



# OUACHITA NATIONAL FOREST

**Fiscal Year 2009  
Monitoring and Evaluation Report for the  
Land and Resource Management Plan**

**October 1, 2008—September 30, 2009**







# **Fiscal Year 2009 Monitoring and Evaluation Report for the Land and Resource Management Plan**

## **Ouachita National Forest**

Arkansas Counties:

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

Oklahoma Counties:

Leflore, McCurtain

United States Department of Agriculture  
Forest Service  
September 2010

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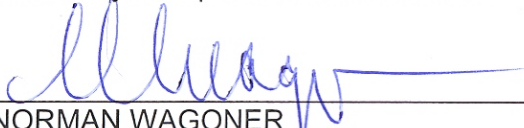
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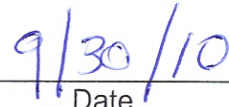


## Forest Supervisor's Certification

I have evaluated and endorse the monitoring results and recommendations presented in this Monitoring and Evaluation Report (M&E Report). This is the fourth M&E Report for the 2005 Revised Forest Plan (Forest Plan), effective December 2005. Monitoring and evaluation are important tools in determining if management direction contained in the 2005 Forest Plan is effective in achieving the desired conditions for the Ouachita National Forest, if program priorities and objectives are being accomplished, and if the Plan standards (design criteria) adequately guide project implementation. This and future M&E Reports will contribute to review and updates to the 2005 Forest Plan.

I have directed that the actions necessary to respond to the recommendations in this report be implemented. I have considered funding requirements necessary to implement these actions.

  
\_\_\_\_\_  
NORMAN WAGONER  
Forest Supervisor

  
\_\_\_\_\_  
Date





# **Fiscal Year 2009 Monitoring and Evaluation Report for the Land and Resource Management Plan**

## **Ouachita National Forest**

### **Introduction**

The 2005 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 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 design criteria 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.

### **Purpose of the Monitoring and Evaluation Report**

The 2005 Forest Plan was completed under the 1982 National Forest Management Act planning regulations (36 CFR 219). 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 shall recommend 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 management on the Ouachita National Forest utilizing the results of monitoring and evaluation. The M&E Report combines the results of the evaluations that occur throughout the year into a summary document. 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 Design Criteria (Forest Plan, Pages 73 - 122); and occurrence of environmental effects as predicted. Monitoring indicates whether 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 are needed to improve

resource management on an annual basis or in more comprehensive reviews that result in periodic updates of the Forest Plan.

## **Organization of the Monitoring and Evaluation Report**

The Monitoring Report is structured similarly to the Forest Plan because the M&E Report evaluates implementation and effectiveness of the Forest Plan. The Monitoring Report is prefaced by a summary of the four main parts to the Report. Monitoring of desired conditions, including actions, outcomes, or resources to be measured and the frequency of measurement and reporting, is included in Part 1 of the Plan and in the M&E Report. Performance indicators to be monitored against Forest Plan objectives, including the frequency of measurement and reporting, are presented in Part 2 of the M&E Report. Project-level adaptation, triggered by reviews of selected projects, is focused on the effectiveness of project design criteria and is presented in Part 3 of the M&E Report. Part 4 of the M&E Report contains specific recommendations for the next fiscal year (FY).

# Monitoring and Evaluation Report Summary

## Part I: Desired Conditions

Monitoring of desired conditions allows the Ouachita NF to annually accumulate data that are then used to establish trends and assess progress towards achievement of the desired condition statements set out by the Forest Plan. Through repeated measurement, data trend lines may be established and used to determine if programs should be adjusted or if changes in Forest Plan direction are needed. Annual monitoring results are reported each year in the M&E Report. Monitoring of desired conditions for terrestrial ecosystems; riparian and aquatic ecosystems; proposed, threatened, endangered and sensitive species; geologic resources; landownership pattern; heritage resources; public use and enjoyment; facility operation and maintenance; commodity, commercial, and special uses; and fire (community protection and safety) for FY 2009 are summarized below.

### Desired Conditions for Terrestrial Ecosystems

- ☞ The Ouachita NF continues to transition to new and improve on current vegetation inventory databases and activity tracking systems that will allow more comprehensive monitoring and analysis of the effects of fire and silvicultural treatments to the vegetation communities.
- ☞ Silvicultural treatments were applied to 18,793 acres within the Pine-Oak Forest ecosystem, 2,346 acres within the Shortleaf Pine, Bluestem Grass ecosystem; and 258 acres within the Dry-Mesic Hardwood Forest.
- ☞ Salvage occurred on 1,482 acres within the Pine-Oak Forest ecosystem; 196 acres within the Short-leaf Pine, Blue Stem Grass ecosystem; and 95 acres within the Dry-Mesic Hardwood Forest for a total of 1,773 acres.
- ☞ The prescribed fire program was very productive. A total of 122,372 acres had a fire influence on the Ouachita NF. These fires include prescribed fires as well as wildland fires.

### Desired Conditions for Riparian and Aquatic Ecosystems

- ☞ A total of 75 acres of soil restoration (50 acres) and soil maintenance (25 acres) was accomplished.
- ☞ Four streams were monitored for the presence of herbicides below treated stands. This is an ongoing monitoring program where ten percent of areas treated with herbicides are monitored for off-site movement. Results are not yet available for the four samples collected, as the samples are in the process of analysis.

### Desired Conditions for Wildlife and Fish Habitat

The following habitat improvements were accomplished:

- ☞ 85 waterholes constructed and 24 waterholes maintained
- ☞ 201 nest boxes installed and 50 nest boxes maintained
- ☞ 5,965 acres of midstory reduction completed
- ☞ 507 acres of overstory mast development for wildlife stand improvement
- ☞ 22,894 acres treated with prescribed fire for wildlife stand improvement (although all 122,372 acres treated with fire are considered beneficial for habitat improvement).
- ☞ 24 acres of seeding/planting
- ☞ 512 acres of habitat restored or enhanced
- ☞ 658 acres of openings rehabilitated and 17 acres of permanent openings created
- ☞ 6 wildlife gates installed and 10 wildlife gates maintained
- ☞ 16 acres fertilized

- 75 structures installed and 302 structures maintained for endangered species
- 73 lake fish attractors created
- 19.5 stream miles of fish passage restored
- 474 acres of fishing pond/lake enhancements completed
- 2,995 acres of early successional habitat were created through timber regeneration harvest methods (2,151 acres), uneven-aged management (159 acres), and wildlife habitat improvement (685 acres). This falls short of the 5,500 acres needed to meet the Plan requirements. A total of 6,089 acres were planted or site prepped for natural regeneration and wildlife habitat improvement. This is slightly higher than the 5,500 acres needed to meet the annual Plan requirements; however previous years have not been as high.
- 5,938 acres were planted or site prepped for natural regeneration including 1,211 acres for wildlife habitat improvement
- Mast Capability – Hardwoods** greater than 50 years old are used to determine hard mast capability. There were 454,787 acres of hardwoods greater than 50 years old in 2009 (25 percent of the forest) compared to 452,111 acres of hardwoods greater than 50 years old in 2008. This is an increase of 2,676 acres.
- Acres in Mature Hardwood Forest – Hardwoods** greater than 100 years old are used to simulate acres in mature hardwood. In 2009, there were 58,689 acres greater than 100 years old (three percent of forest) compared to 52,553 acres greater than 100 years old in 2008. This is an increase of 6,136 acres over the previous year.
- Acres in Mature Pine Forest – Mature pine forest** consist of pines greater than 80 years old. In 2009, there were 553,923 acres of pine forest greater than 80 years old (31 percent of forest) compared to 507,068 acres in FY 2008. This is an increase of 46,855 acres in this category.

#### **Terrestrial Management Indicator Species (MIS) Population Trends**

- Deer:** Deer harvest data for 2009 indicate an increasing harvest in the counties encompassed by the Ouachita NF with the highest harvest year in FY 2006. Data indicate that deer density on the Ouachita NF has an increasing trend.
- Northern Bobwhite:** In the period from FY 2000 through FY 2009, birds heard per stop varied from a high of 1.0 bird calls per stop in 2005 to a low of 0.33 bird calls per stop in 2009. Over this ten-year period, the Ouachita region averaged 0.64 bird calls per stop per year. Landbird point data and the trend in early seral habitat creation indicate a decrease in Northern Bobwhites and in habitat capability.
- Eastern Wild Turkey:** Over the past two decades, the number of turkey poults per hen has varied from a low of 1.36 poults per hen in 2009 to a high of 3.7 poults per hen in 1997. The 2009 data compare to recent results of 1.52 poults in 2008 and 1.9 poults in 2007. The 2009 habitat capability indicates the Ouachita NF can support over 18,152 turkeys compared to 18,380 turkeys in 2008. Biological factors other than habitat are apparently involved. The Arkansas Game and Fish Commission (AGFC) considers turkey to be in a downward trend and have modified seasons to address the trend.
- Pileated Woodpecker:** Analysis shows that the current habitat capability would support 16,236 birds compared to 15,555 birds in FY 2008. This exceeds the 2005 Forest Plan bird population objective of 11,265 (USDA Forest Service 1995). Thirteen years of Landbird monitoring data on the Ouachita NF show an overall slight downward trend for Pileated Woodpecker. The Pileated Woodpecker and its habitat appear to be secure within the Ouachita NF.
- Scarlet Tanager:** Ouachita NF Landbird point data and habitat capability data indicate an increasing trend for the Scarlet Tanager. The Scarlet Tanager appears secure on the Ouachita NF and within its overall range.

- ☞ Prairie Warbler: Ouachita NF Landbird point count data for FY 2009, have shown a slight increase in numbers from FY 2008; however, these numbers are still well below numbers from the late 1990s and early 2000s. The population viability on the Ouachita NF should not be considered threatened. Increases in thinning and prescribed fire in the pine and pine-hardwood types, especially those associated with approximately 200,000 acres of shortleaf pine-bluestem ecosystem restoration, will benefit Prairie Warbler populations by improving habitat.

#### **Ponds, Lakes, and Waterholes MIS Population Trends**

- ☞ Bluegill: The bluegill electrofishing catch for FY 2009 was the third lowest since 1991. As sampled, bluegill populations across the Ouachita NF are at suitable and sustainable levels, and their viability is not in question.
- ☞ Largemouth Bass: The largemouth bass 2009 catch-rate was the highest of the past four years, but the tenth lowest in the past 19 years. As sampled, largemouth bass populations across the Ouachita NF are at suitable and sustainable levels and their viability is not in question.
- ☞ Redear Sunfish: The redear sunfish electrofishing catch in 2009 was the highest annual catch over the past 19 years. As sampled, the redear sunfish populations across the Ouachita NF are at suitable and sustainable levels and their viability is not in question.

#### **Stream and River MIS Population Trends**

There are 14 management indicator species of fish associated with stream and river habitat. Monitoring for 12 species is conducted utilizing Basin Area Stream Surveys (BASS) in the paired-stream surveys every five years due in FY 2011, and annually at long-term stream sites. Data from these surveys are analyzed every five years, and that analysis is utilized for planning purposes throughout the five-year interim. Data for the Johnny and channel darters are collected annually.

- ☞ Data from 2006 BASS samples and other annual long-term monitoring samples were analyzed and incorporated into the 2008 MIS analysis addressing the results of monitoring for 12 stream fish species. Data suggest that fish populations in the Arkansas River Valley and Upper Ouachita Mountain ecoregions were stable. Data identified four fish species in the Lower Ouachita Mountain ecoregion that appear to have adverse population trends and will require additional monitoring.
- ☞ The trend line for Johnny darter snorkeling counts for the past 12 years is non-significant due to the wide range of variability in counts. Counts for this species during FY 2009 were the lowest on record.
- ☞ The trend line for channel darter counts is barely statistically significant, indicating a slight downward trend. The FY 2009 channel darter counts were the second lowest numbers in the 12 years of permanent transect counts.

#### **Desired Conditions for Proposed, Endangered, and Threatened, and Sensitive (PETS) Species**

- ☞ Red-cockaded Woodpecker: Red-cockaded Woodpecker data indicated 128 adult birds and 77 fledglings in FY 2009 compared to 110 adult birds and 58 fledglings in FY 2008. Over the past decade, the number of active territories and the number of adult birds are both showing an increasing trend.
- ☞ Harperella: In FY 2009, monitoring for harperella was limited to the four sites on Irons Fork Creek and two sites on Fiddler Creek and was conducted in conjunction with the MVUM analysis. Two additional miles of stream were inventoried for harperella during FY 2009, but no new populations were found.

- ☞ Cossatot Leafcup: 205 acres of potential habitat were surveyed for the sensitive species, leafcup. No new locations of the species were located during the survey. Survey sites were selected based on known geology and landform requirements of the leafcup including Novaculite boulder fields and talus slopes. One of the four known leafcup sites was monitored to determine the condition of that population, which revealed a healthy population of numerous plants (1000+) and approximately 50 percent of the population was in flower.
- ☞ Leopard Darters: Based on the counts at 17 of the 18 permanent monitoring sites snorkeled during the summer of 2009, leopard darter counts were the second lowest (annual pooled count per minute) since the use of permanent monitoring sites began in 1998. Leopard darter counts in 2009 were nearly half that of the counts during the summer of 2007, the second highest count recorded.
- ☞ Bald Eagle Nests: The Ouachita NF had one active bald eagle nest that hatched two young and fledged one bird.
- ☞ Bear Den Cave Monitoring for Indiana Bat: There were no Indiana bat surveys conducted at Bear Den Cave in FY 2009. Previous surveys at Bear Den Cave did not find any Indiana bats using this winter hibernaculum from 2005 – 2008.
- ☞ American Alligator: Surveys of the American alligator on the Oklahoma Ranger District at Red Slough located seven adult alligators in FY 2009, in addition to a 9-foot alligator spotted prior to survey. This is up from four sighted during FY 2008.
- ☞ American Burying Beetle (*Nicrophorus americanus*): No American burying beetles (ABB) were caught during 800 trap nights on established transects lines during FY 2009. In addition, no ABBs were caught on any project locations.
- ☞ Federally Listed Freshwater Mussels: No surveys were conducted during FY 2009 for the Federally listed mussels. Monitoring in previous years indicated declines in diversity and abundance for all freshwater mussel species.

## **R8 Sensitive Species and Species of Viability Concern and Habitat**

- ☞ Rich Mountain Slit-mouth Snail (*Stenotrema pilsbryi*): Thirty-five to sixty-minute surveys were conducted at six sites over four days in FY 2009. No snails were found.
- ☞ Endemic Salamanders: Since FY 2007, studies have been underway to identify and define species and species boundaries of the Caddo Mountain, Rich Mountain, and Fourche Mountain salamanders, using modern DNA sequence techniques. Surveys were conducted in FY 2009 for *P. caddoensis*.
- ☞ Sensitive Bats: The Ouachita NF initiated a bat acoustic survey protocol in FY 2009 to monitor bat population trends and assess the impacts of White Nose Syndrome (WNS) on the summer distribution of bats. During fourteen survey nights the first year the Ouachita NF captured calls from seven 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.
- ☞ Ouachita Darter (*Percina sp. nov.*): Ouachita darter surveys are conducted in late summer/early fall. A survey was conducted in 2009, however water and air temperatures were abnormally cool; two individuals were found where previously only single individuals have been found in two prior surveys.

## **Desired Conditions for Geologic Resources**

- ☞ Potential threats from geologic hazards to human life, natural resources, or financial investment remain low on the Ouachita NF in both Arkansas and Oklahoma.

## **Desired Conditions for Landownership Pattern**

- ☒ There were 136.5 miles of landline location or maintenance accomplished on the Ouachita NF, compared to 135.4 miles of landline location maintenance during FY 2008.
- ☒ A total of two encroachments were resolved.
- ☒ No lands were purchased; 260 acres were exchanged; and 4.57 acres were sold during FY 2009.

#### **Desired Conditions for Heritage Resources**

- ☒ The Ouachita NF received over 685 hours of volunteer help to organize, clean, document, sort, and catalog archeological collections in the Supervisor's Office. This volunteer help is valued at approximately \$14,000.
- ☒ One hundred thirty-three archeological and historic sites were revisited by heritage staff to reassess their conditions.
- ☒ Archeological survey was undertaken on 21,965 acres during the year as a part of Section 106 activities. As a result, 30 archeological sites were found and documented.
- ☒ The 2009 To Bridge A Gap conference was co-hosted by the Choctaw Nation of Oklahoma, the Ouachita NF and the Ozark-St. Francis NFs at the Choctaw Tribal complex in Durant, Oklahoma and was well attended. Representatives of many Tribes, several Northern, Southern, and Eastern National Forests, and Regional Offices in the Southern and Northern Regions, as well as representatives from the Washington Office attended.

#### **Desired Conditions for Public Use and Enjoyment: Recreation Participation; Conservation Education and Stewardship; Landscape Management; and Law Enforcement**

- ☒ Recreation: 113 of the 118 recreation sites were maintained to standard in 2009.
- ☒ Friends of the Ouachita Trail (FoOT) contributed 3,535 hours of trail maintenance on the Ouachita National Recreation Trail. This volunteer labor is valued at \$7,898.
- ☒ Conservation Education Presentations: At least 119 programs or presentations were offered to various groups. Presentations are listed in Appendix B.
- ☒ Landscape Management: The Ouachita NF maintained its base requirement of having 55 percent of the projects undertaken within a High Scenic Integrity Objective (SIO) area attaining the High SIO, 70 percent of projects undertaken within a Moderate SIO area attaining the Moderate SIO rating, and 100 percent of projects located in Low SIO areas attaining the Low SIO rating.
- ☒ Law Enforcement: During FY 2009, Ouachita NF Law Enforcement personnel spent approximately 450 hours in support of various details away from their home units. These details included security details, fire severity patrols, natural disasters, and large group gatherings. On the Ouachita NF, a total of 305 Federal Violation Notices, 497 State Violations, 531 Warning Notices, and 596 Incident Reports were issued.

#### **Desired Conditions for Facility Operation and Maintenance**

- ☒ The Ouachita NF facility inventory included 343 buildings that are categorized as follows: Existing - Active, Existing - Inactive, or Existing - Excess. Of those 343 buildings, 295 have a Facility Condition Rating (FCR) rating of good or fair. The percentage of buildings with an FCR of good or fair is 86%. Twelve buildings are rated poor and 36 are unrated. All of the "unrated" buildings are at Camp Ouachita.
- ☒ Transportation System: 580 miles of road were operated to standard. Declining road and trail maintenance budgets are contributing to difficulties in meeting objective maintenance levels and classes.

- 📊 Transportation System: 42.99 miles of local roads were reconstructed and 1.94 miles of arterial/collector roads (4 roads) were reconstructed.
- 📊 Transportation System: 21.00 miles of local roads (25 roads) were constructed and added to the system.
- 📊 Transportation System: There were 2.04 miles of roads removed from the system.

### **Desired Conditions for Commodity, Commercial, and Special Uses**

- 📊 Special Uses.  
There were 478 special use authorizations:
  - 298 for roads
  - 60 for water lines, electric, telephone utilities, and oil and gas pipelines
  - 7 for research or resource surveys
  - 24 for dams and reservoirs
  - 61 for communication uses
  - 10 for recreation uses
  - 4 for agricultural uses
  - 7 for community uses
  - 7 for miscellaneous uses
- 📊 Minerals and Energy Development: 837 minerals cases were administered.
- 📊 Livestock Grazing: There were four active range allotments and six permittees on the Ouachita NF in 2009.
- 📊 Firewood: There were 1,650 cords of firewood sold.

### **Desired Conditions for Fire (Community Protection and Safety)**














- 📊 Wildland Urban Interface (WUI): 92,262 acres of hazardous fuel treatments were accomplished by prescribed fire with most of these acres being in the WUI area.
- 📊 Wildfires: During FY 2009, 60 wildfires affected 2,247.3 acres on the Ouachita NF. Of the total number of fires, 7% were lightning-caused, and 1% of the total acres affected by fire were a result of these natural ignitions. Arson accounted for 57% of all fires and about 80% of the total acres burned. Other causes of wildfires include escapes from debris burning (14%), campfires (1%), equipment (5%), railroads (1%), and other miscellaneous causes (15%).
- 📊 Condition Class: Over 120,000 acres were likely to have changed condition class, i.e. lowered, as a result of fuels mitigation and related activities. Prescribed fire treatments that lowered condition class included 92,262 acres specifically designed to reduce hazardous fuels, and 27,863 acres treated with prescribed fire to address other resource benefits, e.g., wildlife, non-native invasive weed control, etc.

## **Part 2: Objectives**

Part 2 of the 2005 Forest Plan contains the strategic direction to be followed in order to move toward desired conditions. Restoring and maintaining healthy and productive ecosystems, providing high-quality recreation opportunities, protecting air quality, and providing clean water, appealing scenery, forest products, and economic opportunities to communities that rely upon the Ouachita NF are the highest priorities under the 2005 Forest Plan. The following is a summary of monitoring findings associated with implementation of the objectives and strategies of the 2005 Forest Plan during FY 2009.

- 📊 Prescribed Fire: A total of 120,125 acres of prescribed fire was accomplished (site preparation, wildlife habitat improvement, and hazardous fuels reduction treatments).



- 
**Water:** The Basin Area Stream Survey (BASS) was conducted in cooperation with the Southern Research Station's Center for Aquatic Technology Transfer (CATT) during FY 2006 and will be conducted again in FY 2011. Data from the nine watersheds surveyed under BASS were analyzed during FY 2008 for MIS fishes. The FY 2006 survey provided data for over 48,000 acres or 46 miles of stream, including 17 sites on 15 streams that were monitored extensively.
- 
**Soil Resources & Watershed Improvement:** The Ouachita NF accomplished a total of 75 acres of soil restoration (50 acres) and maintenance (25 acres). This included watershed improvement or maintenance activities, most of which involved stabilization of gullies and abandoned roads. The FY 2008 work included 41 acres of watershed improvement through normal project work.
- 
**Air:** There is a fine particulate matter and visibility monitoring site located near the Caney Creek Wilderness and operated as part of the IMPROVE monitoring program. The results of the monitoring, particularly the haziness index (deciviews, or dv) on the 20% best and worst days for visibility, are being used to ensure compliance with the federal requirement to achieve natural background visibility conditions at all Class I areas by the year 2064. A review of monitored data through the year 2008 has been performed, and data show that visibility is improving on the 20% worst visibility days. It appears that the Uniform Rate of Progress to achieving better visibility conditions at the Class I area is being met. (Source: <http://vista.cira.colostate.edu/views/>).
- 
**Recreation Sites:** There were 113 of 118 recreation sites (96%) maintained to standard.
- 
**Improve Accessibility:** Construction is underway to improve accessibility at Cedar Lake Day Use Area and Albert Pike Recreation Area.
- 
**Designate a Travel Management System:** During FY 2008 public comments were analyzed and environmental analysis work was accomplished. Continued to update the GIS roads/trails layer as well as INFRA.
- 
**Recreational Fishing Opportunities:** Fishing recreational opportunities are being protected, enhanced or maintained by: monitoring of bass and sunfish spawn with supplemental stocking requested from the 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 Ouachita NF lakes and select ponds. Annual channel catfish stocking continued in most managed recreational fishing waters in close coordination with the fish and game agencies of each state.
- 
**Wilderness:** There were 64,469 acres of wilderness area administration accomplished.
- 
**Upgrade Public Facilities to Architectural Barriers Act (ABA) Standards:** A new accessible toilet building was constructed to replace an older non-accessible toilet building at the Cedar Lake Recreation Area.
- 
**Roads Decommissioned:** During FY 2008, 2.04 miles of road were decommissioned.
- 
**Aquatic Organism Passage:** Six major stream crossings were rebuilt with fish-friendly designs to restore or improve fish passage to seven miles of streams. Five additional crossings had oversized culverts put in as replacements, or existing crossing structures were backfilled and ramped to provide an additional 5.5 miles of improved fish passage. Approximately 19.5 miles of streams had fish passage restored or improved through a variety of stream crossing projects. Dispersed campsites along the Cossatot River were closed and/or rehabilitated and hardened to reduce sediment impacts on five miles of the river.
- 
**Timber Volume Sold:** There were 175,387.2 hundred cubic feet (ccf) of timber sold.
- 
**Fuels Treatment:** 92,262 acres were treated in high priority areas.

- ☒ Hazardous Fuel Reduction: Hazardous fuel treatments met the Plan objective of between 50,000 to 100,000 acres per year. There were 92,262 acres of hazardous fuel treatments accomplished by prescribed fire.

### **Part 3: Design Criteria**

- ☒ No Implementation Monitoring Reviews were conducted during FY 2009.

### **Part 4: Recommendations**

The Recommendations Section reports progress and accomplishments on action items identified in previous year's monitoring reports and sets out any additional recommendations and action items to be accomplished during FY 2010. Progress on action items identified for FY 2009 is summarized below and FY 2010 action items are identified.

#### **Vegetation Inventory Databases and Activity Tracking Systems**

##### **FY 2009 Action Items (Planned)**

- Implement FSVeg Spatial on the Ouachita NF to gain ability to summarize and update forest stand condition data more efficiently and utilize GIS to display it spatially.
- Further implement FACTS and GIS database so activities can be tracked by forest communities.

##### **FY 2009 Action Items (Accomplished)**

- FSVeg Spatial became operational in 2009. Forest Vegetation Stand level data continue to be refined and updated.
- Spatial components for FACTS Accomplished activities began.

##### **FY 2010 Action Item (Planned)**

- Implement FSVeg Spatial on the Ouachita NF to gain ability to summarize and update forest stand condition data more efficiently and utilize GIS to display it spatially.
- Further implement FACTS and GIS database so activities can be tracked by forest communities.

**Implement the Travel Management Rule:** The Travel Management Rule requires that all National Forests and Grasslands designate a system of roads, trails, and areas for use by motor vehicles.

##### **FY 2009 Action Item (Planned)**

- Continue work to complete environmental analysis and designate a system of roads, trails, and areas for public motor vehicle access. Continue to update the GIS roads/trails layer as well as INFRA.

##### **FY 2009 Action Item (Accomplished)**

- Work on the environmental analysis continued.

##### **FY 2010 Action Item (Planned)**

- Complete environmental analysis and sign NEPA decision. Refine GIS and INFRA data. Release MVUMs to the public.

**Wilderness Area Surveys for Non-native Invasive Species:** Forest Plan Objective 29 provides for inventories to determine the presence and extent of non-native invasive species in Appendix E in wilderness areas by 2010.

**FY 2009 Action Item (Planned)**

- Initiate surveys for non-native invasive species in wilderness areas in three of the Forest's six wilderness areas (Poteau Mountain, Dry Creek, and Flatside).

**FY 2009 Action Item (Accomplished)**

- Non-native invasive species inventories were conducted in Poteau Mountain and Dry Creek Wilderness Areas. See Appendix E for results. Data from Flatside Wilderness Surveys were not compiled as of the date of this M & E Report.

**FY 2010 Action Item (Planned)**

- Report data for Flatside Wilderness. Conduct surveys in two additional wildernesses to inventory non-native invasive species.

**Wilderness Management Plans:** Wilderness Management Plans are targeted to be updated. Priority plan elements will be those that are in the Chief's 10 Year Wilderness Challenge.

**FY 2009 Action Item (Planned)**

- Complete the updates of Wilderness Management Plans. Priority plan elements will be those that are in the Chief's 10-Year Wilderness Challenge.

**FY 2009 Action Item (Accomplished)**

- There were no updates to Wilderness Management Plans in FY 2009. Progress was made in the Chief's 10-Year Wilderness Stewardship Challenge, specifically in the non-native invasive species inventories. Work remains to update Wilderness Management Plans, and the target for this work will have to be extended.

**FY 2010 Action Item (Planned)**

- Initiate work to complete the updates of wilderness management plans (within available funding) addressing priority plan elements as listed in the Chief's 10-Year Wilderness Challenge.

**Energy Upgrades:** The 2005 Forest Plan Objective 34 is as follows: "Complete energy efficiency upgrades on all administrative buildings and complete identified work on 10 percent of administrative buildings needing upgrades by 2015."

**FY 2009 Action Item (Planned)**

- Continue work initiated during FY 2008 to identify needed energy efficiency upgrades and complete work where feasible.

**FY 2009 Action Item (Accomplished)**

- Work was continued to identify needed energy efficiency upgrades; however needed work was minor.

**FY 2010 Action Item (Planned)**

- Continue work initiated during FY 2008 and FY 2009 to identify needed energy efficiency upgrades and complete work where feasible.

**Forest Overview of Heritage Resources:** Objective 20 of the Revised Forest Plan is as follows: "Complete a forest overview of heritage resources by 2007 incorporating the results of 20+ years of Section 106 and Section 110 work and documentation."

**FY 2009 Action Item (Planned)**

- Complete the Forest Overview of Heritage Resources.

**FY 2009 Action Item (Accomplished)**

- During FY 2009, the Overview chapter on the History of the Heritage Program was substantially written, but not completed until early in FY 2010. Likewise, the chapter on the history background was begun.

**FY 2010 Action Item (Planned)**

- Complete the Forest Overview of Heritage Resources.

**Projects in High Scenery Integrity Objective Areas:** One analysis for a Special Use Project for road construction through the Upper Kiamichi River Wilderness area was conducted in 2008. This is an area having a SIO of VERY HIGH. A decision on the Special Use project has not been finalized.

**FY 2010 Action Item**

- Action still pending decision. If a decision is reached during FY 2010, design and conduct monitoring for the possible road construction in the wilderness area.

## **Part 1 – Desired Conditions**

Desired conditions describe how the Ouachita NF would be expected to look and function in the future as management direction in the Forest Plan is implemented. Desired conditions are described using the ecological, economic, and social attributes that characterize or exemplify the anticipated outcomes of land management. Desired conditions are not commitments and may be achievable only over the long term.

The degree to which the Ouachita NF achieves the desired conditions is monitored to accumulate data annually. Data are then used to establish trends and assess progress towards achievement of the desired condition statements set out by the Forest Plan. Through repeated measurement, trend lines are established and used to determine if programs should be adjusted or if changes in Forest Plan direction are needed. Annual monitoring results are reported each year in the M&E Report and every five years, a comprehensive review is conducted. This section of the M&E Report is structured similarly to the Forest Plan and annual monitoring results are reported for terrestrial ecosystems; riparian and aquatic ecosystems; proposed, threatened, endangered and sensitive species; geologic resources; landownership pattern; heritage resources; public use and enjoyment; facility operation and maintenance; commodity, commercial, and special uses; and fire (community protection and safety).

### **Terrestrial, Riparian, and Aquatic Ecosystems (including Air Quality) Desired Conditions**

Ecological systems recognized within the Ouachita NF are divided by terrestrial community types and riparian and aquatic community types. In this M&E Report, progress toward the desired conditions for terrestrial communities is presented first, followed by discussions of riparian and aquatic communities.

#### **Terrestrial Ecosystems**

The desired condition for terrestrial ecosystems is a mix of closed-canopy forest, intermittent-canopy woodlands, and open prairie and glade conditions. Forest and/or woodland systems may be dominated by pine, oak, or pine and oak species together. Non-forested systems are primarily dominated by grasses, forbs, and shrubs. 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. There are ten terrestrial community types (and three subsystems):

#### **Terrestrial Communities**

- 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
- Calcareous Prairie

## Ouachita Mountains and West Gulf Coastal Plain-Habitat Diversity, Old Growth and Shortleaf Pine-Bluestem Restoration Emphasis Communities

The following tabulation contains a summary of desired conditions by community type.

<b>Desired Conditions by Community Type</b>	
<b>Ouachita Shortleaf Pine-Oak Forest</b>	
<b>% Canopy Closure</b>	> 70
<b>Vertical Structure</b>	6-14 % in grass/forb or seedling/sapling/shrub condition and 60-90 % in the mature forest condition
<b>Fire Regime</b>	At least 50 % of the spatial extent of the pine-oak forest is treated with prescribed fire every 5-7 years with an occasional growing season fire
<b>Old Growth Characteristics</b>	Old growth pine-oak forests will develop naturally in a range of patch sizes in research natural areas (MA 4), riparian areas (MA 9), wilderness (MA 1), portions of semi-primitive areas (MA 17), and other parts of the Ouachita NF outside of "lands suitable for timber production" in MAs 14, 15, and 16
<b>Ouachita Shortleaf Pine-Oak Woodland</b>	
<b>% Canopy Closure</b>	< 60
<b>Vertical Structure</b>	6-14 % in grass/forb and seedling/sapling/shrub and 60-90 % in the mature woodland condition
<b>Fire Regime</b>	Prescribed fire is applied to at least 50 % of this community every 3-5 years, with an occasional growing season fire
<b>Old Growth Characteristics</b>	Small, medium, and large patches of old growth pine-oak woodlands will develop on at least 79,000 acres (MA 21), well distributed across the Ouachita NF
<b>Ouachita Shortleaf Pine-Bluestem (includes Red-cockaded Woodpecker Habitat)</b>	
<b>% Canopy Closure</b>	40-60
<b>Vertical Structure</b>	3-8.3 % in grass/forb and seedling/sapling/shrub and 60-90 % in the mature woodland condition
<b>Fire Regime</b>	Prescribed fire is applied to at least 50 % of this community every 3-5 years with an occasional growing season fire
<b>Old Growth Characteristics</b>	Small to medium sized patches of old growth pine-bluestem woodland will develop within at least 24,000 acres of MA 22
<b>West Gulf Coastal Plain Pine-Hardwood Forest</b>	
<b>% Canopy Closure</b>	≥ 70
<b>Vertical Structure</b>	6-14 % in grass/forb and seedling/sapling/ shrub and 60-90 % in the mature, fire-maintained forest condition
<b>Fire Regime</b>	Prescribed fire is applied to at least 50 % of this community every 3-5 years with an occasional growing season fire
<b>Old Growth Characteristics</b>	Old growth conditions will develop and go through regeneration cycles naturally on most of the acres in the West Gulf Coastal Plain pine-hardwood forest community, which are represented by small and medium patches
<b>Ouachita Dry-Mesic Oak Forest</b>	
<b>Vertical Structure</b>	4-10 % in grass/forb and seedling/sapling/ shrub and 60-90 % in the mature forest condition
<b>Fire Regime</b>	Prescribed fire is applied to at least 50 % of this community every 5-7 years with an occasional growing season fire
<b>Old Growth Characteristics</b>	Old growth conditions will develop and go through regeneration cycles naturally on most of the acres in the dry mesic oak forest community, which is represented by the complete range of patch sizes

**Are landscape-level and stand level composition and structure of these major forest communities within desired ranges of variability?**

The Ouachita NF has converted to new vegetation inventory databases and activity tracking systems, known as the Natural Resource Information System consisting of two databases: Field Sampled Vegetation (FSVeg) and Forest Service Activity Tracking System (FACTS).

A new FSVeg database interface tool (FSVeg Spatial) was implemented on the Ouachita NF in FY 2009 which allows easier updating of forest stand conditions. Forest stand summary information such as condition class, age, and forest types will be more accessible for analysis and monitoring. Forest Service Activity Tracking System (FACTS) and direction to populate the GIS database with all FACTS accomplishments was emphasized for FY2010 treatments.

While these databases are improving, they are not currently populated sufficiently to adequately address the question of whether landscape-level and stand level composition and structure of major forest types are within the desired ranges of variability.

**Report acres of vegetation management treatment accomplished this fiscal year, including regeneration harvests, and acres treated with prescribed fire in cool season and in growing season. At five-year intervals, progress toward the desired conditions of appropriate vertical structure/age classes, canopy closure, and fire regime will be evaluated.**

The Ouachita Shortleaf Pine-Oak Forest and Woodland, the Ouachita Shortleaf Pine Bluestem, West Gulf Coastal Plain, and the Ouachita Dry-Mesic Oak Forest vegetation communities in Management Area 14 are mostly classified as 'suitable' for timber harvesting activities and are managed to progress toward the desired conditions for MA 14. Excluding the prescribed fire program achievements, the FY 2009 reports from the Timber Information Manager (TIM) program in conjunction with the Forest Service Activity Tracking System (FACTS) reflect an estimate of activities that occurred within these communities for FY 2006, FY 2007, FY 2008 and FY 2009 as depicted in the following tables.

**Table 1. Silvicultural Activity by Community Type**

<b>2009 Ouachita NF Management Activities Accomplished</b>	<b>Pine Oak Forest</b>	<b>Pine Oak Woodland</b>	<b>SLP Bluestem</b>	<b>Dry-Mesic Hardwood</b>	<b>Total Acres</b>
	<b># Acres</b>	<b># Acres</b>	<b># Acres</b>	<b># Acres</b>	
<b>Clear-Cut (native species restoration)</b>	<b>134</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>134</b>
<b>Even-age Management – Shelterwood</b>	<b>245</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>265</b>
<b>Even-age Management – Seedtree</b>	<b>1,517</b>	<b>0</b>	<b>235</b>	<b>0</b>	<b>1,752</b>
<b>Commercial Thinning</b>	<b>8,319</b>	<b>0</b>	<b>1177</b>	<b>0</b>	<b>9,496</b>
<b>Uneven-age Management – Group Selection</b>	<b>1,111</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,111</b>
<b>Uneven-age Management – Single Tree Selection</b>	<b>2,760</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,760</b>
<b>Timber Stand Improvement</b>	<b>8,990</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8,990</b>
<b>Salvage</b>	<b>2,241</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,241</b>
<b>Total FY 2009 Acres</b>	<b>25,317</b>	<b>0</b>	<b>1,432</b>	<b>0</b>	<b>26,749</b>

<b>2008 Ouachita NF Management Activities Accomplished</b>	<b>Pine Oak Forest</b>	<b>Pine Oak Woodland</b>	<b>SLP Bluestem</b>	<b>Dry-Mesic Hardwood</b>	<b>Total Acres</b>
	<b># Acres</b>	<b># Acres</b>	<b># Acres</b>	<b># Acres</b>	
<b>Clear-Cut (native species restoration)</b>	<b>294</b>	<b>34</b>	<b>18</b>	<b>0</b>	<b>346</b>
<b>Even-age Management – Shelterwood and Modified Seedtree</b>	<b>3,229</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,229</b>
<b>Commercial Thinning</b>	<b>9,129</b>	<b>440</b>	<b>1,355</b>	<b>0</b>	<b>10,924</b>
<b>Uneven-age Management – Group Selection and Single Tree Selection</b>	<b>1,246</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,246</b>
<b>Timber Stand Improvement</b>	<b>2,650</b>	<b>0</b>	<b>351</b>	<b>0</b>	<b>3,001</b>
<b>Salvage</b>	<b>943</b>	<b>0</b>	<b>159</b>	<b>0</b>	<b>1,102</b>
<b>Total FY 2008 Acres</b>	<b>17,491</b>	<b>474</b>	<b>1,883</b>	<b>0</b>	<b>19,848</b>
<b>2007 Ouachita NF Management Activities Accomplished</b>	<b>Pine Oak Forest</b>	<b>Pine Oak Woodland</b>	<b>SLP Bluestem</b>	<b>Dry-Mesic Hardwood</b>	<b>Total Acres</b>
	<b># Acres</b>	<b># Acres</b>	<b># Acres</b>	<b># Acres</b>	
<b>Clear-Cut (native species restoration)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Even-age Management – Shelterwood and Modified Seedtree</b>	<b>4,078</b>	<b>0</b>	<b>285</b>	<b>0</b>	<b>4,363</b>
<b>Commercial Thinning</b>	<b>7,657</b>	<b>319</b>	<b>1,946</b>	<b>0</b>	<b>9,922</b>
<b>Uneven-age Management – Group Selection and Single Tree Selection</b>	<b>3,065</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,065</b>
<b>Timber Stand Improvement</b>	<b>907</b>	<b>0</b>	<b>2,081</b>	<b>0</b>	<b>2,988</b>
<b>Salvage</b>	<b>69</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>69</b>
<b>Total FY 2007 Acres</b>	<b>15,776</b>	<b>319</b>	<b>4,312</b>	<b>0</b>	<b>20,407</b>
<b>FY 2006 Ouachita NF Management Activities Accomplished</b>	<b>Pine Oak Forest</b>	<b>Pine Oak Woodland</b>	<b>SLP Bluestem</b>	<b>Dry-Mesic Hardwood</b>	<b>Total Acres</b>
	<b># Acres</b>	<b># Acres</b>	<b># Acres</b>	<b># Acres</b>	
<b>Clear-Cut (native species restoration)</b>	<b>74</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>74</b>
<b>Even-age Management – Shelterwood</b>	<b>1,075</b>	<b>24</b>	<b>195</b>	<b>0</b>	<b>1,294</b>
<b>Even-age Management – Seedtree</b>	<b>1,095</b>	<b>408</b>	<b>205</b>	<b>0</b>	<b>1,708</b>
<b>Commercial Thinning</b>	<b>11,963</b>	<b>432</b>	<b>1,302</b>	<b>0</b>	<b>13,697</b>
<b>Uneven-age Management – Group Selection</b>	<b>1,135</b>	<b>477</b>	<b>0</b>	<b>0</b>	<b>1,612</b>
<b>Uneven-age Management – Single Tree Selection</b>	<b>1,042</b>	<b>563</b>	<b>0</b>	<b>0</b>	<b>1,605</b>
<b>Timber Stand Improvement</b>	<b>5,823</b>		<b>1,005</b>	<b>177</b>	<b>7,005</b>
<b>Salvage</b>	<b>80</b>	<b>915</b>	<b>0</b>	<b>0</b>	<b>995</b>
<b>Total FY 2006 Acres</b>	<b>22,287</b>	<b>2,819</b>	<b>2,707</b>	<b>177</b>	<b>27,990</b>

The prescribed fire program was very productive in FY 2009, exceeding FY 2008 accomplishments by nearly 8,000 acres. An important accomplishment during FY 2009 was 92,262 acres treated to reduce fuels, the highest number of acres treated in any one of the past four years. As shown in the following tabulation, 122,372 acres were influenced by fire on the Ouachita NF during FY 2009. Acreages include treatments by prescribed fire as well as wildland fire.



<b>Prescribed Fire Program by Purpose (acres)</b>					
<b>Fiscal Year</b>	<b>Fuel Reduction</b>	<b>Wildlife</b>	<b>Site Prep</b>	<b>Wildland Fire</b>	<b>Ouachita NF Total</b>
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

During FY 2009, the 122,372 acres treated with fire were mapped and available for analysis, and additional work was accomplished to change mapping protocols to reflect all acres treated with prescribed fire. The number of acres and percent of the communities, including riparian and rare upland communities, were calculated.

As shown in the following tabulations, within the pine-oak forest community the number of acres and percent of community treated with fire decreased from FY 2008. The percent and number of acres of pine-oak woodland and shortleaf pine bluestem acres treated with fire and percentages increased from FY 2008 to FY 2009. The pine-oak community was still treated at a lower number of acres and percentage from the desired range, but the SLP bluestem was within the range for number of acres as well as percent treated with fire for FY 2009. The dry-mesic hardwood community is within the range of its desired fire regime for number of acres and percent of acres treated with fire.

	<b>Ouachita NF Community</b>			
	<b>Pine Oak Forest</b>	<b>Pine Oak Woodland</b>	<b>SLP Bluestem</b>	<b>Dry-Mesic Hardwood</b>
<b>Annual Desired Range of Acres Treated with Fire</b>	56,000 to 80,000	37,000 to 80,000	31,000 to 68,000	16,000 to 22,000
<b>FY 2006</b>	29,568	8,235	7,717	11,196
<b>FY 2007</b>	46,238	15,412	51,617	12,736
<b>FY 2008</b>	59,702	9,764	30,000	15,324
<b>FY 2009</b>	46,405	15,469	37,105	19,799

	<b>Ouachita NF Community</b>			
	<b>Pine Oak Forest</b>	<b>Pine Oak Woodland</b>	<b>SLP Bluestem</b>	<b>Dry-Mesic Hardwood</b>
<b>Annual Desired Percent of Acres Treated with Fire</b>	7-10%	15-33%	15-33%	7-10%
<b>FY 2006</b>	4%	3%	5%	5%
<b>FY 2007</b>	6%	6%	26%	6%
<b>FY 2008</b>	6%	6%	14%	5%
<b>FY 2009</b>	5%	10%	19%	7%

## Ouachita Mountains and West Gulf Coastal Plain-Rare Upland Ecosystems

The following tabulation contains a summary of desired conditions by community type.

<b>Desired Conditions by Community Type (Ouachita Mountains and West Gulf Coastal Plain-Rare Upland Communities)</b>	
<b>Ouachita Mesic Hardwood Forest</b>	
<b>% Canopy Closure</b>	Mostly closed canopy
<b>Vertical Structure</b>	0.5-5 % in grass/forb and seedling/sapling/shrub and 80-98 % in the mature forest condition
<b>Fire Regime</b>	Infrequent fire
<b>Old Growth Characteristics</b>	Old growth conditions will develop and go through regeneration cycles naturally on most of the acres in mesic hardwood forests, which are represented by small to medium patches on the Ouachita NF
<b>Ouachita Montane Oak Forest</b>	
<b>Vertical Structure</b>	Stunted, oak-dominated system
<b>Fire Regime</b>	Occasional prescribed fire
<b>Old Growth Characteristics</b>	Old growth will develop and go through regeneration cycles naturally on most of the acres in the Ouachita montane oak forest, which is represented by small and medium patches
<b>Ouachita Dry Oak Woodland</b>	
<b>% Canopy Closure</b>	40-80 %
<b>Vertical Structure</b>	4-10 % in grass/forb seral stage and 60-90 % in the mature woodland condition, as defined by abundant herbaceous groundcover
<b>Fire Regime</b>	At least 50 % of the dry oak woodland community is treated with prescribed fire every 5-7 years, with an occasional growing season fire included
<b>Old Growth Characteristics</b>	Old growth conditions will develop and go through regeneration cycles naturally on most of the acres in the dry oak woodland community, which is represented by small to medium patches
<b>Ouachita Novaculite Glade and Woodland</b>	
<b>Vertical Structure</b>	Open glade structure
<b>Fire Regime</b>	50 % of the novaculite glade and woodland community is treated with prescribed fire every 3-5 years with an occasional growing season fire included
<b>Old Growth Characteristics</b>	Small patches of old growth conditions will develop and go through regeneration cycles naturally, supplemented by prescribed fire, in all the acres of this community.
<b>Central Interior Highlands Dry Acidic Glade and Barrens</b>	
<b>Vertical Structure</b>	Open glade structure
<b>Fire Regime</b>	50-85 % of the dry acidic glades and barrens system and a 100-meter buffer are treated with prescribed fire every 5-10 years, including an occasional growing season fire
<b>Old Growth Characteristics</b>	Small patches of old growth conditions will develop and go through regeneration cycles naturally, supplemented by prescribed fire, in all the acres of this community.
<b>Central Interior Acidic Cliff and Talus</b>	
<b>Vertical Structure</b>	Open, rocky, herbaceous-dominated system with sparse woody vegetation
<b>Fire Regime</b>	Occasionally influenced by natural or prescribed fires
<b>Calcareous Prairie</b>	
<b>Vertical Structure</b>	Open, fire-maintained grassland with sparse to absent woody vegetation
<b>Fire Regime</b>	50 % of the calcareous prairie system and a 100-meter buffer are treated with fire every 3-5 years including an occasional growing season fire

**Report any maintenance and restoration treatments. At five-year intervals, evaluate progress toward achieving the desired fire regime.**

Restoration and/or maintenance of the rare upland communities primarily consists of an appropriate fire regime. These communities are generally small, patchy inclusions within large landscape scale fire-treated areas. These communities require a range of fire frequency from 50 percent of the community treated with fire every 35 years on average for mesic hardwoods, to 50 percent treated with fire every 3-10 years for the others.

The Ouachita NF generally applies fire to the mesic hardwoods lightly or avoids firing them; they are not, however, excluded from larger landscape areas treated with fire. The montane oak and cliff and talus communities are primarily edaphically maintained, but are also not excluded from large landscape scale areas treated with fire. The other rare upland communities are treated within the scope of the landscape fire-treated areas and all communities are outside the range of the desired fire regime. Although eighty-five percent of the Calcareous Prairie community was successfully treated with prescribed fire in FY 2007, but no acres were treated during FY 2008 or FY 2009.

The following tabulation shows the percentage by community type to be treated with prescribed fire each year to achieve desired conditions and then shows actual accomplishments for FY 2009 and for comparison purposes, accomplishments in FY 2006, FY 2007 and FY 2008. The prescribed fire program was very productive in FY 2009.

Ouachita NF Community Treated with Prescribed Fire by Year							
	Mesic Hardwood	Montane Oak	Dry Oak Woodland	Novaculite Glade & Woodland	Glades & Barrens	Cliff & Talus	Calcareous Prairie
<b>Annual Desired Range of Acres Treated with Fire</b>	<900	N/A	378-540	180-270	252-360	N/A	Once every 3-5 years
<b>FY 2006</b>	712	309	84	139	50	851	0
<b>FY 2007</b>	766	371	296	85	121	577	249
<b>FY 2008</b>	1424	490	470	0	327	0	0
<b>FY 2009</b>	0	834	249	0	414	0	0

Ouachita NF Community Treated with Prescribed Fire by Year							
	Mesic Hardwood	Montane Oak	Dry Oak Woodland	Novaculite Glade & Woodland	Glades & Barrens	Cliff & Talus	Calcareous Prairie
<b>Desired Condition % or Frequency</b>	<3%	N/A	7-10%	10-15%	7-10%	N/A	Once every 3-5 years
<b>FY 2006</b>	2%	3%	<1%	8%	1%	17%	0
<b>FY 2007</b>	2%	3%	5%	5%	3%	10%	85%
<b>FY 2008</b>	13%	4%	4%	0	6%	0	0
<b>FY 2009</b>	0	7%	2%	0	7%	0	0

## Riparian and Aquatic Ecosystems Desired Conditions

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.

<b>Desired Conditions for Riparian and Aquatic Ecosystems Ouachita Ponds, Lakes, and Waterholes</b>
<b>Ouachita Mountain Forested Seep:</b> The desired condition for this system is a largely undisturbed, mature community with a protective buffer 100 feet from the seep boundaries. Old growth seep communities develop and regenerate naturally in relatively small patches.
<b>Ouachita Riparian:</b> The desired condition for this system is a largely undisturbed, mature or old growth community with intact hydrologic functions and processes within a minimum protective buffer of 100 feet on each side of perennial streams and 30 feet on each side of defined channels. Water quality is good to very good and riparian vegetation remains intact during and after vegetation management activities, such as harvesting, prescribed fire, road or fireline construction, and pesticide application.
<b>West Gulf Coastal Plain Small Stream and River Forest:</b> The desired condition for this system is a largely undisturbed, mature or old growth, closed-canopy forest shaped by intact hydrologic functions and processes within a minimum protective buffer of 100 feet on each side of perennial streams and 30 feet on each side of defined channels.
<b>South-Central Interior Large Floodplain:</b> The desired condition for this system is a largely undisturbed, mature or old growth, closed-canopy forest shaped by intact hydrologic functions and processes within an appropriate Streamside Management Area.
<b>West Gulf Coastal Plain Wet Hardwood Flatwoods (Red Slough):</b> The desired condition over much of the area is an intact marsh ecosystem with some reestablishment of a bottomland hardwood forest. Recreation opportunities, particularly Watchable Wildlife, abound, and native biodiversity potential is maximized.
<b>Ouachita Rivers and Streams:</b> The desired conditions for Ouachita rivers and streams are good to excellent water quality, site productivity, channel stability, intact riparian vegetation, sustainability of the sport fisheries, and connectivity of habitats for riparian-dependent species. Aquatic ecosystems function properly and support aquatic biota commensurate with the associated ecoregion. Permanent roads within the SMAs will be minimized but may occur at designated crossings and designated access points. Movement of fish and other aquatic organisms in otherwise free-flowing perennial streams and other streams are not obstructed by road crossings, culverts, or other human-caused obstructions. These desired conditions are achieved through designation of Streamside Management Areas (SMAs) and the implementation of the management standards associated with them.
<b>Ouachita Ponds, Lakes, and Waterholes:</b> The desired condition for unstocked ponds and waterholes is habitat suitable for amphibians and other wildlife and a source of water for upland wildlife species. The desired conditions for fishable waters are high-quality angling opportunities and good to excellent water quality, site productivity, associated vegetation, and habitat for associated riparian and aquatic dependent species.

**Integrate the results of all monitoring information into a paragraph for each of the above seven riparian and aquatic ecosystems that describes the status and trend in aquatic habitat conditions associated with that system. Include discussions of plant and animal species supported by the specific system.**

**Report lake, pond, stream, and river surveys; amphibian surveys; water chemistry data; and habitat enhancement activities such as liming, fertilizing, and adding fish structures accomplished during the fiscal year. When a forested seep or community associated with streams, rivers, or lakes occurs within an area affected by a management project that is reviewed as part of an Implementation Monitoring Review (IMR), compliance with all applicable standards will be reviewed. Basin Area Stream Surveys will be conducted periodically (typically on a five-year cycle). At five-year intervals, evaluate the desired condition status of this habitat.**

**How many acres of watershed improvement or maintenance have been accomplished?**

For FY 2009, the Ouachita NF accomplished a total of 75 acres of soil restoration (50 acres) and maintenance (25 acres), an increase of 34 acres over FY 2008 work that included 41 acres of watershed improvement through normal project work. Work in FY 2009 included watershed improvement or maintenance activities, most of which involved stabilization of gullies and abandoned roads.

**Report the results of monitoring 10% of herbicide application projects for detectable presence in water and any herbicide application in Streamside Management Areas or on dam faces.**

Four streams were monitored for the presence of herbicides below treated stands. This is an ongoing monitoring program where ten percent of areas treated with herbicides are monitored for off-site movement. Four sites were monitored (Caddo/Womble – 2 and Mena/Oden – 2). Results are not yet available for the four samples collected for FY 2009, as the samples are in the process of being analyzed. For FY 2008, lab results indicated that the presence of herbicides was insignificant for all sites.

## **Wildlife and Fish Habitat Desired Conditions**

<b>Wildlife and Fish Habitat Desired Condition</b>
Habitat conditions sustain healthy populations of native and desired non-native wildlife and fish species. Wildlife habitat functions are sustained or improved, including primary feeding areas, breeding areas, and migration corridors. Reintroduction of extirpated species is given serious consideration when proposals originate from or have strong support from the appropriate state and federal fish and wildlife agencies. Fishable waters support high-quality angling opportunities. Vegetation conditions reflect the desired conditions described for each system in the previous section. Habitat conditions are stable or improving over time as indicated by the status of management indicator species. Movement of fish and other aquatic organisms are not obstructed by road crossings, culverts, or other human-caused obstructions.

**What key habitat improvements have been accomplished? Annually report the measures (numbers or acres) for each activity.**

Activity	FY 2006	FY 2007	FY 2008	FY 2009
	Acres or Units			
Waterholes Developed	57	212	99	85
Nest Boxes Installed	402	158	374	201
Roads Closed	22	54	*935	6
Acres of Midstory Reduction Completed	7,715	4,557	2,410	2,955
Acres of Overstory Mast Developed for Wildlife Stand Improvement	1,600	1,474	1,522	507
Acres Treated with Prescribed Fire for Wildlife Stand Improvement	5,760	61,299	30,106	22,894
Acres Seeded/Planted	54	51	28	24
Permanent Openings Created	9	33	0	17
Temporary Openings Created	31	28	3	0
Openings Rehabilitated	955	429	657	658
Snag/Log Developed	26	0	0	0
Lake Fish Attractors Installed	16	65	48	73
Stream Fish Structure/Fish Passage Restored	53	13	**45	20
Fishing Pond/Lake Constructed	0	0	1	***1
Fishing Pond/Lakes Enhanced/fertilized, limed, etc.	970	1,281	558	474

\*Corrections to inventory based on District information that roads were no longer passable or errors in the Infra database

\*\* 11 miles of stream fish structure/ fish passage restoration resulted from 2 crossings replaced with fish friendly designs and 34 miles of stream crossings stabilized.

\*\*\*One two-acre pond reconstructed due to dam wash-out.

## Management Indicator Species Desired Conditions

Maintenance and improvement of habitat for management indicator species (MIS) are addressed by objectives, design criteria, and Management Area allocations; however specific information for each of the species is collected and reported in this M&E Report. The following table includes the 24 MIS for the 2005 Forest Plan. The Ouachita NF MIS are divided into three categories: Terrestrial MIS; Pond, Lake and Waterhole MIS; and Stream and River MIS. There are seven terrestrial MIS; three pond, lake and waterhole MIS; and 14 stream and river MIS, as identified and listed in Table 2 below. In addition to the pond, lake, and waterhole MIS species, additional monitoring for white crappie, gizzard shad, and threadfin shad was conducted due to angler interest, concern over species expansion, and concern over species introduction, respectively. Monitoring methodologies, identification and interpretation of trends, and the implications for Ouachita NF management are reported in this section.

**Table 2. Management Indicator Species, Ouachita NF**

Table of MIS Species for the Ouachita NF			
Common Name	Scientific Name	Common Name	Scientific Name
<b>Terrestrial MIS - 7</b>		<b>Stream and River MIS - 14</b>	
White-tailed deer	<i>Odocoileus virginianus</i>	Yellow bullhead*	<i>Ameiurus natalis</i>
Northern Bobwhite	<i>Colinus virginianus</i>	Pirate perch*	<i>Aphredoderus sayanus</i>
Eastern Wild Turkey	<i>Meleagris gallapavo</i>	Central stoneroller*	<i>Campostoma anomalum</i>
Red-cockaded Woodpecker	<i>Picoides borealis</i>	Creek chubsucker*	<i>Erimyzon oblongus</i>
Pileated Woodpecker	<i>Dryocopus pileatus</i>	Orangebelly darter*	<i>Etheostoma radiosum</i>
Scarlet Tanager	<i>Piranga olivacea</i>	Redfin darter*	<i>Etheostoma whipplei</i>
Prairie Warbler	<i>Dendroica discolor</i>	Northern studfish*	<i>Fundulus catenatus</i>
		Northern hog sucker*	<i>Hypentelium nigricans</i>
<b>Pond, Lake and Waterhole MIS - 3</b>		Green sunfish*	<i>Lepomis cyanellus</i>
		Longear sunfish*	<i>Lepomis megalotis</i>
Bluegill	<i>Lepomis macrochirus</i>	Striped shiner*	<i>Luxilus chrysocephalus</i>
Largemouth bass	<i>Micropterus salmoides</i>	Smallmouth bass*	<i>Micropterus dolomieu</i>
Redear sunfish	<i>Lepomis microlophus</i>	Johnny darter <sup>1</sup>	<i>Etheostoma nigrum</i>
		Channel darter <sup>1</sup>	<i>Percina copelandi</i>

\*These fish species are monitored as a part of the Basin Area Stream Survey which occurs roughly every five years.

<sup>1</sup>Glover & Mtn. Fork Rivers only

## **Terrestrial Management Indicator Species (MIS)**

### **For Terrestrial Management Indicator Species, what key successional stage or seral condition improvement activities have been accomplished?**

Early successional habitat or early seral acres (created and maintained): The 2005 Forest Plan defines early successional habitat as grass/forb or shrub/seedling vegetative conditions in open or semi-open areas (i.e., with little tree canopy coverage). These conditions are newly established primarily through forest regeneration activities, particularly even-age timber harvest and thinnings followed by an appropriate fire regime, as well as those area acres that are maintained as open woodland condition through naturally limiting environmental effects, timber thinning harvest activities and prescribed fire treatments. During the 2005 Forest Plan Revision, analysis of the availability and condition of early successional habitat was found to be in fair-to-good condition forest-wide, based on overall availability and the Forest fire regime.

For monitoring purposes, the following ratios are used to represent acres of early successional habitat created by timber harvest type: seedtree, 1:1; shelterwood, 1:1; and group selection, 7:1. Early seral habitat consisting of herbaceous understory is prevalent and maintained within thinned stands with a frequent to moderate fire regime, particularly the pine-oak woodland and pine-bluestem woodland communities. For acres in a woodland condition a formula of 1:0.8 is used to calculate early seral habitat. The ratio yields the following: each acre of seedtree and shelterwood management is calculated to produce approximately one acre of early successional habitat and seven acres of group selection management is calculated to produce approximately one acre of early successional habitat. For every acre in woodland condition, 0.8 acres of early seral habitat are assumed because maintenance of the woodland condition by frequent fire provides herbaceous understory.

Rare upland vegetation communities that, through naturally limiting factors such as elevation, rainfall, aspect, slope, and/or thin soils, maintain primarily an early successional condition include acidic cliff and talus, acidic glades and barrens, novaculite glade and woodland, and dry oak woodland. Montane oak naturally provides a high elevation shrub condition. Herbaceous groundcover and shrubby vegetation cover the calcareous prairie and are interspersed throughout dry oak and pine-oak and pine-bluestem woodlands with a frequent fire regime. A frequent to occasional fire treatment is essential to discourage the woody encroachment and to maintain the early successional condition within these systems.

A number of species are dependent upon early seral habitat. The habitat carrying capacity is influenced by the amount early seral habitat created and/or maintained through prescribed fire treatments. The 2005 Forest Plan objective is to create 5,500 acres of grass/forb (early seral) habitat per year. In FY 2009, 2,151 acres were created through even-age silvicultural methods compared to 3,539 in FY 2008, 4,363 acres in FY 2007 and 2,602 in FY 2006. Figure 1 charts the early seral habitat created from 2000 to 2009, using regeneration methods. These reported acres do not reflect the thinned (9,496) acres and woodland acres treated with prescribed fire that also provide herbaceous understory.

Since FY 2002, a year with a very low level of early seral habitat creation, this habitat type is showing a slight improvement over the long term. Under 2005 Forest Plan implementation, early seral habitat should continue to increase and then stabilize at approximately 50,000 to 60,000 acres after ten years (FEIS 2005, Page 175). The creation of early seral habitat as shown in Figure 1 shows a slight increasing trend overall; however, there will be a lag time between guidance established in the 2005 Forest Plan and the creation of additional early seral habitat. In the meantime, increases in thinning and prescribed fire activities, especially associated with some 200,000 acres of shortleaf pine-bluestem grass ecosystem restoration, will benefit species



dependent on early seral habitat such as white-tailed deer, Northern Bobwhite and Prairie Warbler.

Herbaceous understory is prevalent and maintained within thinned stands with a frequent to moderate fire regime, particularly the pine-oak woodland and pine-bluestem woodland communities; however, the annual early successional condition acres created by fire have not previously been recorded in monitoring reports. During FY 2009, 52,574 acres in woodland condition were treated with prescribed fire (37,105 acres of shortleaf pine-bluestem and 15,469 acres of pine-oak woodland), providing 42,059 (acres x 0.8) acres of early seral habitat in addition to the acres created during regeneration harvests and commercial thinnings. For consistency with previous year's reports, Figure 1, below, shows only acres of early seral habitat created through regeneration harvesting.

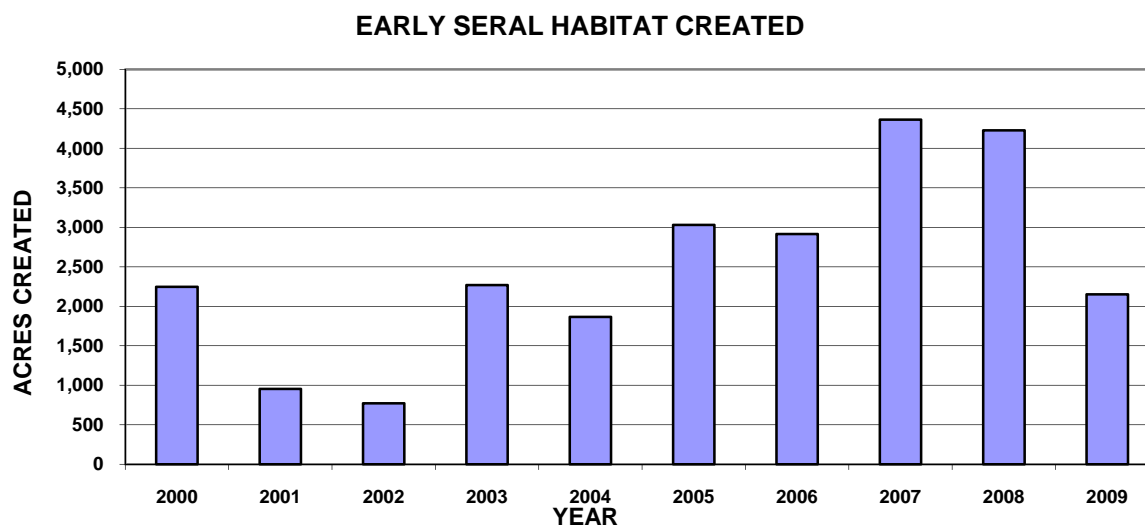


Figure 1. Acres of early seral habitat created by year, 2000 – 2009, regeneration harvest only

### Habitat Capability Model

Modeling habitat capability using the CompPATS 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. Table 3 displays estimated suitable habitat acres for management indicator species as well as differences in acres and percentages compared to the base year of FY 2005.

For FY 2009, the Ouachita NF has worked to improve the methodology for capturing habitat capability. More accurate measurement of acres and age classes were used, with early successional dependent-species showing the greatest change and late successional dependent species having a smaller change. Because a different methodology was used for FY2009, no comparison was made to the estimated habitat capability for FY 2005. Instead, a new comparison to the estimated habitat capability for FY 2015 was generated and reported.

**Table 3. Forest Habitat Capability for Terrestrial Management Indicator Species, FY 2009, in Acres, Compared to Desired Habitat Capability and Previous FY Reports**

Terrestrial Management Indicator Species	Projected Desired Habitat Capability, FY 2015	Estimated Habitat Capability, FY 2005	Habitat Capability, FY 2006 % Difference FY 2006 vs. FY 2005	Habitat Capability, FY 2007 % Difference FY 2007 vs. FY 2005	Habitat Capability, FY 2008 % Difference FY 2008 vs. FY 2005	Habitat Capability, FY 2009	Habitat Capability, FY 2009 vs. FY 2015
Deer	38,105	58,395	<u>50,840</u> - 13	<u>51,898</u> -12	<u>50,325</u> -14	42,442	+11%
Turkey	9,177	18,461	<u>17,601</u> - 5	<u>18,316</u> - 1	<u>18,370</u> - .5	16,204	+77%
Northern Bobwhite	101,748	65,002	<u>62,571</u> - 4	<u>69,349</u> + 6	<u>74,223</u> +14	68,888	-32%
Pileated Woodpecker	11,265	17,842	<u>17,371</u> - 2	<u>14,647</u> + 4	<u>15,555</u> -13	13,628	+21%
Prairie Warbler	112,590	90,313	<u>85,691</u> - 5	<u>93,830</u> + 4	<u>87,788</u> - 3	71,582	-36%
Scarlet Tanager	69,500	90,583	<u>86,455</u> - 5	<u>85,046</u> - 6	<u>84,040</u> - 7	73,136	+5%

Mast Capability – Hard mast (acorns and hickory nuts) is an important habitat element for several game and non-game animals, including white-tailed deer, turkey, squirrel, black bear, and white-footed mouse. Hardwoods greater than 50 years old are used to determine hard mast capability. The tabulation below shows estimated mast capability in acres by year as well as the change from 2005 and changes from the previous year in acres and percentages.

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Mast Capability (Acres)	433,250	468,172	474,384	452,111	454,787
Change from Previous Year (Acres and %)	N/A	+35,000 + 8	+>6,000 + 1	- 22,273 - 5	+2,676 +1
Change from 2005 (Acres and %)	N/A	+35,000 + 8	+>41,000 + 9	+ 18,861 + 4	+21,537 +5

Acres in Mature Hardwood Forest – Hardwoods greater than 100 years old are used to measure these criteria. The tabulation below shows estimated mature hardwood forest in acres by year as well as the change from 2005 and changes from the previous year in acres and percentages.

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Mature Hardwood Forest (Acres)	50,959	51,873	130,343*	52,553	58,689
Change from Previous Year (Acres and %)	N/A	+>900 + 2	+78,500 + 251	-77,790 - 59	+6,136 +12
Change from 2005 (Acres and %)	N/A	+>900 + 2	+79,400 + 255	+1,594 + 3	+7,730 +15

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

Acres in Mature Pine Forest – Mature pine forest consists of pines greater than 80 years old. The tabulation below shows estimated mature pine forest in acres by year as well as the change from 2005 and changes from the previous year in acres and percentages.

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Mature Pine Forest (Acres)	435,112	565,683	495,176	507,068	553,923
Change from Previous Year (Acres and %)	N/A	+130,600 + 30	-73,500 - 12	+11,892 + 2	+46,855 +9
Change from 2005 (Acres and %)	N/A	+130,600 + 30	+ 60,100 + 14	+71,956 +14	+118,811 +27

## Population Trends, Terrestrial MIS

**Report acres of regeneration harvest under irregular shelterwood or irregular seedtree system per year; acres of mature pine-oak forest.**

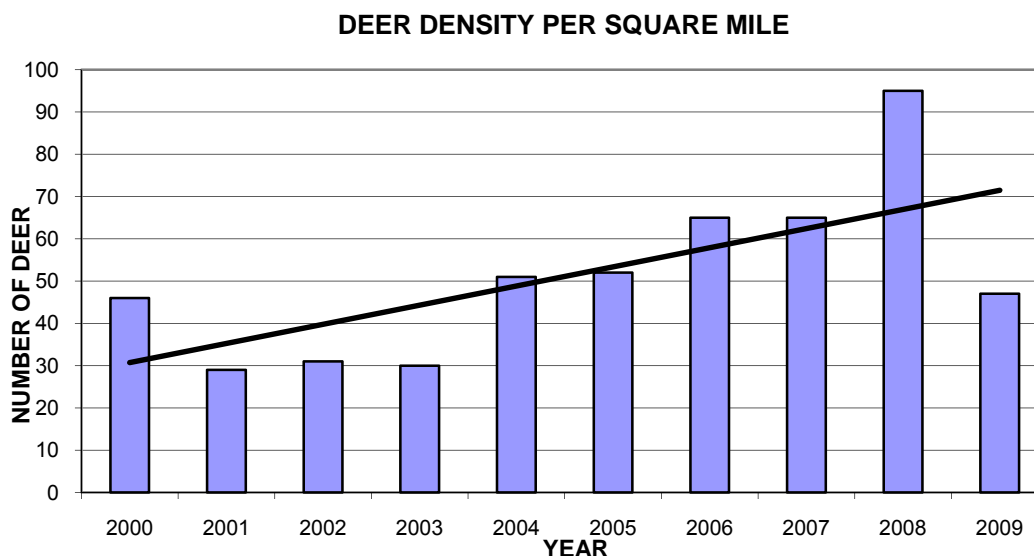
During FY 2009, 2,572 acres of early seral habitat were created: 2,017 acres from irregular shelterwood or irregular seedtree regeneration harvest methods, 134 acres from clearcutting activities and 421 acres by wildlife openings. In FY 2008, there were 3,539 acres of early seral habitat created by regeneration harvest methods, compared to 4,363 acres in FY 2007 and 2,602 acres in FY 2006.

### **White-tailed deer (*Odocoileus virginianus*)**

The white-tailed deer is a management indicator species (MIS) that was selected to help indicate the effects of management on meeting the public hunting demand (USDA Forest Service 2005, Final EIS, Page 165). In the 2005 Forest Plan, the desired habitat condition is to sustain healthy populations of native and desired non-native wildlife and fish species.

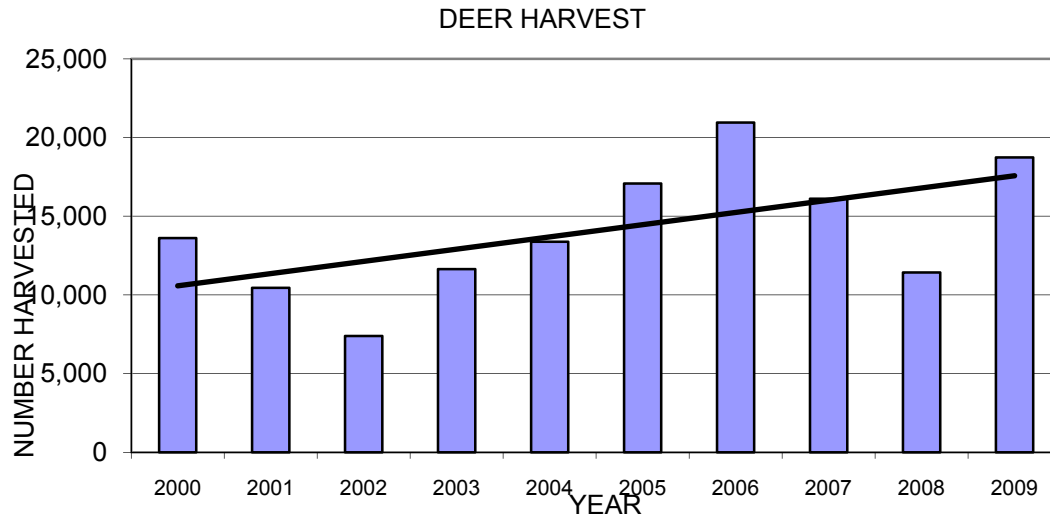
Data sources: Data sources and monitoring techniques for this species include deer spotlight survey counts (Urbston 1987), harvest and population trend data from the Arkansas Game and Fish Commission and Oklahoma Department of Wildlife Conservation, CompPATs deer habitat capability model, and acreage of early successional habitat created by year.

Deer Population Trends: Spotlight surveys are conducted by Ouachita NF District personnel within the boundaries of the Ouachita NF and reported to the state agencies. Based on annual spotlight survey data collected between 2000 to present, average deer density has varied from 29 deer per square mile in FY 2001 to 95 deer per square mile in FY 2008. Figure 2 displays deer per square mile by year. The average density for all years is 51 deer per square mile. Although the 2009 data (48 deer/sq. mile) indicate a decreasing trend from the previous year, data from the last ten years indicate that deer density for the Ouachita NF is increasing.



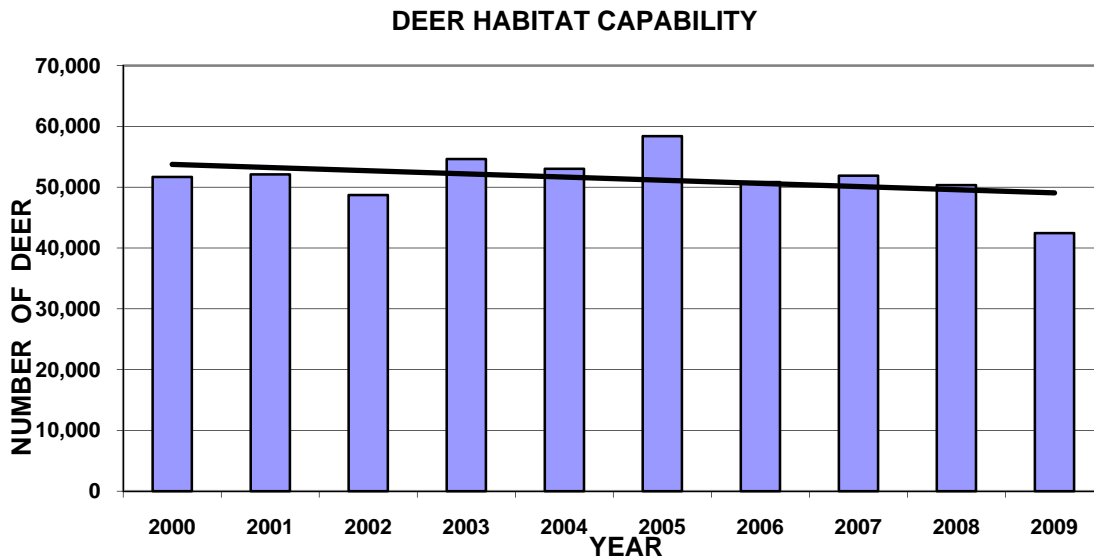
**Figure 2. Ouachita NF deer per square mile FY 2000 – 2009, based on deer spotlight data.**

Deer harvest data is collected by state agencies by county. Deer harvest data indicate an increasing harvest in the counties encompassed by the Ouachita NF with the highest harvest year in FY 2006. Deer harvest has increased from a low of 7,394 in 2002 to over 20,000 in FY 2006 and in FY 2009, down to 18,738. Deer harvest can be a relative indicator of deer abundance; however, the influence generated from changes in hunting regulations and harvest limits cannot be easily quantified. Figure 3 shows an increasing trend of deer harvest for counties encompassed by Ouachita NF from FY 2000 – 2009. These data are provided by the Arkansas Game and Fish Commission and the Oklahoma Department of Wildlife Conservation.



**Figure 3. Deer harvest by year from FY 2000 – 2009.**

The estimated habitat capability for deer for fiscal years 2000-2009 is shown in Figure 4. Habitat carrying capacity is calculated using acres within the Ouachita NF and is influenced by the amount of prescribed fire and early seral habitat created, including regeneration, thinning, Timber Stand Improvement, Mid-Story Removal, Wildlife Stand Improvement, wildlife openings, and site preparation. The habitat capability for the past decade is showing a slight downward trend, yet, it still exceeds the desired habitat capability for FY 2015 (see Table 3).



**Figure 4. Ouachita NF deer habitat capability from FY 2000 – 2009.**

The Final Environmental Impact Statement for the 2005 Forest Plan (September 2005) indicates in Table 3.59 (Page 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 1,780,101 acres (2,780 square miles) for a habitat capability that would support 38,105 deer. The habitat capability as estimated by CompPATs exceeds the 2005 Forest Plan projections for every year in the period 2000 -2009 and is showing a stable trend. The deer spotlight survey

and deer harvest data indicate increasing deer density. The creation of early seral habitat as shown in Figure 1 shows an increasing trend overall. The 2005 Forest Plan objective is to create 5,500 acres of grass/forb habitat per year, and 2,850 acres were created by regeneration harvests and wildlife habitat improvement in FY 2009.

For deer, the CompPATS model places a greater value on early successional habitat and gives lesser value to habitat created by thinning and prescribed fire. In contrast to the declines in even age regeneration cutting, the acres of thinning and prescribed fire have increased.

Interpretation of Trends: The slight decreasing habitat capability for the past few years as estimated by CompPATS is related to the creation of (or lack of) acres 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 densities (based on spotlight surveys) for FY 2008 are the highest in the last nine years and double the FY 2000 deer density. While FY 2009 results are the lowest since FY 2003, overall deer harvest is showing an upward trend.

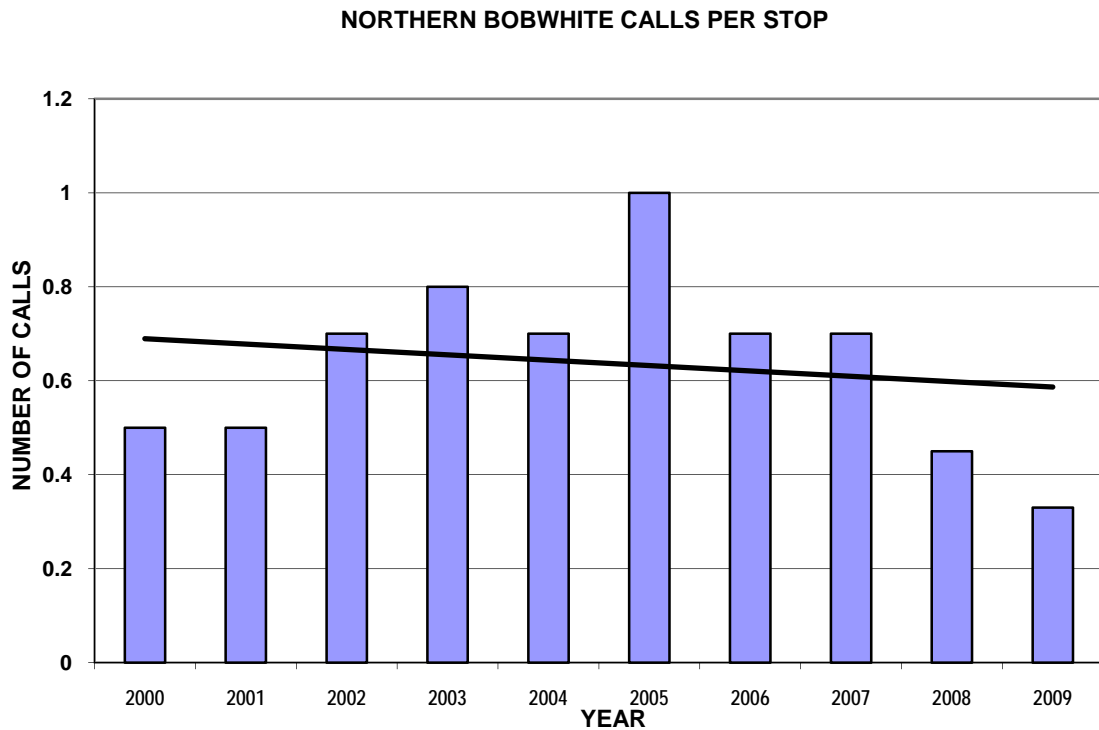
Implications for Management: Deer are widespread, abundant, and the habitat capability still remains above the Forest Plan projection. There are no indications of a need for adjustment in current management practices.

#### **Northern Bobwhite (*Colinus virginianus*)**

The Northern Bobwhite is a Management Indicator Species for the Ouachita NF. It was selected to indicate the effects of management on meeting public hunting demand, and to indicate effects of management on the pine-oak woodland and pine bluestem communities (Final EIS, Revised Land and Resource Management Plan, Page 165, September 2005).

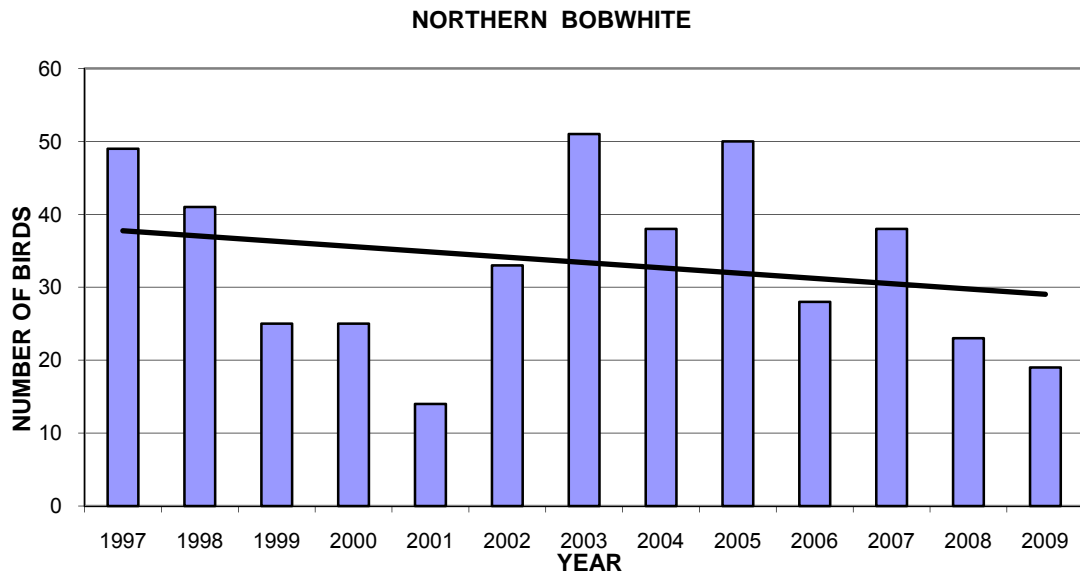
Data Sources: Data sources and monitoring techniques for this species include Northern Bobwhite call counts (AGFC); the CompPATS Habitat Capability Model; and the Ouachita NF Landbird monitoring data collected from 1997 – 2009. Data collected using call counts are presented as bird calls heard per stop. In the 2005 Forest Plan, the population objective for the Northern Bobwhite is an average of 36.6 birds per square mile (FEIS, Page 166, September 2005).

Population Trends: In the period between FY 2000 and FY 2009, bird calls heard per stop have varied from a high of 1.0 bird call per stop in 2005 to a low of 0.33 bird calls per stop in 2009 (Figure 5). Over this ten-year period, the Ouachita region averaged 0.64 bird calls per stop per year. These data indicate a slight decreasing trend.



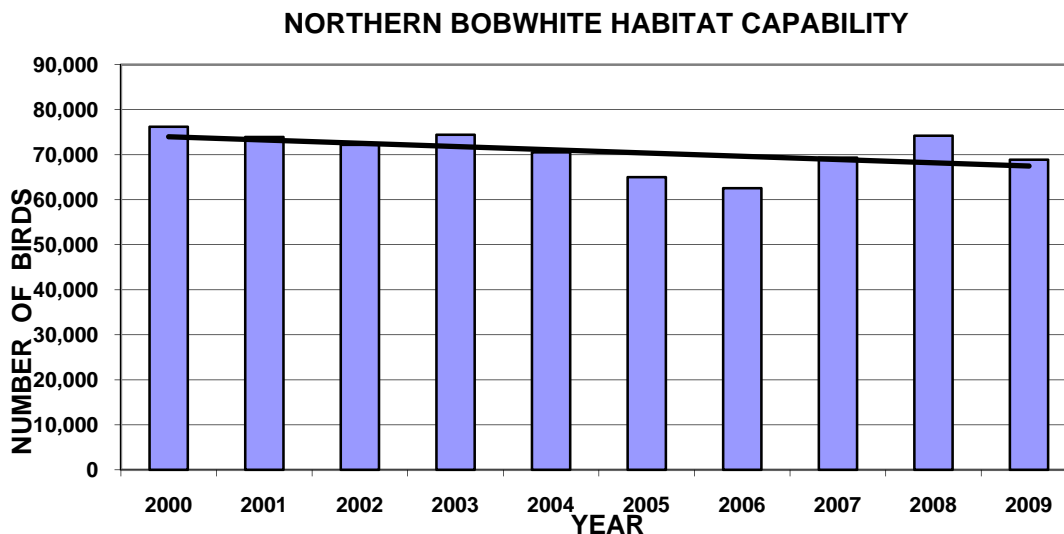
**Figure 5. Ouachita NF Northern Bobwhite call counts  
– Birds per stop for data years FY 1990 – 2009.**

Since FY 1997, the Ouachita NF has been conducting bird surveys on over 300 Landbird monitoring points. Northern Bobwhite data recorded through these surveys indicate a slight downward trend in birds detected over this 13-year period (Figure 6).



**Figure 6. Northern Bobwhites detected on Landbird survey points,  
Ouachita NF, FY 1997 – 2009.**

Estimated habitat capability for the Northern Bobwhite continues to decline slightly (Figure 7). Creation of early successional habitat in 2009 has been the lowest since 2004. Early seral habitat creation has not yet reached the 2005 Forest Plan objective of 5,500 acres per year.



**Figure 7. Northern Bobwhite habitat capability FY 2000 – 2009 for the Ouachita NF.**

**Interpretation of Trends for Northern Bobwhite:** Northern Bobwhite Landbird point data and estimated habitat capability indicate a decreasing trend in Northern Bobwhites for the Ouachita NF. 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 2005 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.

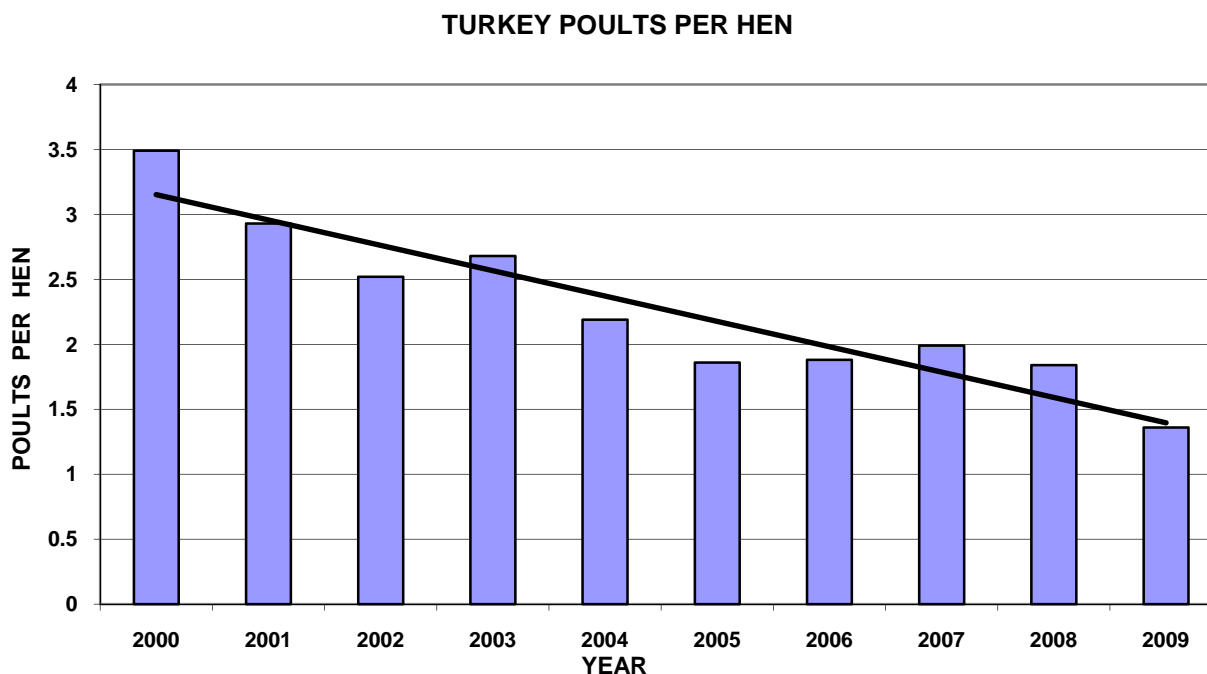
#### **Eastern Wild Turkey (*Meleagris gallopavo*)**

The Eastern Wild Turkey is a management indicator species selected to indicate the effects of management on meeting public hunting demand (USDA Forest Service 2005 Final EIS, Page 165).

**Data Sources:** Sources of data include turkey poult surveys, spring turkey harvest data, habitat capability modeling using CompPATs and Landbird point survey data. In the 2005 Forest Plan, the minimum population objective is 3.3 turkeys per square mile (9,177 turkeys) after 10 years and 3.9 per square mile at 50 years (USDA Forest Service 2005 Final EIS, Page 166).

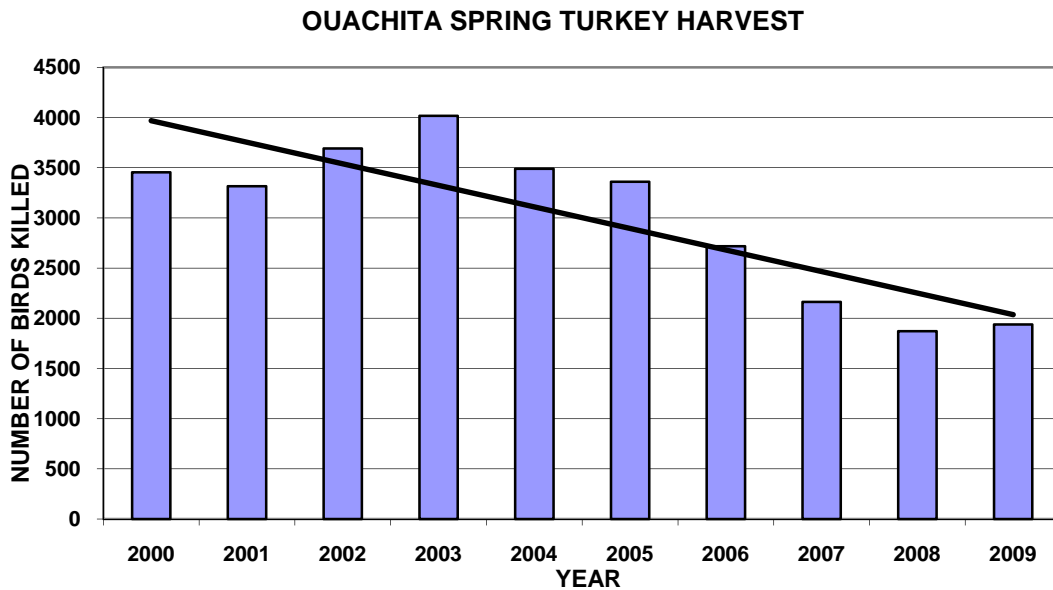


Eastern Wild Turkey Population Trends: The number of turkey poults per hen has varied from 3.5 in 2000 to 1.4 poults per hen in 2009 in the Ouachita region of Arkansas (Figure 8). There is a clear downward trend for successful turkey reproduction.



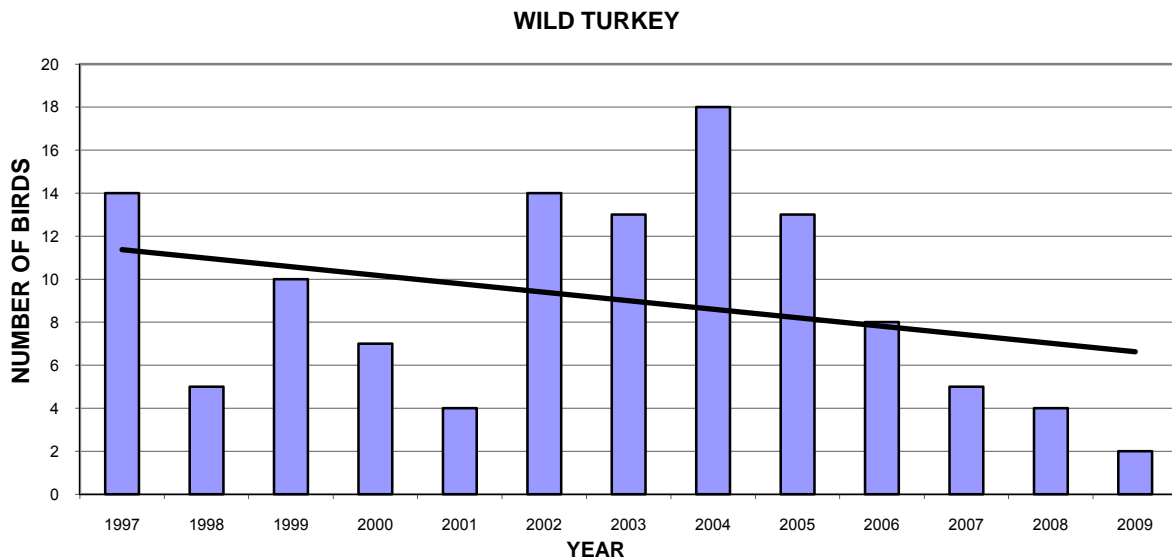
**Figure 8. Eastern Wild Turkey poults per hen, totals by counties within the Ouachita NF, FY 2000 – 2009.**

Spring turkey harvest achieved a high of about 4,017 birds in FY 2003 (Figure 9). Spring 2009 harvest was slightly more than the 2008 harvest. The Arkansas Game and Fish Commission addressed the turkey decline by adjusting the hunting season and eliminating the fall season in 2009.



**Figure 9. Eastern Wild Turkey spring harvest FY 2000 – 2009, totals by counties within the Ouachita NF.**

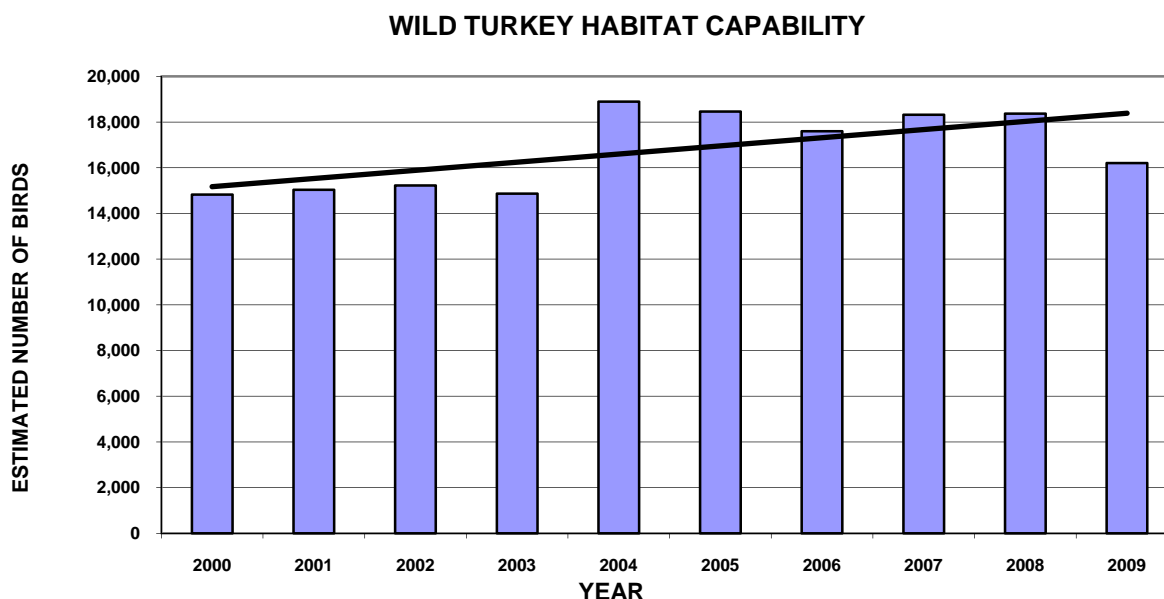
Landbird point surveys are conducted on acres within the Ouachita NF. The wild turkey trend detected on the Ouachita NF Landbird point surveys is similar to the drop in harvested birds and poults per hen and is statistically showing a declining trend (Figure 10).



**Figure 10. Eastern Wild Turkey detected on Landbird Points, Ouachita NF, FY 1997 – 2009.**

Habitat capability for 2009 is estimated at 16,204 turkeys compared to an estimated 18,370 turkeys in 2008 and an estimated 18,316 turkeys in 2007. Figure 11 depicts changes in habitat capability for the years FY 2000 to FY 2009. The overall habitat capability trend is increasing.

The habitat capability estimates exceed the minimum population objective of 3.3 turkeys per square mile (9,177 turkeys) for the first period in the 2005 Forest Plan.



**Figure 11. Estimated number of Eastern Wild Turkeys based on habitat capability model, Ouachita NF, FY 2000 - 2009.**

**Interpretation of Trends:** A positive trend is suggested for the turkey population based on habitat capability modeling. Conversely, the drop in turkey harvest, poults per hen, and birds detected on the Landbird points would indicate a reduction in the number of turkey. The habitat capability remains above the level projected in the 2005 Forest Plan. The sustained high levels for 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.

**Implications for Management:** Although there are variations in poult production, harvest, and birds detected on Landbird point counts, the habitat capability shows a positive trend. Sufficient data exist to believe that this species is in no danger of losing population viability or falling below the desired population levels. The Arkansas Game and Fish Commission has shortened the spring season and eliminated the fall season to stimulate more positive responses. Data are contradictory with habitat projections reflecting a positive trend but poult production, harvest, and Landbird point counts trending downward. Due to conflicting indicators, additional data should be monitored to determine if additional management changes are warranted. No management changes are warranted at this time.

#### **Red-cockaded Woodpecker (*Picoides borealis*)**

The Red-cockaded Woodpecker (RCW) is a management indicator species 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. 2005 Final EIS, Page 166). The 2005 Forest Plan has a management objective to “maintain or improve the population status of all species that are federally listed or proposed for listing.”

**Data Sources:** Because the Red-cockaded Woodpecker is an endangered species, it is one of the most intensively monitored species on the Ouachita NF. Monitoring is conducted with high

precision, intensity, and reliability. Active territories, nesting attempts, fledgling estimates, banding, augmentation, and the number of adults are tracked and reported annually to the Fish and Wildlife Service.

**Definitions:**

*Active Territories:* A territory is determined to be active when nesting or roosting RCW are present.

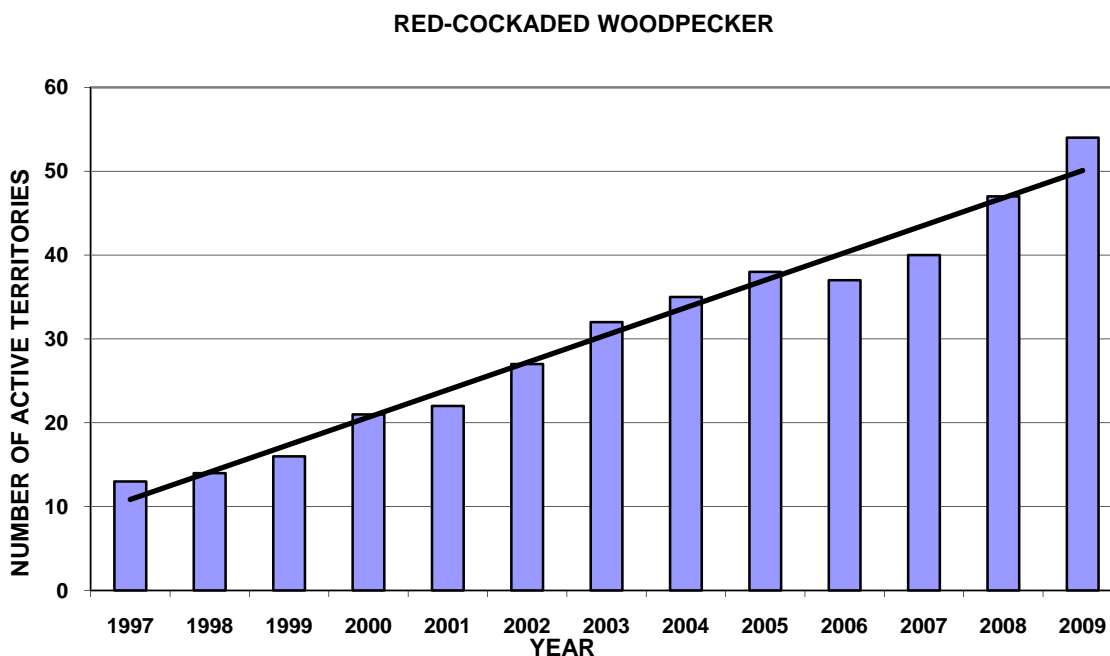
*Nesting Attempts:* A nest attempt is recorded when a pair of RCW exhibits nesting behavior which results in at least 1 egg being laid.

*Estimated Fledglings:* Birds fledge when they leave their nests after hatching, and estimated fledglings refers to the number of young RCWs that leave the natal cavity.

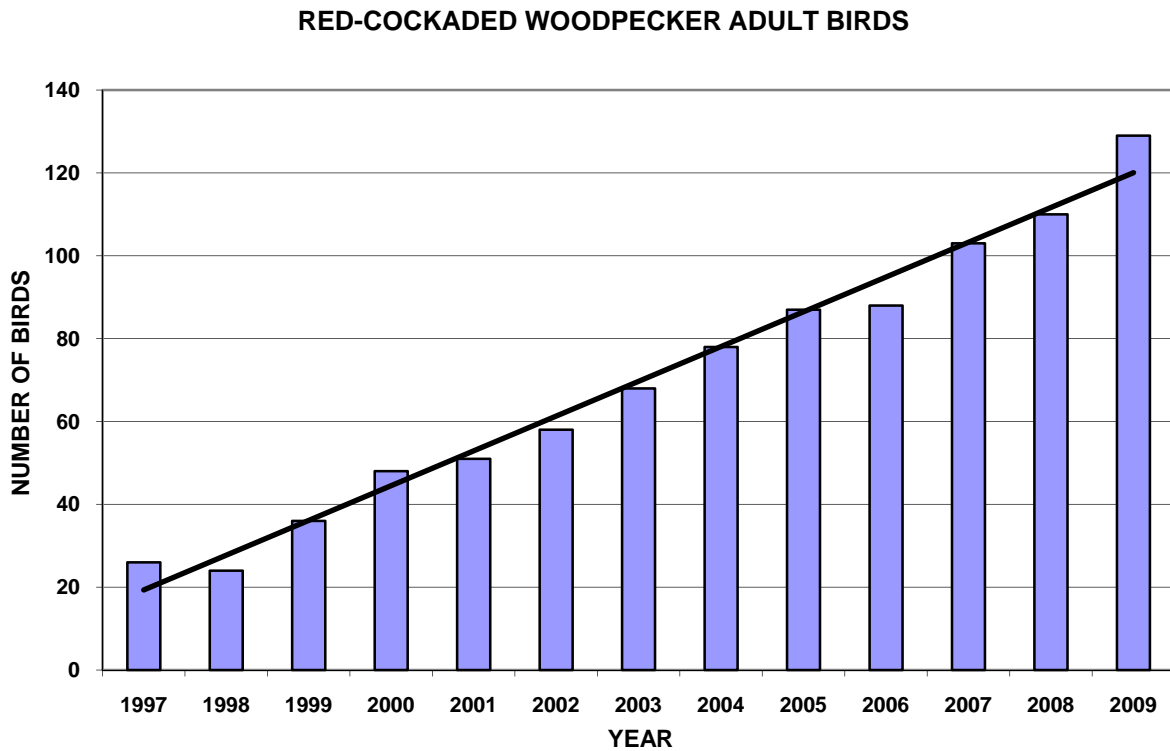
*Number of Adult Birds:* Estimated number of adult RCW present in population prior to nesting season.

**Red-cockaded Woodpecker Population Trends:** Over the past decade, the number of active territories and number of adult birds have increased (Figures 12 and 13).

**Red-cockaded Woodpecker:** The Red-cockaded Woodpecker active territories have increased from a low of 11 territories in FY 1996 to 54 active territories in FY 2009. The Red-cockaded Woodpecker data for FY 2009 indicated 128 adult birds and 77 fledglings compared to 110 adults and 67 fledglings in FY 2008, 103 adult birds and 67 fledglings in FY 2007, and 88 adult birds and 49 fledglings in FY 2006. Also during FY 2009, there were 47 RCW nest attempts, up from 40 the previous year. Five nests were lost to predators. One pair of nestlings was determined to be eaten by a rat snake and the other nests were likely destroyed by southern flying squirrels.



**Figure 12. Red-cockaded Woodpecker active territories, Ouachita NF, FY 1997 – 2009.**



**Figure 13. Red-ckokaded Woodpecker adult birds, FY 1997 – 2009.**

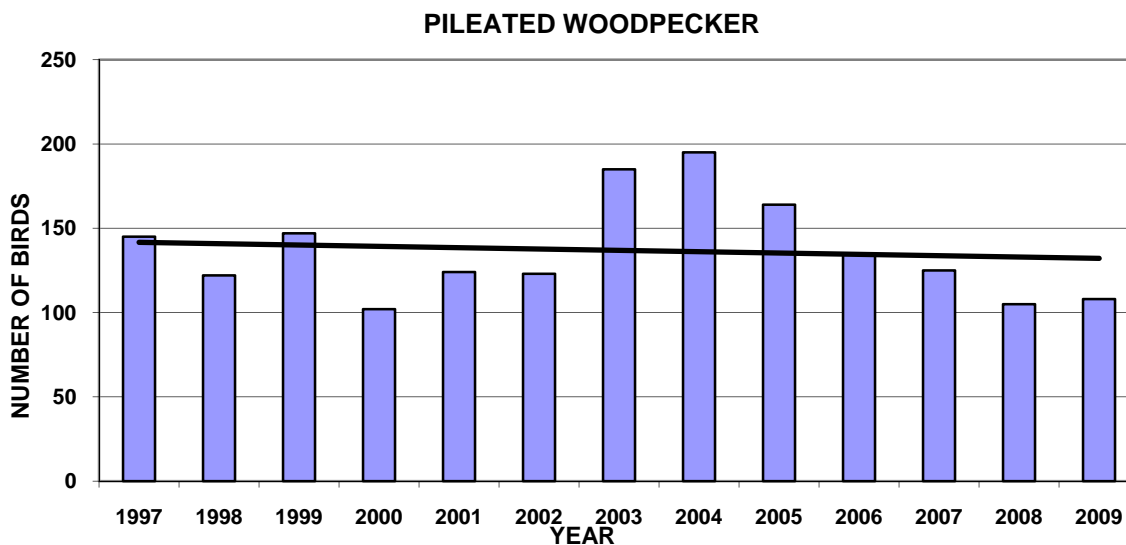
Implications for Management: The population of this species exhibits an increasing trend. Barring any major catastrophic events, this species should continue to improve under the present management intensity. A large-scale ecosystem restoration project was initiated in Management Area 22 to restore the shortleaf pine-bluestem grass ecosystem on over 200,000 acres. This project will eventually provide sufficient habitat for a recovery population of the endangered Red-ckokaded Woodpecker (USDA Forest Service 2005). 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. The Ouachita NF management intensity will be maintained and intensive monitoring will be continued.

#### **Pileated Woodpecker (*Dryocopus pileatus*)**

The Pileated Woodpecker is a management indicator species for the Ouachita NF, selected to indicate the effects of management on snags and snag-dependent species (USDA Forest Service. 2005 Final EIS, Page 166). This species prefers dense, mature to over-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.

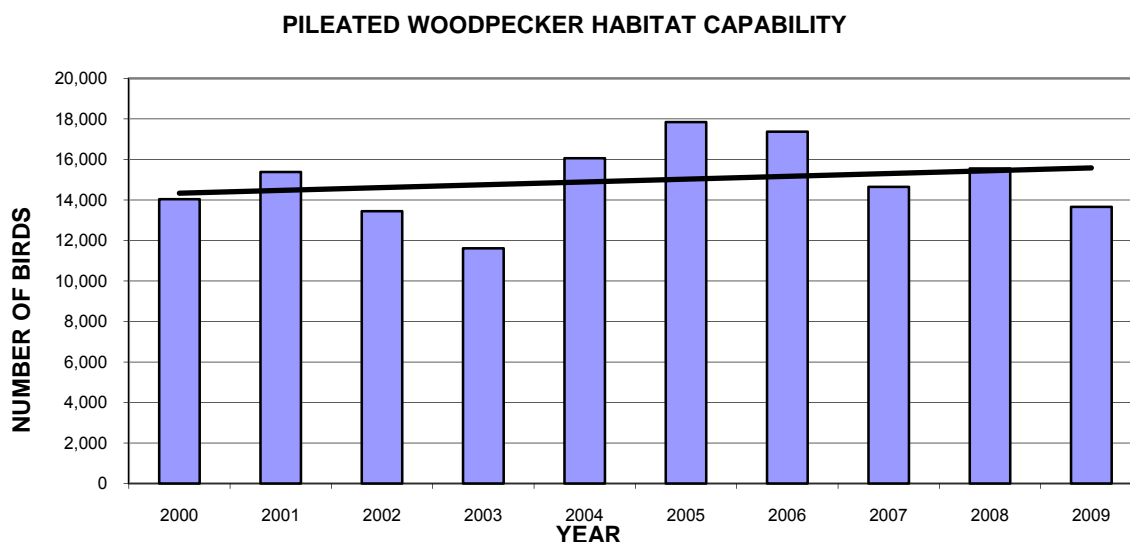
Data Sources: The Ouachita NF Landbird point count data, and habitat capability predictions using CompPATs and Field Sampled Vegetation (FSVeg) data were used as data sources for evaluating Pileated Woodpecker population trends.

Pileated Woodpecker Population Trends: Population trends as indicated by Ouachita NF Landbird data and habitat capability data are mixed. Thirteen years of Landbird monitoring data on the Ouachita NF, shown in Figure 14, indicate the long term trend to be stable to slightly decreasing for Pileated Woodpecker.



**Figure 14. Pileated Woodpeckers detected on Landbird Point Counts, Ouachita NF, from 1997 – 2009.**

CompPATs estimates for the habitat capability, using all forest types, indicate an increasing trend (Figure 15). These data are for pine, pine-hardwood, hardwood, and hardwood-pine stands with the greatest value being for stands greater than or equal to 41 years old. As these stands age, the habitat capability to support the Pileated Woodpecker should continue to improve.



**Figure 15. Pileated Woodpecker habitat capability on the Ouachita NF for 2000 – 2009.**

Interpretation of Trends: The slight upward trend in habitat capability is expected since a majority of the forest vegetation types are aging. The CompPATS program takes into account the conditions in all forest types, and it factors in management practices including prescribed fire and thinning. These data also show an upward trend. The overall situation should continue to improve as the unmanaged hardwood and hardwood-pine and the managed pine stands age. The current habitat capability being able to support 13,628 birds exceeds the 2005 Forest Plan bird population objectives of 11,265 (USDA Forest Service, 2005). The positive trend indicates that this species is doing well.

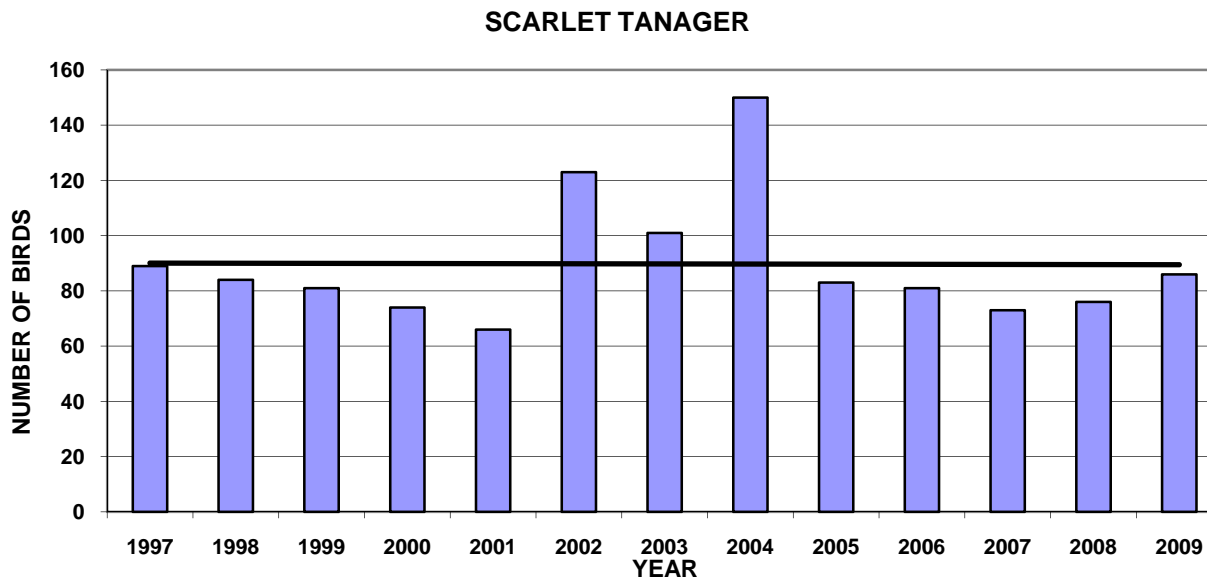
Implications for Management: The Pileated Woodpecker and its habitat appear to be secure within the Ouachita NF. There are no indications of a need to alter management direction.

### **Scarlet Tanager (*Piranga olivacea*)**

The Scarlet Tanager is a 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.

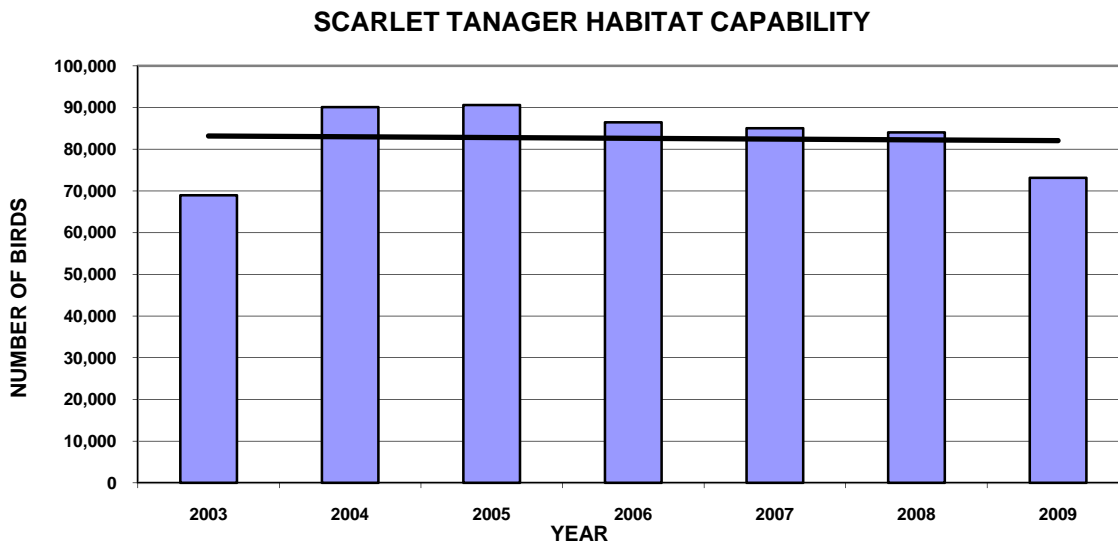
Data Sources: The Ouachita NF Landbird point data and habitat capability predictions using CompPATS, and Field Sampled Vegetation (FSVeg) data were used to make a trend assessment.

Scarlet Tanager Population Trends: The Landbird point data collected from 1997 – 2009 (Figure 16) indicate an overall stable trend for the Scarlet Tanager.



**Figure 16. Scarlet Tanagers detected, Ouachita NF Landbird Points 1997 – 2009.**

Ouachita NF habitat capability (Figure 17) data support a stable trend for the Scarlet Tanager.



**Figure 17. Scarlet Tanager habitat capability trends, Ouachita NF 2003 – 2009.**

Interpretation of Trends: Data support a conclusion of 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 481,226 acres of hardwood and hardwood/pine forest types greater than 41 years old, which is an increase of more than 26,000 acres from the previous year that will continue to mature. The Scarlet Tanager and its habitat are secure within the Ouachita NF. The continued long-term viability of this species is not in question. With the maturing of nearly 500,000 acres of hardwood and hardwood-pine the continued availability of adequate habitat is secure.

Implications for Management: The Scarlet Tanager has an apparent gradual, increasing trend within the Ouachita NF and the Ozark and Ouachita Plateau. The Scarlet Tanager appears secure within its overall range. Its viability as a species is not in question. This species will be retained as an indicator species and monitoring will continue.

### **Prairie Warbler (*Dendroica discolor*)**

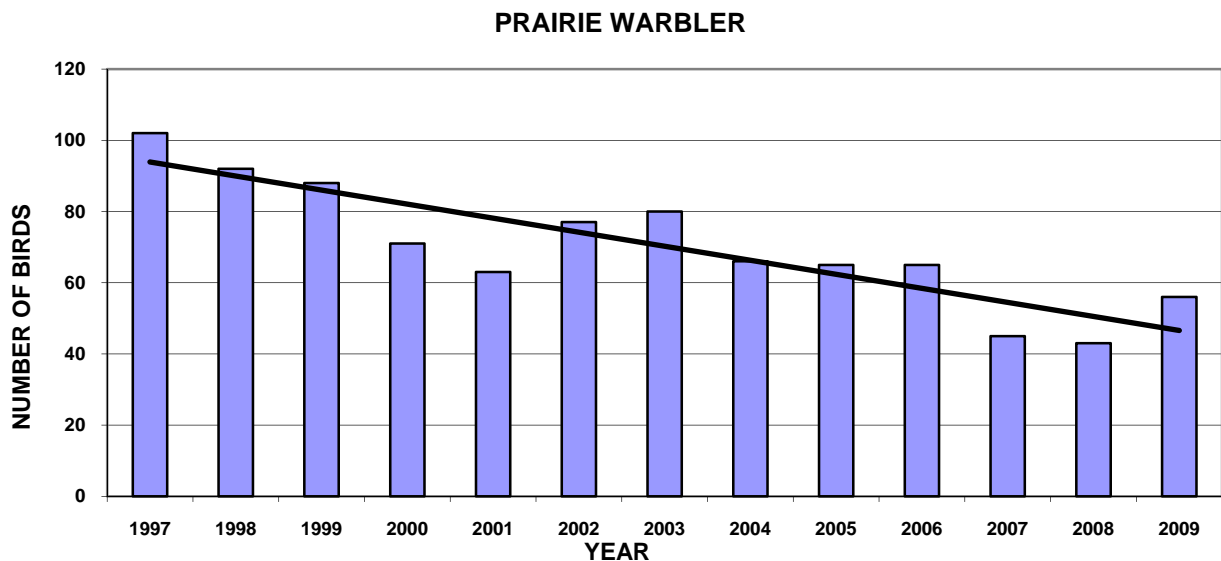
The Prairie Warbler is a MIS on the Ouachita NF, selected to help indicate the effects of management on the early successional component of forest communities. As a neotropical migrant, the Prairie Warbler is an international species of concern. This species uses early successional habitats such as regenerating old fields, pastures, and young forest stands. The vegetation selected may be deciduous, conifer, or mixed types. Habitats with scattered saplings, scrubby thickets, cutover 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 point data (1997 – 2009) and the Habitat Capability data are sources for evaluating Prairie Warbler population trends.

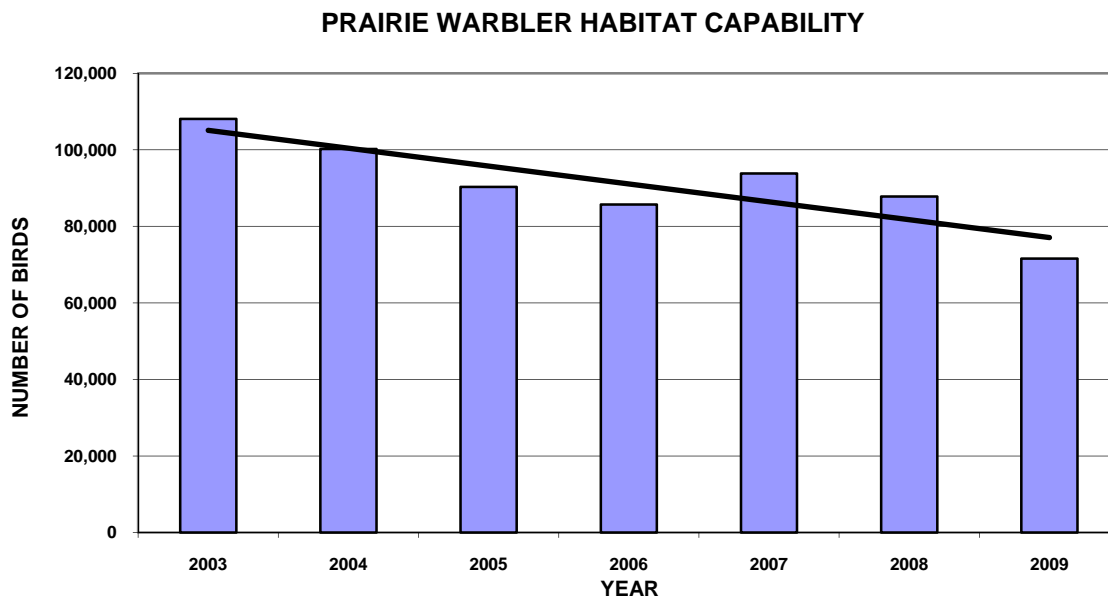


Population Trends: Based on the data available, the Prairie Warbler continues in a downward trend. The Landbird point count data for the warbler show a slight increase in numbers for FY 2009, but throughout the nationwide Prairie Warbler range, a downward trend that is indicated.

Figure 18 indicates the number of Prairie Warblers recorded on the Landbird point counts, and Figure 19 displays the Ouachita NF habitat capability. Both of these charts indicate a downward trend.



**Figure 18. Prairie Warblers detected on Landbird point counts, Ouachita NF 1997 – 2009.**



**Figure 19. Prairie Warbler habitat capability trends, Ouachita NF 2003 – 2009.**

Interpretation of Trends: Data support a conclusion of a declining population trend for the Prairie Warbler on the Ouachita NF and surveywide. This decline is considered to be directly related to the decline in habitat in acres of early seral habitat available.

The Prairie Warbler has demonstrated a decline for the past decade based on Landbird surveys (Figure 18) and mirrors the decline of habitat capability depicted in Figure 19. Under the 2005 Forest Plan implementation, early seral habitat should continue to increase and then stabilize at approximately 50,000 to 60,000 acres after ten years (FEIS 2005, Page175).

Implications for Management: The Prairie Warbler has a declining population trend within the Ouachita NF and throughout its overall range. Although declining, the 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. There will be a lag time between implementation of the 2005 Forest Plan and the appearance of additional early seral habitat and its associated Prairie Warbler response. In the meantime, increases in thinning and prescribed fire in the pine and pine-hardwood types especially that associated with approximately 200,000 acres of shortleaf-bluestem ecosystem restoration, will benefit Prairie Warbler populations.

The Prairie Warbler will continue to be monitored. Actions being taken to reverse its declining habitat and population trend will continue.

### Summary and Conclusions

This review of monitoring information for seven terrestrial management indicator species conducted to determine the status of the species and conservation needs. Table 4 displays the expected population trends, apparent population trends, risk for conservation of species, and management changes needed. The review demonstrated that none of the MIS are at risk and population trends are generally as expected. Current management practices are adequate for maintaining viable populations.

**Table 4. Summary of Terrestrial Management Indicator Species Monitoring**

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

### Aquatic Management Indicator Species (MIS)

#### Population Trends, Ponds, Lakes, and Waterhole MIS

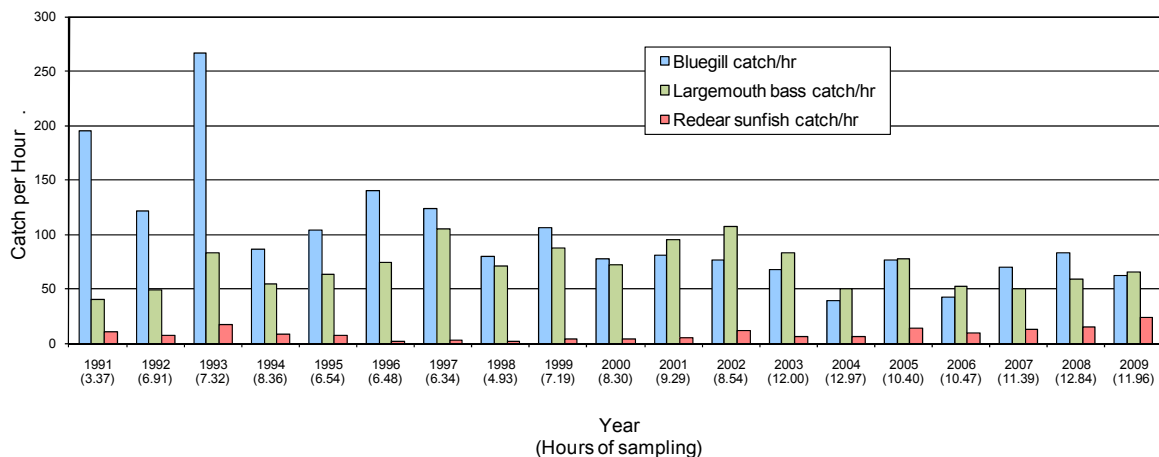
**For pond, lake and waterhole management indicator species (Bluegill, Redear Sunfish, and Largemouth Bass), how well are the pond and lake aquatic habitat conditions being protected, enhanced or maintained? Report percentage of MIS game fish of harvestable size; electrofishing catch per unit (time) effort; number of ponds shoreline seined for spawning success.**

This review of monitoring information for three pond, lake, and waterhole management indicator species (MIS) is conducted to determine the status of the species and conservation needs. During calendar year 2009, 17 electrofishing samples were taken at 15 lakes and ponds. North Fork Lake received one spring and two fall electrofishing samples due to the availability of Ouachita Baptist University students (Figure 25). The Ouachita NF acknowledges the help in sampling by Dr. Jim Taylor and classes from Ouachita Baptist University.



**Figure 20. Ouachita Baptist University Students Assisting with Sampling**

Electrofishing results for 2009 showed some recovery from the 2006 and 2007 poor electrofishing sampling results (Figure 26). Still the spring electrofishing season was characterized with spring temperatures colder than normal with the result that sunfish spawns were missed. Also, the fall electrofishing season was affected by a number of cold fronts that tended to push fish into deeper water with resultant lower catch rates. In addition, a malfunction of the electrofishing boat resulted in one of the extremely productive ponds being dropped (Boney Ridge) which likely decreased bass and bluegill catch rates and harvestability trends.



**Figure 21. Annual Pooled Catch per Hour**

While typical catches of big bass were missing from the Cedar Lake sample in Oklahoma, nice bass and catfish were taken from a number of other lakes and ponds. (Figures 22 - 25).



**Figure 22. Story Pond Largemouth Bass**



**Figure 23. John Burns Pond Bass and Catfish.**



**Figure 24. Hunters Pool Largemouth Bass**



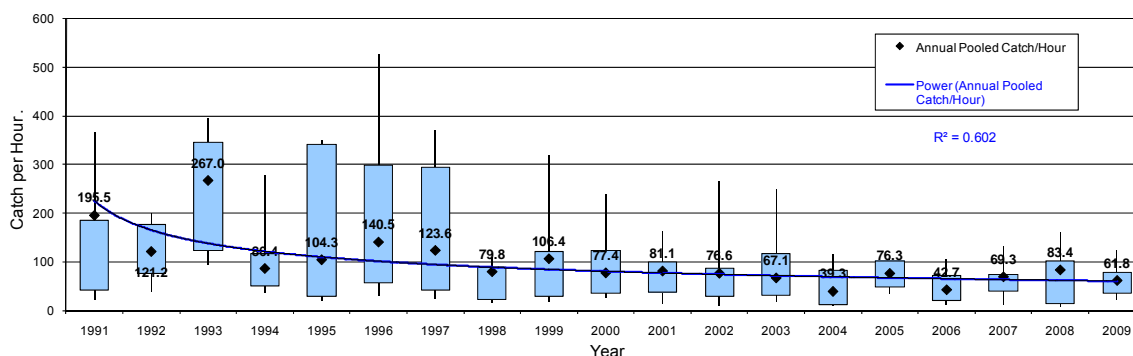
**Figure 25. Additional Hunters Pool Bass**

It should be noted that the following discussions on largemouth bass, bluegill and redear sunfish, white crappie, gizzard shad, and threadfin shad are by calendar year, not the Forest Service's fiscal year. Fisheries data are analyzed by year class or birth year. The federal government's fiscal year 2009 started in October 2008 and ran through September 2009. 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, for this FY 2009 Forest Monitoring Report, the sampling in the spring occurred during FY 2009 and the fall sampling took place during FY 2010 and data for both are included in this 2009 monitoring report.

### Bluegill (*Lepomis macrochirus*)

The bluegill catch for 2009 was the third lowest since 1991. The spring sampling occurred before pre-spawn sunfish had started to congregate in some of the lakes and the fall pond sampling seemed to miss large sunfish schooled up. Ideally, the spring sample catches the bass having spawned but with nest guarding still occurring, redear sunfish spawning and bluegill staging in shallower areas to spawn, so a good representation of all species and sizes is sampled. With work occurring in 10-12 lakes within this temperature/spawning condition window, ideal conditions are missed as much as they are attained. The spring of 2009 was very wet and cool with less than ideal sampling conditions.

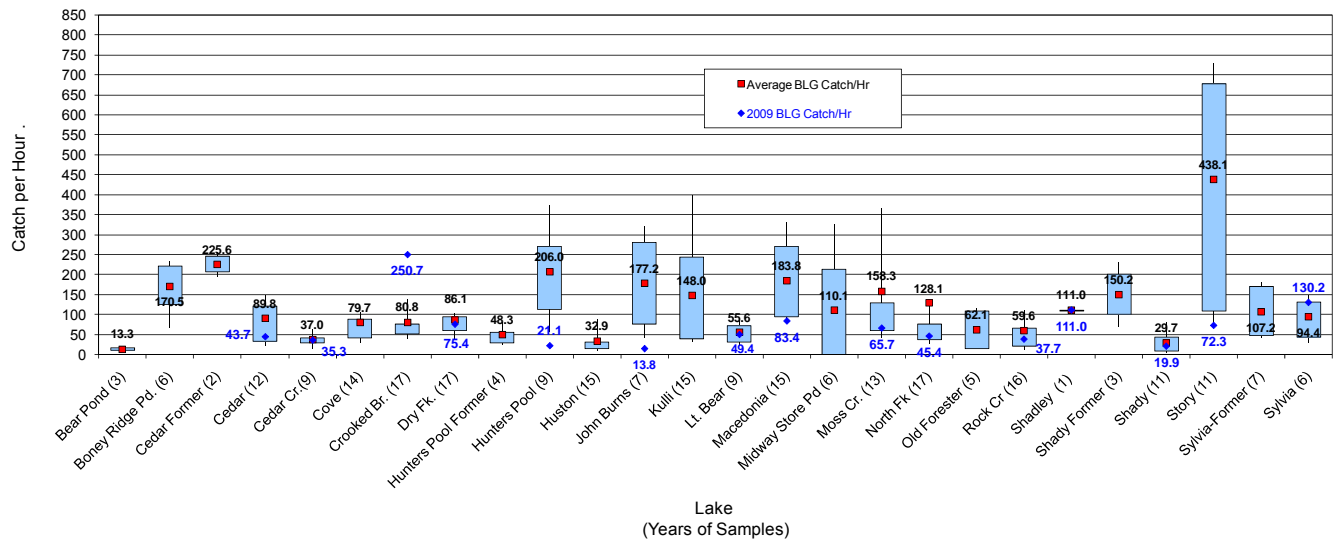
The trend line associated with the annual pooled catch per hour is only slightly significant statistically and seems to be leveling out (Figure 26). Variability in sample sizes between water bodies was less in 2009 than in 2008. This graph displays the variability in annual samples with the widened bars displaying the 25-75% range of the samples and the lines displaying the variability to the 10% and 90% levels.



**Figure 26. Annual Pooled Bluegill Catch per Hour**

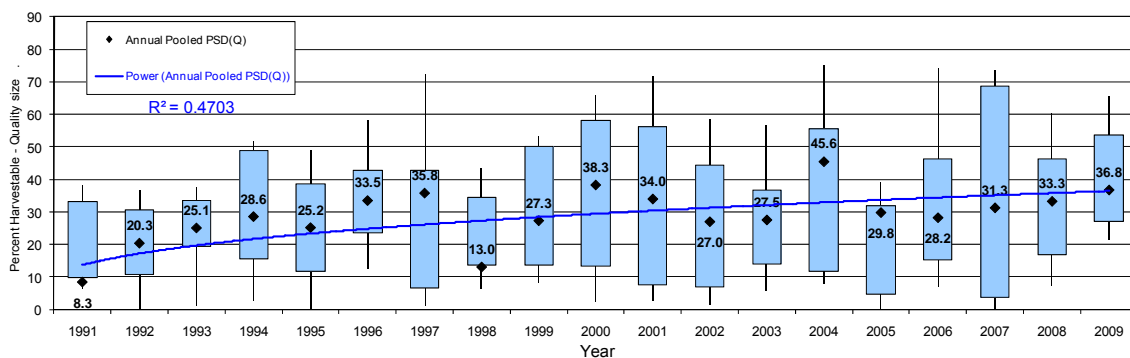
In comparison to results in other years, about two-thirds of the individual waterbody bluegill catch per hour results in 2009 were below average as shown in Figure 27. Two major outliers had higher than normal catches of bluegill. The first was Crooked Branch Lake, which had been severely drawn to allow repairs to the outlet structure and construction of a fishing pier, thus crowding 17 acres worth of fish into four to five acres. The second higher than normal count was at Lake Sylvia where many of bluegill were congregated around a new beaver hut that was heavily sampled. Lower than normal counts were seen at John Burns and Moss Creek ponds, both of which had higher than normal harvestability size classes of bluegill, suggesting

that just large bluegill had congregated in the cover that was sampled, a pattern typical for fall sampling.



**Figure 27. Bluegill Catch per Hour by Lake**

Harvestability of bluegill in 2009 (Figure 28), while the third highest in nineteen years of sampling, was slightly above last year's Proportional Size Distribution, also known as PSD. PSD 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. The trend line shows a slightly increasing trend; however, it is not statistically significant. The 2009 sample shows less variability than most samples to date.

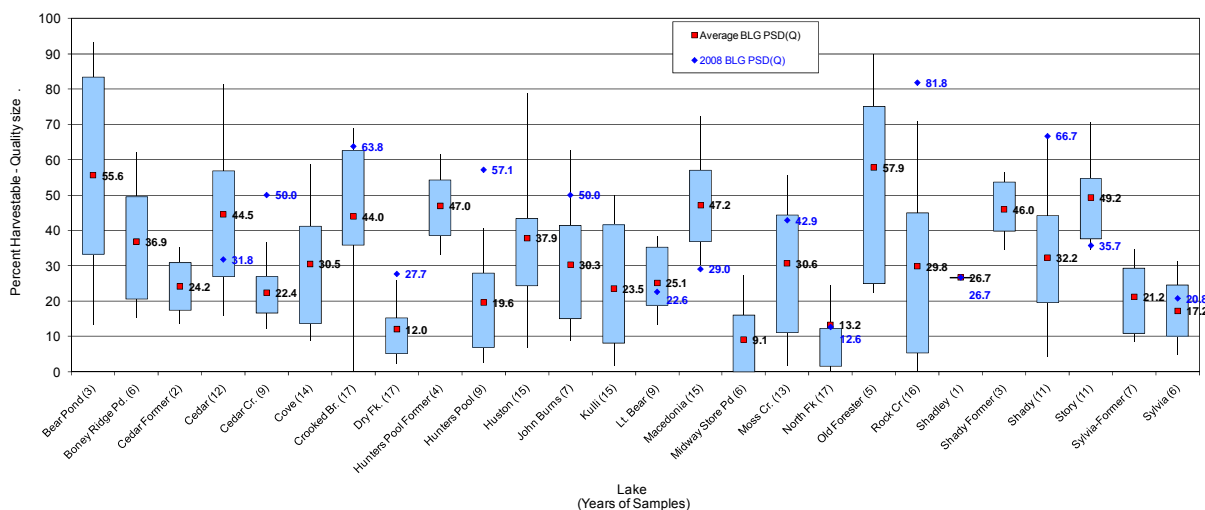


**Figure 28. Proportional Size Distribution for Bluegill by Year**

The variability of this year's sampling can be seen in the following box-whisker plot (Figure 29). Significant outliers can be seen in the higher than normal harvestability of bluegill at Cedar Creek, Hunters Pool, John Burns, Rock Creek, and Shady Lake. All of these results reflect low numbers of bluegill captured which often equates to skewed harvestability, either high or low.

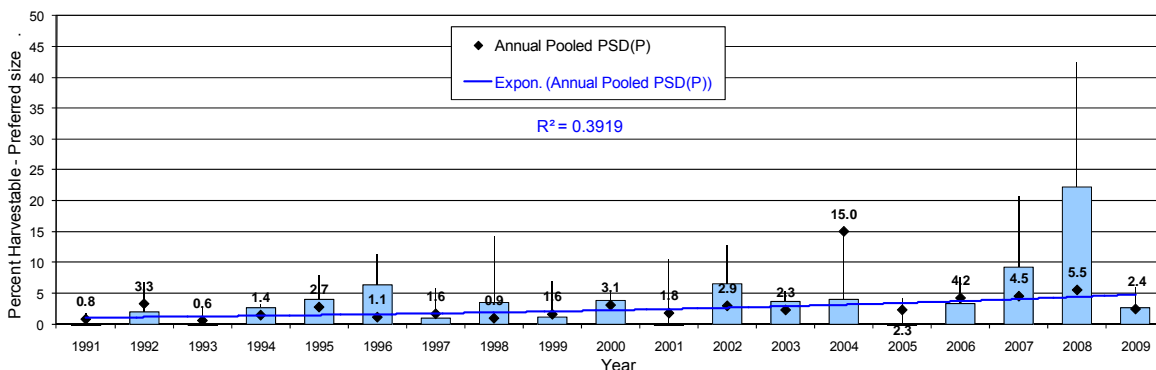


The 2009 revealed higher harvestabilities. The high catch rates of bluegill at Crooked Branch also gave higher than normal harvestability of the bluegill. It is quite likely that the crowding of predator (bass) and prey (bluegill) from the drawdown, mentioned above, resulted in a thinning of the smaller-sized bluegills in that population, resulting in the higher percentage of large bluegill.



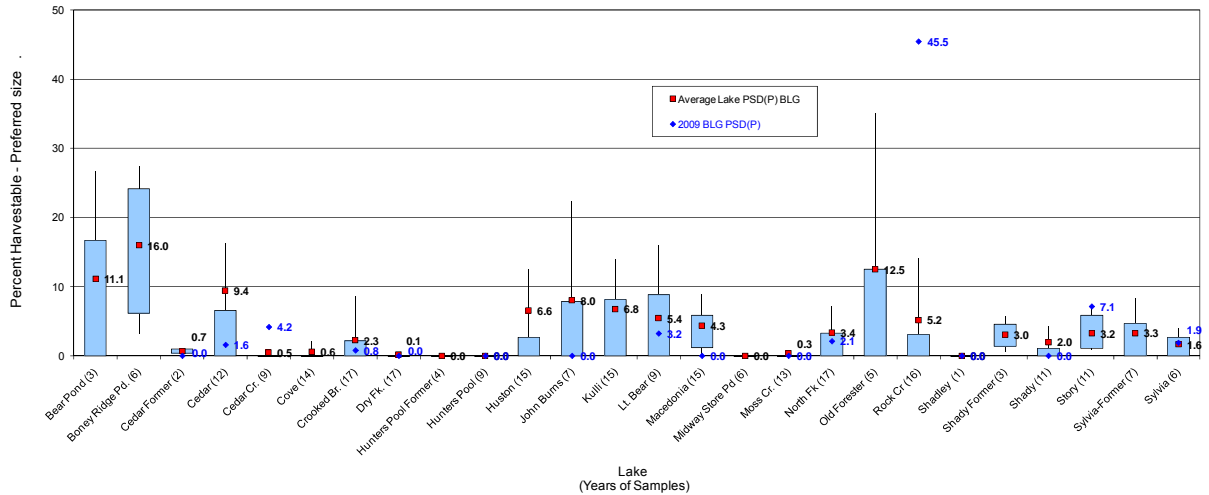
**Figure 29. Proportional Size Distribution for Bluegill by Waterbody**

The same set of graphs for Proportional Size Distribution (Preferred), previously known as RSD (Relative Stock Density) for bluegill equal to or greater than 200 mm (7.9 inches) long, shows relatively few catches of bluegill above that size with an increasing trend line that is not statistically significant (Figure 30). The pooled 2009 catch for preferred-sized bluegill is the smallest seen in the previous three years but is near the norm of the past nineteen years.



**Figure 30. Proportional Size Distribution (Preferred) for Bluegill by Year**

Seven of the lakes and ponds in 2009 had bluegill caught in excess of 7.9 inches (non-zero values for 2009 BLG PSS (P)) (Figure 31) versus nine in 2008. The Rock Creek outlier is from having caught few bluegill, but what were caught were largely spawning or pre-spawn fish with five out of the eleven in this larger size category.



**Figure 31. Proportional Size Distribution (Preferred) for Bluegill by Waterbody**

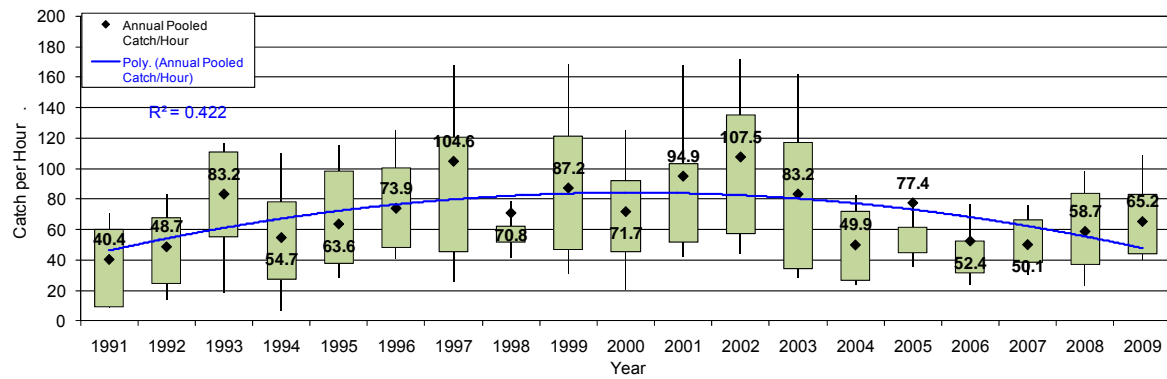
The presence or absence of quality and preferred size bluegill in the samples is most often a function of whether spring electrofishing caught the larger bluegill spawning in the shallows or the fall electrofishing caught them schooling on deeper structure in the fall. Bluegill spawning generally occurs later than the ideal temperature window for lake and pond sampling in the spring. If fall water temperatures are too warm, the largest bluegill will not have concentrated on deeper structures. Conversely, if the temperature is too cool or a front is moving or just moved through; bluegill may be too deep to effectively electrofish. With the 2009 bluegill capture rates showing such wide variability; the same would be expected and is seen for PSD and PSD (P) as shown and discussed above.

As sampled in 2009, 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*)**

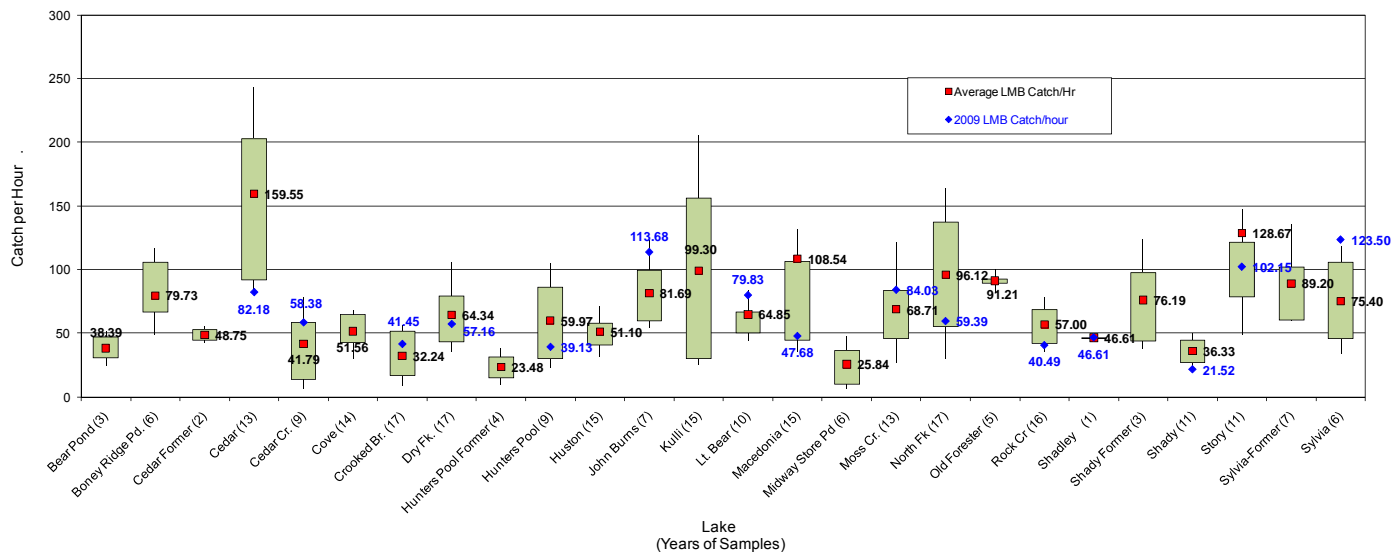
The largemouth bass electrofishing catch rate in 2009 sampling was the tenth lowest in 19 years of sampling with a trend of increasing catches from 1991 through 1999, decreasing catches bottoming out in 2007 and increasing again in 2008 and 2009 (Figure 32), but this trend is not statistically significant. The 2009 catch rate is the highest of the past four years.





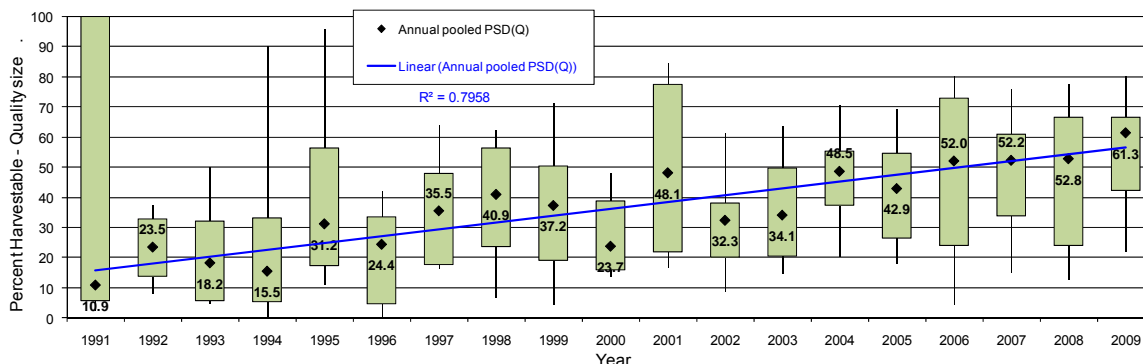
**Figure 32. Annual Pooled Largemouth Bass Catch per Hour**

Much like the bluegill results, largemouth bass catch rates were low overall but improving. Results from nine waterbodies showed bass catches that were within the 25-75% range box and five waterbodies showed catches within the 10-90% legs of the boxes (Figure 33.) One new high bass catch per hour record was set in 2009 at Lake Sylvia. Shady Lake had its second lowest catch. Lots of variability is shown in the 2009 bass catch across the lakes and ponds sampled.



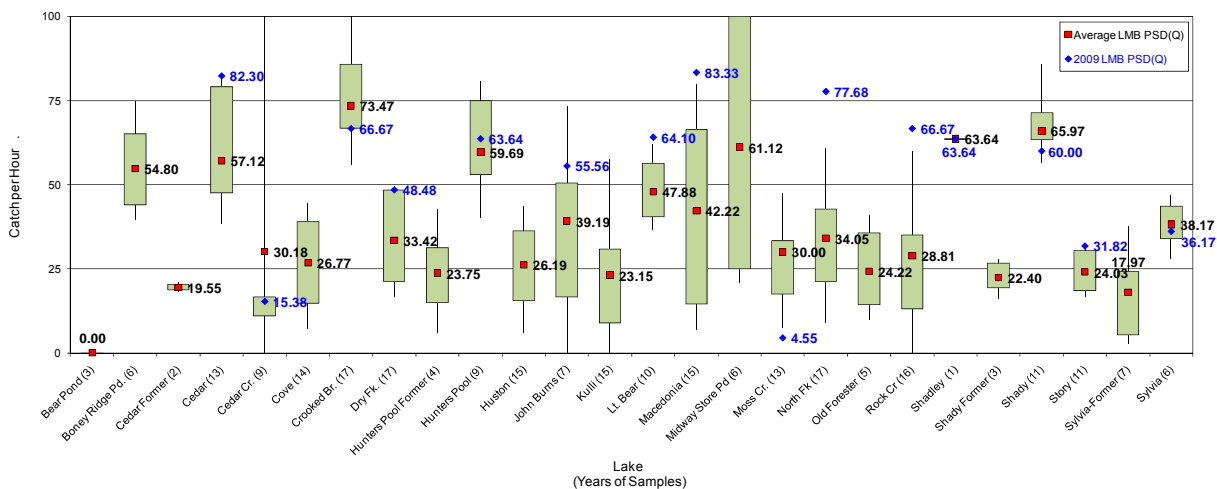
**Figure 33. Largemouth Bass Catch per Hour by Lake**

Harvestability of quality-sized largemouth bass continued to rise in 2009 and reached the highest value for Proportional Size Distribution (PSD) to date but with highly variable results between waterbodies. This overall trend is statistically significant (Figure 34). Quality bass are those equal to or larger than 300 mm (11.8 inches) and the stock size is 200 mm (7.9 inches).



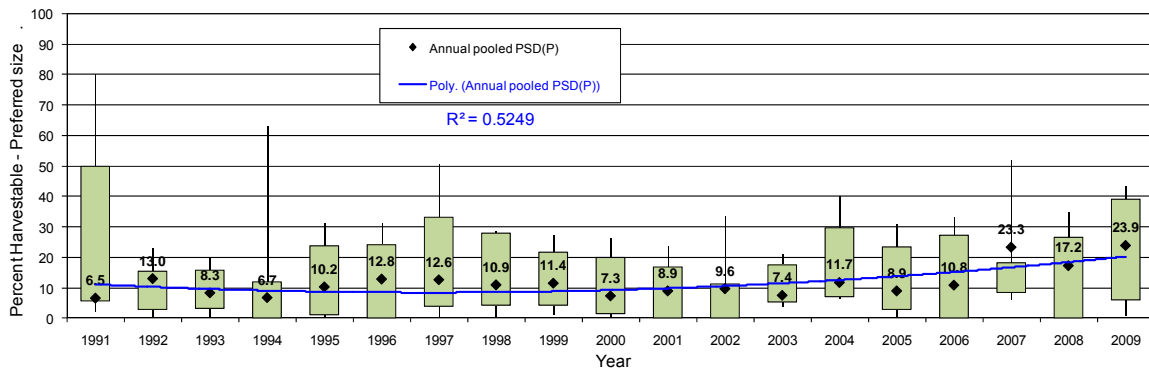
**Figure 34. Proportional Size Distribution for Largemouth Bass by Year**

Bass harvestability (PSD) values were well above average for Cedar, Little Bear, North Fork and Rock Creek lakes (Figure 35). Bass PSD was well below average for Cedar Creek Lake and Moss Creek Pond. With most 2009 PSD values distributed outside of long-term averages of each waterbody, there is additional support for the assumption of sampling/weather inconsistencies.



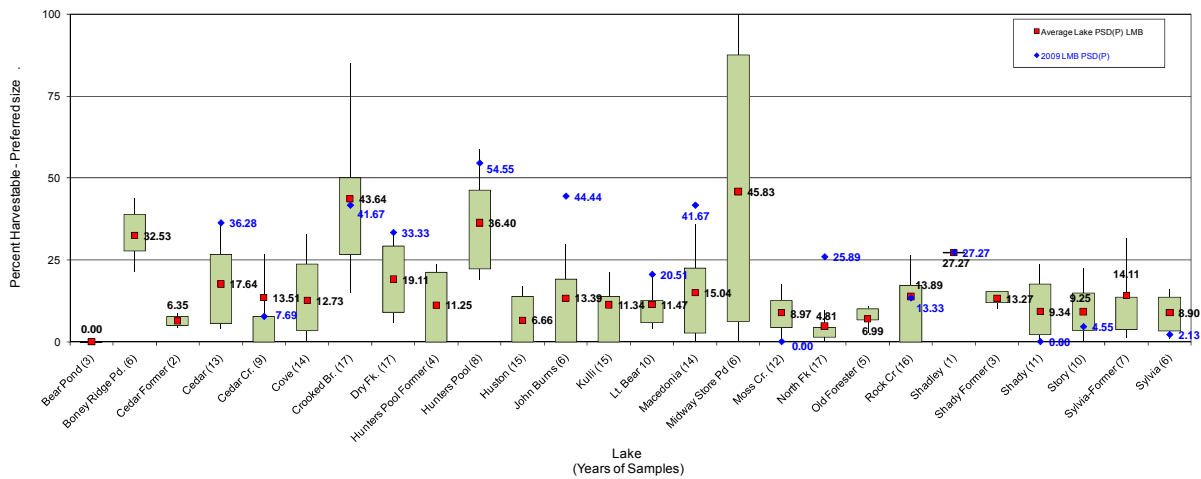
**Figure 35. Proportional Size Distribution for Largemouth Bass by Waterbody**

Largemouth bass catch of preferred lengths (380 mm or 14.9 inches) was the highest in the 19 years of samples with a pooled value of 23.89% of the total catch of stock size bass and larger and is slightly higher than the 2007 results (Figure 36). However, there is only the smallest of a statistically significant trend for these values.



**Figure 36. Proportional Size Distribution (Preferred) for Largemouth Bass by Year**

For 2009 samples, largemouth bass PSD Preferred (P) is within the 25-75% range for five lakes and ponds, within 10-25% or 75-90% for six waterbodies, and outside of the 10-90% range for three waterbodies (Figure 37). Seven of the waterbodies had PSD (P) values above their average value and seven below.

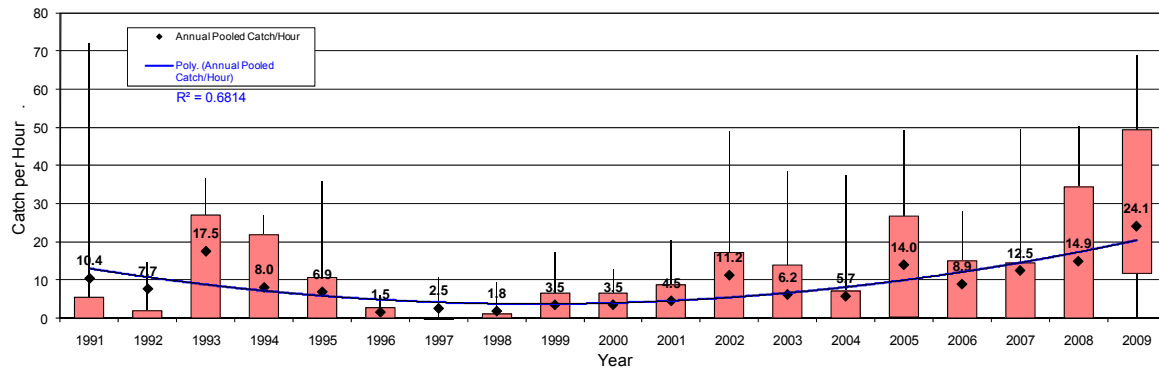


**Figure 37. Proportional Size Distribution (Preferred) for Largemouth Bass by Waterbody**

As sampled in FY 2009, largemouth bass populations across the Ouachita NF are at suitable and sustainable levels and their viability is not in question. Shady Lake does bear close watching with its bass catch so low.

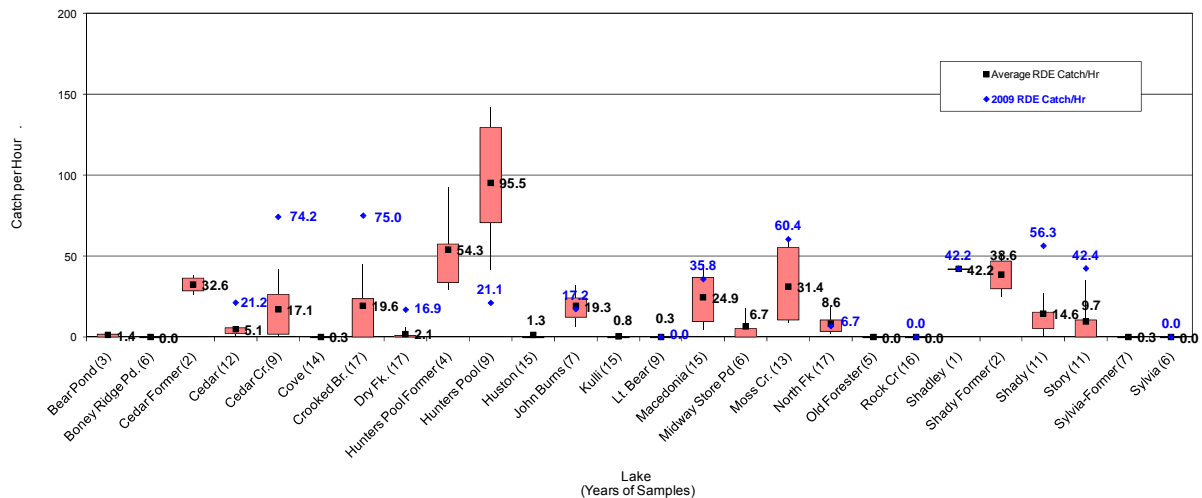
### Redear Sunfish (*Lepomis microlophus*)

The redear sunfish electrofishing catches have ranged from four to 90 times less than bluegill or largemouth bass catches over the past 19 years. The redear sunfish catch in 2009 is the highest annual catch of redear sunfish to date (Figure 38). While the redear sunfish annual pooled catch rate trend line shows an increase since 1998, the trend has low statistical significance.



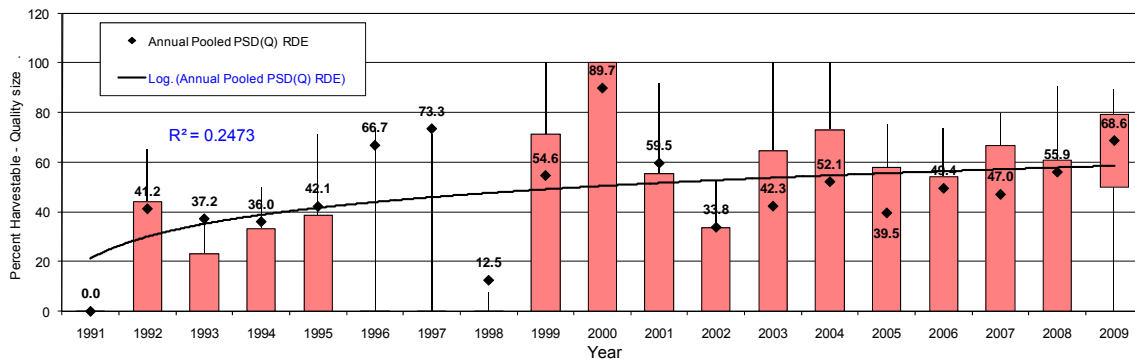
**Figure 38. Annual Pooled Redear Sunfish Catch per Hour**

The 2009 redear catch was dominated by the catch of 74.19 redear per hour at Cedar Creek Lake and 75.0 redear per hour at Crooked Branch Lake (Figure 39). In both lakes, redear sunfish were caught concentrated on their spawning beds. Eight of the waterbodies had 2009 results above their average annual redear catch per hour, four were below average, and two of the sampled waterbodies had zero catch of redears for all years.



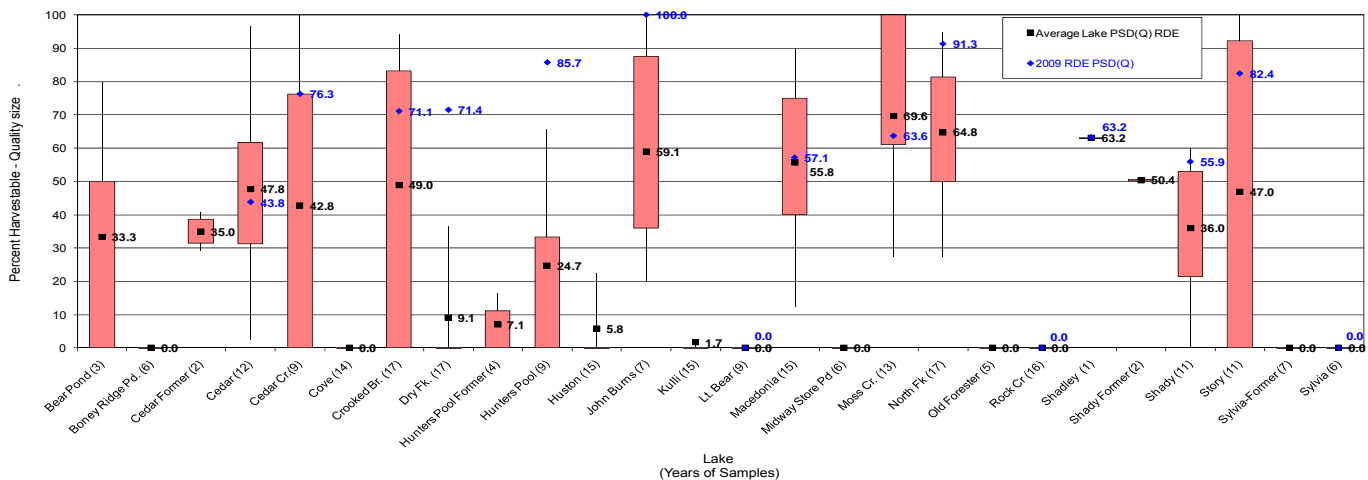
**Figure 39. Redear Sunfish Catch per Hour by Lake**

Harvestability of redear sunfish utilizes a stock length of 100 mm (3.9 inches) and a quality length of 180 mm (7.1 inches). PSD for the pooled redear catch in 2008 was the highest in the past nine years. While the trend line shows a slight increase over time, it is not statistically significant (Figure 40).



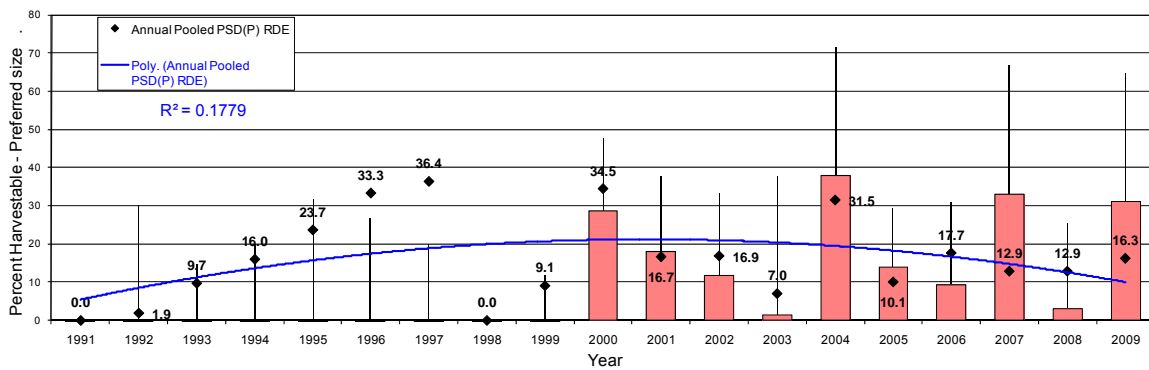
**Figure 40. Proportional Size Distribution for Redear Sunfish by Year**

The 2009 catch of redeer sunfish was dominated by quality sized and larger redeer sunfish at Cedar Creek, Crooked Branch, Dry Fork, Hunters Pool, John Burns, North Fork, Shady and Story with Cedar Creek, Dry Fork, John Burns, Hunters Pool, North Fork and Shady having percentages above the 75 percentile of their annual samples (Figure 41). Catches at Dry Fork, Hunters Pool, and John Burns were under 10 fish each and were skewed to large redears, thus high harvestability/quality. Cedar, Macedonia and Moss Creek catches were close to their average harvestabilities.



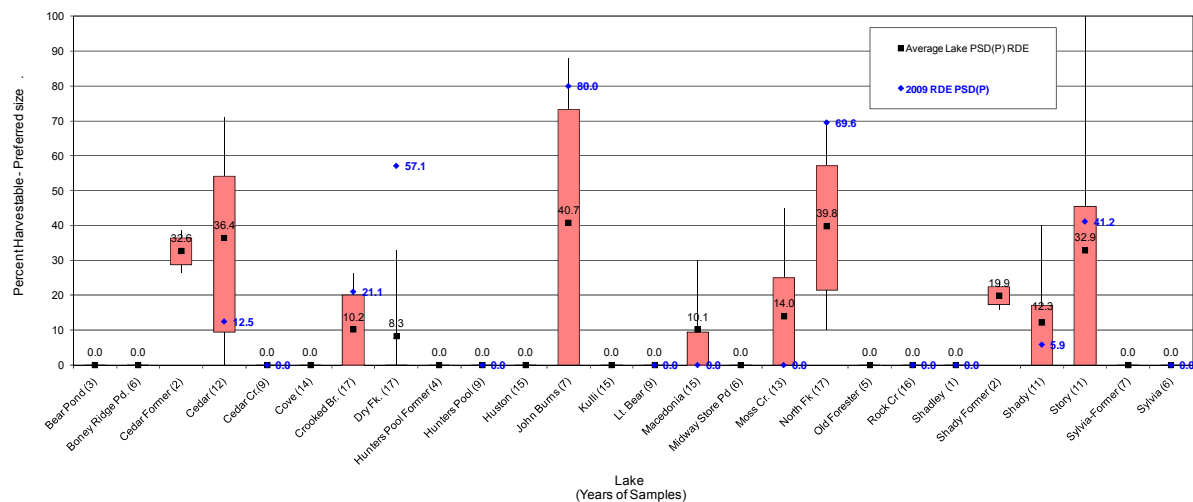
**Figure 41. Proportional Size Distribution for Redear Sunfish by Waterbody**

For the larger, preferred sized redeer sunfish (230 mm or 9 inches), PSD (P) was higher in 2009 than in 2007 and 2008 but lower than the 2006 figure (Figure 42). The trend line, that peaked in 2000 and since has been showing a downward trend, is not statistically significant.



**Figure 42. Proportional Size Distribution (Preferred) for Redear Sunfish by Year**

The 2008 redeer catch of preferred stock size redeer sunfish is way above average for Dry Fork, John Burns and North Fork (Figure 43). These values were driven by catches of only four of seven and four of five of the largest-sized redears at Dry Fork and John Burns respectively. Much higher numbers of large redears were caught at North Fork (16 of 23) which were caught on spawning beds. Preferred size redeer catches were below average for two waters, above average for five waters and zero for eight. None of Hunters Pool quality-sized redeer sunfish achieved the preferred size class. Because of the difficulty in catching large redeer sunfish and the variability in PSD (P) seen with small sample sizes, these fluctuations in values are expected to result in trends with little to no statistical significance.



**Figure 43. Proportional Size Distribution (Preferred) for Redear Sunfish by Waterbody**

As sampled in 2009, the redeer sunfish populations across the Ouachita NF are at suitable and sustainable levels and their viability is not in question.

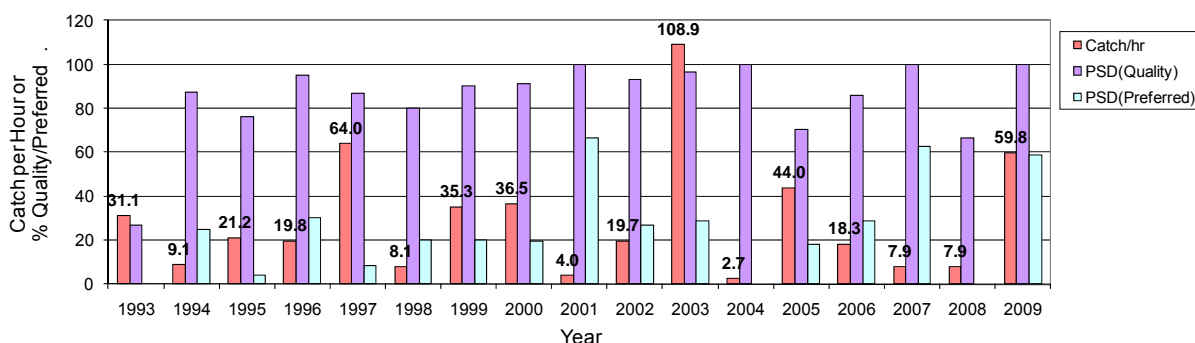
## Other Pond, Lake, and Waterhole Monitoring

In addition to the pond, lake, and waterhole MIS species, some 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. For 2009, additional

monitoring for white crappie, gizzard shad, and threadfin shad was conducted due to angler interest in crappie, and concern over shad population expansion.

### White Crappie (*Pomoxis annularis*)

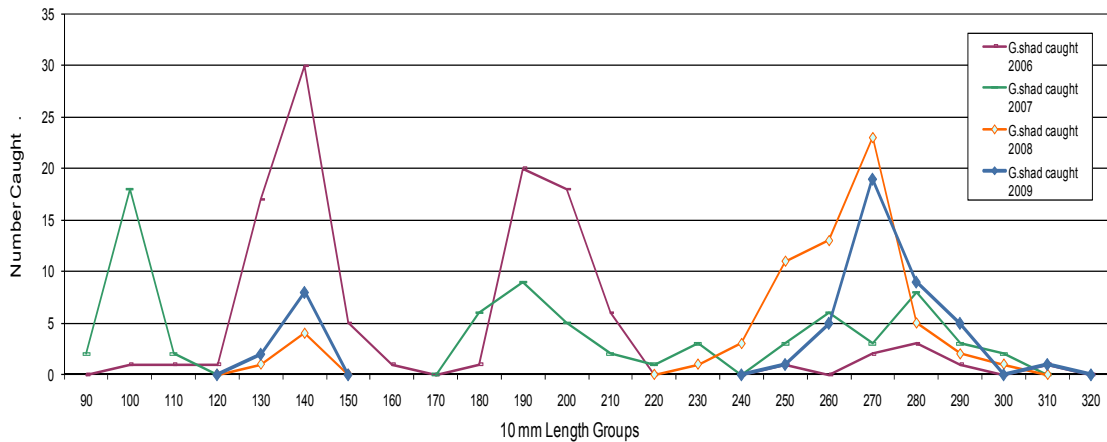
In addition to the previous three lake and pond species tracked Forest-wide, the white crappie population in Dry Fork Lake has been tracked due to anglers' interest at this particular lake. Crappie populations in the rest of the Ouachita NF waters are not nearly as large, thus this species is not a Forest-wide MIS. The population in Dry Fork Lake is also being tracked to follow its cyclic population. At times there is a pattern of low catch rates and high rates of harvestability of both quality (200 mm or 7.9 inches) and preferred (250 mm or 9.8 inches) sized crappie followed some years later by a high catch rate and lower harvestability of the preferred sized crappie (Figure 44.) During 2007, crappie were caught in the low ebb of their population numbers (low catch rates) and showed some of the highest harvestability scores for quality and preferred sized crappie. The 2008 crappie data show a low catch rate with no larger, preferred sized, crappie caught; however, the 2008 results look somewhat similar to 2004 results. The 2009 catch is relatively high which should have resulted in a low preferred sized crappie catch, but that was not the case with the third highest catch rate of preferred sized crappie in 17 years at Dry Fork Lake. Whether this cyclic variability is actually present in the crappie population or is a sampling issue is unknown, particularly after two consecutive annual samples that do not match the patterns of previous catches. This crappie population will continue to be monitored.



**Figure 44. White Crappie Catch per Hour, Proportional Size Distribution (Quality) and (Preferred) for Dry Fork Lake, Perry County**

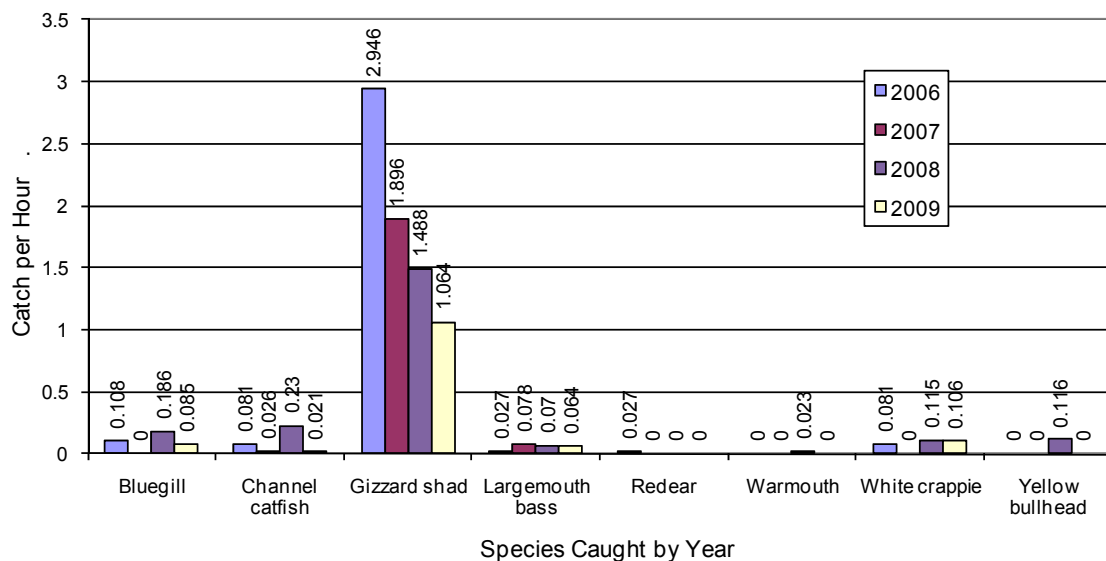
### Gizzard Shad (*Dorosoma cepedianum*)

Due to concern that the gizzard shad population in Cedar Lake might be expanding and could impact sport fishing, gill netting was conducted in the fall of 2005 to monitor the gizzard shad population. Two new 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 2009. The gizzard shad length frequencies (Figure 45) indicate three year/size classes were caught in the nets in 2006, three or more in 2007 and only two year classes caught in 2008 and 2009. The capture of smaller gizzard shad from the fall of 2007 spawn may well be the result of the lake refilling later in the spring and triggering an additional late spawn by the shad. That portion of that year class appears to be missing in the 2008 and 2009 netting catch. The results in 2009 are quite similar to the 2008 results.



**Figure 45. Cedar Lake Gizzard Shad Length Frequencies from Gill Nets (2) for 2006 - FY 2009**

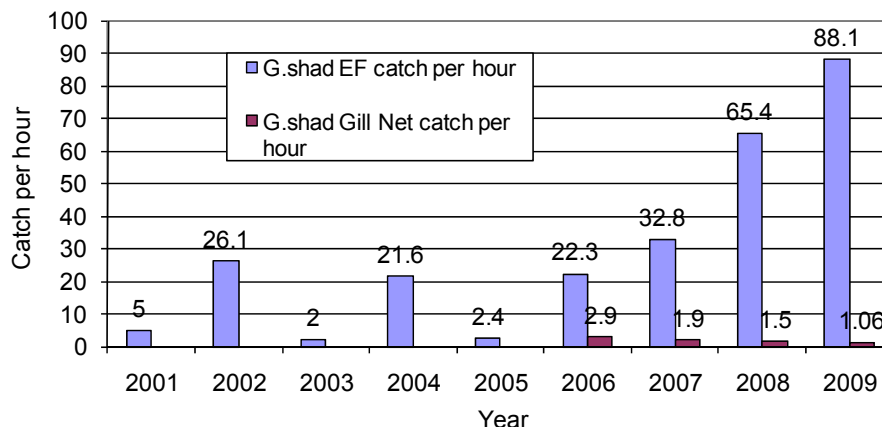
The catch per hour is low for gizzard shad and very low for the non-targeted species (Figure 46). While Cedar Lake was gill netted in 2005, the results are not comparable as those nets were significantly different and considerable less footage of nets was utilized compared to the past three year's net footages and effort. Catch result differences for 2006 through 2009 could well be the result of differences in lake/gill net visibility with length frequency results possibly influenced by the low water levels (11 feet low) experienced from December 2006 through spring 2007. These low lake levels would have resulted in crowding of all species, particularly the pelagic gizzard shad. Large predators would have had the advantage of preying on the crowded prey and the prey species would have encountered more competition for the more limited plankton and detritus food sources.



**Figure 46. Cedar Lake Gizzard Shad Catch per Hour per Year, Combined Nets**



The 2009 netting had similar by-catch of species other than gizzard shad (five additional species in 2006, two additional species in 2007, six additional species in 2008 and four additional species in 2009). Nine less gizzard shad were caught in 2008 with six more hours of same soak time than the 2007 catch. Fourteen less gizzard shad were gill netted in 2009 than in 2008 with 3.6 hours more soak time in 2009. 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 (Figure 47).



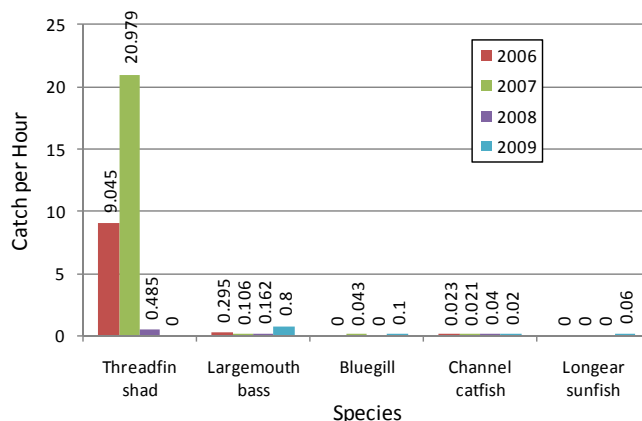
**Figure 47. Cedar Lake Gill Net Capture verse Electrofishing Capture**

While the two methods are not directly comparable, the results do indicate the larger-sized gizzard shad numbers are expanding and the smaller-sized gizzard shad numbers are dropping. This indicates a top-heavy adult shad population which can ultimately reduce reproduction of forage-sized gizzard shad and harm predator-prey relationship of bass to gizzard shad. 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 be targeted for a reduction program to promote production of the smaller gizzard shad. Discussions with the Oklahoma Department of Wildlife Conservation have been initiated to determine the magnitude of the problem and potential solutions. Trends in the gizzard shad population will continue to be monitored by gill netting and electrofishing in order to detect any over-population or change in abundance or length frequencies within the gizzard shad population.

#### **Threadfin Shad (*Dorosoma petenense*)**

During fall electrofishing of North Fork Lake in 2006, threadfin shad were discovered. The two, 200 foot monofilament nets described above were set in North Fork Lake to assess the population size and structure. The two nets were fished 44 total hours capturing fish smaller and larger than those electrofished. Data indicate that there were at least two year classes present. Stocking records were checked by the Arkansas Game and Fish Commission and it appears highly unlikely these shad came from their hatchery system leading to the assumption that the threadfin shad were stocked in North Fork Lake by the public. The lake was again sampled with two gill nets in 2007, 2008 and 2009, set in the same locations and for 47 hours combined fishing time in 2007, 49.5 hours in 2008 and 50.25 hours in 2009. Results show a

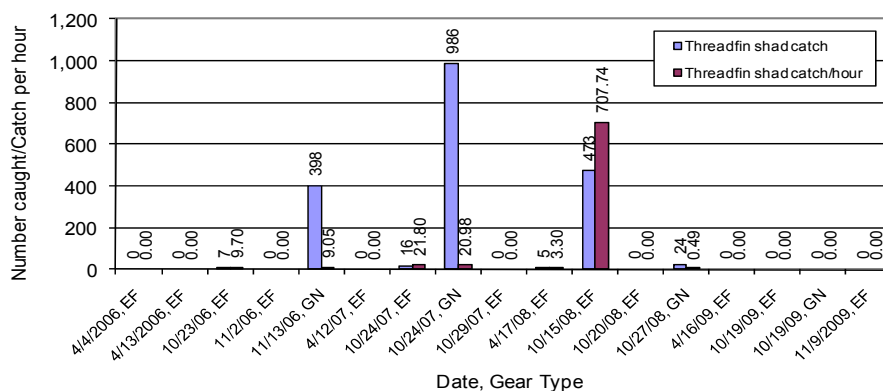
higher catch per hour of threadfin shad in FY 2007 than what was caught in 2006, a very low catch in 2008 and none caught in 2009 (Figure 48).



**Figure 48. North Fork Lake Gill Nets (2) Catch per Hour for 2006 - FY 2009**

The 2009 netting had an intermediate by-catch of species (other than threadfin shad) compared to the other years. The 2006 by-catch was of largemouth bass and channel catfish and totaled fourteen individual fish. Three species (above plus bluegill) and eight individual fish were caught in 2007. In 2008, ten bass and channel catfish were caught. Nearly forty times less threadfin shad were caught in 2008 for nearly the same soak time as in 2007, resulting in a 0.485 threadfin shad catch per hour in 2008, 20.979 caught per hour in 2007 and 9.045 in 2006. In 2009, four bass, one channel catfish, five bluegill and three longear sunfish were caught with no threadfin shad captured in the netting sample or in spring and fall electrofishing data.

With only four years of data for two nets set only one night each year, insufficient data exist for significant interpretation of results. It does appear the threadfin shad population was expanding in numbers based on gill netting and electrofishing results through 2008. However, due to their schooling nature, it is a real hit-or-miss proposition capturing them as shown by the huge October 15, 2008 electrofishing catch, then none electrofished five days later and a very low gill net catch of threadfin shad a week after that (Figure 49.)



**Figure 49. North Fork Lake Threadfin Shad Catch by Electrofishing and Gill Netting**

With no threadfin shad showing up in one gill netting and three electrofishing samples in 2009, it appeared the threadfin shad may have died out but five shad were reported on the June 8, 2009 shoreline seining. Verification of these five fish as threadfin shad was not made. There is a chance the population has been extirpated if these seined fish were misidentified. Threadfin shad are intolerant of water temperatures below 52 degrees and the cold winter of 2008 may have been sufficient to kill them off. The other possibility is the population of threadfin shad is so small that they are below detectable levels with the gear used and sample duration. North Fork Lake will continue to be electrofished at least annually and at least one more gill net sampling will be conducted with no threadfin shad catch before gill netting efforts to capture threadfin shad are abandoned and the population assumed to have been extirpated.

## Shoreline Seining

Shoreline seining was conducted in 29 lakes and ponds across the Ouachita NF. One additional seining effort was conducted as a repeat as the first seining was too early to catch either bass or bluegill reproduction. Adequate reproduction was found for sunfish and bass in most waters. 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 early in June had a lower sunfish/bluegill catch in relation to good bass catches versus those sampled a week or two latter that had what appeared to be better balanced bass/bluegill catches. Cedar Lake was sampled twice to try to get good results but bass numbers were quite low on both occasions. The bass population in Cedar Lake is strong enough that a poor reproductive year should not have any serious consequences on the overall strength of the bass fishery.

## Pond, Lake and Waterhole MIS and Other Species Summary and Conclusions

This review of monitoring information for the three pond, lake, and waterhole Management Indicator Species (MIS) is conducted to determine the status of the species and conservation needs. Table 5 displays trends, risk of conservation of species, and management changes needed for the three selected MIS. The review demonstrated that none of the MIS are at risk and that trends are generally as expected. Current management practices are adequate for maintaining viable populations and no management changes are indicated though the fishery at Shady Lake bears closer examination as it seems to be producing at rates less than expected.

**Table 5. Summary of Pond, Lake, and Waterhole Management Indicator Species Monitoring**

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	<i>Lepomis macrochirus</i>	Not Significant, Slightly Increasing	Not Significant, Slightly Increasing	Sustainable- Viability not in Question	None
Largemouth bass	<i>Micropterus salmoides</i>	Significant, Increasing	Not Significant, Slightly Increasing	Sustainable- Viability not in Question	None
Redear sunfish	<i>Lepomis microlophus</i>	Not Significant, Slightly Increasing	Not Significant, Slightly Decreasing	Sustainable-Viability not in Question	None

Additional monitoring for white crappie, gizzard shad, and threadfin shad was conducted during 2009 even though these are not MIS species. The white crappie population in Dry Fork Lake is monitored because it has been the largest crappie population on the Ouachita NF. Gizzard shad in Cedar Lake are monitored to determine if the population is expanding. The calendar year 2009 was the fourth year of this monitoring and it will continue. Threadfin shad were discovered in North Fork Lake during 2006 electrofishing efforts. The 2009 gill netting and three electrofishing samples captured no threadfin shad but five were caught in the spring shoreline seining. Monitoring for threadfin shad in North Fork Lake will also continue.

### **Aquatic Management Indicator Species (MIS) Population Trends--Stream and River MIS**

There are 14 species of fish associated with stream and river habitat. Monitoring for 12 species is conducted every five years utilizing a Basin Area Stream Survey along with annual data from long-term permanent stream monitoring sites. Data for the Johnny and channel darters are collected annually during the annual leopard darter monitoring conducted jointly with the US Fish and Wildlife Service.

#### **For Management Indicator Species, how well are the stream and river aquatic habitat conditions being protected, enhanced or maintained?**

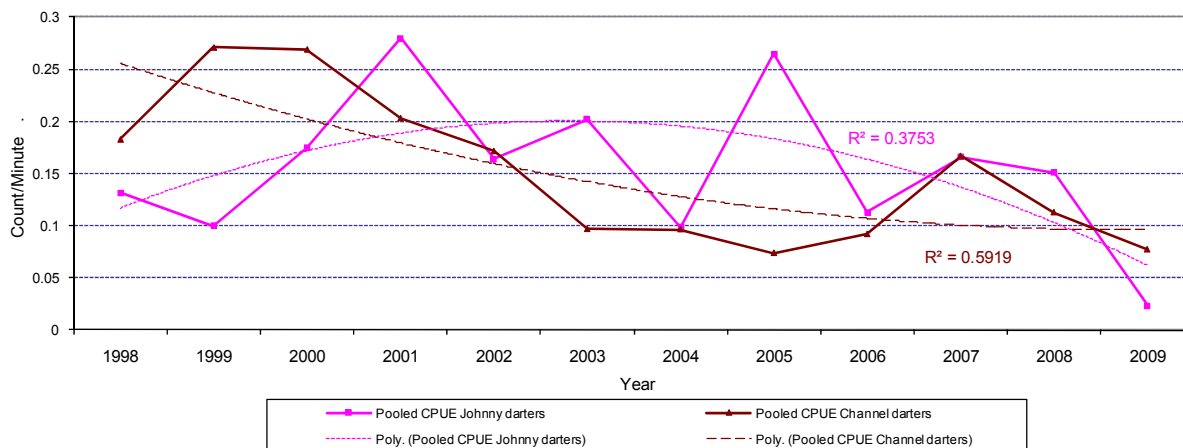
Exclusive of Johnny and channel darters, three data sources are readily for stream fish data. Data sources include the Basin Area Streams Survey (BASS) and Long-term Stream Survey Records (L-TSSR) which include long-term stream monitoring efforts, and fish collection records from Dr. Henry W. Robison in Arkansas and Dr. William L. Fisher in Oklahoma. Table 6 displays stream fish data and analysis from the BASS in FY 2006 and L-TSSR. There is no additional data in Table 6 than was reported in FY 2008. The next Basin Area Stream Surveys will be conducted again in FY 2011.

#### **Johnny and Channel Darters (*Etheostoma nigrum* and *Percina copelandi*)**

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 by species. Snorkeling of each transect is conducted by an experienced five-member crew.

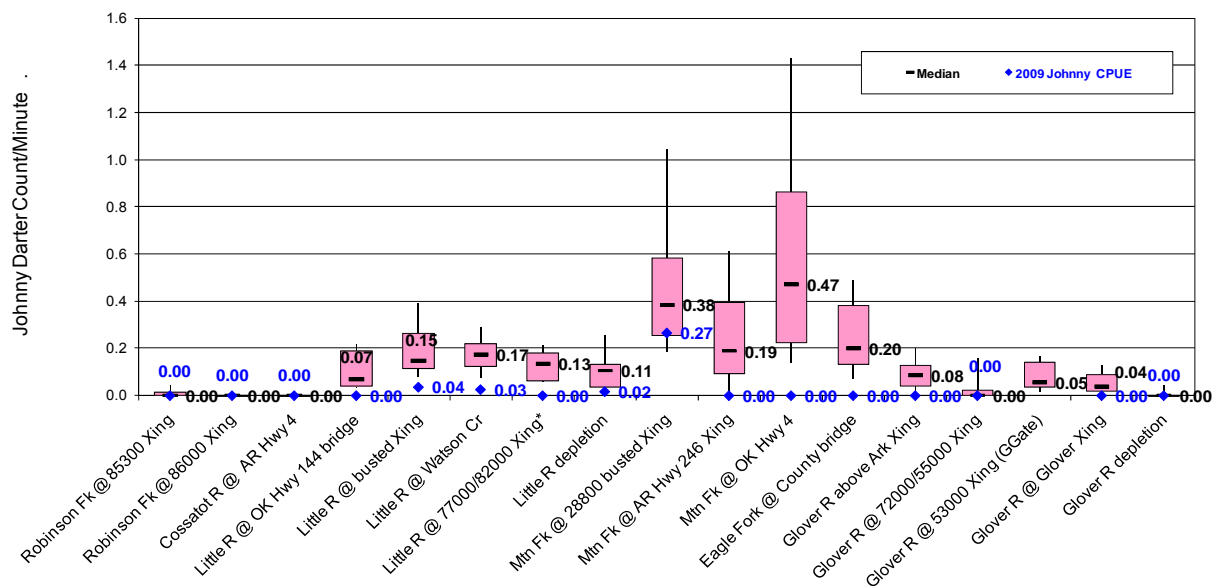
Johnny darters are more typically found over gravel and sand substrates, much finer substrates than the channel darter's preference for cobble and boulder substrates. Shifts in species distribution have been compared to shifts in substrate observations in an effort to establish a relationship. However, after examining the variability in the numbers of the two species at the individual sites over several years, it is not possible to draw a direct correlation. It is suspected that there are more influences than just substrate differences occurring at the site, drainage and regional/climatic levels. The winter of 2004/2005 had fewer and smaller flushing storm events than normal, 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 and 2006 Johnny and channel darter pooled counts/minute data (Figure 50) show a large increase in Johnny darter counts in the summer of 2005. 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, probably as the results of continuing improvement in spawning conditions with the flushing flows. In 2008 there were a number of flushing flows in February through early April that may have flushed eggs and larval darters out of ideal hatching and rearing habitat resulting in lower population levels the summer of 2008. In the winter of 2008/2009 there were even more significant storms through the spring of 2009 that were highly likely of flushing eggs and larvae out ideal habitats. 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 extremely low.



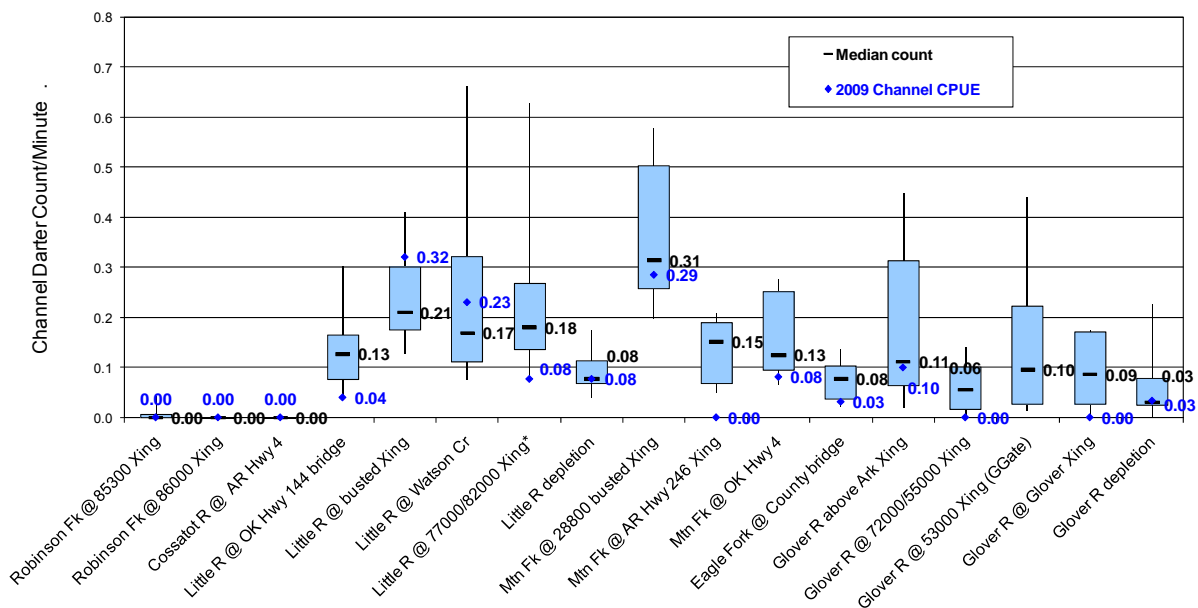
**Figure 50. Johnny and Channel Darter Annual Pooled Counts per Minute**

Most Johnny darter counts were zero in FY 2009, with only four sites out of the sixteen sites surveyed in 2009 having Johnny darters. Of those four, all were well below their median values (Figure 51). The Mountain Fork River site at the Oklahoma Highway 4 Bridge, which normally has the highest single site count for Johnny darters, had no Johnny darters counted in 2009, a first for that site.



**Figure 51. Johnny Darter Counts per Minute by Site**

For channel darters in 2009, only two of the sixteen counts were above the median count per site, eight sites were below their medians, and six sites had zero counts (Figure 52.) The two higher counts for channel darters in the Little River came from the middle sites on the river. The busted ford site in the Narrows of the Mountain Fork had a count just below the median count for that site.



**Figure 52. Channel Darter Counts per Minute by Site**

While the counts for both Johnny and channel darters look rather bleak, it is believed to be a result of the frequent and high intensity flooding of 2008/2009. The populations of both species are expected to rebound with more favorable conditions. Based on historic trends, the populations appear to fluctuate frequently with periods of population numbers expansion and contraction. Channel darter pooled counts have been slightly lower before (2005) and rebounded for two years, but the Johnny darter pooled count for 2009 is the lowest in twelve years. Fluctuating populations may be the norm.

### **Stream and River MIS Summary and Conclusions**

Monitoring information for 14 Stream and River Management Indicator Species (MIS) is reviewed to determine the status of the species and conservation needs. As noted in previous years' M & E Reports, the distributions between BASS managed and reference streams for all years combined and individual years are similar but the data suggest an undesirable trend in managed streams over time for yellow bullhead, green sunfish, central stonerollers, and orangebelly darters. The implications for management are serious, given current levels with potential increases in OHV use and the Forest's inability to conduct adequate road and trail maintenance at current funding levels.

The travel management project that will designate a system of roads and trails for use by motorized vehicles will allow the Ouachita NF to prioritize limited maintenance funds for use in areas most impacted by use and over time, should contribute positively to sediment control and species health.

Table 6 is a summary table that displays trends, risk of conservation of species, and management changes needed. No stream or river management MIS species are at risk, and population trends are generally as expected. Current management practices are adequate for maintaining viable populations of MIS with the noted exceptions.

**Table 6. 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
Yellow bullhead	<i>(Ictalurus natalis)</i>	Stable	Declining	Sustainable – Viability not in Question	Manage OHV use, maintain roads and trails
Pirate perch	<i>(Aphredoderus sayanus)</i>	Stable	Stable	Sustainable – Viability not in Question	None
Central Stoneroller	<i>(Campostoma anomalum)</i>	Stable	Increasing	Sustainable – Viability not in Question	Manage OHV use, maintain roads and trails
Creek chubsucker	<i>(Erimyzon oblongus)</i>	Stable	Stable	Sustainable – Viability not in Question	None
Orangebelly darter	<i>(Etheostoma radiosum)</i>	Stable	Potentially Decreasing	Sustainable – Viability not in Question	Manage OHV use, maintain roads and trails
Redfin darter	<i>(Etheostoma whipplei)</i>	Stable	Stable	Sustainable – Viability not in Question	None
Northern studfish	<i>(Fundulus catenatus)</i>	Stable		Sustainable – Viability not in Question	None
Northern hog sucker	<i>(Hypentelium nigricans)</i>	Stable	Stable	Sustainable – Viability not in Question	None
Green sunfish	<i>(Lepomis cyanellus)</i>	Stable	Increasing	Sustainable – Viability not in Question	Manage OHV use, maintain roads and trails
Longear sunfish	<i>(Lepomis megalotis)</i>	Stable	Stable	Sustainable – Viability not in Question	None
Striped shiner	<i>(Luxilus chrysocephalus)</i>	Stable	Stable	Sustainable – Viability not in Question	None
Smallmouth Bass	<i>(Micropterus dolomieu)</i>	Stable	Stable	Sustainable – Viability not in Question	None
Johnny darter	<i>(Etheostoma nigrum)</i>	Stable	Stable	Sustainable – Viability not in Question	None
Channel darter	<i>(Percina copelandi)</i>	Stable	Stable	Sustainable – Viability not in Question	None



## Threatened and Endangered Species and Habitat Desired Conditions

### Proposed, Endangered, Threatened, and Sensitive (PETS) Species Habitat Desired Condition

Habitats for federally listed species (and those proposed for listing) are conserved or restored, and listed species are recovered. Habitats for sensitive species and other species of concern are sufficient to prevent downward trends in populations or habitat capability and to prevent federal listing. Flow regimes and habitat connectivity in streams that provide habitat for Proposed, Endangered, Threatened, and Sensitive aquatic and riparian-dependent species are sufficient to allow the affected species to complete all phases of their life cycles. Vegetation conditions reflect the desired conditions identified for each system in the previous section.

**Part I for Desired Conditions of the Ouachita National Forest, Wildlife and Fish Habitat, R8 Sensitive Species and Species of Viability Concern and Habitat.** *What are the status and trends of R8 Sensitive species and species of viability concern habitat and/or populations. Annually report findings of all monitoring and research efforts involving Sensitive species and/or species of viability concern. At five-year intervals, evaluate population or habitat availability trends.*

#### Red-cockaded Woodpecker (*Picoides borealis*)

Red-cockaded Woodpecker: The Red-cockaded Woodpecker data for FY 2009 indicated 128 adult birds, and 77 fledglings, compared to 110 adult birds and 58 fledglings in FY 2008, 103 adult birds and 67 fledglings in FY 2007, and 88 adult birds and 49 fledglings in FY 2006. Over the past decade, the number of active territories and the number of adult birds are both showing an increasing trend.

**Annually report numbers or acres accomplished for each of the following RCW habitat activities:**

RCW Habitat Activity	FY 2006	FY 2007	FY 2008	FY 2009
Augmentations	0	0	0	0
Artificial Cavities	26	41	9	12
Cavity Restrictors	4	17	11	27
Predator Guards	30	12	13	15
Cluster Predator Control	41	49	86	93
Midstory Reduction for RCW (acres)	4,935	2,034	550	587
Prescribed Fire for RCW (acres)	8,670	21,164	11,590	11,598

**Maintenance of Threatened, Endangered or Sensitive Species Structures (SNEDS-Snake Excluding Device Structure, SQEDS-Squirrel Excluding Device Structure, restrictors): 302 Structures**

#### Harperella (*Ptilimnium nodosum*)

Harperella is the only endangered plant known to occur on the Ouachita NF. This species 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. On the Ouachita NF, harperella occurs in perennial streams either on or among boulders or large cobbles or on coarse sediment bars. Harperella is often associated with *Justicia americana*, *Gratiola brevifolia*, *Dulichium arundinaceum* and *Eleocharis quadrangulata*.

In FY 2009, monitoring for harperella was limited to the four sites on Irons Fork Creek and two sites on Fiddler Creek and was conducted in conjunction with the MVUM analysis. One site on Irons Fork Creek was being impacted by head-cutting of the stream. The Mena/Oden Ranger District placed rock, concrete jacks and sand bags to temporarily stabilize the stream until a more permanent solution can be found or it stabilizes on its own. Headcutting in the stream (left photo) was impacting the upstream harperella site until rehabilitation/stabilization activities were implemented (right photo).



All other sites were stable and appeared to contain comparable numbers and occupied comparable areas from years past. This method of population estimation was used because it was not possible to count individual plants without damaging others within the occupied area. Throughout its range, harperella population numbers and areas occupied often fluctuate from year-to-year in response to factors such as rainfall levels and winter conditions affecting seedlings and drought. Two additional miles of stream were inventoried for harperella during FY 2009, but no new populations were found.

#### **Cossatot leafcup, (*Polymnia cossatotensis* [Asteraceae])**

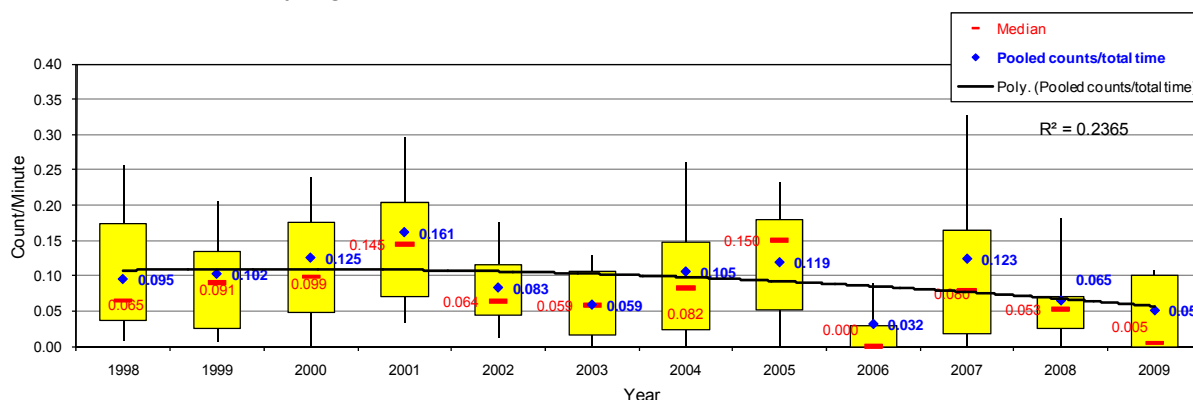
Cossatot leafcup is an endemic species of the Interior Highlands region of Arkansas and is a sensitive species. Cossatot leafcup is a forb/herb meaning that it is neither woody nor a grass. The Cossatot Leafcup was discovered in 1988 and is known only from four sites in Polk and Montgomery Counties within the Ouachita NF. Cossatot leafcup is extremely rare. The estimated number of individuals for the species is 33,765 plants of which 33,719 are located in just two of the populations.

Approximately 205 acres of potential habitat were surveyed for the leafcup during FY 2009. No new locations of the species were located during the survey. Survey sites were selected based on known geology and landform requirements of the leafcup including Novaculite boulder fields and talus slopes. One of the four known leafcup sites was monitored to determine the health of that population, which revealed a healthy population of numerous plants (1000+) and approximately 50 percent of the population was in flower.

#### **Leopard Darter (*Percina pantherina*)**

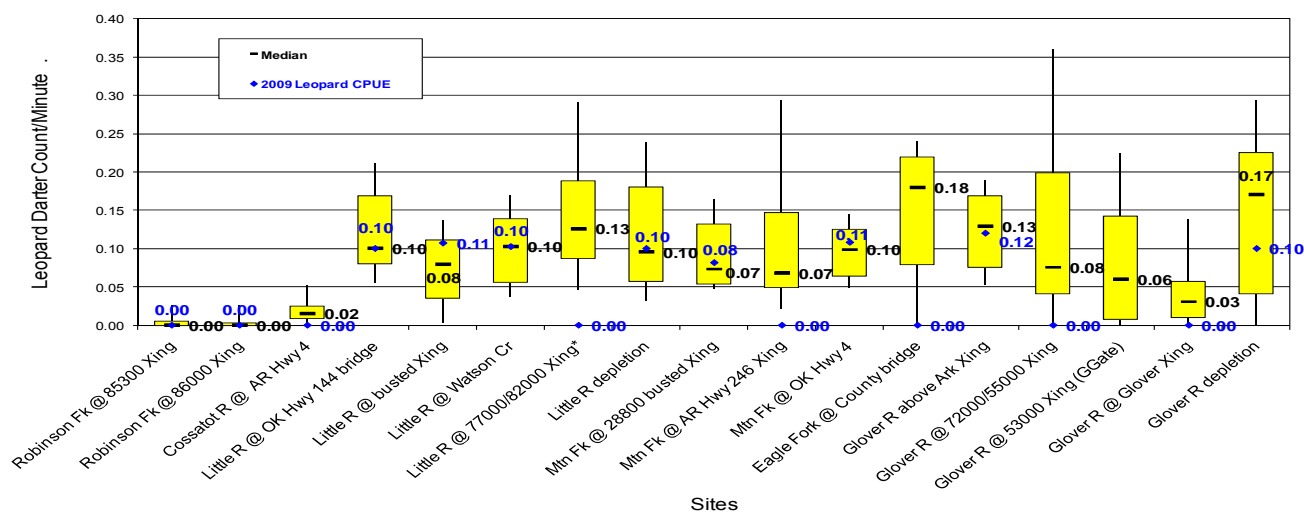
Based on the counts at 17 of the 18 permanent monitoring sites snorkeled during the summer of 2009, leopard darter counts were the second lowest (annual pooled count per minute) since the use of permanent monitoring sites began in 1998. Leopard darter counts in 2009 were nearly half that of the counts from the summer of 2007 (Figure 53.) From 1998 through 2007, there

appeared to be a trend of a gradual four-year increase in pooled counts with a crash and restarting of this trend. However, the 2006 to 2007 increase was followed by a crash in 2008. It is theorized that the winter of 2007/2008 with its numerous storm events led to the poor recruitment of the 2008 year class of leopard darters and low counts the summer of 2008. Flooding during critical spawning and rearing periods was even worse during the 2008/2009 winter into spring 2009. (See discussion of storm responses in the preceding Johnny and channel darter section of this report.) The trend line for the annual pooled counts of leopard darters is not statistically significant.



**Figure 53. Leopard Darter Annual Pooled Counts**

Leopard darters were not seen at eight of the 17 surveyed sites in 2009 (Figure 54). The 2009 leopard darter counts were also the median value at three sites, above the median value at two sites, and below the median, but above the 10 and 25 percentile points, at two sites. Two sites had a count above the median. The Robinson Fork population represents the only drainage area where all counts were zero; however, it has been typical to see no leopard darters at the two sites for several years and then to find one or two leopard darters the next year. This off-Forest population is the most vulnerable to extirpation because it is in a small drainage area isolated above a reservoir.



**Figure 54. Leopard Darter Counts per Minute by Site**

Leopard darters are still undergoing a 5-year Status Review by the US Fish and Wildlife Service and results have not been released. Data presented here would indicate that the population is experiencing natural variations. There are no new perceived threats to its survival. Delisting criteria as laid out in the draft recovery plan, have not been achieved, so delisting is not anticipated.

#### **Bald Eagle (*Haliaeetus leucocephalus*)**

On June 28, 2007, the Interior Department delisted the bald eagle from the endangered species list; however the Ouachita NF still tracks its nesting activities on the Ouachita NF. The bald eagle will still be protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The Ouachita NF had one active bald eagle nest during FY 2009. Two young were observed and one fledged.



**Figure 55. Bald Eagle Fledglings, Ouachita National Forest**

#### **Bear Den Cave Monitoring for Indiana Bat (*Myotis sodalis*)**

A Bear Den Cave bat survey was conducted on January 13, 2005, and two female endangered Indiana bats were found; however surveys at Bear Den Cave did not find Indiana bats using this winter hibernaculum in any of the last four years (FY 2006 - FY 2009).

#### **American Alligator (*Alligator mississippiensis*)**

The American alligator is considered a threatened species due to its similarity to the American crocodile. Surveys of the American alligator on the Oklahoma Ranger District in 2009 located seven alligators in Red Slough and Ward Lake as opposed to four alligators counted in FY 2008, eight in FY 2007 and 12 alligators counted in FY 2006. Also, a nine-foot alligator was spotted prior to the surveys, but not confirmed during survey days.

	2006	2007	2008	2009
Alligators counted	12	8	4	7

### **American Burying Beetle (*Nicrophorus americanus*)**

No American burying beetles (ABBs) were caught during 800 trap nights on established transect lines or project locations during FY 2009. Three ABBs were caught during 921 trap nights in FY 2006, and during FY 2007, two were trapped during 432 trap nights in FY 2008, and one was trapped during 711 trap nights in FY 2008.

	2006	2007	2008	2009
ABB captured	3	2	1**	0
Trap nights	921	432*	711	800

\*ABBs were captured during 432 trap nights on the Poteau/Cold Springs RD; although total trap nights equaled 920

\*\*3 ABBs were caught on the Fletcher Timber sale unit and relocated

### **Listed Freshwater Mussels**

There were no specific freshwater mussel surveys conducted on the forest during FY 2009. Researchers are currently investigating the limits and phylogeography of *Lampsilinae* in Arkansas with emphasis on species of *Lampsilis*. Mussel surveys will continue to be conducted, in conjunction with the Arkansas and Oklahoma USFWS aquatic specialists and the AGFC malacologist to provide information for the Arkansas fatmucket (*Lampsilis powellii*) five-year status review. The species and numbers of all other mussel species encountered will also be noted during the next survey scheduled for FY2012.

## **R8 Sensitive Species and Species of Viability Concern and Habitat**

**What are the status and trends of R8 Sensitive species and species of viability concern habitat and/or populations?**

**Annually report findings of all monitoring and research efforts involving Sensitive species and/or species of viability concern. At five-year intervals, evaluate population or habitat availability trends.**

**Rich Mountain Slit-mouth Snail (*Stenotrema pilsbryi*)- Annually report slit-mouth snail survey results in comparison to past surveys.**

No Rich Mountain Slit-mouth snail individuals were discovered in FY 2009 during six 30-minute surveys (three hours). In FY 2008, nine 30-minute surveys (4.5 hours) were conducted at nine sites over three days. Live snails were found at three sites with a total of 16 snails found. Six 30-minute surveys (3 hours) were conducted at each of the five sites over three days in FY 2007 with a total of 15 live snails found. Five 30-minute surveys (2.5 hours) were conducted at each of the five sites over four days in FY 2006, and four contained snails (eight total live snails were found).

Year of Surveys	2006	2007	2008	2009
# Rich Mountain Slit-mouth Snails	8	15	16	0
# 30-Minute Surveys	5	6	9	6

## Endemic Salamanders

### Report survey results in comparison to past surveys for the Rich Mountain, Caddo Mountain, and Fourche Mountain salamanders: Excerpt from AGFC Project Summary and Results.

The Ouachita Mountains are one most unique biogeographic regions within the central United States and harbor a high level of biodiversity including the endemic salamanders of the *Plethodon* (*P.*) *ouachitae* complex: the Rich Mountain Salamander (*P. ouachitae*), and two species, *P. fourchensis* and *P. caddoensis*, that are endemic only to the Ouachita Mountains of Arkansas. The third species, *P. ouachitae*, spans the west-central Arkansas and southeastern Oklahoma border (Trauth *et al.* 2004). All three are considered Species of Special Concern (SSC) by the Arkansas Game and Fish Commission. Given that morphologically cryptic diversity is common within salamanders of the family *Plethodontidae* (Highton 1995) and speciation can occur within small areas over a fragmented climatic and geographic landscape, the goal of the study was to identify and define species and their boundaries within the *Plethodon ouachitae* complex using modern DNA sequence techniques. In 83 days of fieldwork from 2006 - 2009, tissue from 261 individuals of *P. ouachitae* at 55 localities (133 individuals from 20 localities in Arkansas), 140 individuals of *P. fourchensis* from 38 localities, and 330 individuals of *P. caddoensis* from 66 localities was sampled and documented.

Importantly for the State of Arkansas, a large number of geographically isolated lineages were found that, using the criteria for species delimitation of Wiens and Penkrot (2002) should likely be considered unique species. These lineages were primarily uncovered using data from the mtDNA genes.

Briefly, *P. ouachitae* is composed of seven geographically distinct lineages likely originating in the Kiamichi Mountains and serially colonizing each of the following mountains in a stepping stone fashion: Round, Rich/Black Fork, Winding Stair, and Buffalo. In contrast, *P. fourchensis*, did not demonstrate a stepping-stone biogeographic history involving serial colonization and isolation events. Four distinct lineages were detected in *P. fourchensis* occurring on West Fourche, Little Brushy, Buck Knob, and the Blue Mountains. In comparison to *P. ouachitae*, *P. fourchensis* occupies much wetter and cooler environments, indicating it may be more sensitive to climatic changes.

Finally, it was found that *P. caddoensis* is composed of four highly divergent, geographically distinct lineages. The distributions of lineages abutted each other primarily along an east-west axis, but did not appear to be separated by any physical or environmental barrier such as in *P. fourchensis* and *P. ouachitae*. Based on the observed phylogeographic structure, it was hypothesized that historic climatic changes resulted in range contraction toward streamside talus slopes that serve as retreats thereby isolating populations in different river drainages. In support of this hypothesis that connectivity of talus habitats would be important in determining patterns of interpopulation gene flow, it was found that a significant amount of genetic variation was partitioned among river drainage systems; although many cases were found where individuals had crossed drainage boundaries for short distances in high-elevation headwater regions.

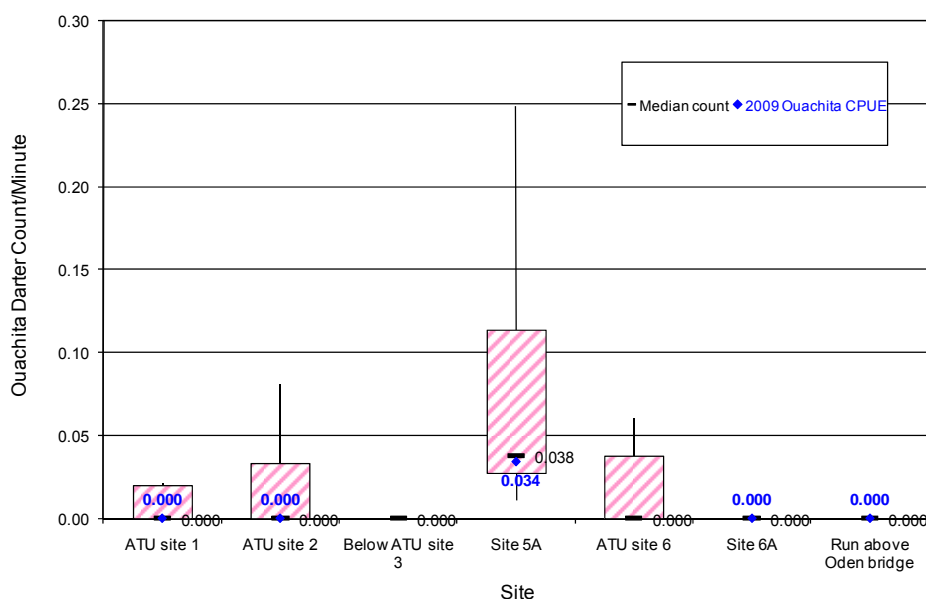
This research demonstrated the likelihood of many new, unrecognized species of salamanders within the *P. ouachitae* complex occurring in Arkansas, and underscored the importance of the Ouachita Mountains as sensitive ecological areas that harbor high endemic species diversity and operate as natural laboratories for studies of evolution.



**Sensitive Bats:** The Ouachita NF initiated a bat acoustic survey protocol in FY 2009 to monitor bat population trends and assess the impacts of White Nose Syndrome (WNS) on the summer distribution of bats. During fourteen survey nights the first year the Ouachita NF captured calls from seven 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.

### **Ouachita Darter (*Percina sp. nov.*)**

Ouachita darter snorkel surveys were initiated in 2004 as an annual survey from Shirley Creek Canoe Camp 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 survey was conducted in 2009, however water and air temperatures were abnormally cool and the first few sites were snorkel surveyed by the only individual that was outfitted with a wet suit. Two Ouachita darters were found at the 5a site where single individuals have been found in two prior surveys in almost the same spot (Figure 56). A personal services contract was awarded to Arkansas Tech University to look for the stargazing darter (*Percina uranidea*) with one found. It and nineteen Ouachita darters were captured by trawls further downstream. This work has been expanded into a Challenge Cost Share project undertaken by a graduate student from Arkansas Tech and his major professor. Work will continue on the stargazing darter and the Ouachita darter for the next two field seasons. Based on this and previous surveys, the Ouachita darter population in this section of the river is likely viable; however monitoring will be critical to better assess the variability in its numbers in this section of the river.



**Figure 56. Ouachita Darter Counts per Minute by Site**

## Geologic Resources Desired Conditions

Geologic Resources Desired Condition
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Unique geological resources and values on the Ouachita National Forest are sustained. Threats from geologic hazards to human life, natural resources, or financial investment are minimized.
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**Report any geologic resources and hazards identified and monitoring results for value of resources discovered and risk of geologic hazards.**

During FY 2009, no geologic resources or hazards were identified. Potential threats from geologic hazards to human life, natural resources, or financial investment remain low on the Ouachita NF in both Arkansas and Oklahoma. Where such threats are identified, appropriate actions will be taken to minimize them. Threats identified by Ouachita NF personnel and the public should be identified to the Forest Geologist for evaluation and possible action.

## Landownership Pattern and Land Administration Desired Conditions

Landownership Pattern
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Land Administration Desired Condition
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Public lands are easily accessible. Land adjustment administration contributes to the reduction of the complexity of landownership patterns and consolidates the National Forest System land base; reduces administrative problems and costs; enhances public access and use; and supports resource management objectives, including the protection and improvement of habitat condition and linkage. Clear title to National Forest System land is retained. Occupancy trespass is eliminated, and National Forest boundaries are clearly posted.
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### Landline Location or Maintenance

**How many miles of Ouachita NF boundaries have been located or maintained?**

There were 136.5 miles of landline location or maintenance accomplished during FY2009 on the Ouachita NF, compared to 135.4 miles during FY2008, 65.0 during FY 2007 and 52.58 miles of landline location maintenance during FY 2006.

**How many encroachments have been resolved?**

A total of two encroachments were resolved.

### Land

**How many acres of land have been purchased?**

No lands were purchased by the Ouachita NF during FY2009 or during FY 2008. During FY 2007, 120 acres of land were purchased as compared to 2,257 acres purchased in FY 2006.

**How many acres of land have been exchanged?**

During FY 2009, 260 acres were exchanged (140 to proponents and 120 to the FS).

**How many acres of land have been sold?**

During FY 2009, 4.57 acres were sold compared to 0 acres sold during FY 2008.

### Right of Way cases

**How many ROW acquisition cases have been accomplished?**

Two road easements were acquired during FY 2009.



## Heritage Resources Desired Conditions

Heritage Resources
Heritage Stewardship Desired Condition
Significant heritage resource sites are identified, preserved, or enhanced. Connections are made with the American people on the importance of public land heritage stewardship through public involvement programs. The past, present, and future of heritage resources' role in ecosystem management, including socio-cultural values in an environmental context, are recognized.

### Heritage Sites Managed to Standard

**Annually report sites managed to standard (sites inventoried, evaluated, protected, promoted, preserved, restored, rehabilitated, monitored, or enhanced). Include the number of site management plans developed, conflicting site-specific land use activities identified and resolved, Section 110 targets achieved, the number of public involvement programs/projects initiated, agreements with research entities, and report and database updates. Every fifth year, progress in increasing the number of heritage resources protected and managed to standard will be evaluated.**

The Heritage Resource program on the Ouachita NF involves a wide range of activities ranging from archeological survey and site documentation, to site protection, collections, management, and public outreach. The primary emphasis of the program, however, deals with the task of complying with Section 106 of the National Historic Preservation Act. Section 106 requires that agencies take into account the effects of their actions on historic properties (sites listed on or eligible for listing on the National Register of Historic Places). This generally requires some field investigations, since many of those properties have not previously been identified.

Public involvement is also a strong focus in the heritage program. During FY 2009, the Ouachita NF hosted a number of local volunteers who assist with collections management in the Supervisor's Office. This group provided 687 hours of service (valued at over \$13,900). In addition, the Heritage Resource staff presented numerous programs to archeological societies and civic groups in Arkansas and Oklahoma during the year.

The heritage staff dedicated many hours entering heritage data (sites and events) into the corporate database (currently more than 9,300 sites are in the database). This allows more efficient management of the resource and easier upward reporting of program accomplishments. The database also provides documentation of site monitoring activities accomplished during the year. One hundred thirty-three archeological and historic sites were revisited by heritage staff to reassess their conditions. One hundred seventy-seven archeological sites on the Ouachita have been identified as Priority Heritage Assets; of these, based on annual condition assessments at 20% of the total, 111 were determined "managed to standard" by the end of FY2009.

## **Heritage Resource Evaluations**

### **Report number of properties of heritage resource evaluation accomplished.**

One archeological site was formally evaluated for eligibility for inclusion on the National Register during 2009. The site is located on the Caddo District in Brooks Hollow.

## **Heritage Resource Survey**

### **Report number of acres of heritage resource survey accomplished.**

Archeological survey was undertaken on 21,965 acres during the year as a part of Section 106 activities. As a result, 30 archeological sites were found and documented.

## **Heritage Resources**

### **Tribal and Native American Interests Desired Condition**

The Ouachita NF is maintained in a condition that allows Native American tribes and individuals to retain traditional connections to the land and to foster both traditional and contemporary cultural uses of the Ouachita NF. The Ouachita NF has active agreements and protocols to facilitate consultation (all resources) and government-to-government relationships.

**Report the number and types of agreements and protocols executed and the number of consultations accomplished in FY 2007. Every fifth year, feedback, and satisfaction will be evaluated as indicators of progress toward the desired condition.**

The Arkansas districts of the Ouachita NF routinely consult with four Tribes (Caddo Nation of Oklahoma, Choctaw Nation of Oklahoma, Chickasaw Nation, the Quapaw Tribe and some Districts also consult with the Osage Nation) and provide copies of environmental and heritage resource documents for their information, review, and comment. The Oklahoma District consults with these same four tribes and three additional tribes (Wichita and Affiliated Tribes, Osage Nation and Absentee Shawnee Tribe).

Part of this interaction involves planning and participating in a conference, the To Bridge A Gap Conference, designed to bring together Tribal and Forest Service representatives to discuss issues of interest and concern to both. The conference promotes closer working relationships, consultation, and information sharing between the Tribes and Forest Service. The Ouachita NF, in consultation and cooperation with the Caddo Nation, the Choctaw Nation, the Chickasaw Nation, and the Ozark-St. Francis National Forests, developed the *To Bridge A Gap Conference* to facilitate Government-to-Government relationships with the tribes in Oklahoma in 2002. The conference has been hosted by the Choctaw Nation of Oklahoma (2002, 2003, 2009), the Caddo Nation (2004), the Absentee Shawnee Tribe (2005), the Muskogee (Creek) Nation (2006) and the Chickasaw Nation (2007)

The 2009 To Bridge A Gap conference was co-hosted by the Choctaw Nation of Oklahoma, the Ouachita NF and the Ozark-St. Francis NFs in Durant, Oklahoma, and was well attended. Representatives of many Tribes, several Northern, Southern, and Eastern National Forests, and Regional Offices in the Southern and Northern Regions, as well as representatives from the Washington Office attended. The Ouachita NF continues to work with the Oklahoma Tribes.

The Ouachita and Ozark-St. Francis NFs heritage programs teach a Heritage Resource Technician Training class on an intermittent basis. This class is open to and often attended by Tribal employees.

## Public Use and Enjoyment Desired Conditions

### Public Use and Enjoyment

#### Recreation Participation Desired Condition

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 National Forest. Existing "rural" recreation opportunities in developed recreation areas are maintained.

#### How many recreation sites are managed by the Ouachita NF?

There are a total of 118 recreation sites managed by the Ouachita NF.

#### How many recreation sites were maintained to standard?

There were 113 of the 118 recreation sites maintained to standard.

#### What was the occupancy/use rate for each recreation site?

Occupancy rates are not tracked at non-fee sites. There are 19 recreation sites that are operated as fee sites; however occupancy rates are not relevant for the five day use areas (Cedar Lake, Lake Sylvia, Shady Lake, Little Pines and Charlton Day Use Areas). Estimated occupancy rates for the remaining 14 fee sites are included in Table 7.

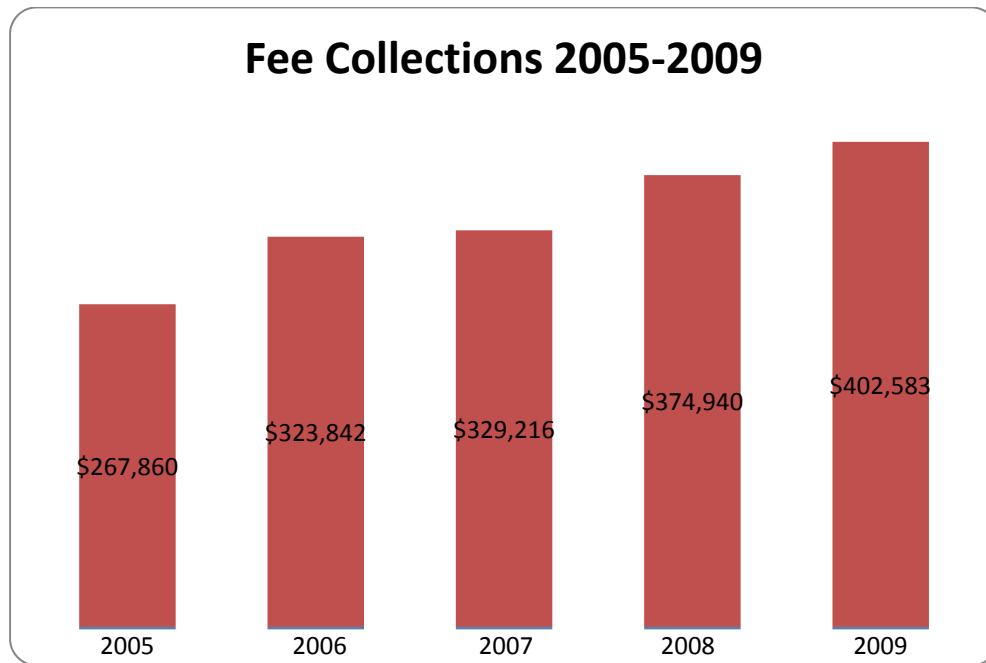
**Table 7. Recreation Sites Estimated Occupancy Rates, Ouachita NF**

Recreation Site Name	Recreation Site Type	% Average Occupancy FY 2006	% Average Occupancy FY 2007	% Estimated Occupancy FY 2008	% Estimated Occupancy FY 2009
Billy Creek	Campground	6	6	5	5
Cedar Lake	Campground	9	18	32	32
Cedar Lake	Horse Camp	26	26	22	22
Winding Stair	Campground	12	15	10	11
Albert Pike	Campground	31	20	29	30
Bard Springs	Campground	6	4	2	4
Knoppers Ford	Campground	9	9	7	6
Camp Ouachita	NFS - Organization Site	5	1	1	1
Lake Sylvia	Campground	11	0	19	20
South Fourche	Campground	6	6	1	3
Shady Lake	Campground	15	11	8	10
Little Pines	Campground	13	13	32	31
Camp Clearfork	NFS - Organization Site	47	47	52	58
Charlton	Campground	11	12	32	32

\* Data not available

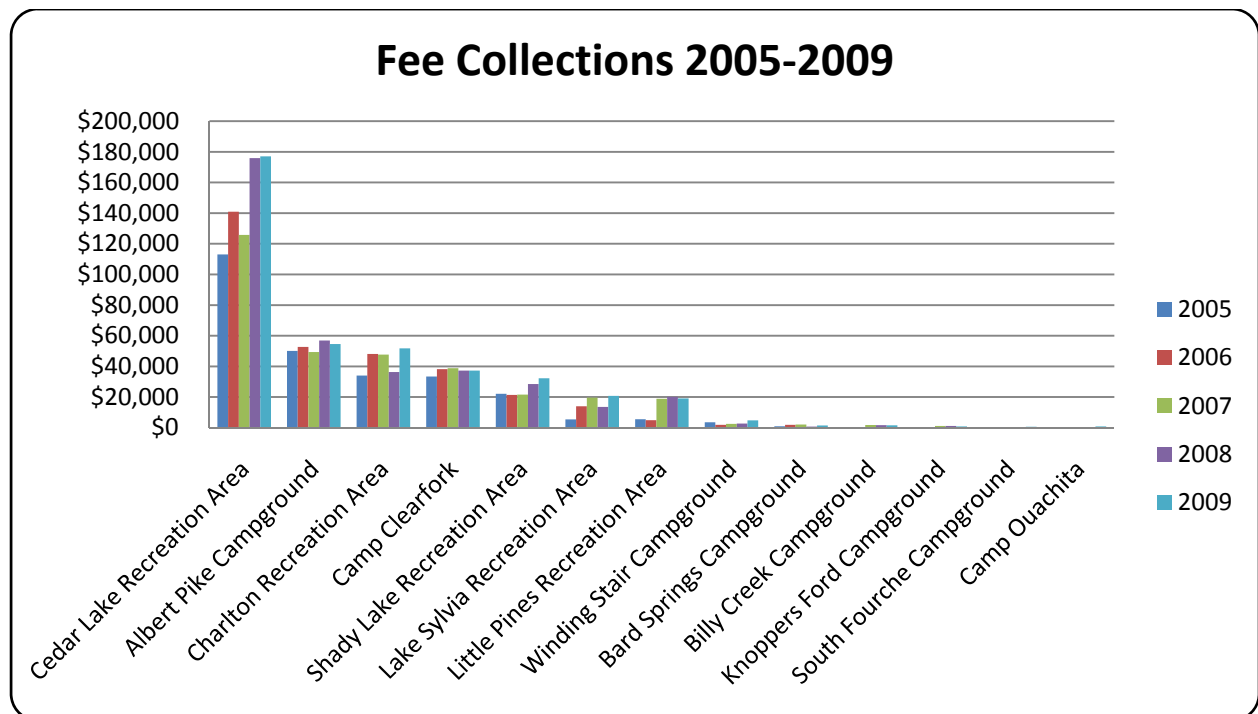
The Ouachita NF relies on fee collections to monitor use patterns/trends at recreation sites. Because fees have not changed during the years FY 2005 – FY 2009, the data in the graph below show increasing use of fee collection recreation sites.

### Total Recreation Area/Campground Fee Collections 2005-2009



As seen in the graph below, fee collections/use rates are trending upwards. Individual recreation site fee collections are shown in Table 7.

### Fee Collections, 2005-2009, by Recreation Area/Campground



**Public Use and Enjoyment****Conservation Education and Stewardship Desired Condition**

People connect to the land and to each other, aided by high-quality public information, interpretive services, and environmental education programs/ activities, with nonprofit partners often in a lead or cooperating role. Proactive efforts reach both traditional and nontraditional users and lead to a greater citizen understanding, appreciation, advocacy, and participation in forest stewardship and ecosystem conservation. Particular emphasis is placed on an ecosystem-based approach to management that takes into account the roles of the Ouachita NF as a contributor to local quality of life, including opportunities for sustainable economic development through recreation, tourism, and carefully designed timber harvests; as a producer of clean water; as a provider of habitat vitally important to many native species; and as a source of wildlife, wilderness, and abundant recreation opportunities.

Through public involvement programs associated with project-level and plan-level activities, connections are made with the American people on the importance of public land heritage stewardship. The role that heritage resources play in ecosystem management, including the role of socio-cultural values within an environmental context, is highlighted.

**How many conservation education products/presentations were presented and what is the estimated number of people reached?**

Over 119 presentations were offered and over 8,000 persons received information from or participated in Forest Service programs, not including those reached by newspaper or television. Conservation Education Activities are recorded and attached as Appendix B.

**Public Use and Enjoyment****Landscape Management Desired Condition**

The biological, physical, and cultural features of landscapes that provide for a "sense of place" as defined in the Landscape Character descriptions are intact. Landscapes possess a vegetation pattern and species mix that is natural in appearance. Built elements and landscape alterations complement the lines, forms, colors, and textures found in the landscape. Fifty percent of projects undertaken on the Ouachita NF within High Scenic Integrity Objective (SIO) areas will attain a high SIO, 65 percent of projects undertaken in Moderate SIO areas will attain Moderate SIO rating, and 100 percent of projects located in Low SIO areas will attain that rating. Refer to the FEIS, Chapter 3, Scenery Management System for a more detailed description of the Scenery Management System and Scenic Integrity Objectives.

**How many of what project types were conducted in areas with a high SIO?**

Sixteen timber management projects, two of which were in a Wild and Scenic River Corridor with a VERY HIGH SIO, and analysis of one special use project for road construction through the Upper Kiamichi River Wilderness area, also having a SIO of VERY HIGH, were conducted in 2009. The special use proposal analysis is ongoing with more monitoring planned for 2010 and 2011. FY 2009 activity compares to FY 2008 activity of nine timber management projects, one that was in a Wild and Scenic River Corridor with a VERY HIGH SIO and another that was the beginning of the special use project mentioned above. In FY 2007, activity consisted of seven timber management projects, two in Wild and Scenic River Corridors with a very HIGH SIOs, and another that was a special use project for a buried electric line adjacent to a wilderness area.

**How many landscape architecture consultations occurred?**

Twenty six consultations occurred with a Landscape Architect for the above sixteen projects. This compares to FY 2008 activity of eighteen consultations for the nine FY 2008 projects and the FY 2007 activity of fourteen consultations for the eight FY 2007 projects.

**To what degree were SIOs maintained/achieved?**

The Ouachita NF maintained the base requirement of having fifty-five percent of the projects undertaken within a High Scenic Integrity Objective (SIO) area attaining the HIGH SIO, 70 percent of projects undertaken within a MODERATE SIO area attaining the MODERATE SIO rating, and 100 percent of projects located in LOW SIO areas attaining the LOW SIO rating.

**Public Use and Enjoyment****Law Enforcement Desired Condition**

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.

Law Enforcement: 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 FY 2009, LE&I administered seven Cooperative Law Enforcement Agreements that support local county law enforcement assistance in Arkansas and Oklahoma. The number of Ouachita NF law enforcement officers (LEO's) in FY 2009 dropped to seven full time officers and one Reserve LEO. The historical high of LEO's forest-wide was twelve. LEO's often work 120-150 hours in a normally 80-hour, two-week pay period. During FY 09 a total of 3,908 hours of Administratively Uncontrollable Overtime (AUO) were worked by LEO's.

LEO's responded to or assisted with 61 accidents within or adjacent to the Ouachita NF. These numbers include minor injuries (sprains, dog bites, etc) and ATV, motorcycle and motor vehicle accidents. Twenty-one accidents were motor vehicles, 19 ATV accidents, 12 motorcycle accidents and 7 personal injury/other accidents. Three fatalities occurred from a plane crash, a drowning and an ATV accident. Twenty-four separate search and rescue (SAR) operations were conducted during FY 09. The SAR's included a man hunt for an escaped prisoner. Officers conducted 38 compliance checkpoints to address the growing traffic, ATV and alcohol violations occurring as a result of increased public visitation on the Ouachita. Additionally, in FY 09, an LEO was assaulted during a felony DWI arrest.

On the Ouachita NF, a total of 305 Federal Violation Notices, 497 State Violations, 531 Warning Notices, and 596 Incident Reports were issued. A comparison of FY 2009 LE activity with FY 2006, FY 2007, and FY 2008 is provided in the tabulation below.

<b>Fiscal Year</b>	<b>Federal Violation Notices</b>	<b>State Violations</b>	<b>Warning Notices</b>	<b>Incident Reports</b>
2006	256	230	331	444
2007	285	436	370	610
2008	246	513	463	444
2009	305	497	531	596

Approximately 33,940 marijuana plants were eradicated from within and adjacent to the Ouachita NF. There were 116 separate investigations initiated in FY 2009 including 27 felony drug cases. Additionally 82 separate misdemeanor drug cases were documented. These incidents include drug and drug paraphernalia possession, K-9 and Forest Service assists to other law enforcement agencies and working with the various local Drug Task Forces. Fifty-nine fires were investigated of which 39 were determined to be arson fires.

Fiscal Year	Marijuana Plants	Investigations	Felony Drug Cases	Misdemeanor Drug Cases	Arson cases
2006	6,300	97	41	51	
2007	8,775	89	29	98	
2008	742	97	36	50	19
2009	33,940	116	27	82	39

Ouachita NF Law Enforcement personnel spent 187 hours in public relation programs. Ouachita NF LEO's traveled approximately 200,000 miles in FY 2009, in support of public and agency safety, as well as protection of natural resources and property. During FY 2009, Ouachita NF Law Enforcement personnel spent approximately 450 hours in support of various details off their home units. Law Enforcement reports show a total of 14,839 public contacts during FY 2009. A comparison of FY 2009 LE activity with FY 2006, FY 2007, and FY 2008 is provided in the tabulation below.

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

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

## Facility Operation and Maintenance – Facility Administration

### Facility Operation and Maintenance – Facility Administration Desired Condition

Facilities and infrastructure are high-quality, well maintained, safe, accessible, and consistent with visitor expectations and the Built Environment Image Guide principles. Facility maintenance meets established national standards. Structures are well integrated into the landscape and advance environmentally sensitive technology.

#### How many facilities were maintained to standard?

The Ouachita NF facility inventory included 343 buildings that are categorized as follows: Existing - Active, Existing - Inactive, or Existing - Excess. Of those 343 buildings, 295 have a Facility Condition Rating (FCR) rating of good or fair. The percentage of buildings with an FCR of good or fair is 86%. 12 buildings are rated poor and 36 are unrated. All of the "unrated" buildings are at Camp Ouachita.

#### How many new facilities do not meet Built Environment Image Guide (BEIG) principle Forest-wide?

There are no facilities known to fall short of BEIG principles on the Ouachita NF.

## Facility Operation and Maintenance - Transportation System Desired Condition

### Facility Operation and Maintenance - Transportation System Desired Condition

The transportation system of roads and trails is safe, affordable, and environmentally sound, responds to public needs, and is efficient to manage. The system provides public access for recreation, special uses, and fire protection activities and supports Ouachita NF management objectives. The system is well maintained commensurate with levels of use and available funding. The system is connected to state, county, or local public roads and trails. Unnecessary roads and trails are removed and the landscape restored. Rights-of-way to access NF System lands satisfy public needs and facilitate planned resource activities. Over the planning period, the number of inventoried unclassified roads and trails is reduced, and the development and proliferation of new unclassified roads is minimized.

An environmentally sustainable, integrated system of backcountry and rural non-motorized trails is maintained. The system can accommodate a range of experiences in high-quality settings for a diverse visitor population; conflicts among users are minimized; and opportunities for partnerships are provided. The availability of day use "loop hikes" is improved.

Recreation opportunities for Off-Highway Vehicle (OHV) enthusiasts will be available within an integrated system of designated roads and trails. Designated OHV routes provide a high-quality OHV experience. Conflicts between OHV enthusiasts and other recreational uses, with private lands and homeowners adjacent to NF land, and with resource issues are addressed and resolved in a timely manner. Resolutions are consistent with area objectives and management direction.

#### How many miles of road by maintenance level exist?

Miles and percentages of roads by maintenance level for FY 2009 are presented in the tabulation below.

Maintenance Level	FY 2009 Miles	Percentage
1 - Basic Custodial Care (Closed)	2547.17	43.9
2 - High Clearance Vehicles	2010.68	34.6
3 - Suitable For Passenger Cars	1181.26	20.4
4 - Moderate Degree of User Comfort	47.01	0.8
5 - High Degree of User Comfort	17.11	0.3
<b>Total</b>	<b>5803.23</b>	<b>100.0</b>

#### How many miles of roads were operated and maintained to meet the objective maintenance level and class?

During FY 2009, 580 miles of road were maintained to standard. Declining road and trail maintenance budgets are contributing to difficulties in meeting objective maintenance levels and classes.

#### How many miles of arterial/collector roads were reconstructed this year?

During FY 2009, only 1.94 miles of arterial/collector roads (4 roads) were reconstructed as compared to 10.54 miles of arterial/collector roads (4 roads) in FY 2008; 6.44 miles of arterial/collector roads (4 roads) in FY 2007; and 15.56 miles of arterial/collector roads (7 roads) during FY 2006.



**How many miles of arterial/collector roads were constructed this year?**

No new arterial/collector roads were constructed during FY 2006, FY 2007, FY 2008, or FY 2009.

**How many miles of local roads were reconstructed this year?**

During FY 2009, only 1.94 miles of local roads were reconstructed, as compared to 28.17 miles during FY 2008; 34.20 miles during FY 2007; and 55.4 miles of local roads reconstructed during FY 2006.

**How many miles of local roads were constructed this year? How many miles were added (classified) to the system?**

During FY 2009, 21.00 miles of local roads (8 roads) were constructed and added to the system as compared to 8.54 miles during FY 2008; 4.28 miles during FY 2007; and 15.99 miles of local roads (22 roads) during FY 2006.

**How many miles of road were removed from the system (decommissioned)?**

There were 2.04 miles of road decommissioned in FY 2009 as compared to 2.70 miles of road removed from the system during FY 2008. During FY 2007, there were 12.30 miles of road removed from the system as compared to 204.35 miles of road showing as removed from the system during FY 2006. The seemingly large number of road closures in FY 2006 was not a result of a management action, rather an administrative correction due to ground- truthing of actual road condition and correction in the official database of record.

**How many accidents were reported (both road and trail)?**

Within or adjacent to the Ouachita NF, LEO's responded to or assisted with 61 accidents within or adjacent to the Ouachita NF. These numbers include minor injuries (sprains, dog bites, etc), ATV, motorcycle, and motor vehicle accidents. Twenty-one accidents were motor vehicles, 12 motorcycle accidents, 21 ATV accidents, and 7 personal injury/other accidents. Three fatalities occurred from a plane crash, a drowning, and an ATV accident. Twenty-four separate search and rescue (SAR) operations were conducted during FY 09. The SAR's included a man hunt for an escaped prisoner. Officers conducted 38 compliance checkpoints to address the growing traffic, ATV and alcohol violations occurring as a result of increased public visitation on the Ouachita. Additionally, in FY 09, an LEO was assaulted during a felony DWI arrest.

Fiscal Year	Accidents			Search & Rescue	Compliance Checkpoints
	Personal	Plane/Vehicle/Motorcycle	ATV		
2006	8	23	*	9	0
2007	30	4	3	13	32
2008	21	11	8	14	27
2009	7	33	21	24	38

\*Data not reported in FY 2006

**Were any visitor satisfaction surveys for roads or trails conducted during FY 2009?**

No

**How many miles of non-motorized trail exist?**

There were 677.5 miles of open, non-motorized trail managed; 44.4 of these miles are located within wilderness areas.

**How many miles of motorized trail exist?**

There were 214.2 miles of open, motorized trail managed.

**How many conflicts were identified by field staff or reported by the public?**  
Conflicts between OHV riders and other users were not tracked during FY 2009.

## **Commodity, Commercial, and Special Uses Desired Conditions**

### **Commodity, Commercial, and Special Uses**

#### **Minerals and Energy Development Desired Condition**

Minerals and energy developments meet legal mandates to facilitate production of mineral and energy resources on the Ouachita NF in a manner that minimizes adverse impacts to surface and groundwater resources.

#### **How many minerals cases were administered during this fiscal year?**

There were 837 gas leases and 57 minerals cases administered during FY 2009, as compared to 827 gas leases and 67 minerals cases administered during FY 2008. In FY 2007, there were 640 cases (Active Cases; 75; Inactive Cases and Oil and Gas Leases: 565) administered as compared to 403 in FY 2006.

	Gas Leases	Minerals Cases
FY 2006	403	
FY 2007	565	75
FY 2008	827	67
FY 2009	837	57

#### **How many operating plans have been administered to standard?**

For FY 2009, all 57 mineral cases were operated to standard.

#### **How many violation notices were issued this year?**

There have been no violation notices issued in the past three years.

#### **Report emerging issues.**

Interest in gas exploration is increasing mainly on the Poteau and Cold Springs Ranger Districts where coal-bed methane reserves exist. Inquiries and past actions have occurred on the Oklahoma Ranger Districts and the Mena-Oden Ranger Districts as well.

## **Reserved and Outstanding Mineral Rights**

**Number of operations proposed under outstanding and reserved mineral rights processed** None

**Number of operations proposed under outstanding and reserved mineral rights processed within 60 days and 90 days, respectively.**

Not applicable

<b>Commodity, Commercial, and Special Uses</b> <b>Livestock Grazing Desired Condition</b>
Livestock grazing opportunities are maintained consistent with other resource values in designated livestock grazing areas (allotments).

Livestock grazing demand is still in decline on the Ouachita NF, and it is expected that this trend will continue.

**How many range allotments are currently active on the Ouachita NF?**

There is a general downward trend in the number of range allotments. The number of active range allotments had held steady at 16 for the period FY 2004 - FY 2007; however, this number declined to four in FY 2009.

Number of Range Allotments	FY 2006	FY 2007	FY 2008	FY 2009
	16	16	16	4

**How many acres of the Ouachita NF are in range allotments?**

For FY 2008, there were 118,862 acres grazed; and in 2009, acres grazed dropped to 92,800 acres, a decline of 26,062 acres.

Acres in Grazing Allotments	FY 2006	FY 2007	FY 2008	FY 2009
	275,815	201,675	118,862	92,800

**How many permittees are associated with the range allotments?**

There is a general downward trend in the number of permittees holding range allotments. There were eight permittees in FY 2008, compared to six in FY 2009.

Range Permittees	FY 2006	FY 2007	FY 2008	FY 2009
	20	15	8	6

**How many Head Months are associated with the range allotments?**

There were 1,813 head months grazed in 2007, 978 in 2008, and 858 head months grazed in FY 2009, which is a decline of 120 head months. For FY 2006, 2,274 head months were associated with range allotments.

Head Months	FY 2006	FY 2007	FY 2008	FY 2009
	2,274	1,813	978	858

**How many head of livestock are associated with the range allotments?**

Fewer animals are being grazed. In FY 2007, 300 head of livestock were associated with range allotments, and in FY 2008, 154 were being grazed, representing a decrease of 49 percent since 2007. In FY 2009 142 head of livestock were associated with range allotments, which is a decrease of 8% from FY 2008.

**How many acres of range forage improvement were accomplished this year?**

During FY 2009, there were 1000 acres of range forage improvement which is equal to acres of improvement accomplished in FY 2008.

**Commodity, Commercial, and Special Uses  
Lands and Special Uses (Non-recreation) Desired Condition**

Facilities are centrally located or concentrated on existing sites or designated corridors, minimizing the number of acres encumbered by special use authorizations. Special uses serve public needs, provide public benefits, and conform to resource management and protection objectives. All uses are authorized and are in full compliance with the terms and conditions of the authorization.

**Special Uses**

**How many special use permits, by type, are active?**

As shown in the tabulation below, there were 478 authorizations on the Ouachita NF during FY 2009 compared to 563 in FY 2008, 506 in FY 2007, and 532 in FY 2006.

<b>Type of Authorization</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>
Roads	318	317	330	298
Water Lines, Electric, Telephone Utilities, & Oil and Gas Pipelines	58	58	58	60
Research or Resource Surveys	13	11	12	7
Dams and Reservoirs	24	24	24	24
Communication Uses	74	60	72	61
Recreation Uses	10	7	11	10
Agricultural Uses			7	4
Community Uses	7	7	7	7
Misc. Uses	21	15	42	7
<b>Total</b>	<b>532</b>	<b>506</b>	<b>563</b>	<b>478</b>

Appendix C contains a list of 20 approved communication sites. This list has not changed for the past three years.

Although no clear trends are emerging, State agency requests to utilize government owned facilities are increasing.

**Firewood**

**How many cords of firewood were sold?**

There were 1,650 cords of firewood sold in FY 2009. In FY 2008, 1,686 cords of firewood sold, which is an increase from the 1,299 cords sold in FY 2007, 1,364 cords sold in FY 2006, and 1,022 cords sold in FY 2005.

Cords of Firewood Sold	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
	1,022	1,364	1,299	1,686	1,650

## Fire (Community Protection and Safety) Desired Conditions

### Fire (Community Protection and Safety) Desired Condition

The Wildland Urban Interface (WUI) is that area of Federal land immediately adjacent to the at-risk communities and typically extends one-quarter to one-half mile either side of National Forest System lands. The goals within the WUI are to reduce the risk of loss of human life, enhance protection of homes and improvements, and provide an area where firefighters can safely conduct tactical operations to stop the spread of a wildland fire. In WUI areas, vegetation management to restore, maintain, or enhance fire-adapted ecosystems to an approximate "reference condition" will be vigorously undertaken. For these types of ecosystems (Fire Regime 1), stands will be treated by reducing the number of overstory trees per acre (to approximately 50 to 70 square feet basal area) and removing woody midstory and understory vegetation. A "park-like" or "woodland" condition is the goal in both pine and oak types and is the most common condition where fuel mitigation projects are likely to be initiated. Local jurisdictional authorities, citizen groups, and the Forest Service will act together to mitigate hazardous fuel conditions in areas surrounding at-risk communities and developments. Practices such as the creation of "defensible space" around structures will be encouraged through fire prevention programs such as "Firewise."

### How many acres within the Wildland Urban Interface (WUI) have received hazardous fuel reduction treatments?

During FY 2009, specific hazardous fuel treatments were accomplished on 92,262 acres by prescribed fire with most of these acres being in the WUI area. Other fire treatments on the Ouachita NF also improve conditions in the WUI.

For FY 2008, hazardous fuel treatments were accomplished on 89,197 acres, most of which were in the WUI. For FY 2007, hazardous fuel treatments were accomplished on 83,136 acres, most of which were in the WUI and in FY 2006, hazardous fuel treatments were accomplished in the WUI on 47,486 acres, and 28,151 acres were accomplished in non-WUI.

Hazardous Fuel Treatments (Acres)	FY 2006	FY 2007	FY 2008	FY 2009
	47,486	83,136	89,197	92,262

### What changes, by acres, to condition class have occurred?

There currently is no working database that accurately tracks condition class changes. It is estimated that over 120,000 acres were likely to have changed condition class as a result of fuels mitigation and related vegetation management activities. Prescribed fire treatments that lowered condition class included 92,262 acres specifically designed to reduce hazardous fuels and over 30,000 acres were treated with prescribed fire to address other resource benefits, e.g., wildlife, non-native invasive weed control, etc. Condition class was effectively lowered on all treatment acres where activities moved current vegetation (composition and density) closer to reference conditions. Condition class changes represent greater gains in reaching reference conditions usually where multiple treatments have taken place in the past five years, such as thinning treatments followed by frequent fire treatments.

**How many cooperative agreements involving how many acres were accomplished this year?**

Several agreements involving thousands of acres were implemented. There currently is no working database available that tracks all agreements and/or provides a suitable means for summarizing data. Estimates are as follows:

*Wyden Amendment* – Ranger Districts, under authorities provided by the Wyden Amendment, may conduct prescribed fires on tracts of private land adjoining Forest Service ownership. No prescribed fires were conducted under this authority during FY 2006, FY 2007, FY 2008, or FY 2009.

*Stevens Act* – Each year the Districts conduct prescribed fires jointly with the Arkansas Forestry Commission (AFC) on private lands adjacent to Forest Service ownership. Landowners sign an agreement with AFC to conduct prescribed fires. Working together, the Forest Service and AFC then coordinate prescribed fire activities. In FY 2009, Steven's Act Burning by the Arkansas Forestry Commission exceeded 3,000 acres which compares to over 2,563 acres in FY 2008, over 9,000 acres in FY 2007, and over 4,000 acres in FY 2006.

Stevens Act Prescribed Fire (Acres)	FY 2006 >4,000	FY 2007 >9,000	FY 2008 >2,563	FY 2009 >3,000
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**What “communities at risk” and “communities of interest” have been positively affected by prescribed fire or other treatments that have reduced hazardous fuels and the threat of catastrophic wildfire?**

**Arkansas**

Communities at Risk	Communities of Interest
Blackfork	Albert Pike
Bonnerdale	Crystal Springs
Danville	Story
Bluffton	Jessieville
Fourche Valley	Blue Springs
Fourche Junction	Mountain Thyme
Joplin	Blakely
Waltreak	Cherry Hill
Onyx	Aplin
Rover	Post Mountain
Steve	Chula
Chalybeate Springs	Ouachita CCC (near Royal)
Blueball	
Eagleton	
Winfield	
Black Springs	
Harvey	

**Oklahoma**

Communities at Risk	Communities of Interest
Sherwood	Cedar Lake
Haw Creek	Conser
	Pipe Springs
	Stapp
	West Holson Valley
	Lenox

**How many wildfires occurred (by size and cause)?**

During FY 2009, 60 wildfires affected 2,247.3 acres on the Ouachita NF compared to only 41 wildfires in FY 2008 affecting only 460 acres. Of the total number of FY 2009 fires, 6.9% were lightning-caused, and 1% of the total acres affected by fire were a result of these natural ignitions. Arson accounted for 57.6% of all fires and about 80.2% of the total acres burned.

Other causes of wildfires include escapes from debris burning (13.3%), campfires (1.7%), equipment (5%), railroads (1.7%), and other miscellaneous causes (15%).

<b>Wildfire Activity</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>
Total Incidents	187	68	41	60
Total Acres	23,185	14,347	460	2,247

<b>Wildfire by Cause (% of Total Number)</b>				
<b>FY</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Lightning	46	20	4	7
Arson	31	34	24	57
Escapes from other Fires	7	15	3	14
Campfires	3	7	3	1
Equipment	3	1	2	5
Railroads	1	12	1	1
Misc.	9	11	4	15

**How many acres of Wildland Fire Use (WFU) were accomplished?**

No wildland fire use (WFU) projects were accomplished on the Ouachita in 2009.

**How many large/significant incidents occurred?**

There were no large/significant incidents during FY 2009 or in FY 2008. This compares to one large fire during FY 2007 and two large fire incidents during FY 2006.

**How many acres of growing season prescribed fire were completed?**

There were over 12,000 acres of growing season prescribed fires during FY 2009. This compares to over 19,000 acres accomplished prescribed fire (understory) during the growing season accomplished between mid-April and the end of the fiscal year (September 30) during FY 2008. There were no prescribed fires (understory) during the growing season accomplished between mid-April and the end of the fiscal year (September 30) during FY 2007.

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## Part 2 – Strategic Direction

Part 2 of the Forest Plan contains the strategic direction to be followed in order to move toward desired conditions. Many variables that influence the degree to which objectives are achieved cannot be fully assessed when a plan is revised or amended. Legal mandates, congressional intent as expressed in annual budgets, natural disturbance events, and other issues or factors over which the Forest Supervisor has little or no control, all influence performance. The actual mix and level of activities to be conducted will be determined each year, utilizing every opportunity to move toward the desired conditions and to contribute to the Forest Service's national strategic goals (<http://www.fs.fed.us/plan>). Restoring and maintaining healthy and productive ecosystems, providing high-quality recreation opportunities, protecting air quality, and providing clean water, appealing scenery, forest products, and economic opportunities to communities that rely upon the Ouachita NF are the highest priorities under the 2005 Forest Plan. Appendix D presents a summary of proposed and probable activities. The following sections contain monitoring findings associated with implementation of the objectives and strategies of the 2005 Forest Plan.

### **Forest Health/Terrestrial, Riparian, and Aquatic Communities/Wildlife and Fish Habitat (including Proposed, Threatened, Endangered, and Sensitive Species Habitat)**

OBJ01. *Increase prescribed fire to an average of 180,000 acres per year by 2011 to help achieve and maintain desired community conditions.*

#### **How many acres of prescribed fire were accomplished this year?**

A total of 122,372 acres of prescribed fire was accomplished. This accomplishment was greater than FY 2008 (120,288 acres), but less than FY 2007 (145,354 acres) and FY 2006 (43,093 acres). The prescribed fire acres continue to be somewhat short of the Forest Plan projection.

Prescribed Fire (Acres)	FY 2006	FY 2007	FY 2008	FY 2009
	43,093	145,354	120,288	122,372

OBJ02. *Move 5,000 acres into fire regime condition class I annually.*

#### **How many acres were moved into fire regime condition class I?**

There is no working database available that accurately tracks the annual acre change from condition class 2 to condition class 1.

OBJ03. *Treat at least 300 acres per year for non-native, invasive species.*

#### **How many acres were treated this year for non-native, invasive species?**

The Ouachita National Forest treated 658 acres of non-native invasive species. There were approximately 76,847 acres surveyed for non-native invasive species including three wilderness areas and two watersheds.

OBJ04. *Maintain or improve the population status of all species that are federally listed or proposed for listing when evaluated at 5-year intervals.*

Compliance with OBJ 04 is reported in the Threatened, Endangered, and Sensitive Species and their Habitats section.

OBJ05. *For wildlife purposes, strive to achieve a total open road density of 1.0 mile per square mile or less for all MAs except MAs 1 and 4 (where the desired density is zero open roads per square mile) and MAs 2, 16, 17, 19, and 21 (where the desired density is 0.75 mile of open road per square mile or less during critical periods for wildlife, i.e., March to August).*

**How many road analyses (travel analyses) were completed?**

Roads/Travel Analyses were completed for six projects as shown in the following tabulation. Also during FY 2009, work was initiated on nine Roads/Travel Analyses that will be completed in FY 2010.

<b>Projects and Project-Level Travel Analyses, Ouachita National Forest</b>			
<b>Completed in FY 2009</b>		<b>Ongoing or Initiated in FY 2009 (To be completed in 2010)</b>	
<b>Project Name</b>	<b>Ranger District</b>	<b>Project Name</b>	<b>Ranger District</b>
Mtn. View Watersheds	Caddo-Womble Ranger District cluster	Smith Mountain Watershed EA	Caddo-Womble Ranger District cluster
Dutch Creek Mountain Project (EA)	Jessieville-Jessieville- Winona-Fourche Ranger District cluster	Big Fork Watershed EA	Caddo-Womble Ranger District cluster
Two Mile Watershed	Mena-Oden Ranger District cluster	Wildcat Hollow	Jessieville-Winona- Fourche
Eli Branch	Poteau-Cold Springs Ranger District cluster	Shadley	Poteau-Cold Springs Ranger District cluster
Alum Fork-Middle Fork Project (EA)	Jessieville-Winona- Fourche Ranger District cluster	Jones Creek	Poteau-Cold Springs Ranger District cluster
Buffalo Creek 1	Oklahoma Ranger District	Hogan Mountain	Poteau-Cold Springs Ranger District cluster
		Buffalo Creek 2	Oklahoma Ranger District Ranger District
		Washita Watershed	Mena-Oden Ranger District cluster
		Mill Creek Mountain Watershed	Mena-Oden Ranger District cluster

**How many miles of road were decommissioned?**

There were 2.04 miles of road decommissioned.

OBJ06. *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.*

**Are landscape-level and stand level horizontal and vertical structure of major forest communities established annually within desirable ranges of variability?**

**Report acres of regeneration harvest under irregular shelterwood or irregular seedtree system per year; acres of mature pine-oak forest.**

During FY 2009, there were 2,017 acres of early seral habitat created by irregular shelterwood or irregular seedtree regeneration harvest methods, 134 acres from clearcutting activities and 699 acres by wildlife habitat improvements. This compares to 3,523 acres of early seral habitat created by irregular shelterwood or irregular seedtree regeneration harvest methods, 346 acres from clearcutting activities and 688 acres by wildlife habitat improvements during FY 2008. During FY 2007 4,363 acres of early seral habitat were created by regeneration harvest methods and 297 acres by wildlife habitat improvements. During FY 2006, 2,602 acres of early seral habitat were created by regeneration harvest methods and 674 acres of early seral habitat were created by wildlife habitat improvements.

Acres of Early Seral Habitat Created by Method				
	Irregular Shelterwood or Irregular Seedtree Regeneration	Clearcutting	Wildlife Habitat Improvements	Total All Methods
FY 2006	2,602		674	3,276
FY 2007	4,363		297	4,660
FY 2008	3,523	346	688	4,557
FY 2009	2,017	134	699	2,850

OBJ07. *Increase cumulative total area being restored to shortleaf pine-bluestem grass or shortleaf pine-oak woodland conditions to 350,000 acres by 2021.*

**How much restoration to shortleaf pine-bluestem grass or shortleaf pine-oak woodland conditions has occurred?**

During FY 2009, within Management Area (MA) 22, 37,105 acres were treated with prescribed fire, and 1,177 acres were commercially thinned to restore and/or maintain shortleaf pine-bluestem woodland conditions. Within MA 14, 8,319 acres were commercially thinned and approximately 70,000 acres were treated with fire.

Within Management Area (MA) 22, during FY 2008 almost 30,000 acres were treated with prescribed fire to restore and/or maintain shortleaf pine-bluestem conditions, and well over 2,000 acres were treated to restore shortleaf pine-oak woodland through vegetation management activities, including commercial thinning (1,355 acres), harvest including salvage (177 acres) and timber stand improvement (351 acres). Within MA 14, 9,129 acres of pine-oak forest and 440 acres of pine-oak woodland were commercially thinned towards restoration of woodland conditions within the pine-oak stands. This compares to FY 2007 work within Management Area (MA) 22, when almost 52,000 acres were treated with prescribed fire to restore and/or maintain shortleaf pine-bluestem conditions, and well over 2,000 acres were treated to restore shortleaf pine-oak woodland through vegetation management activities,

including midstory reduction (4,395 acres), commercial thinning (1,946 acres), harvest (285 acres) and timber stand improvement (351 acres). Also during FY 2007, within MA 14, 5,526 acres of pine-oak forest and 1,842 acres of pine-oak woodland were commercially thinned towards restoration of woodland conditions within the pine-oak stands.

**Report acreage of landscapes in which active management (e.g., thinning, treatment with fire) to restore a significant pine-bluestem or pine-oak woodland component are underway.**

*Number of acres district-wide identified in decision documents that state woodland restoration as an objective. These should be planned in large tracts that fit appropriately within the landscape, such as mostly contiguous NF ownership, a watershed, etc., but should not exclude other smaller appropriate areas.*

*Spatial display in a separate GIS shapefile of all your areas dedicated to pine woodland condition, including MA 21, MA 22, and pine woodlands in MA 14 or other MAs.*

*Treatments scheduled to occur and treatments accomplished on these acres to restore woodland conditions. (What is the schedule of treatments to restore it to woodland condition? Has it been thinned? Thinned and treated with fire once? Thinned and treated with fire twice? Etc.)*

OBJ08. *Establish and maintain the following mix of seral stages in pine-bluestem woodland: 3-9% early, 15-30% mid, and 60-90% late seral.*

**Report percentages of pine-bluestem in early and late seral stages and acres treated with fire and thinned in the pine-bluestem condition.**

Tracking systems for reporting percentages of early and late stages of pine-bluestem are not available as yet. During FY 2009, 37,105 acres were treated with prescribed fire in MA 22, and 9,496 acres were commercially thinned forest wide to restore a shortleaf pine-oak woodland condition. During FY 2008, nearly 30,000 acres were treated with prescribed fire to restore and/or maintain shortleaf pine-bluestem conditions, and 9,129 acres were commercially thinned. During FY 2007, over 52,000 acres were treated with prescribed fire to restore and/or maintain shortleaf pine-bluestem conditions, and 1,946 acres were commercially thinned. During FY 2006 over 13,000 acres were treated with prescribed fire to restore and/or maintain shortleaf pine-bluestem conditions, and 1,302 acres were commercially thinned.

OBJ09. *Apply management actions to restore ecosystem health in at least 5,000 acres per year of oak forests and woodlands affected by oak decline and other hardwood diseases, insect problems, and drought.*

**Report acres of oak forest and woodland treated with fire; acres thinned or regenerated.**

At least 19,799 acres of dry-mesic hardwood were treated with prescribed fire during FY 2009, and 317 acres were commercially or non-commercially thinned. At least 15,324 acres of dry-mesic hardwood were treated with prescribed fire during FY 2008, and 379 acres were thinned. During FY 2007 about 12,736 acres of dry-mesic hardwood were treated with prescribed fire, but no acres were thinned.

OBJ10. *Reduce susceptibility to southern pine or Ips beetle outbreaks on at least 25,000 acres per year.*

In 2009, 5,289 acres were prepared and contracted with Forest Health SPB prevention funding for reducing SPB threats in high risk pine stands. In addition treatments of pre-commercial thinning on 2,092 acres of young susceptible pine stands were accomplished. Completed commercial timber sale treatments of thinning, even and uneven age treatments and salvage/sanitation removals on an additional 17,642 acres reported for 2009 also reduced SPB susceptibility.

**Report acres treated (thinned) and acres at risk. Report acres of pine harvest. Report acres at risk every five years.**

During FY 2009, at least 102,000 acres of pine forest and woodland were treated with prescribed fire, and silvicultural treatments were applied to approximately 15,413 acres (see table 1). At least 113,270 acres of pine forest and woodland were treated with prescribed fire during FY 2007, and silvicultural treatments were applied to approximately 17,350 acres. At least 45,520 acres of pine forest and woodland were treated with prescribed fire during FY 2006, and silvicultural treatments were applied to approximately 26,818 acres.

OBJ11. *Apply management practices to begin replacing off-site loblolly pine plantations with shortleaf pine and native hardwoods where such plantations were installed outside the natural range of loblolly pine (i.e., most of the Ouachita Mountains); treat at least 500 acres per year.*

**How many acres of off-site loblolly pine forests and woodlands have been replaced with shortleaf pine and native hardwoods?**

In FY 2009, approximately 1,070 acres of acquired private land previously in loblolly pine were planted with shortleaf pine. There were also 134 acres of off-site loblolly pine forest/woodlands replaced with shortleaf pine and native hardwoods in FY 2009.

The Ouachita NF is currently in the transition phase of *converting* to the new vegetation inventory databases and activity tracking systems, Natural Resource Information System: Field Sampled Vegetation (FSVeg) and Forest Service Activity Tracking System (FACTS), as well as GIS databases. These databases are not currently populated sufficiently to adequately answer all aspects of some of monitoring and evaluation questions. A new FSVeg database interface tool (FSVeg Spatial) was implemented on the Ouachita NF in FY 2009 which will allow easier updating of forest stand conditions. Forest Stand summary information such as condition class, age, and forest types will be more accessible for analysis and monitoring. Forest Service Activity Tracking System (FACTS) and the GIS databases still need to be directly connected for monitoring purposes. Fire/Fuels activities had this in place for 2009 monitoring. Efforts to populate the GIS database with other FACTS accomplishments should be emphasized to be completed by end of FY 2010.

OBJ12. *Refine the Forest-wide inventory of rare natural systems (upland systems named in MA 6, plus Ouachita Mountains Forested Seep) by ensuring that such systems are identified during forest vegetation surveys and by other means, which may include remote sensing, GIS analyses, and special surveys. Add newly located upland rare systems or communities to MA 6 and newly located seeps or other rare wet or riparian systems to MA9. Report revised inventory figures in annual monitoring reports, beginning in the FY 2010 report.*

Reporting for OBJ 12 will not begin until the FY 2010 report.

OBJ13. *Refine the Forest-wide inventory of possible old growth by verifying or modifying the existing inventory, as needed. The initial inventory is summarized in the Old Growth Strategy section (also see Standard VM002).*

**If possible, report acres of each type of possible old growth added and, if appropriate, subtracted from the inventory. Are landscape-level and stand level percent seral stages in the pine-bluestem woodland community within desirable ranges of variability? How many acres of oak forests and woodlands have been treated for oak decline and other hardwood forest health problems? How many acres of pine forests and woodlands have been treated for southern pine beetle susceptibility?**

There were no acres treated specifically for oak decline. However wildlife stand improvement treatments including midstory reduction (2,955 acres) and overstory development (507 acres), and prescribed fire (22,894 acres) provide for healthier hardwood stands. Total acres treated with Wildlife Stand Improvement, Timber Stand Improvement and other stand improvement activities were 5,746 acres.

It was not necessary to treat any acres within the Ouachita NF for southern pine beetle susceptibility.

## Soil, Water, and Air

OBJ14. *Maintain or improve watershed health.*

**How well are the stream and river aquatic habitat and watershed conditions being protected, enhanced or maintained? What progress was made this year towards the five year report on watershed evaluations to determine if the progress in improving condition ratings has been made? What progress was made this year toward the five year report on Basin Area Stream Surveys (BASS)?**

Annual long-term monitoring stream surveys were conducted on 19 permanent sites in FY2009 towards the five-year 2005 Plan evaluation report, however past collections from the early 1990s through FY2006 will be used during the five-year evaluation. The determination of the effectiveness of the 2005 Forest Plan Standards and Best Management Practices (BMPs) will be assessed primarily through the resurvey of the Basin Area Stream Surveys (BASS) and assimilation of the 2006 data with past stream survey collections. The 2006 BASS was the sixth survey since 1990, and the seventh BASS survey will be conducted in FY 2011. The BMPs are basically a preventative rather than an enforcement system. The Forest BMPs are a whole management and planning system in relation to sound water quality goals, including both broad policy and site-specific prescriptions.

The most recent Basin Area Stream Survey was conducted during FY 2006 to assess watershed conditions. These data along with previous surveys will be used for the five-year evaluation during FY 2011 of the 2005 Plan effectiveness. The next five-year Basin Area Stream Survey will be conducted in FY 2011.

The Basin Area Stream Survey along with the long-term stream monitor sites methodology and data provide a monitoring link BMPs to the aquatic ecosystem. The objectives of these efforts are to identify the physical, chemical and biological characteristics of streams and compare individual streams, paired streams (adjacent watersheds, one managed and one unmanaged or reference), and reference versus managed streams (all reference and managed watersheds) among and across years in a format that will allow determination of stream health as it is affected by Ouachita NF management activities. This serves as a cumulative effects analysis for BMPs as well as provides insight into watershed health, aquatic habitats, and fish communities.

OBJ15. *Conduct watershed improvement actions on at least 40 acres per year.*

**How many acres of watershed improvement and/or maintenance actions have been accomplished? What was the result of soil quality monitoring this year? What percent of treatment units are meeting soil quality standards this year?**

During FY 2009, seven post-timber harvest treatment units were assessed for compliance with soil quality standard SW003 in the 2005 Forest Plan. This standard requires that a minimum of 85% of a treatment area remain in an acceptable condition of soil productivity following soil disturbing actions. Of these: seven or 100%, met the standard.

**How many acres of soil and water improvement (soil inventory) were accomplished this year?**

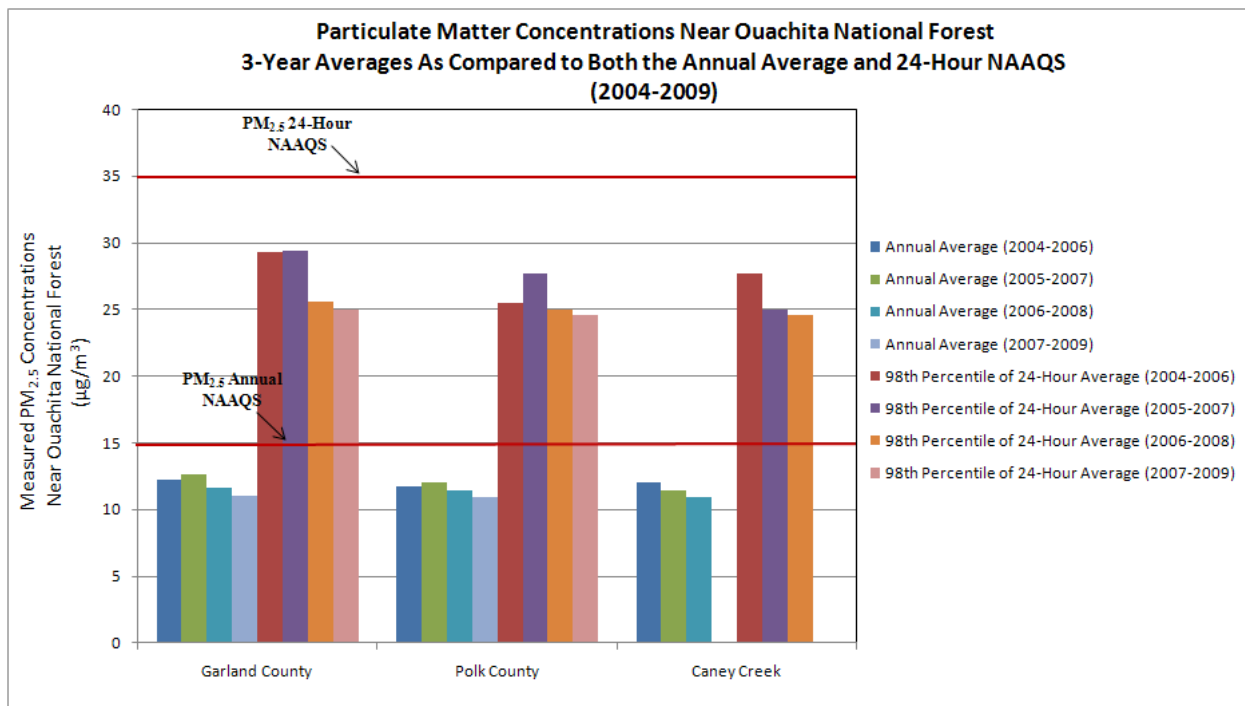
The Ouachita NF accomplished a total of 75 acres of soil restoration and maintenance. This included 50 acres of watershed improvement or maintenance (25 acres), most of which involved stabilization of gullies and abandoned roads. The FY 2008 work included 41 acres of watershed improvement through normal project work.

OBJ16. *Protect and improve the Air Quality Related Values of the Class I Area.*

**What monitoring of the AQRV of the Class I Area occurred this year?**

The Air Quality Related Values (AQRVs) for Caney Creek Wilderness are flora, visibility, and water. In order to evaluate whether impacts may be occurring to the AQRVs, ambient ozone concentrations as well as fine particulate matter and visibility are monitored near the Class I area. National Ambient Air Quality Standards (NAAQS) have been established for both fine particulate matter and ozone; measured ambient concentrations can be compared to the respective NAAQS to determine whether harmful impacts to either human health or the environment are expected due to elevated levels of pollution.

Visitors to the Caney Creek Wilderness area do not want or expect air pollution to negatively impact plant and animal life, nor hamper their own outdoor activities while in the area. In particular, the scenic views within the Class I area should not be obscured by man-made air pollution. Ultra-small particles, called fine particulate matter or PM<sub>2.5</sub>, are the cause of regional haze. The Environmental Protection Agency has established PM<sub>2.5</sub> NAAQS to protect public health and the environment; the daily standard is set at 35 µg/m<sup>3</sup>, while the annual standard is set at 15 µg/m<sup>3</sup>. An ambient air quality monitoring site to measure fine particulate matter has been situated within the Ouachita NF and is operated by the Environmental Protection Agency (EPA) under the Interagency Monitoring of Protected Visual Environments (IMPROVE) program. In addition to this site, there are two additional fine particulate matter monitors operated by the Arkansas Department of Environmental Quality located adjacent to the Ouachita NF in Garland and Polk Counties. The measured fine particulate matter concentrations as compared to the daily and annual NAAQS at all three of these monitoring sites are shown in the graph below.

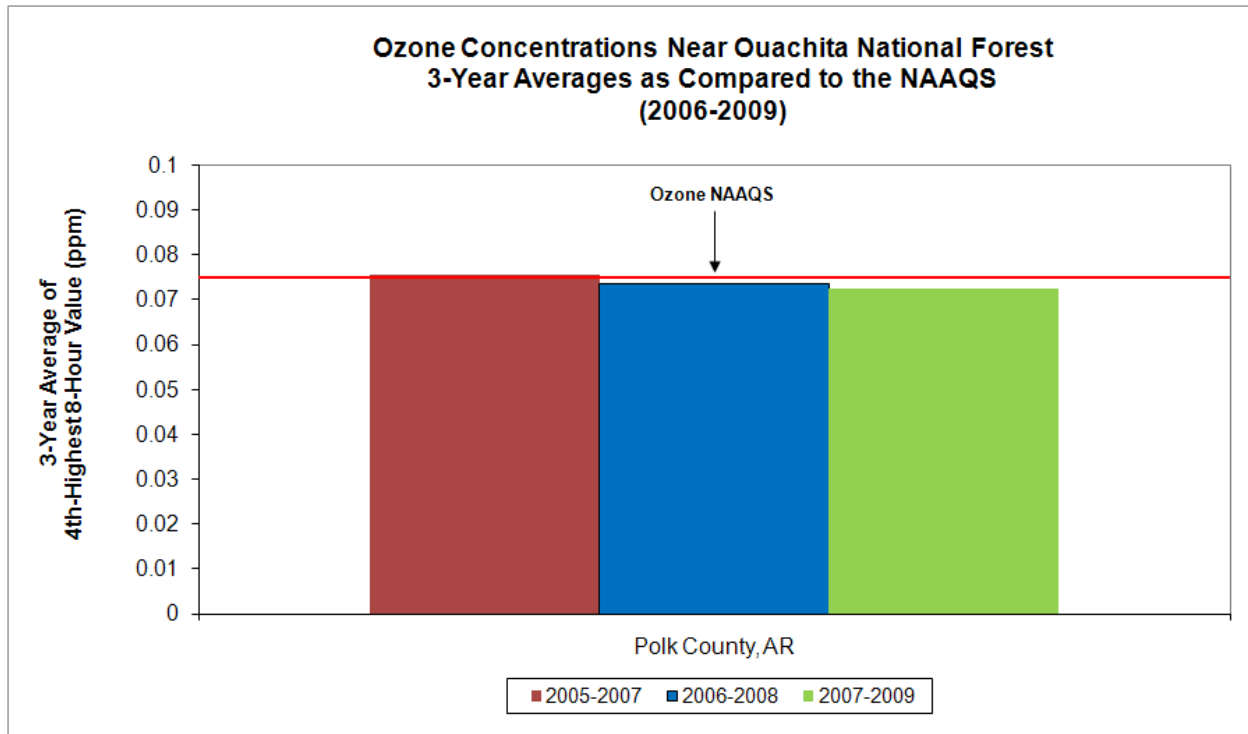


(Source: <http://www.epa.gov/airexplorer/>)

As shown, neither the daily or annual NAAQS for PM<sub>2.5</sub> is exceeded at any of the monitoring sites located on or near the Ouachita NF. Although 2009 data are not yet available for the Caney Creek IMPROVE monitoring site, trends indicate that no exceedances will be noted.

Exposure to elevated ozone levels can cause human health concerns as well as negative impacts to vegetation. As with fine particulate matter, a national air quality standard for protection of both public health and the environment has been set for ground level ozone. US EPA has established the ozone NAAQS as 0.075 ppm, as measured by taking the three-year average of the fourth-highest daily maximum eight-hour average ozone concentrations measured at each monitoring site. There is one ozone monitor located near the Caney Creek Wilderness. The graph below summarizes the three-year average measured ozone concentrations at that location from 2005 through 2009. Although the 3-year average was greater than the standard for the years 2005-2007, since that time ozone levels are now meeting the standard.





(Source: <http://www.epa.gov/airexplorer/>)

Since both fine particulate matter monitoring as well as ozone monitoring conducted within or near to the Ouachita NF show levels or pollution below the air quality standards, no negative impacts are expected.

#### **How many twice weekly air filter checks were documented on the IMPROVE Monitoring Network?**

The IMPROVE monitoring site had 80% data capture for 2007, and 90% data capture for 2008. Overall, there were 25 days missing data in 2007, and 12 days missing for 2008. Data are not yet available to report for FY 2009.

(Source: <http://vista.cira.colostate.edu/views/>)

#### **What are the results of the air visibility monitoring efforts at Caney Creek Wilderness Particulate Matter (PM) 2.5?**

As discussed above, there is a fine particulate matter and visibility monitoring site located near the Caney Creek Wilderness and operated as part of the IMPROVE monitoring program. The results of the monitoring, particularly the haziness index (deciviews, or dv) on the 20% best and worst days for visibility, are being used to ensure compliance with the federal requirement to achieve natural background visibility conditions at all Class I areas by the year 2064.

Unfortunately, there is a lag on the data availability for the calculated haziness index (dv) from IMPROVE, and therefore no information is available for recent years on whether the Uniform Rate of Progress to achieving better visibility conditions at the Class I area is being met. In addition, the raw data from 2007 and 2008 indicate that data capture has gone down significantly at this monitoring location. (Source: <http://vista.cira.colostate.edu/views/>) It is recommended that additional training be provided to the IMPROVE monitoring technician as to the importance of the IMPROVE monitoring data.

**What were the findings (and trends) in comparison to previous monitoring efforts?**

As shown above, fine particulate matter and ozone concentrations near the Ouachita NF have been measured for several years. Although the air quality trends appear to be improving, at this time the improvements are not statistically significant.

**How many PSD permits were reviewed this year?**

The Clean Air Act and its Amendments designate specific wilderness areas and national parks as mandatory Class I areas, and these areas are provided special protection against degradation of air quality related values such as visibility. The Ouachita NF manages one Class I area, Caney Creek Wilderness. The Clean Air Act requires federal land managers with the 'affirmative responsibility' to protect the air quality related values at these Class I areas, and to consider whether a proposed new or modified source of air pollution may adversely impact these values. The Ouachita NF works with state regulatory agencies in Arkansas and Oklahoma to determine if new or existing industry will impact air quality at Caney Creek Wilderness through the Prevention of Significant Deterioration (PSD) permitting process. Five PSD permits were reviewed in 2009, and none of these proposed facilities were shown to cause an adverse impact to the Caney Creek Wilderness.

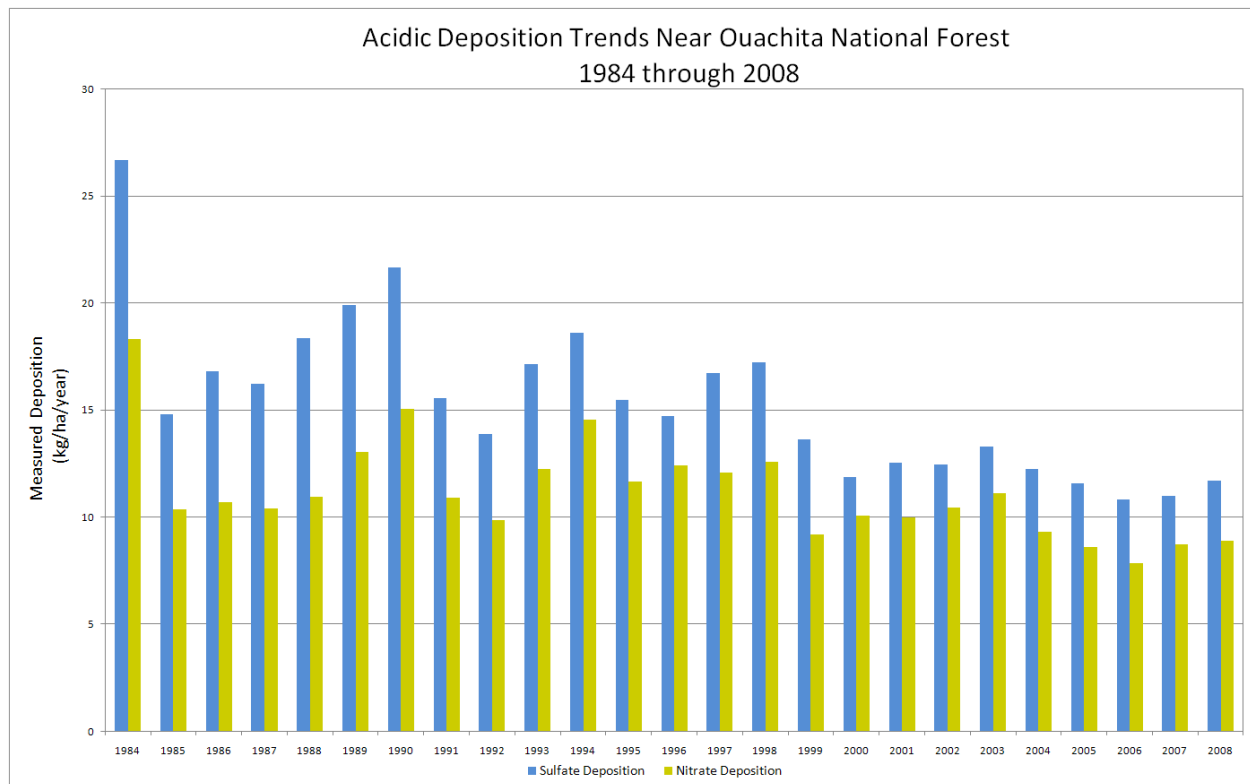
**How many regional air quality planning committees were participated in?**

During FY 2009, participation in two committees for CENRAP (Central Regional Air Planning Association) occurred.

**Was any data gathered this year that will contribute to the report (due in 5 years) on the potential influence from acid rain on water quality?**

Deposition of acidic compounds onto national forests can cause harmful effects to both aquatic and terrestrial ecosystems. Such deposition can occur in three forms: dry, wet, and cloud. Cloud deposition is not expected to be a contributor to acidic deposition on the Ouachita NF, as this type of deposition only occurs at high elevations.

Acidic deposition can be either directly measured at monitoring sites, or may be estimated through high resolution computer modeling. There is one Clean Air Status and Trends Network (CASTNET) site measuring deposition rates located 30 kilometers southeast of the Ouachita NF in Clark County, Arkansas. Total sulfate and nitrate deposition values are available for the years 1983 through the present. The graph below presents the trends in acidic deposition near the Ouachita NF.



(Source: <http://nadp.sws.uiuc.edu/sites/siteinfo.asp?id=AR03&net=NADP>)

## Lands

OBJ17. *Maintain landlines on a 10-year cycle.*

**How many miles of landlines were located or maintained this year?**  
136.5

OBJ18. *Process applications for federal mineral leases, licenses, and permits within 120 days.*

**How many minerals leases, licenses and/or permits applications were received this year?**

**How many of the received leases, licenses, and permits were processed within 120 days?**

Only one application was received for FY 2009, which will be processed during FY 2010. During FY 2008, four APDs for gas drilling were received, all processed timely. Only one application was received for FY 2006; however during FY 2007, four APDs for gas drilling (2 in Arkansas and 2 in Oklahoma) were received.

Applications for mineral leases, licenses, and permits on the Ouachita NF in Arkansas and Oklahoma are processed within 120 days by the District Ranger and Forest Geologist.

OBJ19. *Process operations proposed under outstanding and reserved mineral rights within 60 days and 90 days, respectively.*

**How many process operations were proposed under outstanding and reserved mineral rights this year?**  
None.

**How many were processed within 60 and 90 days, respectively?**  
Not applicable.

Currently, the Ouachita NF is working with only one company with reserved mineral rights. Processing operating proposals within required timeframes is accomplished by the at the District Office level by the District Ranger. Any new proposals will be similarly processed.

## **Heritage Stewardship and Tribal and Native American Interests**

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.*

**What progress was made this year towards completing the forest overview of heritage resources by 2007?**

Each of the Ouachita's five Ranger District clusters continued to update the Heritage Resource Survey Coverage and Sites layers in GIS. These data are critical in developing a current Cultural Resource Overview. The overview will detail what is currently known about the archeology (prehistory and history) within the Ouachita Mountains of west-central Arkansas and southeastern Oklahoma, reveal any data gaps that may be present and will allow the Ouachita NF to place its limited heritage funding where it will have the greatest benefit. The data generated were provided to a contractor who drafted much of the Heritage Overview during FY 2007 and 2008. Chapters on the History of the Heritage Program and the Historic Background were begun in 2009 by the Forest Service.

OBJ21. *Drawing upon the heritage resources overview, complete a Heritage Resources Management Plan by 2010.*

**What progress was made this year towards revising the Heritage Resources Management Plan by 2010?**

The Ouachita NF is continuing to gather data regarding the prehistory and history of the area encompassed by the Ouachita NF; most of the data are being generated through compliance with the Section 106 of the National Historic Preservation Act. These data, together with the Cultural Resources Overview, will allow a comprehensive management plan to be started for the Ouachita NF by 2010, as included in OBJ 20.

OBJ22. *Revise the Programmatic Agreement with SHPOs and THPOs by 2011.*

**What progress was made this year towards Programmatic Agreement with SHPOs and THPOs by 2011?**

A Programmatic Agreement between the State and Tribal Historic Preservation Officers, the Ozark-St. Francis and Ouachita NFs and the Advisory Council on Historic Preservation is currently in effect. The Ozark-St. Francis NF has taken the lead with the renewal of this joint Programmatic Agreement. The current agreement has been forwarded to the consulting/signatory parties for review. Any comments received will be considered and the Agreement modified to address these comments if necessary.

## Public Use and Enjoyment

### Provide Outdoor Recreation Opportunities

OBJ23. *Conduct maintenance on at least 300 miles of trails (non-motorized use) per year.*

**How many miles of trails' (non-motorized use) maintenance were accomplished this year?**

Trail maintenance was performed on 244 miles of non-motorized trail.

OBJ24. *Maintain all recreation facilities to standard.*

**How many recreation sites were maintained to standard this year?**

Of 118 recreation sites, 113 (96%) were maintained to standard.

*Monitor swim areas five times per month during open season for fecal coliform with immediate closures for areas with high counts (<200 colonies/100 mg.).*

**How many swim-water sites have been monitored throughout the open season?**

There were 13 swim-water sites monitored, and all were found to meet state standards.

**How many persons at one time (PAOT) days were utilized this year?**

Within the 118 recognized recreation sites on the Ouachita NF, 2,445,970 PAOT days were utilized during FY 2009.

OBJ25. *Improve accessibility within at least one recreation site per year.*

**Report sites improved for accessibility.**

Funding was secured and initial Design work was completed and construction documents were completed and awarded to improve accessibility at the Cedar Lake Day Use Area and Albert Pike Campground in FY 2009. The construction of both projects should be completed in FY 2010.

OBJ26. *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.*

**What progress has been accomplished towards completing the MVUM?**

During FY 2009 environmental analysis work was continued. Work also continued to update the GIS roads/trails layer as well as INFRA.

**What percentage of routes designated for use by OHV is appropriately signed?**

This is not applicable at this time because routes have not yet been designated.

OBJ27. *Maintain recreational fishing opportunities of stocked lakes and ponds.*

**How well are the recreational fishing opportunities being protected, enhanced or maintained?**

Fishing recreational opportunities are being protected, enhanced or maintained by a number of activities. Monitoring of bass and sunfish spawn by shoreline seining, is conducted with supplemental stocking requested from the state as needed. Structural habitat improvements (fish attractors/cover) are added to increase fish cover. 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 fish populations of Ouachita NF lakes and select 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. In 2009, additional fish sampling was continued to monitor shad populations that were introduced into the two lakes, and control measures will be undertaken in the future if these populations begin to impact game fish populations negatively. In FY 2009 a fishing pond built in 2008 at the Womble Ranger District office as a future Kids Fishing Derby site had additional structure and fish stocking work conducted.

**Report percentage of MIS game fish of harvestable size; electrofishing catch per unit (time) effort; number of ponds shoreline seined for spawning success.**

Please see the section under MIS of this report for information on progress on OBJ 27.

OBJ28. *Improve or maintain all designated observation sites at least once per decade.*

**How many designated scenic overlooks are maintained on the Ouachita NF?**

There are a total of 38 observation sites maintained within the Ouachita NF.

**How many observation sites were improved or maintained this year?**

No hard improvements were made to any observation sites in 2009. Vegetation was removed for better viewing at three sites in 2009. The one observation site is being reconstructed with a road contract in 2009 was completed.

## **Wilderness**

OBJ29. *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.*

**How many acres of Wilderness have been surveyed for non-native invasive species this year?**

**What progress is being made toward completing inventories of non-native invasive species in wildernesses?**

**What non-native invasive species have been identified and treatment and**

**monitoring plans implemented? How many acres have been treated for invasive species control?**

Work to survey wilderness areas for non-native invasive species was completed in FY 2009 for Poteau Mountain, Dry Creek, and Flatside Wilderness Areas. Non-native invasive species inventories were conducted in Poteau Mountain and Dry Creek Wilderness Areas. See Appendix E for results. Data from Flatside Wilderness Surveys were not compiled as of the date of this M & E Report.

OBJ30. *Update all Wilderness Management Plans, including monitoring components, wilderness education, and restoration needs, by 2008.*

**How many acres of Wilderness Area Administration have been accomplished?**

64,469 acres

**How many Wilderness Management Plans were updated this year?**

There were no updates to Wilderness Management Plans in FY 2009. Significant progress was made in the Chief's 10-Year Wilderness Stewardship Challenge. Improvement was made in all 10 elements.

**What progress is being made towards updating all the Wilderness Management Plans by 2008?**

Wilderness Management Plans have not been updated in FY 2009, and the target for this work will have to be extended.

## **Facility Operation and Maintenance**

OBJ31. *Eliminate three leased facilities by 2015.*

**How many leased facilities were eliminated in FY 2009?**

The leased office for the Tiak Ranger District was eliminated in FY 2009 after completing and moving into the new LEED certified District Office in Hochatown. The Ouachita NF also acquired land for a new district office for the Poteau/Cold Springs Districts and anticipates office design to be completed in FY 2011 and construction in FY 2012. This office would eliminate the need for the leased office for the Poteau Ranger District located in Waldron.

OBJ32. *Eliminate 30 percent of other nonessential administrative facilities by 2015.*

**How many nonessential facilities remain as a percentage of the FY 2005 baseline (to be determined)?**

Identifying nonessential facilities is limited until District consolidation plans are complete. The baseline for measurement has not been determined. However, two administrative facilities have been decommissioned and sold. The facilities were the Caddo Trailer (Infra #02016) and the Fourche Ranger Residence (Infra #04002).

OBJ33. *Upgrade all identified public facilities to standards by 2015.*

**What percent of identified public facilities are accessible?**

It is anticipated that work will be undertaken during FY 2011 to identify facilities requiring additional work to make them accessible.

OBJ34. *Complete energy efficiency upgrades on all administrative buildings and complete identified work on 10 percent of administrative buildings needing upgrades by 2015.*

**What percent of administrative buildings need work to complete energy efficiency upgrades?**

It is anticipated that a survey to identify administrative buildings that need energy upgrades will be initiated during 2011.

- OBJ35. *Inspect all buildings compliance with health and safety standards and address all identified health and safety issues.*

**What percent of inspected buildings met health and safety standards?**

All buildings inspected by FS Engineering personnel/staff, either met, or were corrected to meet standard. Engineering inspects at least one-third of the fire, administration and other buildings each year and some recreation buildings. The Ouachita NF is beginning to document safety inspections that they routinely conduct. These data had not previously been reported and were not available for every District for the FY 2009 M&E Report.

## **Transportation System and Public Use of Off-Highway Vehicles**

- OBJ36. *Complete a transportation plan for the Ouachita National Forest by late 2007 that (among other things) addresses the backlog of maintenance and reconstruction needs.*

**What progress has been accomplished towards completing the transportation plan?**

Much of the work to complete the Transportation Plan is included in on-going work for travel analysis and will be completed with publication of the Motor Vehicle Use Map (MVUM). Updating County Road Cooperative Agreements is on-going.

- OBJ37. *By 2015, identify all system roads that should be decommissioned.*  
OBJ38. *Decommission 25 percent of roads identified under the previous objective by 2015 (many such needs to decommission roads will be identified well before 2015).*

**How many road miles have been decommissioned and removed from the road inventory?**

**What progress has been made towards Objective OBJ38?**

In FY 2009, there were 2.04 miles of road decommissioned and removed from the system as compared to 2.70 miles of road removed from the system during FY 2008. During FY 2007, there were 12.30 miles of road removed from the system as compared to 204.35 miles of road removed from the system during FY 2006, an unusual year.

- OBJ39. *Reduce miles of road under Forest Service maintenance.*

**How many road miles are in road maintenance inventory?**

At the end of FY 2009, there were 5,803 miles of road in Forest Service inventory, compared to 5,721 miles in FY 2008 and 5,550 miles of road in FY 2007.

**How many road miles have been eliminated from road maintenance inventory this year?**

No roads have been eliminated from the road maintenance inventory this year.

- OBJ40. *Improve aquatic organism passage on an average of no less than six stream crossings per year (where there are road-related barriers to passage).*



**How many stream crossings were improved for aquatic organism passage?**

Six major stream crossings were rebuilt with fish friendly designs to restore or improve fish passage to seven miles of streams. Five additional crossings had oversized culverts put in as replacements or existing crossing structures were backfilled and ramped to provide an additional 5.5 miles of improved fish passage. Approximately 19.5 miles of streams had fish passage restored or improved through a variety of stream crossing projects. Dispersed campsites along the Cossatot River were closed and/or rehabilitated and hardened to reduce sediment impacts on five miles of the river.



**Figure 58. Old Road 512 crossing of Long Creek**



**Figure 59. Replacement Road 512 low-water bridge**



**Figure 60. Prior Road 53000 slotted ford low-water crossing**



**Figure 61. New Road 53000 pre-cast low-water crossing designed for fish passage**

## Commodity and Commercial Uses (Timber, Minerals, Energy)

OBJ41. *Sell an average of at least 200,000 hundred cubic feet (ccf) of timber per year.*

### How many hundred cubic feet (ccf) of timber were sold this year?

There were 175,387.63 ccf of timber sold in FY 2009 compared to 201,839.86 ccf in FY 2008, 206,356.58 ccf in FY 2007 and 199,270.45 ccf in FY 2006.

### What was the volume of timber sold in comparison to the projected annual average?

Table 8 describes the volume of timber offered and sold during FY 2009. More timber was offered than was sold in FY 2008 which resulted in more timber sold than offered in FY 2009.

**Table 8. Timber Offered and Sold (CCF), Including Method of Harvest**

Acres offered and Acres Sold by FY				
	FY 2006	FY 2007	FY 2008	FY 2009
How many hundred cubic feet (ccf) of timber were offered?	75,699.20	198,605.81	215,206.18	161,740.63
How many hundred cubic feet (ccf) of timber were sold?	199,270.45	206,356.58	201,839.86	175,387.63

Timber Harvest Method by Acres Sold				
	FY 2006	FY 2007	FY 2008	FY 2009
Clearcut	74	0	193	0
Seedtree	1,503	3,594	2,984	1,685
Shelterwood	1,099	769	202	163
Shelterwood Final Harvest	169	40	0	67
UEAM-Single-tree selection	1,605	890	1260	0
UEAM-Group selection	1,611	2,175	1120	1,291
Thinning	13,046	9,922	10,981	12,407
Salvage	995	69	2,300	1,773
Removal Cut	0	21	0	117
Land Clearing (Roads, Ponds, Etc.)	76	218	159	95

## **Timber Resource Inventory**

### **How many acres of timber resource inventory have been accomplished?**

A total of 89,035 acres of timber resource inventory was reported as accomplished during FY 2009 as compared to 105,565 acres in FY 2008, and 59,057 acres reported as inventory accomplished during FY 2007.

## **Fuels**

OBJ42. *Treat the highest priority areas at a rate of 500 to 1,000 acres per year. Most of these areas (i.e., adjacent NF lands) should be restored to condition class 1 by FY 2011.*

### **How many of the 500-1000 highest priority acres were treated?**

There is no working database that accurately tracks accomplishments in the highest priority areas.

### **What percent of the Ouachita National Forest is in fire regime condition class 1 and 2?**

There is no working database that accurately reflects acres in condition class 1 and 2 for the Ouachita NF. Based on previous estimates done using FY 2000 data, there is an estimated 100,000 to 150,000 acres of the Ouachita NF that likely is in either condition class 1 or 2 (slightly less than 10% of the total Ouachita NF).

### **What progress towards restoring these acres to condition class 1 by FY 2011 is being made?**

There is no working database that accurately tracks accomplishments in the highest priority areas: however, with accomplished acres for FY 2008 near the top of the range in OBJ42, it is reasonable that restoration of these acres to condition class 1 by FY 2011 is a reasonable and achievable goal.

OBJ43. *Complete 50,000 to 100,000 acres per year of hazardous fuel reduction in the other moderate to high priority areas.*

### **How many acres of hazardous fuel reduction were accomplished this year?**

Hazardous fuel treatments met the Plan objective of between 50,000 to 100,000 acres per year. During FY 2009, 92,262 acres of hazardous fuel treatments were accomplished, most of which were in the WUI. Prescribed fire treatments for other objectives also help meet this objective. The tabulation below compares accomplishments for FY 2006, FY 2007, FY 2008 and FY 2009.

<b>Hazardous Fuel Reduction</b>	
Year	Acres
FY 2006	75,637
FY 2007	83,136
FY 2008	89,197
FY 2009	92,262

## Budget

The tabulation below shows budget trends for the current year plus the past seven years (\$million)

2002	2003	2004	2005	2006	2007	2008	2009
\$17.8	\$11.4	\$9.4	\$10.2 *	\$8.5	\$6.8	\$8.8	\$11.7

\* The 2005 budget of \$10.2 million included an additional appropriation of \$1.1 million for timber sales.

The Ouachita NF experienced significant changes in National Forest System (NFS) budgets between FY 2002 and FY 2009. The Ouachita NF saw a significant upturn in NFS funding in FY 2009 with increases to inventory and monitoring, land management, rehabilitation and restoration, planning, recreation, forest products (timber management), vegetation and watershed, and wildlife and fisheries habitat. Decreases were seen in minerals management and range allocations. The NFS allocations do not include appropriations for Knutsen-Vandenburg or for construction and maintenance of facilities and infrastructure.

## Performance History

Table 9 displays management accomplishments completed on the Ouachita NF FY 2003 through FY 2009.

**Table 9. Resource Management Accomplishments**

Objective or Activity	Unit of Measure	FISCAL YEAR						
		2003	2004	2005	2006	2007	2008	2009
Trail Construction	Miles	6	6	0	5	5	4	5
Trail Maintenance	Miles	293	288	293	299.8	300	245	244
Heritage Resource Survey	Acres	6,490	22,930	20,046	16,176	22,460	10,444	21,965
Waterhole Development	Structures	107	142	220	57	212	99	85
Midstory Reduction	Acres	3,014	353	1,350	7,715	4,935	2,410	5,965
Prescribed Fire	Acres	128,319	134,386	96,376	43,093	145,354	120,748	120,125
Lime, Fertilize and/or Stock Lakes/Ponds	Acres	647	670	828.5	970	1,281	558	474
Livestock	Number	1,179	903	715	530	300	154	142
Animal Unit Months (AUM) Head Months (HM)	Number	8,334 (AUM)	5,081 (AUM)	5,595 (AUM)	2,274 (HM)	1,813 (HM)	978 (HM)	859 (HM)
Active Range Allotments	Number	20	17	16	16	16	6	4
Watershed Improvement & Maintenance	Acres	35	56	73	87	45	41	75
Minerals Administration	Cases	191	577	860	403	640	894	837
Timber Offered	Million cubic feet	13.11	17.77	20.02	7.57	19.86	21.52	16.17
Timber Sold	Million cubic feet	11.16	14.24	16.68	19.93	20.64	20.18	17.54

Objective or Activity	Unit of Measure	FISCAL YEAR						
		2003	2004	2005	2006	2007	2008	2009
Acres Sold by Harvest Method:								
Salvage/Sanitation	Acres	118	539	1,008	995	69	2,300	1,773
Clearcut	Acres	0	0	0	74	0	193	0
Seedtree/ Shelterwood	Acres	460	2,068	2,702	2,602	4,363	3,186	1,848
Seedtree	Acres	N/A	N/A	N/A	1,503	3,594	2,984	1,685
Shelterwood	Acres	N/A	N/A	N/A	1,099	769	202	163
Thinning	Acres	5,873	12,073	8,933	13,046	9,922	10,981	12,407
Uneven-Aged Management*	Acres	1,334	2,760	3,289	3,216	3,065	1,246	1,291
Timber Harvested	Million cubic feet	12.24	11.40	16.47	16.67	13.93	18.32	18.36
Reforestation (planting & natural regeneration)	Acres	6,307	7,840	7,011	6,640	4,446	5,938	6,159
TSI & Reforestation Herbicide Treatment	Acres	1,344	1,452	2,891	1,124	3,253	6,881	1,407
Non-Herbicide Release Treatment	Acres	20,978	17,536	11,095	7,166	5,725	861	7,672
Land Line Location Or Maintenance	Miles	39.5	77.0	80.0	52.6	65.0	135.4	136.5
Rights-of-way	Cases	2	1	1	0	1	0	2
Arterial/Collector Roads Reconstructed	Miles	33	4	14	15.56	6.44	10.54	1.94
Local Roads Constructed	Miles	5	5	5	15.99	4.28	8.54	21.00
Soil Inventory	Acres	50,000	0	9,090	3,240	0	0	26,165
Stream Inventory	Miles	N/A	N/A	N/A	46	10	10	10
Stream Inventory For Leopard Darter	Miles	N/A	N/A	N/A	8	8	8	8
Stream Inventory For Ouachita Darter	Miles	N/A	N/A	N/A	6	6	0	6
Total Stream Inventory	Miles	N/A	N/A	N/A	60	26	18	24
5 Yr. Basin Area Stream Survey (Water Resource Inventory)	Acres	N/A	N/A	N/A	48,237	N/A**	N/A**	N/A**
Fish Attractors	Sites	45	26	6	16	65	48	73
Streams Monitored for Offsite Herbicide Movement	Sites	11	11	11	6	3	4	4

\* Unevenaged Management consisted of 1,120 acres of group selection and 126 acres of single-tree selection.

\*\* Basin Area Stream Survey occurs approximately one time every five years.

## Part 3 - Design Criteria and Implementation

As projects are undertaken to implement the 2005 Forest Plan, implementation monitoring reviews will be undertaken and results reported in this section. During FY 2007, one Integrated Management Review (IMR) was completed. A Forest Review team conducted an IMR of growing season prescribed fire projects on the Jessieville-Winona-Fourche Districts during June, 2007. No subsequent IMRs have been conducted.

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## Part 4 - Recommendations

This section of the Monitoring and Evaluation Report addresses actions identified through inventory and monitoring that will need to be addressed during FY 2009 and beyond. It also reports progress on recommendations made in previous M&E reports.

### Progress on Recommendations for FY 2008 and Recommendations for FY 2009

**Vegetation Inventory Databases And Activity Tracking Systems:** During FY 2006, the Ouachita NF began a transition phase of *converting* to the new vegetation inventory databases and activity tracking systems, Natural Resource Information System: Field Sampled Vegetation (FSVeg), Forest Service Activity Tracking System (FACTS), and GIS databases. These databases are becoming operational and populated with information that will track progress within landscape and stand level compositions and structure of major forest communities. These types of data will be useful to determine status within desired ranges of variability. In addition, a new FSVeg database interface tool (FSVeg Spatial) will be implemented on the Ouachita NF in FY 2009 that will allow easier updating of forest stand conditions. Forest Stand summary information such as condition class, age, and forest types will be more accessible for analysis and monitoring. Forest Service Activity Tracking System (FACTS), and GIS databases still need to be directly connected for monitoring purposes. Fire/Fuels activities should have this in place for 2010 monitoring.

#### FY 2009 Action Items (Planned)

- Implement FSVeg Spatial on the Ouachita NF to gain ability to summarize and update forest stand condition data more efficiently and utilize GIS to display it spatially.
- Further implement FACTS and GIS database so activities can be tracked by forest communities.

#### FY 2009 Action Items (Accomplished)

- The Ouachita NF has completed the phase of *converting* to the new vegetation inventory databases and activity tracking systems, Natural Resource Information System: Field Sampled Vegetation (FSVeg) and Forest Service Activity Tracking System (FACTS).
- A new FSVeg database interface tool (FSVeg Spatial) was implemented on the Ouachita NF in FY 2009 which will allow easier updating of forest stand conditions. Forest stand summary information such as condition class, age, and forest types will be more accessible for analysis and monitoring. Forest Service Activity Tracking System (FACTS) and Direction to populate the GIS database with all FACTS accomplishments was emphasized to begin with FY2010 treatments.
- While these databases are improving, they are not currently populated sufficiently to adequately address the question of whether landscape-level and stand level composition and structure of major forest types are within the desired ranges of variability.

#### FY 2010 Action Item (Planned)

- Implement FSVeg Spatial on the Ouachita NF to gain ability to summarize and update forest stand condition data more efficiently and utilize GIS to display it spatially.
- Further implement FACTS and GIS database so activities can be tracked by forest communities.

**Implement the Travel Management Rule:** The Travel Management Rule requires that all National Forests and Grasslands designate a system of roads, trails, and areas for use by motor vehicles.

**FY 2009 Action Item**

- Continue work to complete environmental analysis and designate a system of roads, trails, and areas for public motor vehicle access. Continue to update the GIS roads/trails layer as well as INFRA.

**FY 2009 Action Item (Accomplished)**

- Work on the environmental analysis continued.

**FY 2010 Action Item (Planned)**

- Complete environmental analysis and sign NEPA decision. Refine GIS and INFRA data. Release MVUMs to the public.

**Wilderness Surveys for Non-native Invasive Species:** Forest Plan Objective 29 provides for inventories to determine the presence and extent of non-native invasive species listed in Appendix E in wildernesses by 2010.

**FY 2009 Action Item (Planned)**

- Initiate surveys for non-native invasive species in wilderness areas in three of the Forest's six wilderness areas (Poteau Mountain, Dry Creek and Flatside).

**FY 2009 Action Item (Accomplished)**

- Non native invasive species inventories were conducted in Poteau Mountain, Dry Creek and Flatside Wilderness Areas. See Appendix E for results. Data from Flatside Wilderness Surveys were not compiled as of the date of this M & E Report.

**FY 2010 Action Item (Planned)**

- Report data for Flatside Wilderness. Conduct surveys in two additional wildernesses to inventory non native invasive species.

**Wilderness Management Plans:** Wilderness Management Plans were targeted to be updated by 2008. Priority plan elements will be those that are in the Chief's 10 Year Wilderness Challenge.

**FY 2009 Action Item (Planned)**

- Complete the updates of Wilderness Management Plans. Priority plan elements will be those that are in the Chief's 10-Year Wilderness Challenge.

**FY 2009 Action Item (Accomplished)**

- There were no updates to Wilderness Management Plans in FY 2009. Progress was made in the Chief's 10-Year Wilderness Stewardship Challenge, specifically in the non native invasive species inventories. Work remains to update Wilderness Management Plans, and the target for this work will have to be extended.



**FY 2010 Action Item (Planned)**

- Initiate work to complete the updates of wilderness management plans (within available funding) addressing priority plan elements as listed in the Chief's 10-Year Wilderness Challenge.

**Energy Upgrades:** The 2005 Forest Plan Objective 34 is as follows: "Complete energy efficiency upgrades on all administrative buildings and complete identified work on 10 percent of administrative buildings needing upgrades by 2015."

**Energy Upgrades****FY 2009 Action Item (Planned)**

- Continue work initiated during FY 2008 to identify needed energy efficiency upgrades and complete work where feasible.

**FY 2009 Action Item (Accomplished)**

- Work was continued to identify needed energy efficiency upgrades; however needed work was minor.

**FY 2010 Action Item (Planned)**

- Continue work initiated during FY 2008 to identify needed energy efficiency upgrades and complete work where feasible.

**Endemic Salamanders:** During FY 2007-2009, salamander specimens were collected to identify and define species and species boundaries within the *Plethodon ouachitae* complex which includes the Caddo Mountain, Rich Mountain, and Fourche Mountain salamanders, using modern DNA sequence techniques. This work is essential in order to determine the true endemic *plethodontid* salamander diversity and its distribution in the Ouachita Mountains of Arkansas, and should be finalized during FY 2009.

**FY 2009 Action Item (Planned)**

- Complete work to identify salamander diversity and distribution in the Ouachita Mountains of Arkansas.

**FY 2009 Action Item (Accomplished)**

- During FY 2009, work was completed to identify salamander diversity and distribution in the Ouachita Mountains of Arkansas concentrating efforts on the *P. caddoensis* range, distribution and genetic analysis. Results of the 2007 study revealed that *Plethodon ouachitae* is composed of seven well-supported lineage structures across six major mountains: Kiamichi, Round, Rich, Black Fork, Winding Stair, and Buffalo. The researchers found during the 2009 work that *Plethodon caddoensis* is composed of four highly divergent, geographically distinct lineages. The distributions of lineages abutted each other primarily along an east-west axis, but did not appear to be separated by any physical or environmental barrier such as in *P. fourchensis* and *P. ouachitae*. The dissemination of our research results via these outlets and our continuation of research on these salamanders will culminate into international attention for these unique species and the Ouachita Mountains, which will ultimately aid in conservation efforts.

**Forest Overview of Heritage Resources:** Objective 20 of the Revised Forest Plan is as follows: "Complete a forest overview of heritage resources by 2007 incorporating the results of 20+ years of Section 106 and Section 110 work and documentation."

Each of the Ouachita's five Ranger Districts expended considerable effort during FY 2007 to complete the development of the Heritage Resource Survey Coverage layers in GIS that will be

critical in developing a current Cultural Resource Overview. Data were provided to an Archeological Contractor who has analyzed most of the information and is providing draft sections of a report as well as several GIS maps. The overview will detail what is currently known about the archeology (prehistory and history) within the Ouachita Mountains of west-central Arkansas and southeastern Oklahoma, reveal any data gaps that may be present and will allow the Ouachita NF to place its limited heritage funding where it will have the greatest benefit. The data generated were provided to a contractor who drafted much of the Heritage Overview during FY 2007 and 2008.

**FY 2009 Action Item (Planned)**

- Complete the Forest Overview of Heritage Resources.

**FY 2009 Action Item (Accomplished)**

- Each of the Ouachita's five Ranger District clusters has continued during the fiscal year to update the Heritage Resource Survey Coverage and Sites layers in GIS. These data are critical in developing a current Cultural Resource Overview. The overview will detail what is currently known about the archeology (prehistory and history) within the Ouachita Mountains of west-central Arkansas and southeastern Oklahoma, reveal any data gaps that may be present and will allow the Ouachita NF to place its limited heritage funding where it will have the greatest benefit. During FY 2009, the Overview chapter on the History of the Heritage Program was substantially written, but not completed until early in FY 2010. Likewise, the chapter on the history background was begun.

**FY 2010 Action Item (Planned)**

- Complete the Forest Overview of Heritage Resources.

**Projects in High Scenery Integrity Objective Areas:** One Special Use Project for road construction through the Upper Kiamichi River Wilderness area was conducted in 2008. This is an area having a SIO of VERY HIGH. The Special Use project has not been completed.

**FY 2010 Action Item**

- Action still pending decision. If a decision is reached during FY 2010, design and conduct monitoring for the possible road construction in the wilderness area.

## Appendix A – List of Contributors and Preparers

Robert Bastarache—Oklahoma Ranger Districts, Biologist  
Dan Benefield—Oklahoma Ranger Districts, Biologist  
Janine Book—Mena/Oden Ranger Districts, NEPA Coordinator  
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Rhonda Huston— Mena/Oden Ranger Districts, District Biologist  
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Richard Standage—Ouachita NF, Forest Fisheries Biologist  
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Debbie Ugbade—Ouachita NF, Public Affairs Specialist  
Ray Yelverton—Ouachita NF, Sales Forester

## Appendix B – Conservation Education Activities

Forest Service Staff & Unit	FY 2009 Date	Activity	Number of attendees	Notes
SO Susan Hooks	7-Oct	I&E, Wildflower Presentation	26	Presentation on Forest Service and the Botany and Wildlife Programs
SO Betty Crump	10-Oct	I&E, Wildlife (Bats) Presentation	300	6 bat programs on Forest Service and bat conservation concerns and activities to the Pangburn Elementary School Classes
SO Betty Crump	13-Oct	I&E, Wildlife (Bats) Presentation	180	6 bat programs on Forest Service and bat conservation concerns and activities to the Mammoth Spring Elementary School Classes
Jessieville-Winona-Fourche David Saugey	11-Oct	I&E, Wildlife Presentation	15 adults/50 children	1-Bat program. Girl Scouts, Camp Coconinnio, Waldron, AR. Requested by Howard Robinson.
Jessieville-Winona-Fourche David Saugey	14-Oct	I&E, Wildlife Presentation	7 adults/99 students	1-Bat program. Ftn. Lake Elementary. Hot Springs, AR. Requested by Don Lovejoy, HSV Optimists.
Jessieville-Winona-Fourche David Saugey	14-Oct	I&E, Wildlife Presentation	6 adults/76 students	1-Bat program. Mtn. Pine Elementary. Mtn. Pine, AR. Requested by Don Lovejoy, HSV Optimists.
Jessieville-Winona-Fourche David Saugey	14-Oct	I&E, Wildlife Presentation	6 adults/72 students	1-Bat program. Jessieville Elementary. Jessieville, AR. Requested by Don Lovejoy, HSV Optimists.
SO Betty Crump	24 & 25-Oct	I&E, Wildlife (Bats) Presentation	1200	20-Bat programs (1400-2400) on Forest Service and bat conservation concerns and activities to the public during Boo Fest - Huckabee Nature Center in Pine Bluff
Jessieville-Winona-Fourche David Saugey	12-Nov	I&E, Wildlife Presentation	25 adults/300 students	3-Bat programs. Cabot Middle School, Cabot, AR. Requested by Joyce Dalton.
Jessieville-Winona-Fourche David Saugey	12-Nov	I&E, Wildlife Presentation	10 adults/20 students	1-Bat program. Grace Apostolic Church School. Hot Springs, AR. Requested by Nelda Ward.
Jessieville-Winona-Fourche Mary Mentz	6-Oct	I&E, Wildlife Presentation	75 kindergarteners and 9 adults	Showed a live baby fox squirrel and discussed its habitat.
Jessieville-Winona-Fourche Mary Mentz	10-Oct	I&E, Wildlife Presentation	268 students and 24 adults	Showed a live baby fox squirrel and discussed its habitat.
Jessieville-Winona-Fourche Mary Mentz	22-Oct	I&E, Wildlife Presentation	237 students and 26 adults (6 programs)	Spider Programs. Used sections of the Planet Earth segments to show trap door spiders, web construction, modified webs, and babies ballooning. Showed 7 different species of live spiders and spoke about each one including brown recluse and black widows. Requested by Danville Public Schools.
Jessieville-Winona-Fourche Mary Mentz	23-Oct	I&E, Wildlife Presentation	92 students and 12 adults	Same as above

## Appendix B – Conservation Education Activities

Jessieville-Winona-Fourche Mary Mentz	23-Oct	I&E, Wildlife Presentation	83 students and 8 adults	Same as above
Jessieville-Winona-Fourche Mary Mentz	25-Oct	I&E, Wildlife Presentation	57 students and 4 adults	Same as above
Jessieville-Winona-Fourche Mary Mentz	29-Oct	I&E, Wildlife Presentation	21 students and 2 adults	Danville GT Classes on "Dirty Jobs in Arkansas" - discussed collection of scat, ABB surveys, rotenone sampling, bear bait stations, etc.
Oklahoma Robert Bastarache	13-Nov	I&E, Wildlife Presentation	16 adults	Red Slough presentation to the Audubon Society of Central Oklahoma - Little Rock, AR
Oklahoma Robert Bastarache	20-Nov	I&E, Wildlife Presentation	20 students and 25 adults	Wildlife identification and hike for Gingerbread Pre-School in Hugo, OK
Jessieville-Winona-Fourche Mary Mentz	21-Mar	I&E, Wildlife Presentation	120 adults and 35 students	Wal-Mart Grand Opening Garden Center, Dardanelle, AR
Oklahoma Robert Bastarache	11-Jun	I&E, Wildlife Presentation	53 students and 19 adults	Snake show for the youth forestry camp at Beaver's Bend State Park
SO Betty Crump	7-Apr	I&E, Aquatic Ecology Presentation	20 youth/5 adults	1 Aquatic Ecology Program/Leadership Hot Springs Youth, Hot Springs, AR Requested by Mr. Leonard
Jessieville-Winona-Fourche Mary Mentz	9-Apr	I&E, Wildlife Presentation	26 adults	Monarch Butterflies and Pollinator Decline
SO Susan Hooks	9-Apr	I&E, Wildflower Presentation	70	Program on rare plants and unique plant communities
SO Susan Hooks	10-Apr	I&E, Wildflower Presentation	90	Program on native wildflowers and a wildflower walk
Jessieville-Winona-Fourche Mary Mentz	21-Apr	I&E, Wildlife Presentation	125 students and 24 adults	Migratory bird obstacle course
SO Susan Hooks	22-Apr	I&E, Wildflower Presentation	18	Wildflower and nature walk
Jessieville-Winona-Fourche Mary Mentz	22-Apr	I&E, Wildlife Presentation	85 students and 15 adults	Migratory bird obstacle course
Jessieville-Winona-Fourche Mary Mentz	24-Apr	I&E, Wildlife Presentation	51 children and 8 adults	Earth Day with Smokey Bear
Jessieville-Winona-Fourche Mary Mentz	24-Apr	I&E, Wildlife Presentation	22 students and 3 adults	PLT Resource-Go-Round - a pencils life cycle
Oklahoma Robert Bastarache	24-Apr	I&E, Wildlife Presentation	64 students and 5 adults	Wildlife identification and snake program for kindergarten classes at Hodgen Elementary - Hodgen, OK
SO Betty Crump	1-May	I&E, Aquatic Ecology Presentation	125	4 Aquatic Ecology Programs/4H WHEP Program

## Appendix B – Conservation Education Activities

Oklahoma Robert Bastarache	5-May	I&E, Wildlife Presentation	100 students and 25 adults	Snake show for third graders from Albion, Talihina, and Buffalo Valley Elementary during annual Kerr Field Day
SO Betty Crump	6-May	I&E, Aquatic Ecology Presentation	30	1 Aquatic Ecology Program/Silviculture Training with Jim Guldin @ Crossett
SO Betty Crump	7-May	I&E, Herp Presentation	60	1 Herp Program/Gardner Elementary School with Hunter Speed
Oklahoma Robert Bastarache	19-May	I&E, Wildlife Presentation	137 students and 23 adults	Snake show for Mena Elementary Field Day held at Cossatot State Park – AR
Jessieville-Winona- Fourche Mary Mentz	22-May	I&E, Wildlife Presentation	14 students and 4 adults	Seining and ID for macroinverts and fish, electorshocked creek
SO Susan Hooks	28-May	I&E, Wildflower Presentation	78	Nature walk
SO Betty Crump	4-Jun	I&E, Wildlife (Herps) Presentation	70	1 Herp Program/Cossatot Conservation Camp, Gilham Lake, AR
SO Betty Crump	4-Jun	I&E, Wildlife (Bats) Presentation	70	1 Bat Program/Cossatot Conservation Camp, Gilham Lake, AR
SO Susan Hooks	16-Jun	I&E, Wildflower Presentation	9	Tree Identification and Wildflower Walk
Jessieville-Winona- Fourche Mary Mentz	18-Jun	Envirothon Training Assistance	250	Assisted three regional teams with Envirothon Training.
Jessieville-Winona- Fourche Mary Mentz	27-Jun	I&E, Wildlife Presentation	300	Butterfly Explorer Booklets and booth with homemade posters on Pollinator Ecology and Decline.
SO Betty Crump	10-Jul	I&E, Wildlife (Bats) Presentation	70	1 Bat Program/Kirby Landing RA, Lake Greeson, AR
SO Betty Crump	11-Jul	I&E, Wildlife (Bats) Presentation	70	2 Bat Program/Cowhide Cove RA, Lake Greeson, AR
Jessieville-Winona- Fourche Mary Mentz	15-Jul	I&E, Wildlife Presentation	18 students and 2 adults	Monotremes and Marsupials
Jessieville-Winona- Fourche Mary Mentz	4-Sep	I&E, Wildlife Presentation	85 students and 8 adults	Opossum presentation
Jessieville-Winona- Fourche Mary Mentz	9-Sep	I&E, Wildlife Presentation	157 students and 8 adults	Marsupials and opossums
SO – IR Richard Standage	24-Oct	Fisheries Presentation and Electrofishing	8 students and 1 instructor	1/2 day session
SO Betty Crump	25-Oct	I&E Presentation	1100 children/250 adults	4-One 4-hour Bat Program/ Mike Huckabee Delta Rivers Nature Center, Pine Bluff, AR

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SO – IR Richard Standage	29-Oct	Fisheries Presentation and Electrofishing	8 students and 1 instructor	1/2 day session
SO – IR Richard Standage	16-Apr	Fisheries Presentation and Electrofishing	8 students and 1 instructor	1/2 day session
Cold Springs/ Poteau	June	2 National Fishing Derbies	200	Two fishing derbies during National Fishing Week
Cold Springs/ Poteau	FY 2009	6 Animal Inn Presentations	120	6 Animal Inn Presentations
Cold Springs/ Poteau	FY 2009	1 Eyes on Wildlife Presentation	1	1 Eyes on Wildlife Presentation
Cold Springs/ Poteau	FY 2009	19 Every Species Counts Presentation	405	19 Every Species Counts Presentation
	FY 2009	Total # of Programs=119	Total # of People = 8,165	

## Appendix C – Approved Communication Sites

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

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



## Appendix D – Proposed and Probable Activities

Activity	Unit of Measure	Range of Proposed/ Probable Annual Activity	Actual Annual Activity FY 2007	Actual Annual Activity FY 2008	Actual Annual Activity FY 2009
Allowable Sale Quantity	Million cubic feet/year	27	20.64	20.18	17.54
Timber offered for sale	Million cubic feet/year	20-30	19.86	21.52	16.17
Regeneration harvest (by modified seedtree/shelterwood methods)*	Acres	5,000-6,000	4,363	3,186	1,848
Management Area 14	Acres sold	4,000-4,700	3,981	2,968	1,685
Management Area 15	Acres sold	140	0	179	0
Management Area 16	Acres sold		97	39	0
Management Area 17	Acres sold	250	0	0	78
Management Area 21	Acres sold	160	0	0	0
Management Area 22	Acres sold	1,000-1,200	285	0	85
Other MAs	Acres sold	250	0	0	0
Uneven-aged management*	Acres sold	9,000-12,500	3,065	1,246	1,291
Management Area 14	Acres sold	7,200-7,850	1,972	1,031	508
Management Area 16	Acres sold	1,000-1,300	676	114	0
Management Area 17	Acres sold				636
Management Area 19	Acres sold	800-850	417	101	147
Commercial Thinning*	Acres sold	20,000-28,500	9,922	10,981	12,407
Management Area 14	Acres sold	10,000-13,700	7,368	9,070	7,722
Management Area 15	Acres sold	1,000	0	288	0
Management Area 16	Acres sold		608	0	0
Management Area 17	Acres sold	400-500	0	67	415
Management Area 21	Acres sold	1,500-1,600	0	615	1,099
Management Area 22	Acres sold	7,000-8,200	1,946	534	3,171
Midstory reduction	Acres	4,325-5,000	5,850	2,280	5,965
Management Area 21	Acres	500-600	1,220	734	1,941

## Appendix D – Proposed and Probable Activities

Activity	Unit of Measure	Range of Proposed/ Probable Annual Activity	Actual Annual Activity FY 2007	Actual Annual Activity FY 2008	Actual Annual Activity FY 2009
Management Area 22	Acres	3,500-3,725	4,630	898	2,363
Other MAs	Acres	325-500	1,560	648	1,661
Watershed improvement and maintenance	Acres	30-60	45	41	75
Arterial/collector roads reconstructed	Miles	15-20	6.44	10.54	1.94
Local roads reconstructed	Miles		34.20	28.17	42.99
Local roads constructed	Miles	5-10	4.28	8.54	21.00
Roads decommissioned	Miles	10-20	12.30	2.70	2.04
Trail maintenance (non-motorized)	Miles	300-350	300	300	244
Heritage resource survey	Acres	9,000-10,000	22,460	10,448	21,965
Active range allotments	Number	≤17	16	6	4
Prescribed Fire	Acres	80,000-250,000	145,354	120,748	122,372
Management Area 6	Acres	5,000-10,000	2,465	5,464	1,638
Management Area 14	Acres	25,000-110,000	43,405	62,826	61,875
Management Area 17	Acres	8,000-22,000	7,659	5,486	7,898
Management Area 21	Acres	8,000-25,000	16,527	22,595	6,983
Management Area 22	Acres	27,000-70,000	51,617	24,541	37,105

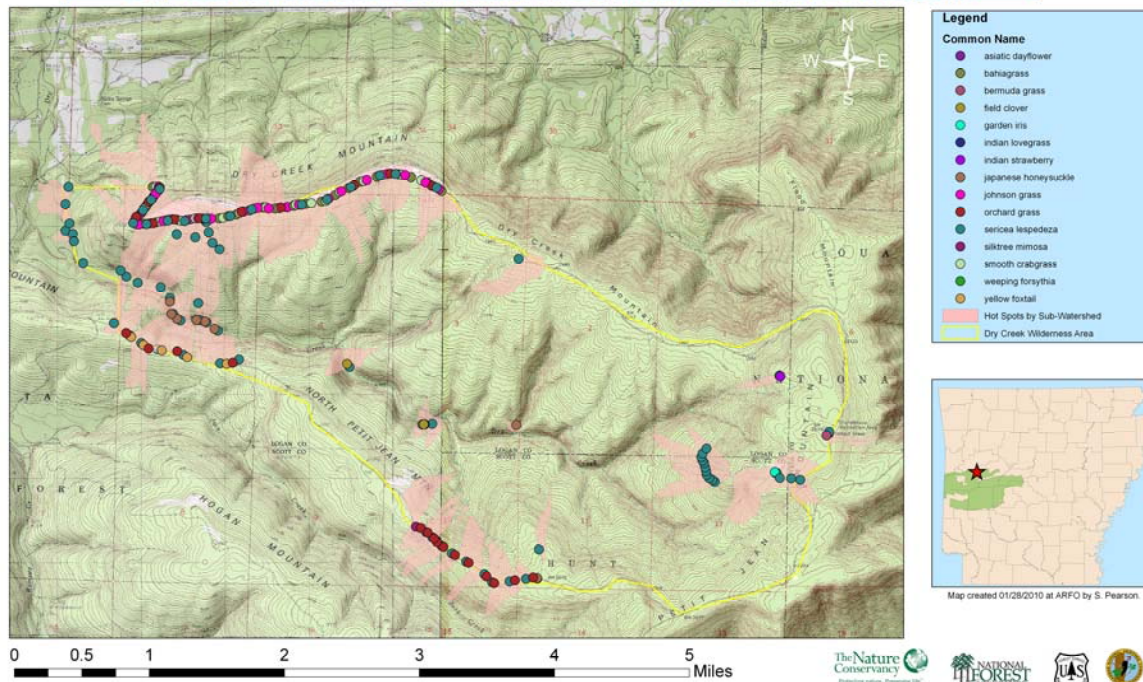
\*Reported figures based on acres sold.

## Appendix E – Wilderness Area Non-Native Invasive Species Inventories

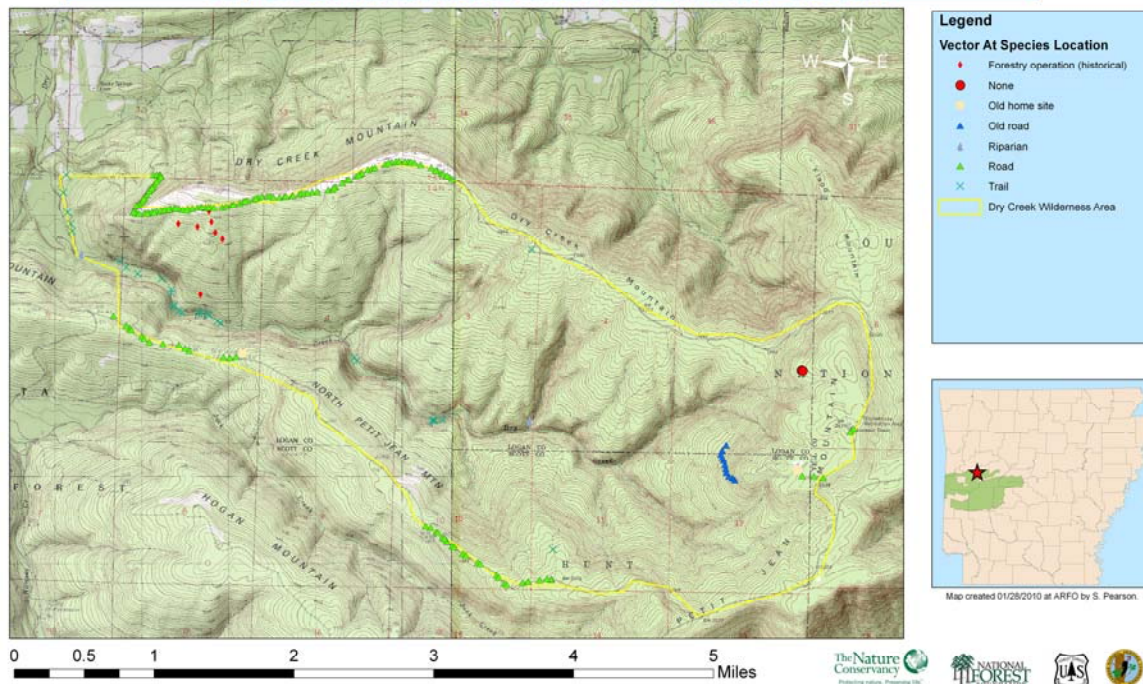
Scientific Name	Common Name	Dry Creek Wilderness	Poteau Mountain Wilderness
<i>Aira caryophylla</i> var. <i>capillaris</i>	annual hairgrass		X
<i>Albizia julibrissin</i>	Mimosa tree	X	X
<i>Bromus arvensis</i>	field brome		X
<i>Bromus tectorum</i>	cheatgrass		X
<i>Commelina communis</i>	Asiatic dayflower	X	X
<i>Cynodon dactylon</i>	Bermuda grass	X	X
<i>Digitaria ischaemum</i>	smooth crabgrass	X	
<i>Dactylis glomerata</i>	orchard grass	X	X
<i>Duchesnea indica</i>	Indian strawberry	X	
<i>Eragrostis pilosus</i>	Indian lovegrass	X	X
<i>Fallopia convolvulus</i>	black bindweed		X
<i>Forsythia suspensa</i>	weeping forsythia	X	
<i>Gamochaeta purpurea</i>	cudweed		X
<i>Hordeum pusillum</i>	little barley		X
<i>Iris germaica</i>	garden iris	X	
<i>Lactuca serriola</i>	prickly wild lettuce		X
<i>Lespedeza bicolor</i>	shrubby lespedeza		X
<i>Lespedeza cuneata</i>	sericea lespedeza	X	X
<i>Lolium perenne</i>	annual rye grass		X
<i>Lonicera japonica</i>	Japanese honeysuckle	X	X
<i>Medicago lupulina</i>	black medic		X
<i>Melilotus</i> spp.	sweet clover		X
<i>Microstegium vimineum</i>	Nepalese browntop		X
<i>Paspalum notatum</i>	Bahia grass	X	X
<i>Perilla frutescens</i>	beefsteak plant		X
<i>Plantago rugelii</i>	blackseed plantain		X
<i>Schedonorus arundinaceum</i>	tall fescue		X
<i>Setaria pumila</i>	yellow foxtail	X	X
<i>Sorghum halepense</i>	Johnson grass	X	X
<i>Torilis arvensis</i>	hedge parsley		X
<i>Tragopogon dubius</i>	goat's beard		X
<i>Trifolium campestre</i>	field clover	X	
<i>Trifolium incarnatum</i>	crimson clover		X
<i>Trifolium vesiculosum</i>	arrowleaf clover		X
<i>Verbascum thapsus</i>	common mullein		X
<i>Vulpia myros</i>	rattail six weeks grass		X

Inventories were conducted by The Nature Conservancy with assistance from the Arkansas Natural Heritage Commission

## Dry Creek Wilderness Non-Native Species Potential Hot Spots

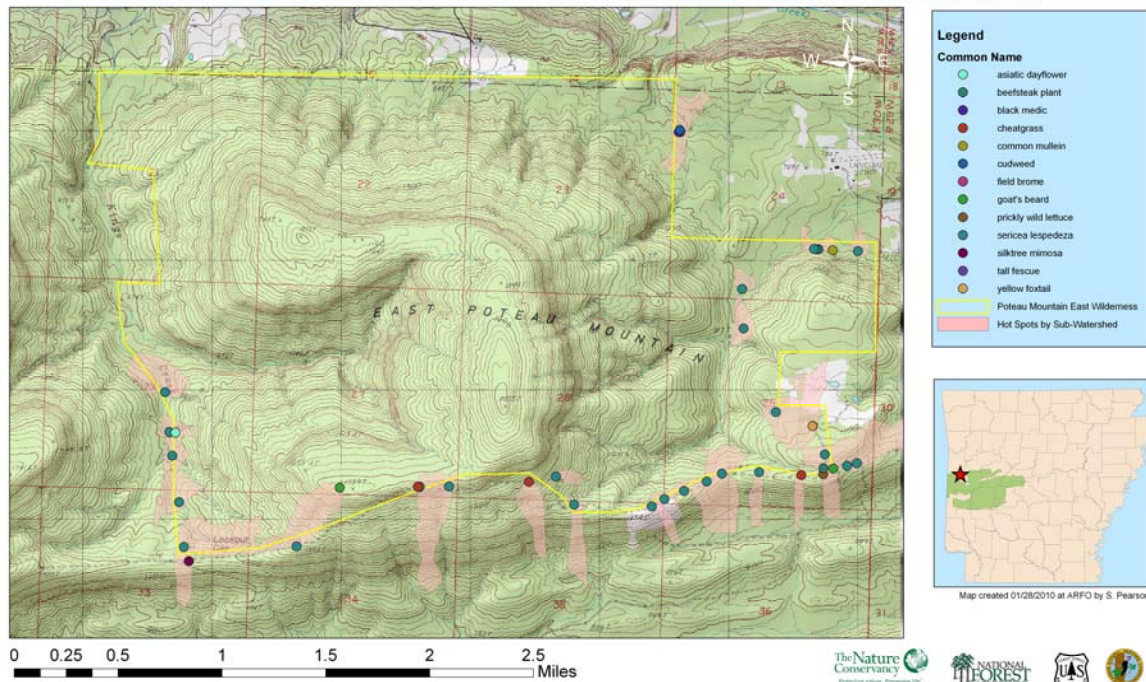


## Dry Creek Wilderness Non-Native Species Vectors

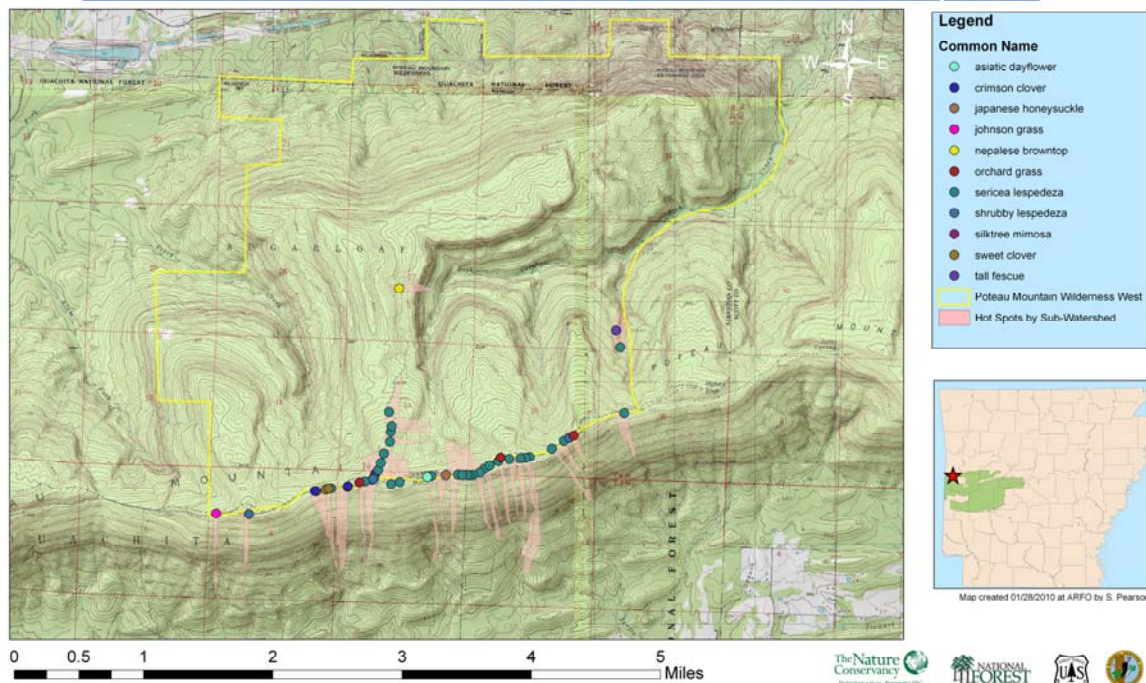




## Poteau Mountain Wilderness East Non-Native Potential Hot Spots

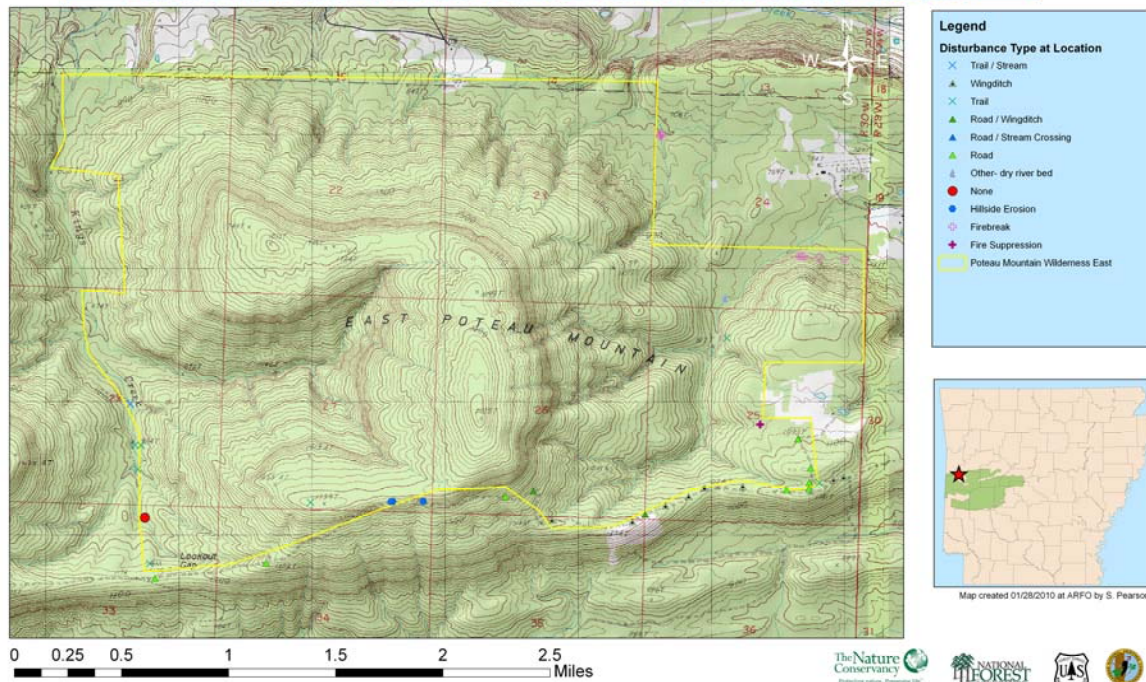


## Poteau Mountain Wilderness West Non-Native Potential Hot Spots





## Poteau Mountain Wilderness East Non-Native Species Vectors



## Poteau Mountain Wilderness West Non-Native Species Vectors

