines, and Charlton Recreation Areas). During 2014, $183,094 was collected at 14 fee sites.

Trails

The Forest provides a diverse array of trails including equestrian, off-highway-vehicle (OHV), hiking/mountain bike and interpretive. Primary trail-based opportunities occur in the Wolf Pen Gap OHV area, along the Ouachita National Recreation Trail, on the Cedar Lake Equestrian trails system in Oklahoma, the International Mountain Bicycling Association “EPIC” Womble Mountain Biking Trail, and the newly “EPIC” Lake Ouachita Vista Trail.

Recreation Participation

Based on the 2010 National Visitor Use Monitoring program, overall satisfaction ratings were very high – over 80% of visitors to the Ouachita NF were very satisfied with their overall experience. The 2015 National Visitor Use Monitoring is in progress.

Public and Agency Safety

The Forest Law Enforcement Officers (LEO’s) responded to or assisted with 24 accidents during 2014 within or adjacent to the Ouachita NF. These numbers include minor injuries (sprains, dog bites, etc.), All-Terrain Vehicles (ATV), and motorcycle and motor vehicle accidents. During 2012, an ATV Razor was acquired to address violations on ATV trails, and whether related or not, there were zero ATV fatalities during 2014. This is only the second year that the ONF has been able to report no fatalities due to ATV accidents. A total of 570 violation notices were reported for 2014. Over 16,000 members of the public were reached in 82 public relations program hours.

Heritage Resources and Tribal Relationships

Heritage Stewardship

During 2014, the State Historic Preservation Officers of Arkansas and Oklahoma and several tribes agreed to extend for another year the existing programmatic agreement with the Forest Service (Ouachita and Ozark-St. Francis National Forest), an agreement that guides implementation of National Historic Preservation Act Section 106 procedures on these national forests.

Priority Heritage Assets (PHAs) are monitored on a five-year rotation, in which 20 percent of PHAs are monitored each year; for 2014, the Ouachita had 198 archeological and historic sites on the PHA list. The reviews address interpreted sites, sites with management plans, sites registered in the National Register of Historic Places, cemeteries, and sites with hazards or severe maintenance needs. Although this schedule is highly effective for these types of sites, there are other important sites that are not being monitored as frequently.

Tribal and Native American Interests

During 2014, several tribes agreed to extend for another year the existing programmatic agreement with the Forest Service (Ouachita and Ozark-St. Francis National Forest) and the State Historic Preservation Officers of Arkansas and Oklahoma; this agreement guides implementation of National Historic Preservation Act Section 106 procedures on these national forests. By early 2016, the parties will need to agree to a new, streamlined version of the programmatic agreement or revert to the requirements of 36 CFR 800.

Also during FY 2014, the Caddo Nation of Oklahoma and the Choctaw Nation of Oklahoma signed comprehensive agreements with the USDA Forest Service (Ouachita and Ozark-St. Francis National Forests) concerning protocols to implement the Native American Graves Protection and Repatriation Act of 1990 and the Archaeological Resources Protection Act of 1979. These represent positive steps toward stronger Government-to-Government relationships with these Tribes.

The annual To Bridge a Gap meeting between Tribes and the Forest Service was held in Fayetteville, AR in 2014. 167 people attended the conference representing 13 Tribes, 9 State and 14 Federal agencies and 5 private companies and contractors.

Contribution to Social & Economic Sustainability

The Ouachita NF is important to many local economies in terms of providing employment, ecosystem services, products, services, recreation visits, contracting, and other sources of revenue that then multiply economically within local communities. The economic influence of the Ouachita NF has remained fairly stable over time.

Payments to Counties

Payments in 2014 ranged from a high of $1,091,255 to Scott County (where nearly 65% of the county is in NFS ownership) to a low of $444 in Hot Spring County (where less than 1% of the County is in NFS ownership).

Budget

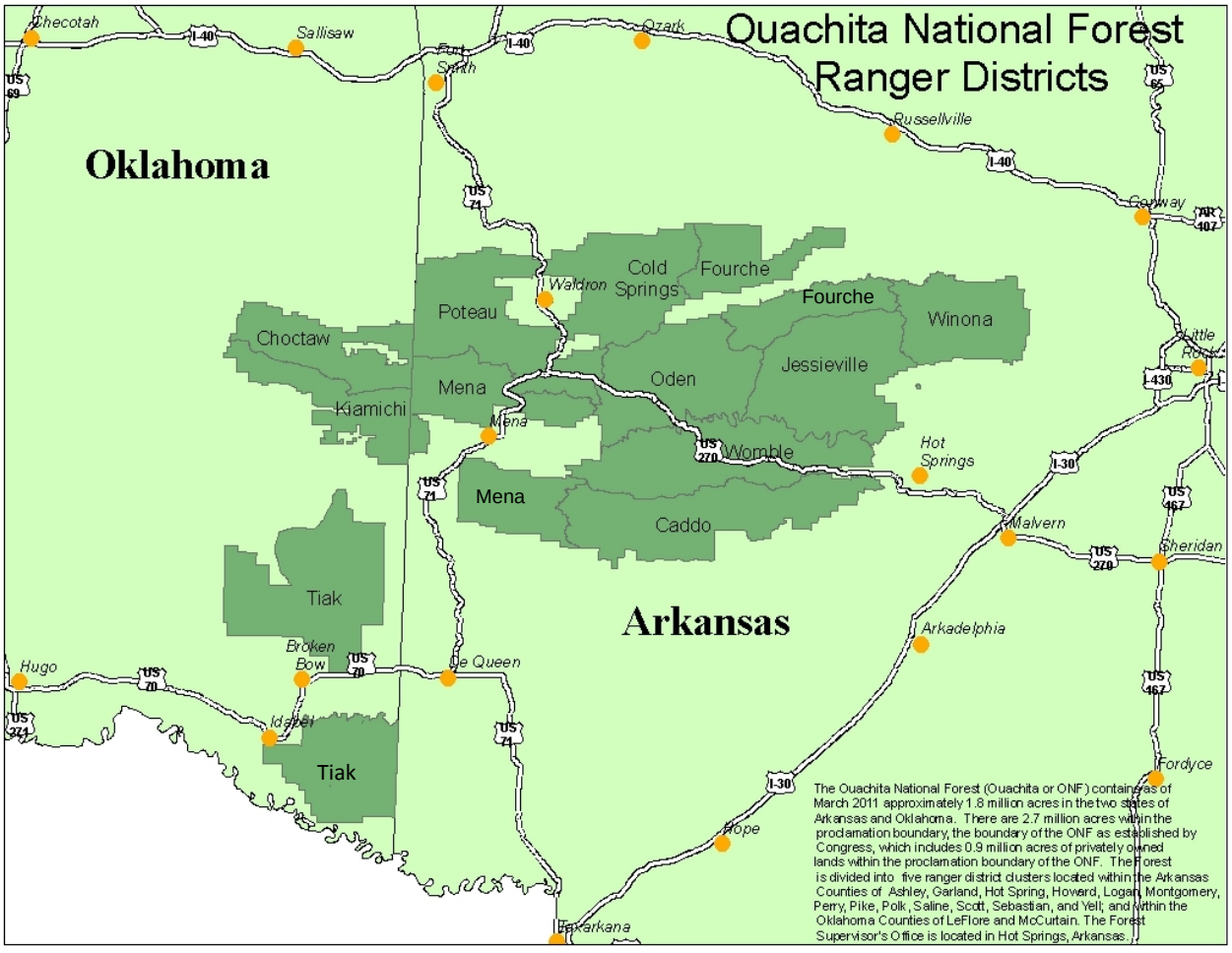
The Forest Plan management areas and standards represent statements of long-term management direction. Such direction and the rate of implementation are largely influenced by and dependent on the annual budgeting process. The NFS budget for 2014 was $9.7 million (without earmarks or returns on receipts of timber sales under the Knutson-Vandenberg Act).

The Ouachita National Forest

The Ouachita National Forest (Ouachita NF, Forest, or ONF) is located in western Arkansas and southeastern Oklahoma and contains approximately 1.8 million acres. There are approximately 2.7 million acres within the boundary of the Forest established by Congress, known as the "proclamation boundary." Privately-owned or State lands within the proclamation boundary total nearly 1,000,000 acres.

The Ouachita NF is divided into five ranger district units located within 13 Arkansas counties: Ashley (Crossett Experimental Forest), Garland, Hot Spring, Howard, Logan, Montgomery, Perry, Pike, Polk, Saline, Scott, Sebastian, and Yell; and within two Oklahoma counties: LeFlore and McCurtain. The Ouachita NF Supervisor's Office is located in Hot Springs, Arkansas. Individual Ranger Districts are shown in the following map. For administrative purposes, the Ranger Districts are grouped into the following administrative units: Oklahoma; Poteau-Cold Springs; Mena-Oden; Caddo-Womble; and Jessieville-Winona-Fourche.

Ouachita NF Vicinity Map



Monitoring of the Forest Plan

The Land and Resource Management Plan (Forest Plan) for the Ouachita National Forest (Ouachita NF) provides broad, strategic direction for managing the land and its resources. The Forest Plan sets out the vision, desired conditions, priorities and objectives as well as standards to achieve the desired conditions and priorities. Forest Plan direction provides a framework to guide future management decisions and actions. Over time, it is necessary to assess progress toward achieving the desired conditions, meeting the objectives, and adhering to the standards in the Forest Plan. A cycle of adaptation is formed when management direction in the Forest Plan is implemented, reviewed, and then adjusted in response to knowledge gained through monitoring and evaluation. Monitoring is conducted by Forest Service resource specialists; Forest Service research scientists; universities; state, federal, and resource agencies; and other cooperators. Persons who contributed data, assisted in compilation of data, or helped to prepare this Monitoring and Evaluation Report (M&E Report) are listed in Appendix A to this report.

Purpose of the Monitoring and Evaluation Report

The Forest Plan was completed under the 1982 version of the 36 CFR Part 219 regulations (developed under the National Forest Management Act) that guide Forest Service planning at the Forest and national levels. These regulations specify that forest plan "implementation shall be evaluated on a sample basis to determine how well objectives have been met and how closely management standards and guidelines have been applied. Based upon this evaluation, the interdisciplinary team recommends to the Forest Supervisor such changes in management direction, revisions, or amendments to the forest plan as are deemed necessary." Thus, the purpose of the M&E Report is to identify needed changes to the Forest Plan. Based on the data gathered during monitoring, trends can be established and management corrections made, as necessary. Monitoring helps to track progress toward achievement of Desired Conditions (Forest Plan, Pages 6–43) and Plan Objectives (Forest Plan, Pages 58–69); implementation of Standards (Forest Plan, Pages 73–122); and occurrence of environmental effects, as predicted in the Environmental Impact Statement prepared for the Forest Plan. Monitoring indicates whether, or to what extent, Ouachita NF management is addressing plan priorities. The evaluation of monitoring results allows the Forest Supervisor to initiate actions to improve compliance with management direction where needed, improve cost effectiveness, and determine if any amendments to the Forest Plan should be made to improve resource management.

Organization of the Monitoring and Evaluation Report

For Monitoring Reports completed for years 2006–2009, the M&E Report was structured similarly to the Forest Plan. However, over the course of those years, it became evident that a more cohesive accounting of plan progress could be achieved through consolidating all monitoring by subject matter. Beginning with the 2011 M&E Report and continuing forward, the format changed to a summary of monitoring and evaluation by subject, and topics are not repeated in various places throughout the report. Also, beginning with the 2012 and 2013 M&E report, in compliance with the 2012 Plan Rule, a biennial monitoring report was prepared. However, specialists felt it was more accurate to produce an annual monitoring report; therefore, the 2014 Monitoring and Evaluation Report covers a single year.

Implementation of the Forest Plan

While the Forest Plan for the Ouachita NF provides broad or strategic direction for managing the Ouachita NF, site-specific project decisions are more defined and must be consistent with Forest Plan direction. Project level decisions must also be in compliance with all applicable Federal and State laws, rules and regulations, such as the National Environmental Policy Act (NEPA), the National Historic Preservation Act, and the Endangered Species Act. The Forest Plan is implemented through project work primarily accomplished at the District level.

Project Decisions Made in Fiscal Year 2014

For additional information, contact Lisa Cline at lcline@fs.fed.us

Decisions to implement management actions fall into two categories: non-documented and documented. Some routine management actions do not require documented decisions, such as road and trail maintenance. Other actions that may affect the human environment such as timber harvest and prescribed burning require documented decisions.

Appendix B to this report (page 129) contains a list of 27 projects involving every Ranger District on the Ouachita NF for which NEPA decision documents were signed from 10/01/2013 through 09/30/2014. Of the 27 decisions, two were accomplished with decision notices and 25 were accomplished with decision memos. Decision notices are prepared for project analyses that are documented in environmental assessments, for example large timber sales. Decision memos are prepared for projects that are categorically excluded from documentation in an environmental assessment like special use authorizations.

The list of projects was derived from the Planning, Appeals, and Litigation System (PALS). The PALS database is used to track project planning and NEPA decision data and to generate the quarterly Schedule of Proposed Actions (SOPA). Quarterly and "live" SOPA reports are available at the following internet address: www.fs.fed.us/sopa.

General Forest

Land Ownership and Land Administration

Land Line Location, Maintenance, or Management

For additional information, contact Charlie Storey at cstorey@fs.fed.us

Forest Plan Objective 17 addresses the need for boundary management. Approximately 805 total miles of National Forest System boundary have been maintained or marked from 2006 through 2014 which is an average of about 89 miles per year. Boundary management was accomplished on a total of 57 miles in 2014. Due to funding and human resource constraints, the trend is that marked boundary lines are declining on the Forest. Following is a summary of miles of boundary located or maintained by year since 2006:

Miles of Boundary Located or Maintained, by FY

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Miles	52.58	65.00	135.40	136.50	114.02	105.00	99.75	40.00	56.58

To protect land ownership title, during 2014, nine encroachments were resolved (for comparison, eleven and twelve encroachments were resolved during 2012 and 2013 respectively). From 2006 through 2014, 70 encroachments, trespass, or unauthorized occupations have been resolved.

Land Ownership Pattern and Land Exchanges

For additional information, contact Jessica Soroka at jasoroka@fs.fed.us

The Forest Service conducts a fairly active lands program within allocated budgets. Land purchases, exchanges and conveyances are used to consolidate and simplify National Forest Lands ownership. Consolidation reduces administrative costs and management challenges. The trend in the lands program is to use exchanges to meet Forest Plan goals. The following data displays acres purchased since the Forest began implementing the Forest Plan.

Land Program, Acres Purchased by FY

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Acres Purchased	120.00*	120.00	0.00	0.00	27.80	0.00	0.00	0.00	0.00

*Previous Monitoring Reports included 2,257 acres for 2006 because acres acquired through tripartite exchanges were counted as purchases when they were actually exchanges. The totals for the rest of the years also have tripartite acres in the exchange portion so now it is consistent.

During 2014, 161.35 acres were exchanged by the Forest Service. The following data displays acres exchanged since the Forest began implementing the Forest Plan.

Land Program, Acres Exchanged by FY

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Acres Exchanged	72.95	3,978.00	0.00	260.00	160.00	260.80	4.00	0.00	161.35

The first time that the Forest Service sold National Forest System lands other than by the Small Tracts Act was during 2006. Sales in 2006 were accomplished under PL 108-350 which gave the Forest authority to sell several administrative sites and three pieces of National Forest System land. Several (Heavener) residences were sold under a relatively new authority, the Forest Service Facility Realignment and Enhancement Act of 2005. During 2014, 350 acres were transferred to the US Fish and Wildlife Service. The following data show acres sold by the Forest Service since implementation of the Forest Plan.

Land Program, Acres Sold by FY

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Acres Sold	162.45	9.89	0.00	4.57	0.41	0.00	0.00	0.45	350*

*During 2014, 350 acres were transferred to the US fish and Wildlife Service without consideration.

Overall, the total of National Forest System lands has remained fairly stable, increasing by 4,710 acres during the span of 2005–2014. The stable trend in National Forest System acreage illustrated in the following is likely to continue. If there is a need to exchange or purchase additional lands, the Forest will continue to apply the Land Ownership Strategy set out in Part 2 of the Forest Plan.

Land Totals by FY

Year	2005	2006	2007/2008	2009	2010	2011/2012	2013	2014
Total NFS Acres	1,784,610	1,786,714	1,789,690	1,789,666	1,789,853	1,789,672	1,789,671	1,789,320
Yearly Change	+1,945	+2,104	+2,976	-24	+187	-181/0	-0.65	-351.35

Transportation System and Access Management

Transportation System

For additional information, contact Lea Moore at lvmoore@fs.fed.us

There are four objectives stated for the Ouachita NF transportation system:

- *OBJ36: Complete a transportation plan for the Ouachita NF by late 2007 that (among other things) addresses the backlog of maintenance and reconstruction needs.*
- *OBJ37: By 2015, identify all system roads that should be obliterated.*
- *OBJ38: Obliterate 25% of roads identified under the previous objective by 2015 (many such needs to obliterate roads will be identified well before 2015).*
- *OBJ39: Reduce miles of road under Forest Service maintenance.*

Although a "transportation plan" (Objective 36) has not been completed *per se*, a great deal of work has been accomplished under the Travel Management Rule and the annual maintenance plans. Completion of work currently underway (Subpart A of the Travel Management Rule) will help to address Objectives 37 and 38 by identifying roads no longer needed. The following table displays the road miles in the database of record for each of the categories for 2014.

Road Miles by District and Maintenance Level (ML)

District	ML5	ML4	ML3	ML2	ML1	Total
Caddo/Womble	4.92	56.56	95.45	235.06	322.77	714.76
CS/Poteau	2.44	15.4	273.19	388.77	520.68	1,200.48
JWF	2.15	92.09	438.24	439.22	900.08	1,871.78
Mena/Oden	3.18	35.24	197.14	249.98	391.61	877.15
Oklahoma	7.39	1.31	163.73	385.94	465.72	1024.09
Total FS Jurisdiction	20.08	200.6	1,167.75	1,698.97	2,600.86	5,688.26
Open Roads – All Districts (miles)						**3,087.40**

Source: Infra

During 2014, 1,283 miles of road were operated and maintained to meet objective maintenance levels and classes. Declining road maintenance budgets are contributing to difficulties in meeting objective maintenance levels and classes. Also during 2014, 11.80 miles of arterial/collector roads were reconstructed on separate sections of 15 roads. During 2014, no miles of new arterial/collector roads were constructed. The following shows arterial/collector roads reconstructed for 2014 and since 2006.

Miles and Number of Arterial/Collector Roads Reconstructed by FY

Arterial/Collector Roads Reconstructed	2006	2007	2008	2009	2010	2011	2012	2013	2014
Miles	15.56	6.44	6.44	1.94	7.96	11.35	37.6	0.99	11.8
Number of Roads	7	4	4	4	3	3	8	3	15

Work has been accomplished to reconstruct local roads. During 2014, 13.77 miles of local roads were reconstructed. The following displays local road reconstruction. There is no clear trend related to miles of road reconstructed. Usually available budgets and repairs needed for safety concerns drive road reconstruction accomplishments.

Road (Local) Reconstruction by FY

Local Roads Reconstructed	2006	2007	2008	2009	2010	2011	2012	2013	2014
Miles	55.40	34.20	28.17	1.94	13.62	14.71	28.50	13.95	13.77

In addition to the 13.77 miles of local road reconstruction during 2014, 0.72 miles of local roads were constructed and added to the system during this same period. The following displays the miles of local roads constructed and added to the National Forest Road system by fiscal year.

Local Road Miles Constructed and Added to the NF System by FY

Local Roads Constructed & Added to the System	2006	2007	2008	2009	2010	2011	2012	2013	2014
Miles	15.99	4.28	8.54	21.00	3.29	11.13	5.1	2.21	0.72
Number of Roads	22	NR	NR	8	5	11	2	4	2

There were 84.33 miles of roads removed from the system (decommissioned) during 2014. The following displays the miles of roads removed from the system by fiscal year.

Miles of Road Removed from the NF System by FY

Roads Removed from the System	2006	2007	2008	2009	2010	2011	2012	2013	2014
Miles	204.35*	12.30	2.70	2.04	0.00	20.70	28.3	28.0	84.33*

* The seemingly large number of road closures in 2006 was not a result of a management action, rather an administrative correction due to verification of actual road condition and correction in the official database of record. Similarly, another records review during 2014 found additional roads that were not actual forest service jurisdiction.

Road Maintenance funding for 2014 was $285,000 in regular appropriated funds and $485,000 in Emergency Relief for Federally Owned roads funds for a total of $770,000. Tracking road maintenance funding was initiated in the last M&E Report and will be included in succeeding years.

Bridge Inspections

For additional information, contact Gary Griffin at gwgriffin@fs.fed.us

Another facet of maintenance of the transportation system is robust monitoring of bridge condition through inspections. There are 130 bridges on 73 roads within National Forest System management. Bridge inspection is a continuous process, and each year approximately half of those bridges are inspected. For 2014, 76 bridges were inspected (49 FS and 27 County). Over 88% of all bridges inspected were found to be free of any structural deficiency. Those requiring maintenance have been entered into a maintenance inventory and will be addressed as funding is available or closed if a deficiency becomes a safety hazard.

Access/Travel Management

For additional information, contact Alett Little at alittle@fs.fed.us

Development of the Ouachita NF transportation system was substantially completed prior to 1985. Road reconstruction and construction has traditionally been accomplished through the timber sale program; however, road work in timber sales now is mostly system road maintenance/reconstruction and/or use of temporary roads accomplished by using road purchaser provisions in the timber sale contract.

Funding for road maintenance essentially remained flat for the ten years prior to 2011 and has resulted in choices on the level and degree of maintenance needed, such as whether to close roads, provide maintenance to surface drainage, culverts, bridges and aggregate surfacing. In 2011, this trend changed to a substantial decrease in available road maintenance funding. This decrease reduced on-the-ground work, and the reduced funding is expected to continue into the foreseeable future. Decisions about the operational level of all roads and even possible road closures will be an important challenge as the Ouachita NF moves forward.

The Forest Plan objective specific to travel management follows:
OBJECTIVE 26: "Designate and sign a system of roads and trails suitable for public access by motor vehicle, including off-highway vehicles, no later than October 2009; at the same time, initiate the process to prohibit cross country travel by motorized vehicles except for emergency purposes and specific authorized uses."

This objective was accomplished in 2011 with publication of a series of Motor Vehicle Use Maps (MVUMs). These maps are updated annually and posted to the Forest's website.

Travel Management Program

Travel planning is intended to identify opportunities for the Forest transportation system to meet current or future management objectives, based on ecological, social, cultural, and economic concerns. The Forest Plan contains the following desired condition, *"Recreation opportunities for OHV (Off-Highway Vehicle) enthusiasts will be available within an integrated system of designated roads and trails."*

On November 9, 2005, the Forest Service enacted regulations to combine and clarify existing regulations at 36 CFR part 212 governing administration of the forest transportation system and regulations at 36 CFR part 295 governing use of motor vehicles off National Forest System (NFS) roads. A nationwide Travel Management Program was established with a final rule issued as part 212, Travel Management, covering the use of motor vehicles on NFS lands. The regulations implemented Executive Order (EO) 11644 (February 8, 1972), ''Use of Off-Road Vehicles on the Public Lands,'' as amended by EO 11989 (May 24, 1977). Those Executive orders directed Federal agencies to ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands. The Forest Service *Travel Management Rule* has 3 parts:

- Subpart A – Administration of the Forest Transportation System;
- Subpart B – Designation of roads, trails, and areas for motor vehicle use; and
- Subpart C – Use by over-snow vehicles.

During 2010, the Forest, under Subpart B of the Travel Management Rule (designation of roads, trails, and areas for motor vehicle use), completed a travel management environmental analysis and signed the NEPA decision. All related GIS and INFRA data were refined and updated. As a part of the project, the Forest completed the forestwide travel analysis which provided data for the Motor Vehicle Use Maps. Five Motor Vehicle Use Maps (MVUMs), for each administrative Ranger Districts units, were prepared displaying the routes and, in some cases, seasons designated for motor vehicle use. Maps are updated annually to reflect changes.

During 2014, the Forest, under Subpart A of the Travel Management Rule (administration of the Forest transportation system) began work to identify the minimum road system necessary to serve the Forest and the public. This work is expected to be completed by the end of 2015.

Facility Operation and Maintenance

For additional information, contact Bubba Brewster at bbrewster@fs.fed.us

Objective 31 of the Forest Plan is to *"Eliminate three leased facilities by 2015."* Since 2006, the Forest had been making good progress on this objective; however, since 2012, no facilities had been eliminated as of the end of 2014. The leased office for the Tiak Ranger District was eliminated in 2009 after completing and moving into the new Leadership in Energy and Environmental Design (LEED) certified District Office in Hochatown. The Ouachita NF also acquired land for a new district office for the Poteau/Cold Springs Districts and developed a site plan for the land that was acquired. The new office would take the place of the leased Poteau office in Waldron. Due to budget constraints, the Forest has no known date for anticipated design or construction of this proposed new office.

Forest Plan Objective 32 is to *"Eliminate 30% of other nonessential administrative facilities by 2015."* Presently, there are five Ranger District units, and there is a need to consolidate administrative facilities remnant from the administration of twelve once-separate Ranger Districts. Identifying nonessential facilities is limited until District consolidation plans are complete. Two administrative facilities were decommissioned and sold during 2009: the Caddo Trailer (Infra #02016) and the Fourche Ranger Residence (Infra #04002). During 2010, two additional facilities were decommissioned and were sold during 2013: Kiamichi Ranger Dwelling (Infra #06002) and shed (Infra #06003).

Objective 33 calls for *"public facilities to [be upgraded to] Architectural Barriers Act standard by 2015."* Facility inspections are undertaken each year. A complete inventory of facilities that require additional work to make them accessible was to be undertaken during 2012, and the work will be programmed as funding is made available. The building inventory has been updated to show which buildings are accessible and which are not. Twenty-four percent of public facilities are now accessible.

Executive Order 12902 (March 8, 1994), *Energy Efficiency and Water Conservation at Federal Facilities*, and Executive Order 13123 (June 3, 1999), *Greening the Government Through Efficient Energy Management*, are aimed at requiring each Federal agency to reduce energy use in buildings and to meet the challenge of global warming by reducing greenhouse gas emissions. To meet the requirements of these EOs, Forest Plan Objective 34 states, *"Complete energy efficiency upgrades on all administrative buildings and complete identified work on 10% of administrative buildings needing upgrades by 2015."* The Forest upgraded three heating ventilation and air-conditioning (HVAC) systems in offices during 2012 and 2013 to increase efficiency and installed insulation in one office as well. The Forest contracted to inventory all HVAC systems and their condition in 2013.

Annually, buildings are inspected for compliance with health and safety standards in accordance with Forest Plan Objective 35. Since 2005, buildings inspected by FS Engineering personnel either met or were corrected to meet standard. Each year, at least 33% of the fire, administration and other buildings and some recreation buildings are inspected by the Engineering Section. For 2014, the facility inventory included 349 buildings that were categorized as follows: Existing – Active, Existing – Inactive, or Existing – Excess. Of those 349 buildings, 320 had a Facility Condition Rating (FCR) rating of "Good" or "Fair." The percentage of buildings with an FCR of "Good" or "Fair" was 92. Nine buildings were rated "Poor" and 20 were unrated.

During 2014, the Caddo District office and work center were closed, and the process for selling these and the Caddo residence has begun. As leases for office space expire, reviews will determine if there is a need to renew them or if it is more advantageous to taxpayers not to renew those leases.

Special Uses

For additional information, contact Elaine Sharp at esharp01@fs.fed.us

Many uses of National Forest System (NFS) lands are relatively unrestricted. Some uses of NFS lands, though, are authorized by Special Use permits, easements and leases. There were 569 special authorizations of various types in 2014. The total number of authorizations issued was relatively consistent between years 2012 and 2013 and increased 7.5% in 2014. The majority of authorizations were for road access.

Communication and utility corridor uses comprise the next highest categories of use requests. The number of utility permits issued is not expected to change; however, the amount of NFS land occupied by utilities will continue to increase as existing permits are amended to include additional NFS land for utility service provided to forest inholdings.

A measure of success in assuring that uses of NFS land comply with the terms and conditions of the authorizations is the number of permits administered to standard. In 2014, 399 authorizations were administered to standard. At the close of 2013, changes in the inspection frequency requirements resulted in more authorizations being administered to standard for a longer period of time. The Forest has increased the number of permits administered to standard from 71% in 2013 to 80% in 2014.

General Trends:

- The number of road authorizations continues to rise as unauthorized occupancies are addressed and private landowners develop their properties.
- Utility permit amendments are increasing as inholders request utility service to their properties.
- Permits issued for research and heritage resource surveys are relatively stable. The number of requests for wildlife research permits has steadily increased. The monitoring report does not show this activity because most research projects have been granted waivers from the permitting requirement.
- Dams/Reservoirs, agricultural uses and community uses remain unchanged from 2013 and increases are not anticipated.
- Communication uses continue to increase as carriers expand their infrastructure and funding becomes available to local governments to expand communications.
- Recreation uses are mostly short-term, recurring permits. The amount of use has remained stable.

Special Use Permits by type use are shown in the following:

Special Use Permits, by Type of Authorization and FY

Type of Authorization	2006	2007	2008	2009	2010	2011	2012	2013	2014
Roads	318	317	330	298	278	262	285	280	290
Water Lines, Electric, Telephone Utilities, & Oil and Gas Pipelines	58	58	58	60	60	57	63	64	75
Research or Resource Surveys	13	11	12	7	11	12	16	17	16
Dams and Reservoirs	24	24	24	24	24	24	22	22	22
Communication Uses*	74	60	72	61	59	49	55	56	62
Recreation Uses	10	7	11	10	10	11	65	66	69
Agricultural Uses	--	--	7	4	4	4	6	6	6
Community Uses	7	7	7	7	7	8	6	6	13
Misc. Uses	21	15	42	7	10	8	20	12	16
Total	532	506	563	478	463	435	538	529	569

*A list of the approved communication sites and those pending approval as of September 2013, is included in Appendix C.

The Forest continues to acquire road rights-of-way based on need determined through a roads analysis. Six road easements were acquired in 2012, and only a single easement in 2013. No permanent easements were acquired in 2014.

Commodity/Commercial Uses

Three types of commodity or commercial uses are discussed:

- Mineral and Energy Development
- Livestock Grazing or Range Activities
- Timber

Minerals and Energy Development

For additional information, contact Andrew McCormick at andrewtmccormick@fs.fed.us

There is very little Forest discretion within the minerals management program as most leases, licenses, and permits are granted with legal stipulations attached. The Forest Plan objectives that relate to minerals management with specific requirements to process applications follow:

> *OBJ18: Process applications for federal mineral leases, licenses, and permits within 120 days.*
>
> *OBJ19: Process operations proposed under outstanding and reserved mineral rights within 60 days and 90 days, respectively.*

As reported since 2006, financial investment and potential threats from geologic hazards to human life or natural resources remain low on the Ouachita NF in both Arkansas and Oklahoma. Each year, the number of gas leases and mineral cases are reported. Over time, it appears that the number of gas leases has increased. In 2011, the Bureau of Land Management retracted all of the gas lease consents from Arkansas; however, this was rescinded in 2014. During the period 2011 to 2014, no new gas leases were auctioned.

Gas Leases and Mineral Cases by FY

	Gas Leases	Minerals Cases
2006	403	--
2007	565	75
2008	827	67
2009	837	57
2010	800	39
2011	0*	0
2012	215	20
2013	215	20
2014	215	142

*Bureau of Land Management retracted all of the gas lease consents from Arkansas and no new ones were auctioned in 2011.

The minerals program also addresses mines; quartz contracts; contracts for sand, gravel and stone; non-energy minerals such as wavellite; and other energy resources such as coal.

Livestock Grazing/Range Activities

For additional information, contact Susan Hooks at shooks@fs.fed.us

Desired Condition: *Livestock grazing opportunities are maintained consistent with other resource values in designated livestock grazing areas (allotments).*

The Range program had been in decline for several years, but has been relatively stable for the past four years.

Number of Livestock, Permittees, and Active Allotments by FY

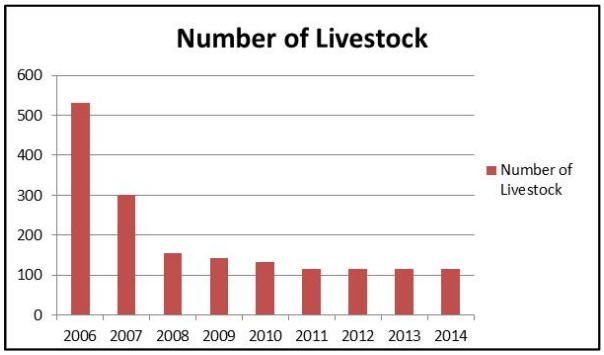
Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number of Livestock	715	530	300	154	142	133	116	116	116	116
Number of Permittees	24	20	15	8	6	5	5	4	4	4
Active Allotments	16	16	16	6	4	3	3	3	3	3

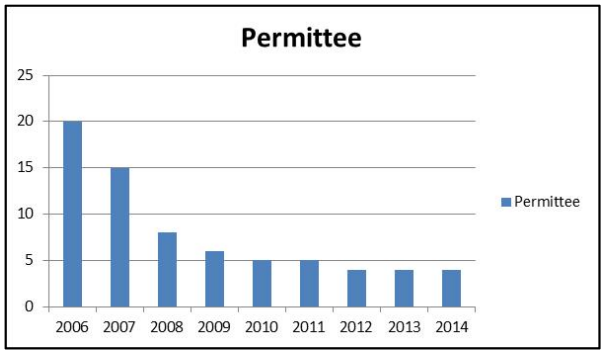
Livestock Grazing – Trends Related to Forest Plan Objectives and/or Desired Conditions

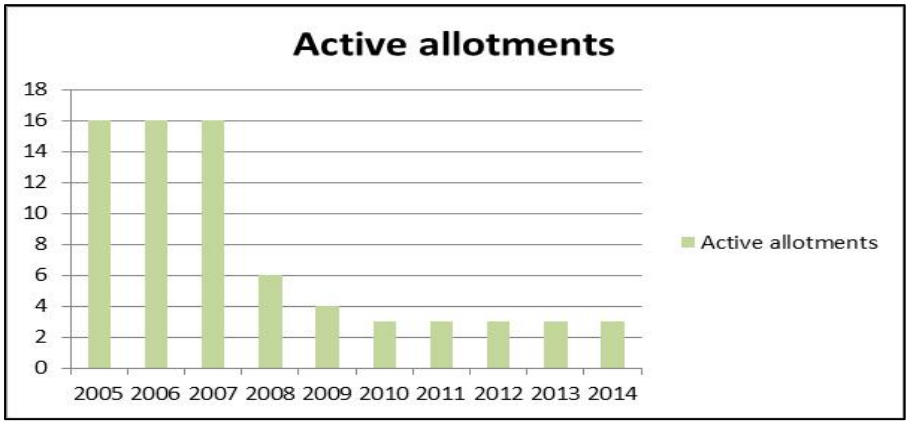
The interest in grazing on the Ouachita NF has declined and is not expected to increase in the future. All grazing on the National Forest is in forest and/or woodlands. The number of cattle being grazed is also on the decline; therefore, resource damage from grazing is minimal. Such use is consistent with the two standards (found at 9.08 and 9.09) that require grazing and watering sources to be carried out in a way that is not damaging to the Streamside Management Area as well as at 9.10 that allows grazing within limits of usable forage and protects water quality.

The current condition of the range allotments are in line with the desired condition and plan objectives.

There were 610 acres of rangeland vegetation improvements in grazing season 2014. See the following graphs.







Timber Sale Program

Firewood

For additional information, contact Ray Yelverton at ryelverton@fs.fed.us

Firewood permits remain high, but did decrease in 2014 when compared previous years. Forest Plan standards specifically for firewood follow:

> *FW001: Hardwood will be made available for firewood as identified through project level analysis.*
>
> *FW002: In areas where trees have been treated with herbicide, use of treated trees for firewood will not be allowed.*

With the implementation of the travel management decision establishing designated routes, access routes should be noted on firewood permits. The cords of firewood sold by year are shown in the following.

Cords of Firewood Sold (Cords = CCF x 1.54) by FY

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Cords Sold	1,364	1,299	1,686	1,650	2,107	1,609	1,145	936	828

Source: Timber Cut and Sold Report as reported at the end of the fiscal year.

Timber – Allowable Sale Quantity (ASQ)

A priority of the timber sale program is to contribute to the economic base of local communities by providing a sustained yield of high-quality wood products at a level consistent with sound economic principles, local market demands, and desired ecological conditions. The ASQ for the Ouachita NF is 27 million cubic feet per year (270,000 CCF). To this end, the Ouachita NF has sold an average of 68.15% of ASQ since 2006, and the following shows volumes sold by FY.

Chargeable (CV) and Non-Chargeable (Non-CV) Volume Sold (CCF) by FY

Year	Green		Salvage		Total	
	CV	Non-CV	CV	Non-CV	CV	Non-CV
2006	193,672	0	3,447	0	197,119	0
2007	204,311	0	1,995	0	206,306	0
2008	189,276	4,983	7,545	54	196,821	5,037
2009	162,929	0	12,459	0	175,388	0
2010	182,438	76	6,375	394	188,813	470
2011	167,190	6,747	26,116	0	193,306	6,747
2012	174,797	75	3554	0	178,351	75
2013	139,198	908	12,160	1,477	151,358	2,385
2014	154,396	629	14,247	0	168,643	629
Average	174,245	1,491	9,766	214	184,011	1,705
Average Total	175,736		9,980		185,716	

Source: CDW – PTSAR - Reports PTSR201F & PTSR202F

Timber Volume Offered and Sold

Forest Plan Objective 41 is as follows: *"Sell an average of at least 200,000 hundred cubic feet (CCF) of timber per year."* Since 2006, the Ouachita NF has sold an average of almost 93% of the objective of 200,000 CCF. The objective of at least 200,000 CCF per year was exceeded in 2007, 2008, and 2011. The timber volumes offered and sold by year are shown in the following table:

Timber Volume Offered & Sold (CCF) Compared to Net Budget Allocation for All Timber Dollars by FY

Year	2006*	2007	2008	2009	2010	2011	2012	2013	2014
Volume Offered	75,699	198,606	215,206	161,741	204,688	198,790	161,287	181,873	133,428
Volume Sold	197,119	206,306	201,858	175,388	189,283	200,053	178,426	153,743	169,272
Timber Budget ($)	6,722,677	7,182,961	7,216,888	7,093,596	7,960,905	8,439,629	7,966,274	6,135,978	7,051,133
$/CCF Offered	88.81	36.17	33.53	43.86	38.89	42.45	49.39	33.74	52.85
$/CCF Sold	34.10	34.82	35.75	40.45	42.06	42.19	44.65	39.91	41.66

Annual Averages

Volume Offered	Volume Sold	Timber Budget ($)	$/CCF Offered	$/CCF Sold
170,146	185,716	7,307,782	42.95	39.35

*During 2006, the Ouachita NF reverted to Sold Volume as the Target vs. Volume Offered. Volume Offered in 2005 but not sold until 2006 was credited towards the Sold Target in 2006 and the offered target in 2005.

**If 2006 is not considered, the average $/CCF Sold for 2007 through 2014 is $40.05.

Following is a comparison of actual acres sold to proposed and probable activities as presented in the Forest Plan:

Actual Acres Sold Compared to Proposed and Probable Activities											
Activity By Acres or Acres Sold	**Range of Proposed/ Probable Annual Activity**	**Actual Annual Activity 2006**	**Actual Annual Activity 2007**	**Actual Annual Activity 2008**	**Actual Annual Activity 2009**	**Actual Annual Activity 2010**	**Actual Annual Activity 2011**	**Actual Annual Activity 2012**	**Actual Annual Activity 2013**	**Actual Annual Activity 2014**	**Annual Average**
Regeneration harvest (by modified seedtree/ shelterwood methods)	5,000- 6,000	2,658	4,363	3,186	1,848	2,270	1,837	2,322	1,151	1.503	2,349
MA 14	4,000-4,700	1,374	3,981	2,968	1,685	2,033	1,274	2,195	745	1,225	1,942
MA 15	140	0	0	179	0	0	0	0	179	0	40
MA 16	--	401	97	39	0	21	33	0	0	141	81
MA 17	250	52	0	0	78	0	297	87	83	0	66
MA 21	160	232	0	0	0	0	0	0	0	0	26
MA 22	1,000-1,200	599	285	0	85	216	233	40	144	137	193
Other MAs	250	0	0	0	0	0	0	0	0	0	0
Uneven-aged management	9,000- 12,500	3,216	3,065	1,246	1,291	715	444	0	0	0	1,109
MA 14	7,200- 7,850	1,307	1,972	1,031	508	378	0	0	0	0	577
MA 16	1,000- 1,300	1,841	676	114	0	0	375	0	0	0	334
MA 17	--	19	0	0	636	0	0	0	0	0	73
MA 19	800-850	0	417	101	147	337	0	0	0	0	111
Other MAs	--	49	0	0	0	0	69	0	0	0	13
Commercial Thinning	20,000- 28,500	13,060	9,922	10,981	12,407	10,864	10,978	10,517	8,058	10,316	10,789
MA 14	10,000- 13,700	5,946	7,368	9,070	7,722	5,700	5,512	6,190	3,512	4,782	6,200
MA 15	1,000	0	0	288	0	0	0	0	288	0	64
MA 16	--	845	608	0	0	764	1,493	0	175	839	525
MA 17	400-500	60	0	67	415	0	1,462	160	299	0	274
MA 21	1,500-1,600	493	0	615	1,099	1,000	0	272	145	460	454
MA 22	7,000-8,200	5,571	1,946	534	3,171	2,294	1,780	3,895	3,639	4,235	3,007
Other MAs	--	145	0	0	0	1,106	731	0	0	0	220

Source for Actual Acres: TIM *Average is for 2007-2014

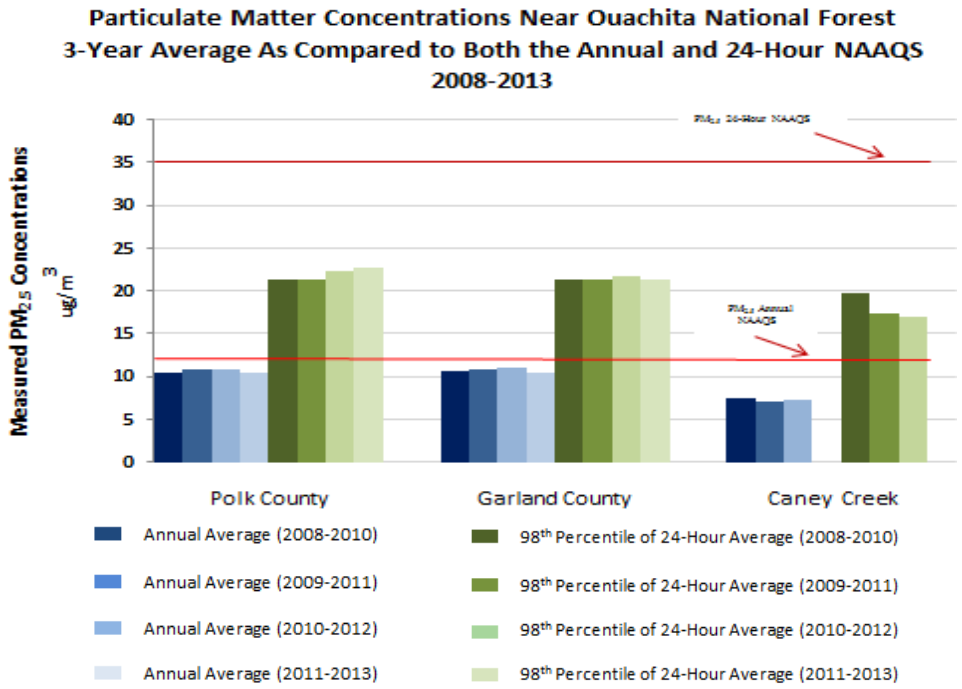
Air Quality

For additional information, contact Judith Logan at jlogan@fs.fed.us

Air pollution often has a subtle but critical impact on ecosystems and vistas, and can alter ecosystems by harming plants and animals or changing soil or water chemistry. Ecosystems then become more vulnerable to damage from insects and diseases, drought, or invasive species. Additionally, since many visitors to National Forests value pristine areas with magnificent vistas, air pollution can lessen their experience and enjoyment. Within the Ouachita NF, air pollutants such as ozone, fine particulate matter, and acidic deposition can cause negative impacts to flora, visibility and water. Ambient monitoring of fine particulate matter, ozone, and visibility-impairing pollutants occurs on or near the Forest to evaluate any potential effects. Additionally, monitoring of acidic deposition levels occurs nearby and is representative of conditions on the Forest. All data are for calendar years.

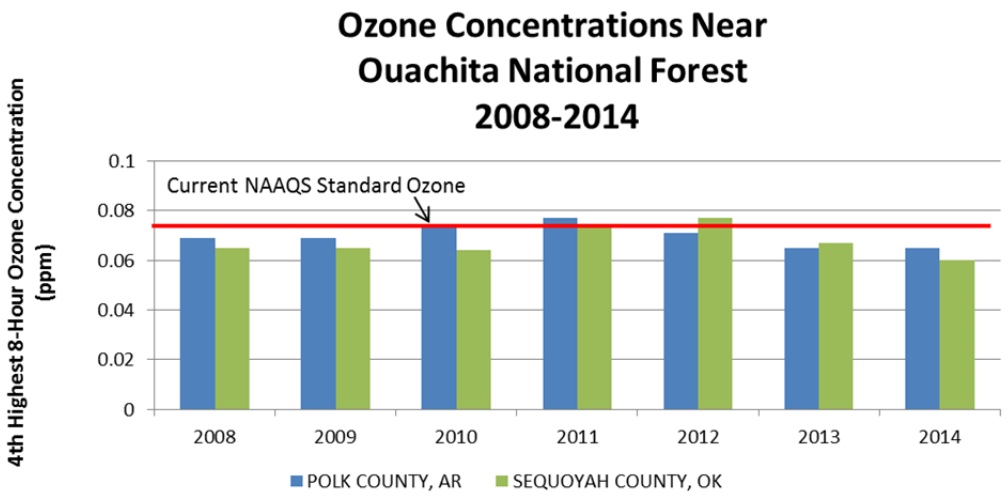
Particulate Matter

Particulate matter is a mixture of extremely small particles made up of soil, dust, organic chemicals, metals, and sulfate and nitrate acids. The size of the particles is directly linked to health effects, with smaller particles causing the worst impacts to human health. As a result, the Environmental Protection Agency (EPA) has set a primary National Ambient Air Quality Standard (NAAQS) for ultra-small (less than 2.5 microns in diameter) particulate matter on both a short-term (24-hour) and annual basis. The 24-hour fine particulate matter ($PM_{2.5}$) NAAQS is currently set at 35 µg/m^3, while the annual $PM_{2.5}$ NAAQS is 12 µg/m^3. The EPA may set more stringent standards in the future if scientific research suggests that the current standards are not protective enough of sensitive populations. The following graphic shows the measured $PM_{2.5}$ levels at the three fine particulate matter monitoring sites located near the Ouachita NF. As shown, all concentrations levels are below the 24-hour and annual air quality standards. The 2013 data from the Caney Creek monitoring site indicated a 98th percentile value at 20. No data were available for 2014.



Ozone

Ozone is a pollutant formed by emissions of nitrogen oxides and volatile organic compounds in the presence of sunlight. At elevated concentrations, it causes human health concerns as well as negative impacts to vegetation. The EPA, as directed by Congress, has set a national ambient air quality standard (NAAQS) of 0.075 parts per million (ppm) to protect both human health and the environment. However, EPA is required to reassess the standards every five years based on most recent scientific research, and as a result, more stringent standards may be proposed sometime in the future. The following graphic depicts the measured concentrations of ozone at the two monitoring sites closest to the Forest. As shown, most values are below the NAAQS. The Polk County ozone monitor reached 0.077 ppm in 2011 and the Sequoyah County monitor also averaged 0.077 ppm in 2012. Since then, both monitors have recorded values below the NAAQS in both 2013 and 2014.

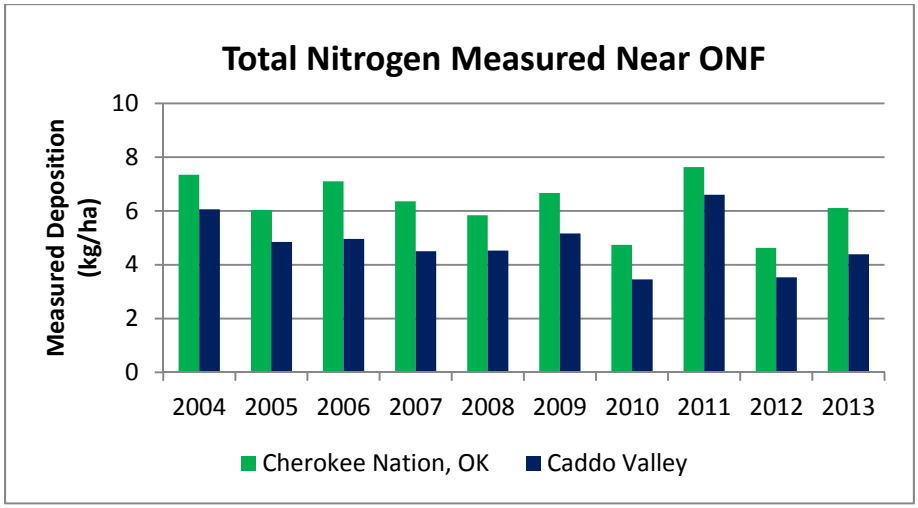


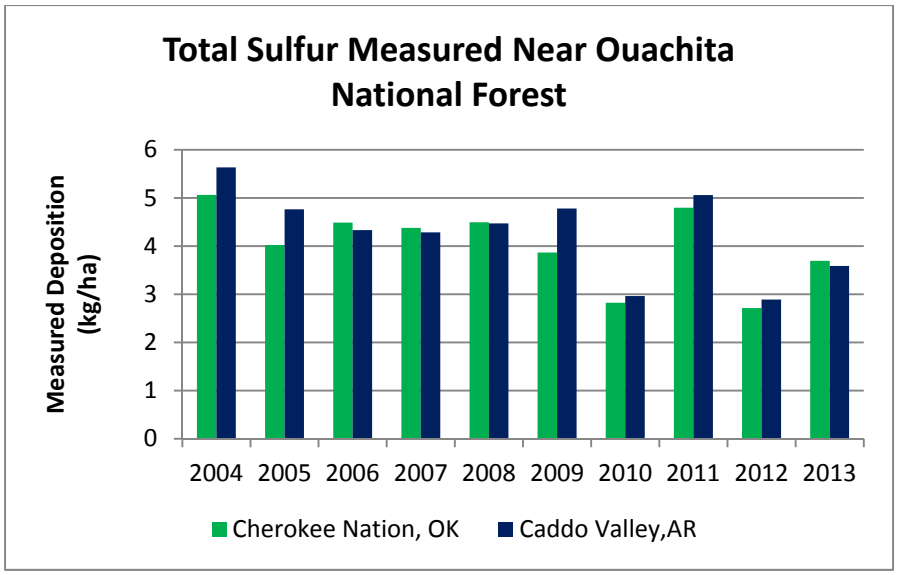
Acidic Deposition

Deposition of acidic compounds onto the Forest can cause harmful effects to both aquatic and terrestrial ecosystems. Such deposition can occur in three forms: dry, wet, and cloud. Dry deposition is the direct fallout of fine particulates and gases from the atmosphere. Wet deposition occurs when acidic pollutants combine with water in the atmosphere, which is then deposited in the form of rain, snow or hail. Both sulfur and nitrogen deposition can impact the water on the Forest by decreasing the acid neutralizing capacity (ANC) and decreasing the pH in perennial streams.

The National Atmospheric Deposition Program (NADP; http://nadp.sws.uiuc.edu) and Clean Air Status and Trends Network (CASTNET; http://epa.gov/castnet/javaweb/index.html) operate two sites near the Ouachita NF. Neither of these locations is on the Forest, but the data collected represent a range of sites and are generally representative of conditions occurring on the Forest. Because small fluctuations do occur from year to year, trends over longer periods of time are more reliable.

From 2004 through 2013, nitrogen and sulfur deposition rates indicate a steady decrease in acidic deposition. In 2011, both nitrogen and sulfur rates increased sharply for the year. In 2012, both deposition rates decreased over 30% followed by a slight increase in 2013. No data are available for 2014. The following graphs show the total sulfur and total nitrogen deposition trends for the Cherokee Nation (Adair County, OK) and Caddo Valley (Clark County, AR) monitoring locations as reported in the CASTNET database.





Terrestrial Ecosystems

Terrestrial communities include all non-aquatic Ouachita Mountain and West Gulf Coastal Plain Ecological Community Systems listed by NatureServe (2003). There are 10 terrestrial ecosystems (and 3 subsystems):

- Ouachita Shortleaf Pine-Oak Forest and Woodland, comprised of:
  - Ouachita Shortleaf Pine-Oak Forest
  - Ouachita Shortleaf Pine-Oak Woodland
  - Ouachita Shortleaf Pine-Bluestem (Red-cockaded Woodpecker Habitat)
- West Gulf Coastal Plain Pine-Hardwood Forest
- Ouachita Dry-Mesic Oak Forest
- Ouachita Mesic Hardwood Forest*
- Ouachita Montane Oak Forest
- Ouachita Dry Oak Woodland
- Ouachita Novaculite Glade and Woodland
- Central Interior Highlands Dry Acidic Glade and Barrens
- Central Interior Acidic Cliff and Talus
- Southern Arkansas Calcareous Prairie

Desired conditions for each terrestrial ecosystem type are described on pages 6-18 of the Forest Plan. Data regarding these ecological systems were presented in the first Five-Year Review (2010) of the current Forest Plan. The next evaluation will occur as part of the five-year review for 2011–2015.

Collaborative Forest Landscape Restoration Program

Congress established the Collaborative Forest Landscape Restoration Program (CFLRP) with Title IV of the Omnibus Public Land Management Act of 2009 (PDF, 40 KB). The purpose of the CFLRP is to encourage the collaborative, science-based ecosystem restoration of priority forest landscapes. The CFLRP funding for the Ouachita project began in 2012 and provided accelerated landscape restoration for the Pine Bluestem ecosystem on the Ouachita NF primarily through increased collaborative accomplishments in prescribed burning, commercial timber harvests/thinnings, wildlife stand improvement (WSI), timber stand improvement (TSI), and monitoring. Collaborating partners include: Arkansas Forestry Commission, The Nature Conservancy, Oklahoma Department of Wildlife Conservation, Arkansas Game & Fish Commission, Natural Resources Conservation Service, Arkansas Natural Heritage Commission, National Wild Turkey Federation, Arkansas Wildlife Federation, Audubon Arkansas, Arkansas State University, Oklahoma State University, University of Arkansas-Monticello, Buffalo River National Park, Monarch Joint Venture, the Monarch Watch, twelve local schools and others.

This project is designed to advance the 20-year ongoing and extensive efforts to restore large blocks of contiguous public lands into shortleaf pine-bluestem habitat.

The dense second-growth forests long protected from fire need to be thinned and burned periodically to restore open, species-rich woodlands. Restored shortleaf pine-bluestem woodlands provide habitat for a suite of rare, endangered, and/or sensitive species that thrive only or primarily under such conditions. Fire-influenced (pine-grass) old growth forests and woodlands are rare on the landscape and represent a significant restoration need. Maintenance of shortleaf pine-bluestem systems requires periodic thinning, frequent prescribed burns, and occasional regeneration treatments.

The Ouachita NF is the only participant in the National CFLR program that incorporates conservation education into its CFLRP plan of work. Forest specialists and partners work with twelve local schools to expand environmental education. These efforts include the hiring of high school students to teach younger grades and give educational programs at local events, nursing homes, etc. Products generated by students include a video documenting the tools used for restoration and the partners involved as well as posters and brochures navigating a drive through tour of the shortleaf bluestem project area. These products inform the younger and older publics on the "how to" and "why," as well as the benefits of restoration work: for the federally endangered red-cockaded woodpecker; the management of our natural resources, including timber management; the need for prescribed fire; and how restored habitats provide for a richer diversity of animals and plants. To provide on-the-ground restoration connection, students from these area schools plant 1,000 milkweed plants every year on public and school property with Monarch Watch and local community partners. Understanding how and why restoration of large landscapes is important helps to create future conservation leaders. The following shows overall matching amounts and direct CFLR funding associated with the CFLRP Project since its inception in 2012:

Year	Matching Contribution	Direct CFLR Funding
2012	$720,474	$316,319
2013	$2,600,223	$2,099,632
2014	$2,143,051	$2,112,377
Totals	**$5,463,748**	**$4,528,328**

Accomplishments associated with Pine-Bluestem restoration for the Ouachita NF follow:

Key Treatments for Pine-Bluestem Restoration	**Acres Accomplished, FY**			**Cumulative Total Acres**	**Proposed Accomplishment Total at Year 3**	**% of Proposed Total**
	2012	**2013**	**2014**			
Prescribed Burning	44,805	54,461	43,532	142,798	255,000	56
Non-commercial thinning (WSI, TSI)	3,660	7,021	5,416	16,097	13,000	124
Volume of timber sales sold (CCF)	69,206	71,700	79,828	220,734	115,000	192
Timber harvest acres:						
Accomplished (sold)	4,966	4,673	7,033	16,672	16,000	104
Completed (closed sales)	160	2,465	4,195	6,820	16,000	42

For more specific targets and accomplishments for the CFLRP on the Forest, the following link provides the annual reports for the pine bluestem restoration projects:
www.fs.fed.us/restoration/CFLRP/results.shtml

Chiefs' Joint Landscape Restoration Partnership

An initiative, formed in 2014 between the US Forest Service and the Natural Resources Conservation Service (NRCS), to improve the health and resiliency of forest ecosystems specifically targets needed management in areas where public and private lands meet. The partnership, which extends for several years, has the following objectives:

- restore landscapes regardless of land ownership,
- reduce wildfire threats to communities and landowners,
- protect water quality and supply and
- improve habitat for at-risk species.

The initiative is a part of a Climate Action Plan to responsibly cut carbon pollution, slow the effects of climate change and put America on track to a cleaner environment. To accomplish this, Forest Service and NRCS are launching a coordinated effort on priority forested watersheds to deliver on-the-ground accomplishments by leveraging technical and financial resources, and coordinating activities on adjacent public and private lands. The Ouachita National Forest in collaboration with the Ozark-St. Francis National Forests has initiated one large project under the Joint Chief's Initiative.

The Western Arkansas Woodland Restoration Project

The forests and woodlands in the area provide significant ecosystem service benefits for society. However, the effects of land-use conversion and fragmentation, development pressures, changes in species emphasis and stand structure, invasive species, as well as exclusion of the historical fire regime, are reducing those services significantly. The project aims to increase the conservation activity on private lands in the project area over the next three years. Woodland restoration in the Sylamore Ranger District of the Ozark and St. Francis National Forests will improve of habitat used by the Indiana bat and other wildlife species. Watershed restoration activities on the Ouachita National Forest, including improvement, obliteration, closure, or relocation of roads and off-highway vehicle trails, will reduce sedimentation and improve water quality for three federally listed species of mussels. Improvements to water quality and increases to water quantity will help protect the 464 active public water sources in the project area. FY 2014 funding: FS (Ouachita) - $800,000; NRCS - $2,180,000.

The measures of success for this project will be woodland ecosystems restoration, reduction of fuel load and risk of catastrophic wild fire, enhanced wildlife habitat and help for endangered species, and employment opportunities created in chronically impoverished counties. Benefits will also include reduced risk of catastrophic wild fire, improved water quality (especially in watersheds with drinking water supply), and recovery of at risk wildlife and plant species with an estimated 700 new conservation practices implemented on approximately 22,000 acres. Complementary habitat and watershed restoration efforts are also proposed on the Federal lands within the project area. The Ouachita National Forest will implement a series of activities that will improve water quality for federally listed species, including the Arkansas fatmucket (T), rabbitsfoot (T) and spectaclecase (E) mussels by reducing sedimentation. This work will also help restore pine-bluestem forest communities and reduce wildfire threats in the process. Activities will include improvement, obliteration, closure, or relocation of roads and off-highway vehicle trails. Restoration activities also include non-native invasive species control, prescribed burns, native warm season grass seeding, native cane planting, and woody species control. This project will also serve to strengthen collaboration with local conservation partners and

demonstrate the effectiveness of an All Lands approach to improving forest health and resilience as supported by sister USDA agencies.

Good Neighbor Authority

The Good Neighbor Authority (GNA) allows the Forest Service to enter into cooperative agreements or contracts with States to perform watershed restoration and forest management services on National Forest System (NFS) lands. This year, Congress passed two laws expanding Good Neighbor Authority: the FY 2014 Appropriations Act and the 2014 Farm Bill. Each law contains slightly different versions.

- The Farm Bill permanently authorizes the Good Neighbor Authority for both the Forest Service and the Bureau of Land Management (BLM) extending it to all 50 States and Puerto Rico. It excludes construction, reconstruction, repair, or restoration of paved or permanent roads or parking areas and construction, alteration, repair, or replacement of public buildings or works; as well as projects in wilderness areas, wilderness study areas, and lands where removal of vegetation is prohibited or restricted.
- The Fiscal Year 2014 Appropriations Act included a five-year authorization for the use of GNA in all states with NFS lands to perform watershed restoration and protection services on NFS and BLM lands when similar and complementary services are performed by the state on adjacent state or private lands. Other than the adjacency requirement, there were no exclusions as to type or location of work.

Terrestrial Habitat and Health

Soils

For additional information, contact Jeff Olson at jwolson@fs.fed.us

Objective 15 of the Forest Plan states, *"Conduct watershed improvement actions on at least 40 acres per year."* Progress toward this objective is reported each year as acres of watershed improvement or maintenance are accomplished. In each of the fiscal years since adoption of the Forest Plan, including 2014, this objective was exceeded.

Soil Restoration and Maintenance Activities are implemented on both small and large projects as a part of watershed improvement on the ONF. These include such activities as rehabilitating abandoned mines and user-created trails, obliterating roads and trails, gully stabilization, stream channel and riparian restoration, and restoration of the hydrologic and soils functions of watersheds impacted by all aspects of forest management activities. Acres of soil restoration and maintenance accomplished by year follow:

Soil Restoration and Maintenance by FY

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Acres of Soil Restoration and Maintenance	87	45	41	75	64	118	505	1,003	515*

*These acres reflect progress on watershed improvement as a part of the Western Arkansas Woodland Restoration Project (Joint chief's Initiative).

Burned Area Emergency Response (BAER) is a part of soil and water resource assessment and rehabilitation and monitoring work on the Ouachita National Forest. BAER focuses on natural resource damage occurring as a result of wildfire and wildfire suppression activities.

National Best Management Practices for Water Quality Management became a required part of resource monitoring programs on National Forest lands, beginning in 2013. This was the first of two transitional years in which each National Forest was mandated to monitor at least two

BMPs (within two resource categories). On the Ouachita National Forest, those BMP categories were roads and fire. In 2014, a total of seven resource areas on 529 acres were monitored, which included recreation management, vegetation management, roads management and fire management.

Accomplishment by year for BAER and National BMP Monitoring activities follow:

Acres of Soil and Water Resource Assessments (BAER) and National BMP Monitoring by FY

Acres	2012	2013	2014
Soil & Water Resource Assessment (BAER)	685	1,177	2,686
National BMP Monitoring	0	687	529

Trends Related to Forest Plan Objectives and/or Desired Conditions

The desired condition of Terrestrial, Riparian, and Aquatic Ecosystems on the ONF is, in great part, dependent upon the health of the soil resources. Each year, soil monitoring is conducted through various avenues to ensure that Forest Plan standards for maintaining soil and water quality are being met. Factors such as soil erosion and soil compaction are a threat to sustained soil productivity as well as to desired water quality. Preparation and follow-up work for watershed projects and monitoring activities serve as a check on current conditions of the soils, effects to soils from project implementation, and what mitigating measures may be required to bring the soils to the desired level of health. Where Best Management Practices (BMPs) are implemented, soil health and water quality are more likely to be preserved during and after forest management activities. To date, on a Forestwide basis, monitoring and observations have revealed that management actions in general have not had a consistently detrimental impact to soil conditions. Therefore, there are currently no recommended changes to ONF soils standards.

Fire Influences and Fuels

For additional information, contact Andy Dyer at adyer@fs.fed.us

Fire regime includes how frequently fires occur and the season of the burn (dormant or growing season). A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (Agee 1993, Brown 1995). For purposes of the M&E Report, the cool or dormant season is considered to be October through February, and the growing season, March through September. Most of the natural communities of the Ouachita NF are slightly, moderately, or highly dependent on certain fire regimes to restore and maintain “good” conditions.

Fire management activities across the Forest are relatively stable with a general trend of less than 100 wildland fires occurring annually. The majority of wildland fires on the Ouachita National Forest is human-caused and burn on average less than 100 acres per fire (calculated by adding average acres/fire/year and dividing by total years). Lightning activity as a fire ignition source plays an important but usually subordinate role as a fire cause; however, 2011 was a highly active year for lightning-ignited fires.

Fire Activity

Objective or Activity	FISCAL YEAR								
	2006	2007	2008	2009	2010	2011	2012	2013	2014
Wildland Fire (#)	187	68	41	60	75	130	43	22	25
Wildland Fire (Acres)	23,185	14,347	460	2,247	2,029	7,720	1,795	3,305	3,428
Wildland Fire (Average Acres)	124	211	11	37	27	59	42	150	137
Lightning caused (#)	46	20	4	7	12	68	10	10	5

At the time the Forest Plan was approved, wildland fire was a general term describing any non-structural fire that occurred in wildland. Wildland fire was categorized into three types. Under current fire management terminology, the categories have been reduced into the following two categories:

1. Wildfire – Unplanned ignitions or prescribed fires declared a wildfire. All wildfires were managed with the single objective of controlling/confining the fire so as to provide protection to the public and firefighters and to limit damages to the extent possible. Less than Full Suppression fires, formerly a third category, is now included under the wildfire category; and if ignited from a natural source, it may be managed to achieve resource benefit objectives.

2. Prescribed Fires – Planned ignitions to achieve resource goals, objectives, and benefits.

All responses to wildland fire continue to be based on objectives and constraints in the Forest Plan. The guidance still defines wildland fire as a general term describing any non-structural fire that occurs in wildland; however, the policy now directs that there be only the two categories of wildland fire mentioned in the previous paragraph.

There are two forest-wide standards that guide fire suppression actions on the Ouachita NF. These standards coupled with the Fire Management Plan guide the fire management program for the Ouachita NF and provide comprehensive guidelines for the suppression of wildland fire.

> *FS001 The full range of wildland fire suppression tactics (from immediate suppression to monitoring) may be used, consistent with Forest and resource management objectives and direction.*
>
> *FS002 Suppress wildfires at minimum cost, considering firefighter and public safety, benefits and values to be protected, consistent with resource objectives. All human-caused wildland fires will be suppressed.*

The fuels treatment program has resulted in gains toward restoration of ecosystems, reduction in risk of unwanted wildfires, and wildlife habitat improvement. Legal mandates, congressional intent expressed in annual budgets, natural disturbance events, and other issues or factors beyond the control of the fire program all influence performance.

Opportunities to move toward desired conditions through the management of wildfires for multiple objectives have been increased; however, the goal to treat 180,000 acres of the Forest each year with prescribed fire has proven difficult to achieve. Efforts are made to utilize all opportunities to increase treatments. Partnering with state agencies, non-governmental organizations, and private land owners through agreements, fire regime condition class and ecosystem condition improvements are being achieved on a landscape scale that includes crossing agency boundaries. Treatment activities across the Forest to move landscapes toward

desired conditions, through prescribed fire, mechanical methods, and integrated activities have remained fairly constant the last few years. This trend is expected to continue. The following reports prescribed fire activity (including wildland fire acres) by purpose for 2006 through 2014.

Prescribed Fire Program by Purpose (acres) by FY

Year	Fuel Reduction	Wildlife Habitat Improvement	Site Prep	Wildland Fire	Ouachita NF Total
2006	36,855	5,760	478	23,185	66,278
2007	83,136	61,299	919	14,347	159,701
2008	89,197	30,106	985	460	120,748
2009	92,262	23,981	3,882	2,247	122,372
2010	101,173	33,464	6,151	2,029	142,817
2011	66,777	20,242	1,981	7,720	96,720
2012	72,219	24,170	3,345	1,795.4	101,529
2013	79,086	11,554	2,220	3,305.3	96,165
2014	87,341	10,870	916	0	99,127

The Watershed Restoration and Enhancement Agreement Authority is known as the Wyden Amendment. Where public safety is threatened and benefits to resources within the watershed may be realized, the Forest Service is authorized to enter into domestic cooperative agreements or grants for purposes such as the protection, restoration, and enhancement of fish and wildlife habitat and other resources and for the reduction of risk from natural disaster. While the number of acres treated through prescribed burning utilizing the Wyden Amendment is not large, these acres critically influence the Forest's ability to conduct prescribed fire projects safely and efficiently and allow for landscape treatment projects and projects that go beyond NFS lands. Such agreements are for small tracts of an in-holding or an adjacent parcel that allows use of natural or pre-existing features for control lines. Acres treated with prescribed fire under agreement are shown in the following:

Acres of Prescribed Fire accomplished under Agreement by FY

Activity In Acres	Year								
	2006	2007	2008	2009	2010	2011	2012	2013	2014
Prescribed Fire Agreements	>4,000	>9,000	2,563	>3,000	2,728	1,394	0	2,480	2,828

Prescribed fire is consistently used to aid in the prevention of catastrophic wildfires, and is essential to improve and promote forest and vegetation community health. The forest is comprised of primarily fire-dependent communities, particularly the pine-dominated communities, and is dependent on a definite and fairly frequent fire regime for forest health. As shown in the following tabulation, the annual prescribed fire acres burned by community for 2014, were improved in the Pine Oak Forest primarily from accelerated woodland restoration activities.

Community Type Treated with Prescribed Fire by FY

Year	Annual Desired Range							
	Pine Oak Forest		Pine Oak Woodland		SLP Bluestem		Dry-Mesic Hardwood	
	Acres 56,000 to 80,000	7-10%	Acres 37,000 to 80,000	15-33%	Acres 31,000 to 68,000	15-33%	Acres 16,000 to 22,000	7-10%
2006	29,568	4%	8,235	3%	7,717	5%	11,196	5%
2007	46,238	6%	15,412	6%	51,617	26%	12,736	6%
2008	59,702	6%	9,764	6%	30,000	14%	15,324	5%
2009	46,405	5%	15,469	10%	37,105	19%	19,799	7%
2010	47,812	7%	21,478	8%	32,551	18%	25,633	8%
2011	26,446	4%	11,163	4%	19,489	11%	9,854	3%
2012	61,099	8%	20,962	7%	25,102	14%	16,063	5%
2013	61,094	8%	19,170	6%	23,198	13%	15,597	5%
2014	72,115	9%	14,420	6%	12,692	8%	9,866	4%

The Forest Plan recognizes the importance of prescribed fire mimicking the role that wildfire played in the development of the fire-dependent ecosystems of the Ouachita NF over centuries. Prescribed fires conducted during the growing season, generally described as from leaf emergence to beginning of plant dormancy, are an integral part of many functioning ecosystems. For compatibility with the Ouachita NF reporting systems, prescribed fire accomplished from March through September annually are reported here. Implementing prescribed fire during the growing season to achieve desired ecological conditions will be continued as a management practice.

Acres of Prescribed Fire during March – September by FY

	YEAR								
	2006	2007	2008	2009	2010	2011	2012	2013	2014
Acres of Prescribed Fire	18,162	17,327	92,614	57,102	112,957	83,925	82,254	86,753	80,889

All wildland fires have the potential to pose threats to communities and developments adjacent to the Ouachita NF. These identified “At Risk Communities” and the Wildland Urban Interface (WUI) areas receive the highest priority for fuel reduction treatments. Wildfire hazard reductions, to enhance protection of homes and human lives in the interface areas, are coordinated with the state forestry agencies through programs such as FireWise. The FireWise program works with fire departments and civic organizations to make communities safer from the threat of wildfire through mitigation projects and community education initiatives. Through funding from the US Forest Service, Arkansas Forestry Commission and Oklahoma Forestry Services educate homeowners in the WUI about proactive steps they can take to protect their homes. Both states encourage communities to participate in the FireWise program by offering grants and free community assistance. Assistance to complete Community Wildfire Protection Plans is a key feature of the FireWise program.

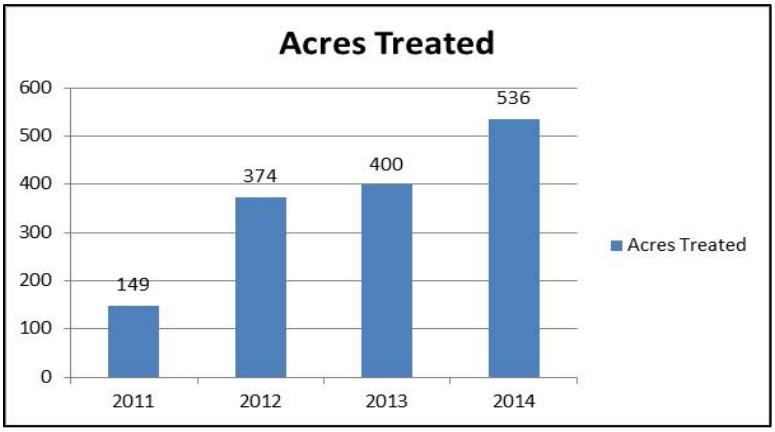
Terrestrial Non-native Invasive Species

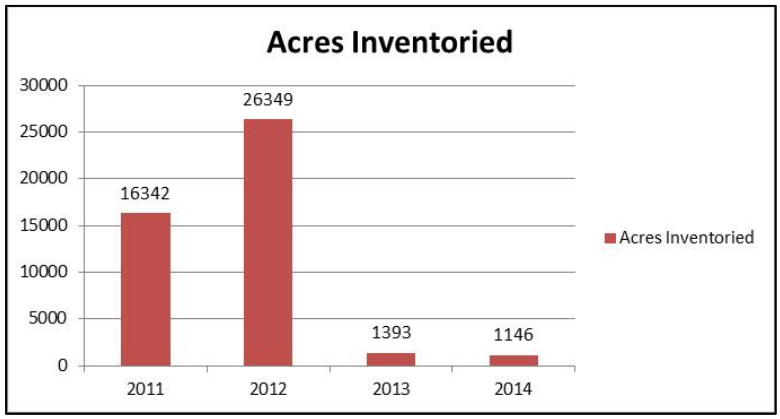
For additional information, contact Susan Hooks at shooks@fs.fed.us

Forest Plan Objective 29 requires the following:

"*Conduct inventories to determine the presence and extent of non-native invasive species in wildernesses by 2010; based on results of these inventories, develop and implement appropriate monitoring and treatment programs."*

The Forest not only treats acres for non-native invasive species but also surveys areas and locates new sites that need treatment. In 2014, a total of 536 acres of non-native invasive plants were treated and a total of 1,146 acres of new infestations were reported and surveyed. The acres inventoried are dependent to a great degree on reports from District personnel who encounter species that need to be inventoried to determine their extent. The following graphs display acres treated and acres inventoried for non-native invasive species.





The Ouachita NF has been collecting data on invasive species infestations and entering that data into the Natural Resource Information System (NRIS) corporate database. There have been inventories completed on Dry Creek, Poteau Mountain, Blackfork, and Flatside wilderness areas (35,466 acres surveyed). The Ouachita NF continually enters new information on non-native species infestations into NRIS as watershed assessments are completed. The most common invasive species is S*ericea lespedeza*; infestations appear to be limited to roadside areas and trails.

Insects and Disease

For additional information, contact Dr. James D. Smith at jdsmith@fs.fed.us

The Ouachita NF continues to participate in the annual southern pine beetle (SPB) trapping protocol that attracts the SPB and forecasts activity based on the number of trap catches. During 2014 no SPB were located during spring trapping. The Ouachita NF also participates in the SPB prevention program that targets pine stands in need of thinning to keep them below the volume and spacing requirements known to contribute to SPB spot growth (timber loss).

The Ouachita NF is dealing with the invasive emerald ash borer (EAB). This beetle has rapidly moved from its entrance point into the United States (Michigan) to Arkansas. Six counties in south central Arkansas have had positive trap catches, and those counties plus other buffer counties have now been quarantined for the movement of hardwood timber products. This particularly affects the Ouachita NF in that firewood permitees now receive information on the pest when they obtain their permit. They are asked to “burn it where you obtain it” and to not transport firewood from their campsite or outside of the area where it is obtained. The Ouachita NF has been active in notifying the public of the destructive and invasive nature of this pest for the past four years.

One important factor in controlling insects and disease on the Ouachita NF is to monitor movements by pests in other states. For example EAB has been discovered in North Louisiana, and the red bay wilt which is vectored by a bark beetle has been found within eight miles of the Arkansas state line. Insect/disease combination may move quickly and knowing the direction of their movements is important. Red bay wilt poses a risk to sassafras trees within the forest. Trapping and surveying for the insect and the disease is continuing, and no changes have been noted in this pest activity for 2014.

Oak decline is still being found in Arkansas. This problem occurs on poor sites with high volume and age component present. The most damaging incidence of this disease has been found on the Ozark-St. Francis NF near Clarksville, Arkansas. There are isolated areas within the Ouachita NF that also host this disease complex. These areas will be aggressively treated as they are found and the disease component confirmed. Due to potential impacts from the red oak borer, thinning and cultural management of hardwood stands is needed. Such treatment will ultimately lead to a healthier, more resilient, and more productive forest.

Other Vegetation Management

Forest Regeneration

For additional information, contact Jo Ann Smith at joannsmith@fs.fed.us

The Ouachita NF predominately uses natural regeneration to propagate stands and provide early seral vegetation. Seedtree and shelterwood cuts in Shortleaf Pine/Shortleaf Pine-Oak planned and contracted through commercial timber sales 2006 – 2014 resulted in 21,138 acres of regeneration. There has been no uneven-aged management for the last three years. For the period 2006-2014 the annual average uneven-aged harvest was 1,109 acres, whereas the plan proposed/probable acres in this category would have been a low of 9,000 acres. Natural regeneration systems are very successful, with less than 10% of the area treated in need of supplemental planting.

Artificial regeneration occurs on the Forest after storm damage, fire, and insect or disease damage. Artificial regeneration also occurs where off-site species (loblolly) are removed through clearcutting and planting to restore shortleaf pine (along with native hardwoods) and on cut-over acquired lands. At the time of the Five-year Review, 7,309 acres had been planted in shortleaf pine.

The Ouachita NF has had moderate-to-good success in planting shortleaf pine in the past. Also, the Forest has used containerized seedlings grown by contract nurseries using seed from the Ouachita Seed Orchard. An increase in initial survival is one result of using the containerized seedlings, as has an increase in growth rates and partial elimination of release treatments.

Monitoring will continue on these plantations for any signs of "toppling," a condition observed by Forest Research on containerized longleaf plantations where saplings are more easily downed in strong winds.

Method of Harvest Trends

For additional information, contact Jo Ann Smith at joannsmith@fs.fed.us

Silvicultural treatments involving commercial timber sales are less than half of what was proposed and probable in the Forest Plan. Under current workloads, sale preparation requirements and workforce, it is unlikely that this trend will change.

Acres Harvested by Method of Cut by FY

Harvest Type by Year	Clearcut	Even-Aged Management (Seedtree/Shelterwood)	Uneven-Aged Management (Group/Single Tree)	Commercial Thinning
2006	74	2,602	3,216	13,046
2007	0	3,414	1,325	10,601
2008	193	3,186	1,246	10,981
2009	134	2,351	1,568	10,409
2010	152	2,086	1,336	8,120
2011	39	1,142 (150/992)	856 (856/0)	6,175
2012	29	2,322 (2,067/255)	684 (217/467)	10,517
2013	253	1,151 (855/296)	979 (882/97)	8,058
2014	46	1,503 (1,503/0)	0	4,710

Terrestrial Habitats and Conditions

For additional information, contact Mary Lane at melane@fs.fed.us

Vertical Structure

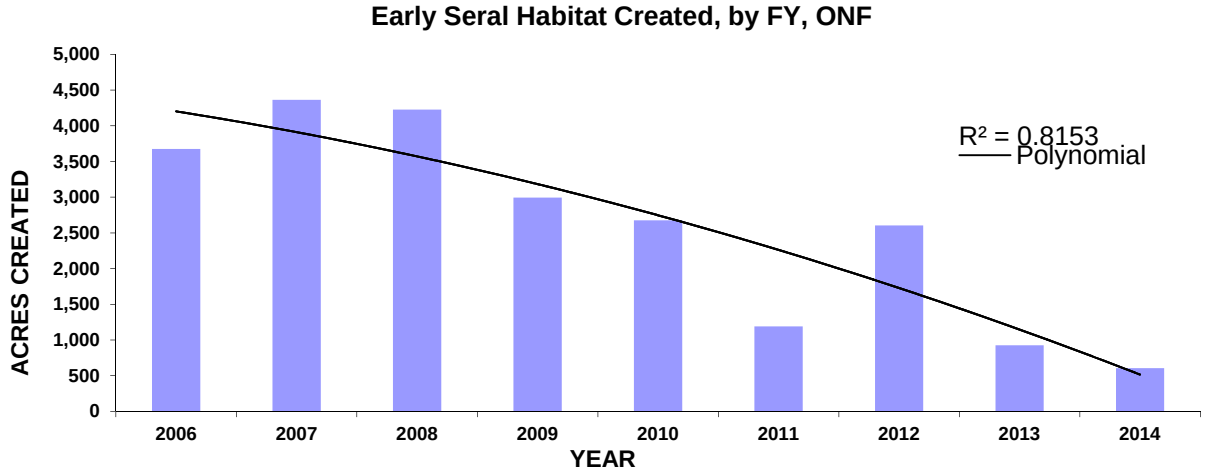
Fire, thinning, and other vegetation management practices help sustain the balance of structural and compositional diversity needed to support healthy populations of native plants and animals while maintaining the productivity of the land. Some plant and animal species can do well within any of the seral stages; however, some species can only survive in specific stages.

- Early seral structure includes the 0-5 year-old grass/forb stage plus the 0-10 year-old seedling/sapling/shrub stage. (In Woodland communities, early seral structure also includes 40% of the late seral stage.)
- Mid-seral structure includes all age-classes and diameters in the pole timber stand condition class.
- Late seral structure includes mature and immature sawtimber-size trees with diameters at breast height of greater than 9.5 inches for pine and 12 inches for hardwood.

Early Seral Stage

Early seral stage is important for the viability of early seral-dependent species as well as to development of a healthy and resilient forest. The early seral stage is particularly important to species such as white-tailed deer, Northern Bobwhite, Prairie Warbler, many other bird and small mammal (rodent) species, and reptiles, such as terrapins and snakes seeking small mammals as food sources. The grass/forb seedling/sapling (early seral) condition is highly productive in terms of diversity and abundance of nesting and escape cover and forage production, including insects, small mammals, reptiles, seeds and soft mast.

Based on Forest Plan projections, early seral stage habitat should continue to increase and then stabilize at approximately 50,000 to 60,000 acres after ten years (USDA Forest Service 2005, p. 175.) The Forest Plan objective is to create 5,500 acres of early seral stage (grass/forb) habitat per year using even-aged methods. The Forest is lagging behind Forest Plan Objective 006, "*Establish 5,500 acres per year in grass/forb condition within the pine-oak forest subsystem while maintaining 60-90 percent in mature to late seral condition."* The following graph shows that the Forest has failed to meet that objective since 2006.



Inadequate levels of early seral stage habitat creation result in reduction of early seral species numbers. Forestwide, less than 24,000 acres of early seral habitat have been created since Plan Revision in 2005, averaging less than 2,500 acres per year. In 2014, 3,287 acres were salvaged; however, adding this to the acres of early seral created through green timber harvesting (606) would still not meet the plan objective. The following presents acres of early seral stage habitat created by timber harvesting (even-aged methods) since 2000, which included accomplishments under the previous Forest Plan as well as the current Forest Plan.

Acres of Early Seral Stage Habitat Created by Timber Harvesting by FY

1990 Forest Plan	
Year	Acres of Early Seral Habitat Created
2000	2,246
2001	953
2002	772
2003	2,268
2004	1,866
2005	3,031

2005 Forest Plan	
Year	Acres of Early Seral Habitat Created
2006	2,602
2007	4,363
2008	3,869
2009	2,151
2010	2,676
2011	1,190
2012	2,605
2013	925
2014	606

Due to continuous growth, the early seral condition has a transient lifespan and is often in short and/or declining supply. Current forest management has resulted in a forest that is growing older, because the suitable acreage regenerated from the older age groups is less than the acreage of timber entering into these age classes. This will ultimately result in a forest well over the desired rotation age and with far too little early seral structure to achieve species viability for dependent species.

Ouachita NF communities that maintain an herbaceous ground-cover and/or shrub habitat component within the Forest are pine-bluestem and pine-oak woodland, as well as several of the rare upland vegetation communities-dry oak woodland, acidic cliff and talus, acidic glades and barrens, novaculite glade and woodland, montane oak, and calcareous prairie. These communities cover approximately 30% of the Forest. The herbaceous and shrub habitat is annually maintained in a forest-wide mosaic on approximately 540,000 acres.

In the pine woodland communities, thinning and frequent prescribed burns support an herbaceous ground cover on approximately 40% of those communities. Naturally limiting factors such as elevation, rainfall, aspect, slope, and/or thin soils maintain primarily an early seral stage within the acidic cliff and talus, acidic glades and barrens, novaculite glade and woodland, and dry oak woodland communities. Montane oak naturally provides a high elevation shrub condition, and the calcareous prairie provides herbaceous groundcover and shrubby vegetation. A frequent to occasional fire treatment is essential to discourage woody encroachment and to maintain any early successional condition within most of these systems.

Mid-Seral Stage

The Mid-Seral Stage is tracked in FSVeg as a transitory stage between early and late seral stages. There are no species of concern that are considered obligates of this vegetation condition.

Late Seral Stage

The late seral vertical structure condition (mature forest) provides habitat and forage for a suite of habitat generalists as well as habitat specialists such as the Scarlet Tanager and Cerulean Warbler that specifically require tall trees. This condition provides important habitat for high canopy nesting and roosting, suitable structure for cavity development and excavation, and relatively large volumes of seed and hard mast. Components of this condition include snags, large and small diameter hollow trees used as den trees, downed woody debris, and large trees near water that provide critical habitat for many wildlife species. Mature pine forest consists of pines greater than 80 years old.

Acres of Late Seral Stage, by Fiscal Year			
Year	Mature Pine Forest	± Previous Year and % change from Previous Year	± from 2005 and % change from 2005
2005	435,112	N/A	N/A
2006	565,683	+130,600 + 30	+130,600 + 30
2007	495,176	-73,500 - 12	+ 60,100 + 14
2008	507,068	+11,892 + 2	+71,956 +14
2009	553,923	+46,855 +9	+118,811 +27
2010	588,733	+34,810 +6	+153,621 +35
2011	568,851	-19,882 -3	+133,739 +31
2012	565,235	-3,616 -1	+130,123 +30
2013	581,925	+16,690 +3	+146,813 +34
2014	599,830	+15,095 +3	+164,718 +38

Other Terrestrial Habitat Components – Wildlife

For additional information, contact Mary Lane at melane@fs.fed.us

In addition to the terrestrial ecosystems and the habitat they provide (discussed under Terrestrial Habitats and Conditions above), other terrestrial habitat systems provide habitat that is important specifically for wildlife. Habitat components monitored annually include Cave and Mine Habitat and Mast Production. Other habitat components that are important to terrestrial ecosystems include Large Trees near Water; Snags, Cavity/Den Trees, Down Logs/Woody Debris; and Old Growth Habitat (there are no reports specific to these elements for the 2014 M&E Report). A short discussion of Cave and Mine Habitat and Mast Production follows.

Cave and Mine Habitat

For additional information, contact Mary Lane at melane@fs.fed.us

Bear Den Cave Monitoring: There were no bat surveys conducted at Bear Den Cave in 2014. Previous surveys at Bear Den Cave found 25 and five Indiana bats in 2010 and 2012, respectively. During mine surveys in 2014, northern long-eared bats (a new federally listed species) were identified in two mines. Most mines have been gated with bat-friendly gates.

A protective order for closure at Bear Den Cave has been in place for many years to protect the cave and the Indiana bat hibernaculum. In May 2013, the Southern Region enacted a regional closure order for caves and mines across the South, extending the protection against the spread of white-nose syndrome; this closure order remains in place.

Bear Den Cave Closure
Source: USFS

Mast Production

For additional information, contact Mary Lane at melane@fs.fed.us

Acorns and hickory nuts (hard mast) are important habitat elements for several wildlife species, including white-tailed deer, Eastern Wild Turkey, squirrel, and black bear. Mid- to late-successional oak, hickory, and hardwood-pine forests provide an important source of hard mast on the Forest. The availability of acorns has been demonstrated to influence population dynamics of demand species and non-game animals such as white-footed mice.

Hardwoods greater than 50 years old are used to determine hard mast capability. There were 421,072 acres of hardwoods greater than 50 years old in 2014 compared to a slightly larger number of acres (423,961) in 2012-2013. The difference is small and does not imply a downward trend. Management activities critical to mast producing tree species and predominately hardwood communities are thinning and prescribed burning.

Acres of Mast Capability by FY

Acres (Acres & %)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mast Capability	433,250	468,172	474,384	452,111	454,787	394,357	422,992	423,961	423,961	421,072
± Previous Yr & %	N/A	+35,000 + 8	+>6,000 + 1	- 22,273 - 5	+2,676 +1	-60,430 -13	+28,635 +7	+969 0	0 0	-2,889 -1
± from 2005 & %	N/A	+35,000 + 8	+>41,000 + 9	+18,861 + 4	+21,537 +5	-38,893 -9	-10,258 -3	-9,289 -2	-9,289 -2	-12,178 -3

Hardwoods greater than 100 years old are used as a surrogate for mature hardwood forests. In 2014, there were 80,600 acres of hardwood forest greater than 100 years old (4.5% of the Forest) compared to 70,343 acres greater than 100 years old in 2012-2013. This is an increase of more than 10,000 acres since 2012. In 2011, there were 75,743 acres of hardwood forest greater than 100 years old (4.2% of the Forest).

Acres of Mature Hardwood Forest by FY

Acres (Acres & %)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mature Hardwood Forest	50,959	51,873	130,343*	52,553	58,689	73,830	75,743	70,343	70,343	80,600
± Previous Yr & %	N/A	+>900 + 2	+78,500 + 251	77,790 - 59	+6,136 +12	+15,141 +26	+1,913 +3	-5,400 -7	0 0	+10,257 +15
± from 2005 & %	N/A	+>900 + 2	+79,400 + 255	+1,594 + 3	+7,730 +15	+22,871 +45	+24,784 +49	+19,384 +38	+19,384 +38	+29,641 +58

* Data reported for 2007 appear to be in error. No major storm events, insect infestations or timber treatments or harvest occurred that would have caused a decrease of 59% from 2007 to 2008. Acres of Mature Hardwood Forest in 2008 are consistent with acreages reported for 2005 and 2006.

Habitat Capability Modeling

For additional information, contact Mary Lane at melane@fs.fed.us

Modeling habitat capability using the Computerized Project Analysis and Tracking System (CompPATS) wildlife model and vegetation data from Field Sampled Vegetation (FSVeg) is a tool to evaluate and estimate acres of suitable habitat to sustain healthy populations of native and desired non-native wildlife species on the Ouachita NF. Estimated suitable habitat acres for MIS are shown for 2005, current habitat capability for 2014, and projected capability for 2015.

Habitat Capability, Modeled by FY

Estimated Modeled Habitat Capability in Acres											Projected Desired Habitat (Acres)
Terrestrial Management Indicator Species	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Eastern Wild Turkey	18,461	17,601	18,316	18,370	16,204	14,610	14,736	14,643	14,727	14,809	9,177
Northern Bobwhite	65,002	62,571	69,349	74,223	68,888	76,690	71,468	67,296	63,004	65,480	101,748
Pileated Woodpecker	17,842	17,371	14,647	15,555	13,628	11,580	12,814	12,731	12,597	13,066	11,265
Prairie Warbler	90,313	85,691	93,830	87,788	71,582	75,531	64,686	65,411	66,126	58,457	112,590
Scarlet Tanager	90,583	86,455	85,046	84,040	73,136	66,744	66,743	66,811	66,573	68,014	69,500
White-tailed Deer	58,395	50,840	51,898	50,325	42,442	41,775	40,223	37,814	38,415	38,017	38,105

Forestwide habitat capability modeling indicates that terrestrial MIS are moving toward or have passed the projected desired habitat capability for 2015, with a few exceptions. Habitat for such early successional species as Northern Bobwhite declined in 2012 and 2013 from the previous years; improved slightly in 2014; but is still below the 2015 Projected Desired Habitat Capability. Habitat capability for Prairie Warbler has been declining since 2007, and although it has appeared to be stable with some increase since 2010, it continues to be well below the habitat capability estimated in the Plan. Habitat for such late successional species as Pileated Woodpecker remains above levels projected for 2015. Habitat capability for Scarlet Tanager has declined overall to below the 2015 projected level, but it has remained fairly stable for the last five years and is near the 2015 Projected Desired Habitat Capability. Most of these habitat estimates lend weight to the finding that the Ouachita NF is trending toward becoming a late seral forest, in need of additional regeneration, thinning, prescribed burning, and other habitat improvement to meet desired conditions.

Terrestrial Management Indicator Species and Wildlife Habitat Management

For additional information, contact Mary Lane at melane@fs.fed.us

Management indicator species (MIS) are analyzed separately from the threatened and endangered species and the sensitive and other species of viability concern. National Forest Management Act regulations adopted in 1982 require selection of MIS during development of forest plans (36 CFR 219.19(a)). MIS are selected "because their population changes are believed to indicate the effects of management activities" (36 CFR 219 (a)(1)). Where appropriate, MIS shall represent the following groups of species:

1. Threatened and endangered species on State and Federal lists,
2. Species with special habitat needs,
3. Species commonly hunted, fished, or trapped,
4. Non-game species of special interest, and
5. Species selected to indicate effects on other species of selected major biological communities.

Maintenance and improvement of habitat for MIS are addressed by objectives, standards, and Management Area allocations; however, specific information for each of the species is collected and reported here.

MIS serve as indicators of habitat conditions occurring on the Ouachita NF and allow monitoring of a select few to represent other wildlife species in a variety of habitats across the ONF. The Forest Plan identified seven terrestrial MIS—all bird species with the exception of white-tailed deer. The Red-cockaded Woodpecker was included as both a federally endangered species and an MIS. The MIS and/or their habitats are monitored to determine if changes indicate the effects of management activities or if management changes are needed. The following shows the 24 MIS for the Ouachita NF under the Forest Plan. This list is constant and does not change from year to year but may soon be replaced by "focal species."

MIS Species for the Ouachita NF

Common Name	Scientific Name	Common Name	Scientific Name
Terrestrial MIS		***Stream and River MIS***	
Eastern Wild Turkey	*Meleagris gallapavo*	Yellow bullhead*	*Ameiurus natalis*
Northern Bobwhite	*Colinus virginianus*	Pirate Perch*	*Aphredoderus sayanus*
Pileated Woodpecker	*Dendroica discolor*	Highland Stoneroller*	*Campostoma spadiceum*
Prairie Warbler	*Dryocopus pileatus*	Creek Chubsucker*	*Erimyzon oblongus*
Red-cockaded Woodpecker	*Picoides borealis*	Orangebelly Darter*	*Etheostoma radiosum*
Scarlet Tanager	*Piranga olivacea*	Redfin Darter*	*Etheostoma whipplei*
White-tailed deer	*Odocoileus virginianus*	Northern studfish*	*Fundulus catenatus*
Aquatic MIS–17		Northern Hog Sucker*	*Hypentelium nigricans*
Pond, Lake and Waterhole MIS		Green Sunfish*	*Lepomis cyanellus*
		Longear Sunfish*	*Lepomis megalotis*
Bluegill	*Lepomis macrochirus*	Striped Shiner*	*Luxilus chrysocephalus*
Largemouth Bass	*Micropterus salmoides*	Smallmouth Bass*	*Micropterus dolomieu*
Redear Sunfish	*Lepomis microlophus*	Johnny Darter [1]	*Etheostoma nigrum*
		Channel Darter [1]	*Percina copelandi*

*These fish species are monitored as a part of the Basin Area Stream Survey, which occurs every 5 years, while pond and lake species (Bluegill, Largemouth Bass, and Redear Sunfish) are monitored annually.
[1]Only within the range of Leopard Darters.

Terrestrial MIS

In this report, terrestrial MIS and aquatic MIS are presented separately. A discussion of the seven terrestrial MIS follows.

Eastern Wild Turkey *(Meleagris gallapavo)*

For additional information, contact Mary Lane at melane@fs.fed.us

The Eastern Wild Turkey is a MIS selected to indicate the effects of management on meeting public hunting demand (USDA Forest Service 2005a, p. 165.)

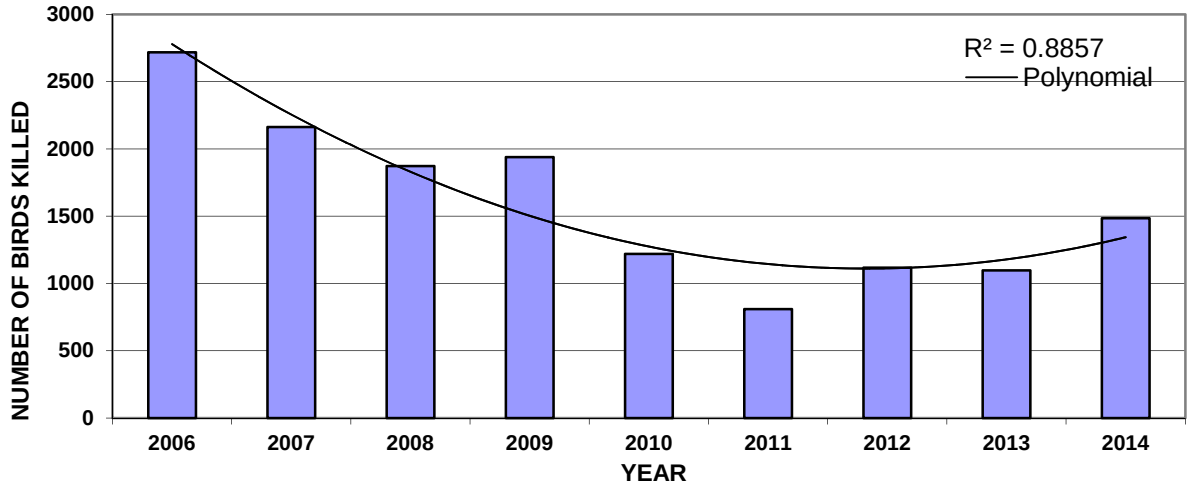
Data Sources: Sources of data include turkey poult surveys, spring turkey harvest data, habitat capability modeling using CompPATS, and Landbird Points survey data.

In the Forest Plan, the minimum population objective is 3.3 turkeys per square mile (9,177 turkeys Forest-wide) after 10 years and 3.9 per square mile at 50 years (USDA Forest Service 2005a, p166.)

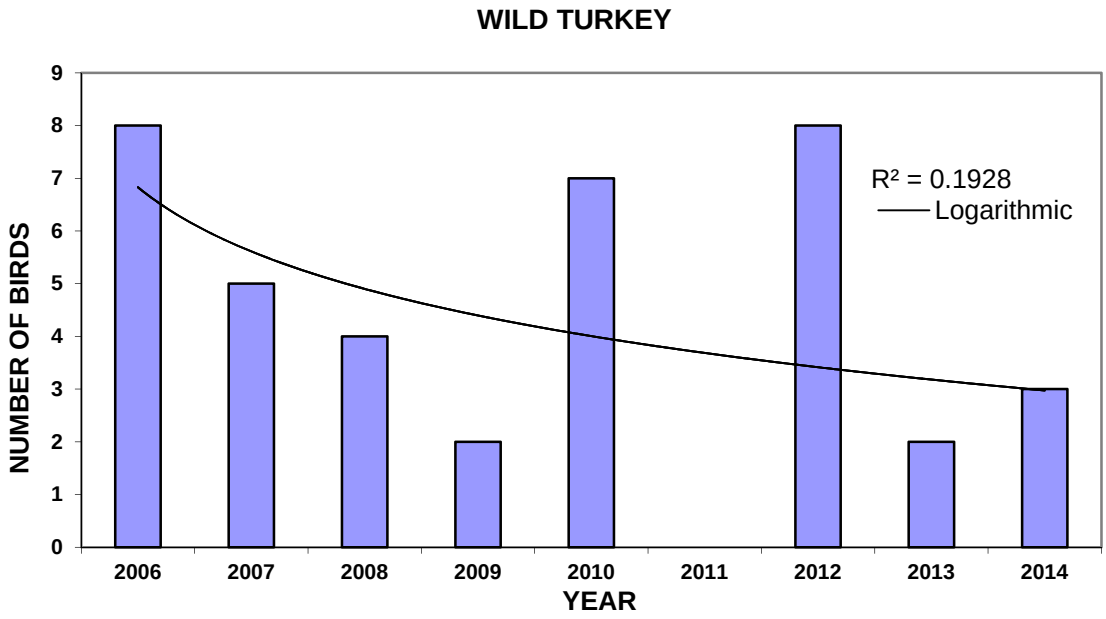
Eastern Wild Turkey
Source: USFS

Population Trends for Eastern Wild Turkey: The number of turkey poults per hen in the Ouachita region of Arkansas has varied from 1.99 in 2006 to 3.2 poults per hen in 2012. Records indicate 2.6 poults per hen in 2014, up slightly from 2.5 in 2013. Although this indicates that reproduction has gone down from 2012, it is still better than what was recorded for the last decade. Spring turkey harvest was measured at a high of about 2,718 birds in 2006. Spring 2014 harvest in the Ouachita Mountains was a 26% increase from spring 2013 and statewide a 32% increase from the previous year. The Arkansas Game and Fish Commission addressed the turkey decline by adjusting the hunting season and eliminating the fall season entirely. The 2012 brood survey indicated the best reproduction since the early 2000s, and the 2014 harvest reaffirmed those observations.

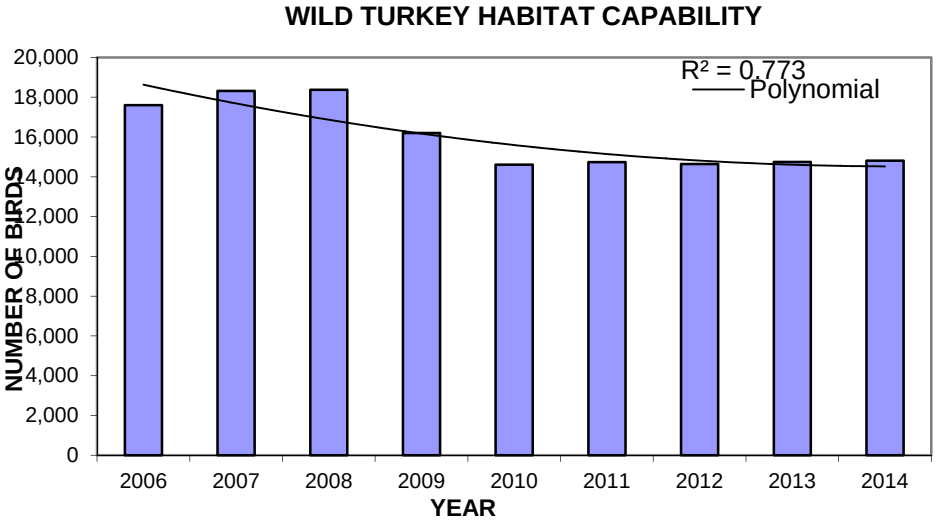
OUACHITA SPRING TURKEY HARVEST



Landbird Points surveys are conducted on many acres within the Ouachita NF. No turkeys were detected during the 2011 surveys. During the surveys in 2012, eight birds were identified; two birds were identified in 2013; and three birds during 2014.



Habitat capability for 2014 is estimated at 14,809 turkeys. This is compared to 14,643 and 14,748 turkeys in 2012 and 2013, respectively, and an estimated 14,736 turkeys in 2011, 14,610 in 2010, 16,204 in 2009, 18,370 in 2008, and 18,316 in 2007, indicating a downward trend in habitat capability for the years 2006 to 2014. Although the estimated habitat capability is exhibiting a downward trend, actual habitat capability has remained relatively stable since 2010, with a slight increase in 2014. The Forest should have habitat to support numbers exceeding the minimum population objective of 3.3 turkeys per square mile (9,177 turkeys) for the first period (10 years) of the Forest Plan.



Interpretation of Trends for Eastern Wild Turkey: A slight negative trend is suggested for the turkey population on the Forest based on habitat capability modeling. In addition, the drop in turkey harvest and birds detected on the Landbird Points data would indicate a reduction in the number of turkey forest-wide. Still, habitat capability remains above the level projected in the Forest Plan. The sustained high levels of habitat capability would indicate that the drop in harvest levels, reductions in poults per hen, and birds detected on the Landbird Points are due to factors other than habitat suitability or availability.

Implications for Management: Turkey poult production, harvest, birds detected on Landbird Points counts and habitat capability were up in 2014 compared to 2013; however, trends for harvest, birds detected on Landbird Points counts, and habitat capability all show a slight downward trend. Insufficient data exist to suggest that Eastern Wild Turkey may be in danger of losing population viability or falling below desired population levels. The Arkansas Game and Fish Commission has shortened the spring season and eliminated the fall season to stimulate more positive responses. In addition to harvest levels, weather conditions and predation may be having a negative impact on the turkey. Data are contradictory, with habitat projections and poult production reflecting a negative, but stabilized, trend in the past few years, and harvest and Landbird Points counts down from 2006 levels in most years. Due to conflicting indicators, more research should be conducted to determine if additional management changes are warranted. Research across the South has shown that prescribed fire treatments, including growing season burns, improve turkey habitat by opening up dense forest, reducing shrub and brush, and improving nesting and brood rearing habitat. Areas that were not burned for more than 2 years were almost devoid of turkey hens (Cox and Widener 2008). No management changes are warranted at this time. In addition, research is currently ongoing on the Forest to look at habitat preferences of the Eastern Wild Turkey.

Northern Bobwhite (*Colinus virginianus*)

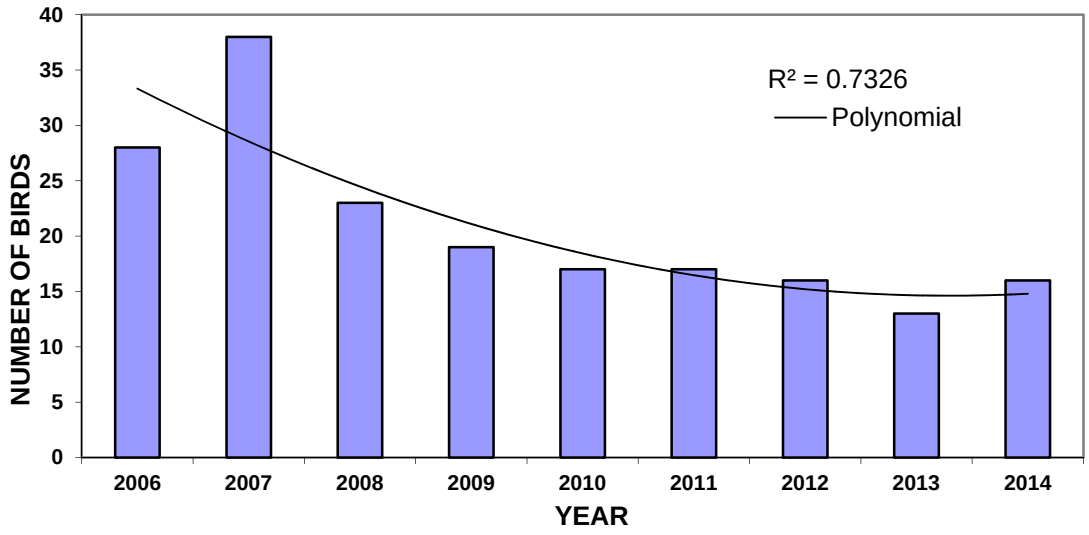
For additional information, contact Mary Lane at melane@fs.fed.us

The Northern Bobwhite is an MIS selected to indicate the effects of management on meeting public hunting demand and the effects of management on the pine-oak woodland and pine bluestem communities (USDA Forest Service 2005a, p165.)

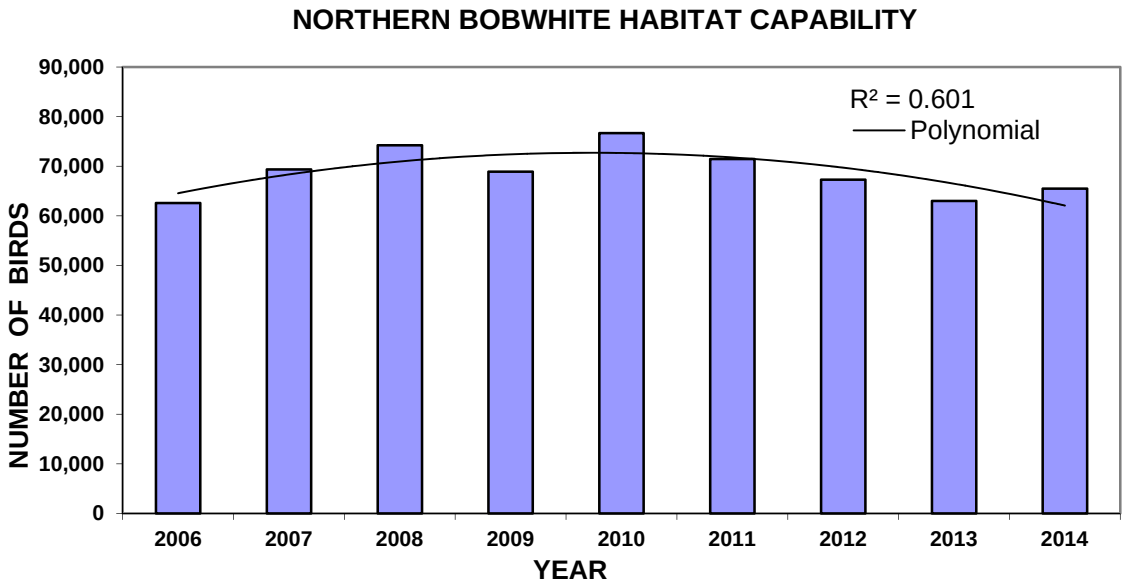
Northern Bobwhite
Source: USFS

Data Sources: Data sources and monitoring techniques for this species include Northern Bobwhite call counts (Arkansas Game and Fish Commission and Oklahoma Department of Wildlife Conservation); the CompPATS Habitat; Capability Model and the Ouachita NF Landbird Points monitoring data collected from 1997 – 2014. In the Forest Plan EIS, the population objective for the Northern Bobwhite is an average of 36.6 birds per square mile (USDA Forest Service 2005a, p. 166).

Population Trends: Since 1997, the Ouachita NF has been conducting bird surveys on over 300 Landbird Points. Northern Bobwhite data indicate a downward, but leveling, trend in birds detected over this 18-year period. Since 2006, a nine-year declining trend has continued mirroring this species range-wide population trends, although 2014 counts were higher than the previous year and about equal to the preceding three years (2010- 2012).



Estimated habitat capability for the Northern Bobwhite has been relatively stable since 2006, with the last three years showing a slight decrease from the previous five years. However, it is still far from reaching the projected 2015 desired forest-wide habitat capability of 101,748 based on the Forest Plan EIS. One major factor is that the Forest has not met the objective of establishing 5,500 acres of early seral habitat per year since the Forest Plan went into effect. The habitat capability trend is not statistically significant.



Interpretation of Trends for Northern Bobwhite: Northern Bobwhite Landbird Points data indicate a decreasing trend in Northern Bobwhite numbers for the Ouachita NF, while the estimated habitat capability shows a fairly stable, but recent slight downward trend. Regional declining population trends for the Ozark-Ouachita Plateau region are reported. Regional and range-wide declines are primarily attributed to the loss of habitat on private and agricultural lands and changes in agricultural practices. The Ouachita NF has pursued aggressive prescribed fire and thinning programs that are providing habitat improvements, and it is expected that these management actions will soon positively act to overcome the downward trends.

Implications for Management: The Northern Bobwhite population viability on the Ouachita NF is not expected to be threatened, and populations are expected to improve through Forest Plan implementation. Increases in thinning and prescribed fire, especially associated with some 200,000 acres of shortleaf pine-bluestem grass ecosystem restoration, will benefit Northern Bobwhite populations by improving habitat.

Pileated Woodpecker (*Dryocopus pileatus)*

For additional information, contact Mary Lane at melane@fs.fed.us

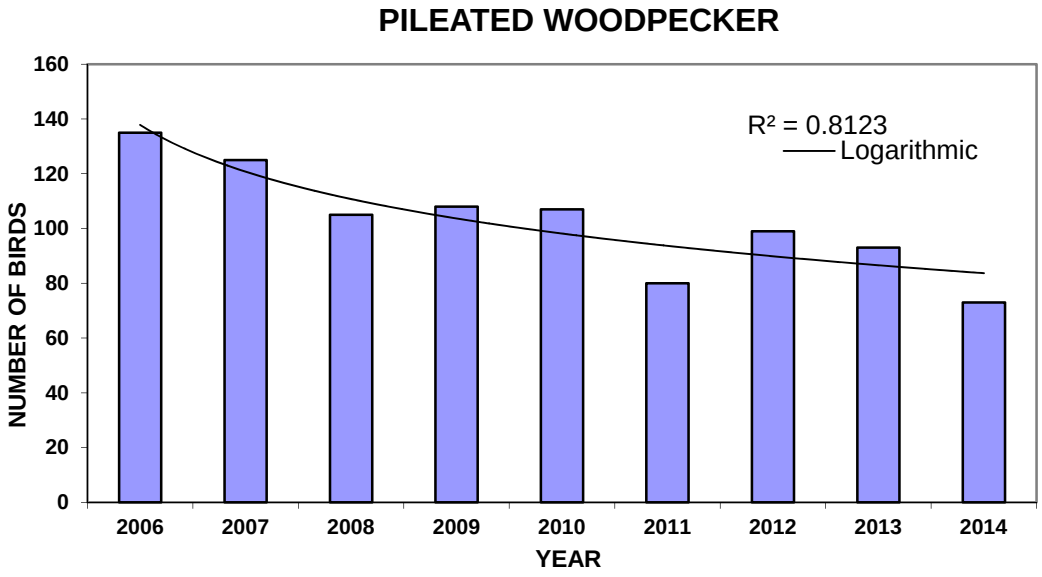
The Pileated Woodpecker is an MIS for the Ouachita NF, selected to indicate the effects of management on snags and snag-dependent species (USDA Forest Service 2005a, p. 166). This species prefers dense, mature hardwood and hardwood-pine forest types. It is a primary excavator of cavities important to obligate secondary cavity nesters and is a key indicator for the retention of a complete community of cavity nesting species.

Pileated Woodpecker
Source: www.enature.com

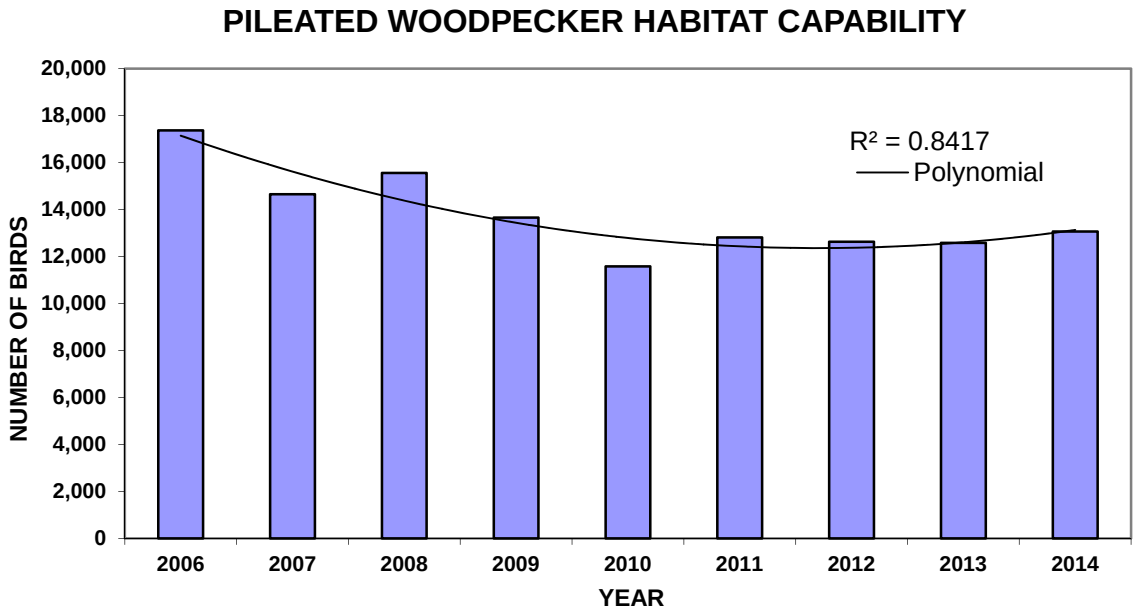
Data Sources: The Ouachita NF Landbird Points count data and habitat capability predictions using CompPATS wildlife model and Field Sampled Vegetation (FSVeg) data were used as data sources for evaluating Pileated Woodpecker population trends.

Population Trends: Ouachita NF Landbird Points data and habitat capability data both indicate a downward trend for the Pileated Woodpecker.

Landbird Points monitoring data on the Ouachita NF indicate the long term trend to be slightly decreasing for Pileated Woodpecker; however, this is not reflecting the fact that across the Ouachita NF, the trend is for the forest to age overall.



The CompPATS wildlife model estimates for habitat capability, using all forest types, show a trend similar to the Landbird Points data since 2006. These model data are for pine, pine-hardwood, hardwood, and hardwood-pine stands, with the greatest value for this species being stands greater than or equal to 41 years old. As stands age, the habitat capability to support the Pileated Woodpecker should begin to stabilize.



Interpretation of Trends for the Pileated Woodpecker: The CompPATS wildlife model takes into account conditions in all forest types, and it factors in management practices including prescribed fire and thinning. These data show a downward trend since 2006, although within the last five years habitat capability has been stable to increasing. The data also indicate that the Forest is still well within the desired habitat capability projected for FY15. Overall population trends should continue to improve as stands age. The current habitat capability, estimated to support approximately 13,066 birds, exceeds the Forest Plan bird population objective of 11,265 for 2015 (USDA Forest Service 2005a).

Implications for Management: The Pileated Woodpecker and its habitat appear to be secure within the Ouachita NF. There are no indications of a need to alter management direction.

Prairie Warbler *(Dendroica discolor)*

For additional information, contact Mary Lane at melane@fs.fed.us

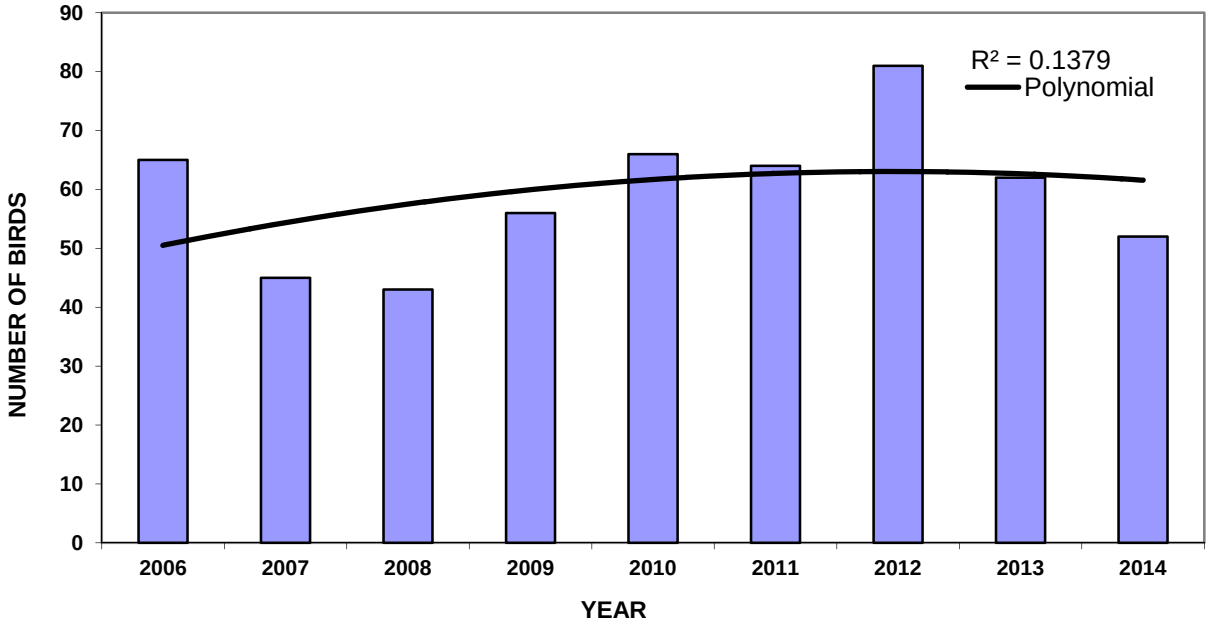
The Prairie Warbler is an MIS selected to indicate the effects of management on the early successional component of forest communities. As a neo-tropical migrant, the Prairie Warbler is an international species of concern. This species uses early successional habitats, such as regenerating old fields, pastures, and young or very open forest stands. The vegetation selected may be deciduous, conifer, or mixed types.

Prairie Warbler
Source: www.enature.com

Habitats with scattered saplings, scrubby thickets, cut-over and/or burned-over woods, woodland margins, open brushy lands, mixed pine and hardwood, and scrub oak woodlands are most often selected.
Data Sources: Ouachita NF Landbird Points data (1997–2014) and the Habitat Capability Model data are sources for evaluating Prairie Warbler population trends.

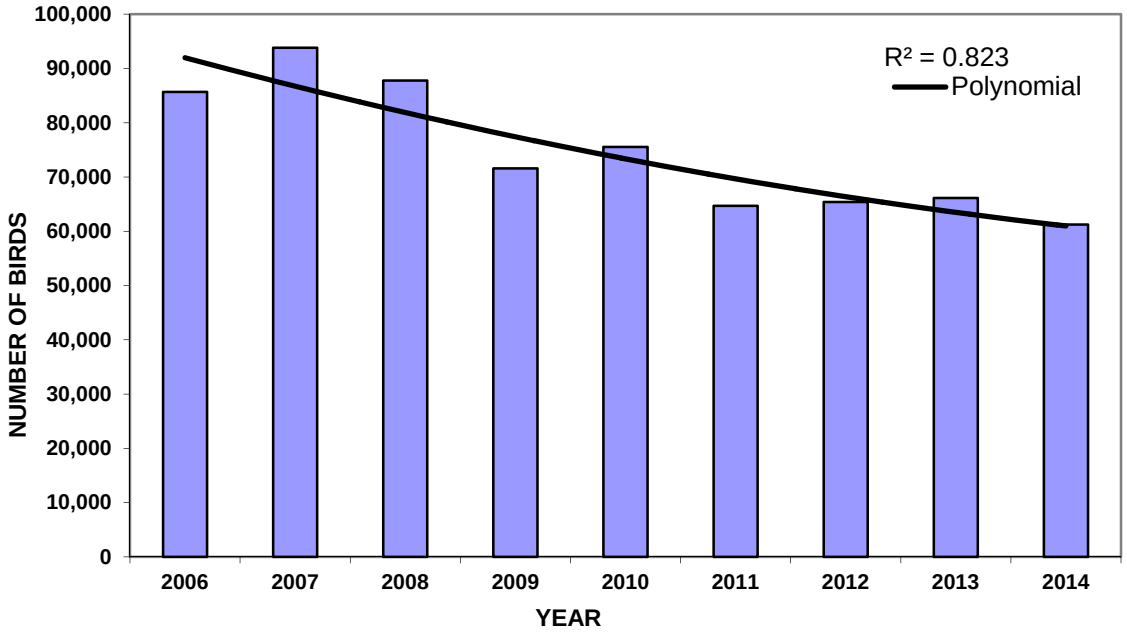
Population Trends: Based on the data available, the Prairie Warbler shows a slight upward (but not statistically significant) trend since FY 2006 and a decline since 2012. Throughout the Prairie Warbler range, a downward trend is indicated.

PRAIRIE WARBLER



Habitat capability for the Prairie Warbler on the ONF continues to show a downward trend (which is consistent with range-wide trends), with some hint of having plateaued over the last four years reported.

PRAIRIE WARBLER HABITAT CAPABILITY



Interpretation of Trends for Prairie Warbler: The Prairie Warbler has a relatively stable but recently declining population on the Forest, based on Landbird Points data. Habitat capability appears to be declining steadily. Under Forest Plan implementation, early seral stage habitat should continue to increase and then stabilize at approximately 50,000 to 60,000 acres after ten years (USDA Forest Service 2005a, p.175); however just the opposite is happening, with less than 1,000 acres regenerated in 2014 (less than 20% of the Forest Plan objective of 5,500 acres). Data point to a declining population trend for the Prairie Warbler on the Ouachita NF and

survey-wide for the long-term, with such decline considered to be related to the decline in acres of early seral stage habitat available.

Implications for Management: The Prairie Warbler has a declining population trend within the Ouachita NF and throughout its overall range; however, population viability on the Ouachita NF should not be threatened. The population decline has been exacerbated by the fact that the quantity of early seral habitat expected to be produced annually (5,500 acres), largely by seed tree and shelterwood cutting, has not yet been realized. Meanwhile, increases in thinning and prescribed fire in the pine and pine-hardwood types, especially associated with approximately 200,000 acres of shortleaf-bluestem ecosystem restoration, will benefit Prairie Warbler populations, if these management activities are implemented to their full extent.

Red-cockaded Woodpecker (*Picoides borealis*)

For additional information, contact Mary Lane at melane@fs.fed.us

The Red-cockaded Woodpecker (RCW) is an MIS for the Ouachita NF because it has Federal endangered species status. It was selected to indicate the effects of management on recovery of this species and to help indicate effects of management on shortleaf pine-bluestem woodland community (USDA Forest Service 2005a, p166.) The RCW is discussed in more detail in the 'Proposed, Endangered, and Threatened Species Habitat' Section of this report.

Scarlet Tanager *(Piranga olivacea)*

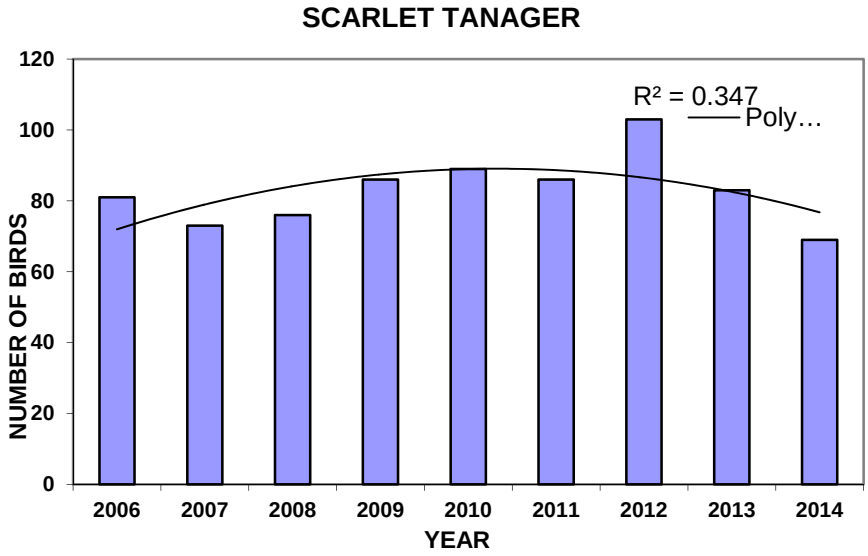
For additional information, contact Mary Lane at melane@fs.fed.us

The Scarlet Tanager is an MIS for the Ouachita NF, selected to help indicate the effects of management on mature forest communities. This species favors mature hardwood and hardwood-pine, and is less numerous in mature mixed pine-hardwood and pine habitat types. It is relatively common in all of these habitats in the Ouachita Mountains.

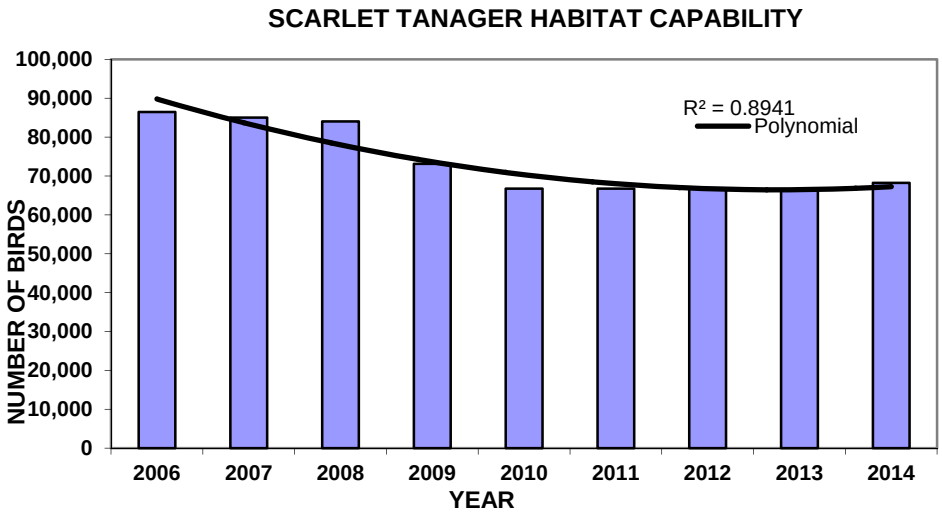
Scarlet Tanager
Source: www.enature.com

Data Sources: The Ouachita NF Landbird Points data and habitat capability predictions using CompPATS wildlife model, and Field Sampled Vegetation (FSVeg) data were used to make a population trend assessment.

Population Trends: The Landbird Points data collected from FY 2006-2014 suggest an overall decreasing trend for the Scarlet Tanager, with 2014 showing the lowest number of tanagers recorded in the last ten years, but the trend is not significant and could reflect natural variability.



Similar to Landbird Points data, Ouachita NF habitat capability data point to a (statistically significant) downward trend for Scarlet Tanager since 2006, although habitat capability has been stable for the last 5 years.



Interpretation of Trends for the Scarlet Tanager: Recent data show a stable trend on the Ouachita NF and the Ozark-Ouachita Plateau where mature hardwood and mixed types are represented. On the Ouachita NF, there are over 200,000 acres of hardwood and hardwood/pine forest types greater than 41 years old. The Scarlet Tanager and its habitat are secure within the Ouachita NF, and the continued long-term viability of this species is not in question.

Implications for Management: The Scarlet Tanager may be decreasing gradually within the Ouachita NF and the Ozark and Ouachita Plateau but appears secure within its overall range. The viability of this species is not in question; however, it will be retained as an indicator species and monitoring will continue.

White-tailed deer *(Odocoileus virginianus)*

For additional information, contact Mary Lane at melane@fs.fed.us

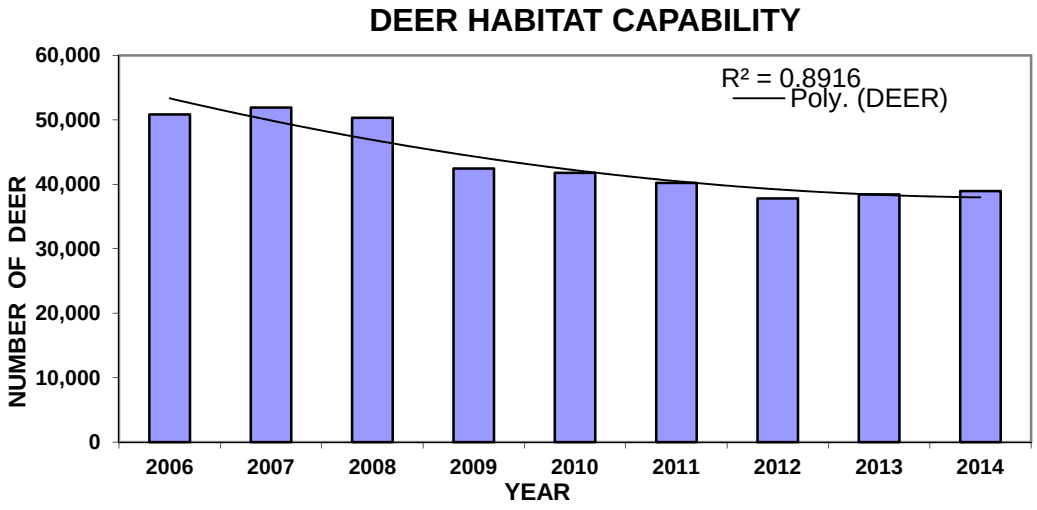
The white-tailed deer is an MIS that was selected to help indicate the effects of management on meeting the public hunting demand (USDA Forest Service 2005, p165). However, AGFC biologists look at early seral creation as an indicator for management of this species, as well. In the Forest Plan, the desired habitat condition is to sustain healthy populations of native and desired non-native wildlife and fish species.

White-tailed Deer
Source: www.enature.com

Data sources: Data sources and monitoring techniques for this species include deer spotlight survey counts (Urbston *et al.* 1987), harvest and population trend data from the AGFC and ODWC, CompPATS deer habitat capability model, and acreage of early successional habitat created by year.

Deer Population Trends: The estimated habitat capability for deer for 2014 shows a downward trend since 2006, albeit with a slight increase over the last 3 years. The capability is within the range of the desired habitat capability of 38,105 acres for 2015. Habitat carrying capacity is calculated using acres within the Ouachita NF and is positively influenced by the number of acres of prescribed fire accomplished and early seral habitat created, including regeneration, thinning, mid-story removal, wildlife stand improvement, wildlife openings, and site preparation, but negatively influenced by timber stand improvement.

For deer, the CompPATS habitat capability model places a greater value on early seral stage habitat and gives lesser value to habitat created by thinning and prescribed fire. In contrast to the declines in even-age regeneration cutting and site preparation, the acres of thinning and prescribed fire have increased over the last five years. The Final Environmental Impact Statement for the Forest Plan (USDA FS 2005) indicates in Table 3.59 (p. 166), a desired terrestrial habitat capability to support an average of 13.7 deer per square mile within the Ouachita NF after 10 years. This is calculated on a land base of 1,789,320 acres (2,796 square miles) for a habitat capability that would support 38,303 deer. The habitat capability as estimated by the CompPATS wildlife model exceeds the Forest Plan projections for every year in the period 2006 – 2014 but is declining. The Forest Plan objective is to create 5,500 acres of early seral stage (grass/forb) habitat per year; however, only 606 acres were created by regeneration harvests in 2014.



Interpretation of Trends for White-tailed Deer: The decreasing habitat capability for the past few years as estimated by the CompPATS wildlife model is related to fewer acres than anticipated in grass/forb habitat (forest types ages 0-10 years) preferred by deer. Although acres of created early successional habitat have not matched the desired levels, deer harvest is showing a slightly increasing trend in the last few years.

Implications for Management: Deer are widespread, abundant, and their habitat capability still remains above the Forest Plan projection. There are no indications of a need for adjustment in current management practices.

Terrestrial MIS Summary

For additional information, contact Mary Lane at melane@fs.fed.us

This review of monitoring information for the seven terrestrial management indicator species was conducted to determine the status of each species and its management needs. This review shows poor habitat conditions and capability for three species: Eastern Wild Turkey, Northern Bobwhite, and Prairie Warbler. The other four species are stable or increasing. The table below displays the expected population trends for all seven species, apparent population trends, risk for conservation of species, and management changes needed.

All three of the declining species are showing declines within Arkansas and Oklahoma, as well as throughout the region. Additional management activities to increase early seral habitat for the declining species through shelterwood and seedtree silvicultural methods, combined with continued thinning and burning in pine and pine-oak woodlands, are needed.

Status of Terrestrial Management Indicator Species, ONF

Species	Expected Population Trends	Apparent Population Trends	Risk for Conservation of Species	Management Changes Needed
Eastern Wild Turkey (*Meleagris gallopavo*)	Stable	Decreasing	None	Increase early seral habitat development
Northern Bobwhite (*Colinus virginianus*)	Increase	Decreasing	None	Increase prescribed burning, thinning and early seral habitat development
Pileated Woodpecker (*Dryocopus pileatus)*	Stable	Stable	None	None
Prairie Warbler *(Dendroica discolor)*	Increase	Decreasing	None	Increase early seral habitat development
Red-cockaded Woodpecker (*Picoides borealis*)	Increasing	Increasing	None	None
Scarlet Tanager *(Piranga olivacea)*	Stable	Stable	None	None
White-tailed Deer *(Odocoileus virginianus)*	Stable	Increasing	None	None

R8 Sensitive Species and Terrestrial Species of Viability Concern

For additional information, contact Mary Lane at melane@fs.fed.us or *Susan Hooks at shooks@fs.fed.us*

The comprehensive list of “species of viability concern” pertaining to the Forest is a fine-filter list of species that was compiled from Arkansas and Oklahoma species specialists’ recommendations from all species of local concern that may occur or are known to occur on the Forest. These species may not have Global viability concerns, but do have local viability concerns (for example: edge of range, local rarity, Forest population status).

The R8 Regional Forester’s Sensitive species list was compiled by the Forest species’ specialists according to their Global ranking (G1-G3) and/or Forest viability concerns. Forest Service sensitive species are defined as: “Those plant and animal species identified by a

Regional Forester for which population viability is a concern, as evidenced by: a) Significant current or predicted downward trends in population numbers or density, or b) Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution." (Forest Service Manual 2670.5) There are 67 species on the R8 Sensitive Species list that are known to occur on the Ouachita NF. Of those, 44 are terrestrial species.

Species are categorized as being "sensitive" due to their endemic or restricted ranges, and/or current or predicted downward trends in population numbers and/or available habitat, which raises concern about long-term viability. The following species on the Regional Forester's Sensitive Species list are regularly monitored: Bald Eagle, Caddo Mountain salamander, Rich Mountain slit-mouth snail, and certain sensitive bats. In late 2011, Region 8 began the process of revising the R8 Regional Forester's Sensitive species list and it should be completed in 2016.

Bald Eagle (*Haliaeetus leucocephalus*)

For additional information, contact Mary Lane at melane@fs.fed.us

Bald Eagle
Source: www.enature.com

Bald Eagles were removed from the endangered species list in June 2007 due to population recovery. When the Bald Eagle was delisted, the USFWS prepared National Management Guidelines that the Forest Service implements. Other federal laws, including the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act still apply to this species. It is currently listed as a Regional Forester's Sensitive Species. Surveys in 2014 on the Ouachita NF showed 6 known nest sites (Irons Fork Lake, Lake Ouachita, North Fork Lake, Lake Hinkle, a new site near High Point Mountain, about 4 miles south of Waldron, and a new location near Waldron Lake) with two confirmed nest successes at North Fork Lake and Lake Hinkle. The species is expected to remain stable.

Caddo Mountain, Rich Mountain and Fourche Mountain Salamander *(Plethedon caddoensis, P. ouachitae, P. fourchensis)*

For additional information, contact Mary Lane at melane@fs.fed.us

Caddo Mountain Salamander
Source: Dr. Stan Trauth

No recent surveys for the Caddo and Fourche Mountain salamander species have been conducted; however, the Oklahoma Ranger District (RD) surveyed a project area on Rich Mountain during 2014 that located three Rich Mtn. Salamanders, along with Redback and Western Slimy salamanders.

In 2007, studies were conducted to identify and define species and species boundaries of the Caddo Mountain, Rich Mountain, and Fourche Mountain salamanders, using modern DNA sequencing techniques (Burbrink *et al.* 2009).

The 2005 SVE score for the Caddo Mountain Salamander species declined from a "Good" to a "Fair" ranking in 2010 primarily due to road density and fire history. The USFWS has been petitioned for these species to be federally listed so status surveys will be conducted during 2015.

Rich Mountain Slit-mouth Snail *(Stenotrema pilsbryi)*

For additional information, contact Mary Lane at melane@fs.fed.us

In 2014, eight Rich Mountain slit-mouth snails were found during nine 30-minute surveys at nine sites. All sites are existing sites that are monitored on a three-year cycle. The 2010 viability analysis ranked the Rich Mountain slit-mouth snail in the "Good" category, an improvement from the 2005 rank of "Fair." However, with no sightings in either 2012 or 2013, this species will require continued monitoring.

Sensitive Bats (Eastern small-footed bat and Southeastern Myotis)

For additional information, contact Mary Lane at melane@fs.fed.us

The Ouachita NF initiated a bat acoustic survey protocol in 2009 to monitor bat population trends and assess the impacts of White Nose Syndrome (WNS) on the summer distribution of bats. During 14 survey nights in the first year, the Ouachita NF captured calls from 7 bats species. *Myotis leibii* (Eastern small-footed bat), an R8 sensitive species rarely found to occur on the Ouachita NF, was identified during four of the survey nights on two separate survey routes. The SVE scores (2010) for both bat species were in the "Good" category. Twenty-two Southeastern Myotis were found to occur in Chalk Mine during the FY 2014 mine monitoring efforts.

Source: www.enature.com
Eastern Small-footed Bat

Sensitive Plant Species Monitoring

For additional information, contact Susan Hooks at shooks@fs.fed.us

All known *Delphinium newtonianum* sites were monitored during the 2014 season. Two known *Hydrophyllum brownei* and one *Helianthus occidentalis* ssp. *plantagineus* sites were also monitored. All sites were healthy and reproducing.

Delphinium newtonianum

Hydrophyllum brownei

Helianthus occidentalis ssp. plantagineus

New locations for the sensitive species *Draba aprica, Vernonia letermannii*, and *Streptanthus squamiformis* were documented in the 2014 survey season. Both monitoring and inventory data were updated accordingly in the TESP database.

Draba aprica

Vernonia letermannii

Streptanthus squamiformis

Terrestrial Proposed, Endangered, and Threatened Species Habitat

For additional information, contact Mary Lane at melane@fs.fed.us

The Endangered Species Act of 1973 requires that all threatened and endangered species and their habitats be protected on federally managed land. Proposed, Endangered and Threatened species include all federally listed species where their ranges include part or all of the Forest. There are twelve federally listed species that are considered as occurring on or potentially occurring on the Forest, and five are known to be terrestrial species. Specifically within the Ouachita NF, five terrestrial, federally endangered species and a single species listed as threatened occur or have the potential to occur on the Forest. For the three listed birds, one mammal, one insect, and one reptile species, habitat scores indicate that the American burying beetle and Indiana Bat are stable and that the Red-cockaded Woodpecker has improved.

A list of species, species federal status, and a comparison of 2005 and 2010 SVE scores follow. These data were prepared for the 5-year Review and will not be updated until 2015. Where species have not yet been evaluated, it is noted.

Federally Listed Species on the ONF and SVE Scores 2005, 2010

**Listed in October 2014*

Common Name and Scientific Name	Federal Listing	2005 SVE Score	2010 SVE Score
American Burying beetle (*Nicrophorus americanus*)	Endangered	1.92 Fair	1.97 Fair
Indiana Bat (*Myotis sodalis*)	Endangered	2.86 Good	2.52 Good
Least Tern (*Sterna antillarum*)	Endangered	NA- Not evaluated- Red Slough only	NA- Not evaluated- Red Slough only
Northern Long-Eared Bat* *(Myotis septentrionalis)*	Proposed Endangered	NA- Not evaluated	NA- Not evaluated
Piping Plover (*Charadrius melodus*)	Endangered	NA- No known occurrences on the Forest	NA- No known occurrences on the Forest
Red-cockaded Woodpecker (*Picoides borealis*)	Endangered	2.50 Fair	2.72 Good
American Alligator (*Alligator mississippiensis*)	Threatened by similarity of appearance (to other listed crocodilians)	NA	4.00 Very Good
Missouri Bladderpod (*Lesquerella filiformis*)	Threatened	NA- Not evaluated	NA- Not evaluated

American Burying Beetle (*Nicrophorus americanus*)

For additional information, contact Mary Lane at melane@fs.fed.us

In May 2010, the Ouachita NF was issued a Revised Programmatic Biological Opinion for the American Burying Beetle (ABB) that remapped the ABB areas on the Forest and incorporated the joint Ouachita and Ozark-St. Francis ABB Conservation Plan (USDA Forest Service 2010).

This Conservation Plan used the most current research and data from the US Fish and Wildlife Service (USFWS) and the three National Forests. It addresses conservation and improvement of habitat for ABB rather than just protecting individual beetles from human disturbances, which was the focus of earlier work.

American Burying Beetle
Source: USFS

A Conservation Plan has also been created for Ft. Chaffee, near Ft. Smith, AR, and all parties are communicating, comparing data, and assisting each other for the benefit of this endangered species. Results from implementation of the new Conservation Plan are not yet evident due to the short implementation time (four years).

Previously, Forest Plan Standard TE005 read: *"Potential project level impacts on individual American Burying Beetles will be reduced by using the U.S. Fish and Wildlife Service's current bait-away or trap-and-relocate protocols."* The bait-away and trap-and-relocate protocols are no longer the method of conservation endorsed by the USFWS. The Forest Plan requirement TE005 was changed (via an early 2015 administrative correction) to: *"Project planning will adhere to the Conservation Plan and current Programmatic Biological Opinion regarding American Burying Beetles (ABBs) on the Ouachita and Ozark-St. Francis National Forests, as well as adhering to any other current FWS direction available."*

In 2014, 36 transects were monitored using the current USFWS protocol, for a total of 155 trap nights. Some of these transects were located in the American Burying Beetle areas (ABBAs) established in the Conservation Plan. The remaining transects occur outside the ABBAs as indicated in the ABB Conservation Plan Monitoring Strategy. No ABBs were captured on either Oklahoma or Poteau/Cold Springs Ranger Districts in 2014. In 2012 and 2013, a total of 36 transects were monitored each year. In 2012, a single ABB female was captured in LeFlore County, OK, surveys, and a male was captured in Scott County, AR, both on permanent survey routes. In 2013, two females were captured in LeFlore County, OK, both on permanent survey routes within the ABBAs.

Indiana Bat (*Myotis sodalis*)

For additional information, contact Mary Lane at melane@fs.fed.us

All current habitat use and distribution data for the Indiana bat, in combination with extensive District, Forest and regional surveys, a recent Anabat (acoustic detection) survey conducted during the maternity period, and captures during the Ouachita Mountain Bat Blitz have located only a few individuals of this species in the Forest or on adjacent lands. The 2010 surveys, however, did find 25 Indiana bats hibernating at Bear Den Cave (Oklahoma). According to the five-year review on the status of the Indiana bat, white-nose syndrome has reduced the range-wide population by approximately 50 percent, with greater mortality expected (USFWS 2009).

Indiana Bat
Source: www.enature.com

Surveys in 2012 found at least five Indiana bats hibernating in Bear Den Cave. No surveys were conducted at Bear Den Cave in 2013 or 2014.

Data from the Indiana Bat Recovery Team and other sources in the scientific literature show there are no records of this species reproducing within the Ouachita Mountain Region of Arkansas or Oklahoma. Indiana bats typically travel north from Ozark Mountain summer maternity sites and winter hibernacula. Indiana bats occasionally hibernate in small numbers in Bear Den Cave but have not been detected there or anywhere else on the Forest during the breeding season. Bear Den Cave, which lies within the congressionally designated Winding Stairs National Recreation Area, represents the only natural cave habitat known on the Forest. Very little active management occurs near the cave other than protection of the habitat by gating.

Northern Long-eared Bat (*Myotis septentrionalis*)

For additional information, contact Mary Lane at melane@fs.fed.us

The Northern long-eared bat (NLEB) was proposed as an endangered species in October 2013. NLEB is a common bat species on the Ouachita NF and, prior to federal listing, was not a species of concern in Arkansas. Identifying, protecting, and restoring summer maternity sites, as well as cave/mine winter hibernacula are primary objectives of the Ouachita NF's management program for all bats. No other threat is as severe and immediate as the disease, white-nose syndrome (WNS).

Northern Long-Eared Bat
Source: www.fws.gov

In 2014, nine mines on the Caddo/Womble and Mena/Oden Ranger Districts were surveyed for bats. NLEBs were found in two of these mines.

Bats and White-Nosed Syndrome (WNS)

For additional information, contact Mary Lane at melane@fs.fed.us

Since the winter of 2006, White-nose Syndrome has killed more than 5.7 million bats in Eastern North America. White-nose Syndrome (WNS) is a disease caused by a non-native, cold-loving fungus which can be found in the caves of affected regions. The white fungus found on the bats is scientifically called *Geomyces destructans* from Eurasia and refers to the white fungal growth found on the noses of infected bats, although it is also found on their wings and tail membrane (www.Batconservation.org). The fungus invades the skin of hibernating bats and disrupts both their hydration and hibernation cycles. Infected hibernating bats awake repeatedly during the winter. While awake, they burn up limited fat reserves in search of insects and other food that is not available, often causing mortality. Arkansas became the 23rd state to confirm deadly disease in bats May 2014. The fungus is transmitted primarily from bat to bat. Currently, WNS is found in 26 US states, including northern Arkansas within the caves on the Ozark NF, and five Canadian provinces. Up-to-date information may be found at http://batcon.org/index.php/our-work/regions/usa-canada/address-serious-threats/wns-intro.

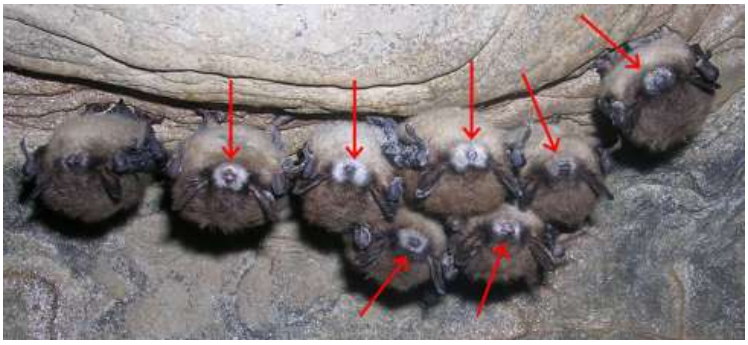


Photo Courtesy of: ©Al Hicks, New York Department of Environmental Conservation.

Arrows point to unusual white noses on bats in a New York cave during the winter 2006, apparently caused by a fungus and possibly related to an unusual number of bat deaths.

The Ouachita National Forest continues to restrict access to the mines and caves across the forest with a regional cave and mine closure order, and by improving and installing gates at the cave and mine entrances. The Ouachita NF has gated most known mines or caves with bat-friendly gates to allow access for the bats and to prevent other disturbances, and continues to gate and perform maintenance work on existing gates as needed. In 2014, two new mine gates were installed, two mine gates were repaired, one gate was replaced and two mine shafts were closed.

Least Tern (*Sterna antillarum*) and Piping Plover (*Charadrius melodus*)

For additional information, contact Robert Bastarache at rbastarache@fs.fed.us or Mary Lane at melane@fs.fed.us

The federally listed Endangered species Interior Least Tern and Piping Plover are known to occur at Red Slough. The Interior Least Terns are regularly seen from late spring to early fall and can be seen feeding over the wetlands and reservoirs. They nest on nearby sandbars in the Red River and bring their young to Red Slough to teach them how to catch fish. The Piping Plover is very rare at Red Slough as they prefer sandy beaches along shorelines. This species has shown up on occasion during migration on mudflats.

During 2014, Least Tern numbers rebounded with the highest number yet at 82 individuals, alleviating the concerns of 2012 when the fewest number of Least Terns were observed at Red Slough in the 15 years that the Forest Service has been actively managing it. In 2013, a small rebound was observed from the low numbers in 2011 and 2012. Because of the drought in southeastern Oklahoma, the breeding populations along the Red River suffered greatly, as well. It is from those breeding populations that the Least Terns that frequent Red Slough originate.

Most Piping Plovers that occur on the Ouachita NF in Arkansas and Oklahoma are passing migrants and are only occasionally seen foraging within the Red Slough Wildlife Management Area. During 2011 through 2013, drought was widespread and may have affected populations of Piping Plover; however, there have been no sightings of Piping Plover in the Red Slough since the single sighting in 2006.

Least Tern
Source: David Arbour

Piping Plover
Source: David Arbour

The Least Tern and Piping Plover are not known to occur as reproducing populations on the Forest (James and Neal, 1986; Peterson, 1980). The following information for Least Terns and Piping Plovers shows that Least Terns are observed much more often than Piping Plovers (generally observed only during migration). Most, if not all, of the observed Least Terns are from breeding colonies along or in the near vicinity of the Red River.

Least Terns and Piping Plovers by FY, ONF

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Least Terns	17	56	81	21	63	8	9	18	82
Piping Plovers	1	0	0	0	0	0	0	0	0

Red-cockaded Woodpecker (*Picoides borealis)*

For additional information, contact Warren Montague at wmontague@fs.fed.us, Robert Bastarache at rbastarache@fs.fed.us or Mary Lane at melane@fs.fed.us

The Red-cockaded Woodpecker (RCW) is both a federally listed endangered species and an MIS for the Ouachita NF. MA 22, Renewal of the Shortleaf Pine-Bluestem Grass Ecosystem and Red-cockaded Woodpecker Habitat (approximately 188,002 acres) was established as an area for the renewal of the Shortleaf Pine-Bluestem Grass Ecosystem and Red-cockaded Woodpecker habitat. This MA is located on NF System land on the Poteau-Cold Springs, Mena, and Oklahoma Ranger Districts. These lands consist primarily of extensive blocks of Pine-Oak Forest, Pine-Oak Woodlands, and intermingled stands of Dry-Mesic Oak Forest. In addition to providing extensive areas in which restoration of pine-bluestem ecosystems is featured, MA 22 incorporates two Habitat Management Areas (HMAs; one each in Arkansas and Oklahoma) for the endangered RCW. As required by the 1995 Red-cockaded Woodpecker EIS, HMAs (MA 22a) have been designated. The HMA acres on the Ouachita NF are shown by Ranger District in the following tabulation:

Red-cockaded Woodpecker
Source: www.enature.com

Habitat Management Areas
Acres by District, ONF

District	Cold Springs	Mena	Poteau	Tiak	Total
Acres	6,581	11,147	66,584	50,945	135,257

The remaining part of MA 22 (entirely in Arkansas) is the Extended Area, or MA 22b. The Extended Area provides for renewal of the shortleaf pine-bluestem grass ecosystem and future expansion habitat for RCWs.

The Forest Plan has a management objective to *"maintain or improve the population status of all species that are federally listed or proposed for listing."* The RCW was selected as an MIS for the Ouachita NF due to its Federal endangered species status. It was selected to indicate the effects of management on recovery of this species and to help indicate effects of management on shortleaf pine-bluestem woodland community (USDA Forest Service 2005a, p166).

Trends: RCW active territories have been increasing from a low of eleven territories to the present high of 70 active territories in 2014. Over the period that RCWs have been monitored on the Forest, the number of active territories and number of adult birds have increased.

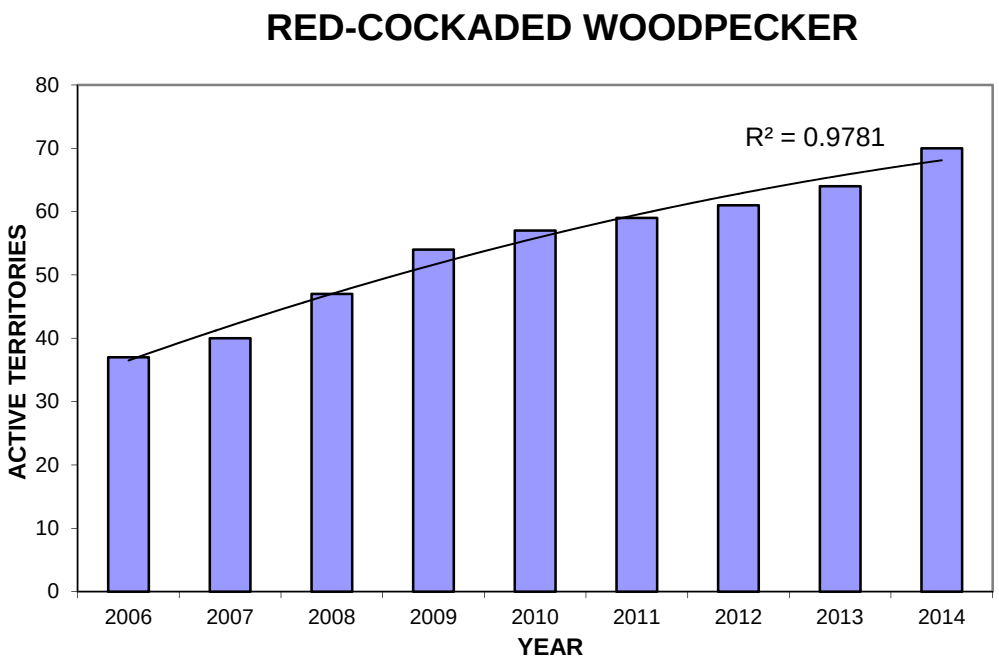
The following table shows the successful history of RCW management on the Ouachita NF and displays, by breeding season, the number of active territories (individual or group of nesting or roosting RCW(s)), nesting attempts (nesting behavior which results in at least one egg), the estimated number of fledglings (nestlings that left the nest), and the number of adult birds. Of these, the most descriptive parameter of RCW population status is the number of nesting attempts, or what is often referred to in the RCW Recovery Plan as the number of Potential Breeding Groups (USDI FWS 2003).

RCW Management, by Breeding Season, ONF				
RCW Breeding Season	Active Territories	Nesting Attempts	Estimated Fledglings	Number of Adult Birds
2000	21	15*	13	48
2001	22	18	40	51
2002	27	24*	40	58
2003	32	27*	47	68
2004	32	28	49	78
2005	35	29	18	87
2006	37	32	49	88
2007	40	37	67	103
2008	47	42	58	110
2009	51	47	77	120
2010	57	51	88	138
2011	59	57	86	145
2012	61	59	118	155
2013	67	59	114	158
2014	70	No Data[1]	No Data[1]	No Data[1]

**Includes renest attempts*

[1] Due to reduction in personnel and funding, monitoring for nest attempts, fledglings and adult birds were discontinued.

RCW active territories increased from a low of eleven territories in 1996 to 70 active territories in 2014. The number of active territories has steadily increased over the last nine years. During 2013, a successful translocation to the Oklahoma Ranger District resulted in the first nesting pair of RCWs on the Oklahoma side of the ONF which produced two hatchlings. It was also the first nesting pair outside of the McCurtain County Wilderness Area in almost 30 years. The success of RCW management on the Ouachita NF since 2006, with increases being evident since the 1990s, is illustrated in the following chart:



Implications for Management: Management of this species is guided by the RCW Recovery Plan, with an objective of a minimum 5% population increase per year as specified in Section 8.A.1 of the Recovery Plan (USDI FWS 2003, page 162). Populations of this species on the Forest exhibit an increasing trend. Barring any major catastrophic events, RCW populations should continue to improve under the present management intensity. A large-scale ecosystem restoration project was initiated to restore the shortleaf pine-bluestem grass ecosystem on over 200,000 acres (principally in Management Area 22). This project will eventually provide sufficient habitat for a recovery population of the endangered Red-cockaded Woodpecker (USDA Forest Service 2005a). As the pine/bluestem ecosystem is restored and the acres of quality habitat are increased, the main factors influencing species population and recovery will be the limitations of population dynamics and uncontrollable natural influences. Ouachita NF management intensity should be maintained and intensive monitoring continued.

American Alligator (*Alligator mississippiensis*)

For additional information, contact Robert Bastarache at rbastarache@fs.fed.us or Mary Lane at melane@fs.fed.us

The American alligator ranges across southeastern North America. With enforcement of protective legislation, populations have shown rapid recovery from habitat loss and over-hunting and are stable or increasing in most of this species' range. Even though the American alligator is no longer biologically endangered or threatened, it is still listed by the USFWS as "Threatened" throughout its entire range due to the similarity of appearance to other endangered or threatened crocodilians. It now seems secure from extinction and was pronounced fully recovered in 1987. The ODWC 2014 Red Slough survey resulted in a count of 16 alligators, which is only half the 2013 count of 32. There were at least five age-classes with two 10-foot, one each 8-, 7-, 6- & 5-footers, as well as several 3- and 2-footers.

American Alligators at Red Slough
Photo Courtesy of David Arbour

Alligators Counted by FY, ONF

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Alligators counted	12	8	4	7	19	22	18	32	16

The number of alligator counted in 2014 American alligator surveys dropped by half from 2013 counts. No alligator nests were found during the surveys in 2014. Surveys in 2012 and 2013 located 18 and 32 alligators, respectively, in Red Slough and Ward Lake, with the 32 alligators counted in 2013 a record high. The 2013 increase is attributed to successful hatchings at Red Slough and on Ward Lake. In 2012, 2 nests produced a total of 18 hatchlings. In 2013, no nests were located. The population on Red Slough has remained fairly steady at 8-10 individuals seen per year, with over 30 seen in 2013, with this number probably due to the increase in young from previous seasons surviving to adulthood.

The only suitable or potential habitat for this species occurring on the Forest is within the West Gulf Coastal Plain Wet Hardwood Flatwoods of the Red Slough WMA of southeastern Oklahoma, where it has been seen in streams, ponds and ditches. At least one alligator has also been observed in Broken Bow Lake in Oklahoma, but there is little, if any, suitable habitat for this species on nearby National Forest System land.

Missouri Bladderpod (*Lesquerella filiformis*)

For additional information, contact Susan Hooks at shooks@fs.fed.us

The Missouri bladderpod was added to the Federal List of Endangered and Threatened Plants in January 1987, as a threatened species. Natural habitat for the Missouri bladderpod is primarily open limestone glades, but it has been found on one dolomite glade in Arkansas. Missouri Bladder Pod was monitored in 2013 and will be monitored in 2015. The 2013 monitoring found that the population at the Avant Site near the Cedar Fourche Recreation Area was in full bloom. The population was small, and each individual had multiple flowers. At that time, there were no apparent signs of disease or damage from browsing, and there were approximately 150 individuals.

Other Habitat Considerations - Wildlife

For additional information, contact Mary Lane at melane@fs.fed.us

In addition to managing for species viability and health, the Ouachita NF maintains a very active role coordinating with the Arkansas Game and Fish Commission (AGFC) and the Oklahoma Department of Wildlife Conservation (ODWC), particularly in habitat improvement activities.

Hunting and Wildlife Management Areas

Hunting is permitted anywhere on the Ouachita NF except within developed recreation sites or otherwise posted areas. Hunting seasons are designated by the AGFC and the ODWC. All state hunting and fishing regulations, fees, and seasons apply on National Forest System lands. Cooperatively-managed Wildlife Management Areas (WMAs) represent approximately 42% of NFS lands. Hunting with dogs is not allowed on Ouachita NF System lands within WMAs managed by either the AGFC or ODWC. Hunting with dogs is still allowed outside of WMAs on the Ouachita NF in Arkansas.

There are thre WMAs in Arkansas, each established by Memorandum of Understanding between the parties in 1968: Caney Creek, Muddy Creek and Winona. These WMAs are managed cooperatively with the AGFC for the benefit of the hunting public.

The National Wild Turkey Federation (NWTF) and the AGFC are instrumental in efforts for WMA and Walk-In Turkey Area wildlife food plot establishment, maintenance and reclamation, as well as dozer work for access route improvements. In most years, the Ranger Districts provide assistance with some native seed and fertilizer, but the AGFC contracts for disking, mowing/bushhogging, seeding, fertilizing, and any dozer work needed to allow access to the food plots.

Caney Creek WMA (85,000 acres) occupies portions of Howard, Montgomery, Pike, and Polk Counties. Maintainance for 2014 included mowing 125 acres of plots and planting 72 acres of plots. Most plots are maintained on a two-year rotation with the exception of plots within the Walk-In Turkey Area.

Muddy Creek WMA (150,000 acres) is located in Montgomery, Scott, and Yell Counties. Maintainance for 2014 included mowing and planting 162 acres of plots. AGFC maintained a two-year rotation for maintainance with a few exceptions due to heavy rains washing out accesses in the Rockhouse Watershed area.

The Winona WMA (160,000 acres) is located on lands in Garland, Perry, and Saline Counties. Maintainance for 2014 included mowing and planting 160 acres of plots. Food plot maintenance in the Winona WMA is on a two-year rotation. In 2014, the AGFC Biologist took 5 feral hogs out of Winona WMA in approximately 20 nights of baiting and 8 nights of trapping.

In Oklahoma, there are 4 WMAs on the Ouachita NF, jointly managed in cooperation with the ODWC. Oklahoma is unique for the Ouachita NF in that all National Forest System lands within the 2 counties in Oklahama are contained within WMAs. All of the National Forest System lands within LeFlore County are contained within either the Ouachita LeFlore Unit WMA (212,836 acres) or the Cucumber Creek WMA (12,627 acres, with 3,514 owned by The Nature Conservancy). All of the National Forest System lands within McCurtain County are contained within either the McCurtain Unit WMA (127,191 acres) or the Red Slough WMA (5,814 acres).

On the Ouachita Leflore WMA (in cooperation with the ODWC and NWTF), 130 food plots are maintained, of which 40 per year are planted. Food plot size is around ½ acre; however, a few are larger (about 1 acre). During 2014, 45-50 acres of food plots were maintained. No new food plots were established. The NWTF contributes to the prescribed burning of these plots, which is in a 3-year rotation allowing for almost continual new growth.

The Red Slough WMA is cooperatively managed by the Ouachita NF, Natural Resources Conservation Service (NRCS) and ODWC. The Red Slough WMA is enrolled in the Wetland Reserve Program (WRP) which is administered by the NRCS. The WRP has a permanent easement that gives NRCS ultimate authority over the project activities that can take place on the ground. The NRCS is responsible for ensuring the the goals and objectives of the Wetland Reserve Program, including funding for all WRP projects, are met. Day-to-day management activities are handled by the ONF and ODWC. During 2014, the ODWC removed 106 feral hogs from the Red Slough WMA along with their annual food plot maintenance.

Following are reports on monitoring of nest box and egg hatch rate success for species in the Red Slough WMA.

Red Slough WMA Nest Box Success Rates Monitoring Results by FY

Year	2007	2008	2009	2010	2011	2012	2013	2014
Wood Duck	50%	38%	45%	30%	40%	26%	62%	58%
Hooded Merganser	88%	87%	100%	54%	70%	19%	78%	59%
Black-bellied Whistling Duck	46%	100%	86%	59%	23%	62%	64%	90%

Red Slough WMA Egg Hatch Rate* Success by FY

	2007	2008	2009	2010	2011	2012	2013	2014
Wood Duck	724/713	791/1271	551/681	552/1298	520/769	293/818	420/260	562/406
95/65	95/65	95/65	95/65	95/65	95/65	95/65	95/65	95/65
37/4	37/4	37/4	37/4	37/4	37/4	37/4	37/4	37/4

*Hatched eggs/Unhatched eggs

The Red Slough WMA bird surveys through 2014 revealed a total of 317 bird species. Some of the more ‘rare’ species that regularly-to-occasionally occur are: Black-bellied Whistling Duck, Trumpeter Swan, Mottled Duck, Wood Stork, Roseate Spoonbill, Glossy Ibis, Golden Eagle, King Rail, Yellow Rail, Cave Swallow, Common Ground-Dove, Swainson's Warbler, and Henslow’s Sparrow.

Vagrants are species that are outside of their normal range and not normally expected to be seen in a given area. Those that have been seen on the Red Slough WMA, include: Fulvous Whistling Duck, Tundra Swan, Least Grebe, Magnificent Frigatebird, Swallow-tailed Kite, Harris’ Hawk, Crested Caracara, Sabine’s Gull, Sooty Tern, Royal Tern, Band-tailed Pigeon, Ash-throated Flycatcher, Great Kiskadee, Western Kingbird, Brewer’s Sparrow, Lark Bunting, McCown’s Longspur, Chestnut-collared Longspur, Snow Bunting and Lazuli Bunting.

Gulf Coastal Plain species that only reach the extreme southeast portion of Oklahoma; typically don't occur elsewhere in the state; and are a big attraction to the birdwatchers include: Anhinga, White Ibis, and Purple Gallinule. Other wetland species that are seldom seen elsewhere in the state due to the disappearance of wetlands include Least Bittern and Common Gallinule. Species that are not necessarily rare or limited in range but are difficult to see due to their secretive natures, and can be more easily found at Red Slough include: Bell's Vireo, Sedge and Marsh Wrens, Le Conte's Sparrow, and Nelson's Sparrow. And finally, two very popular and colorful birdwatcher species that are relatively common at Red Slough are the Prothonotary Warbler and Painted Bunting.

Walk-In Turkey Areas

There are nine Walk-In Turkey Areas on the Ouachita NF, seven in Arkansas and two in Oklahoma: Sharptop Mountain, Leader Mountain, Hogan Mountain, Fourche Mountain, Deckard Mountain, Shut-In Mountain, Chinquapin Mountain, Blue Mountain (OK), and Well Hollow (OK). Walk-In Turkey Areas were established at the request of turkey hunters who desired opportunities to hunt on public lands managed by the Ouachita NF in places free of disturbance from motor vehicles. The Ouachita Mountains, with high turkey populations compared to other areas, have seen the number of hunters increase dramatically during the last 20 years, making it challenging for serious turkey hunters to find an area to hunt away from traffic and noise.

The Ouachita NF Walk-In Turkey Hunting Areas are a joint partnership between the Ouachita NF, AGFC, ODWC, and the NWTF as a part of the Making Tracks Program, which began in 1989 as a way to improve wild turkey habitat on National Forest System lands. There were no NWTF or AGFC funds for maintenance in Walk-In Turkey Area in 2014. AGFC took eight feral hogs out of Sharptop in approximately 25 nights overall and having trap gates set for five of those nights.

In Oklahoma, five food plots each (or ten acres/Area) are annually maintained in Well Hollow Walk-In Turkey Area and in Blue Mountain Walk-In Turkey Area.

Riparian and Aquatic Ecosystems and Habitat

For additional information, contact Mary Lane at melane@fs.fed.us

The desired condition for riparian and aquatic-associated terrestrial communities (within designated Streamside Management Areas) "…*is high water quality, undiminished soil productivity, stable streambanks, and high-quality habitat for riparian-dependent and aquatic species. Properly functioning systems support healthy populations of native and desired non-native species."* More detailed descriptions of desired conditions for Ouachita Rivers and Streams and Ouachita Lakes and Ponds are located in the Forest Plan on page 19. River and stream fish angling opportunities are enhanced through road crossing 'aquatic organism passage' improvements implemented across the Forest, and protected through 'Streamside Management Areas' during ground disturbing activities. Monitoring efforts of stream game fish indicate that population levels are well maintained and viabilities are not in question.

The primary MA associated with riparian and aquatic ecosystems is Management Area 9, Water and Riparian Communities, consisting of approximately 278,284 acres. This management area consists of streams, rivers, lakes and ponds, and streamside management zones necessary to protect water quality and associated beneficial uses found within the Ouachita Mountains, Arkansas River Valley, and West Gulf Coastal Plain. Management Area 9 direction applies to all streams, riparian areas, ponds, and lakes, except where even more stringent management requirements are in place, notably in wilderness areas (MA 1). Included are flowing and non-flowing aquatic habitats; wetlands; woodland seeps and springs; portions of floodplains; variable distances (but at least 100 feet) from both edges of all perennial streams and from the shores of bodies of water equal to or greater than ½ acre; variable distances (but at least 30 feet) from both edges of other streams with defined stream channels and ponds less than ½ acre in size; and certain lands surrounding public water supplies, lakes, and streams.

There are five riparian-associated vegetation community types and two aquatic ecosystems identified for watershed value as well as aquatic habitat:

- Ouachita Riparian
- Ouachita Mountain Forested Seeps
- West Gulf Coastal Plain Small Stream and River Forest
- South-Central Interior Large Floodplain
- West Gulf Coastal Plain Wet Hardwood Flatwoods (Red Slough)
- Ouachita Rivers and Streams
- Ouachita Lakes and Ponds

Riparian and aquatic associated ecosystems comprise approximately 16 percent of the Forest, and are managed within designated Streamside Management Areas (SMAs) to protect and maintain water quality, productivity, channel stability, and habitat for riparian-dependent species. The desired condition is that watercourses are in proper functioning condition and support healthy populations of native species.

Aquatic Management Indicator Species (MIS)

For additional information, contact Richard Standage at rstandage@fs.fed.us

In this report, terrestrial MIS and riparian and aquatic MIS are presented separately. Aquatic species are divided into Pond, Lake and Waterhole MIS and Stream and River MIS. There are 14 fish MIS associated with stream and river habitat, and 3 pond, lake and waterhole MIS (17 fish species total). The 17 fish species identified for the Ouachita NF under the Forest Plan as MIS follow:

Aquatic MIS Species for the Ouachita NF

Common Name	Scientific Name
Pond, Lake and Waterhole MIS - 3	
Bluegill	*Lepomis macrochirus*
Largemouth Bass	*Micropterus salmoides*
Redear Sunfish	*Lepomis microlophus*
Stream and River MIS - 14	
Yellow bullhead*	*Ameiurus natalis*
Pirate Perch*	*Aphredoderus sayanus*
Central Stoneroller*	*Campostoma spadiceum*
Creek Chubsucker*	*Erimyzon oblongus*
Orangebelly Darter*	*Etheostoma radiosum*
Redfin Darter*	*Etheostoma whipplei*
Northern studfish*	*Fundulus catenatus*
Northern Hog Sucker*	*Hypentelium nigricans*
Green Sunfish*	*Lepomis cyanellus*
Longear Sunfish*	*Lepomis megalotis*
Striped Shiner*	*Luxilus chrysocephalus*
Smallmouth Bass*	*Micropterus dolomieu*
Johnny Darter [1]	*Etheostoma nigrum*
Channel Darter [1]	*Percina copelandi*

*These fish species are monitored as a part of the Basin Area Stream Survey, which occurs every five years, while pond and lake species (Bluegill, Largemouth Bass, and Redear Sunfish) are monitored annually.

[1]Only within the range of Leopard Darters.

Pond, Lake, and Waterhole MIS

For additional information, contact Richard Standage at rstandage@fs.fed.us

There are three pond, lake, and waterhole management indicator species (MIS):

- Bluegill
- Largemouth Bass
- Redear Sunfish

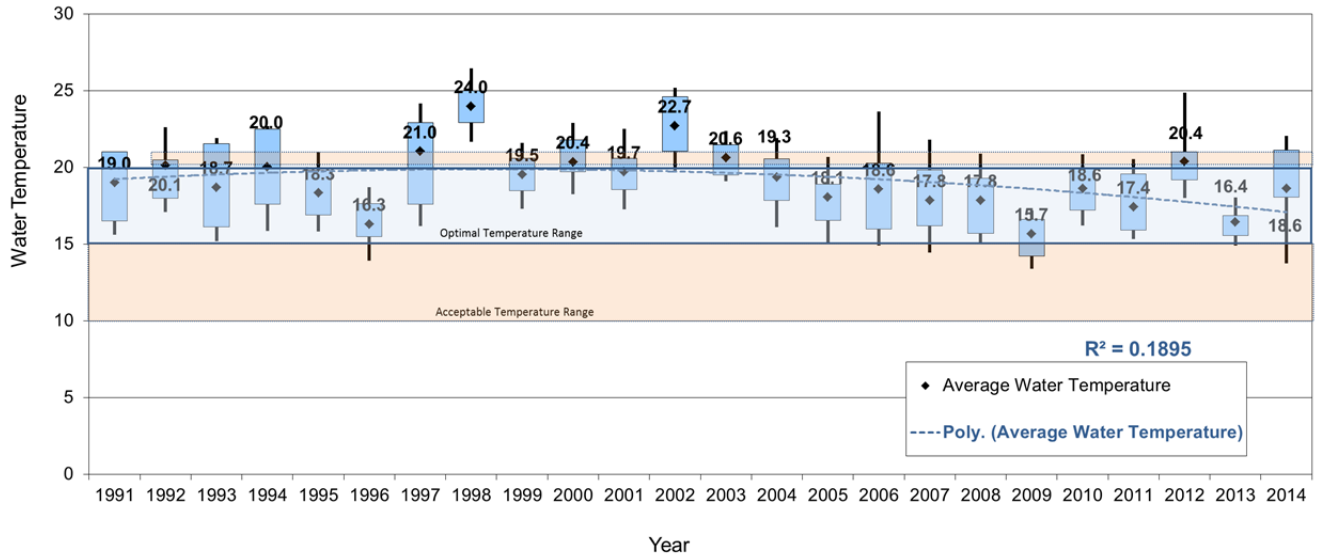
Reviews of monitoring information for the three species were conducted to determine the status of the species and conservation needs. During calendar year 2014, 18 electrofishing samples were taken at 15 lakes and ponds. Story Pond was sampled twice, once in the spring and once in the fall to take advantage of water high enough to launch the electrofishing boat. North Fork Lake was sampled by electrofishing once in the spring and twice in the fall due to the availability of volunteer Ouachita Baptist University students. The Ouachita NF acknowledges the help in sampling by Dr. Jim Taylor and classes from Ouachita Baptist University. They have assisted in at least 45 samples in the past 16 years.

Ouachita Baptist University Students Assisting with Sampling

Electrofishing results since 2003 have been somewhat similar. The spring electrofishing seasons in the past several years have been wet with temperatures cooler than normal. Because of the cool, wet weather, the Sunfish spawns have been missed. Also, the fall electrofishing seasons more recently have been affected by variable fronts, both cooler and warmer. Cooler temperatures tended to push fish into deeper water, resulting in lower catch rates; but warmer temperatures kept Sunfish from schooling over structure, also resulting in fewer Sunfish from electrofishing. As seen in the following annual pooled water temperature graph, the pooled water temperatures of the samples started getting warmer in 1997 through 2003. At that point it was decided to move the spring sampling earlier to keep from getting such warm lake samples toward the end of the season and push back the fall sampling to try to get cooler fall temperatures. While the overall trend would indicate success with that goal, there still remains a lot of variability in sample temperatures across the years. Sample temperatures are taken just prior to the start of electrofishing at each waterbody. While the temperature may rise in the course of an hour or slightly more, it is still a small change considering the volume of water in each lake and pond. Air temperature is recorded at the time of the water temperature reading and it typically fluctuates during the course of the sampling but it does not affect the

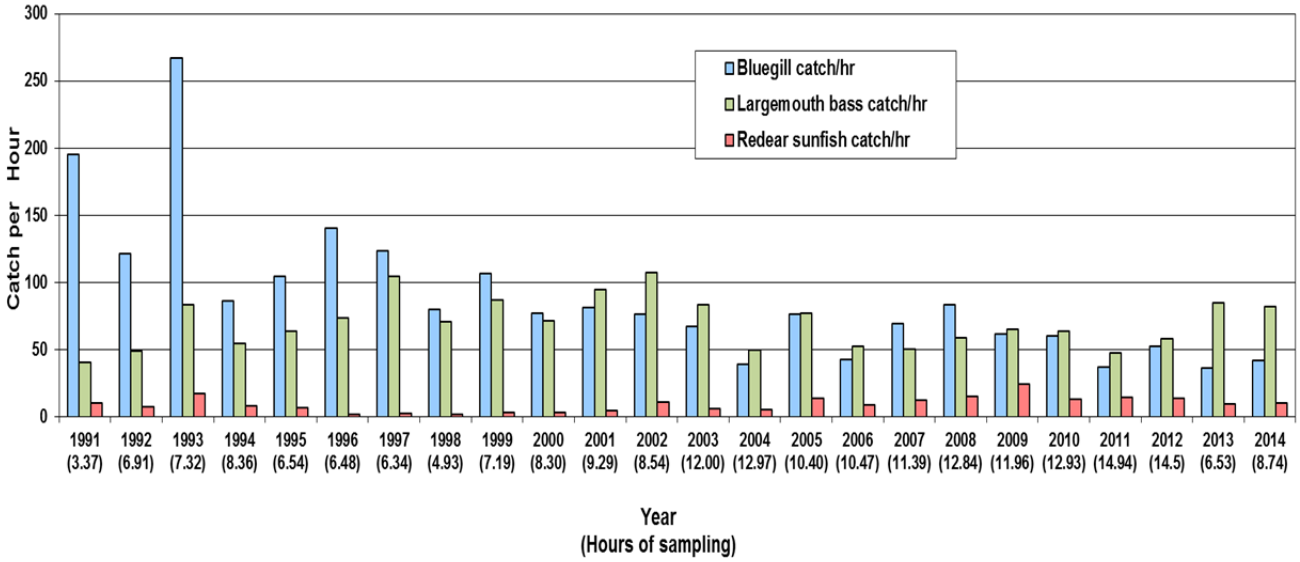
water temperature which is the primary influence on the fish. Barometric pressure would be a good indicator of fronts moving through but, since only an instantaneous pressure reading can be taken at the time of sampling, there is no indication of prior or post sampling barometric trends. The pressure reading at the time of the sample isn't felt to be of much use and the taking of the barometric pressure was eventually dropped. The timing of fronts moving through is the needed value and no practical/cost-effective way has been devised to record the timing and amount of change caused by such an occurrence.

Annual Pooled Water Temperatures by Year, ONF



This same variability by lake is seen for 2014 sampling with quite a range of temperatures. However, as shown by the annual temperature graph and the individual sample graph, most samples are within the AGFC's protocol for acceptable temperatures, with the majority of the samples falling within the ideal range (data are for 1991 through 2013 calendar years).

Annual Pooled Catch per Hour
Bluegill, Largemouth and Redear by Calendar Year, ONF



Typical catches of big Bass continue to be made at Cedar Lake in Oklahoma, with some nice Bass and Catfish taken from a number of other lakes and ponds. The values of catch per hour reflect all sizes of fish, not just that of stock size and larger Largemouth Bass and Bluegill as prescribed by the AGFC sampling protocol. Another deviation from the protocol used by each

state is that all species and all sizes are captured, measured, weighed and entered into the database. The results concerning the other non-MIS species are examined but only the 3 lake and pond MIS species are fully evaluated for this report as they make up the majority of the catch. They, plus the stocked Channel Catfish, are the most sought-after species.

The following discussions on Bluegill, Largemouth Bass, Redear Sunfish and Gizzard Shad are by calendar year, not the Federal fiscal year. Fisheries data are analyzed by year class or birth year. For any given year, spring sampling occurs in April in one fiscal year and the fall electrofishing and gill netting, which occurs after October 1, falls into the following fiscal year. Therefore, the sampling in the spring occurred during 2013 and the fall sampling took place at the start of 2014; data for both are included in this report for 2014.

Bluegill *(Lepomis macrochirus)*

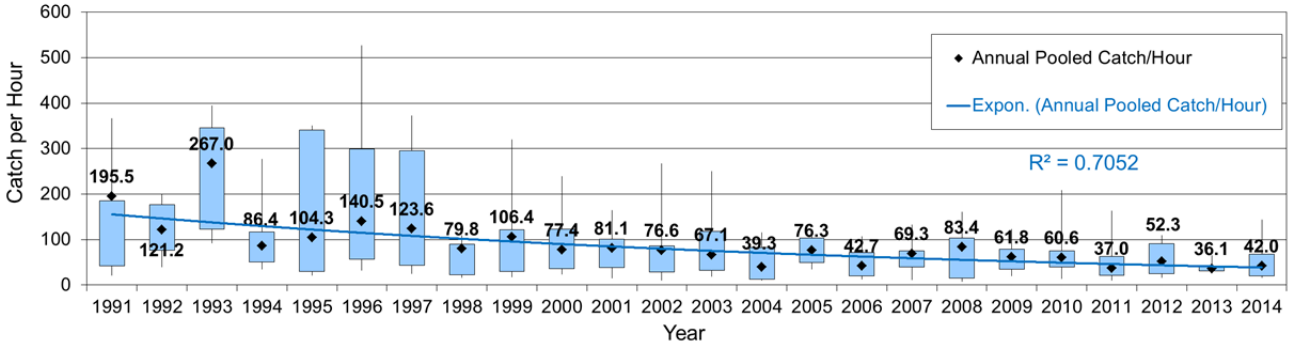
For additional information, contact Richard Standage at rstandage@fs.fed.us

Bluegill
Source: USFS

There was an increase in the 2014 Bluegill electrofishing catch after historic lows in 2013 and also 2011 which was the second lowest since 1991. The spring sampling occurred before the Bass spawn. Also for the spring sampling, the Sunfish had not started to congregate in most of the lakes to spawn. The fall pond sampling appears to have missed schooled large Sunfish. Ideally, the spring sample occurs with the Bass having spawned but still in the vicinity nest-guarding, Redear Sunfish spawning and Bluegill staging in shallower areas to spawn yield a good representation of all species for sampling. With sampling normally occurring in 10-12 lakes in the spring within a specific temperature and spawning condition window, ideal conditions are missed as often as they are attained.

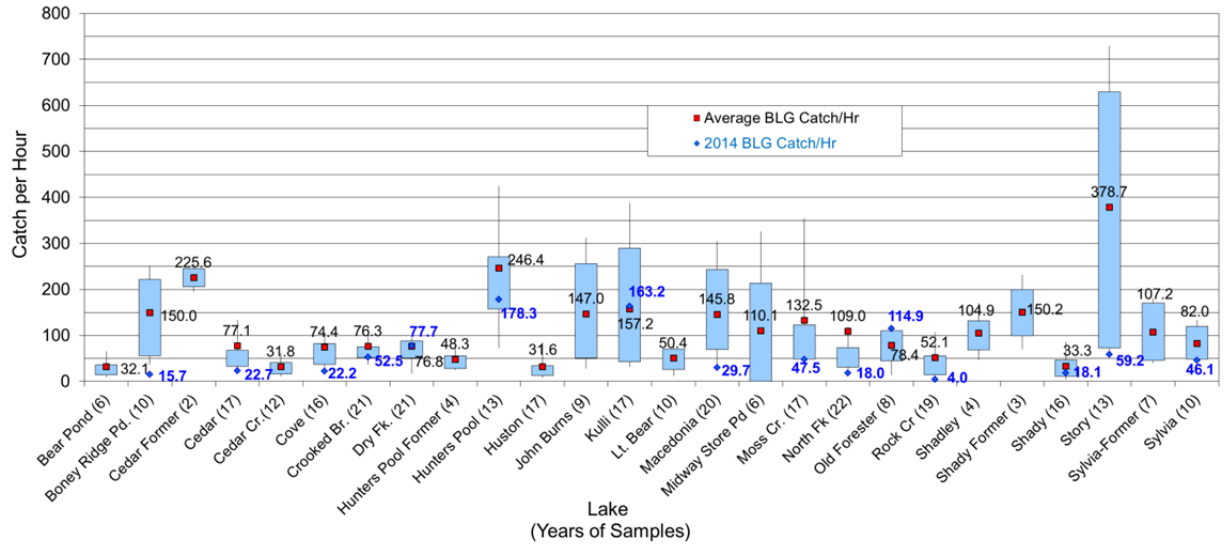
The trend line associated with the annual pooled catch per hour has statistical significance, showing a slight downward trend in catch per hour, but the significance is quite low. There are high variabilities in sample sizes between and within water bodies over time. Only three 2014 samples had larger catches than their long-term averages. This following graph displays the variability in annual samples, with the widened bars displaying the 25-75% range of the samples and the lines displaying the variability to the 10% and 90% levels. Variability was extremely low in 2013 due to the small number of samples (7) as compared to other years (16-20).

Bluegill Catch per Hour by Year Forest-wide, ONF



Individual lakes and ponds such as Hunters Pool, Kulli, and Story with 178.3, 163.2 and 114.7 Bluegill caught per hour, respectively, drove the averages for Bluegill caught per hour up in 2014 over prior years. On a Forest-wide basis, it appears that the average catch per hour for Bluegill can be expected to be in the 40 to 60 range for most years. As shown in the following chart, undoubtedly there will continue to be fluctuation within individual lake catches.

Bluegill Catch per Hour by Lake, ONF

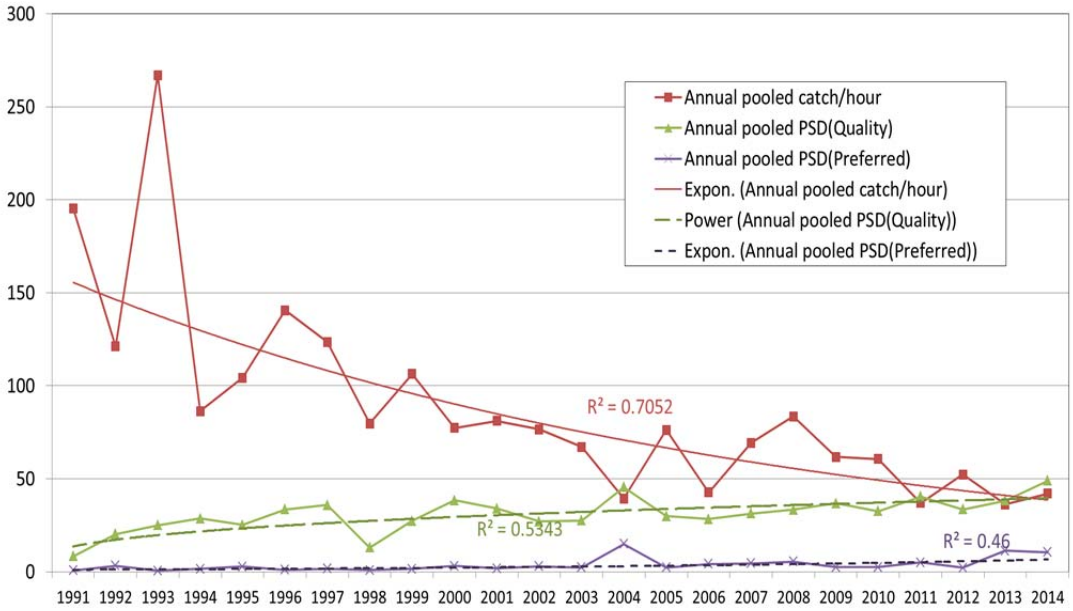


Harvestability of Bluegill was low for the 2014 Proportional Size Distribution (Quality), also known as PSD (Q). PSD (Q) is calculated from the numbers of Bluegill 150 mm (5.9 inches) and larger divided by the numbers of Bluegill of stock size (adults) that are 80 mm (3.1 inches) and larger, expressed as a percentage. It was low in 2012 due to the high catch of small Bluegill in Hunters Pool and higher in 2013 as a function of the smaller catch in 2012. Harvestability was slightly higher in 2014, mostly driven by the high PSD (Q) of the Kulli Pond Bluegill. The trend line shows a slightly increasing trend; however, it is not statistically significant (r^2=.53).

Proportional Size Distribution (Preferred), also known as RSD (Relative Stock Density), for Bluegill equal to or greater than 200 mm (7.9 inches) long, was low in 2012, driven by the number of small Bluegill caught at Hunters Pool. RSD shows relatively few catches of Bluegill above that size with an increasing trend line that is not statistically significant (r^2=0.46). The slight increase in the pooled 2013 catch for preferred-sized Bluegill is attributable to a small catch of Bluegill in combination with that year's small sample size. The large Bluegill caught at Cove Creek Lake and Shady Lake drove up the percentage in the preferred range for 2014. With so few preferred sized Bluegill being caught at just a couple of lakes or ponds (usually with a low catch per hour) the percent harvestable must be examined in light of the total number of

Bluegill caught across the Forest per lake or pond. Usually the RSD for Bluegill is a more meaningful number because larger numbers of fish are involved.

Catch per Hour and Quality and Preferred Size Distribution for Bluegill by Year, ONF



As sampled in all years through 2014, given the above constraints and conditions, Bluegill populations across the Ouachita NF are at suitable and sustainable levels and their viability is not in question.

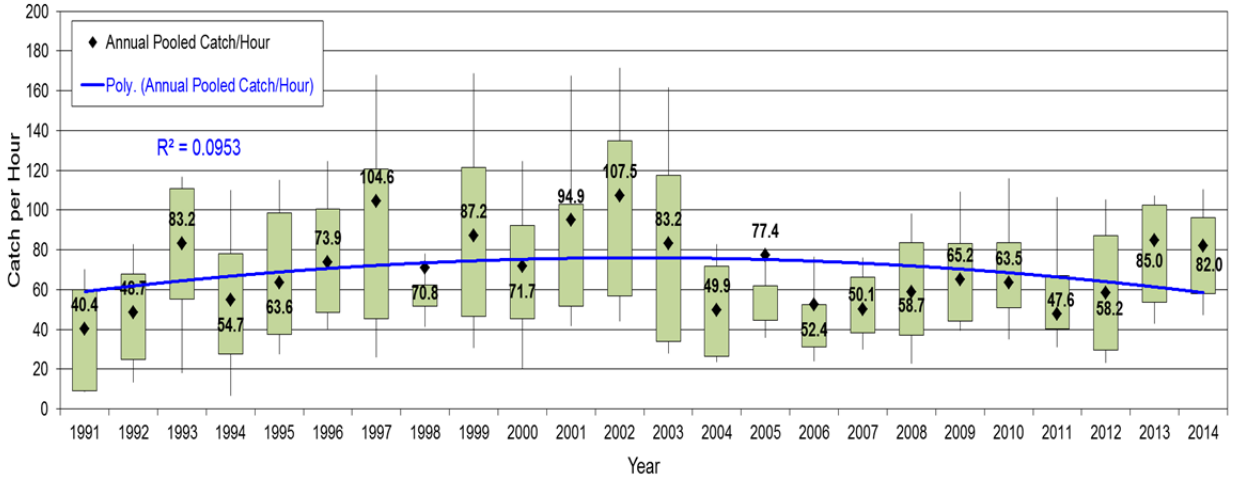
Largemouth Bass *(Micropterus salmoides)*

For additional information, contact Richard Standage at rstandage@fs.fed.us

Largemouth Bass
Source: USFS

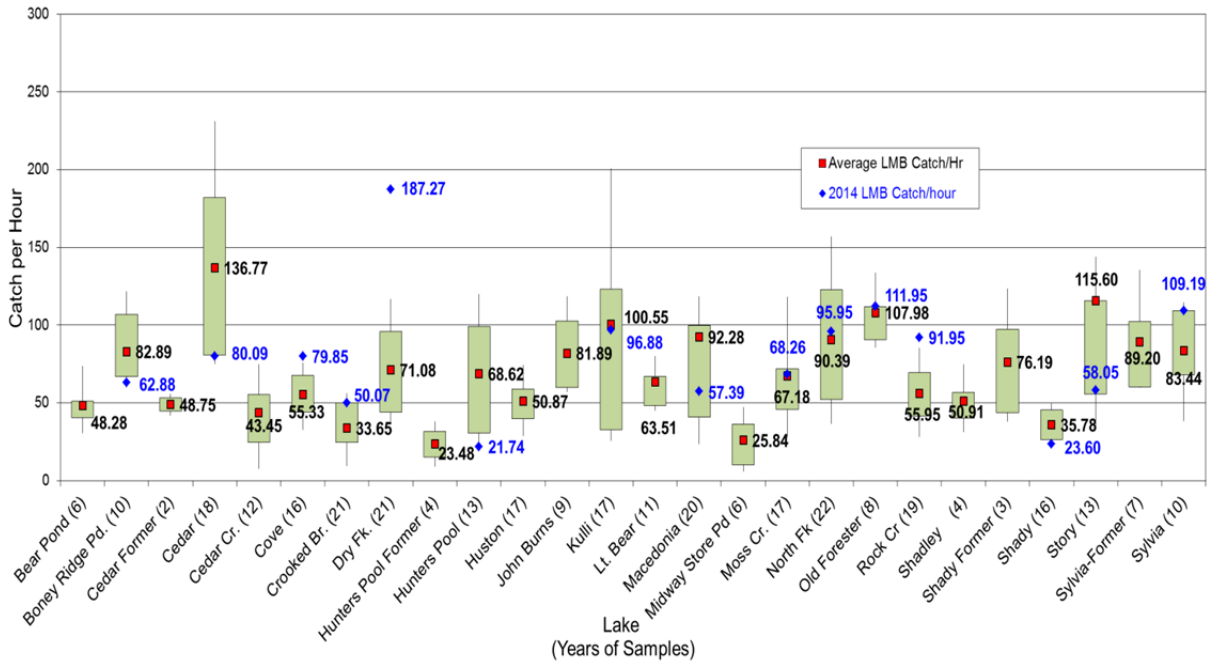
The Largemouth Bass electrofishing catch rate in 2012 and 2013 was an improvement over the 2011 catch rate. The 2014 catch rate was slightly down from 2013, but the 2014 data set contains many more samples than did the 2013 data set. Actually, the 2014 catch rate was the second highest of the past 5 years, with the 2011 results the lowest for the same time period. The 2013 sampling results are slightly biased (high) by a smaller than normal number of lakes and ponds sampled (7) and with those lakes and ponds being the better producing Bass waters for the Forest. The catch rate for 2014 is heavily influenced by an abnormally high catch of Bass at Dry Fork of 187 bass/hour, when 71 is the average catch rate there. Sampling results from the last 24 years are shown in the following graph.

Annual Pooled Largemouth Bass Catch per Hour, ONF



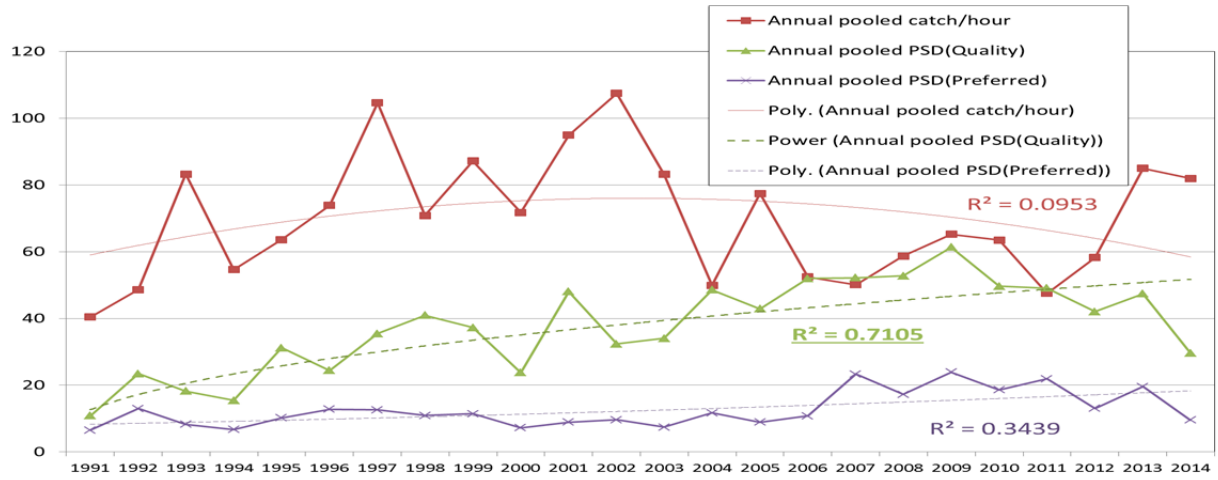
Largemouth Bass catch rates are higher in 2013 and 2014 than in 2011 with the variability somewhat more comparable in the last 2 years, and also with less variability than in many of the pre-2004 samples. There also seems to be a slight increasing trend in catch per hour since 2006, even though the 24-year trend appears in a downward mode since 2003. This trend has no statistical significance.

Largemouth Bass Catch per Hour by Lake
Average Catch per Hour and 2014 Catch per Hour, ONF



Catch per hour at the individual lakes sampled in 2014 are very inconsistent, but are heavily driven up by the large catch of sub-harvestable sized bass at Dry Fork Lake and a catch rate at Rock Creek Lake nearly double its average. Again the Rock Creek fish were mostly sub-harvestable which contributed significantly to the low 2014 harvestability of quality-sized Largemouth Bass after a slight increase in 2013 (influenced by a small sample size that year). Overall there is a mildly significant increasing trend in harvestability of quality-sized bass as shown in the following graph, even though for the last 3 years, the values are below the trend line. Quality bass are those equal to or larger than 300 mm (11.8 inches) and the stock size is 200 mm (7.9 inches).

Proportional Size Distribution, Quality and Preferred for Largemouth Bass by Year, ONF



The PSD (P) value for 2014 shows a continued drop to below the 2012 drop; but, as is the case with the PSD (Q) value, it has less outliers than what is often seen in prior years.

As sampled in 2014, largemouth bass populations across the Ouachita NF are at suitable and sustainable levels and their viability is not in question.

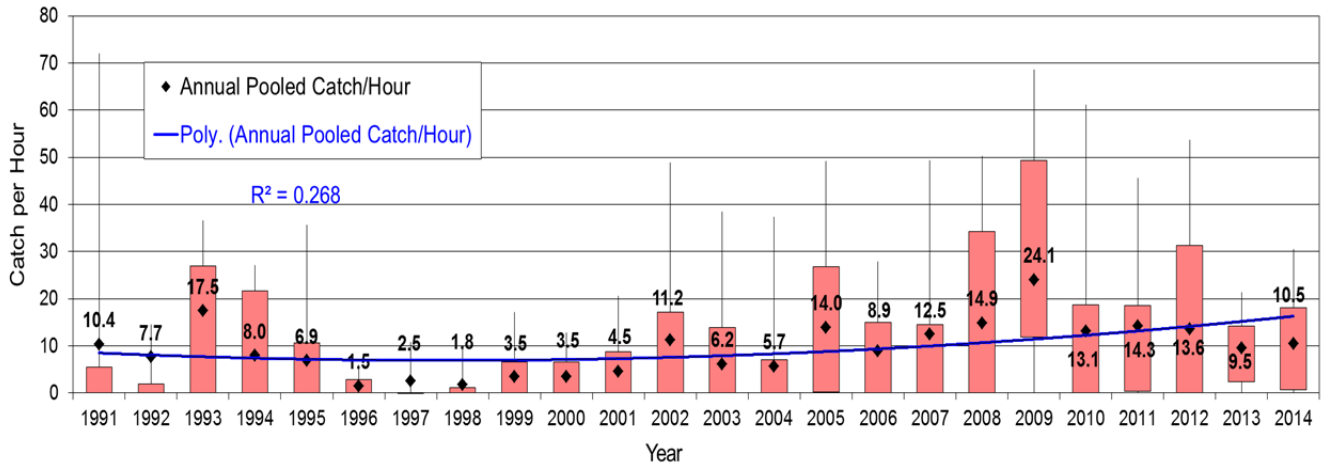
Redear Sunfish *(Lepomis microlophus)*

For additional information, contact Richard Standage at rstandage@fs.fed.us

The Redear Sunfish electrofishing catches have ranged from 4 to 90 times less than Bluegill or Largemouth Bass catches over the past 24 years. As shown in the following graph; the Redear Sunfish catch in 2010 through 2014 but excluding 2012, displays quite a bit of difference in the amount of variance from samples in the 2005-2009 period. While the Redear Sunfish annual pooled catch rate trend line shows an increase since 1998, the trend is not statistically significant.

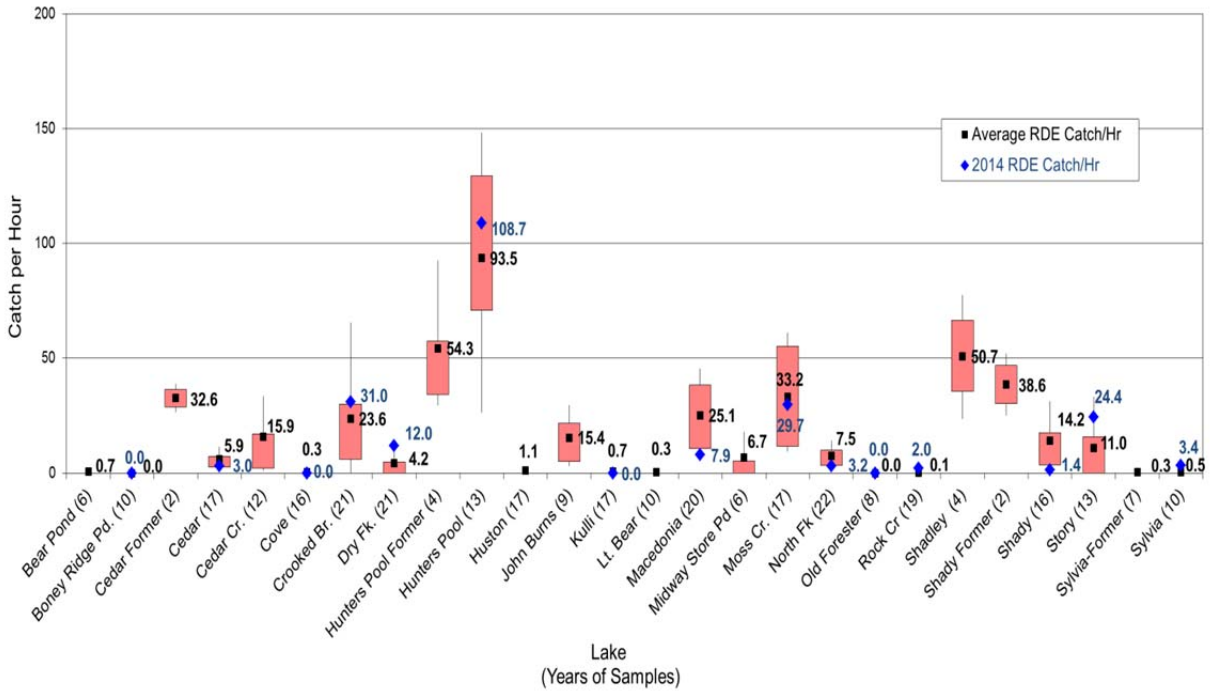
Redear Sunfish
Source: USFS

Annual Pooled Redear Sunfish Catch per Hour, ONF



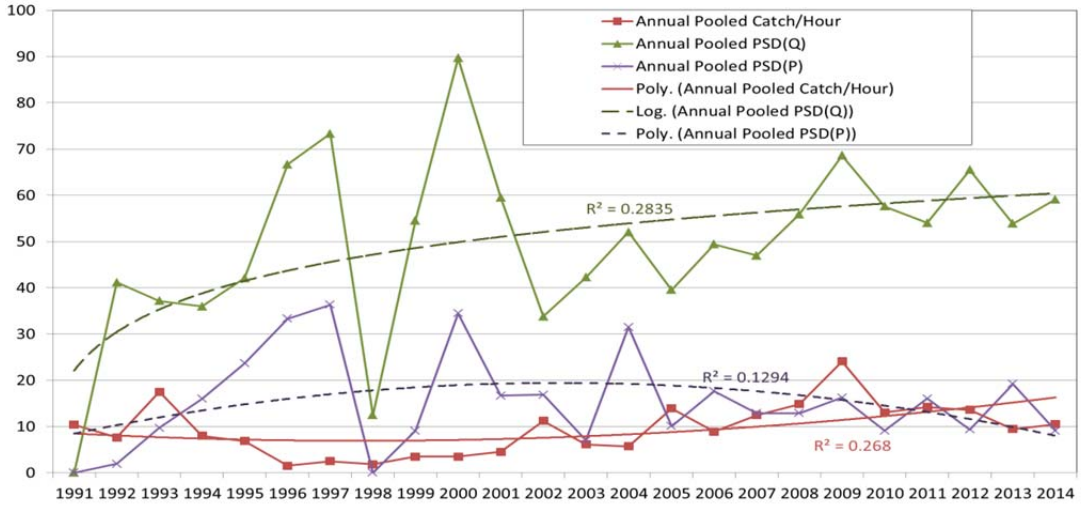
The 2014 Redear catch was dominated by the catch of 108.7 Redear per hour at Hunters Pool and 24.38 Redear per hour at Story Pond as shown in the following figure. This significantly added to that variance seen for 2014. Less variability in 2013 is attributed to the decreased number of lakes and ponds sampled

Redear Sunfish Catch per Hour by Lake, ONF



Harvestability of Redear Sunfish utilizes a stock length of 100 mm (3.9 inches) and a quality length of 180 mm (7.1 inches). Preferred-sized Redear Sunfish are 230 mm (9 inches) and greater. The 2012 catch of Redear Sunfish quality and preferred-sized fish surpassed that of the 2013 catch which was more similar to those sizes caught in 2011. The trend lines are not statistically significant for the catch per hour nor the quality or the preferred-sized Redears. Most of the lakes with high harvestabilities had very low catch rates for Redears. The Forest continues to work with the AGFC to establish Redear Sunfish in more of the lakes in the Fourche LaFave watershed.

Quality and Proportional Size Distribution for Redear Sunfish by Year, ONF



As sampled in 2014, the Redear Sunfish populations across the Ouachita NF are at suitable and sustainable levels and their viability is not in question.

Other Pond, Lake, and Waterhole Species

For additional information, contact Richard Standage at rstandage@fs.fed.us

In addition to the pond, lake, and waterhole MIS species, additional sampling of pond, lake, and waterhole species is conducted to determine catch and harvestability rates of other game fish or to assess potential hazards to sustainable sport fisheries. While the White Crappie population was followed in this report for its cyclic nature, the population is stable and past trends continue, so unless something should change, White Crappie has been dropped from further discussion in the Annual Monitoring Report though the data continues to be studied in the course of evaluating the Dry Fork sampling results for all species caught. Likewise, Threadfin Shad that suddenly showed up in the North Fork sampling efforts in 2006, then disappeared in 2009 and have not been found since, will be dropped from this report unless they should reappear. Intensive management of Gizzard Shad at Cedar Lake, Oklahoma, continues and it will continue to be analyzed in this report.

Gizzard Shad *(Dorosoma cepedianum)*

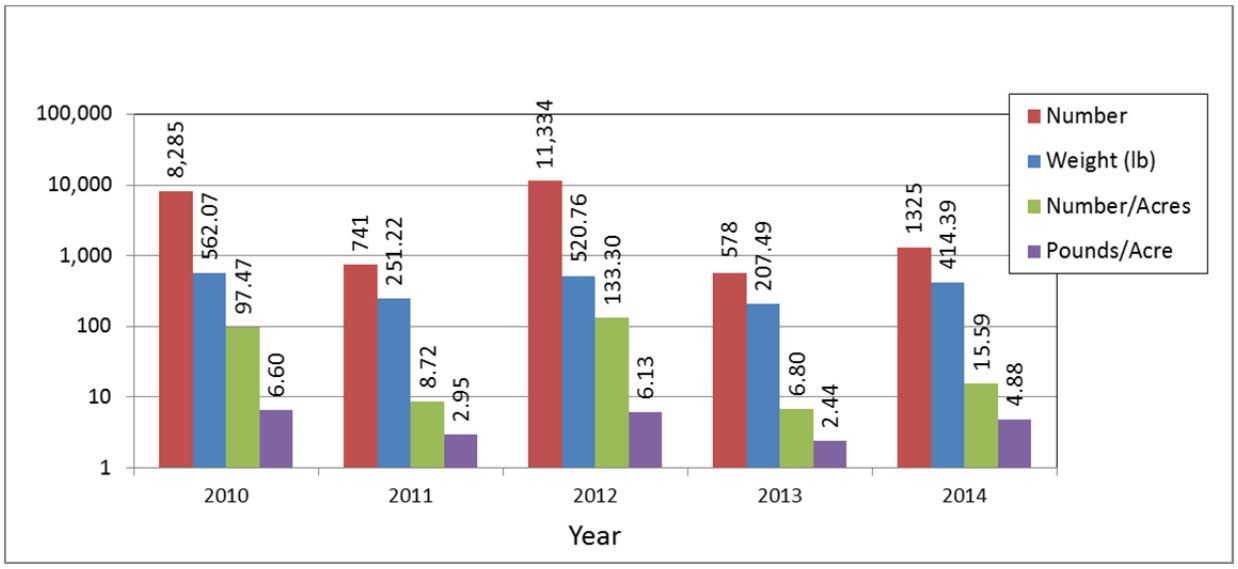
For additional information, contact Richard Standage at rstandage@fs.fed.us

Gizzard Shad
Source: USFS

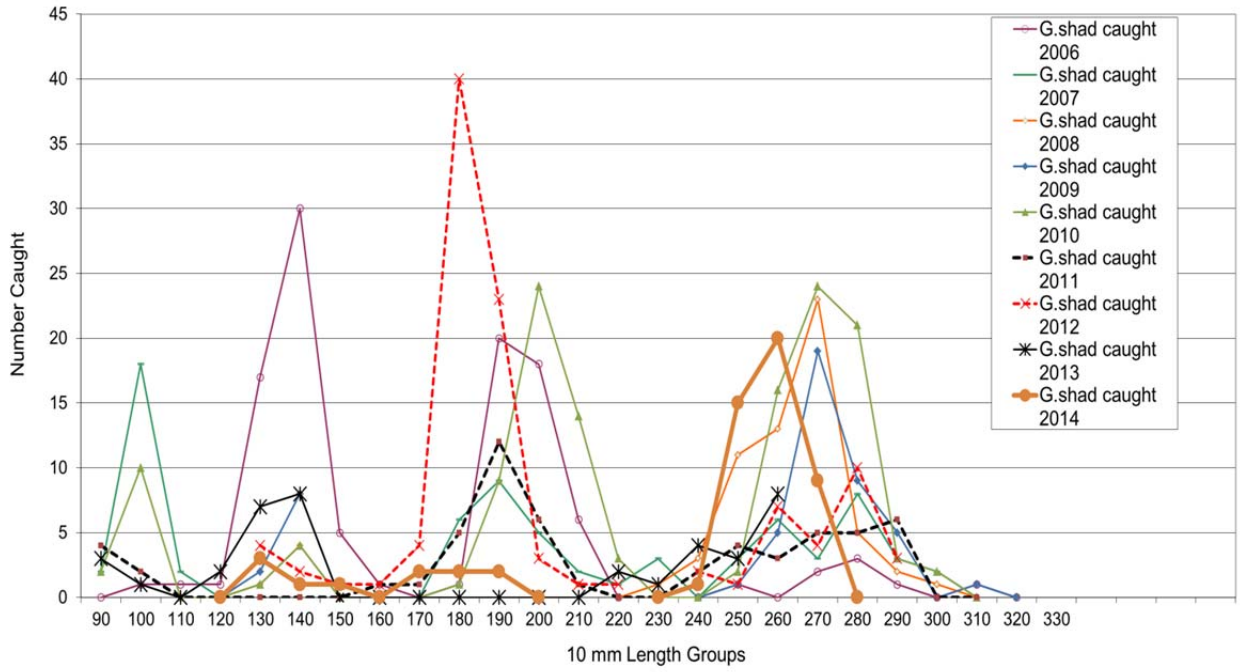
There is concern that the Gizzard Shad population might be expanding in Cedar Lake to the detriment of the sport fishing species. Gill netting was first conducted in the fall of 2005 in Cedar Lake to monitor the Gizzard Shad population. Two 200-foot monofilament nets, sized specifically to capture these Shad and minimize Bass catches were utilized in 2006 for the first time and their use has continued through 2014. In 2014, 2 additional and identical nets were set to try to increase the Gizzard Shad sample size and to better sample the open, deeper waters of Cedar Lake. The Gizzard Shad length frequencies, as shown in the following graph, indicate three year/size classes were caught in the nets in 2006; three or more in 2007; only two year classes caught in 2008 and 2009; four year classes or at least distinct lengths caught in 2010; three to as high as five size classes caught in 2011 and 2012 with four in 2013; but again only three size/year classes in 2014. The results in 2014 with the four gill net set actually resulted in a lower catch per hour of Gizzard Shad than prior sampling; however, the nets were set in sub-freezing temperatures which likely reduced fish movements and thus susceptibility of being caught. The netting results for 2014 likely is not as representative of the current Gizzard Shad population as those of prior years.

After review of the 2009 results, in consultation with the Oklahoma Department of Wildlife Conservation (ODWC), it was decided that the Gizzard Shad population needed to be reduced in Cedar Lake. The need for reduction was to encourage more reproduction/recruitment of Gizzard Shad of smaller sizes and at the same time to reduce the number that were too large to serve as forage for the Largemouth Bass and Crappie. In one day of electrofishing in 2010, using both the ODWC electrofishing boat and the Forest Service boat followed by another work-day with only the Forest Service boat and crew, approximately 562 pounds of Gizzard Shad, numbering approximately 4,100 individuals were removed. This amounted to approximately 97.5 individual Shad per acre or 6.6 pounds of Shad removed per acre. This removal may have resulted in the netting of the extra small size class of Gizzard Shad that hadn't been recorded since 2007. This removal work has continued with usually one Forest Service boat and two ODWC boats with various quantities of Gizzard Shad removed (see the following chart). The fall netting results of more numerous and smaller Shad in most years is believed to be the result of the removal efforts.

Cedar Lake Gizzard Shad Removals, ONF

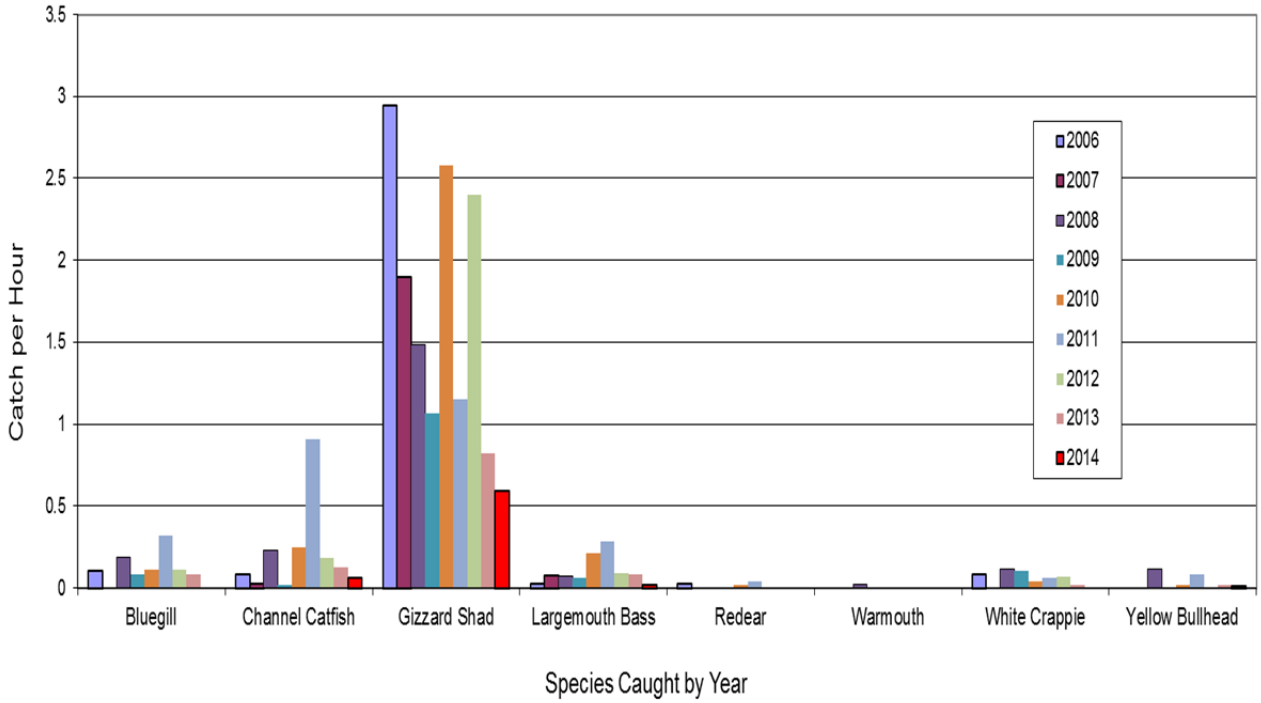


Cedar Lake Gizzard Shad Length Frequencies from Gill Nets (2) for 2006 – 2014, ONF



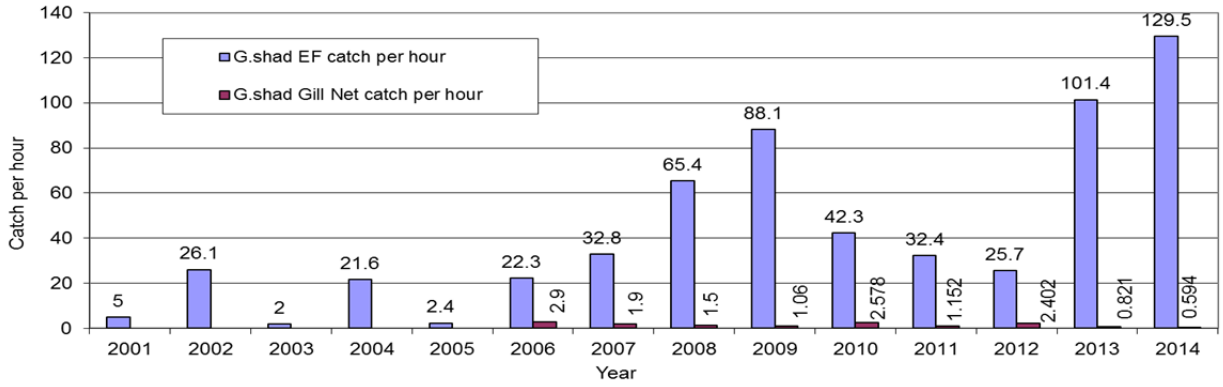
The gill net catch per hour for Gizzard Shad in 2014 is the lowest at Cedar Lake and is very low for non-targeted species (see the following graph). As noted above, the results were likely heavily influenced by the extremely cold water temperatures.

Cedar Lake Gizzard Shad Catch per Hour per Year, Combined Nets, ONF



More indicative of a potential problem is the comparison of spring electrofishing catch of generally larger Gizzard Shad compared to the gill net capture of the smaller year classes of Gizzard Shad. While the spring electrofishing Gizzard Shad catch in 2012 was not as high as that in 2008 through 2011, the 2013 and 2014 electrofishing catches are the highest to date. The gill net catch is the third highest in 2012 and the lowest in 2014 in spite of the past Gizzard Shad removals. The high catch of Gizzard Shad in 2014 by electrofishing were 10-12 inch Shad ready to spawn and they were congregated against the shoreline where they were more susceptible to electrofishing capture as was the case in 2013. Their location is likely a factor with the catches in these two years.

Cedar Lake Electrofishing Capture versus Gill Net Capture, ONF



The electrofished Gizzard Shad are generally too large to be consumed by all but the very largest Bass and Channel Catfish in Cedar Lake. Based on these results, it appears the large Shad should continue to be targeted with a reduction program to promote production of the smaller Gizzard Shad, continuing the work started by ODWC to achieve desired results. Trends in the Gizzard Shad population will continue to be monitored by gill netting and electrofishing in order to detect changes in abundance and length frequencies within the Gizzard Shad population.

Shoreline Seining

For additional information, contact Richard Standage at rstandage@fs.fed.us

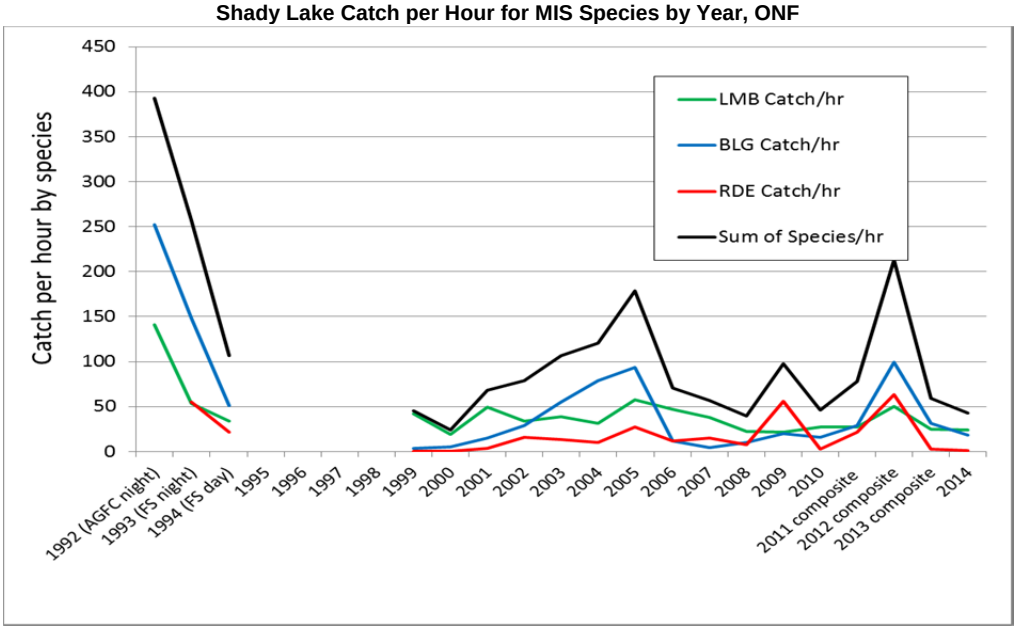
Shoreline seining was conducted, or at least attempted, in approximately 33 lakes and ponds across the Ouachita NF in 2014. Adequate reproduction was found for Sunfish and Bass in most of the waters that were easily seined. Difficulties in pulling seines were encountered and noted at several ponds, most of which also had low numbers of Bass young. In these cases, the results are more indicative of the ability to seine versus inadequate reproduction. Results also seemed to vary based on the week of sampling. Those lakes and ponds sampled later in June had a lower bass catch in relation to sunfish catches. This likely indicates the bass had grown large enough to out-swim the seine. However those lakes sampled very early in June had almost no catches of bass or sunfish fingerlings and had to be resampled when the bass fingerlings were actually big enough to be captured and not go through the seine. Reliable seining results are an issue of timing which seems more unpredictable these past few years with greater fluctuations of warm and cold temperatures in the spring.

Pond, Lake, and Waterhole Fisheries Operations

For additional information, contact Richard Standage at rstandage@fs.fed.us

To accomplish swimming beach maintenance, Shady Lake was being routinely drained by the Mena/Oden Ranger District; thus, large numbers of fish were being flushed out annually. This flushing resulted in low catch rates; and with low remnant water levels in the lake, the surviving fish were not surviving to reach expected sizes. The practice of draining or nearly draining the lake has been halted, and operations now correspond to the Operations and Maintenance procedure. However, during the winters of 2012-2013 and 2013-2014 drawdowns, were not completed due to manpower issues and a broken pump system to raise and lower the outlet gate valve for the lake. In the meantime, recovery in the catch per hour for the three species showed an improvement until 2013 and 2014. The Shady Lake electrofishing data for 2013 spring and fall shows an extraordinarily small catch was made in the spring of 2013 as the lake was too cold for the three species to be in shallower water where they are more vulnerable to electrofishing capture. The fall sample, while better, was insufficient to significantly bring up the pooled catch results. A single spring sample was taken in 2014, with results similar to the 2013 samples: very low Sunfish catches due to the lake temperature being too cool. Without the drawdowns of the 2012 and 2013 winters, an increase in water shield beds became quite noticeable across the lake. Future sampling will be attempted under warmer conditions or at night to see if a more balanced and growing fish population is detected.

Shady Lake Catch per Hour for MIS Species by Year, ONF



Note: During the period 1995, Shady Lake was at such a low level that it needed to be refilled and restocked for fish of adequate size to sample.

Pond, Lake and Waterhole Management Indicator Species (MIS) and Other Species Summary and Conclusions

For additional information, contact Richard Standage at rstandage@fs.fed.us

Summary of Pond, Lake, and Waterhole Management Indicator Species Monitoring, ONF

Pond, Lake and Waterhole Management Indicator Species					
Common Name	**Scientific Name**	**Trend, Proportional Size Distribution Quality**	**Trend, Proportional Size Distribution Preferred**	**Risk for Conservation of Species**	**Management Changes Needed**
Bluegill	*Lepomis macrochirus*	Not Significant, Slightly Increasing	Not Significant, Slightly Increasing	Sustainable-Viability not in Question	None
Largemouth Bass	*Micropterus salmoides*	Significant, Increasing	Barely Significant, Increasing	Sustainable-Viability not in Question	None
Redear Sunfish	*Lepomis microlophus*	Not Significant, Slightly Increasing	Not Significant, Slightly Decreasing	Sustainable-Viability not in Question	None

Additional analysis or monitoring for White Crappie, Gizzard Shad, and Threadfin Shad was conducted during 2014 even though these are not MIS species. The White Crappie population in Dry Fork Lake has been scrutinized because it has been the largest Crappie population on the Ouachita NF. After 21 years of sampling with cyclic harvestability values, the reporting of such has been discontinued since there is no question as to its sustainability. It will continue to be examined as part of the typical review of Dry Fork sample data. Gizzard Shad in Cedar Lake are monitored to determine if the population is expanding and the management of the population is producing the desired results. Threadfin Shad were discovered in North Fork Lake during 2006 electrofishing efforts but disappeared after 2009. Since they have not been sampled since 2010, reporting of sampling efforts and results has been discontinued but will be restarted should they again show up in any of the on-going sampling.

In 2012, the ODWC sampled Cedar Lake, Oklahoma for mercury analysis taking Channel Catfish (8), Largemouth Bass (13) and White Crappie (7). Only Largemouth Bass had levels of mercury (0.53 ppm) high enough to trigger an Advisory. Only two meals of Largemouth Bass per month are advised for pregnant or nursing women, women of child bearing age and children younger than 15 years of age. Consumption advisories occur for many of the lakes across the Forest due to natural weathering of mercury from the parent rock of the Ouachita Mountains combined with airborne sources. The consumption advisory has not appeared to have had an impact on angler use at Cedar Lake. There has been no further sampling of any others non-listed waters on the Forest in either Oklahoma or Arkansas.

River and Stream Fish Management Indicator Species (MIS) Summary and Conclusions

For additional information, contact Mary Lane at melane@fs.fed.us

Stream and River Fish Management Indicator Species					
Common Name	Scientific Name	Current Trend	Preferred Trend	Risk for Conservation of Species	Management Changes Needed
Smallmouth Bass	*Micropterus dolomieu*	Not Significant, Natural Range of Variability	Not Significant, Slightly Increasing	Sustainable-Viability not in Question	None
Green Sunfish	*Lepomis cyanellus*	Not Significant, Slightly Decreasing	Not Significant, Natural Range of Variability	Sustainable-Viability not in Question	None
Longear Sunfish	*Lepomis megalotis*	Not Significant, Natural Range of Variability	Not Significant, Natural Range of Variability	Sustainable-Viability not in Question	None
Yellow Bullhead	*Ameiurus natalis*	Not Significant, Natural Range of Variability	Not Significant, Natural Range of Variability	Sustainable-Viability not in Question	None
Highland (Central) Stoneroller	*Campostoma spadiceum*	Not Significant, Slightly Increasing	Not Significant, Natural Range of Variability	Sustainable-Viability not in Question	None
Northern Hog Sucker	*Hypentelium nigricans*	Not Significant, Natural Range of Variability	Not Significant, Natural Range of Variability	Sustainable-Viability not in Question	None
Creek Chubsucker	*Erimyzon oblongus*	Not Significant, Natural Range of Variability	Not Significant, Natural Range of Variability	Sustainable-Viability not in Question	None
Striped Shiner	*Luxilus chrysocephalus*	Not Significant, Slightly Increasing	Not Significant, Natural Range of Variability	Sustainable-Viability not in Question	None
Northern Studfish	*Fundulus catenatus*	Not Significant, Slightly Increasing	Not Significant, Natural Range of Variability	Sustainable-Viability not in Question	None
Orangebelly Darter	*Etheostoma radiosum*	Not Significant, Natural Range of Variability	Not Significant, Natural Range of Variability	Sustainable-Viability not in Question	None
Redfin Darter	*Etheostoma whipplei*	Not Significant, Natural Range of Variability	Not Significant, Natural Range of Variability	Sustainable-Viability not in Question	None
Pirate Perch	*Aphredoderus sayanus*	Not Significant, Natural Range of Variability	Not Significant, Natural Range of Variability	Sustainable-Viability not in Question	None

Stream and River MIS

For additional information, contact Mary Lane at melane@fs.fed.us

There are 14 species of fish associated with stream and river habitat. Monitoring and MIS analysis for 12 species is conducted every five years utilizing a Basin Area Stream Survey (BASS) along with annual data from other long-term permanent stream monitoring sites (OSS). Johnny and Channel Darters data are surveyed during the annual Leopard Darter monitoring conducted jointly with the US Fish and Wildlife Service. Monitoring for these 12 fish MIS is to determine how well the stream and river aquatic habitat conditions are protecting, enhancing or maintaining the populations' viability.

Stream and River Fish MIS, ONF	
Smallmouth Bass	*Micropterus dolomieu*
Green Sunfish	*Lepomis cyanellus*
Longear Sunfish	*Lepomis megalotis*
Yellow Bullhead	*Ameiurus natalis*
Highland (Central) Stoneroller	*Campostoma spadiceum*
Northern Hog Sucker	*Hypentelium nigricans*
Creek Chubsucker	*Erimyzon oblongus*
Striped Shiner	*Luxilus chrysocephalus*
Northern Studfish	*Fundulus catenatus*
Orangebelly Darter	*Etheostoma radiosum*
Redfin Darter	*Etheostoma whipplei*
Pirate Perch	*Aphredoderus sayanus*

Basin Area Stream Survey (BASS) and 'Other Stream Sites' (OSS) Data

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Every five years, the watershed condition is evaluated to determine if the progress in condition ratings has occurred through the paired-stream Basin Area Stream Survey (BASS). The BASS data includes biological (fish and aquatic macroinvertebrate surveys), morphological (physical measurements of stream reaches), and limnological (water chemistry) sampling. Paired streams are surveyed during the BASS, two streams each in the Arkansas River Valley (ARV), the Lower Ouachita Mountain (LOM), and the Upper Ouachita Mountain (UOM) ecoregions. Methods for BASS inventories can be found in the 2008 Ouachita National Forest MIS Report (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5327801.pdf). The most recent Forestwide BASS was completed in FY 2011, and the next is due in FY 2016. The data has been reviewed and has been placed into the Forest BASS database.

There are up to 18 'other stream sites' (OSS) that are sampled annually as time and resources allow, as well as other stream sampling that occurs for site-specific project analysis. These OSS are sampled annually primarily within the Upper and Lower Ouachita Mountain Ecoregions using the BASS protocol for 100-meter lengths. This analysis only uses the OSS data from the 2001 through 2014 surveys, which includes 245 OSS survey data. Results of the fish surveys' data analysis by species are as follows.

Note that the time scales for the BASS data (1990, 1991, 1992, 1996, 2001, 2006, 2011) and the OSS data (2001-2014, annual) are somewhat different, so comparisons for population trends would need to include only samples from 2001-2011. The 1996 data in the BASS data for some species may reflect effects of the sporadic years of drought and/or severe storm events experienced in the early to mid-1990s. Any sample may have been affected by drought, storm events, low/high water levels, weather (high temperatures for sampling, inconsistent sampling efforts, and a number of other factors that may temporarily cause a high or low number of individuals.

Smallmouth Bass (*Micropterus dolomieu*)

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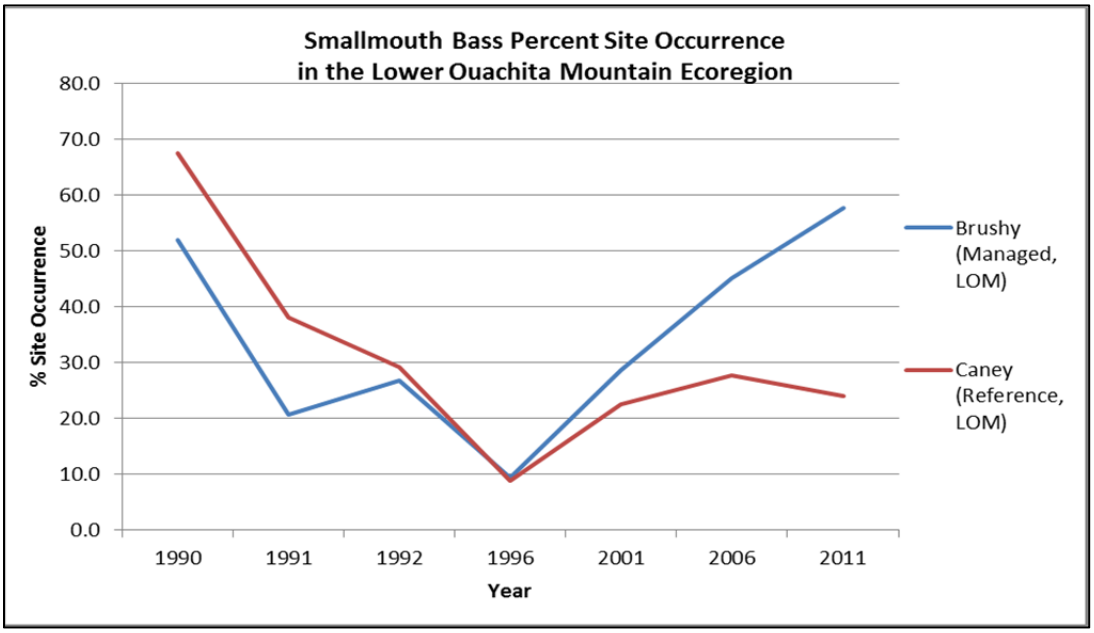
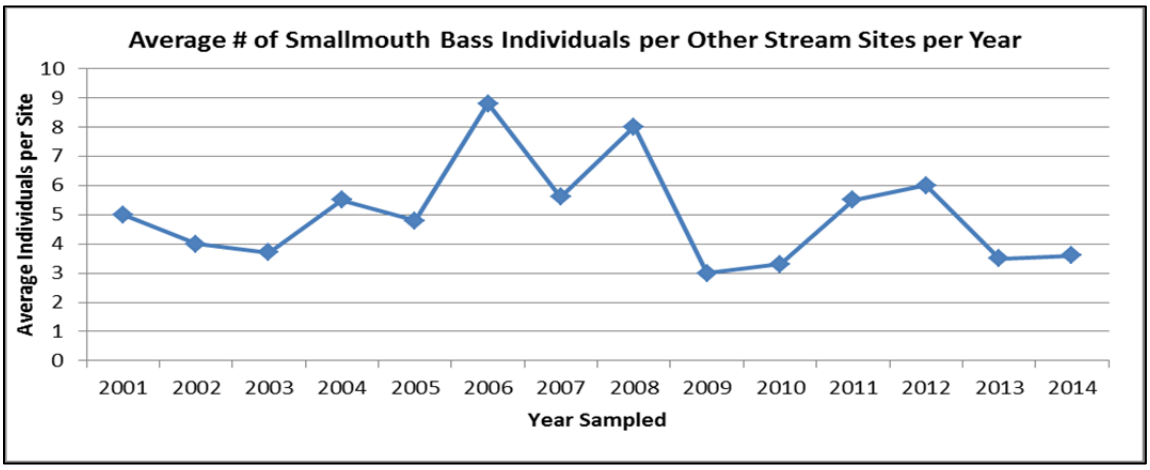
Smallmouth Bass was retained as a demand MIS to track the health of river and stream communities, particularly as it relates to supporting sport fisheries. Smallmouth bass are known to be sensitive to habitat degradation and are not found to occur in less than high quality habitat.

Data Source: Smallmouth Bass (SMB) individuals were collected during every 5-year BASS inventory and in 35% (84 of 245) of the OSS inventories primarily within the Upper (UOM) and Lower Ouachita Mountain (LOM) Ecoregions. The Arkansas River Valley (ARV) streams' collections revealed few SMB. The following table and graph display the percent site

occurrence of Smallmouth Bass for Brushy and Caney Creeks (LOM) for the BASS, and the second graph shows the average number of individuals per the OSS sites per year (2001-2014).

Stream	1990	1991	1992	1996	2001	2006	2011
Brushy Creek (Managed, LOM)	51.9	20.7	26.7	9.4	28.6	45.0	57.7
Caney Creek (Reference, LOM)	67.5	38.0	29.2	8.9	22.6	27.8	24.1





Population Trends: Both Brushy and Caney creeks show a decline in the percent occurrence from 1990 to 1991 and another sharp decline in 1996; however there is steady recovery through 2011within the LOM ecoregion BASS inventories. The OSS surveys revealed Smallmouth Bass at 35% of the sites with the average number of individuals per site by year ranging from 3 to 8.8 individuals. Smallmouth Bass are very successful at avoiding the electrofishing sampler, so individuals are regularly observed that do not get counted. The BASS as well as the OSS survey data indicate that the Smallmouth Bass populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question.

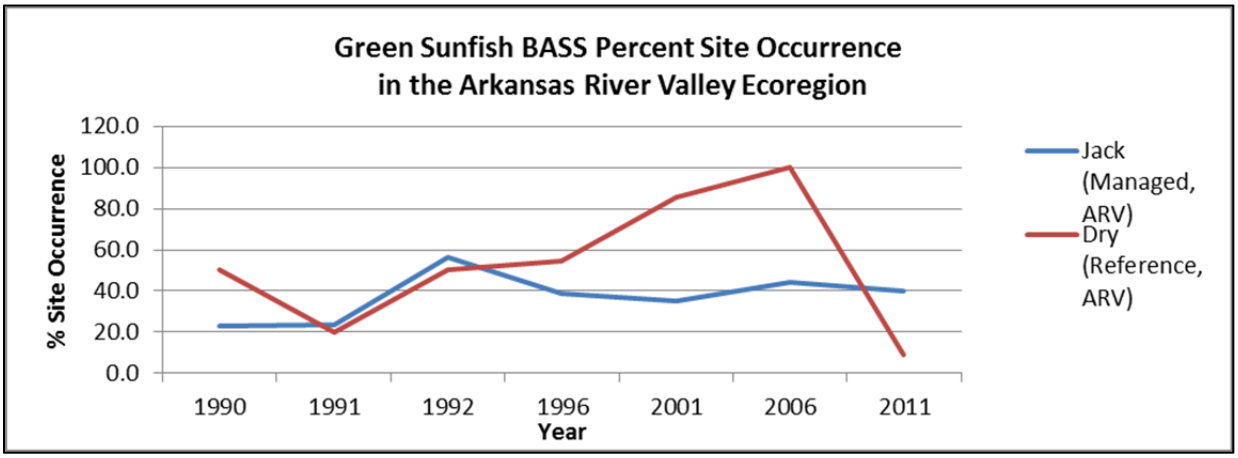
Green Sunfish (*Lepomis cyanellus*) and Longear Sunfish (*Lepomis megalotis*)
These two species are commonly found throughout the Ouachita National Forest. They are natives to Ouachita Mountain streams, but differ in their tolerance to pollution and habitat disturbance. The Green Sunfish can be found in almost every type of aquatic habitat in Arkansas. It is a highly adaptable species and is tolerant of a wide range of ecological

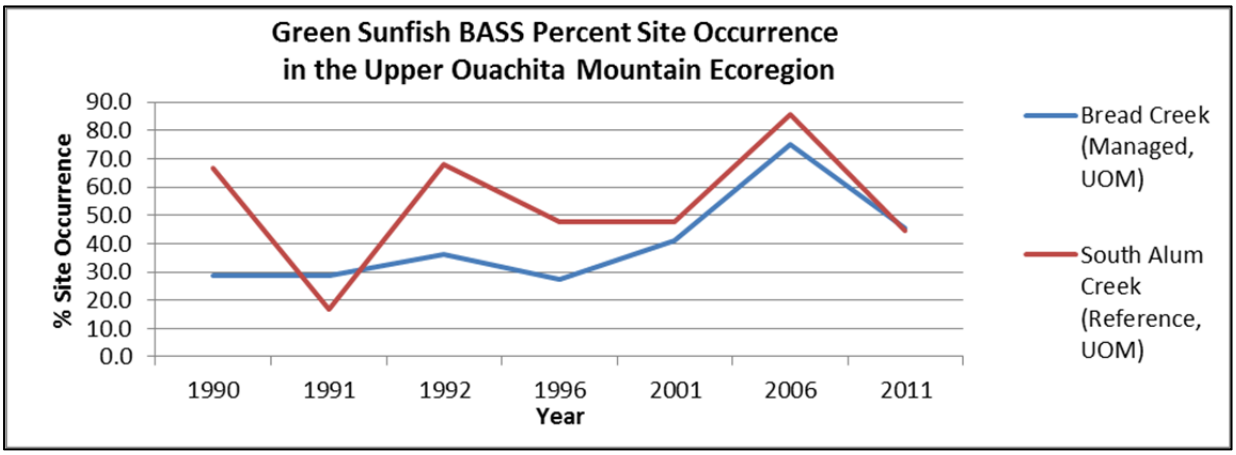
conditions. Green Sunfish occur naturally in the Upper and Lower Ouachita Mountains, and the Arkansas River Valley. The Longear Sunfish occurs in a variety of habitats but is most abundant in small, clear, upland streams with rocky bottoms and permanent or semi-permanent flow. Significant changes in the relative abundances of these two species over time would likely indicate changes in ecological integrity.

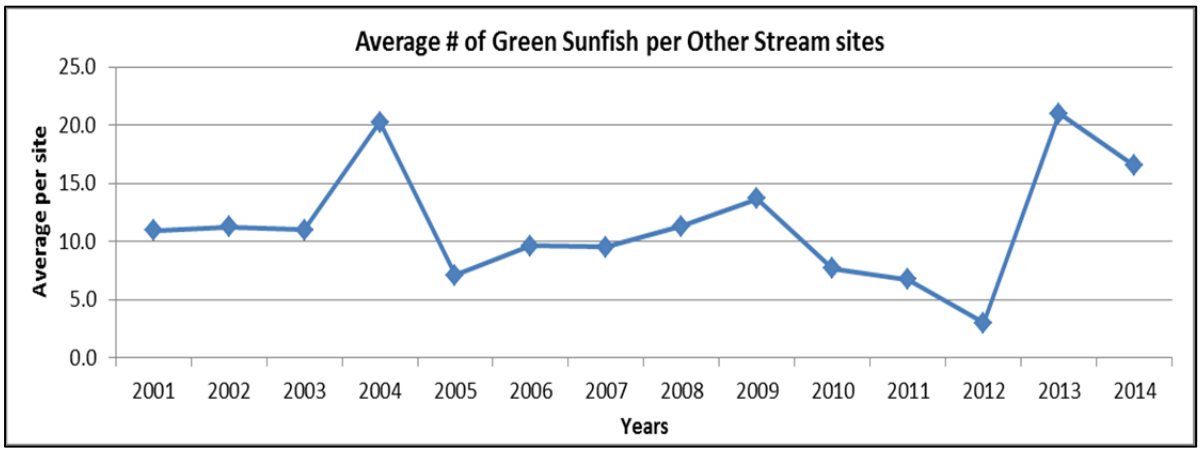
Green Sunfish

Data Source: Green Sunfish individuals were collected during every BASS inventory and in 73% (178 of 245) of the OSS inventories conducted within the Arkansas River Valley and the Upper and Lower Ouachita Mountain Ecoregions. The following table and three graphs display the percent site occurrence of Green Sunfish from the BASS data. The fourth graph shows the average number of individual Green Sunfish per OSS per year from 2001 through 2014.

Stream	1990	1991	1992	1996	2001	2006	2011
Jack Creek (Managed, ARV)	23.1	23.8	56.3	38.9	35.3	44.4	40.0
Dry Creek (Reference, ARV)	50.0	20.0	50.0	54.5	85.7	100.0	9.0
Bread Creek (Managed, UOM)	28.6	28.6	36.4	27.3	41.2	75.0	45.5
South Alum Creek (Reference, UOM)	66.7	16.7	68.2	47.6	47.8	85.7	44.4
Brushy Creek (Managed, LOM)	51.9	17.2	20.0	9.4	14.3	10.0	7.7
Caney Creek (Reference, LOM)	2.5	8.0	12.5	0.0	0.0	0.0	13.8





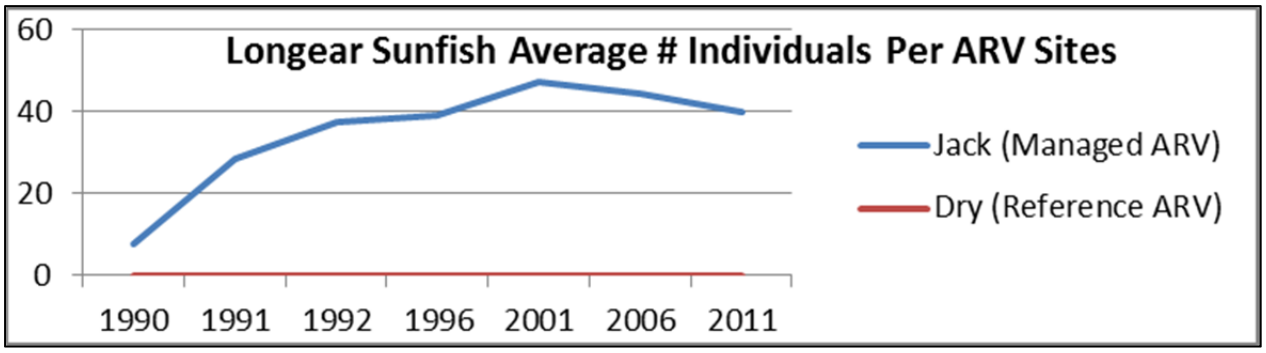


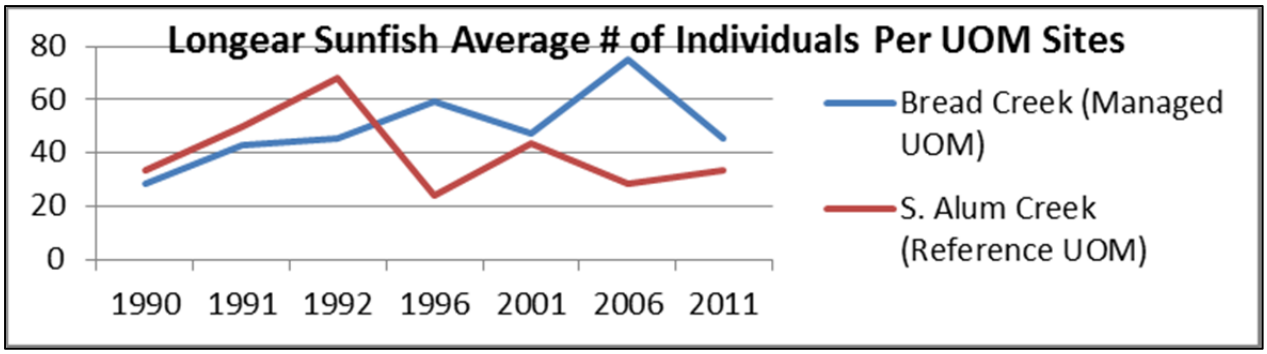
Population Trends: The 2011 BASS and OSS surveys indicate a decline in the 2011 Green Sunfish population data in all streams except Caney Creek, which has never shown to be a robust population. This decline is most likely due to the lower water levels from lack of rain. The OSS data however from 2012 to 2013 and 2014 show substantial recovery. There is no obvious or known reason other than drought and/or severe storm events for the sharp and unusual decline. Continued monitoring will be conducted. The BASS as well as the OSS survey trend lines indicate that the Green Sunfish populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question.

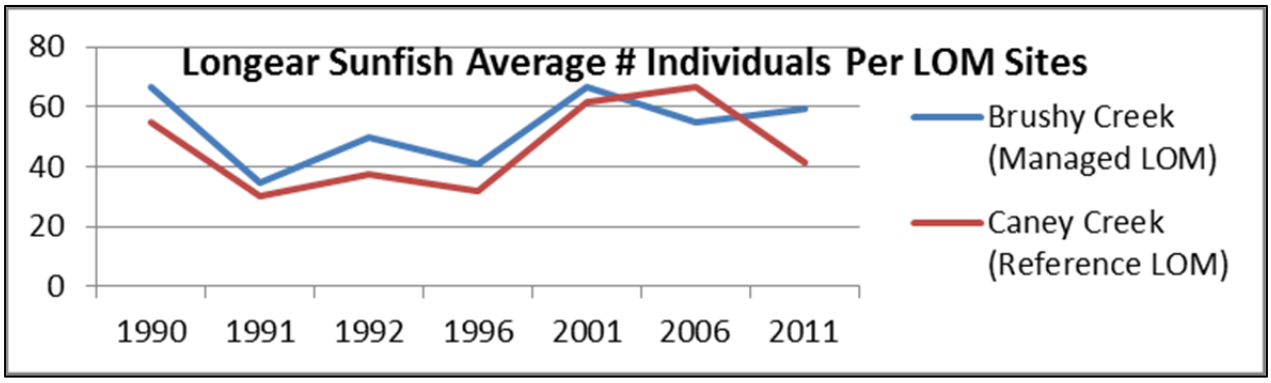
Longear Sunfish

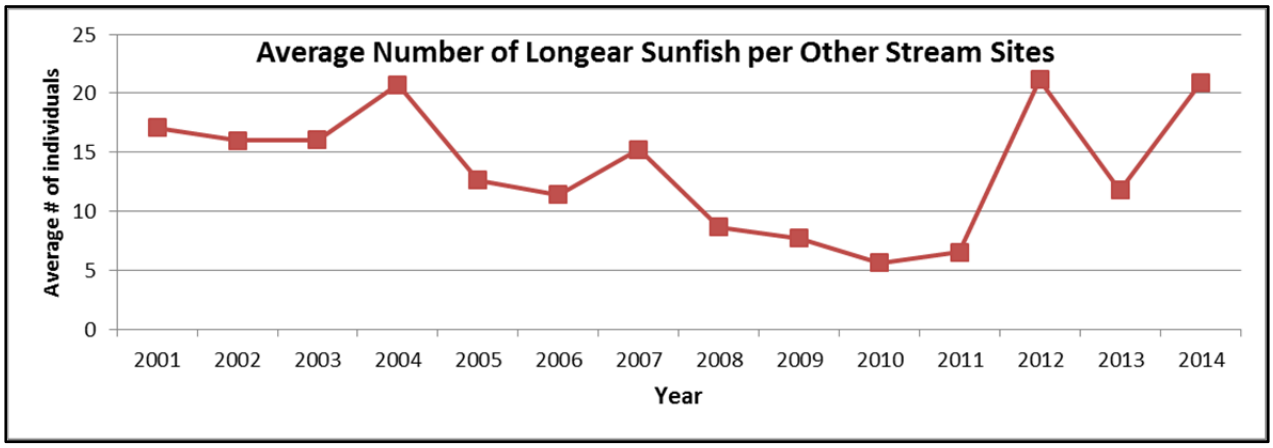
Data Source: Longear sunfish are common throughout much of the Upper and Lower Ouachita Mountain ecoregions; however the percent site occurrence in the ARV was limited to Jack Creek (Reference). Longear Sunfish individuals were collected during every BASS inventory and in 91% (178 of 245) OSS inventories conducted within the Arkansas River Valley and the Upper and Lower Ouachita Mountain Ecoregion. The following table and three graphs display the percent site occurrence of Longear Sunfish from the BASS data. The fourth graph shows the average number of individual Longear Sunfish per OSS per year from 2001 through 2014.

Stream	1990	1991	1992	1996	2001	2006	2011
Jack Creek (Managed ARV)	7.7	28.6	37.5	38.9	47.1	44.4	40
Dry Creek (Reference ARV)	0	0	0	0	0	0	0
Bread Creek (Managed UOM)	28.6	42.9	45.5	59.1	47.1	75	45.5
S. Alum Creek (Reference UOM)	33.3	50	68.2	23.8	43.5	28.6	33.3
Brushy Creek (Managed LOM)	66.7	34.5	50	40.6	66.7	55	59.3
Caney Creek (Reference LOM)	55	30	37.5	32.1	61.3	66.7	41.2









Population Trends: The 2011 BASS and OSS surveys indicate fairly level population trends in the Longear Sunfish population data in all streams. The BASS as well as the OSS survey data indicate that the Longear Sunfish populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question

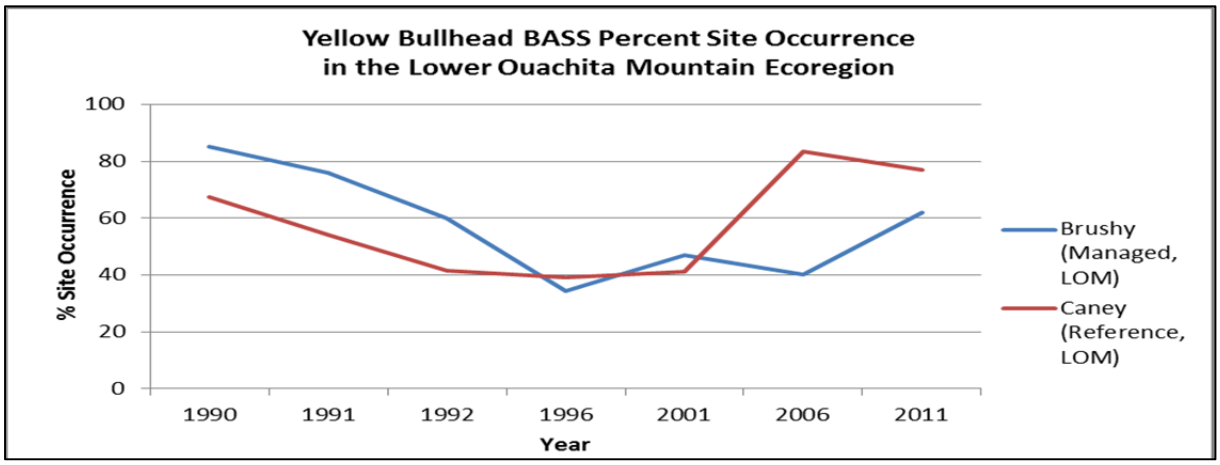
Yellow Bullhead (*Ameiurus natalis*)

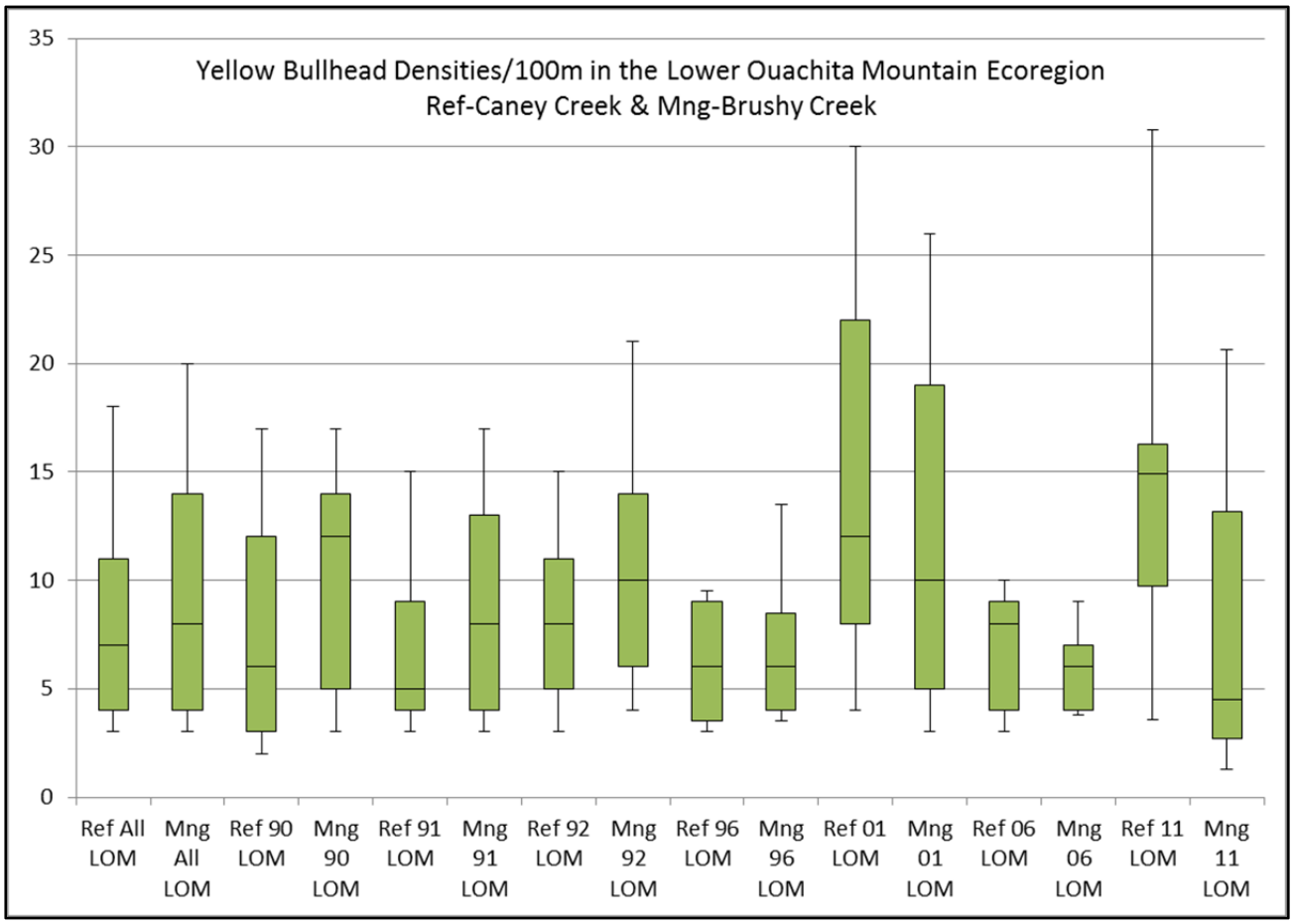
Yellow bullheads are found forestwide in a variety of habitats, but seem to prefer clear, gravel and rocky-bottomed, permanent streams with some cover. It is considered a key species for the Arkansas River Valley by Arkansas Department of Environmental Quality (ADEQ). The Yellow Bullhead occurs in streams throughout the Forest. Favored habitat for the Yellow Bullhead consists of pools with structure (root wads, stable undercut banks, boulders, etc.).

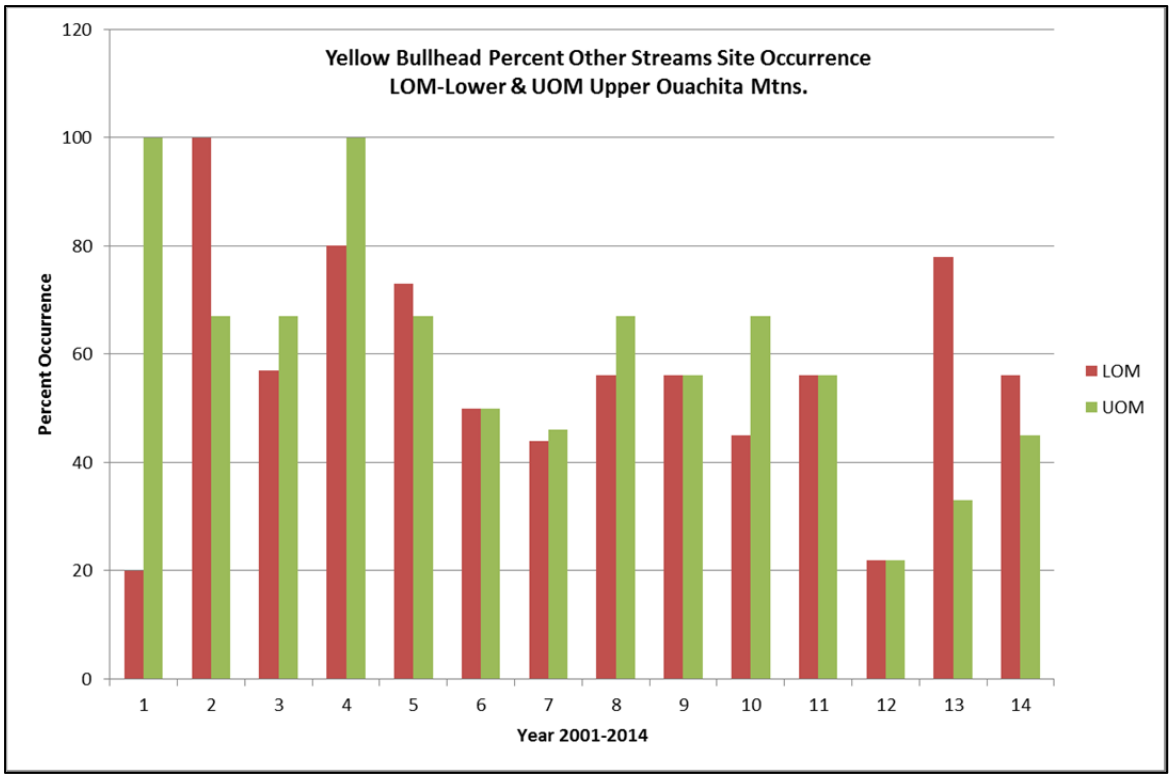
Data Source: Yellow Bullhead individuals were collected during every BASS inventory and in 61% (149 of 245) of the OSS inventories conducted within the Arkansas River Valley and the Upper and Lower Ouachita Mountain Ecoregion. The following table and two graphs display the percent site occurrence of Yellow Bullhead from the BASS data. The fourth graph shows the average number of individual Yellow Bullheads per OSS per year from 2001 through 2014.

Percent Site Occurrence of Yellow Bullhead

Stream	1990	1991	1992	1996	2001	2006	2011
Brushy Creek (Managed, LOM)	85.2	75.9	60	34.4	46.9	40	62
Caney Creek (Reference, LOM)	67.5	54	41.7	39.3	41.1	83.3	77







Population Trends: The previous figures demonstrate the natural range of variability for Yellow Bullhead population trends for LOM streams. Insufficient information from the BASS inventories is available to determine population trends for the Arkansas River Valley or the Upper Ouachita Mountain Ecoregions. Initially from the percent occurrence there appears to be a higher occurrence of Yellow Bullhead in the managed stream (Brushy Creek) than in the reference stream (Caney Creek) in the Lower Ouachita Mountain ecoregion (1990-1992), then the trend reversed with Caney Creek occurrences generally increasing while Brushy Creek occurrences slightly decreased. From the OSS data, the LOM and UOM streams population trends fall within the natural range of variability for population density. The BASS as well as the OSS survey data indicate that even though there is a slight downward trend, the Yellow Bullhead populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question.

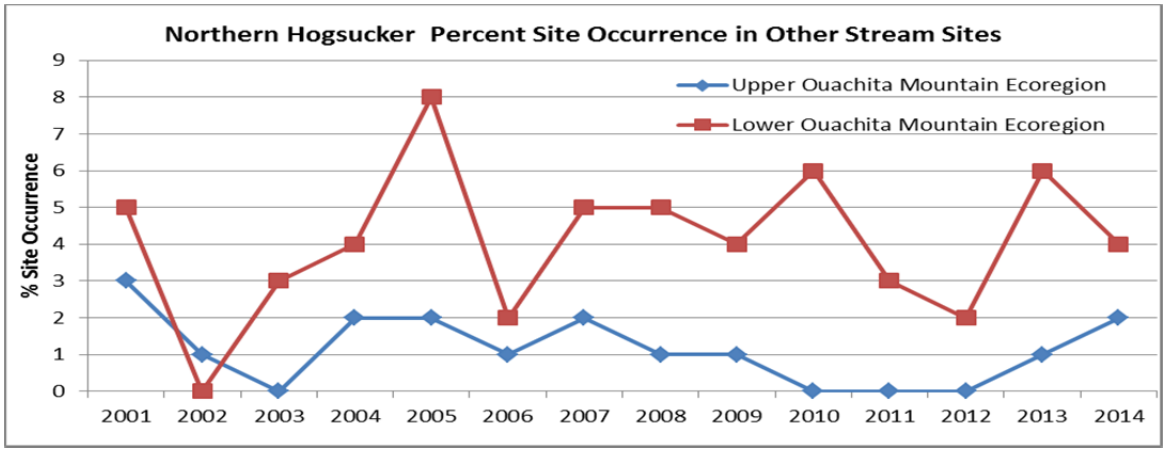
Northern Hog Sucker (*Hypentilium nigricans*)

Northern Hog Suckers are only found to occur in clear, permanent streams with gravel or rocky substrate and generally prefer deep riffles, runs, or pools having current. This fish species is intolerant of pollution, silt, and stream channel alteration. The Northern Hog Sucker is considered a key species for the Ouachita Mountains Ecoregion by ADEQ.

Data Source: Northern Hog Suckers were not collected in any of the BASS inventories, but they have been collected in several OSS surveys within the Upper and Lower Ouachita Mountains. This fish species is not known to occur within the Ouachita National Forest's Arkansas River Valley ecoregion. Northern Hog Sucker individuals were collected in 30 % (73 of 245) of the OSS inventories conducted within the Upper and Lower Ouachita Mountain Ecoregions. The following table shows the number of OSS sites per year by ecoregion that Northern Hog Suckers were counted. The following graph displays the percent site occurrence of Northern Hog Sucker from the OSS data.

Number of OSS Sites Per Year By Ecoregion

Ecoregion	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
UOM	3	1	0	2	2	1	2	1	1	0	0	0	1	2
LOM	5	0	3	4	8	2	5	5	4	6	3	2	6	4



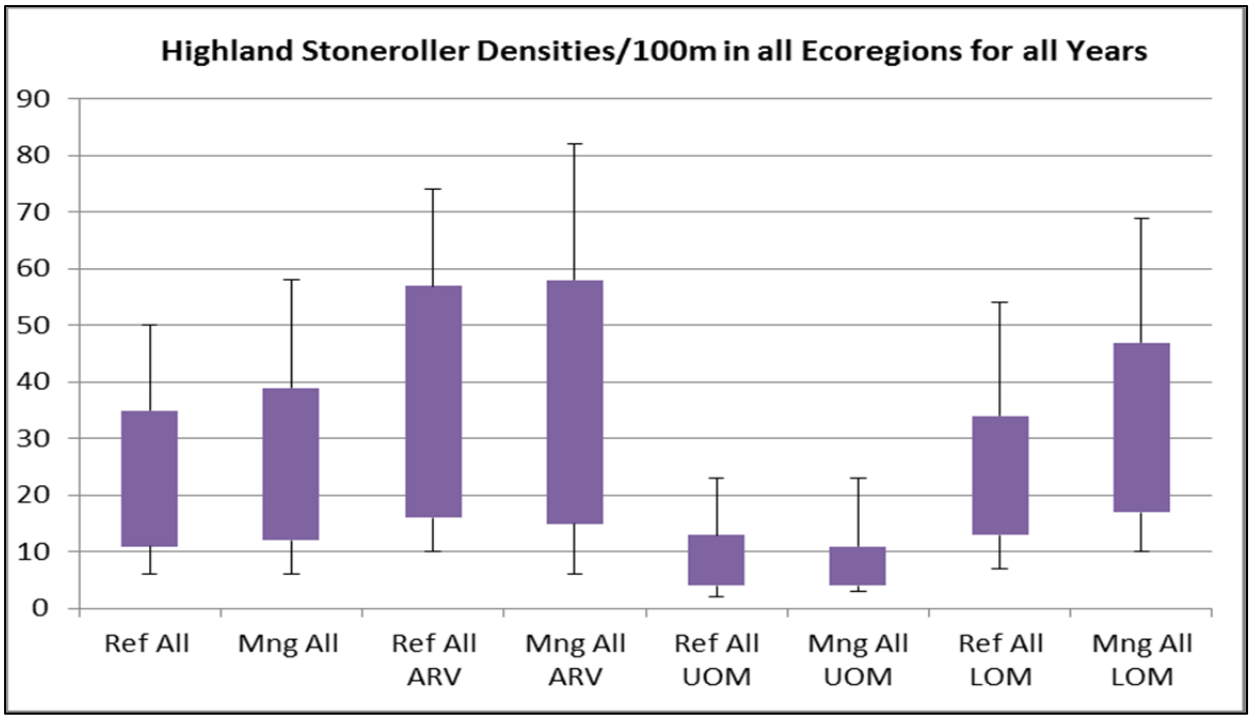
Population Trends: Northern Hog Suckers, as a somewhat solitary rather than schooling fish are often seen but not in great numbers. This fish species is not known to occur within the Ouachita National Forest's Arkansas River Valley ecoregion, and is not captured often during the rest of the BASS efforts. Northern Hog Sucker individuals were collected in 30% (73 of 245) of the OSS inventories conducted within the Upper and Lower Ouachita Mountain Ecoregions. This species is also very successful at avoiding the electrofishing sampler, so individuals are regularly observed that do not get counted. The OSS survey data indicate that the Northern Hot Sucker populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question.

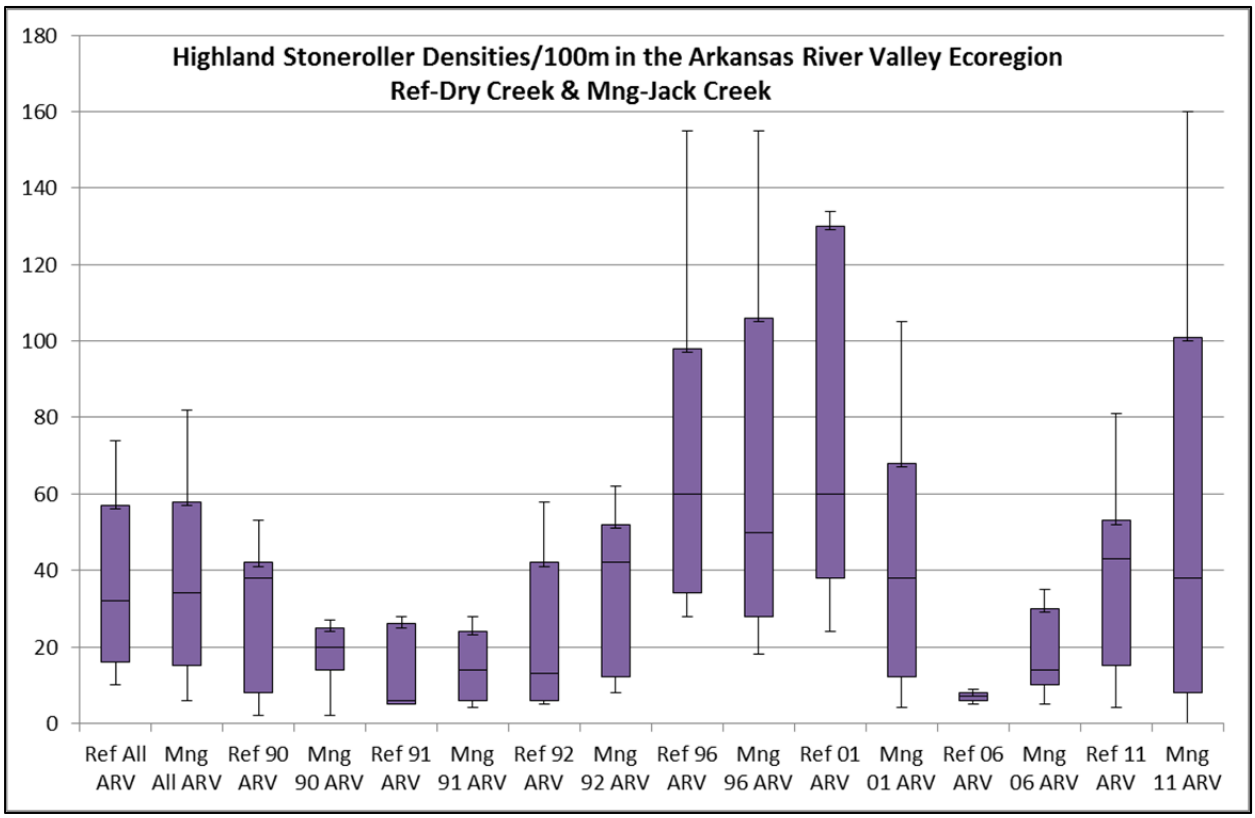
Highland (Central) stoneroller (*Campostoma spadiceum*)

Highland Stonerollers occur in streams throughout the Ouachita National Forest. It is primarily an herbivore, eating algae from the rocky substrate in pools and runs. There seems to be a wide range of natural variation in population trends throughout the Arkansas River Valley, and Upper and Lower Ouachita Mountain ecoregions.

Data Source: Highland Stoneroller individuals were collected during every BASS inventory and in all of the OSS inventories conducted within the Arkansas River Valley and the Upper and Lower Ouachita Mountain Ecoregions. The following table and four graphs display the percent site occurrence of Highland Stonerollers from the BASS data. The fourth graph shows the average number of individual Highland Stonerollers per OSS per year from 2001 through 2014.

Stream	1990	1991	1992	1996	2001	2006	2011
Jack Creek (Managed, ARV)	76.9	90.5	87.5	100	88.2	100	80
Dry Creek (Reference, ARV)	100	100	87.5	100	100	100	100
Bread Creek (Managed, UOM)	28.6	28.6	59.1	18.2	35.3	87.5	45.5
South Alum Creek (Reference, UOM)	40	8.3	40.9	33.3	21.7	28.6	44.4
Brushy Creek (Managed, LOM)	92.6	72.4	80	75	85.7	90	96
Caney Creek (Reference, LOM)	92.5	82	85.4	75	87.1	94.4	93.1


Highland Stoneroller Densities/100m in all Ecoregions for all Years
90
80
70
60
50
40
30
20
10
0
Ref All
Mng All
Ref All ARV
Mng All ARV
Ref All UOM
Mng All UOM
Ref All LOM
Mng All LOM


Highland Stoneroller Densities/100m in the Arkansas River Valley Ecoregion
Ref-Dry Creek & Mng-Jack Creek
180
160
140
120
100
80
60
40
20
0
Ref All ARV
Mng All ARV
Ref 90 ARV
Mng 90 ARV
Ref 91 ARV
Mng 91 ARV
Ref 92 ARV
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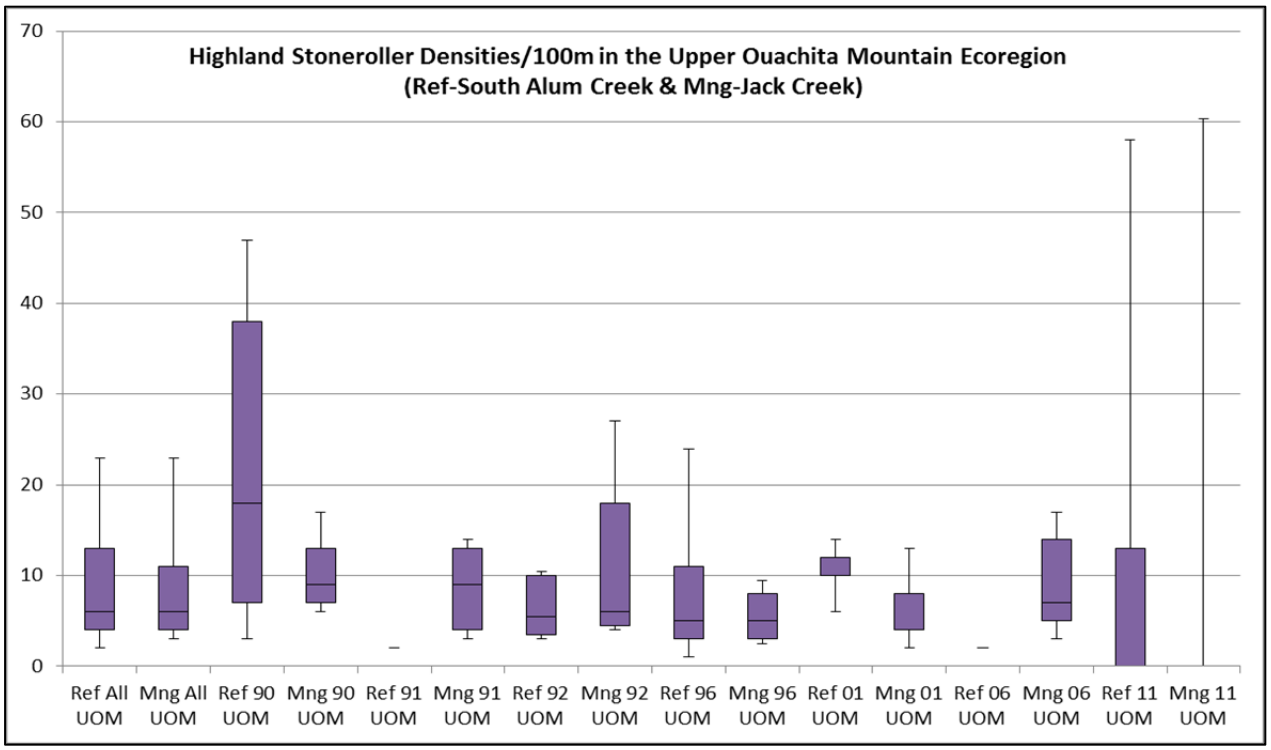
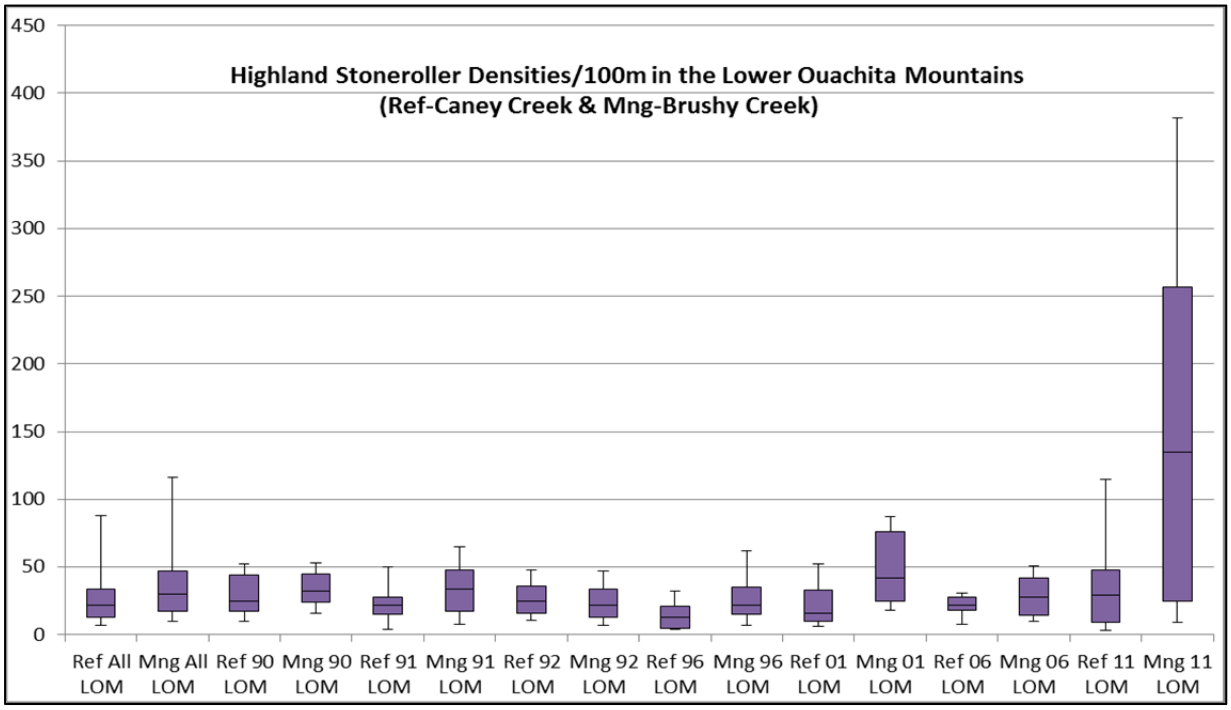


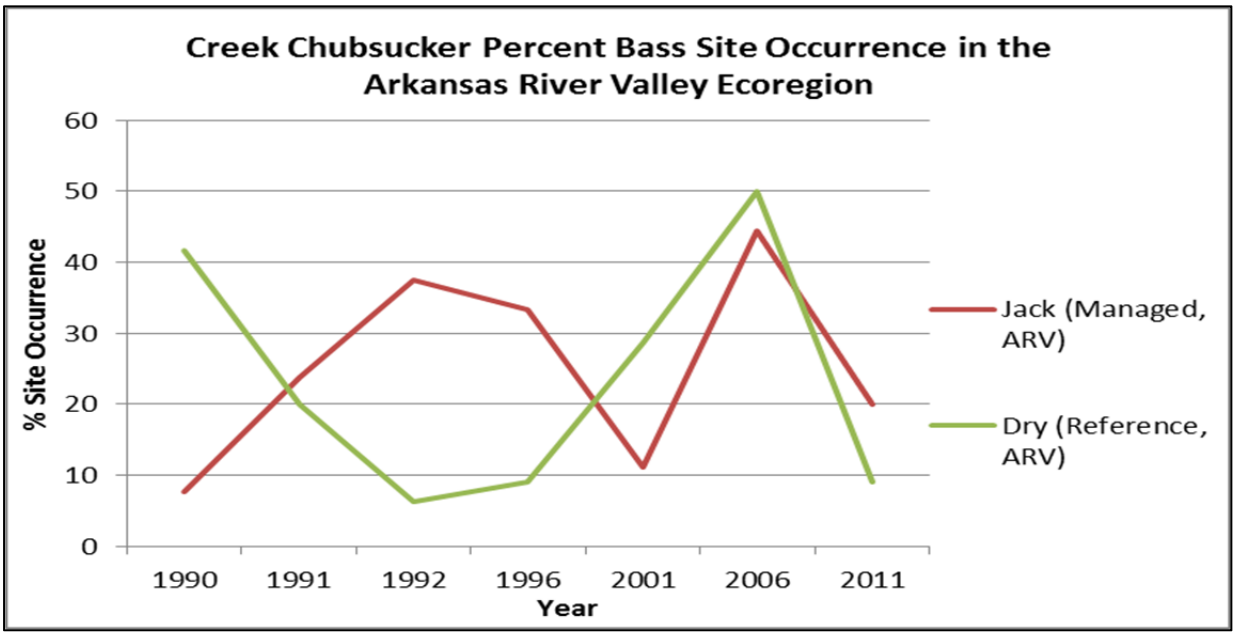


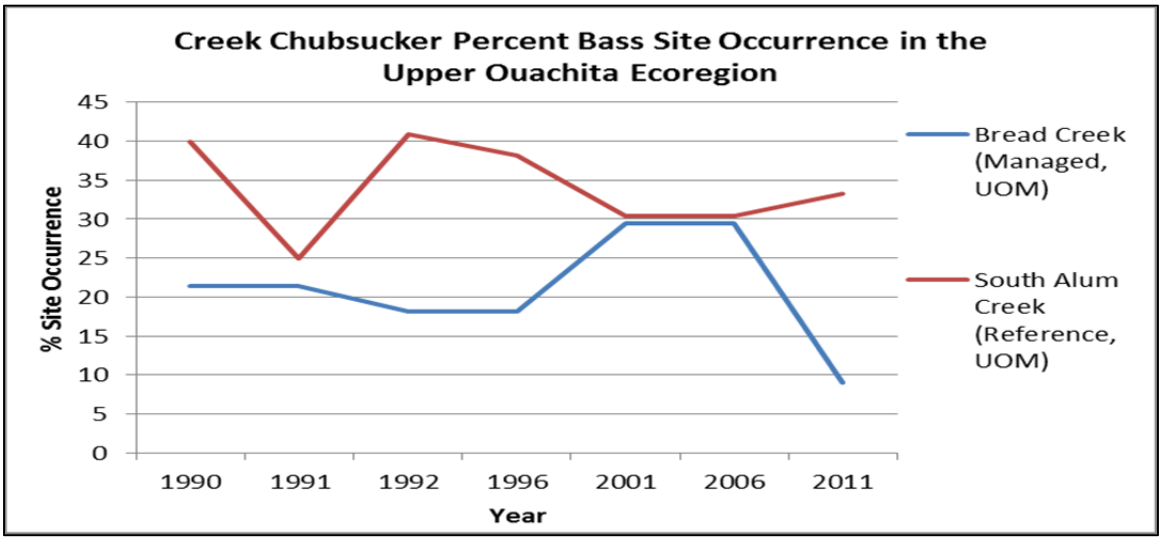
Population Trends: Highland Stonerollers are common across the forest with a broad range of variation in population trends. The BASS data indicate that the population trends were increasing particularly in 2011, but the OSS survey data didn't necessarily follow that same pattern. The OSS data however, indicates a slightly downward trend for the ARV and UOM Highland Stoneroller populations until 2014 when the levels were substantially higher. The OSS UOM populations however, indicated an increasing trend level. Monitoring will continue. The BASS as well as the OSS survey data indicate that the Highland Stoneroller populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question.

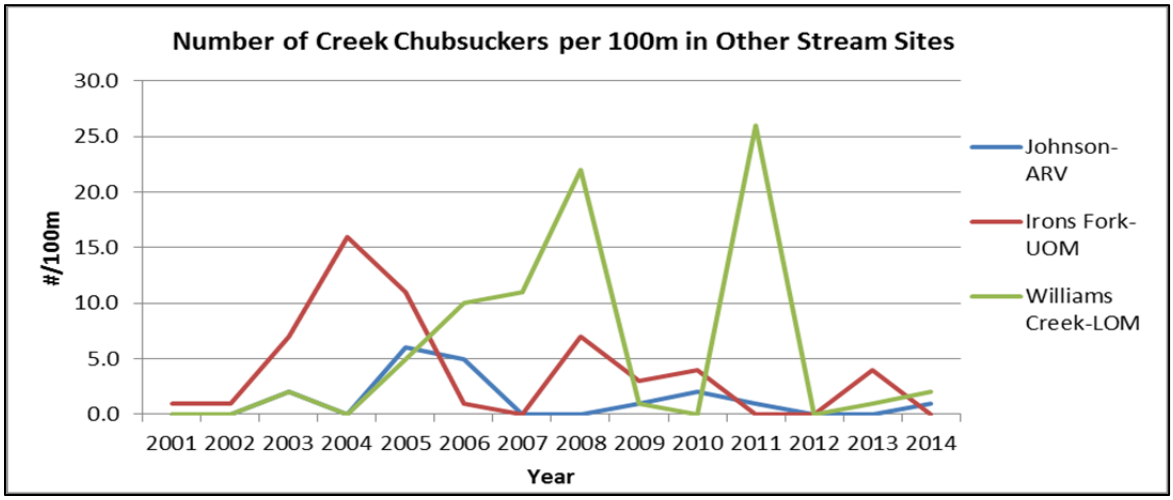
Creek Chubsucker (*Erimyzon oblongus*)
Creek Chubsuckers prefer small creeks and streams of moderate gradient, and it lives in quiet waters in vegetation over sand or gravel-bottomed and/or debris-laden substrates. It is somewhat intolerant of high flows and/or heavy silt loads, and is considered a Gulf Coastal Plain indicator species by ADEQ. The Creek Chubsucker occurs forestwide, but less often within the LOM.

Data Source: Creek Chubsucker individuals were seldom collected during the BASS inventory and only in 13% (33 of 245) of the OSS inventories conducted within the Arkansas River Valley and the Upper and Lower Ouachita Mountain Ecoregions. The following graph displays the average number of individual Creek Chubsuckers per OSS per year from 2001 through 2014, for Johnson Creek in the Arkansas River Valley ecoregion, Irons Fork Creek in the Upper Ouachita Mountain ecoregion, and Williams Creek in the Lower Ouachita Mountain ecoregion.

Stream	1990	1991	1992	1996	2001	2006	2011
Jack Creek (Managed, ARV)	7.7	23.8	37.5	33.3	11.1	44.4	20
Dry Creek (Reference, ARV)	41.7	20	6.3	9.1	28.6	50	9
Bread Creek (Managed, UOM)	21.4	21.4	18.2	18.2	29.4	29.4	9
South Alum Creek (Reference, UOM)	40	25	40.9	38.1	30.4	30.4	33.3







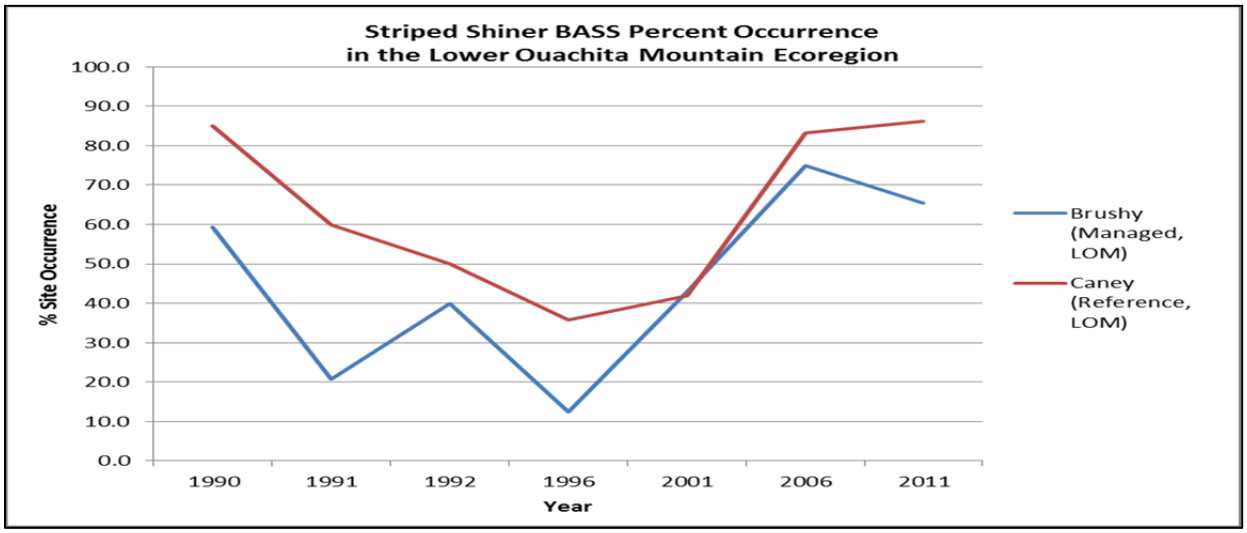
Population Trends: Creek Chubsuckers are regularly found during OSS as well as BASS efforts, but usually not in great numbers, and their numbers fluctuate widely. The BASS as well as the OSS survey data indicate that the Creek Chubsucker populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question.

Striped Shiner (*Luxilus chrysocephalus*)

The Striped Shiner is abundant in the Ouachita Mountains, where it seems to prefer small to moderate-sized perennial streams with permanent flow, clear water, and rocky substrate. The Striped Shiner is found in low to moderate currents but avoids strong current. The ADEQ considers it an indicator species for the Ouachita Mountains Ecoregion. Striped Shiners were collected in the BASS inventories and other Forest stream surveys, primarily in the Lower Ouachita Mountains ecoregion in large numbers.

Data Source: Striped Shiner individuals were collected during every BASS inventory but most numerously within the Lower Ouachita Mountain ecoregion in Brushy and Caney creeks, and in 55% (134 of 245) of the OSS inventories also most numerously in the Lower Ouachita Mountain Ecoregion. The following table and graph display the percent site occurrence of Striped Shiners from the BASS data.

Stream	1990	1991	1992	1996	2001	2006	2011
Brushy (Managed, LOM)	59.3	20.7	40.0	12.5	42.9	75.0	65.4
Caney (Reference, LOM)	85.0	60.0	50.0	35.7	41.9	83.3	86.2



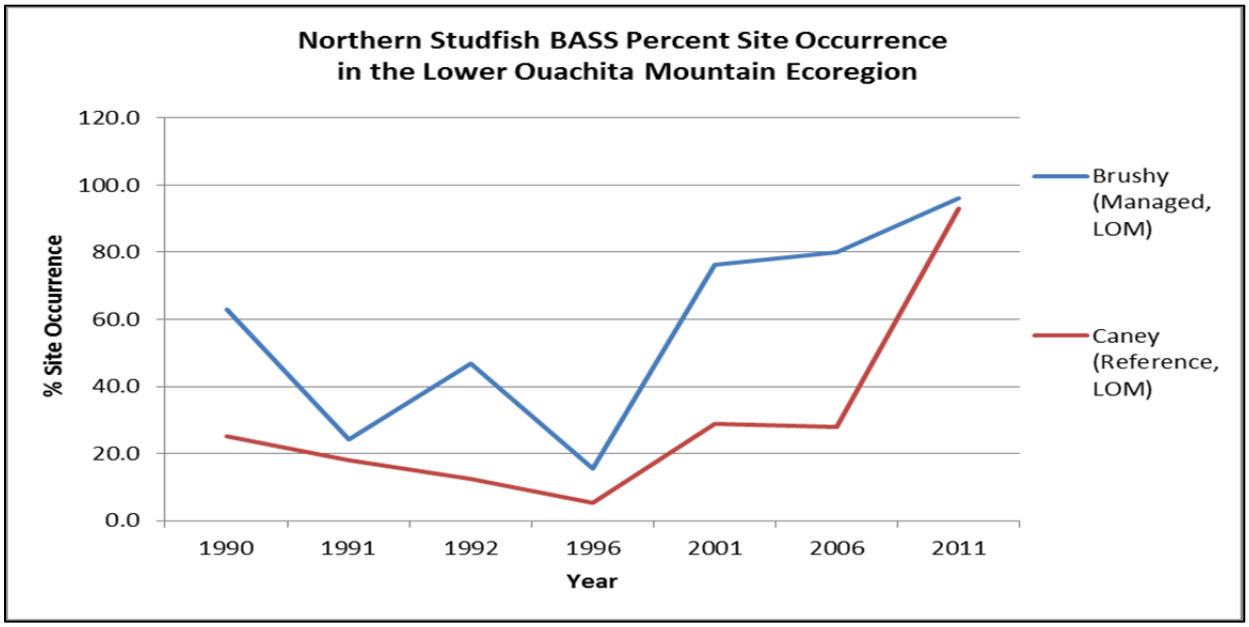
Population Trends: There appear to be wide fluctuations in populations of Striped Shiners on the Forest, with an upward trend in the BASS as well as the OSS numbers. Striped Shiners are common throughout the Lower Ouachita Mountain ecoregions. The conservation of this species in the Ouachita National Forest is not in question. Based on BASS and other Forest stream surveys, there appears to be no adverse effect on Striped Shiner populations from forest management activities. The BASS as well as the OSS survey data indicate that the Striped Shiner populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question.

Northern Studfish (*Fundulus catenatus*)

The Northern Studfish occurs only in the Arkansas portion of the Ouachita Mountains. It is considered an indicator species for the Ouachita Mountains Ecoregion by ADEQ, and is found only in clear streams of moderate to high gradient and permanent flow, usually in quiet, shallow waters along the margins of pools having rock and gravel substrate. Northern Studfish were collected in the BASS inventories and other Forest stream surveys, primarily in the Lower Ouachita Mountains ecoregion in large numbers.

Data Source: Northern Studfish individuals were collected during every BASS inventory but most numerously within the Lower Ouachita Mountain ecoregion in Brushy and Caney creeks, and in 33% (80 of 245) of the OSS inventories also most numerously in the Lower Ouachita Mountain ecoregion. The following table and graph display the percent site occurrence of Northern Studfish from the BASS data.

Stream	1990	1991	1992	1996	2001	2006	2011
Brushy (Managed, LOM)	63.0	24.1	46.7	15.6	76.2	80.0	96.0
Caney (Reference, LOM)	25.0	18.0	12.5	5.4	29.0	27.8	93.0



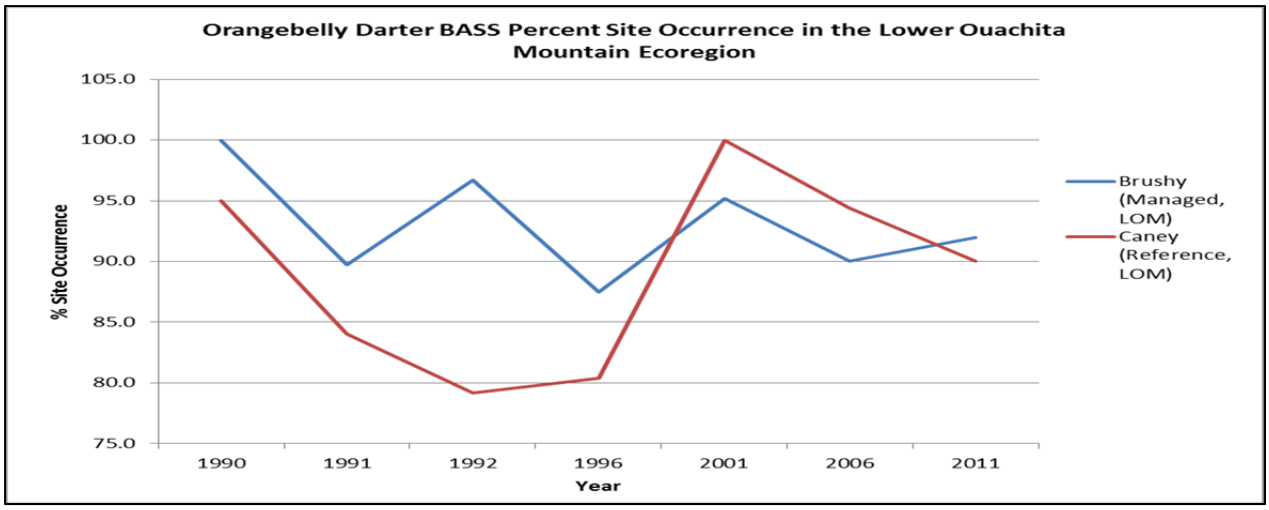
Population Trends: There appear to be wide fluctuations in populations of Northern Studfish on the Forest, with an apparent upward or increasing trend. Northern Studfish are common throughout the Lower Ouachita Mountain ecoregions. The conservation of this species in the Ouachita National Forest is not in question. Based on BASS and other Forest stream surveys, there appears to be no adverse effect on Northern Studfish populations from forest management activities. The BASS as well as the OSS survey data indicate that the Northern Studfish populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question.

Orangebelly Darter (*Etheostoma radiosum*)

The Orangebelly Darter is endemic to tributaries of the Red River in southeastern Oklahoma and southwestern Arkansas. It seems to have a broad ecological niche, since it occurs in a variety of habitats from small, gravelly, high-gradient streams to larger, more sluggish lowland rivers. Like most darters, however, it is sensitive to the effects of siltation and seems to be most common in gravel and cobble-bottomed streams with moderate to high gradient. It is able to acclimate somewhat to habitat alteration and apparently is able to repopulate areas that have been environmentally disturbed after the disturbance has been removed. The ADEQ considers the Orangebelly Darter to be a key species for the Ouachita Mountains Ecoregion, and it has been collected commonly in BASS and OSS surveys.

Data Source: Orangebelly Darter individuals were collected during every BASS inventory but most numerously within the Lower Ouachita Mountain ecoregion in Brushy and Caney creeks, and in 80% (196 of 245) of the OSS inventories also most numerously in the Lower Ouachita Mountain Ecoregion. The following table and graph display the percent site occurrence of Orangebelly Darters from the BASS data for Brushy and Caney creeks in the LOM.

Stream	1990	1991	1992	1996	2001	2006	2011
Brushy (Managed, LOM)	100.0	89.7	96.7	87.5	95.2	90.0	92.0
Caney (Reference, LOM)	95.0	84.0	79.2	80.4	100.0	94.4	90.0

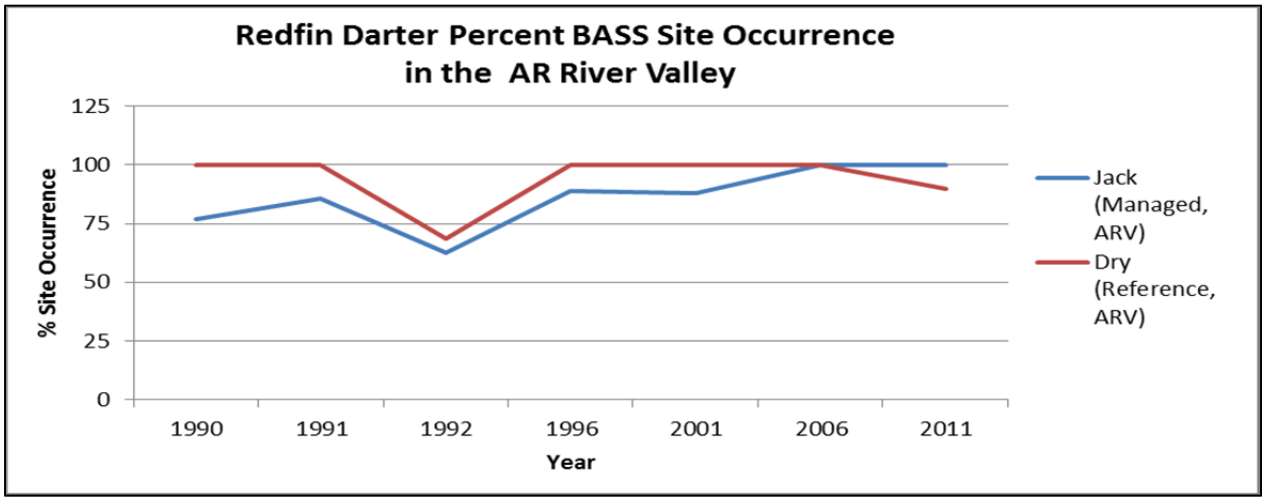


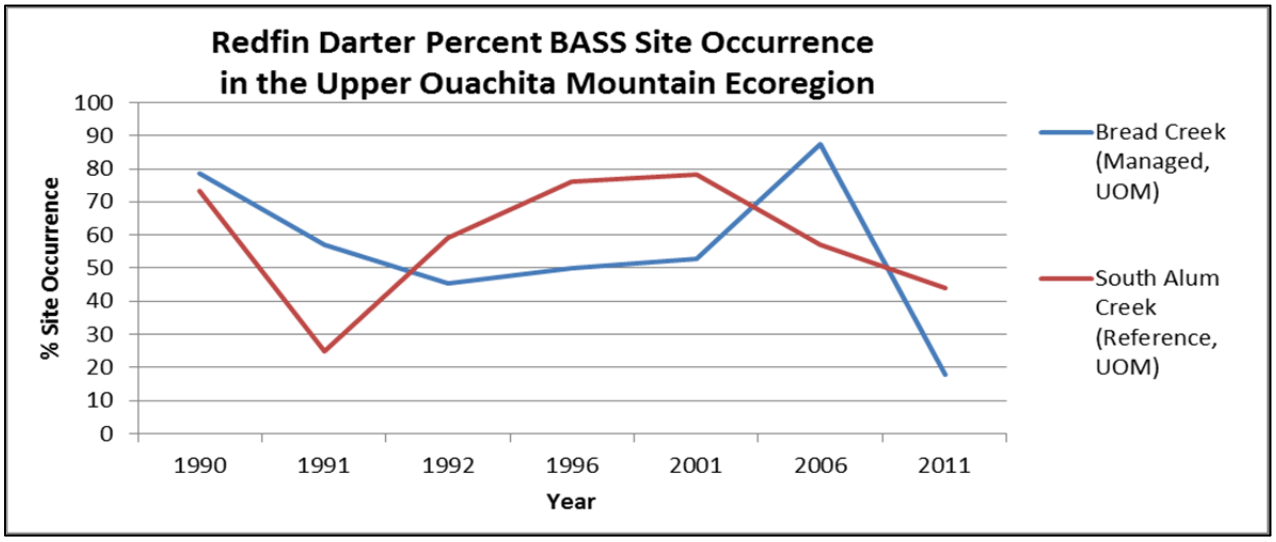
Population Trends: Orangebelly Darters are common and abundant on the Forest with wide fluctuations in populations and no apparent upward or downward trend. Orangebelly Darters are most common throughout the Lower Ouachita Mountain ecoregions. The conservation of this species in the Ouachita National Forest is not in question. Based on BASS and other Forest stream surveys, there appears to be no adverse effect on Orangebelly Darter populations from forest management activities. The BASS as well as the OSS survey data indicate that the Orangebelly Darter populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question.

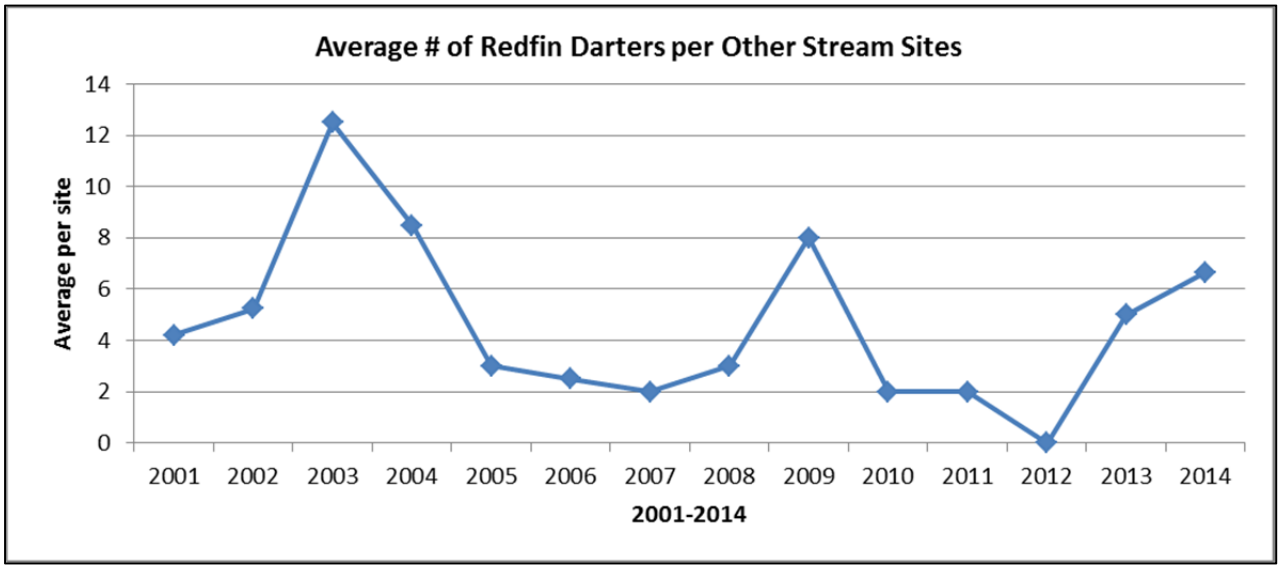
Redfin Darter (*Etheostoma whipplei*):
The Redfin Darter occupies a niche similar to the Orangebelly Darter, but generally occurs in other areas of the Forest, such as the Upper Ouachita Mountains and the Saline River drainage. This species represents the niche of "riffle benthic specialist feeder."

Data Source: Redfin Darter individuals were collected during the BASS inventory within the Arkansas River Valley and the Upper Ouachita Mountain ecoregion in Brushy and Caney creeks. It is not known to occur within the Lower Ouachita Mountain Ecoregion. Redfin Darters were found to occur in the OSS surveys only in the UOM and the ARV ecoregions in 13% (33 of 245) of the OSS inventories. The following table and two graphs display the percent site occurrence of the Redfin Darter from the BASS data. The third graph shows the average number of Redfin Darters per OSS.

Stream	1990	1991	1992	1996	2001	2006	2011
Jack Creek (Managed, ARV)	76.9	85.7	62.5	88.9	88.2	100	100
Dry Creek (Reference, ARV)	100	100	68.8	100	100	100	90
Bread Creek (Managed, UOM)	78.6	57.1	45.5	50	52.9	87.5	18
South Alum Creek (Reference, UOM)	73.3	25	59.1	76.2	78.3	57.1	44







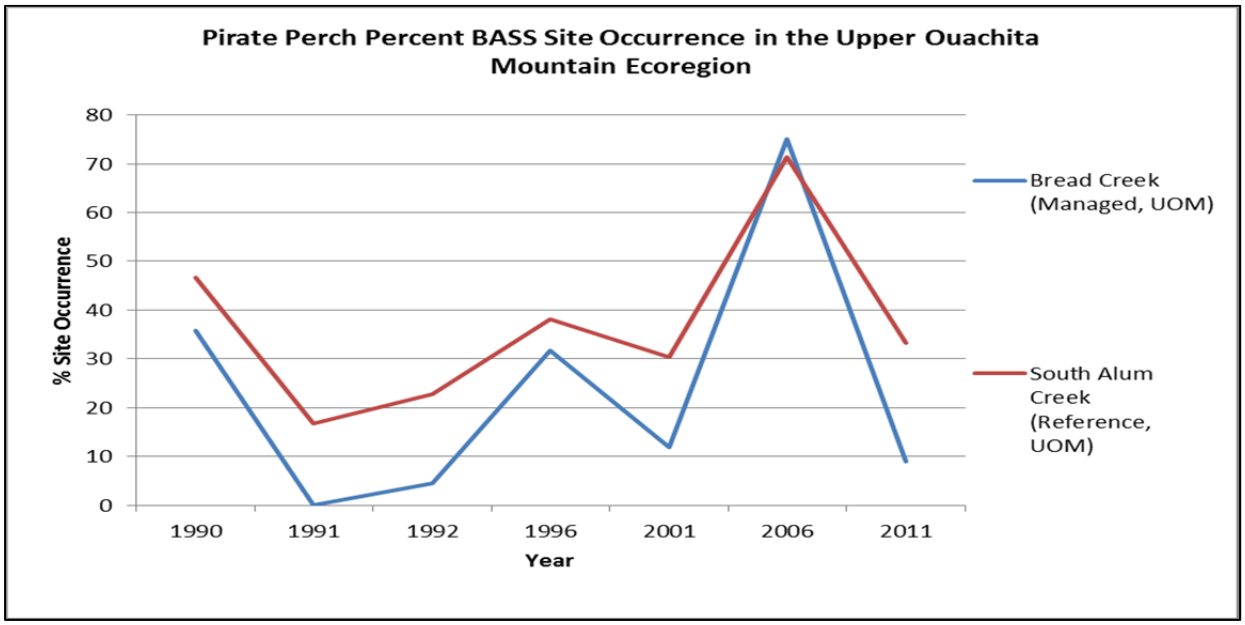
Population Trends: There appears to be some slight fluctuation in population trends of Redfin Darters on the Forest, with no extreme upward or downward trends. Redfin Darters are fairly common but not abundant throughout the ARV and UOM ecoregions, and are not known to occur in the LOM. The conservation of this species in the Ouachita National Forest is not in question. Based on BASS and other Forest stream surveys, there appears to be no adverse

effect on Redfin Darter populations from forest management activities. The BASS as well as the OSS survey data indicate that the Redfin Darter populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question.

Pirate Perch (*Aphredoderus sayanus*)
Pirate Perch is a solitary species inhabiting quiet ponds, oxbow lakes, swamps, ditches, and sluggish mud and sand-bottomed small rivers and streams. It is locally abundant over soft mud and silt bottoms with thick vegetation and is found in both clear and turbid waters. The Pirate Perch is considered an indicator species by the ADEQ for the Gulf Coastal region.

Data Source: Pirate Perch individuals were collected during the BASS inventory within the Upper Ouachita Mountain ecoregion in Bread and South Alum creeks. It is not known to occur in substantial numbers within the ARV or the LOM ecoregions. Pirate Perch were found to occur in the OSS surveys only in the UOM and the ARV ecoregions in 14% (35 of 245) of the OSS inventories. The following table and graph display the percent site occurrence of Pirate Perch from the BASS data.

Stream	1990	1991	1992	1996	2001	2006	2011
Bread Creek (Managed, UOM)	35.7	0	4.5	31.8	11.8	75	9
South Alum Creek (Reference, UOM)	46.7	16.7	22.7	38.1	30.4	71.4	33.3



Population Trends: The conservation of this species is more closely linked to the Gulf Coastal Ecoregion of where there is little influence from National Forest Lands. Pirate Perch are not commonly collected anywhere on the Forest. There appear to be wide fluctuations from the BASS inventories in populations of Pirate Perch within the UOM ecoregion. The conservation of this species in the Ouachita National Forest is not in question. Based on BASS and OSS surveys, there appears to be no adverse effects on Pirate Perch populations from forest management activities. The BASS as well as the OSS survey data indicate that the Pirate Perch populations within the Ouachita NF are at suitable and sustainable levels, and their viability is not in question.

Johnny and Channel Darters (Etheostoma nigrum and Percina copelandi)
For additional information, contact Richard Standage at rstandage@fs.fed.us

The Johnny and Channel Darter data are taken from snorkel counts conducted at permanent monitoring sites for the threatened Leopard Darter. Each Darter encountered during snorkeling is identified to species, counted and recorded. Snorkeling of each transect is conducted by an experienced 5-member crew and time is recorded for each snorkeler at each site.

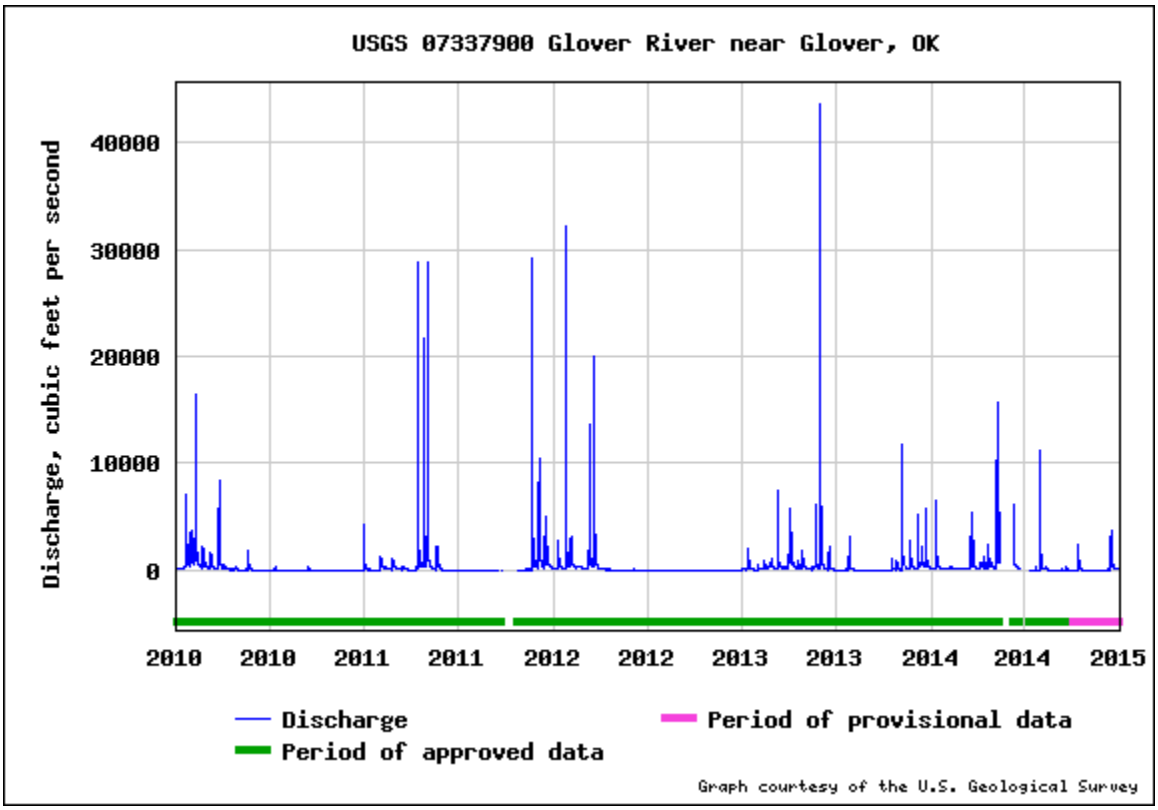
Johnny Darter
Source: USFS

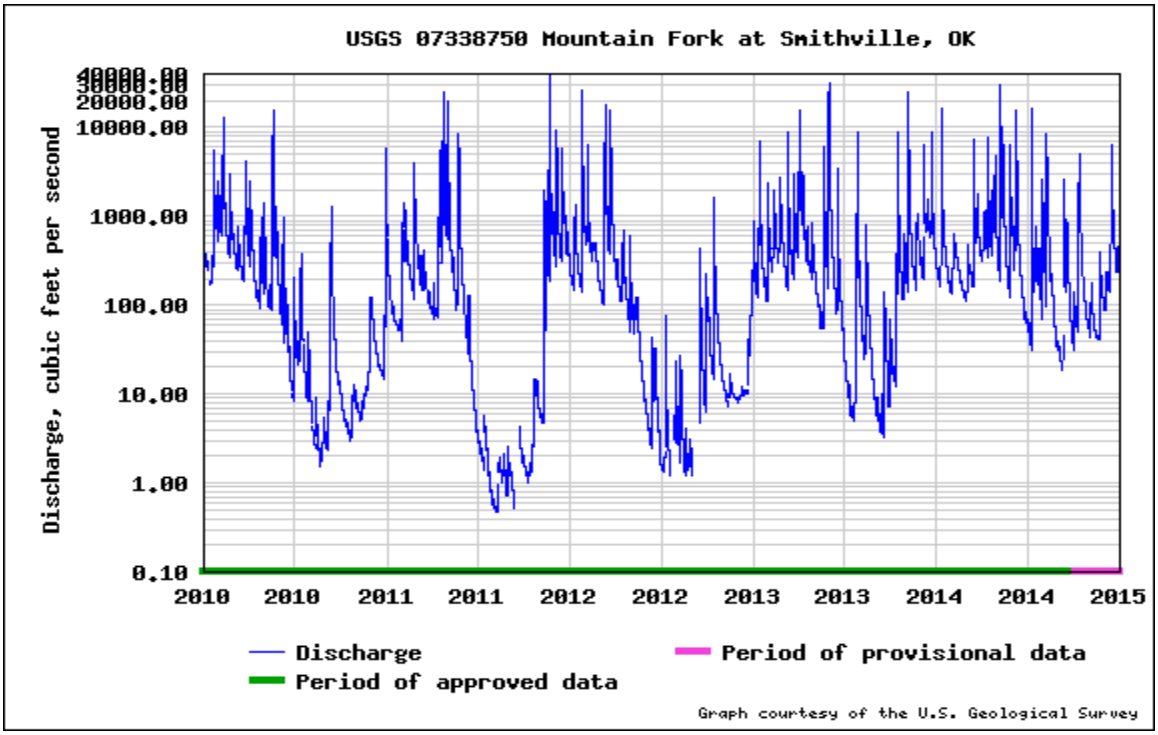
Johnny Darters: Johnny Darters are more typically found over fine gravel and sand substrates whereas Channel Darters prefer coarser cobble and boulder substrates (R. Standage, personal observations). Shifts in species distribution have been compared to shifts in substrate observations in an effort to establish a relationship; however, after examining the variability in the numbers of the two species and substrate observations at the individual sites over many years, there is no discernable correlation between species numbers and habitat types. It is obvious that there are more influences than just substrate differences occurring at the site, drainage and regional/climatic levels. Fewer and smaller flushing storm events than normal occurred during winter 2004/2005, followed by an extremely dry summer with lots of silt and detritus buildups observed and noted in the survey records. The winter of 2005/2006 was wet with numerous spates that cleaned substrates, but it was followed by a dry summer that set numerous low flow records. The winter 2006/2007 was also wet and led into a wet spring/early summer that showed good darter recruitment. The 2005 Johnny and Channel darter pooled counts/minute data showed a large increase in Johnny Darter counts. This may be the result of low winter flows leaving more suitable spawning substrate that resulted in more reproduction, less flushing of post-hatch Johnny Darters from suitable rearing habitat, and/or better summer foraging habitat. Over the same time period, channel darters show a slight increase across the sampled drainages from 2005 to 2006, which could possibly be in response to the 2005/2006 winter's flushing flows coarsening the substrate.

Both species show recovery in 2007, particularly Channel Darters, possibly as a result of continuing improvement in spawning conditions due to flushing flows. In 2008, there were a number of flushing flows (February - early April) that may have actually flushed eggs and larval darters out of their ideal hatching and rearing habitat and caused lower population levels during the summer of 2008. In the winter of 2008/2009 there were even more significant storms that lasted well into spring of 2009 accompanied by a high likelihood of flushing eggs and larvae out of ideal habitats. Streamflow conditions the winter of 2009/2010 and through the spring were more conducive to better recruitment for these darters with an upward trend for Johnny Darters and less of a drop in Channel Darter counts from prior years.

While the winter of 2011 was fairly mild without much flooding, high rains and flooding occurred in April and May followed by the sixth worst drought since 1921. 2014 was a very wet year, particularly for the Mountain Fork River drainage (there were three weeks in July where it was not possible to conduct surveys due to high water/flooding). Three of the Upper Little River sites could not be conducted due to poor visibilities from rain; however, the Upper Glover River was somewhat low, making for high visibilities and easier counting of the Darters that were present.

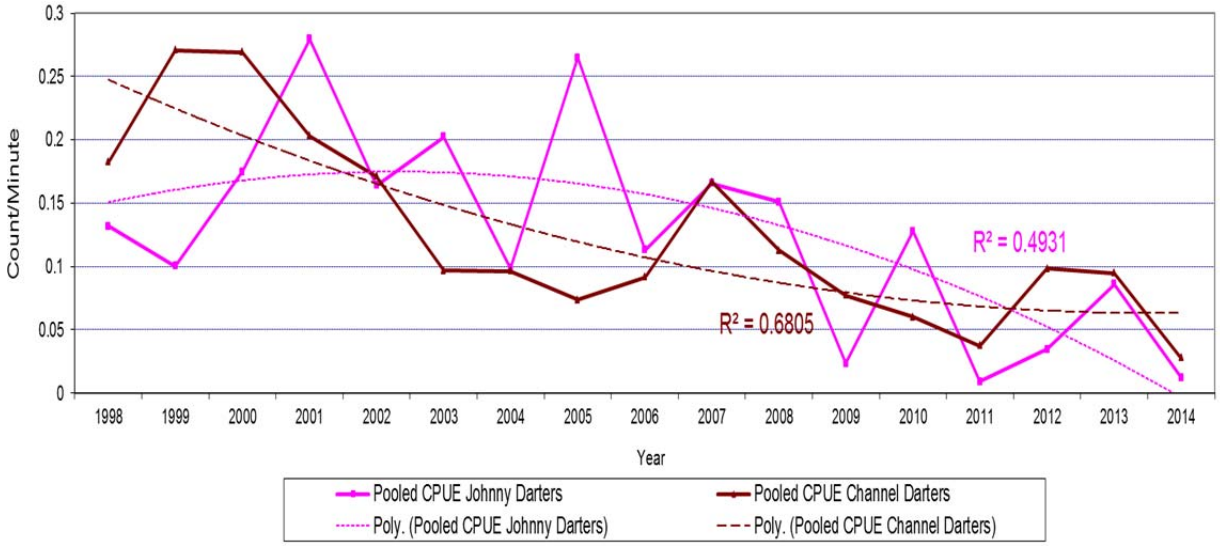
Stream Flow Records for the Glover and Mountain Fork Rivers at or near Permanent Sites by Year





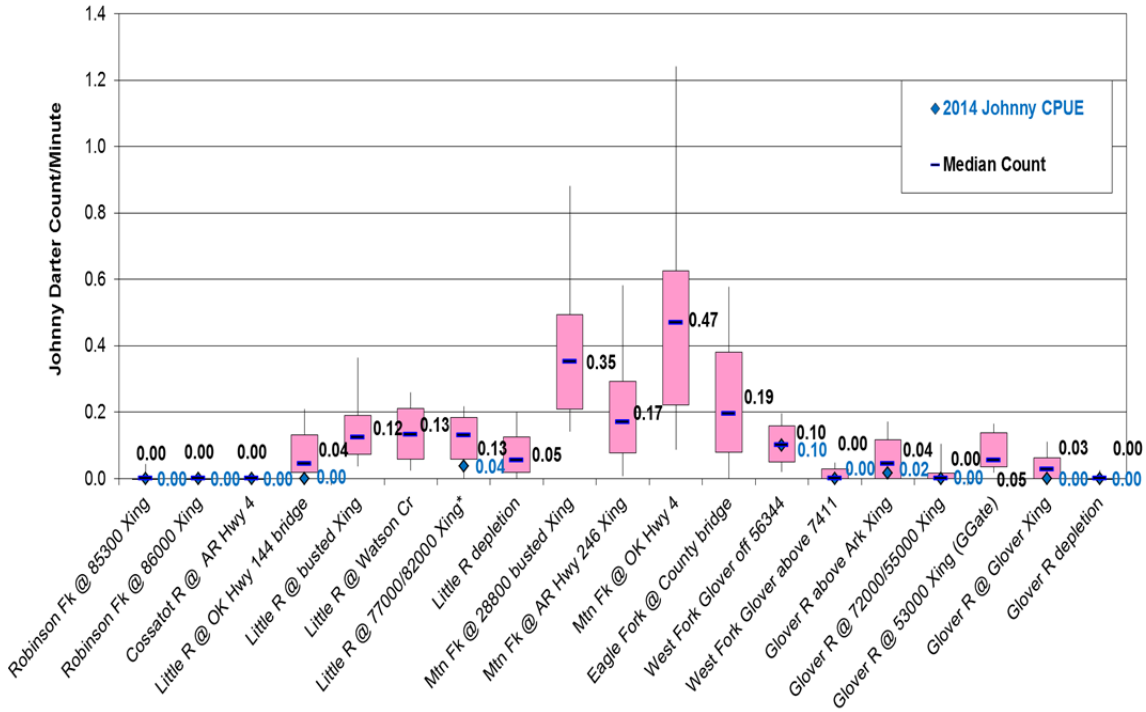
Overall trend lines for Johnny and Channel darters show a downward trend but only the trend line for the Channel Darter is statistically significant and that significance is very low.

Johnny and Channel Darter Annual Pooled Counts per Minute, ONF



Johnny Darter counts were generally quite low in 2012, with some improvement in 2013 and then a large drop in 2014. A good portion of the 2014 drop is from not being able to conduct surveys at a number of the Mountain Fork River sites with traditionally higher Johnny Darter numbers that averaged in resulting in higher annual pooled counts. Both 2012 and 2013 surveys were done during extremely dry conditions, and 2014 was dry in some places while flooded in others. The last 3 years each had numerous high water events during the winter through the spring. As mentioned above and as shown in the following graph, traditionally the Mountain Fork sites have the higher Johnny Darter counts, and those surveys could not be accomplished in 2014 due to high flows. Because of the variability between years and sites, several good water years without flushing flows should result in higher numbers of Johnny Darters.

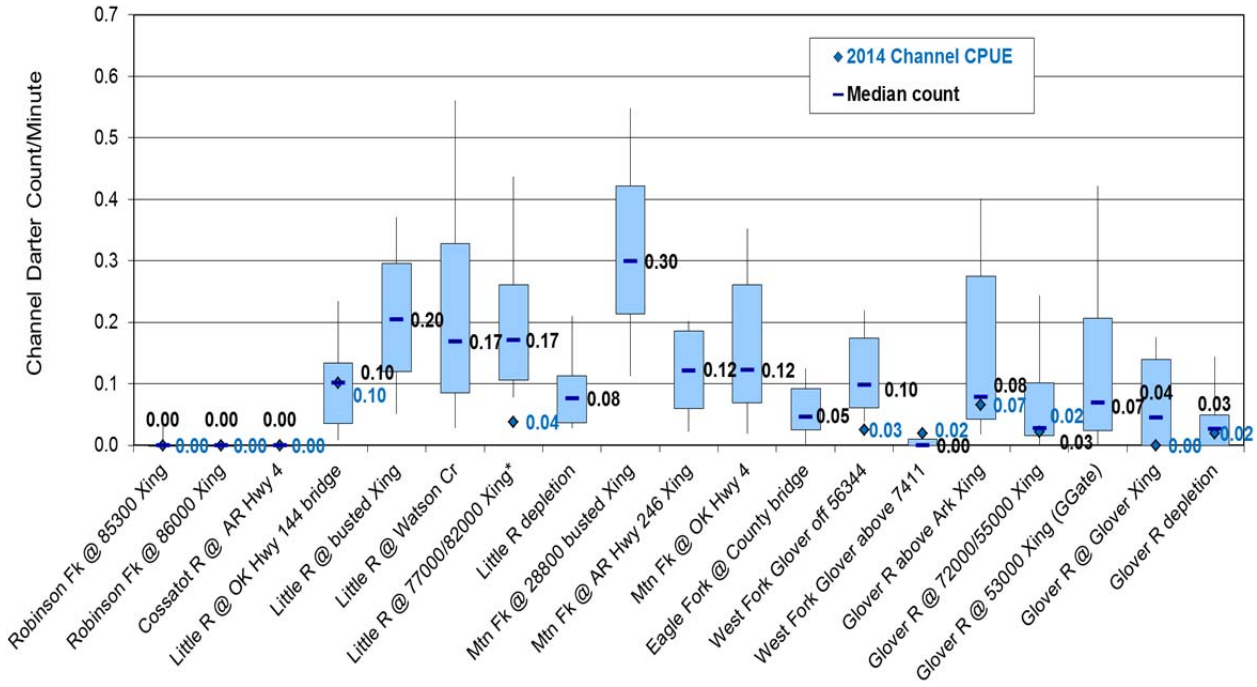
Johnny Darter Counts per Minute by Site, ONF



Channel Darters: In 2014, Channel Darter counts plummeted like Johnny Darters because of flooded and muddy sites where it was not possible to see anything underwater. While the trend line for Channel Darter annual pooled counts shows a small upturn, this is due to the results of 2012 and 2013, which were up from prior years. Numbers for most individual sites that could be surveyed in 2014 were near or below their median counts with the exception of 2 Glover River sites that were .01 above their median count and a West Fork Glover site with a .02 higher count than its median.

Channel Darter
Source: USFS

Channel Darter Counts per Minute by Site, ONF



While the trends for both Johnny and Channel Darters appear bleak, those trends are likely due to the frequent and high intensity flooding of 2008/2009, slightly moderated by a good water year in 2010. High flows were experienced in April and May of 2011-2014 during juvenile growth periods, followed by droughts with low water conditions or, conversely, the flooding in late 2014. While the populations of both species would be expected to rebound with more favorable conditions, Channel Darters did not respond as well as the Johnny Darters after the 2010 rains. Based on historic trends, the population numbers appear to fluctuate frequently, with periods of expansion and contraction. Channel Darter pooled counts were low in 2005 and then, rebounded for two years. The Johnny Darter pooled count for 2009 is the second lowest in 17 years of sampling; however, counts rebounded 2010, followed by a drop in 2011 and “rebounds” in 2012 and 2013 (though counts these two years may be a reflection of low water with higher than normal water clarity). As with the Leopard Darter, fluctuating populations seem to be the norm for these two species. Poor sampling conditions and the loss of several of the more productive (higher counts) sites exacerbated the situation for 2014.

Summary of Stream and River Management Indicator Species Monitoring

Stream and River Management Indicator Species					
Common Name	Scientific Name	Expected Population Trends	Apparent Population Trends	Risk for Conservation of Species	Management Changes Needed
Arkansas River Valley Streams					
Creek Chubsucker	(*Erimyzon oblongus*)	Stable	Stable	Sustainable – Viability not in Question	None
Highland Stoneroller	(*Campostoma spadiceum*)	Stable	Increasing	Sustainable – Viability not in Question	None
Green Sunfish	*(Lepomis cyanellus)*	Stable	Increasing	Sustainable – Viability not in Question	None
Longear Sunfish	(*Lepomis megalotis*)	Stable	Stable	Sustainable – Viability not in Question	None
Orangebelly Darter	(*Etheostoma radiosum*)	Stable	Potentially Decreasing	Sustainable – Viability not in Question	None
Northern Studfish	(*Fundulus catenatus*)	Stable		Sustainable – Viability not in Question	None
Northern Hog Sucker	(*Hypentelium nigricans*)	Stable	Stable	Sustainable – Viability not in Question	None
Pirate Perch	*(Aphredoderus sayanus)*	Stable	Stable	Sustainable – Viability not in Question	None
Redfin Darter	*(Etheostoma whipplei)*	Stable	Stable	Sustainable – Viability not in Question	None
Smallmouth Bass	*(Micropterus dolomieu)*	Stable	Stable	Sustainable – Viability not in Question	None
Striped Shiner	*(Luxilus chrysocephalus)*	Stable	Stable	Sustainable – Viability not in Question	None
Yellow Bullhead	(*Ictalurus natalis*)	Stable	Declining	Sustainable – Viability not in Question	None
Johnny Darter	*(Etheostoma nigrum)*	Normally fluctuating	Relatively Stable	Sustainable – Viability not in Question	None
Channel Darter	*(Percina copelandi)*	Normally fluctuating	Potentially Decreasing	Sustainable – Viability not in Question	Unknown

R8 Sensitive and Other Aquatic Species of Viability Concern

For additional information, contact Mary Lane at melane@fs.fed.us

There are 67 species on the R8 Regional Forester's Sensitive Species List, including 22 freshwater mussel species, seven crayfish species and eleven fish species. Of those, only the Quachita Darter is an aquatic species that is monitored on an annual basis.

Ouachita Darter *(Percina sp. nov.)*

For additional information, contact Richard Standage at rstandage@fs.fed.us

Ouachita Darter
Source: USFS

The Ouachita Darter has been formally described (A New Species of Darter from the Ouachita Highlands In Arkansas Related to *Percina nasuta* (Percidae: Etheostomatinae)) by Robison *et al.*, 2014. Ouachita Darter snorkel surveys were initiated in 2004 as an

annual survey from Shirley Creek Recreation Area downstream to the Arkansas 379 Highway Bridge at Oden. During subsequent monitoring, sites originally surveyed during an Arkansas Tech University study have been utilized with modifications, such as adding or deleting sites based on flow conditions or occupancy by anglers. The Ouachita Darter surveys are conducted in late summer/early fall. A personal services contract was awarded to Arkansas Tech University in 2009 to look for the Stargazing Darter (*Percina uranidea)* in the Ouachita River, with one found. It and 19 Ouachita Darters were captured by trawling further downstream in the transition zone of the river and Lake Ouachita backwaters. This work was expanded into a Challenge Cost Share project undertaken by a graduate student from Arkansas Tech and his major professor. Work continued on the Stargazing Darter and the Ouachita Darter for the next two field seasons, with the final report received in 2014. Results indicated that, while there are Ouachita Darters in the stretch of the river that the Ouachita NF is monitoring, larger populations are found further downstream, particularly at and right above the backwaters of Lake Ouachita.

A Forest Service snorkel survey for Ouachita Darters was not conducted in 2014 due to the short turnaround time for required training and reporting in the Watershed Interactive Tool (WIT) data base of record. Based on the Arkansas Tech surveys and Forest Service previous surveys, the Ouachita Darter population in this section of the river appears viable but may be declining. Continued monitoring will better assess its numbers and their variability in this section of the river and the monitoring efforts will be fine-tuned utilizing the latest results from the Arkansas Tech University study, particularly as it relates to sample locations.

Aquatic Dependent Proposed, Endangered, Threatened, and Sensitive Species and Habitat

Federally listed as threatened or endangered are seven freshwater mussel species, one fish species, and one aquatic-dependent plant species. Of the nine federally listed aquatic species, Harperella carries the distinction of being the only endangered plant species.

Federally Endangered or Threatened Aquatic Species, ONF

Common Name	Scientific Name	Viability Concern Classification
Mussels		
Pink Mucket*	*Lampsilis abrupta*	Federally Endangered
Winged Mapleleaf*	*Quadrula fragosa*	Federally Endangered
Scaleshell	*Leptodea leptodon*	Federally Endangered
Ouachita Rock-pocketbook*	*Arkansia wheeleri*	Federally Endangered
Spectaclecase	*Cumberlandia monodonta*	Federally Endangered
Arkansas Fatmucket	*Lampsilis powellii*	Federally Threatened
Rabbitsfoot	*Quadrula cylindrica cylindrica*	Federally Threatened
Leopard Darter	*Percina pantherina*	Federally Threatened
Harperella	*Ptilimnium nodosum*	Federally Endangered

*Not known to occur within the Ouachita NF

Listed Freshwater Mussels

There were no specific freshwater mussel surveys conducted on the Ouachita NF during the past three years including 2014; however, the U.S. Fish and Wildlife Service (USFWS) and AGFC malacologist along with the Forest Stream Ecologist will be conducting status surveys for all mussel species during 2015. Researchers are currently investigating the limits and phytogeography of *Lampsilinae* in Arkansas, with emphasis on species of *Lampsilis* (fatmucket). Mussel surveys will continue to be conducted.

Pink Mucket (*Lampsilis abrupta*) and Winged Mapleleaf (*Quadrula fragosa*)

For additional information, contact Mary Lane at melane@fs.fed.us

Many of the streams and rivers within the Ouachita NF have been surveyed for freshwater mussel species diversity as well as relative abundance. The federally endangered pink mucket mussel and the winged mapleleaf freshwater mussel have not been found to occur in any of the surveyed waters. There are no records that show that the pink mucket and winged mapleleaf mussels have ever occurred within the Forest's waters; however, the winged mapleleaf is found just upstream of the Ouachita NF in the Little River. These species will remain on the viability concern list, and survey efforts will continue. Any occurrences will be reported to the USFWS. Otherwise, protection of aquatic habitat will follow the streamside management area direction in the Forest Plan.

Scaleshell Mussel (*Leptodea leptodon*)

For additional information, contact Mary Lane at melane@fs.fed.us

The South Fourche La Fave River is dominated by a few widely distributed and abundant species. The only scaleshell mussel record from this river is a single, live specimen found in 1991, and a second survey of the site in 2001 did not located specimens of this species. The potential of additional mussel populations is very low due to the limited availability of suitable substrate. Similarly, other major tributaries of the South Fourche La Fave River provide little opportunity for mussel occurrence; therefore, persistence of scaleshell mussel in this river is in doubt.

Although not found within the Forest boundary in Oklahoma, populations of the freshwater scaleshell mussel are known to occur along with populations of the Ouachita Rock Pocketbook in the Kiamichi River in Oklahoma and Little River systems in Oklahoma and Arkansas. The potential for occurrence in Arkansas as well as Oklahoma, along with the federally endangered status, makes this a species of viability concern for the Ouachita NF.

Ouachita Rock-pocketbook (*Arkansia wheeleri*)

For additional information, contact Mary Lane at melane@fs.fed.us

Populations of this freshwater mussel are known to occur in the Kiamichi River in Oklahoma and the Little River systems in Oklahoma and Arkansas.

Although it is not found within the Forest boundary, the Ouachita rock-pocketbook is known to occur downstream of and within close proximity to the Forest. The potential for occurrence along with the federally endangered status of this species makes this a species of viability concern for the Forest. Protocols for this species will be the same as the mussels that are known to occur within the Forest's waters.

Ouachita Rock-pocketbook
Source: USFWS

Spectaclecase (*Cumberlandia monodonta*)

For additional information, contact Mary Lane at melane@fs.fed.us

ecase is a freshwater mussel that was added to the hreatened and endangered species in 2012, giving ll protection under the Endangered Species Act. The protection against practices that kill or harm the equires planning for recovery and conservation fying, protecting and restoring aquatic habitat are ne Forest Service's management program. A single was found near Dragover Access on the Ouachita After multiple searches since then, the is considered by the mussel experts in AR to be n the Ouachita River above Lake Ouachita.

A young and a mature spectaclecase
Source: USFWS; Nick Rowse

Population losses likely due to dams have contributed to the decline and potential extinction of the Spectaclecase. Dams affect both upstream and downstream populations by disrupting seasonal flow patterns, scouring river bottoms, changing water temperatures and eliminating river habitat. Large rivers throughout nearly all of the Spectaclecase mussel's range have been dammed, leaving short, isolated patches of habitat between dams. Spectaclecase mussels likely depend on host fish species, or other aquatic species, to move upstream. Because dams block fish passage, mussels are also prevented from moving upstream.

Arkansas Fatmucket *(Lampsilis powellii)*

For additional information, contact Mary Lane at melane@fs.fed.us

The federally threatened Arkansas fatmucket mussel, listed in 1990, lives only in Arkansas and is endemic to the Saline, Caddo, and Upper Ouachita rivers. Historically, this species was found to be relatively common in preferred habitat; however, the frequency of detection and the population sizes have been consistently decreasing.

Arkansas Fatmucket
Source: USFS

In a 2007, a five-year status review by the USFWS (USDI Fish & Wildlife Service 2007), findings indicated that the Arkansas fatmucket mussel had suffered significant population declines, with severely reduced distribution since its listing.

Catastrophic population declines have resulted in the extirpation of Arkansas fatmucket from the South Fork Saline River and from several stream reaches of the Caddo River, Ouachita River, South Fork Ouachita River, Middle Fork Saline River, and North Fork Saline River. The increasingly small and isolated populations are becoming even more susceptible to stochastic events and ongoing and/or increasing anthropogenic impacts (USFWS 2007). The Arkansas fatmucket continues to be of great concern to the Ouachita NF, and protective measures are coordinated through the USFWS whenever Forest activities may impact this species or its habitat.

Rabbitsfoot *(Quadrula cylindrica cylindrica)*

For additional information, contact Mary Lane at melane@fs.fed.us

Rabbitsfoot
Source: USFWS

The rabbitsfoot, a freshwater mussel, was federally listed as a threatened species in 2013. It is found in rivers and streams on the Ouachita NF. Estimates are that it has been lost throughout about 64 percent of its historical range. While 51 of 140 historical populations are still present, only 11 populations are viable; 23 populations are at risk of extirpation, and 17 populations do not seem to be reproducing at a level that can sustain the populations. Most of the existing rabbitsfoot populations are marginal to small and isolated. Significant habitat loss, range restriction, and population fragmentation and size reduction have rendered the rabbitsfoot vulnerable to extinction. Threats include exotic species; sedimentation; small population sizes; isolation of populations; livestock grazing; wastewater effluents; mine runoff; unstable and coldwater flows downstream of dams; gravel mining; and channel dredging. Many of the remaining populations are isolated and may be eliminated by single catastrophic events, such as toxic spills. Natural repopulation is impossible without human intervention.

Conservation actions that may benefit rabbitsfoot are programs that support life history research and surveys that contribute to public understanding of the functions that the rabbitsfoot and other mussels play in the environment. Ensuring that regulations designed to protect water quality and aquatic habitats are fully implemented is vital to maintaining or enhancing remaining rabbitsfoot populations. The federally listed threatened Rabbitsfoot freshwater mussel will be considered in every watershed project analysis for effects to individuals and/or habitat.

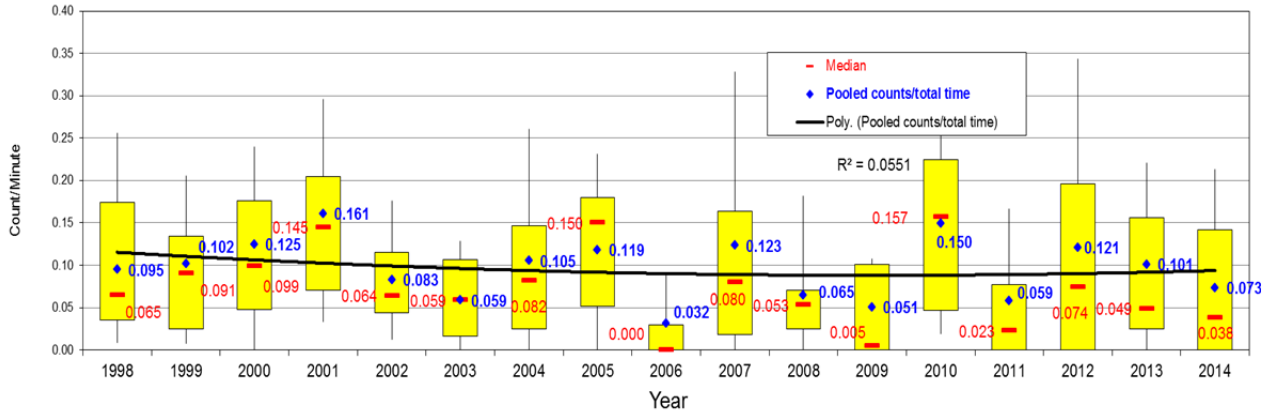
Leopard Darter (*Percina pantherina*)

For additional information, contact Richard Standage at rstandage@fs.fed.us

Leopard Darter
Source: USFS

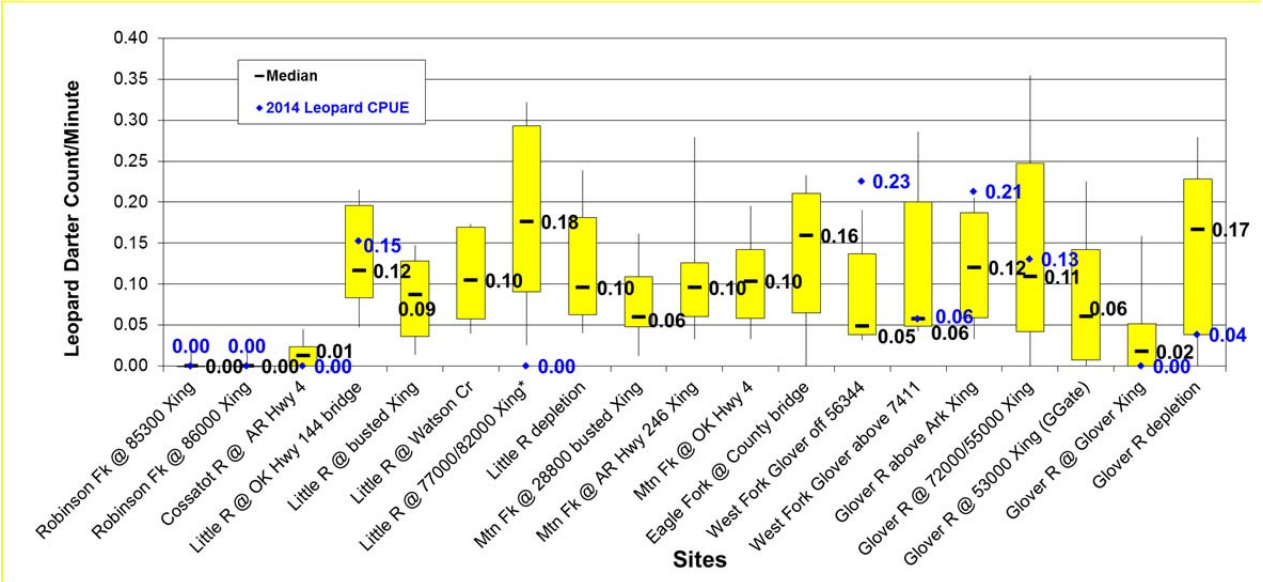
Snorkel counts of Leopard Darters in 2014 were somewhat higher than those the summer of 2011, but were lower than counts in 2012 and 2013. It was observed and noted that low water and high water clarity was experienced during the surveys in 2012 and 2013 which could lead to higher counts with the greater visibility and with the low water levels in 2012 and to a lesser extent in 2013 that trapped and concentrated Leopard Darters. In the summer of 2014, the Mountain Fork River and one tributary (four sites) and three of the upper Little River sites could not be snorkeled due to high flows and/or poor underwater visibility. The team was even forced to set back the second week's surveying due to high water and poor visibilities. Sites missed, while often having higher than median counts, would likely have had low counts due to the flooding had they been sampled. The trend line for the annual pooled counts of Leopard Darters is not statistically significant.

Leopard Darter Annual Pooled Counts



No Leopard Darters were found at the two permanent Robinson Fork sites (off Forest), making it now 10 years since the last leopard Darter was found in a transect there. A number of non-permanent Robinson Fork sites were surveyed in 2014 with no Leopard Darters found within them either. The Cossatot River site also has zero Leopard Darters counted within the permanent transect. Leopard Darters were last counted in 2010 within the Cossatot permanent transect, but they are usually seen in non-transect areas as they were in 2014. These two off-Forest populations are highly vulnerable to extirpation because of small drainage areas isolated above a reservoir. Because of the loss of the site on the Glover River at the Road 53000 crossing due to the change from a pool to a steep riffle caused by the new low-water crossing and the continual poor counts at the Glover Crossing (Xing in graph below) due to excessive sedimentation, two West Fork Glover sites have been added as permanent transects to balance the number of sites per river drainage. The upper Little River depletion site could not be done in 2014 due to the loss of the vented ford that pooled the river to make a suitable site. While still surveyable when there is sufficient stream flow/depth, it was unsuitable to survey in 2014. Only ten of the now 19 permanent sites could be sampled in 2014 with reasonable underwater visibilities (one meter or greater) or swimable conditions.

Leopard Darter Counts per Minute by Site



Data presented here would indicate that the population is experiencing natural variations. There is a newly perceived threat to Leopard Darter survival of inadequate genetic variation between and within populations which is under further scrutiny.

Harperella (*Ptilimnium nodosum*)

For additional information, contact Susan Hooks at shooks@fs.fed.us

Harperella
Source: USFS

Harperella typically grows on rocky shoals, in crevices in exposed bedrock, and (sometimes) along sheltered muddy banks. It seems to exhibit a preference for the downstream margins of small pools or other spots of deposition of fine alluvium. In most Harperella sites, there seems to be significant deposition of fine silts. It may occur in mostly sunny to mostly shaded sites. On the Ouachita NF, Harperella occurs in perennial to near-perennial streams either on or among boulders or large cobbles or on course sediment bars. Harperella is most often associated with *Justicia americana, Gratiola brevifolia, Dulchium arundinaceum,* and *Eleocharis quadrangulata*. Population levels at individual sites appear to vary greatly from year to year. Some of this variation is attributable to past population estimates based on rough guesses rather than numerical counts or samples. Even so, the life history of this species suggests that population fluctuations are natural and to be expected. This phenomenon suggests that Harperella depends on a seed bank to supplement annual seed production and should be tolerant of a range of habitat conditions. This is consistent with observations since the discovery of Harperella on the ONF. Annual rainfall and the timing of the rainfall appear to have the most influence on population numbers.

Five of the known sites of Harperella on the forest were monitored by the Forest Botanist: one area along Fiddler Creek, one on Rainey Creek, one on the South Fourche La Fave River and two sites along the Irons Fork. Fiddler Creek was the only site where Harperella was observed during 2014. The other sites were visited on two different occasions and both times the sites were under water and no Harperella could be observed.

Other Aquatic Habitat Considerations

Game Fish Habitat

For additional information, contact Richard Standage at rstandage@fs.fed.us

The desired condition for game fish habitat in the Forest Plan is as follows: *"Fishable waters support high-quality angling opportunities."* Habitat for game fish and recreational opportunities for fishing are being protected and maintained or enhanced by: monitoring of Bass and Sunfish spawn with supplemental stocking requested from either state as needed; structural habitat improvements (fish attractors/cover); fertilizing and liming to increase productivity and reduce excessive aquatic vegetation; access improvements; and annual to biannual electrofishing to monitor the adult fish populations of select Ouachita NF lakes and ponds. Annual Channel Catfish stocking continues in most managed recreational fishing waters in close coordination with the fish and game agencies of each state.

Objective 27 states, "*Maintain recreational fishing opportunities of stocked lakes and ponds."* This objective is being met by activities that protect, and maintain or enhance fishing recreational opportunities. Monitoring of Bass and Sunfish spawn by shoreline seining is conducted with supplemental stocking requested from either state as needed. Structural habitat improvements (fish attractors/cover/spawning beds) are added to increase fish cover and improve spawning conditions. Fertilization and liming is used to increase productivity and reduce excessive aquatic vegetation. Access improvements are made to increase the ease of access to various fisheries. Annual to biannual electrofishing is conducted to monitor the adult

and sub-adult fish populations of select Ouachita NF lakes and ponds. Annual Channel Catfish stocking is occurring in most managed recreational fishing waters in close coordination with the fish and game agency of each state. The control measures, with limited sampling, appear to be shifting some of the Gizzard Shad biomass to smaller sized shad, making them more available for game fish consumption. If based solely on 2014 data; whether these improvements actually occurred in 2014 is inconclusive due to the extremely cold sampling conditions during fall gill netting. The trend in Gizzard Shad electrofishing numbers continuing to rise and gill netting numbers dropping is of concern but at least for 2014 the picture is clouded due the very suboptimal sampling conditions. It does seem that in the past few years electrofishing sampling has occurred during the Gizzard Shad spawning season when they were more in-shore than is typically the case. This made them more vulnerable to capture since electrofishing occurs only along the shoreline.This would drive up their electrofishing catch but these results for the larger Gizzard Shad should top out at some point.

Aquatic Habitat Enhancement Activities

For additional information, contact Richard Standage at rstandage@fs.fed.us

The desired condition for fish habitat states, *"Movement of fish and other aquatic organisms are not obstructed by road crossings, culverts, or other human-caused obstructions."*

Objective 40 also addresses aquatic organism passage, *"Improve aquatic organism passage on an average of no less than 6 stream crossings per year (where there are road-related barriers to passage)."*

To address the desired condition and Forest Plan objective, in 2014, 23.6 miles of fish passage were restored at 7 crossings and over 16.5 miles of sediment reduction/control was accomplished, mostly funded with Federal Highway's flood restoration dollars (ERFO).

FDR 177 Replacement Crossing for Aquatic Organism Passage

53000 Glover Bridge Washed Out Approach

Extended Concrete Approaches with Slope Paving to Reduce Erosion at the 53000 Glover Bridge

The following data display a summary of all activities undertaken during the last 6 years, by fiscal year to improve aquatic habitat.

Activity by FY	2008	2009	2010	2011	2012	2013	2014
	Acres or Units						
Lake Fish Attractors Installed	48	73	40	48	16	0	0
Stream Fish Structure/Fish Passage Restored (miles)	11	20	14	11.5	5	3	23.6
Fishing Pond/Lake Constructed	1	*1	0	0	0	0	0
Fishing Pond/Lakes Enhanced/fertilized, limed, etc.	558	474	548.5	696	702	593	743

*1 2-acre pond reconstructed due to the dam washing-out.

Amphibian Habitat

For additional information, contact Mary Lane at melane@fs.fed.us

In 2014, 44 wildlife waterholes were constructed or reconstructed as ephemeral aquatic habitat particularly for amphibian spawning.

Watershed Function and Public Water Supply

For additional information, contact Steve Cole at sncole@fs.fed.us

Within the Forest Plan, the desired condition for watersheds is: *"Watersheds are healthy, dynamic, and resilient, and are capable of responding to natural and human caused disturbances while maintaining the integrity of their biological and physical processes and maintaining the connectivity of habitats for aquatic organisms. Watersheds, streams, groundwater recharge areas, springs, wetlands, and aquifers produce high quality water. Soil productivity, riparian dependent resources, and other uses are sustained."*

In addition, there is a specific Forest Plan objective that relates to watershed function: "*OBJ 14. Maintain or improve watershed health."*

Municipal water supplies (public water source areas) are protected when pesticide applications or soil disturbing activities are implemented through coordination with the public water supply manager/operator.

Public water supply surface sources with lands on or near the Forest include Broken Bow and Wister lakes in Oklahoma and the following source areas in Arkansas: South Fork Reservoir (Cedar Creek), Iron Forks, and James Fork reservoirs; Hamilton, Nimrod, Ouachita, Waldron, Winona, and Square Rock lakes; and the Caddo, Middle Fork Saline, Ouachita, Petit Jean, and Saline (eastern) rivers.

Herbicide Monitoring

For additional information, contact Steve Cole at sncole@fs.fed.us

In 2014, one stream was monitored twice on the Mena-Oden RD for the presence of herbicides (Imazapyr and Triclopyr) below treated stands. This is an ongoing monitoring program where 10% of areas treated with herbicides are monitored for off-site movement. Lab results indicate that the presence of herbicides was insignificant for all sites. No changes to the monitoring protocols are recommended; however, samples need to be submitted to the lab for analysis and reported each year.

Recreation and Scenery Management

For additional information, contact Chris Ham at cpham@fs.fed.us

Abundant opportunities exist for the public to use and enjoy the Ouachita NF. Areas or facilities include developed recreation sites, semi-primitive and wilderness areas, and trails. Recreation participation, activities, and services contribute to visitors' physical and mental well-being and represent a variety of skill levels, needs, and desires. Quality fish and wildlife habitat and a variety of access opportunities are available to the public. Facilities and infrastructure are high quality, well maintained, safe, accessible, and consistent with visitors' expectations. Primitive recreation opportunities are maintained on at least 70,000 acres, semi-primitive recreation opportunities on at least 136,000 acres, and roaded-natural recreation opportunities on much of the remainder of the Forest. Existing "rural" recreation opportunities in developed recreation areas are maintained.

The following Management Areas offer essentially primitive recreational opportunities in a natural setting:

MA 1 – Wilderness
MA 20 – Wild and Scenic Rivers
MA 17 – Semi-Primitive Areas

MA 1 - Wilderness (National Wilderness Preservation System)

For additional information, contact Chris Ham at cpham@fs.fed.us

There are six wilderness areas totaling approximately 64,469 acres located within the Ouachita NF, 1 with land in both Arkansas and Oklahoma (Black Fork Mountain Wilderness), four in Arkansas (Caney Creek, Poteau Mountain, Dry Creek, and Flatside), and one in Oklahoma (Upper Kiamichi). The six wilderness areas were congressionally designated in three separate acts, as follow:

- The Eastern Wilderness Act of 1975, Public Law 93-622: Caney Creek Wilderness, Arkansas (14,460 acres).
- Arkansas Wilderness Act of 1984, Public Law 98-508: Black Fork Mountain Wilderness (8,350 acres); Poteau Mountain Wilderness (11,299 acres), Dry Creek Wilderness (6,310 acres) and Flatside Wilderness (9,507 acres), all in Arkansas.
- Winding Stair Mountain National Recreation and Wilderness Area Act of 1988, Public Law 100-499: Black Fork Mountain Wilderness (4,789 acres) and Upper Kiamichi Wilderness (9,754 acres), both in Oklahoma.

The eligibility and suitability of certain areas within the Ouachita NF for possible future wilderness designation were studied during compilation of the Forest Plan. Lands adjacent to Flatside Wilderness (620 acres) and the East Unit of Poteau Mountain (77 acres) in Arkansas and Upper Kiamichi Wilderness (1,096 acres) in Oklahoma are recommended for addition to the National Wilderness System, primarily because adding these lands to the National Wilderness Preservation System would establish more logical and manageable boundaries for these areas. Completing these additions would also be consistent with Forest Plan desired conditions for public use and enjoyment of National Forest System lands, including conservation of opportunities for semi-primitive recreation settings.

The proposed additions to Flatside Wilderness and Poteau Mountain in Arkansas and Upper Kiamichi Wilderness in Oklahoma are contiguous to existing wilderness boundaries, would increase visibility and ease of identification of wilderness versus non-wilderness areas, would create more manageable overall boundaries for administrative purposes, and would add areas of scenic value to each wilderness. The recommended wilderness additions total 1,793 acres. If Congress adds these areas to the National Wilderness Preservation System, they will become part of MA 1a.

These recommendations are preliminary administrative recommendations that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and/or the President of the United States. Congress has reserved the authority to make final decisions on wilderness designation. A congressional sponsor will be required to advance the recommendations through the system. No action has been taken to advance these recommendations.

Forest Plan *OBJECTIVE 30, states, "Update all Wilderness Management Plans, including monitoring components, wilderness education, and restoration needs, by 2008."*

No Wilderness Management Plans have been updated; however, all Wilderness units on the Forest have met and exceeded the goals set by the Chief's 10 Year Wilderness Stewardship Challenge (the Challenge), which concluded in FY14. The 10-Year Challenge was developed by the Chief's Wilderness Advisory Group (WAG) as a quantifiable measurement of the Forest Service's success in Wilderness stewardship. The goal identified by the Wilderness Advisory Group, and endorsed by the Chief, was to bring each and every wilderness under Forest Service management to a minimum stewardship level by the 50th Anniversary of the Wilderness Act in 2014. Ten critical elements of wilderness stewardship were identified and a "minimum stewardship level" was defined as meeting six out of the ten elements. The following chart depicts the individual scores per elements and final stewardship score for each individual wilderness unit.

10 Yr. WSC Element	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
Wilderness	Fire Plans	Invasive Plants	AQRV Monitoring	Education Plans	Ops for Solitude	Rec Site Inventory	Outfitter & Guide Language	Forest Plan Standards Adequate	Information Mgt. Needs Met	Baseline Workforce	**Final Scores**
Black Fork Mountain	10	10	10	4	6	4	6	6	10	2	68
Caney Creek	10	10	10	10	10	10	6	6	10	2	78
Dry Creek	10	10	10	4	6	4	6	6	10	2	68
Flatside	10	10	10	4	6	4	6	6	10	2	68
Poteau Mountain	10	10	10	4	6	4	6	6	10	2	68

Color Key
60+ At or Above Standard

Wilderness Stewardship Headwater Stream Sampling

For additional information, contact Judy Logan at jlogan@fs.fed.us

The "Wilderness Stewardship Challenge" was instituted in 2004 to ensure that wildernesses are being properly managed to leave them unimpaired for present and future generations. Monitoring air quality values was identified as 1 of 10 accountability elements in the Challenge. An air quality value (AQV) is simply a resource that can be affected by air pollution. An AQV is selected based upon relative sensitivity to pollution, value as an indicator of the natural conditions of the wilderness area and importance to wilderness visitors.

The Forest was required to develop an Air Quality Value Plan that provides a thorough evaluation of currently available air quality monitoring and modeling data for the wilderness areas managed by the Ouachita NF, as well as a characterization of resources that might be affected by air pollution (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3811710.pdf). This evaluation was used to select AQV's and develop a monitoring plan that will allow the Forest to determine whether air quality in wilderness areas is improving or degrading, and whether it is affecting wilderness values. The plan also identifies the sensitive receptors and indicators that can be measured to evaluate the effect of air pollution on the AQV, and describes how inventory and monitoring will be conducted. See Monitoring and Evaluation Report for Fiscal Years 2012-2013 for more information.

Wild and Scenic Rivers

For additional information, contact Chris Ham at cpham@fs.fed.us

The National Wild and Scenic Rivers System (NWSRS) was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations and to safeguard the special character of these rivers. Management Area 20, Wild and Scenic River Corridors and Eligible Wild and Scenic River Corridors, containing approximately 26,571 acres, was established on the Ouachita NF to manage river segments designated or eligible for consideration as components of the NWSRS.

Currently, the Cossatot and Little Missouri rivers are the only designated Wild and Scenic Rivers within the Ouachita NF. The eligibility and suitability of the Glover River in McCurtain County, Oklahoma was studied as part of an amendment to the 1990 Forest Plan, completed in 2002, and described in Appendix B of the EIS for that amendment with a recommendation that 16.5 miles be added to the NWSRS with a designation of "scenic." A review of other eligible rivers for the Forest Plan revealed none suited for recommendation by the Ouachita NF as additions to the NWSRS, because most were bordered by too little NFS land. No action has been taken to have the Glover River formally designated as a part of the NWSRS.

Semi-Primitive Areas

For additional information, contact Chris Ham at cpham@fs.fed.us

Management Area 17, Semi-Primitive Areas, consisting of approximately 136,091 acres, are areas that (a) meet the Recreation Opportunity Spectrum (ROS) criteria for motorized and non-motorized semi-primitive recreation settings and (b) are not included in other MAs. (Wilderness areas (MA 1), the Poteau Mountain Area (MA 1b), portions of some special interest areas (MA 2), and National Forest lands around Broken Bow Lake and Lake Ouachita (MA 16), for example, also offer either semi-primitive motorized or non-motorized recreation opportunities or both.

Scenery Management

For additional information, contact Chris Ham at cpham@fs.fed.us

Projects that occur within Management Area 2, Special Interest Areas, Management Area 16, Lands Surrounding Lake Ouachita and Broken Bow lakes, and Management Area 19 are among the many focus areas in which Scenery Integrity Objectives are of very high priority.

MA 2 – Special Interest Areas

Management Area 2, Special Interest Areas is devoted to areas of the Ouachita NF that possess characteristics of unique features, most with high quality scenery. Within this Management Area there are approximately 26,989 total acres, including the following:

2a. Scenic Areas, approximately 2,700 acres
2b. Watchable Wildlife Areas, approximately 5,853 acres
2c. Botanical Areas: Rich Mountain, approx. 3,200 acres, and South Fourche, approximately 2,580 acres (the Cove Creek Lake Project Area, approximately 324 acres surrounded by the South Fourche Botanical Area, is specifically excluded from the botanical area)
2d. Rich Mountain Recreation Area, approximately 12,980 acres

Special Interest Areas consist of Scenic Areas, Watchable Wildlife Areas, two Botanical Areas, and a large, undeveloped recreation area (Rich Mountain). There are areas specifically designated as scenic areas (shown in the following), and three of these—Blowout Mountain, Dutch Creek, and Crystal Mountain—are also designated to sustain characteristics of old growth shortleaf pine-hardwood forests.

Scenic Area – MA 2a.	Ranger District	Acres
Blowout Mountain	Oden	526
Dutch Creek Mountain	Cold Springs, Fourche	624
Crystal Mountain	Caddo, Womble	100
Irons Fork	Jessieville	1,450

Two designated Watchable Wildlife Areas are listed as part of Management Area 2: Red Slough (5,815 acres) on the Tiak Unit of the Oklahoma Ranger District and Richardson Bottoms (38 acres) on the Jessieville Unit of the Jessieville/Winona/Fourche Ranger District. Other Watchable Wildlife Areas, such as Buffalo Road Shortleaf Pine-Bluestem Restoration Area Auto Tour and Blue Moon Wildlife and Fisheries Demonstration Area in Management Area 22, are found throughout the Ouachita NF within other MAs. Rich Mountain Botanical Area and Rich Mountain Recreation Area are on the Mena Ranger District.

There are two congressionally designated botanical areas in Oklahoma—Beech Creek Botanical Area and Robert S. Kerr Memorial Arboretum, Nature Center, and Botanical Area; and they are addressed in MA 19 along with the other non-wilderness areas designated by the Winding Stair Mountain National Recreation Area and Wilderness Act.

MA 16 - Lands Surrounding Lake Ouachita and Broken Bow Lake

Management Area 16, Lands Surrounding Lake Ouachita and Broken Bow Lake, containing approximately 87,153 acres, includes NFS lands surrounding Lake Ouachita in Arkansas and Broken Bow Lake in Oklahoma. All management activities within this area are designed to address wildlife and recreation objectives and the protection of resource values for each lake. The overriding objective is to sustain the unique combination of representative recreational, aesthetic, wildlife, and water quality values. Scenic integrity is to be maintained so that visitors on the lakes or shorelines view the surrounding lands as predominantly naturally-appearing with

little or no addition of road miles to the transportation system. Portions of this MA are suitable for some timber management activities; others such as steep slopes are unsuitable.

In addition to maintaining the scenic integrity of the Special Interest Areas and the Lands Surrounding Lake Ouachita and Broken Bow Lake, there is a specific Forest Plan Objective that addresses scenic overlooks (all of which are not located within MA 16):

OBJECTIVE 28: Improve or maintain all designated scenic overlooks at least once per decade.

Of 38 scenic overlooks on the Forest, all were maintained within the last 10-year period.

MA 19 – Winding Stair Mountain Recreation National Area

Management Area 19, Winding Stair Mountain Recreation National Area and Associated Non-Wilderness Designations, consists of approximately 79,897 acres and contains lands designated by the Winding Stair Mountain National Recreation and Wilderness Area Act of 1988, Public Law 100–499, except for the two wilderness areas, which are included with other Forest wilderness in MA 1, Wilderness. A variety of outstanding recreational opportunities exists in MA 19, including the Talimena Scenic Drive. No management changes are recommended for this MA.

Winding Stair Mountain Recreation National Area by Name and Acreage, ONF

Area Name*	Acres
19a. Winding Stair Mountain National Recreation Area	25,890
19c. Robert S. Kerr Memorial Arboretum, Nature Center, and Botanical Area	8,256
19e. Beech Creek Botanical Area	380
19f. Beech Creek National Scenic Area	6,200
19g. Indian Nations National Scenic and Wildlife Area	29,171

*19b and 19d (Rich Mountain Recreation and Botanical Areas in Arkansas) from the 1990 Forest Plan were moved into MA 2.

MA 3 – Developed Recreation Areas

For additional information, contact Chris Ham at cpham@fs.fed.us

There are approximately 5,189 acres devoted to developed recreation encompassing some 118 separate sites on the Ouachita NF; of these, several are Forest Service-operated fee sites. Development ranges from an essentially natural environment with few facilities to a high degree of site development with comfort and convenience facilities, including features such as paved roads, water systems, flush toilets, and boat-launching ramps. Included within this management unit are campgrounds, picnic areas, horse camps, interpretive and observation sites, information sites, float camps, shooting ranges, and swimming areas.

There are two Forest Plan Objectives that govern developed recreation:

OBJECTIVE 24: "Maintain all recreation facilities to standard."

At present, 159 of 162 recreation facilities are maintained to standard. "To standard" is calculated by the amount of deferred maintenance as a percentage of current replacement value. Using the Forest Service definition, the Ouachita NF is accomplishing 99% percent of the target of the maintained to standard measurement.

OBJECTIVE 25: "Improve accessibility within at least one recreation site per year."

This objective was met with improvements to Camp Clearfork with the installation of new hardened trail surfaces throughout the recreation area to improve accessibility from overnight facilities to other recreation facilities at the site.

Fee Sites

For additional information, contact Chris Ham at cpham@fs.fed.us

Occupancy rates are not tracked at non-fee sites. Of the recreation sites that are operated as fee sites, occupancy rates are not developed for the five day use areas (at Cedar Lake, Lake Sylvia, Shady Lake, Little Pines, and Charlton recreation areas). The following shows data through 2014 for the 14 recreation sites where fees are collected.

Total Recreation Area/Campground Fee Collections FY 2005-2014, ONF

The decrease in fee collections for 2012 through present is due to closures of several campgrounds and individual campsite units due to flash flooding concerns. 2012 figures are also likely influenced by a mid-year change to a new accounting and collection system.

Trails

For additional information, contact Tom Ledbetter at tledbetter@fs.fed.us

The Forest provides a diverse array of trails including equestrian, off-highway-vehicle (OHV), hiking/mountain bike and interpretive. Primary trail-based opportunities occur in the Wolf Pen Gap OHV area, along the Ouachita National Recreation Trail, on the Cedar Lake Equestrian trails system in Oklahoma, the International Mountain Bicycling Association “EPICs” Womble and Lake Ouachita Vista Trail. Mountain biking is fast becoming one of the most important niches that the Forest can support and currently provides over 200 miles of single-track trail for mountain bike enthusiasts. Key to the development and maintenance of these trail systems is the involvement of dedicated, well-trained trail enthusiasts such as the Friends of the Ouachita Trail and the Trail Dogs.

Trail maintenance on Lake Ouachita Vista Trail.

Objective 23 of the Forest Plan is specific to trails: *"Conduct maintenance on at least 300 miles of trails (non-motorized use) per year."*

Thanks to the efforts of volunteer trail groups and district employees, the Ouachita NF accomplishes more maintenance each year than the annually assigned target of 292 miles of non-motorized trail maintained to standard. It should be noted that in past years, the Ouachita NF has reported non-motorized trail maintenance and motorized trail maintenance separately, but due to database structures, it is not possible to separate the two types of maintenance.

Demand for OHV riding opportunities is high on the Forest, and such demand presents management challenges to provide OHV riding places, protect natural resources, and balance recreational needs for quiet and solitude within the Ouachita NF.

Recreation Participation

For additional information, contact Chris Ham at cpham@fs.fed.us

Based on the 2010 National Visitors Use Monitoring program, overall satisfaction ratings were very high – over 80 percent of visitors to the Ouachita NF were very satisfied with their overall experience. The composite index results were also quite high. Across all types of sites, and all composite measures, satisfaction ratings were above the national target of 85 percent satisfied. The National Visitors Use Monitoring is currently in progress (2015).

Public and Agency Safety

For additional information, contact Alissa Land at aland@fs.fed.us or Tim Fincham at (501) 321-5202

The Forest Plan includes the following desired condition for law enforcement, *"A safe environment for the public and agency employees is provided on National Forest System land; natural resources and other property under the agency's jurisdiction are protected."*

It is critical that a safe environment for the public and agency employees is provided on National Forest System lands, and that natural resources and other property under the agency's jurisdiction are protected. In 2014, the Law Enforcement and Investigation (LE&I) unit for the Ouachita NF administered six Cooperative Law Enforcement Agreements that support local county law enforcement assistance in Arkansas and Oklahoma. The number of Forest law enforcement officers (LEO's) in 2014 was seven full-time and one in "reserve" LEO status. The historic high of LEO's forest-wide was 12. LEO's often work 120-150 hours in a what for most employees would be an 80-hour, two-week pay period. During FY 14, approximately 4,251 hours (equal to 531 days) of Administratively Uncontrollable Overtime were worked by the seven LEO's and the Reserve Officer.

LEO's responded to or assisted with 13 accidents within or adjacent to the Ouachita NF. These numbers include minor injuries (sprains, dog bites, etc.), ATV, motorcycle and motor vehicle accidents. Seven accidents were motor vehicles, one ATV accident, two motorcycle accidents and one personal injury/other accident. Twenty-four separate search and rescue (SAR) operations were conducted during 14 (up from nine in FY13) for lost hikers and hunters, a plane crash that killed an AR Forestry Commission pilot and a missing persons case in which two individuals were located deceased and another being tried for manslaughter. During 2014, LE&I investigated 24 assault cases.

Year	Motor Vehicle Accidents	ATV Accidents	Motorcycle Accidents	Personal Injury/Other Accidents	Search and Rescue
2011	19	7	4	12	20
2012	12	9	12	18	10
2013	14	3	2	1	9
2014	7	1	2	1	24

In 2013, LE&I purchased a marine patrol boat to be used to address alcohol and fishing violations on Forest Service lakes and assist in night hunting violations. This equipment is an addition to the ATV Razor that was acquired in 2012 to address violations on ATV trails. There have been no ATV fatalities during 2013 and 2014, perhaps, due in part to an increased LE&I presence. This is the second year on the Ouachita NF that did not have an ATV fatality.

Officers conducted/assisted with 23 compliance checkpoints to address the growing traffic, ATV and alcohol violations occurring as a result of increased public visitation on the Ouachita. A total of 167 Timber compliance checkpoints were performed in 2014. Also during 2014, a total of 570 Federal and State Violation Notices, 282 Warning Notices, and 374 Incident Reports were issued. Thirty-nine cases were initiated and 128 arrests were reported during 2014. A comparison of violation notices and incident reports by is provided in the following:

Violation Notices and Incident Reports by FY, ONF

Fiscal Year	Violations	Warning Notices	Incident Reports
2010	581	394	628
2011	487	474	476
2012	354	262	364
2013	542	344	339
2014	570	282	374

Officers investigated and assisted in 27 felony drug cases and 42 simple possession drug cases. In 2014, approximately 600 marijuana plants were located during joint operations and eradicated. Approximately nine grams of methamphetamine was seized. Four hundred thirty-two DUI and public intoxication and alcohol possession incidents were documented (up from 309 in 13). Eighteen fires were investigated of which seven were determined to be arson or human caused fires. There were 124 separate ATV violations were recorded for 2014. The following show these data since 2006, the first full year of monitoring for the Forest Plan.

Eradications, Arrests, and Investigations by FY

FY	Marijuana Plants	Methamphetamine Grams Seized	Investigations	Felony Drug Cases	Misdemeanor Drug Cases	Arson cases
2006	6,300	Data Not Reported 2006-2013	97	41	51	*
2007	8,775		89	29	98	*
2008	742		97	36	50	19
2009	33,940		116	27	82	39
2010	300		105	27	68	13
2011	124		86	17	44	50
2012	4,200		74	35	42	50
2013	8		46	15	66	16
2014	600	9	39	27	42	18

*Arson cases occurred and were investigated during 2006 and 2007; however, the data were not reported in the Monitoring and Evaluation Reports.

Ouachita NF Law Enforcement personnel spent 82 hours in public relation and training programs. Forest LEO's traveled over 192,000 miles in 2014, in support of public and agency safety, as well as protection of natural resources and property. Law Enforcement reports show a total of 16,304 public contacts during 2014. A comparison of public Relations Program Hours, Miles Traveled and Public Contacts made by is provided in the following:

Public Relations Programs, Miles Traveled and Public Contacts by FY

Fiscal Year	Public Relations Program Hours	Miles Traveled	Public Contacts
2006	32*	196,423	12,236
2007	252	229,220	19,375
2008	270	206,436	22,811
2009	187	200,000	14,839
2010	103	240,000	20,067
2011	123	260,000	22,315
2012	166	208,000	22,271
2013	228	212,000	18,436
2014	82	192,000	16,304

*Data reported are programs, not hours, as reported in subsequent years.

Heritage Resources and Stewardship

For additional information, please contact the Ouachita National Forest at bpell@fs.fed.us

Heritage Resources are addressed by reporting Heritage Stewardship and Tribal and Native American Interests.

There are three Forest Plan objectives for Heritage Stewardship:

> *OBJ20. Complete a Forest overview of heritage resources by 2007 incorporating the results of 20+ years of Section 106 and Section 110 work and documentation.*
>
> *OBJ21. Drawing upon the heritage resources overview, complete a Heritage Resources Management Plan by 2010.*
>
> *OBJ 22. Revise the Programmatic Agreement with SHPOs and THPOs by 2011.*

Review of Progress toward Desired Condition, Priorities, and Objectives

The Heritage Overview is complete and consultation with tribal and state consulting partners is concluded. The document will be available in final form in CY 2015.

During 2014, the State Historic Preservation Officers of Arkansas and Oklahoma and several tribes agreed to extend for another year the existing programmatic agreement with the Forest Service (Ouachita and Ozark-St. Francis National Forest), an agreement that guides implementation of National Historic Preservation Act Section 106 procedures on these national forests.

Priority Heritage Assets (PHAs) are monitored on a five-year rotation, in which 20 percent of PHAs are monitored each year; for 2014, the Ouachita had 198 archeological and historic sites on the PHA list. The reviews address interpreted sites, sites with management plans, sites registered in the National Register of Historic Places, cemeteries, and sites with hazards or severe maintenance needs. Although this schedule is highly effective for these types of sites, there are other important sites that are not being monitored as frequently.

Archeological collections are Priority Heritage Assets. Additional effort to prepare collections for curation was exerted in 2014, but much remains to be done.

Tribal and Native American Interests

For additional information, please contact the Ouachita National Forest at bpell@fs.fed.us

In addition to the three objectives listed under Heritage Stewardship, the Forest Plan identifies a desired condition that the “Forest has active agreements and protocols to facilitate consultation (all resources) and government-to-government relationships.”

The Native American Graves Protection and Repatriation Act of 1990 provides a process for identifying and returning cultural patrimony to Native Americans. All archeological collections curated by the Ouachita NF have been examined for faunal materials, and analysis revealed several small human bone fragments from six archeological sites in McCurtain County, Oklahoma. Consultation with culturally affiliated tribes is ongoing.

During 2014, several tribes agreed to extend for another year the existing programmatic agreement with the Forest Service (Ouachita and Ozark-St. Francis National Forest) and the State Historic Preservation Officers of Arkansas and Oklahoma; this agreement guides implementation of National Historic Preservation Act Section 106 procedures on these national forests. By early 2016, the parties will need to agree to a new, streamlined version of the programmatic agreement or revert to the requirements of 36 CFR 800.

Also during FY 2014, the Caddo Nation of Oklahoma and the Choctaw Nation of Oklahoma signed comprehensive agreements with the USDA Forest Service (Ouachita and Ozark-St. Francis National Forests) concerning protocols to implement the Native American Graves Protection and Repatriation Act of 1990 and the Archaeological Resources Protection Act of 1979. These represent positive steps toward stronger Government-to-Government relationships with these Tribes.

The annual To Bridge a Gap meeting between Tribes and the Forest Service was held in Fayetteville, AR in 2014. 167 people attended the conference representing 13 Tribes, 9 State and 14 Federal agencies and 5 private companies and contractors.

Performance History

Contribution to Social & Economic Sustainability

For additional information, contact Alett Little at alittle@fs.fed.us

The Ouachita NF comprises approximately 4.2 percent of the land base of the state of Arkansas and less than 1 percent of the total land area in Oklahoma. In Arkansas, Ouachita NF System lands occupy a high of 67 percent to a low of 0.08 percent of total lands by county. Within the two Oklahoma counties, National Forest System lands occupy 22 percent of LeFlore County and 11 percent of McCurtain County. The following displays the amount and percentage of Ouachita NF lands in each county and within each state as a whole:

Lands by State and County, September 2010 - 2014

State/County	Acres	Ouachita NF Acres 2010	Ouachita NF Acres 2011	Ouachita NF Acres 2013	Ouachita NF Acres 2014	Ouachita NF Percent of State or County 2014
Arkansas	34,034,560	1,434,899	1,434,718	1,434,718	1,434,718	4.22
Ashley	589,440	1,675	1,675	1,675	1,675	0.28
Garland	433,280	120,573	120,573	120,573	120,573	27.83
Hot Spring	393,600	320	320	320	320	0.08
Howard	375,680	1,531	1,531	1,531	1,531	0.41
Logan	454,400	18,586	18,586	18,586	18,586	4.09
Montgomery	499,840	336,840	336,839	336,839	336,839	67.39
Perry	352,640	99,170	99,170	99,170	99,170	28.12
Pike	385,920	13,427	13,427	13,427	13,427	3.48
Polk	549,760	206,441	206,261	206,261	206,261	37.50
Saline	462,720	58,959	58,959	58,959	58,959	12.74
Scott	572,160	369,587	369,587	369,587	369,587	64.59
Sebastian	343,040	18,956	18,956	18,956	18,956	5.53
Yell	593,920	188,834	188,834	188,834	188,834	31.79
Oklahoma	43,946,880	354,954	354,954	354,953	354,953	0.81
LeFlore	1,015,040	221,949	221,949	221,948	221,948	21.87
McCurtain	1,185,280	133,005	133,005	133,005	133,005	11.22

Source: Ouachita NF – 2012 acres not reported.

There were no substantive changes in the total acres managed under the National Forest System over the past several years. The Ouachita NF is important to many local economies in terms of providing employment and in providing products, services, recreation visits, contracting, and other sources of revenue that then multiply economically within local communities and this has remained fairly stable. Some of contributions are difficult to quantify. One type of economic contribution to counties, however, is clear, as described in the following section on payments in lieu of taxes described in the following discussion.

Payments to Counties

For additional information, contact Bill Pell at bpell@fs.fed.us

An important source of revenue for many counties that have National Forest System lands is payments received from the US Forest Service. Because no real estate tax payments are made to counties for land that is federally owned, the Secure Rural Schools and Community Self-Determination Act (or, if a county chooses, the older 25 percent Payment Act) provides rural communities with annual funding for: (1) county roads in or near national forests; (2) local school districts that include National Forest System lands; and (3) local conservation projects on or benefitting National Forest System lands. Hot Spring, Ashley and Garland Counties opted for 25% payments for FY 2013 (received in FY 2014).The following table shows payments to counties under the Secure Rural Schools and Community Self-Determination Act (SRS Act) or 25% Percent Act (plus small amounts of "special payments" in a few cases).

Payments (Titles I and III) to Counties, 2006 – present

AR County	2006	2007	2008	2009	2010	2011	2012	2013	2014
Ashley (003)	3,539	2,869	6,633	6,235	4,970	4,233	$3,412	$2,573	$2,318
Garland (051)	454,370	453,437	321,2963	291,494	276,302	211,103	$229,758	$185,034	$166,642
Hot Spring (059)	676	548	5713	568	549	561	$530	$492	$444
Howard (061)	3,235	2,622	5,8201	5,200	5,085	4,956	$4,495	$4,827	$4,121
Logan (083)	42,505	42,418	70,754	50,287	45,922	43,652	$38,414	$35,367	$33,614
Montgomery (097)	1,243,580	1,241,027	1,467,711	1,325,823	1,290,494	1,158,828	$1,111,849	$1,107,819	$998,289
Perry (105)	387,420	328,632	324,278	260,347	237,031	219,113	$187,900	$187,993	$193,351
Pike (109)	21,847	22,957	31,344	29,111	25,179	23,132	$24,170	$25,732	$21,857
Polk (113)	648,426	687,539	876,424	832,968	890,615	759,411	$683,118	$632,456	$565,027
Saline (125)	184,787	216,951	146,405	124,858	112,788	95,534	$91,072	$87,389	$88,963
Scott (127)	1,456,962	1,165,618	1,614,725	1,456,841	1,577,973	1,500,621	$1,386,118	$1,340,211	$1,091,255
Sebastian (131)	64,570	64,438	38,467	35,477	34,226	31,424	$31,118	$28,399	$27,575
Yell (149)	695,433	694,006	801,940	733,059	666,927	614,500	$569,457	$576,372	$486,532
OK County	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
LeFlore (079)	974,175	972,176	956,344	842,016	773,112	674,238	$651,328.	$645,564	$619,979
McCurtain (089)	264,770	264,226	383,889	350,417	347,835	309,374	$265,335	$269,341	$254,783

Source: http://www.fs.fed.us/projects/ under Secure Rural Schools and Community Self-Determination Act: Proclaimed National Forest All Service Recipients-10-2: Payment Detail

These annual payments (plus additional payments processed through the Department of the Interior) have provided some stability and predictability for funding to the counties since 2000, when Congress passed the SRS Act. The act was extended for one year and then reauthorized in 2008 for four more years with a one-year reauthorization in 2012. The program was reauthorized in October 2013 to provide benefits for an additional year (with payments made in 2014). The actual amount of each state's payment is determined by a number of factors determined by law, including how many counties ultimately decide to share in that payment. Each county's share of their state's payment amount can be found on this Forest Service website: http://www.fs.usda.gov/main/pts/securepayments/projectedpayments.

In addition to payments made by the Forest Service to Oklahoma and Arkansas for counties that contain National Forest System lands, many counties participate actively in Title II of the SRS Act, including eight counties that include lands of the Ouachita National Forest. When counties elect to allocate funding for Title II projects, the associated funds are directed to Forest Service accounts and then expended on projects recommended by the Ozark-Ouachita Resource Advisory Committee and approved by the Forest Supervisor of the Ouachita or Ozark-St. Francis National Forests.

Title II funds may be used for the for protection, restoration, and enhancement of fish and wildlife habitat and other resource objectives consistent with the SRS Act on Federal land and on non-Federal land where projects would benefit the resources on Federal land. For purposes of this Act, Federal land (in Arkansas, Oklahoma, and most other states) means land within the National Forest System.

County	Title II Funds Received by Ouachita NF in 2013-2014, by County	
AR	**2013**	**2014**
Logan	$9,582	$8,821
Montgomery	$277,575	$259,510
Perry	$46,861	$33,098
Polk	$170,542	$157,889
Scott	$303,896	$293,836
Yell	$49,442	$50,047
OK	**2013**	**2014**
LeFlore	$114,940	$113,923
McCurtain	$46,824	$47,531

Source: Final Title I, II and III Region Summary PNF (ASR-18-02)

Budget

For additional information, contact Diane Lowder at dlowder@fs.fed.us

The Forest Plan management areas, management prescriptions, and standards represent statements of long-term management direction. Such direction and the rate of implementation are largely influenced by and dependent on the annual budgeting process. The NFS allocated funds for the Ouachita NF in Arkansas and Oklahoma without earmarks or returns on receipts of timber sales under Knutson-Vandenberg (KV)* for the time period 2006 through 2014 are shown in the following:

Allocated Funding 2006-2010, by FY

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Dollars (in Millions)	**8.5**	**6.8**	**8.8**	**11.7**	**10.5**	**9.8**	**11.8**	**8.7**	**9.7**

Source: Ouachita NF

*The KV Act of 1930, as amended, established a funding mechanism for wildlife and fisheries, timber, soil, air, and watershed restoration and enhancement projects. Projects are restricted to timber sale areas and are funded from receipts generated from those timber sales on those areas.

Resource Management Accomplishments

The following table summarizes resource management accomplishments for the Ouachita NF from 2003 to present.

Objective or Activity	FISCAL YEAR											
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Miles of Trail Construction	6	6	0	5	5	4	5	24	24	3	5	5
Miles of Trail Maintenance	293	288	293	299.8	300	245	244	150	150	281	211	271
Acres of Heritage Resource Survey	6,490	22,930	20,046	16,176	22,460	10,444	21,965	6,597	6,211	Not Reported		
# of Waterholes Developed	107	142	220	57	212	99	85	51	101	44	31	44
Acres of Midstory Reduction	3,014	353	1,350	7,715	4,935	2,410	5,965	5,159	5,362	5,035	6,408	
Acres of Prescribed Fire	128,319	134,386	96,376	43,093	145,354	120,748	120,125	142,817	96,720	101,529	96,165	99,127
Acres of Lime, Fertilize/Stock Lakes/Ponds	647	670	828.5	970	1,281	558	474	548.5	696	702	593	743
# Livestock	1,179	903	715	530	300	154	142	133	116	116	116	116
# Active Range Allotments	20	17	16	16	16	6	4	3	3	3	3	3
Acres of Watershed Improvement & Maintenance	35	56	73	87	45	41	75	64	118	505	1003	515
Cases -Minerals Administration	191	577	860	403	640	894	894	839	N/A	232	235	139
MMCF Timber Offered	13.11	17.77	20.02	7.57	19.86	21.52	16.17	20.47	19.88	16.13	18.19	13.34
MMCF Timber Sold	11.16	14.24	16.68	19.93	20.64	20.18	17.54	18.93	20.05	17.84	15.37	16.93
Miles of Land Line Location Or Maintenance	39.5	77.0	80.0	52.6	65.0	135.4	136.5	114.02	105	99.75	40.00	56.58
Cases-Rights-of-way	2	1	1	0	1	0	2	3	0	6	1	0
Miles of Arterial/Collector Roads Reconstructed	33	4	14	15.56	6.44	10.54	1.94	7.96	112.35	37.6	0.99	0.88
Local Roads Constructed	5	5	5	15.99	4.28	8.54	21.00	3.29	11.13	5.1	2.21	0.72
Acres of Soil Inventory	50,000	0	9,090	3,240	0	0	26,165	0	24,800	0	0	500
Stream Inventory Miles	N/A	N/A	N/A	46	10	10	10	10	46	24	27	25
Stream Inventory For Leopard Darter Miles	N/A	N/A	N/A	8	8	8	8	7	7	8	8	7
Stream Inventory For Ouachita Darter Miles	N/A	N/A	N/A	6	6	0	6	10	10	0	0	0
Total Miles of Stream Inventory	N/A	N/A	N/A	60	26	18	24	27	63	32	35	32
# Fish Attractors	45	26	6	16	65	48	73	40	44	16	0	0
# Streams Monitored for Offsite Herbicide Movement	11	11	11	6	3	4	0	0	4	3	3	3

* Basin Area Stream Survey occurs approximately 1 time every 5 years. Analyses of results is underway, but were unavailable for this report.
N/A – Not Available

Appendix A – Contributors to the FY 2014 M&E Report

David Arbour—NRCS Red Slough WMA Mgr.
Mark Adams—GIS Specialist
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James D. Smith—Forest Health Protection
JoAnn Smith—Forest Silviculturist
Richard Standage—Forest Fisheries Biologist
Charlie Storey—Forest Land Surveyor
Norman Wagoner—Forest Supervisor
Mike White—Technical Services Team Leader
Ray Yelverton—Sales Forester

Appendix B – Project Decisions Signed in FY 2014

Management Unit	Project Name	Decision Type	Project Purpose
Caddo-Womble	Kate's Creek – debris and sediment removal	DM	Road Management
Cold Springs-Poteau	Blackfork Rx Burn	DM	Vegetation Management (other than forest products), Fuels Management
Cold Springs-Poteau	Compartment 258 Rx Burn	DM	Wildlife, Fish, Rare Plants, Vegetation Management (other than forest products), Fuels Management
Cold Springs-Poteau	Compartments 254 and 260 Harvest and Salvage	DM	Forest Products, Vegetation Management (other than forest products)
Cold Springs-Poteau	14 Midstory Reduction Treatments	DM	Wildlife, Fish, Rare Plants, Vegetation Management (other than forest products)
Cold Springs-Poteau	Pilot Knob Burn Block	DM	Vegetation Management (other than forest products), Fuels Management
Cold Springs-Poteau	Pinnacle Towers SUP	DM	Special Use Management
Cold Springs-Poteau	Ross Creek	DN	Recreation Management, Heritage Resource Management, Wildlife, Fish, Rare Plants, Forest Products, Vegetation Management (other than forest products), Fuels Management, Watershed Management, Road Management
Cold Springs-Poteau	Stateline Rx Burn	DM	Vegetation Management (other than forest products) Fuels Management
Jessieville-Winona-Fourche	Crossett Experimental Forest (SRS 4159) Rx Fire	DM	Wildlife, Fish, Rare Plants, Fuels Management, Research and Development
Jessieville-Winona-Fourche	Crossett Water Line	DM	Special Use Management
Jessieville-Winona-Fourche	Rx Fire on Phase 3 Pine Bluestem Areas	DM	Wildlife, Fish, Rare Plants, Fuels Management, Research and Development
Jessieville-Winona-Fourche	Special Use Re-authorization (radio repeater) 2014	DM	Special Use Management
Jessieville-Winona-Fourche	Special Use Re-authorization (Road Easements) 2014	DM	Special Use Management
Jessieville-Winona-Fourche	Wildlife Habitat Improvement in MA-21, 2014	DM	Wildlife, Fish, Rare Plants
Mena-Oden	13th Annual Ouachita Challenge	DM	Special Use Management
Mena-Oden	Burt Land Exchange	DM	Land Ownership Management, Land Acquisition
Mena-Oden	Eagle Mountain Tower Replacement	DM	Special Use Management

Management Unit	Project Name	Decision Type	Project Purpose
Mena-Oden	Eagle Mountain Tower Utility Line 2014	DM	Special Use Management
Mena-Oden	Talimena 13.1	DM	Special Use Management
Mena-Oden	Montgomery County Conservation District Sign	DM	Special Use Management
Oklahoma	Carter Mountain Storm Salvage	DM	Forest Products, Vegetation Management (other than forest products), Fuels Management
Oklahoma	Cedar Mountain Sub-Unit 1 Rx Burn	DM	Wildlife, Fish, Rare Plants, Fuels Management
Oklahoma	Gary Newcomb Private Road Permit	DM	Road Management
Oklahoma	Kiamichi Valley Wildlife Habitat Improvement	DM	Land Management Planning, Wildlife, Fish, Rare Plants, Vegetation Management (other than forest products)
Oklahoma	Mountain Fork West	EA DN	Wildlife, Fish, Rare Plants, Vegetation Management (other than forest products), Fuels Management, Road Management
Oklahoma	RWD #6 Cooperville Amendment	DM	Special Use Management

Appendix C – Approved Communication Sites

Approved Communication Sites and sites for which plans are under development:

Bee Mountain Electronic Site Mena RD, Polk County, AR NW1/4 of SE1/4 Section 13, T3S R31W This site is unoccupied and may be abandoned.	**Buck Knob** Oden RD, Scott County AR T1S. R28W, Sec. 1
Cove Mountain Fourche RD. Perry, Co. AR T3N, R21W, Sec. 14	**Crystal Mountain** Winona RD, Saline County, AR T2N, R18W, Sec. 8 This site is unoccupied and may be abandoned.
Danville Electronic Site Fourche RD, Yell Co. AR T4N, R23W, Sec. 12	**Dutch Creek** Fourche RD, Yell County, AR, 2.3 Ac. T4N, R23W, Sec. 12 Microwave, mobile radio
Eagle Mountain Mena RD, Polk Co. AR SW1/4 Sec. 30 T3S, R29W	**High Peak** Caddo RD. Montgomery Co. AR T3S, R24W, Sec. 19
Kiamichi Mountain (Three Sticks Historical Monument) Kiamichi RD, LeFlore Co. OK T2N, R25E, Sec. 29	**Federal Aviation Agency, VORTAC Site** Choctaw RD, LeFlore Co. OK Sect. 6, T2N, R26E
Ouachita Pinnacle Jessieville RD, Garland Co. AR T1N, R21W, Sec. 15	**Paron Elec. Site** Winona RD, Saline Co, AR T2N, R18W, Sec. 11
Poteau Mtn. (Bates) Poteau RD. Sebastian Co. AR T4N, R32W, Sec. 34	**Rich Mtn. #1** Mena RD, Polk Co. AR NW1/4 Sec. 17, T1S, R31W
Rich Mtn. #2 Mena RD, Polk Co. AR NW1/4 Sec. 6, T2S, R30W	**Tall Peak** Mena RD, Polk Co. AR SE1/4 SE1/4, Sec. 24, T4S, R28W
White Oak Mtn. Cold Springs RD., Scott Co. AR T4N, R28W, Part of the NE NW, Sec. 26	**Sycamore** Choctaw RD, LeFlore Co. OK T3N, R23E, Sec. 33
Slatington Peak Caddo RD. Montgomery Co. AR NW1/4 NW1/4 Sec. 4, and NE1/4 NE1/4 Sec. 5, T4S, R27W Currently unoccupied, retain for future development.	**Hodgen** Choctaw RD, LeFlore Co. OK T3N, R25E, Sec. 2

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