Ouachita National Forest

Fiscal Year 2008
Monitoring and Evaluation Report for the Land and Resource Management Plan

October 1, 2007—September 30, 2008

Fiscal Year 2008
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 2009

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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 third 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 Comprehensive Evaluation Reports to be issued every five years.

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.

/s/ Richard Rosemier for Norman Wagoner _____ 9/30/09 _____
NORMAN WAGONER Date
Forest Supervisor

Fiscal Year 2008
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 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 (Ouachita NF) 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 National Forest to annually accumulate data annually 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, 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 2008 are summarized below.

Desired Conditions for Terrestrial Ecosystems

- The Ouachita NF continues to transition to new vegetation inventory databases and activity tracking systems that will allow monitoring and analysis of the effects of fire and silvicultural treatments to the vegetation communities.
- Silvicultural treatments were applied to 16,708 acres within the Pine-Oak Forest ecosystem, 664 acres within the Pine-Oak Woodland ecosystem; and 693 acres within the Shortleaf Pine, Bluestem Grass ecosystem.
- Salvage occurred on 943 acres within the Pine-Oak Forest ecosystem and 159 acres within the Short-leaf Pine, Blue Stem Grass ecosystem.
- The prescribed fire program was very productive. A total of 120,748 acres had a fire influence on the Ouachita National Forest. These fires include prescribed fires as well as wildland fires.

Desired Conditions for Riparian and Aquatic Ecosystems

- A total of 41 acres of watershed improvement and maintenance 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. Preliminary Lab results indicate that the presence of herbicides was insignificant for all sites.

Desired Conditions for Wildlife and Fish Habitat

The following habitat improvements were accomplished:

- 99 waterholes constructed
- 374 nest boxes installed
- 2,410 acres of midstory reduction completed
- 1,522 acres of overstory mast development for wildlife stand improvement
- 30,106 acres treated with prescribed fire for wildlife stand improvement (although all 120,748 acres treated with fire are considered beneficial for habitat improvement).
- 28 acres of seeding/planting
- 3 temporary openings created
- 657 acres of openings rehabilitated
- 48 lake fish attractors created
- 45 stream miles of fish passage restored
- 558 acres of fishing pond/lake enhancements completed

- There were 4,227 acres of early successional habitat created through timber regeneration harvest methods and wildlife habitat improvement. 5,938 acres were planted or site prepped for natural regeneration and wildlife habitat improvement. This falls short of the 5,500 acres needed to meet the Plan requirements.
- Mast Capability – Hardwoods greater than 50 years old are used to determine hard mast capability. There were 452,111 acres of hardwoods greater than 50 years old in 2008 compared to 474,384 acres of hardwoods greater than 50 years old in 2007. This is a decrease of 22,273 acres.
- Acres in Mature Hardwood Forest – Hardwoods greater than 100 years old are used to meet these criteria. In 2008, there were 52,553 acres greater than 100 years old compared to 130,343 acres greater than 100 years old in 2007. This is a decrease of 42,210 acres over the previous year.
- Acres in Mature Pine Forest – Mature pine forest consist of pines greater than 80 years old. In 2008, there were 507,068 acres of pine forest greater than 80 years old compared to 495,176 acres in FY 2007. This is an increase of 11,892 acres in this category.

Terrestrial Management Indicator Species (MIS) Population Trends

- Deer: Deer harvest data indicate an increasing harvest in the counties encompassed by the Forest with the highest harvest year in FY 2006. Based on annual spotlight survey data collected from 2000 to 2008, the average deer density has varied from 29 deer per square mile in 2001 to 95 deer per square mile in 2008. The average density for the Forest for all years is 46 deer per square mile. These data indicate that deer density on the Forest has an increasing trend.
- Northern Bobwhite: In the period from FY 2000 and FY 2008, birds heard per stop have varied from a high of 1.0 bird calls per stop in 2005 to a low of 0.45 bird calls per stop in 2008. Over this eight year period, the Ouachita region averaged 0.65 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 decade, the number of turkey poults per hen has varied from a low of 1.45 poults per hen in 1993 to a high of 3.7 poults per hen in 1997. In 2008 there were 1.52 poults per hen and in 2007, 1.9 poults per hen. This is less than the previous two years. The 2008 habitat capability can support over 18,370 compared to 18,000 turkeys in 2007. Biological factors other than habitat are apparently involved. The Arkansas Game and Fish Commission (AGFC) consider turkey in a downward trend and have modified seasons to address the trend.
- Red-cockaded Woodpecker: The Red-cockaded Woodpecker data for FY08 indicated 110 adult birds and 58 fledglings compared to FY 2007 with 103 adult birds and 67 fledglings. Over the past decade, the number of active territories and the number of adult birds are both showing an increasing trend.
- Pileated Woodpecker: Analysis shows that the current habitat capability would support 15,555 birds in 2008, which exceeds the 2005 Forest Plan bird population objectives of 11,265 (USDA Forest Service 1995). Twelve years of Landbird monitoring data on the Ouachita National Forest show an overall stable trend for Pileated Woodpecker. The Pileated Woodpecker and its habitat appear to be secure within the Ouachita National Forest.
- Scarlet Tanager: Ouachita National Forest Landbird point data, Breeding Bird Survey data, and Habitat capability data all indicate an increasing trend for the Scarlet Tanager. The Scarlet Tanager appears secure on the Ouachita National Forest and within its overall range.

- Prairie Warbler: The Breeding Bird Survey data indicate a significant declining trend of negative 4.6 percent for 1966 – 2007 for the Ozark-Ouachita Plateau, as well as a -2.0 percent decline throughout its range survey-wide. Although it has been declining, the population viability on the Ouachita National Forest should not be threatened. Increases in thinning and prescribed fire in the pine and pine-hardwood types especially those associated with approximately 200,000 acres of Shortleaf-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 2008 was the ninth highest since 1991. As sampled, bluegill populations across the Ouachita National Forest are at suitable and sustainable levels and their viability is not in question.
- Largemouth Bass: The largemouth bass electrofishing catch rate in 2008 was the seventh lowest in 18 years of sampling. As sampled, largemouth bass populations across the Ouachita National Forest are at suitable and sustainable levels and their viability is not in question.
- Redear Sunfish: The redear sunfish electrofishing catch in 2008 was the second highest annual catch over the past 18 years. As sampled, the redear sunfish populations across the Ouachita National Forest 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 every five years utilizing a Basin Area Stream Survey (BASS). Data for the Johnny and channel darters are collected annually.

- Data from BASS samples and other long-term monitoring samples were analyzed in FY 2008 that address monitoring for 12 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 eleven years is non-significant but counts for this species during 2008 were the fifth lowest.
- The trend line for channel darter counts is barely statistically significant, and it indicates a slight downward trend. The 2008 channel darter counts were also the fifth lowest in the 11 years of permanent transect counts.

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

- Red-cockaded Woodpecker: The Red-cockaded Woodpecker data indicated 110 adult birds and 58 fledglings compared to 103 adult birds and 67 fledglings in FY 2007. Over the past decade, the number of active territories and the number of adult birds are both showing an increasing trend.
- Harperella: Eight sites were monitored - one site on Rainey Creek, four on Irons Fork Creek, two on Fiddler Creek, and a reported new location on the Fourche LaFave. Seven of the sites occupied areas similar to previous years, and population numbers were estimated to be similar to those in previous years. All sites were healthy and had an abundance of flowering and fruiting individuals.
- Cossatot Leafcup: 250 acres of potential habitat were surveyed for the Leafcup. No new locations of the species were located during the survey.

- Leopard Darters: Based on the counts at the 18 permanent monitoring sites snorkeled during the summer of 2008, leopard darter counts were the third lowest (annual pooled count per minute) since the use of permanent monitoring sites began in 1998. Leopard darter counts in 2008 were nearly half that of the counts during the summer of 2007.
- Leopard Darter fish passage was restored on the Glover River at the Golden Gate Bridge, which was replaced by a precast low water bridge designed to accommodate fish passage within critical habitat of the leopard darter.
- Bald Eagle Nests: The Ouachita National Forest had one active Bald Eagle nest that fledged two birds.
- Bear Den Cave Monitoring for Indiana Bat – Surveys at Bear Den Cave did not find any Indiana bats using this winter hibernaculum in 2008 (or in either of the past two years).
- American Alligator: Surveys of the American alligator on the Oklahoma Ranger District at Red Slough located four alligators, down from eight sighted during FY 2007.
- American Burying Beetle *(Nicrophorus americanus*): One American burying beetle (ABB), was caught during 711 trap nights on established transects lines and three were caught on the Fletcher Timber sale unit and relocated. The Cold Springs Ranger District accepted, located, and provisioned 28 American burying beetles that were captured in areas off of the Forest.
- Federally Listed Freshwater Mussels: No surveys were conducted during FY 2008 on these mussels. Monitoring in previous years indicated declines in diversity and abundance.

R8 Sensitive Species and Species of Viability Concern and Habitat

- **Rich Mountain Slit-mouth Snail (*Stenotrema pilsbryi):*** Thirty-minute surveys were conducted by several (4-5) biologists at each of nine sites over three days in 2008. A total of 16 live shells and 6 empty shells were discovered. One site yielded live snails as well as empty shells, two sites yielded only live shells, and two other sites yielded only empty shells. Four of the sites yielded no live or empty shells.
- **Endemic Salamanders**: During FY 2007, biologists from New York and Oklahoma, assisted by AGFC, collected salamander specimens 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. During FY 2008, *w*ork was completed to identify salamander diversity and distribution in the Ouachita Mountains of Arkansas. Results of the 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.

Desired Conditions for Geologic Resources

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

Desired Conditions for Landownership Pattern

- There were 135.4 miles of landline location or maintenance accomplished on the Ouachita National Forest, compared to 65.0 miles of landline location maintenance during FY 2007.
- A total of 13 encroachments were resolved.
- No lands were purchased or exchanged during FY 2008.

Desired Conditions for Heritage Resources

- The Ouachita National Forest received 548 hours of volunteer help to clean, document, sort, and catalog archeological collections in the Supervisor's Office. This volunteer help is valued at approximately $10,000.
- Forty-four archeological and historic sites were revisited by heritage staff to reassess their conditions.
- Archeological survey was undertaken on 10,488 acres during the year as a part of Section 106 activities. As a result, 98 archeological sites were found and documented.
- The 2008 To Bridge A Gap conference was co-hosted by the Choctaw Nation of Oklahoma, the Ouachita National Forest and the Ozark-St. Francis National Forests in Fort Smith, Arkansas 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: 115 of the 118 recreation sites were maintained to standard in 2008.
- Friends of the Ouachita Trail (FoOT) contributed 3,297 hours of trail maintenance on the Ouachita National Recreation Trail. This volunteer labor is valued at $64,324.
- Conservation Education Presentations: Over 90 programs or presentations were offered.
- Landscape Management: The Forest exceeded the 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 2008, Ouachita National Forest Law Enforcement personnel spent approximately 1,246 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 Forest, a total of 246 Federal Violation Notices, 513 State Violations, 463 Warning Notices, and 444 Incident Reports were issued.

Desired Conditions for Facility Operation and Maintenance

- Facility Administration: Ouachita National Forest facility inventory included 348 buildings that are categorized as follows: Existing - Active, Existing - Inactive, or Existing - Excess. Of those 348 buildings, 289 (83%), have a rating of good or fair. Twenty-two buildings are rated poor and 37 are unrated. The majority 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: 28.17 miles of local roads were reconstructed and 10.54 miles of arterial/collector roads (4 roads) were reconstructed.
- Transportation System: 8.54 miles of local roads (8 roads) were constructed and added to the system.
- Transportation System: There were 2.70 miles of road removed from the system.

Desired Conditions for Commodity, Commercial, and Special Uses

- Special Uses.
  There were 563 special use authorizations:
  - 330 for roads
  - 58 for water lines, electric, telephone utilities, and oil and gas pipelines
  - 12 for research or resource surveys
  - 24 for dams and reservoirs
  - 72 for communication uses
  - 11 for recreation uses
  - 7 for agricultural uses
  - 7 for community uses
  - 42 for miscellaneous uses
- Minerals and Energy Development: 894 minerals cases were administered.
- Livestock Grazing: There were 6 active range allotments and 8 permittees on the Ouachita National Forest in 2008.
- Firewood: There were 1,686 cords of firewood sold.

Desired Conditions for Fire (Community Protection and Safety)

- Wildland Urban Interface (WUI): 89,197 acres of hazardous fuel treatments were accomplished by prescribed fire with most of these acres being in the WUI area.
- Wildfires: During FY 2008, 41 wildfires affected 460 acres on the Ouachita National Forest. Of the total number of fires, 9.8% were lightning-caused, and 18% of the total acres affected by fire were a result of these natural ignitions. Arson accounted for 58.5% of all fires and about 66.1% of the total acres burned. Other causes of wildfires include escapes from debris burning (7.3%), campfires (7.3%), equipment (4.9%), railroads (2.4%), and other miscellaneous causes (9.8%).
- Wildland Fire Use (WFU): The third WFU project undertaken by the Ouachita National Forest was completed on the Mena/Oden Ranger District cluster and included 58 acres. The WFU projects are naturally ignited fires (lightning) managed for resource benefits (rather than implementing a full suppression response). Completion of this project brings the average of WFU on the Ouachita National Forest to one per year.
- 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 89,197 acres specifically designed to reduce hazardous fuels, and 31,097 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 National Forest 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 2008.

- Prescribed Fire: A total of 120,288 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 Stations Center for Aquatic Technology Transfer (CATT) during FY 2006. Data from the nine watersheds surveyed under BASS was 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: There were 41 acres of soil and water improvement accomplished.
- Watershed Improvement: The Ouachita National Forest exceeded the objective of completing 40 acres of watershed improvement actions per year by accomplishing 41 acres of watershed improvement or maintenance. The FY 2008 work included 41 acres of watershed improvement through normal project work. Most of the normal project restoration work involved stabilizing gullies and abandoned roads.
- Air: Fine particulate matter and ozone concentrations near the Forest have been measured for several years. Presently, 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 indicate that data capture has gone down significantly at this monitoring location. Based on data lag and availability, no trends in ambient air quality concentrations of these two pollutants can be established.
- Recreation Sites: There were 115 of 118 recreation sites (97%) maintained to standard.
- Improve Accessibility: Funding was secured and initial design work was done to improve accessibility at the 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 National Forest lakes and select ponds. Annual channel catfish stocking is occurring 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: The one project accomplished in 2008 was the Winona Work Center Technician Office.
- Roads Decommissioned: During FY 2008, 2.7 miles of road were decommissioned.
- Aquatic Organism Passage: Two major river crossings were rebuilt with fish friendly designs to restore fish passage to 11 miles of streams. Thirty-four miles of unauthorized OHV (Off Highway Vehicles) trails along and across streams were decommissioned restoring numerous crossings to natural conditions and reducing sediment impacts improving fish habitat and passage to 34 miles of streams.
- Timber Volume Sold: There were 201,839.86 hundred cubic feet (ccf) of timber sold.
- Fuels Treatment: Over 89,000 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 89,197 acres of hazardous fuel treatments accomplished by prescribed fire.

Part 3: Design Criteria

- No Implementation Monitoring Reviews were done during FY 2008.

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 2009. Progress on action items identified for FY 2008 is summarized below and FY 2009 action items are identified.

Vegetation Inventory Databases and Activity Tracking Systems

FY 2008 Action Item (Planned)

- Supplement data from FSVeg and FACTS with data from TIMS, GIS data on Management Areas and fire databases to track landscape level accomplishments.

FY 2008 Action Item (Accomplished)

- Transition to FSVeg and FACTS is nearly complete, and it has become apparent that FSVeg and/or FACTS will not provide all of the data required to monitor silvicultural activities on the Ouachita NF. The TIMS program currently provides the most accurate data on timber harvest work accomplished. FACTS should now be adequate in reporting accomplishments, but FACTS data and, where appropriate, TIMS data need to be combined with GIS data by Management Area and fire databases to provide a more comprehensive picture of landscape level accomplishments.

FY 2009 Action Items

- Implement FSVeg Spatial on the Forest 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.

Forest Fuels: The 2005 Forest Plan (Objective 40) is as follows: "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. " During FY 2006 and FY 2007, there was no working database to accurately track accomplishments in high priority areas.

FY 2008 Action Item (Planned)

- Implement the newly developed monitoring protocol utilizing GIS mapping to track fuel treatment accomplishments accurately in high priority areas.

FY 2008 Action Item (Accomplished)

- The 2008 all wildfire, prescribe burn and fuel treatment accomplishments are now tracked by the Forest according to the newly developed monitoring protocol utilizing GIS mapping as follows:
  - Accomplished Prescribed Burns – shapefile of polygon with front page of burn plan due July 15th of each fiscal year (FY),
  - Planned Prescribed Burns -- shapefile of polygon with either front page of burn plan or information linking the polygon to a name, type of burn and acres involved due October of each FY, and
  - Wildfires – reports completed and sent to AOICC within two weeks of containment. Polygons are mandatory for all incidents regardless of size. For each polygon or point, information linking it to a fire name, date, fire number and cause need to be included. AOICC will also process these fire reports into FIRESTAT.

Mussel survey work

FY 2008 Action Item (Planned)

- Publish results of survey work on rare and endangered freshwater mussels.

FY 2008 Action Item (Accomplished)

- The Journal of the Southwestern Association of Naturalists published the following: *Status of Rare and Endangered Freshwater Mussels in Southeastern Oklahoma* by Heather S. Galbraith, Daniel E. Spooner, and Caryn C. Vaughn of the University of Oklahoma; Oklahoma Biological Survey and Department of Zoology based on the field surveys and fish host study work on the Arkansas fatmucket completed by Dr. Christian and graduate students from Arkansas State University under a cooperative project funded by the Ouachita National Forest during 2006.

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 2008 Action Item (Planned)

- Continue to work with the public to refine a system of roads, trails, and areas for public motor vehicle access. The Forest will complete an environmental review and develop the preferred action alternative during FY 2008.

FY 2008 Action Item (Accomplished)

- During FY 2008, public comments were analyzed and environmental analysis work was initiated. Work continued to update the GIS roads/trails layer as well as INFRA. The Forest made significant progress, but did not complete the environmental review or develop the preferred action alternative during FY 2008. Work remains to complete designations for motor vehicle travel, and the target for this work will have to be extended.

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.

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 in wildernesses by 2010.

FY 2008 Action Item (Planned)

- Initiate surveys for non-native invasive species in wilderness areas (to be completed by 2010).

FY 2008 Action Item (Accomplished)

- Work to survey wilderness areas for non-native invasive species was not initiated during FY 2008. It is anticipated that the required work will be initiated during FY 2009 and completed by FY 2010.

FY 2009 Action Item

- 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).

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

FY 2008 Action Item (Planned)

- Complete the updates of Wilderness Management Plans by 2008. Priority plan elements will be those that are in the Chief's 10-Year Wilderness Challenge.

FY 2008 Action Item (Accomplished)

- There were no updates to Wilderness Management Plans in FY 2008. Significant progress was made in the Chief's 10-Year Wilderness Stewardship Challenge. Improvement was made in all 10 elements. Work remains to update the Wilderness Management Plans, and the target for this work will have to be extended.

FY 2009 Action Item

- 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 2008 Action Item (Planned)

- Continue work initiated during FY 2007 to identify needed energy efficiency upgrades and complete work where feasible.

FY 2008 Action Item (Accomplished)

- Energy upgrades were accomplished during renovation of the Jessieville Work Center and the Big Cedar Work Center.

FY 2009 Action Item

- Continue work initiated during FY 2007 to identify needed energy efficiency upgrades and complete work where feasible.

Basin Area Stream Survey: Basin Area Stream Surveys are conducted periodically (typically on a five-year cycle); and at five-year intervals, the desired condition status of this habitat is evaluated.

FY 2008 Action Item (Planned)

- During FY 2008, complete the analysis of data collected during the FY 2006 Basin Area Stream Survey and report results on data from the nine watersheds surveyed under BASS.

FY 2008 Action Item (Accomplished)

- Analysis of data collected during the FY 2006 Basin Area Stream Survey was completed during FY 2008.

Management Indicator Species for stream and river aquatic habitat: Stream and river monitoring surveys were analyzed for changes in MIS fish populations.

FY 2008 Action Item (Planned)

- During FY 2008, analyze data for stream and river MIS species for changes in aquatic habitat conditions.

FY 2008 Action Item (Accomplished)

- The analyses of data collected from the 2006 Basin Area Stream Surveys and other long-term stream survey sites suggest detrimental effects to population trends for four fish species in the Lower Ouachita Mountain ecoregion. To address this source of fish habitat degradation, road and trail maintenance should be prioritized for this ecoregion and OHV use managed or reduced in areas showing damage.

FY 2009 Action Items

- During FY 2009, work with Engineering to develop priority areas for road and trail maintenance work.
- Work to complete the travel management project.

Endemic Salamanders

FY 2008 Action Item (Planned)

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

FY 2008 Action Item (Accomplished)

- During FY 2008, work was completed to identify salamander diversity and distribution in the Ouachita Mountains of Arkansas. Results of the 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 complete study by D. B. Shepard and F. T. Burbrink was published in 2008 in Molecular Ecology, " Lineage diversification and historical demography of a sky island salamander, *Plethodon ouachitae*, from the Interior Highlands."

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 2008 Action Item (Planned)

- Complete the Forest Overview of Heritage Resources.

FY 2008 Action Item (Accomplished)

- Each of the Ouachita's five Ranger District clusters has 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 National Forest to place its heritage funding where it will have the greatest benefit. The data generated was provided to a contractor who drafted much of the Heritage Overview during FY 2007 and 2008; however, the document will require final work in FY 2009.

FY 2009 Action Item

- Complete the Forest Overview of Heritage Resources.

Projects in High Scenery Integrity Objective Areas: One Special Use application for road construction through the Upper Kiamichi River Wilderness area was addressed in 2008. This is an area having a Scenery Integrity Objective of VERY HIGH. If the project is approved, the permit will include future monitoring.

FY 2009 Action Item

- Design and conduct monitoring for the road construction in the Wilderness area.

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Part 1 – Desired Conditions

Desired conditions describe how the Forest 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 Forest 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 National Forest 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.

Desired Conditions by Community Type	
Ouachita Shortleaf Pine-Oak Forest	
% Canopy Closure	> 70
Vertical Structure	6-14 % in grass/forb or seedling/sapling/shrub condition and 60-90 % in the mature forest condition
Fire Regime	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
Old Growth Characteristics	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 National Forest outside of "lands suitable for timber production" in MAs 14, 15, and 16
Ouachita Shortleaf Pine-Oak Woodland	
% Canopy Closure	< 60
Vertical Structure	6-14 % in grass/forb and seedling/sapling/shrub and 60-90 % in the mature woodland condition
Fire Regime	Prescribed fire is applied to at least 50 % of this community every 3-5 years, with an occasional growing season fire
Old Growth Characteristics	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 National Forest
Ouachita Shortleaf Pine-Bluestem (includes Red-cockaded Woodpecker Habitat)	
% Canopy Closure	40-60
Vertical Structure	3-8.3 % in grass/forb and seedling/sapling/shrub and 60-90 % in the mature woodland condition
Fire Regime	Prescribed fire is applied to at least 50 % of this community every 3-5 years with an occasional growing season fire
Old Growth Characteristics	Small to medium sized patches of old growth pine-bluestem woodland will develop within at least 24,000 acres of MA 22
West Gulf Coastal Plain Pine-Hardwood Forest	
% Canopy Closure	≥ 70
Vertical Structure	6-14 % in grass/forb and seedling/sapling/ shrub and 60-90 % in the mature, fire-maintained forest condition
Fire Regime	Prescribed fire is applied to at least 50 % of this community every 3-5 years with an occasional growing season fire
Old Growth Characteristics	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
Ouachita Dry-Mesic Oak Forest	
Vertical Structure	4-10 % in grass/forb and seedling/sapling/ shrub and 60-90 % in the mature forest condition
Fire Regime	Prescribed fire is applied to at least 50 % of this community every 5-7 years with an occasional growing season fire
Old Growth Characteristics	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 National Forest 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).

In addition, a new FSVeg database interface tool (FSVeg Spatial) will be implemented on the Ouachita National Forest 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 GIS databases still need to be directly connected for monitoring purposes. Fire/Fuels activities should be in place for FY 2009 monitoring. Efforts to populate the GIS database with other FACTS accomplishments should be emphasized to be completed by end of FY 2009.

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 2008 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, and FY 2008, as depicted in the following table.

Table 1. Silvicultural Activity by Community Type

FY 2006 Ouachita National Forest Management Activities Accomplished	Pine Oak Forest	Pine Oak Woodland	SLP Bluestem	Dry-Mesic Hardwood
	# Acres	# Acres	# Acres	# Acres
Clear-Cut (native species restoration)	74	0	0	0
Even-age Management – Shelterwood	1,075	24	195	0
Even-age Management – Seedtree	1,095	408	205	0
Commercial Thinning	11,963	432	1,302	0
Uneven-age Management – Group Selection	1,135	477	0	0
Uneven-age Management – Single Tree Selection	1,042	563	0	0
Timber Stand Improvement	5,823		1,005	177
Salvage	80	915	0	0

2007 Ouachita National Forest Management Activities Accomplished	Pine Oak Forest	Pine Oak Woodland	SLP Bluestem	Dry-Mesic Hardwood
	# Acres	# Acres	# Acres	# Acres
Clear-Cut (native species restoration)	0	0	0	0
Even-age Management – Shelterwood and Modified Seedtree	4,078	0	285	0
Commercial Thinning	7,657	319	1,946	0
Uneven-age Management – Group Selection and Single Tree Selection	3,065	0	0	0
Timber Stand Improvement	907	0	2,081	0
Salvage	69	0	0	0

2008 Ouachita National Forest Management Activities Accomplished	Pine Oak Forest	Pine Oak Woodland	SLP Bluestem	Dry-Mesic Hardwood
	# Acres	# Acres	# Acres	# Acres
Clear-Cut (native species restoration)	294	34	18	0
Even-age Management – Shelterwood and Modified Seedtree	3,229	0	0	0
Commercial Thinning	9,129	440	1,355	0
Uneven-age Management – Group Selection and Single Tree Selection	1,246	0	0	0
Timber Stand Improvement	2,650	0	351	0
Salvage	943	0	159	0

The prescribed fire program was very productive in FY 2008, although limited burning opportunities resulted in a reduction from FY 2007 accomplishments of over 20,000 acres. An important accomplishment during FY 2008 was 89,197 acres treated to reduce fuels, the highest number of acres treated in any one of the past three years. As shown in the following tabulation, 120,748 acres were influenced by fire on the Ouachita National Forest during FY 2008. These fires include prescribed fires as well as wildland fires.

Prescribed Fire Program by Purpose (acres)					
Fiscal Year	Fuel Reduction	Wildlife	Site Prep	Wildland Fire	Ouachita National Forest Total
2006	36,855	5,760	478	23,185	66,278
2007	83,136	61,299	919	14,347	159,701
2008	89,197	30,106	985	460	120,748

During FY 2008, these 120,748 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. These acres were treated with either wildland fire or prescribed fire. As shown in the following tabulation, the pine-oak forest community is well within and the dry-mesic hardwood community is close to the range of their desired fire regimes. The pine-oak woodland and short-leaf pine/bluestem communities are below the range of the desired fire regime and, although improved over FY 2006, were below what was accomplished during FY 2007.

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

	Ouachita National Forest Community			
	Pine Oak Forest	**Pine Oak Woodland**	**SLP Bluestem**	**Dry-Mesic Hardwood**
Annual Desired Percent of Acres Treated with Fire	7-10%	15-33%	15-33%	7-10%
FY 2006	4%	3%	5%	5%
FY 2007	6%	6%	26%	6%
FY 2008	6%	6%	14%	5%

Ouachita Mountains and West Gulf Coastal Plain-Rare Upland Ecosystems

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

Desired Conditions by Community Type (Ouachita Mountains and West Gulf Coastal Plain-Rare Upland Communities)	
Ouachita Mesic Hardwood Forest	
% Canopy Closure	Mostly closed canopy
Vertical Structure	0.5-5 % in grass/forb and seedling/sapling/shrub and 80-98 % in the mature forest condition
Fire Regime	Infrequent fire
Old Growth Characteristics	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 National Forest
Ouachita Montane Oak Forest	
Vertical Structure	Stunted, oak-dominated system
Fire Regime	Occasional prescribed fire
Old Growth Characteristics	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
Ouachita Dry Oak Woodland	
% Canopy Closure	40-80 %
Vertical Structure	4-10 % in grass/forb seral stage and 60-90 % in the mature woodland condition, as defined by abundant herbaceous groundcover
Fire Regime	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
Old Growth Characteristics	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
Ouachita Novaculite Glade and Woodland	
Vertical Structure	Open glade structure
Fire Regime	50 % of the novaculite glade and woodland community is treated with prescribed fire every 3-5 years with an occasional growing season fire included
Old Growth Characteristics	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.
Central Interior Highlands Dry Acidic Glade and Barrens	
Vertical Structure	Open glade structure
Fire Regime	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
Old Growth Characteristics	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.
Central Interior Acidic Cliff and Talus	
Vertical Structure	Open, rocky, herbaceous-dominated system with sparse woody vegetation
Fire Regime	Occasionally influenced by natural or prescribed fires
Calcareous Prairie	
Vertical Structure	Open, fire-maintained grassland with sparse to absent woody vegetation
Fire Regime	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 National Forest 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, no acres were treated during FY 2008.

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 2008 and for comparison purposes, accomplishments in FY 2006 and FY 2007. The prescribed fire program was very productive in FY 2008, although drier weather limited burning opportunities.

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

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

Desired Conditions for Riparian and Aquatic Ecosystems **Ouachita Ponds, Lakes, and Waterholes**
Ouachita Mountain Forested Seep: 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.
Ouachita Riparian: 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.
West Gulf Coastal Plain Small Stream and River Forest: 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.
South-Central Interior Large Floodplain: 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.
West Gulf Coastal Plain Wet Hardwood Flatwoods (Red Slough): 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.
Ouachita Rivers and Streams: 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.
Ouachita Ponds, Lakes, and Waterholes: 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?
The Ouachita National Forest exceeded the objective of completing 40 acres of watershed improvement actions per year by accomplishing 41 acres of watershed improvement or maintenance. The FY 2008 work included 41 acres of watershed improvement through normal project work. Most of the normal project restoration work involved stabilizing gullies and abandoned roads. This work typically includes re-applying stabilization measures, such as re-constructing waterbars and re-seeding, on areas of watershed improvement projects that were accomplished 1-3 years earlier but for various reasons are now (or expected to become) unstabilized and need additional treatment.

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). Preliminary Lab results indicate that the presence of herbicides was insignificant for all sites.

Wildlife and Fish Habitat Desired Conditions

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

*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.

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. MIS are divided into three categories: Terrestrial MIS; Pond, Lake and Waterhole MIS; and Stream and River MIS. There are 7 terrestrial MIS, 3 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 National Forest management are reported in this section.

Table 2. Management Indicator Species, Ouachita National Forest

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

*These fish species are monitored as a part of the Basin Area Stream Survey which occurs roughly every five years.
[1] *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 and prescribed fire. 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 and the habitat carrying capacity is influenced by the amount of prescribed fire and early seral habitat created and/or maintained. The 2005 Forest Plan objective is to create 5,500 acres of grass/forb (early seral) habitat per year. In FY 2008, 3,539 acres were created through even-age silvicultural methods compared to 4,363 acres in FY 2007 and 2,602 in FY 2006. These reported acres do not reflect the thinned (10,981) 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 2008, 39,674 acres in woodland condition were treated with prescribed fire (30,000 acres of shortleaf pine-bluestem and 9,674 acres of pine-oak woodland), providing 43,267 acres of early seral habitat in addition to the acres created during regeneration harvests and commercial thinnings. For consistency in reporting, these acres are not shown in Figure 1 below.

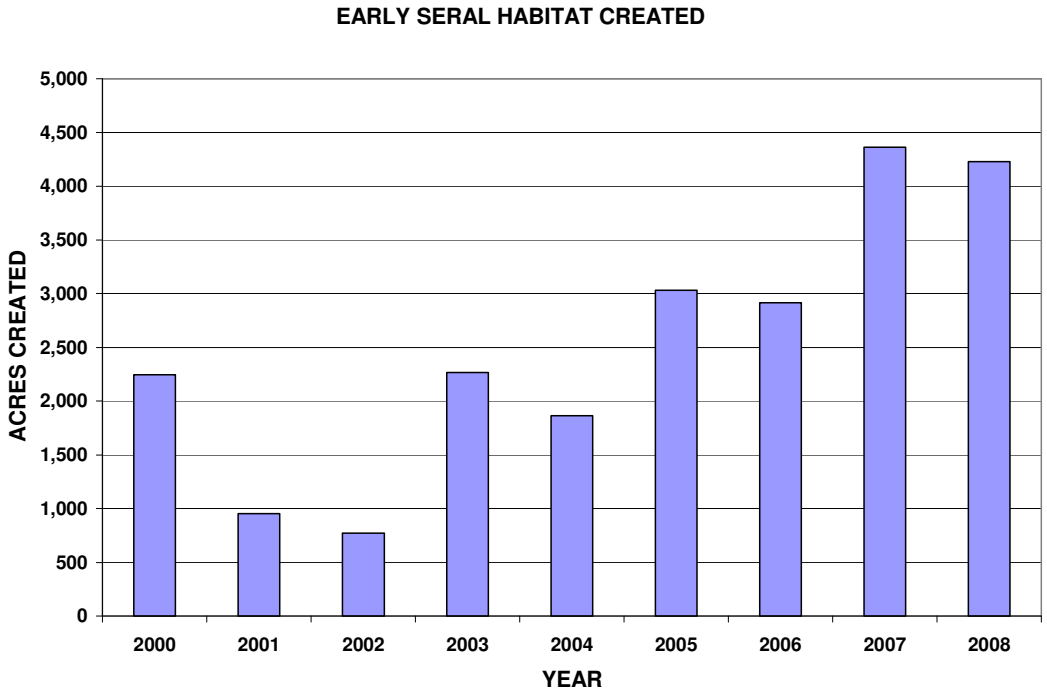


Figure 1. Acres of Early Seral Habitat Created by Year 2000 - 2008

Habitat Capability Model

Modeling habitat capability using the CompPATS model and vegetative data from the Field Sampled Vegetation (FSVeg) is a way to evaluate and estimate acres of suitable habitat to sustain healthy populations of native and desired non-native wildlife species on the Ouachita National Forest. Table 3 displays estimated habitat acres by species as well as differences in acres and percentages compared to the base year of FY 2005.

Table 3. Forest Habitat Capability for Terrestrial Management Indicator Species, FY 2008 with Comparison to FY 2005, FY 2006, and FY 2007

Terrestrial Management Indicator Species	Actual Habitat Capability, FY 2005	Actual Habitat Capability, FY 2006 % Difference FY 2006 vs. FY 2005	Actual Habitat Capability, FY 2007 % Difference FY 2007 vs. FY 2005	Actual Habitat Capability, FY 2008 % Difference FY 2008 vs. FY 2005
Deer	58,395	50,840 - 13	51,898 -12	50,325 -14
Turkey	18,461	17,601 - 5	18,316 - 1	18,370 - .5
Northern Bobwhite	65,002	62,571 - 4	69,349 + 6	74,223 +14
Pileated Woodpecker	17,842	17,371 - 2	14,647 + 4	15,555 -13
Prairie Warbler	90,313	85,691 - 5	93,830 + 4	87,788 - 3
Scarlet Tanager	90,583	86,455 - 5	85,046 - 6	84,040 - 7

Mast Capability – 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
Mast Capability (Acres)	433,250	468,172	474,384	452,111
Change from Previous Year (Acres and %)	N/A	+35,000 + 8	+>6,000 + 1	- 22,273 - 5
Change from 2005 (Acres and %)	N/A	+35,000 + 8	+>41,000 + 9	+ 18,861 + 4

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
Mature Hardwood Forest (Acres)	50,959	51,873	130,343*	52,553
Change from Previous Year (Acres and %)	N/A	+>900 + 2	+78,500 + 251	-77,790 - 59
Change from 2005 (Acres and %)	N/A	+>900 + 2	+79,400 + 255	+1,594 + 3

* Data for FY 2007 appear to be in error. 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
Mature Pine Forest (Acres)	435,112	565,683	495,176	507,068
Change from Previous Year (Acres and %)	N/A	+130,600 + 30	-73,500 - 12	+11,892 + 2
Change from 2005 (Acres and %)	N/A	+130,600 + 30	+ 60,100 + 14	+71,956 +14

Population Trends, Terrestrial MIS

Report acres of regeneration harvest under irregular shelterwood or irregular seedtree system per year; acres of mature pine-oak forest.
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: 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 the Forest for all years is 46 deer per square mile. These data indicate that deer density on the Forest has an increasing trend.

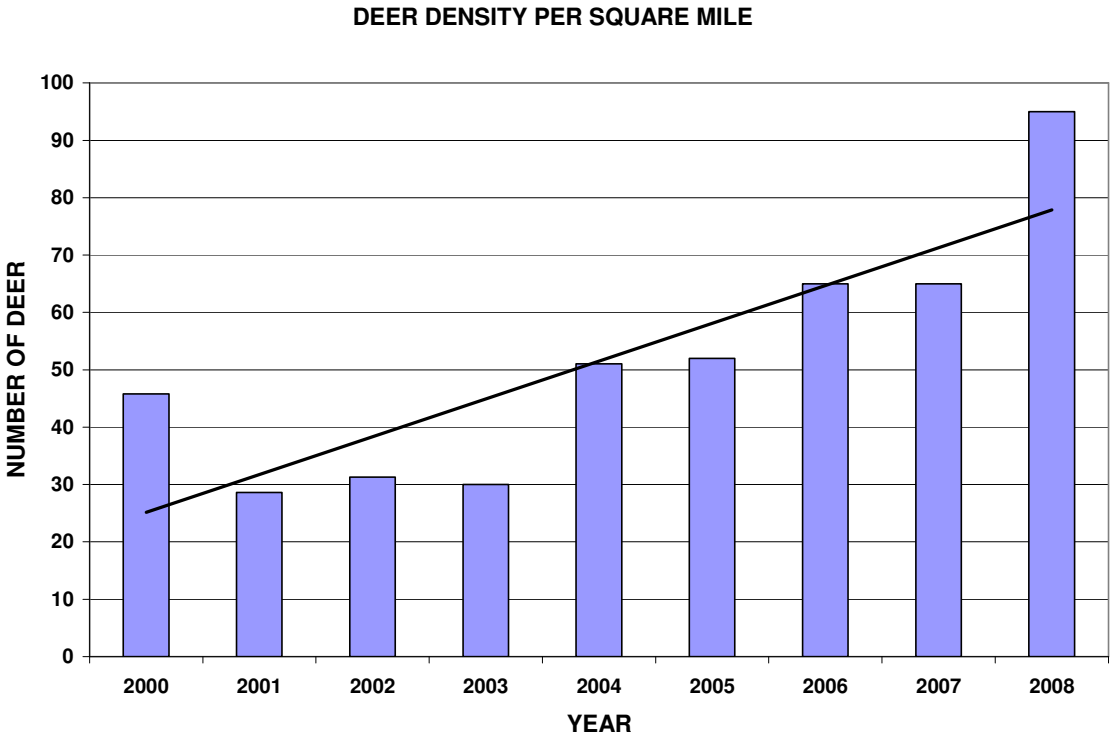


Figure 2. Ouachita National Forest Deer per Square Mile FY 2000 – 2008 Based on Deer Spotlight Data

Deer harvest data indicate an increasing harvest in the counties encompassed by the Forest 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 now, down to 8,726 in FY 2008. Deer harvest can be a relative indicator of deer abundance; however, the influence generated from changes in hunting regulations and harvest limits cannot be determined. Figure 3 shows Ouachita National Forest deer harvest by year from FY 2000 – 2008. These data are provided by the Arkansas Game and Fish Commission and the Oklahoma Department of Wildlife Conservation.

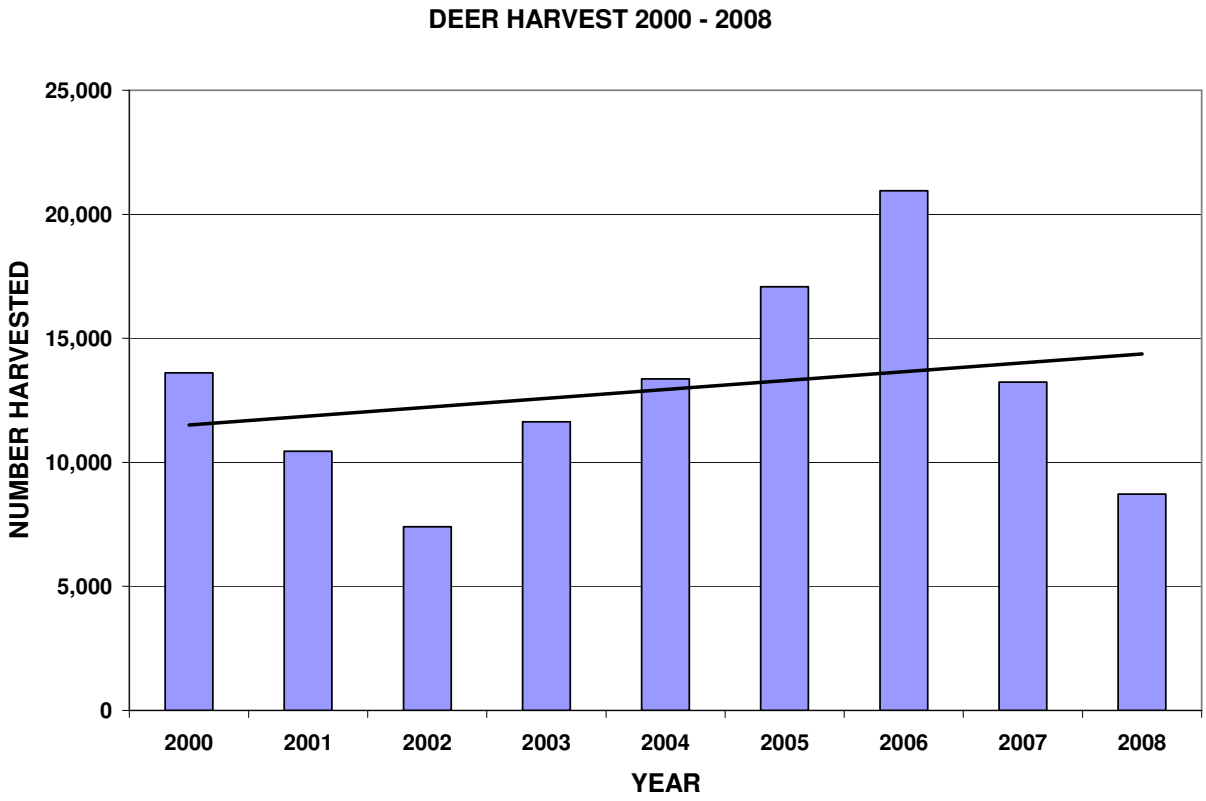


Figure 3. Ouachita National Forest Deer Harvest by Year from FY 2000 - 2008

Modeling habitat capability using the CompPATS model and vegetative data from the Field Sampled Vegetation (FSVeg) is a way of evaluating the ability of the existing habitat to support deer. The estimated habitat capability for deer for fiscal years 2000 -2008 is shown in Figure 4. Habitat carrying capacity is influenced by the amount of prescribed fire and early seral habitat created. The long term habitat capability is showing a stable trend.

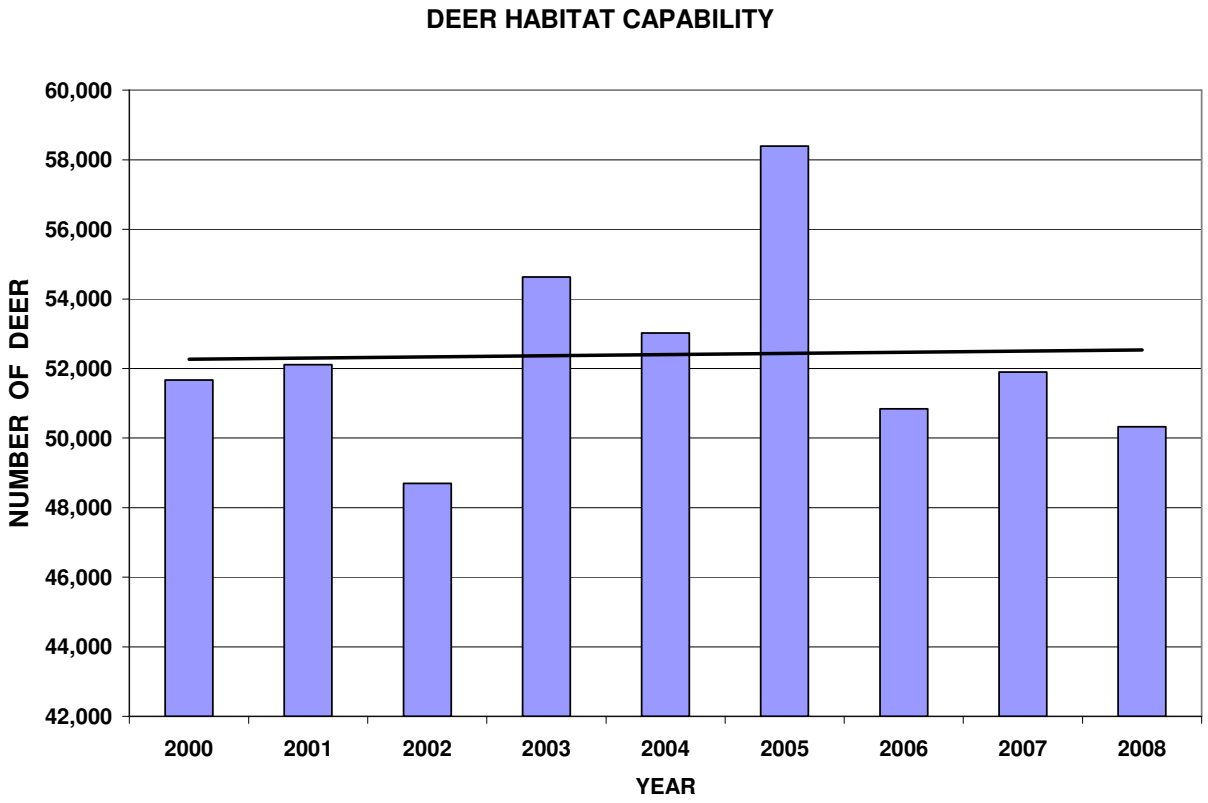


Figure 4. Ouachita National Forest Deer Habitat Capability by FY 2000 - 2008

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 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 -2008 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 4,227 acres were created by regeneration harvests and wildlife habitat improvement in FY 2008.

Interpretation of Trends: The stable but decreasing habitat capability for the past three years as estimated by CompPATS may be related to the creation of acres in grass/forb habitat (forest types ages 0-10 years) preferred by deer. Although acres of created early successional habitat have not met the desired levels, deer densities for FY 2008 are the highest in the last nine years and double the FY 2000 deer density.

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.

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

Northern Bobwhite *(Colinus virginianus)*

The Northern Bobwhite is a Management Indicator Species for the Ouachita National Forest. 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 community (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; data collected on Breeding Bird Survey (BBS) routes, FY 1966 to 2007 (Sauer et al. 2008); the CompPATS Habitat Capability Model; and the Ouachita National Forest Landbird monitoring data collected from 1997 – 2008. 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 2008, bird calls heard per stop have varied from a high of 1.0 bird call per stop in 2005 to a low of 0.45 bird calls per stop in 2008 (Figure 5). Over this eight year period, the Ouachita region averaged 0.65 bird calls per stop per year. These data indicate a slight increasing trend.

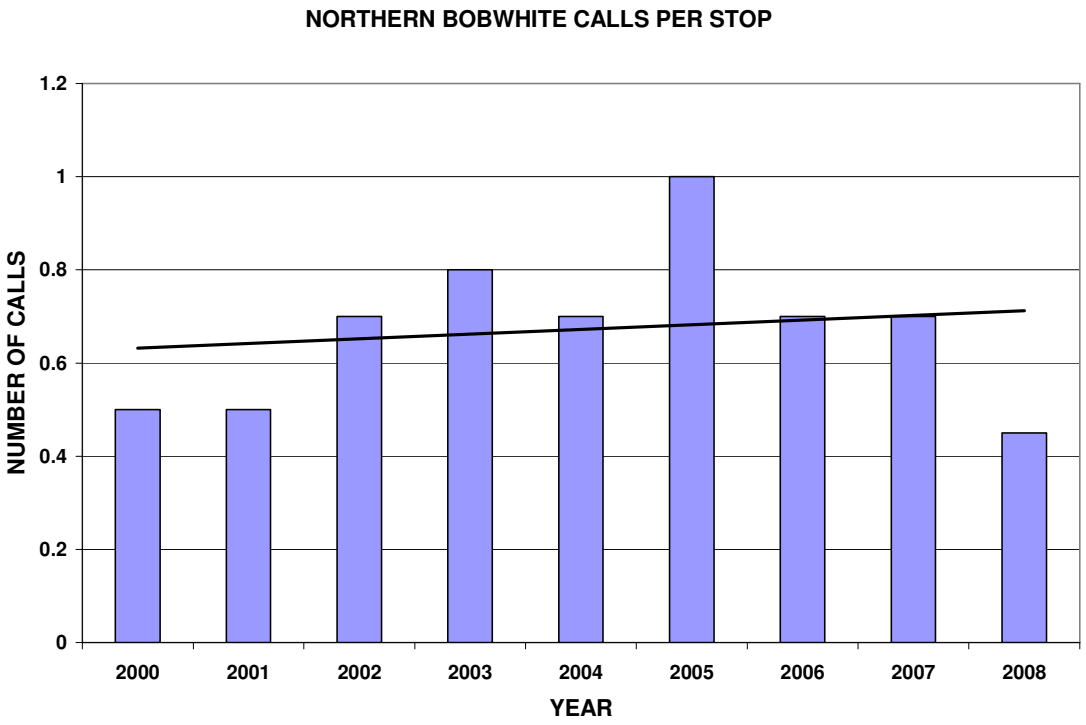


Figure 5. Ouachita National Forest Northern Bobwhite Call Counts – Birds per Stop for Data Years FY 1990 - 2008

Since FY 1997, the Forest has been conducting bird surveys on over 300 Landbird monitoring points. Northern Bobwhite data recorded through these surveys indicate a stable trend in birds detected over this 12 year period (Figure 6).

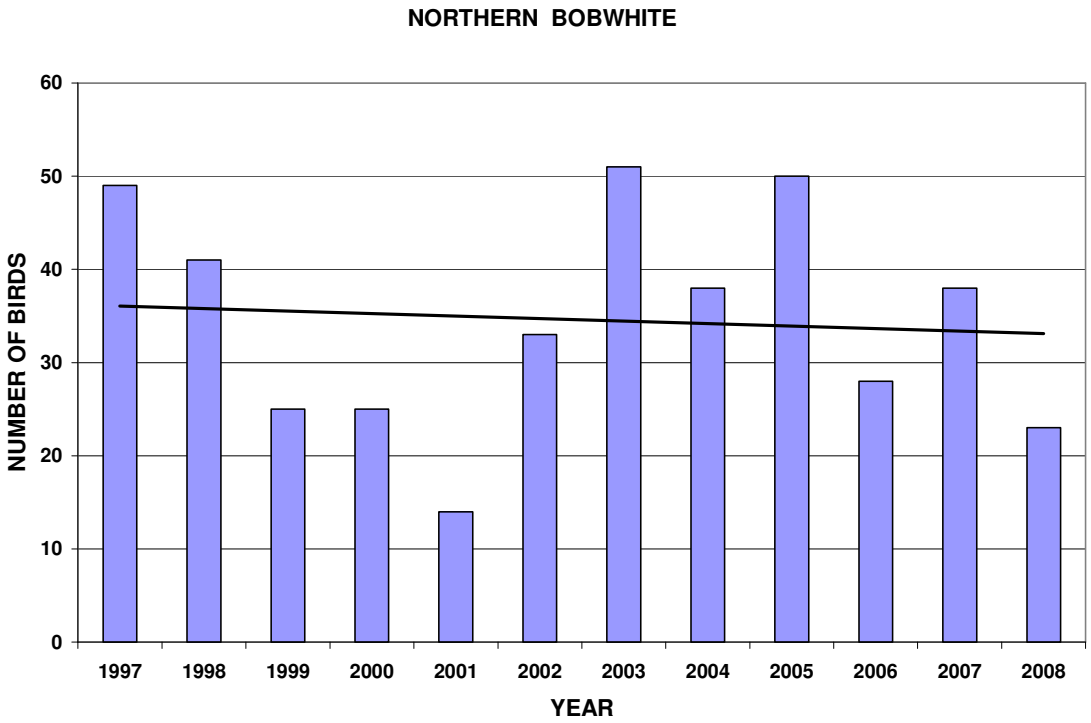


Figure 6. Northern Bobwhites detected on Landbird survey points, Ouachita National Forest, FY 1997 – 2008

The CompPATS habitat capability estimate for the Northern Bobwhite has declined slightly, but steadily, (Figure 7). Although the creation of early successional habitat is higher in 2008 than in 2007, this habitat creation has not yet reached the 2005 Forest Plan objective of 5,500 acres per year.

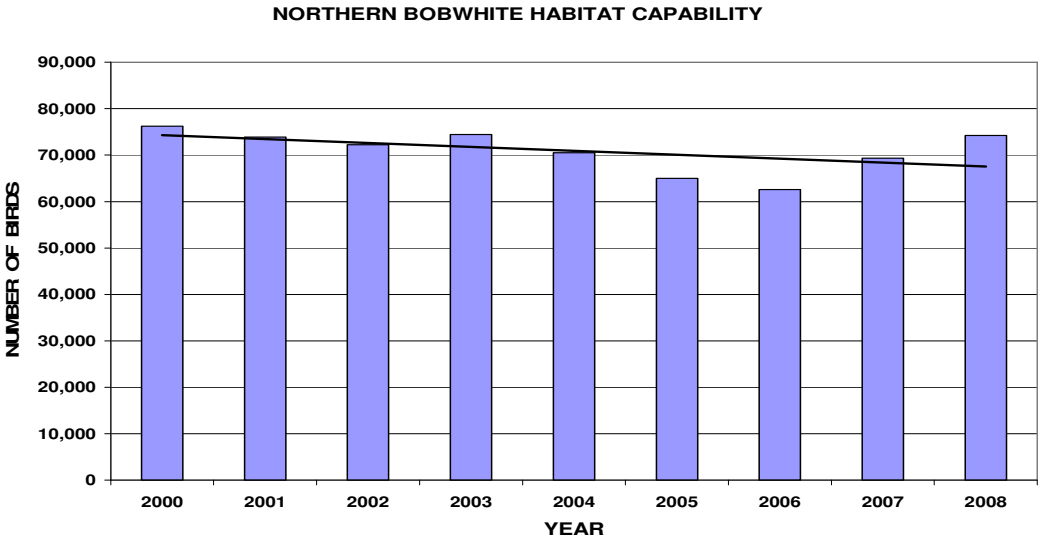


Figure 7. Northern Bobwhite Habitat Capability FY 2000 – 2008, for the Ouachita National Forest

Breeding Bird Survey data (Figure 8), collected over the past 41 years (1966 through 2007), indicate a -3.5 % decline for the Ozark – Ouachita Plateau, and a -4.6% for the period 1980 – 2007 (Sauer et al. 2008).

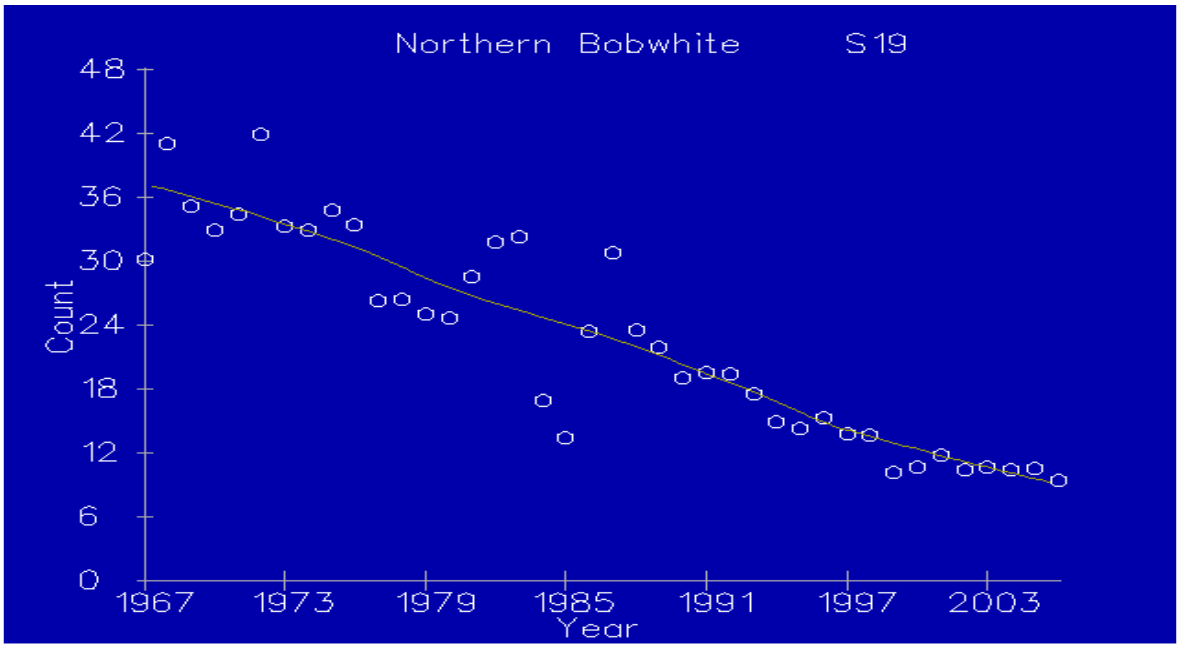


Figure 8. Northern Bobwhite Breeding Bird Survey trend data FY 1966 – 2007 for the Ozark – Ouachita Plateau.

Interpretation of Trends for Northern Bobwhite: Northern Bobwhite Landbird point data indicate a decrease in Northern Bobwhites; however the habitat capability model for Northern Bobwhites indicates increasing habitat capability for the Ouachita National Forest. 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 National Forest 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 indicated by Breeding Bird Surveys.

Implications for Management: The Northern Bobwhite population viability on the Ouachita National Forest is not expected to be threatened and populations are expected to improve through 2005 Forest Plan implementation. Increases in thinning and prescribed fire, especially that 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 (MIS) 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, Breeding Bird Survey data (Sauer et al. 2008), 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). Habitat capability for 2008 is estimated at 18,370 turkeys compared to 2007 which was estimated at 18,316 turkeys.

Eastern Wild Turkey Population Trends: The number of turkey poults per hen has varied from 3.5 in 2000 to 1.5 poults per hen in 2008 (Figure 9). There is a clear downward trend for successful turkey reproduction most likely due to wet spring conditions.

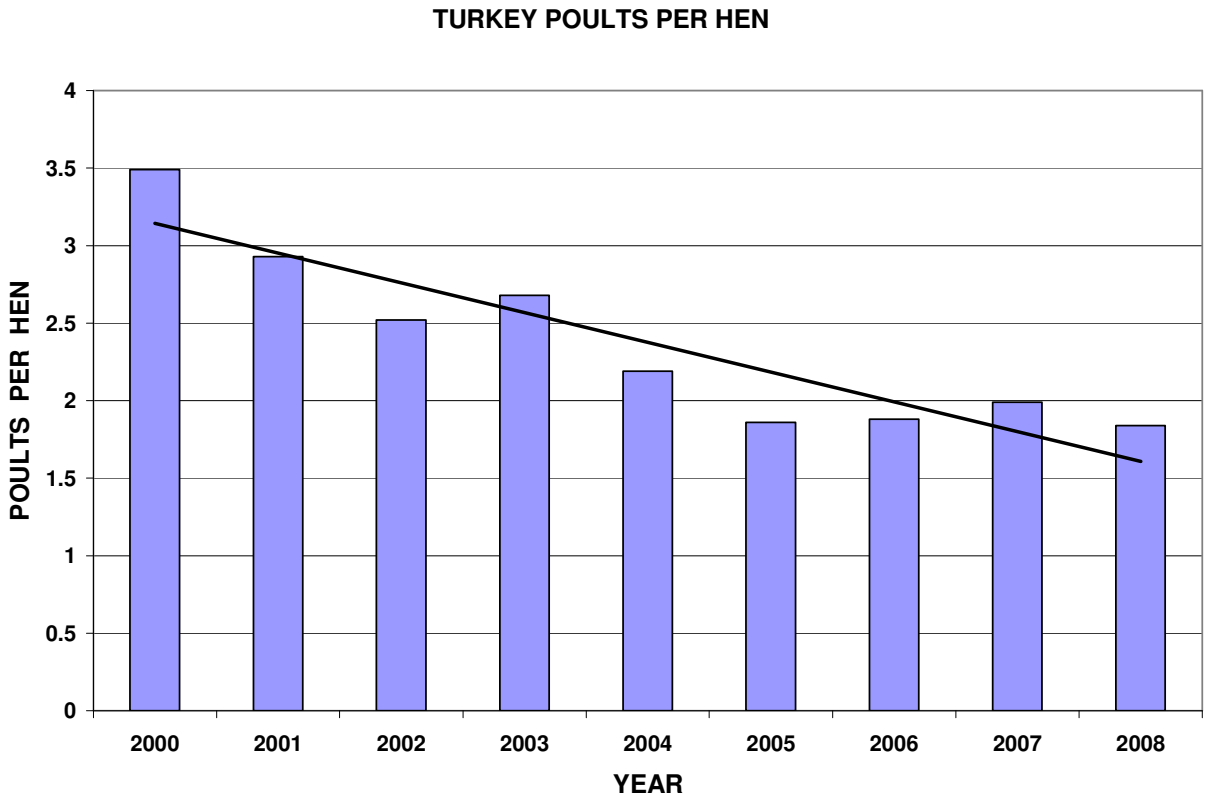


Figure 9. Eastern Wild Turkey Poults per Hen, Ouachita National Forest, FY 2000 – 2008

Spring turkey harvest has varied from a high of about 4,017 birds in FY 2003 to 1,872 in 2008 (Figure 10). The Arkansas Game and Fish Commission addressed the turkey decline by adjusting the hunting season.

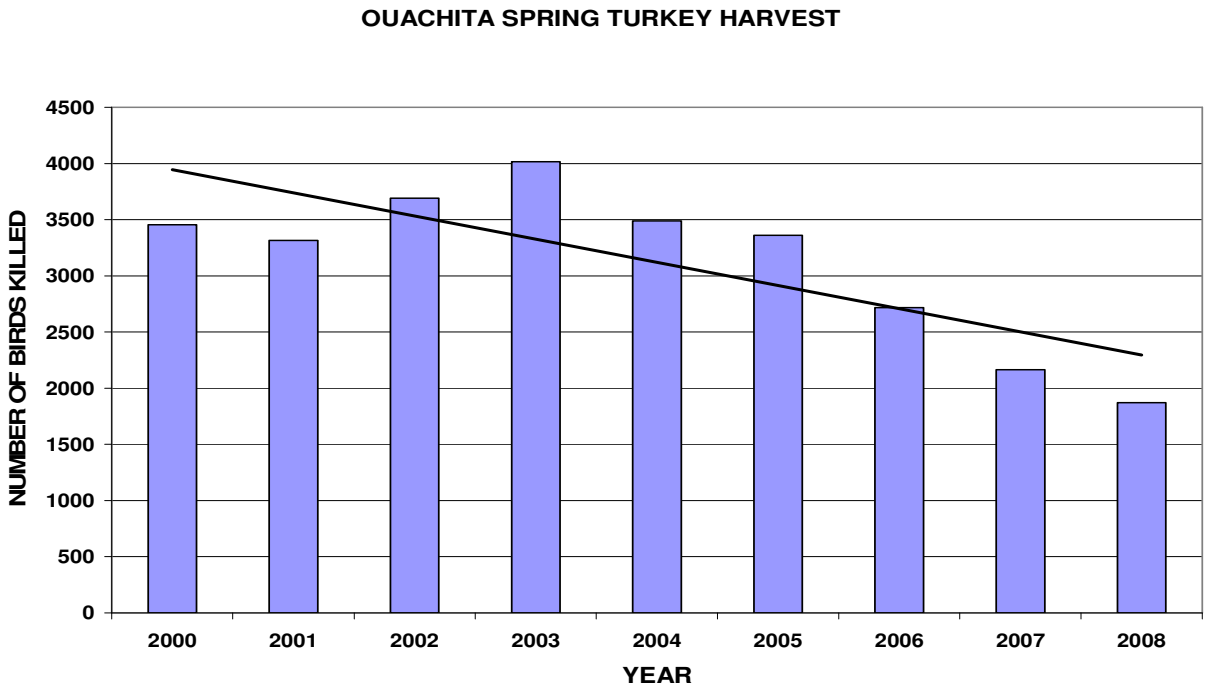


Figure 10. Eastern Wild Turkey Spring Harvest FY 2000 – 2008, Ouachita National Forest

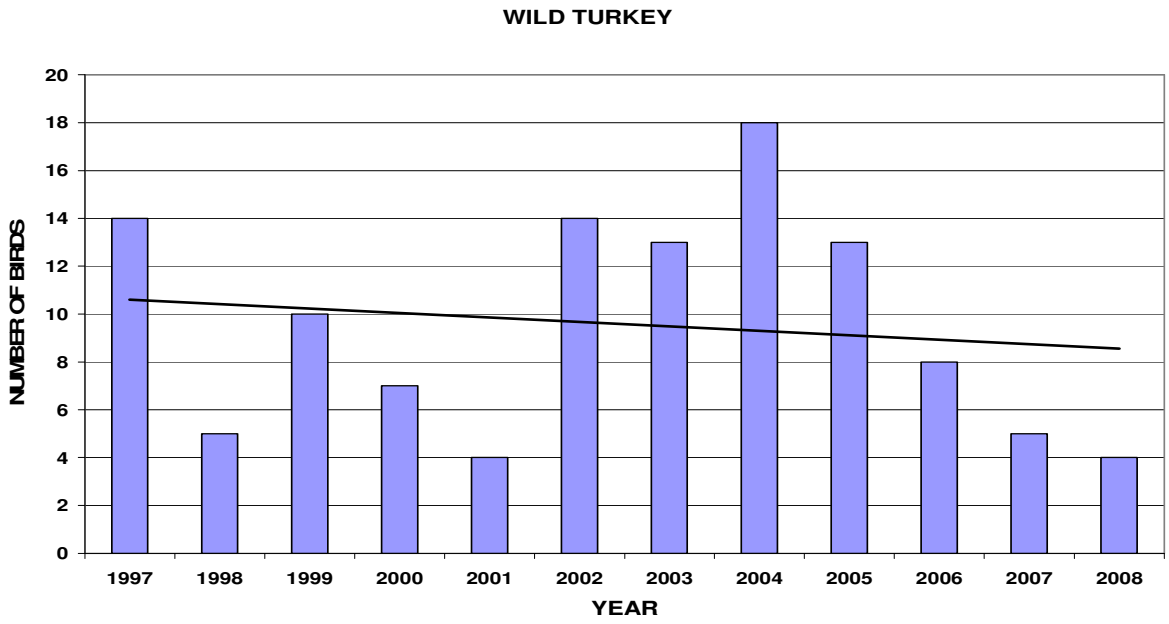


Figure 11. Eastern Wild Turkey Detected on Landbird Points, Ouachita National Forest, FY 1997 – 2008

The wild turkey trend detected on the Forest Landbird point surveys is similar to the drop in harvested birds and poults per hen and is statistically showing a declining trend.

As shown in Figure 12, the available Breeding Bird Survey data for the Ozark and Ouachita Mountains indicate a 2.3 % increase in the turkey population from FY 1966 to FY 2006.

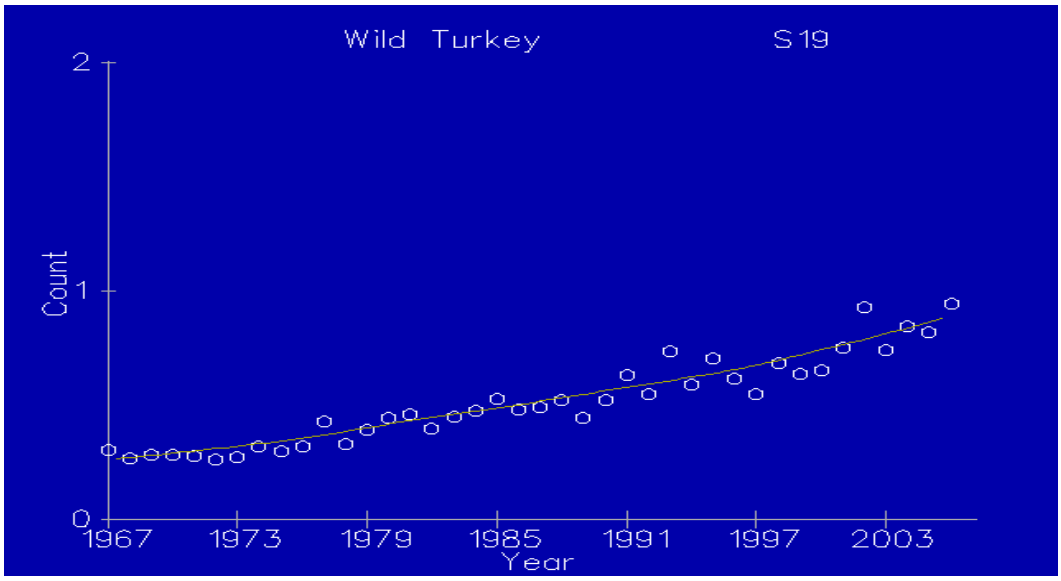


Figure 12 – Eastern Wild Turkey Breeding Bird Survey data for the Ozark–Ouachita Plateau FY 1966–2006 (latest available data)

Figure 13 depicts changes in habitat capability for the years FY 2000 to FY 2008. The overall habitat capability trend is improving with a habitat capable of supporting 18,370 turkeys which is similar to the capability of 18,316 in 2007. This is above the 2005 Forest Plan objective of 9,177 birds for the first period (USDA Forest Service 2005 Final EIS, Page 166).

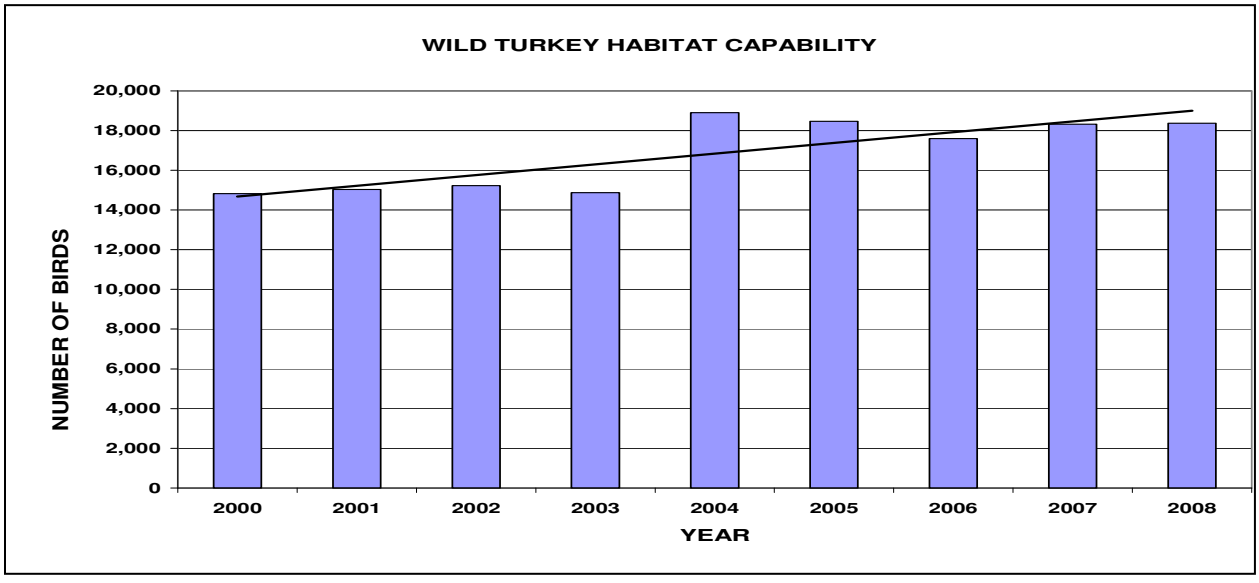


Figure 13. Eastern Wild Turkey Habitat Capability, Ouachita National Forest, FY 2000 - 2008

Interpretation of Trends: Turkey habitat capability and Breeding Bird Survey data indicate overall positive trends for the turkey population. However, the drop in turkey harvest, poults per hen, and birds detected on the Landbird points indicate a continuing reduction in the number of turkey. The habitat capability remains above the level projected in the 2005 Forest Plan and 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 could implicate 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 and breeding bird surveys are showing positive trends. There is no reason to believe that this species is in danger of losing population viability or falling below the desired population levels. One of the wildlife management agencies, the Arkansas Game and Fish Commission, has shortened the season to stimulate a positive response. Indications are that the Eastern Wild Turkey and its habitat are doing well on the Forest but trends warrant watching.

Red-cockaded Woodpecker *(Picoides borealis)*

The Red-cockaded Woodpecker (RCW) is a Management Indicator Species (MIS) for the Ouachita National Forest 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: This is one of the most intensively monitored species on the Forest, and monitoring is done 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 14 and 15).

Red-cockaded Woodpecker: The Red-cockaded Woodpecker active territories have increased from a low of 11 territories in FY 1996 to 47 active territories in FY 2008. The Red-cockaded Woodpecker data for FY 2008 indicated 110 adult birds and 58 fledglings compared to 103 adult birds and 67 fledglings in FY 2007 and 88 adult birds and 49 fledglings in FY 2006. Also during FY 2008, there were 40 RCW nest attempts, up from 37 last year. Six nests were lost to predators, most likely southern flying squirrels. In two of these cases, adults who lost clutches or broods re-nested.

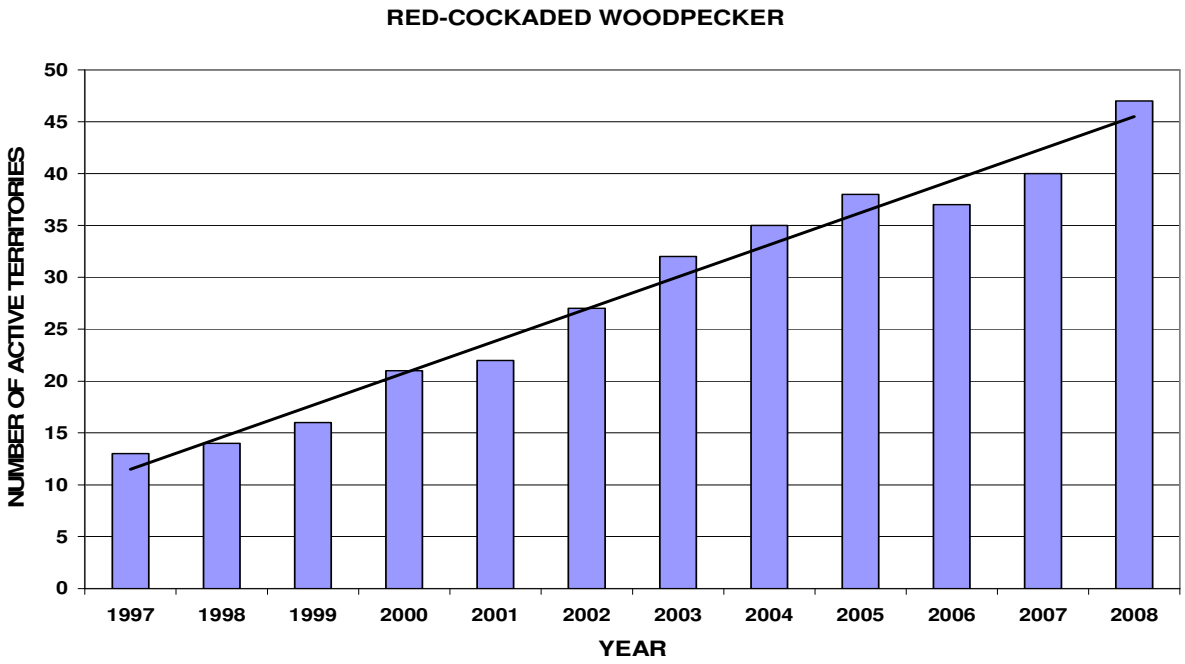


Figure 14. Red-cockaded Woodpecker Active Territories, Ouachita National Forest, FY 1997 – 2008

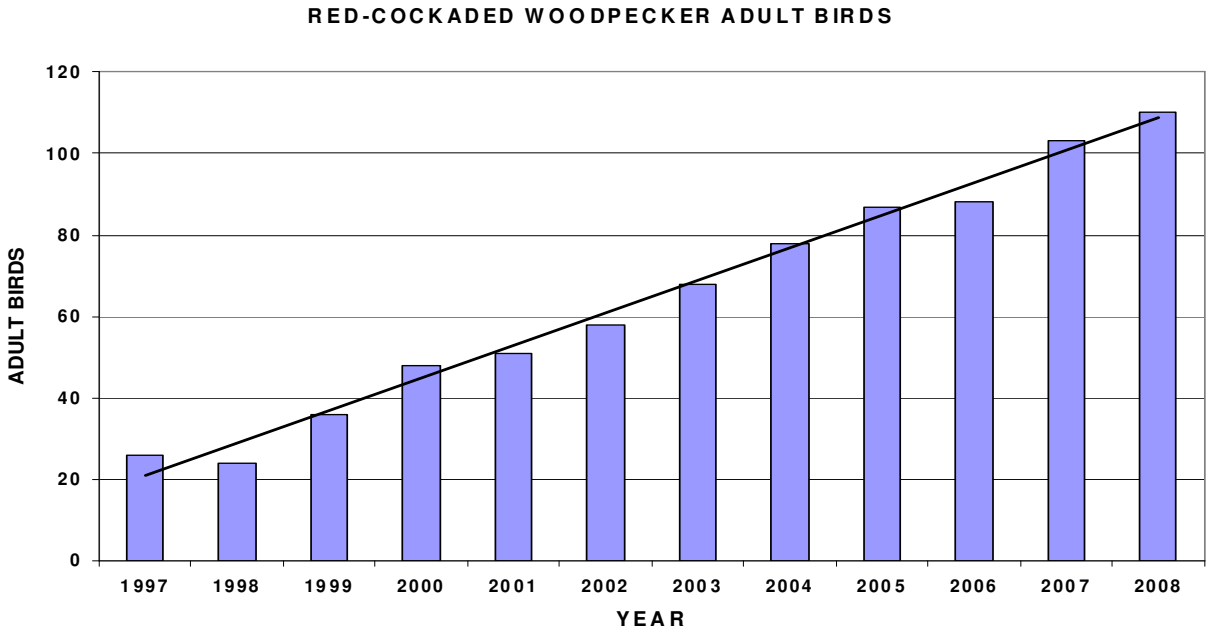


Figure 15. Red-cockaded Woodpecker Adult Birds, FY 1997 – 2008

Interpretation of Trends: Populations of the Red-cockaded Woodpecker on the Ouachita National Forest have normal fluctuations through natural mortality and predation. These changes appear more dramatic in smaller populations than they would appear in larger populations. To be able to maintain the current level, with slight increases in the number of active nest territories and adult birds, is a significant step forward and indicates the management success and commitment for the recovery of this species.

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-cockaded 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 National Forest management intensity will be maintained and intensive monitoring will be continued.

Pileated Woodpecker *(Dryocopus pileatus)*

The Pileated Woodpecker is a Management Indicator Species (MIS) for the Ouachita National Forest, 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 Forest Landbird point count data, North American Breeding Bird Survey (BBS) (Sauer et al. 2008), 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 trend as indicated by Breeding Bird Survey data, Forest Landbird data and habitat capability data are mixed. Twelve years of Landbird monitoring data on the Ouachita National Forest, shown in Figure 16, indicate the long term trend to be stable for Pileated Woodpecker.

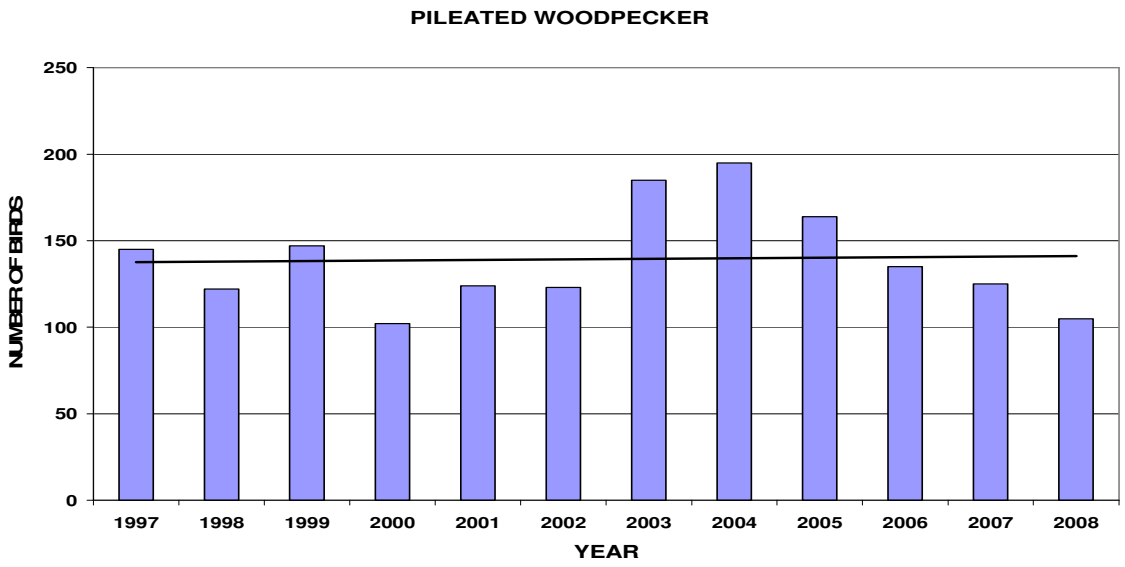


Figure 16. Pileated Woodpeckers Detected on Landbird Point Counts, Ouachita National Forest, 1997 – 2008

The Breeding Bird Survey data shown below in Figure 17 indicate a slight downward trend (- 0.6 %) in the period of 1966 – 2007, and a 1.0 % increase for data from the 1980 to 2007 period, for the Ozark–Ouachita Plateau.

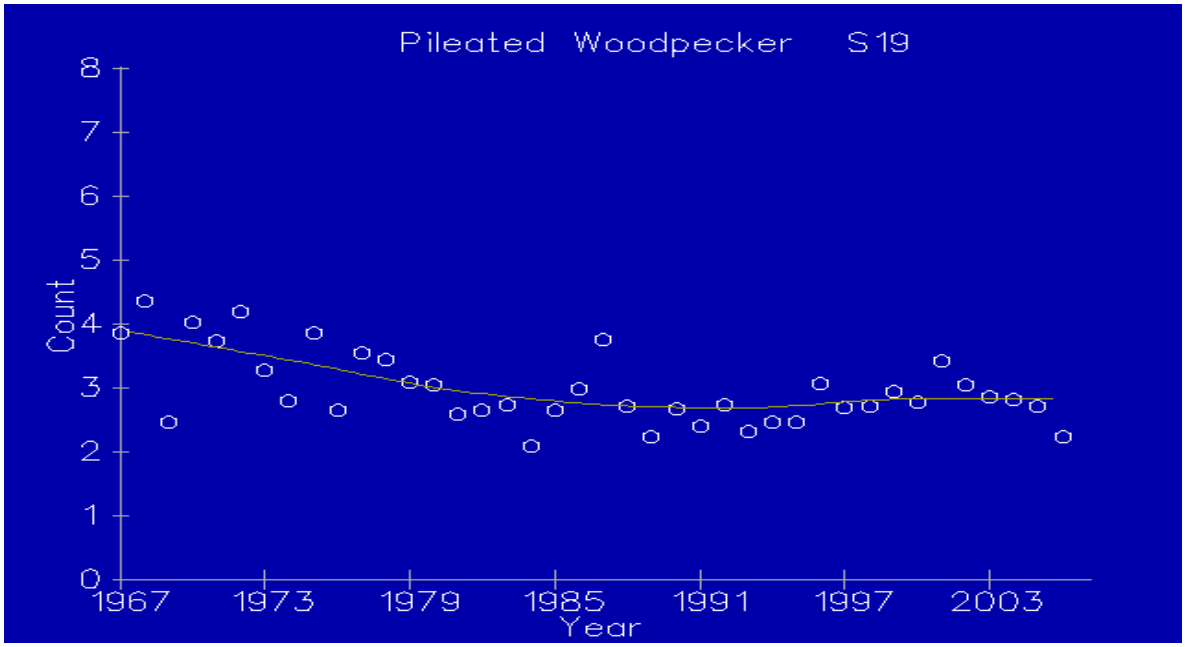


Figure 17. Pileated Woodpecker Breeding Bird Survey trend data 1966 – 2007 for the Ozark – Ouachita Plateau

CompPATS estimates for the habitat capability, using all forest types, indicate an increasing trend (Figure 18). 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.

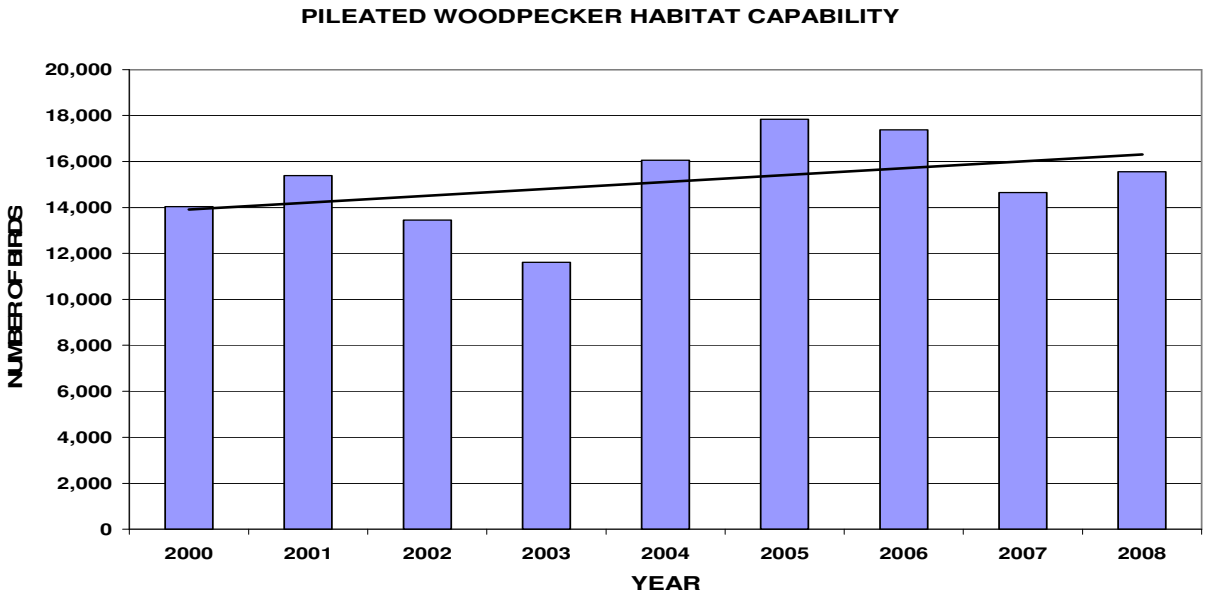


Figure 18. Pileated Woodpecker habitat capability on the Ouachita National Forest for 2000 - 2008

Interpretation of Trends: The upward population trend in the Landbird point data and habitat capability are 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 15,555 birds exceeds the 2005 Forest Plan bird population objectives of 11,265 (USDA Forest Service. 1995). 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 National Forest. There are no indications of a need to alter management direction.

Scarlet Tanager *(Piranga olivacea)*

The Scarlet Tanager is a Management Indicator Species (MIS) for the Ouachita National Forest, 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 Forest Landbird point data, North American Breeding Bird Survey (BBS) (Sauer et al. 2008), 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 – 2008 (Figure 19) indicate an overall stable trend for the Scarlet Tanager.

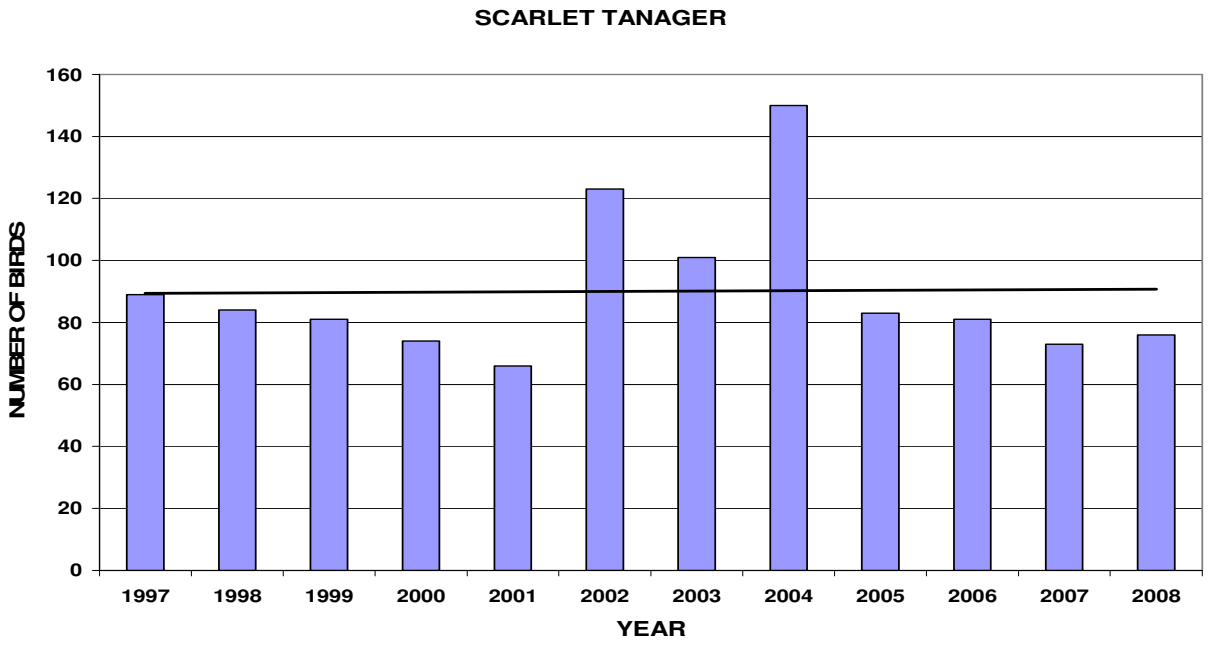


Figure 19. Scarlet Tanager Detected, Ouachita National Forest Landbird Points 1997 – 2008

The Breeding Bird Survey data (Figure 20) indicate a gradual, increasing trend of 1.0 % for 1966 – 2007, for the Ozark-Ouachita Plateau.

Ouachita National Forest Landbird point data, Breeding Bird Survey data, and Habitat capability data support a positive trend for the Scarlet Tanager.

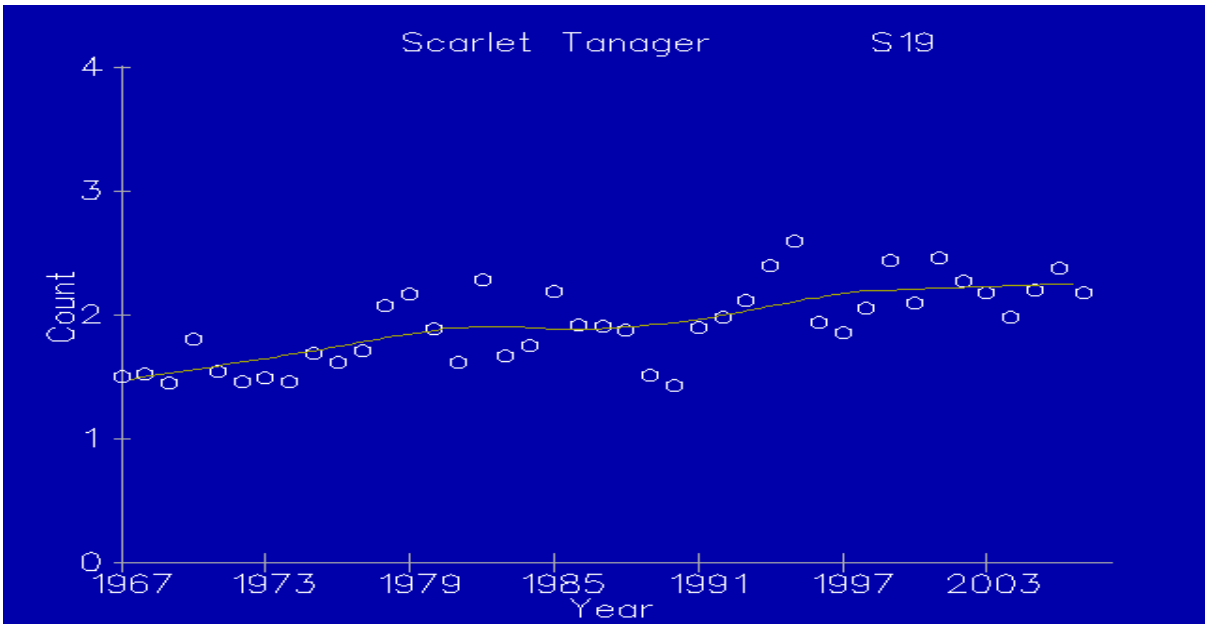


Figure 20 - Scarlet Tanager Breeding Bird Survey Trends for the Ozark-Ouachita Plateau 1966 – 2007

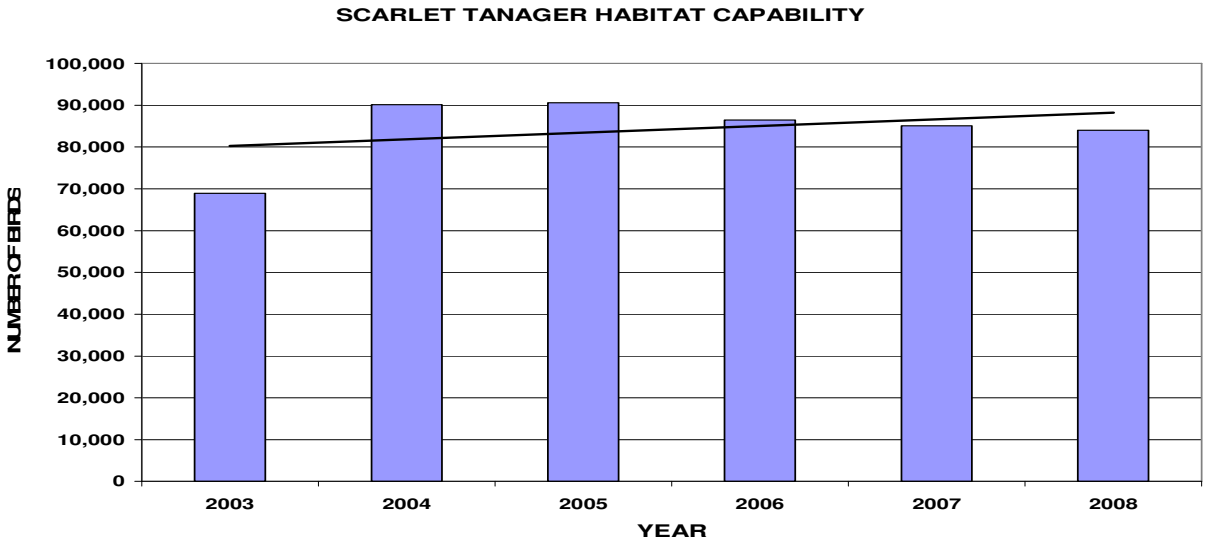


Figure 21. Scarlet Tanager Habitat Capability Trends, Ouachita National Forest 2003 – 2008

Interpretation of Trends: Data are supporting a conclusion of a gradual, increasing trend on the Ouachita National Forest and the Ozark-Ouachita Plateau where mature hardwood and mixed types are represented. On the Ouachita National Forest, there are 454,757 acres of hardwood and hardwood/pine forest types greater than 41 years old that will continue to mature. The Scarlet Tanager and its habitat are secure within the Ouachita National Forest. The continued long-term viability of this species is not in question. With the maturing of nearly 455,000 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 National Forest and the Ozark and Ouachita Plateau. The Scarlet Tanager appears secure within its overall range. Its viability as a species is not in question. The Scarlet Tanager will be retained as a Management Indicator Species and monitoring will continue through the Breeding Bird Surveys, Landbird point counts, and habitat capability monitoring processes.

Prairie Warbler *(Dendroica discolor)*

The Prairie Warbler is a Management Indicator Species (MIS) on the Ouachita National Forest, 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: The North American Breeding Bird Survey (Sauer et al. 2008) indicating trend results for the Ozark - Ouachita Plateau, Forest Landbird point data (1997 – 2008), and the Habitat Capability data are sources for evaluating Prairie Warbler population trends.

Population Trends: The available Breeding Bird Survey data (Figure 22) indicate a significant trend of - 4.6 percent for periods of consideration, 1966 – 2006 for the Ozark-Ouachita Plateau.

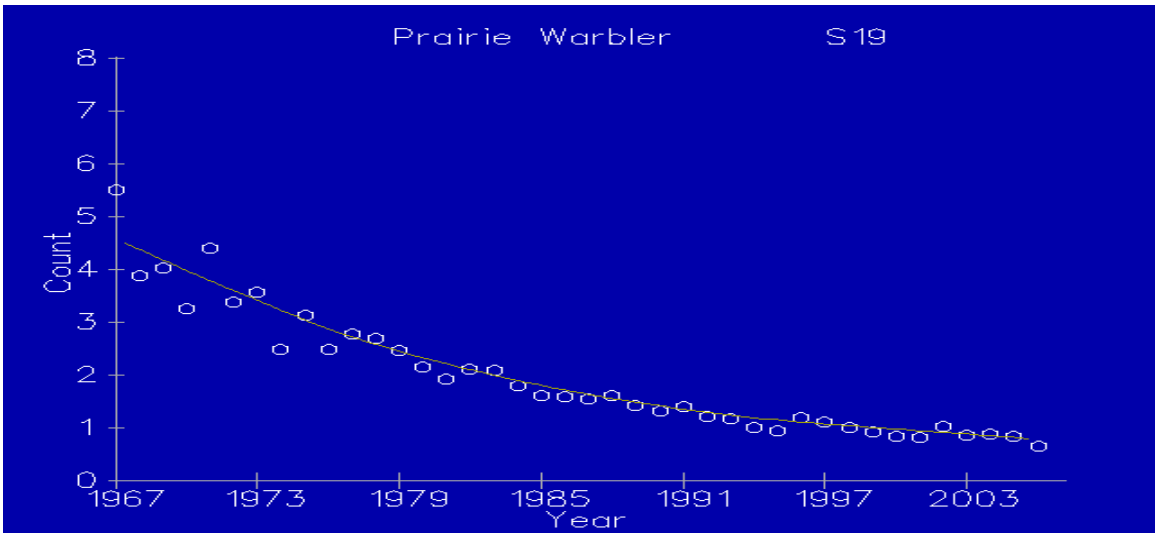


Figure 22. Prairie Warbler Breeding Bird Survey population trend for Ozark-Ouachita Plateau for 1966 - 2006

Based on the data available, the Prairie Warbler continues in a downward trend. These data are in agreement with the Breeding Bird Survey data for the Ozark-Ouachita Plateau and the same downward trend that is indicated throughout the nationwide Prairie Warbler range.

Figure 23 indicates the number of Prairie Warblers recorded on the Landbird point counts, and Figure 24 displays the Ouachita National Forest habitat capability. Both of these charts indicate a downward trend.

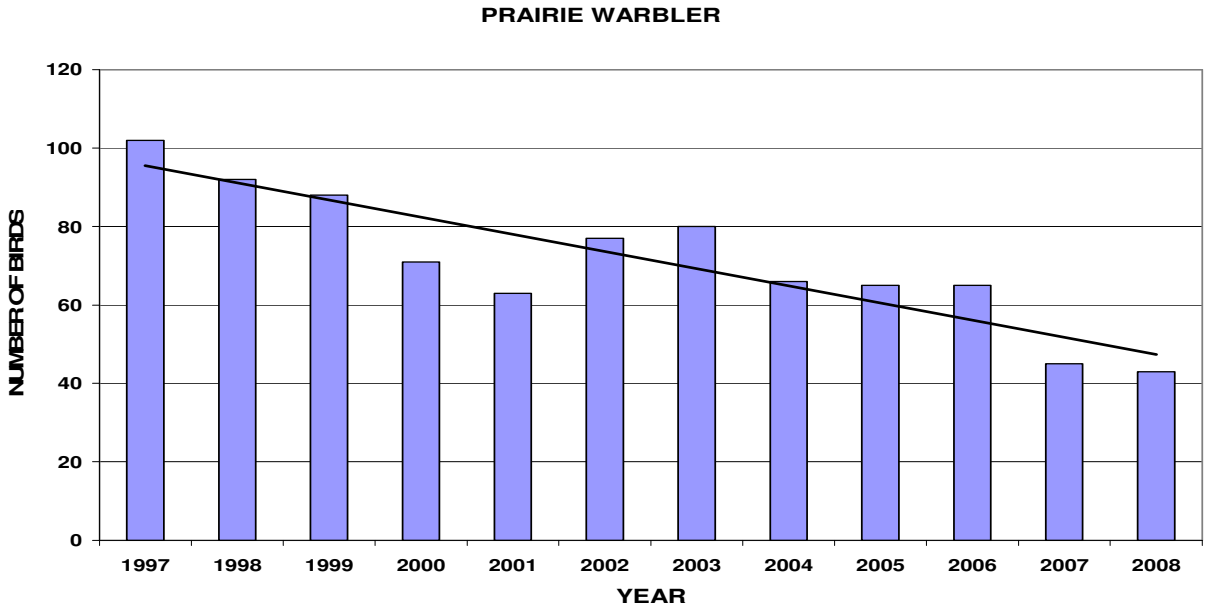


Figure 23. Prairie Warbler Detected on Landbird Point Counts, Ouachita National Forest 1997 – 2008

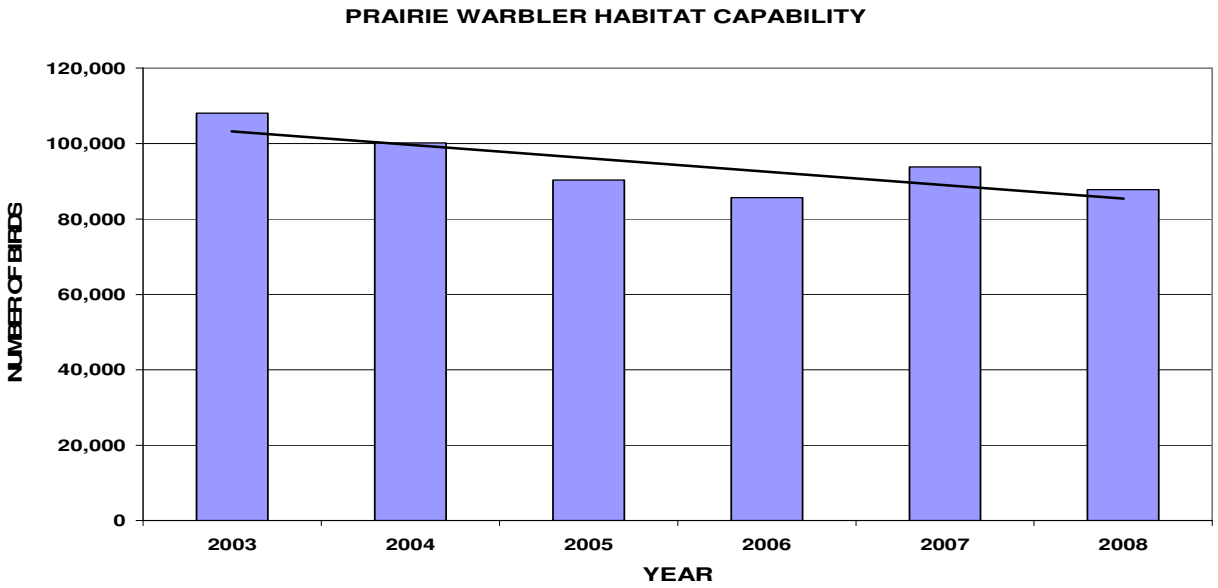


Figure 24. Prairie Warbler Habitat Capability Trends, Ouachita National Forest 2003 – 2008

Interpretation of Trends: Data support a conclusion of a declining population trend for the Prairie Warbler on the Forest and survey wide. This decline is considered to be directly related to the

decline in habitat in acres of early seral habitat available. See Figure 1 showing early seral habitat.

The decline in early seral habitat has been recognized and was addressed in the 2005 Forest Plan. Forest management has gone from approximately 15,000 to 18,000 acres of clear-cutting per year in the later 1980's to a low of about 800 acres of seedtree/shelterwood cutting in 2002. The changes by year in the creation of early seral habitat in the pine and pine/hardwood management types are demonstrated in Figure 1.

The Prairie Warbler has demonstrated a decline for the past decade (Figure 23) and mirrors the decline of habitat capability depicted in Figure 24. 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). The Prairie Warbler and its habitat will continue to be monitored.

Implications for Management: The Prairie Warbler has a declining population trend within the Forest and throughout its overall range. Although declining, the population viability on the Forest 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 by improving habitat.

The Prairie Warbler will continue to be monitored through the Breeding Bird Surveys, Landbird point counts, and habitat relationship processes. 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 (MIS) is conducted to determine the status of the species and conservation needs. Table 4 displays the expected population trends, apparent population trends, risk of 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 (*Odocoileus virginianus*)	Decreasing	Increasing	None	None
Northern Bobwhite (*Colinus virginianus*)	Decreasing	Decreasing	None	None
Eastern Wild Turkey (*Meleagris gallopavo*)	Stable	Decreasing	None	None
Red-cockaded Woodpecker (*Picoides borealis*)	Increasing	Increasing	None	None
Pileated Woodpecker (*Dryocopus pileatus)*	Stable	Stable	None	None
Scarlet Tanager *(Piranga olivacea)*	Stable	Increasing	None	None
Prairie Warbler *(Dendroica discolor)*	Decreasing	Decreasing	None	None

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 2008, twenty samples were taken at seventeen lakes and ponds. Story Pond was sampled in the spring and fall and North Fork Lake received one spring and two fall electrofishing samples due to the availability of Ouachita Baptist University students (Figure 25). The Ouachita National Forest appreciates the help in sampling by Dr. Jim Taylor and his classes from Ouachita Baptist University.

Figure 25. Ouachita Baptist University Students Helping with Sampling

Electrofishing results for 2008 showed some recovery from the past two year's of poor electrofishing sampling results (Figure 26). The fall electrofishing season was plagued by a number of cold fronts that tended to push fish into deeper water with resultant lower catch rates.

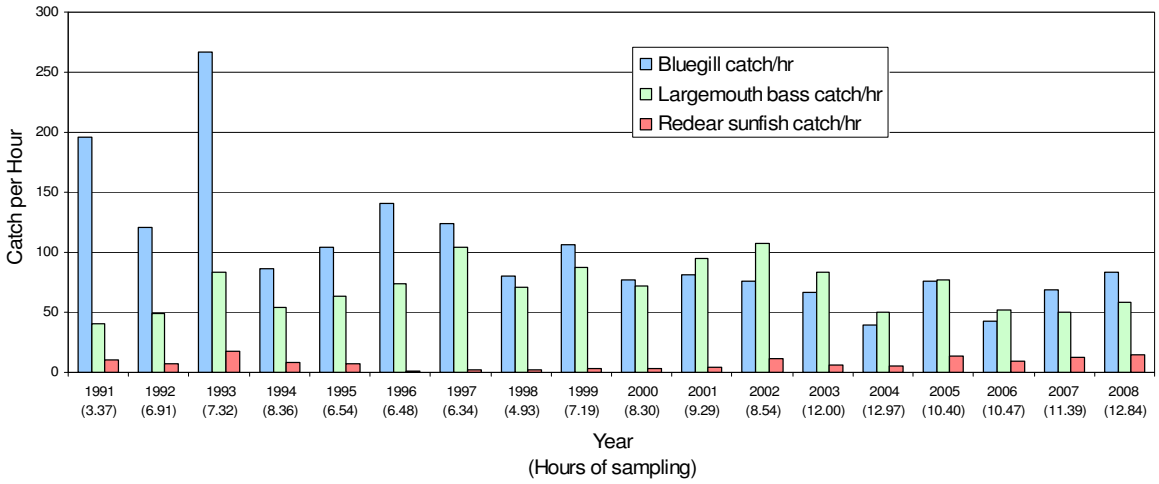


Figure 26. Annual Pooled Catch per Hour

While typical catches of big bass were missing from the Cedar Lake sample in Oklahoma, several nice bass and bluegill were taken from several lakes. (Figures 27 - 30).

Figure 27. Lake Sylvia 5.6 lb. Largemouth Bass

Figure 28. Huston Watershed Lake Bluegill

Figure 29. Dry Fork Largemouth Bass

Figure 30. Additional Dry Fork Largemouth Bass

It should be noted that the following discussions on bluegill, largemouth bass, redear sunfish, white crappie, gizzard shad, and threadfin shad are by calendar year, not fiscal year. Fisheries data are analyzed by year class or birth year. The federal government's fiscal year 2008 started in October 2007 and ran through September 2008. 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 2008 Forest Monitoring Report, the sampling in the spring occurred during FY 2008 and the fall sampling took place during FY 2009 and data for both are included in this 2008 monitoring report.

Bluegill *(Lepomis macrochirus)*

The bluegill catch for 2008 was the ninth highest since 1991. This compares to 2007 data where the catch was the second lowest since 1991. The trend line associated with the annual pooled catch per hour is only slightly significant statistically (Figure 31). This graph also 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.

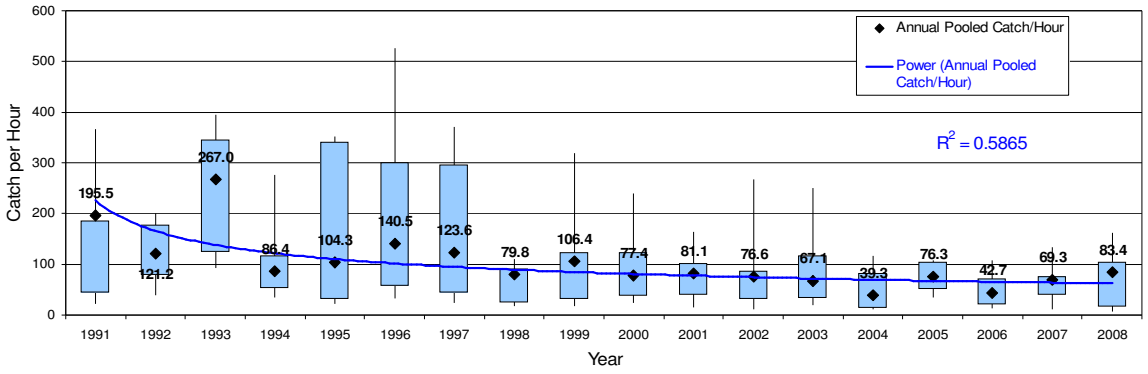


Figure 31. Annual Pooled Bluegill Catch per Hour

In comparison to results in other years, catch per hour samples in 2008 were about two-thirds below average as shown in Figure 32. During 2008, only six lake and pond samples had bluegill catches above the average catch per hour for each lake and most of the ponds had lower than average catches.

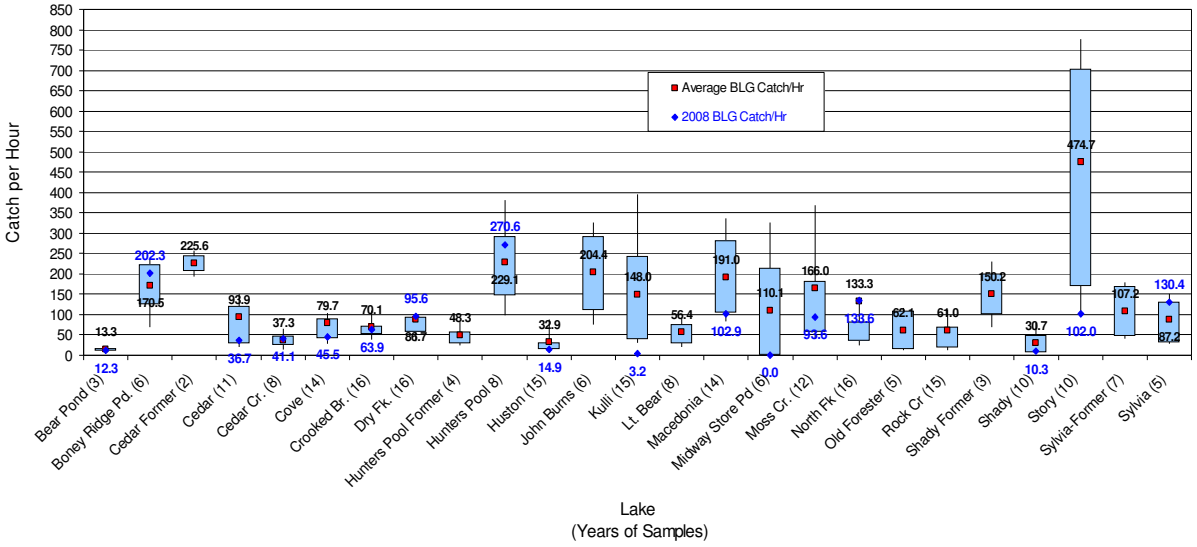


Figure 32. Bluegill Catch per Hour by Lake

Harvestability of bluegill in 2008 (Figure 33), while the sixth highest in eighteen years of sampling, was slightly above last year's Proportional Size Distribution also know 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 2008 sample shows less variability than most samples to date.

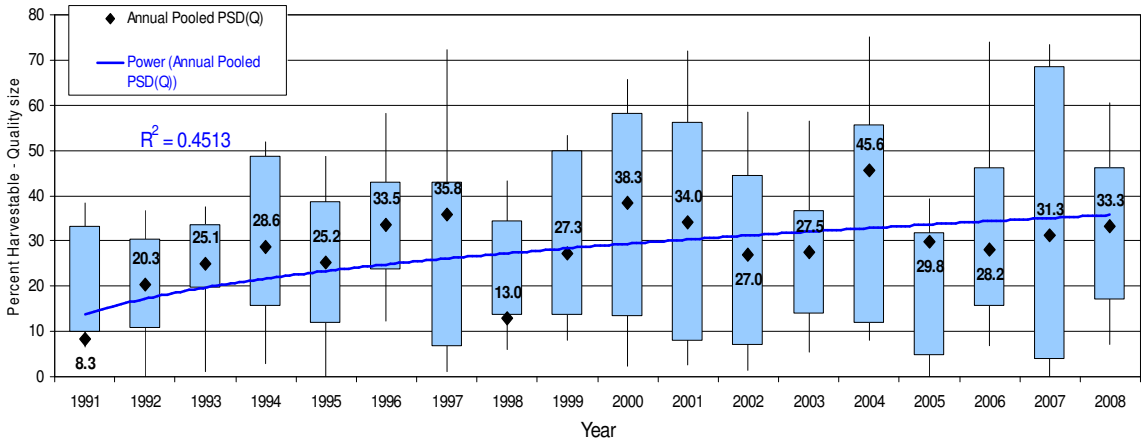


Figure 33. Proportional Size Distribution for Bluegill by Year

The variability of this year's sampling can be seen in the following box-whisker plot (Figure 34). Significant outliers can be seen in the extremely high harvestability of bluegill at Houston Watershed Lake and also at Hunters Pool, where catches are above the 90 percentile of the

samples at each waterbody. At Kulli, we had a catch of zero bluegill which has never happened before and may be attributed to the wild fluctuations in water levels the pond has experienced in the past five years. We also caught fewer big bluegill this year at Boney Ridge Pond. Both Hunters Pool and Boney Ridge Pond had extremely high catch rates the fall of 2008 but Hunters Pool big bluegill were schooled up and Boney Ridge's big bluegill were scattered and not as vulnerable.

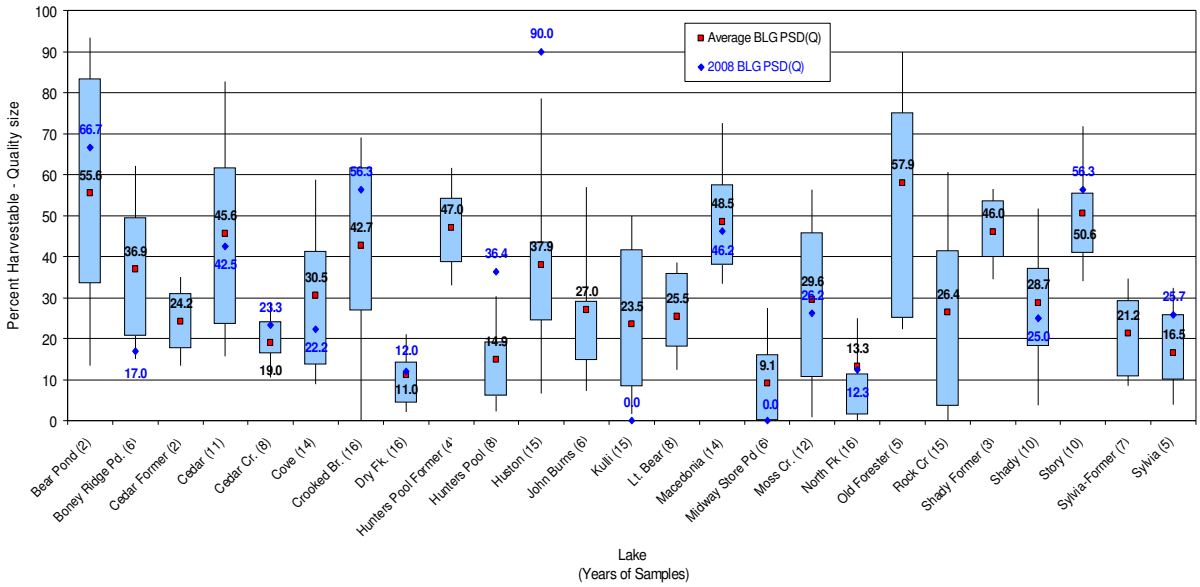


Figure 34. Proportional Size Distribution for Bluegill by Waterbody

The same set of graphs for Proportional Size Distribution (Preferred), previously known as RSD (Relative Stock Density) for bluegill equal to or in excess of 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 35).

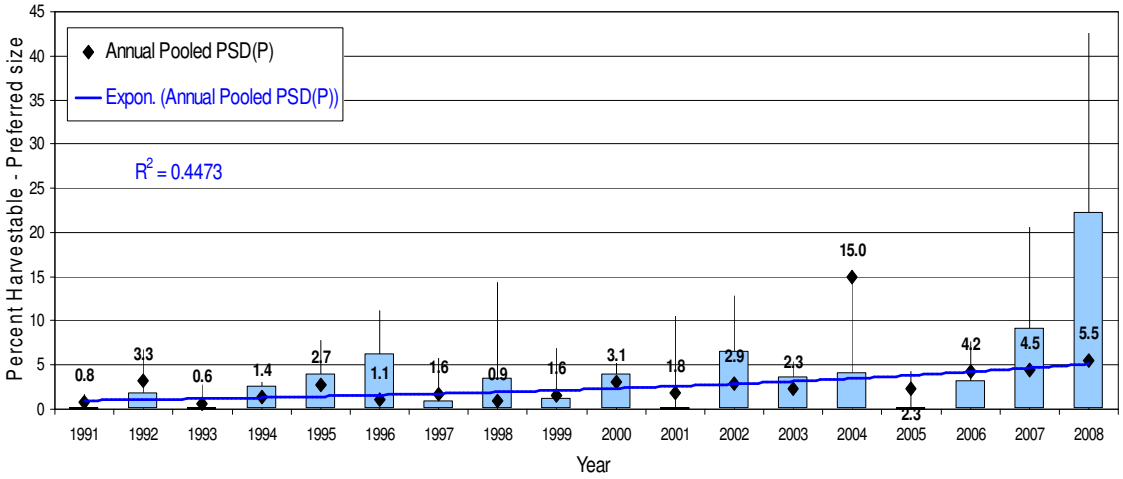


Figure 35. Proportional Size Distribution (Preferred) for Bluegill by Year

Nine of the lakes and ponds in 2008 had bluegill in excess of 7.9 inches caught (non-zero values for 2008 BLG PSS (P)) (Figure 36).

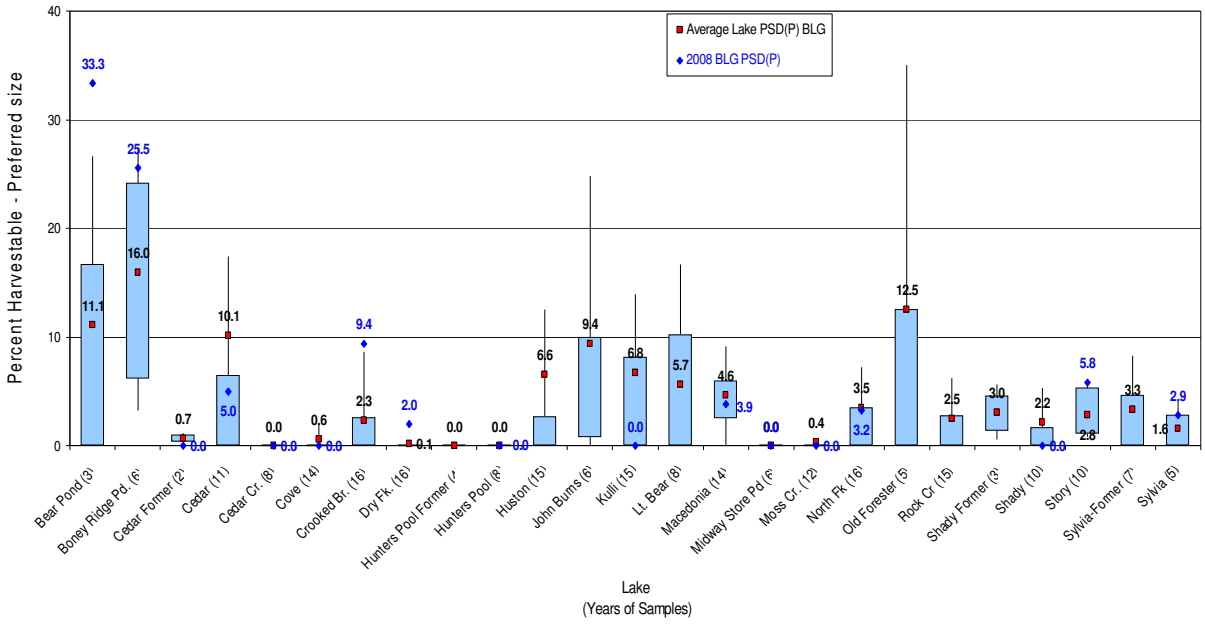


Figure 36. Proportional Size Distribution (Preferred) for Bluegill by Waterbody

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 2008 bluegill capture rates showing such wide variability; the same would be expected and is seen for PSD and PSD (P) as shown above.

As sampled in 2008, bluegill populations across the Ouachita National Forest are at suitable and sustainable levels and their viability is not in question.

Largemouth Bass *(Micropterus salmoides)*

The largemouth bass electrofishing catch rate in 2008 sampling was the seventh lowest in 18 years of sampling with a trend of increasing catches from 1991 through 1999 and decreasing catches since then (Figure 37), but this trend is not statistically significant. The 2008 catch rate is the highest of the past three years.

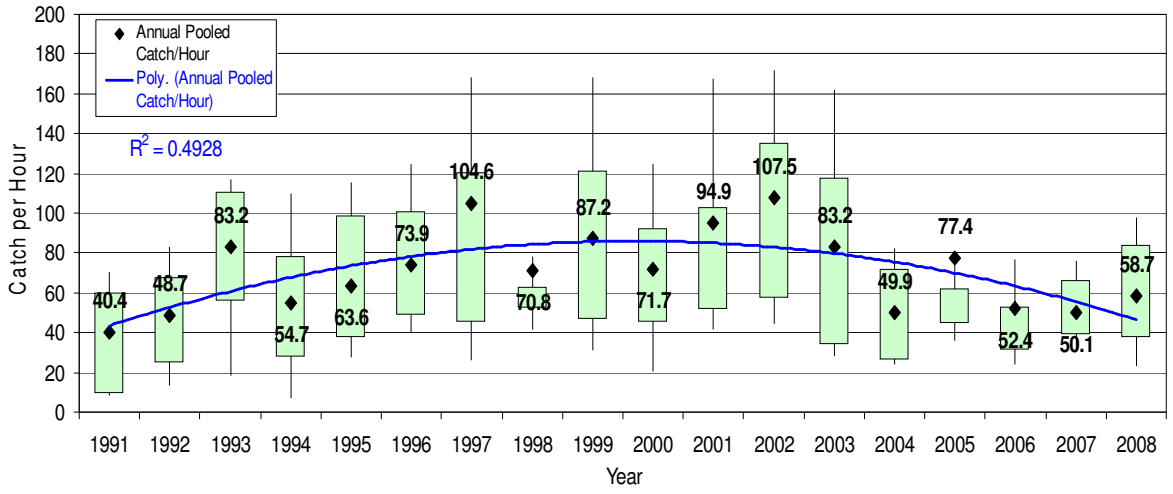


Figure 37. Annual Pooled Largemouth Bass Catch per Hour

Much like the bluegill results, largemouth bass catch rates were low overall but improving. Results from three waterbodies showed bass catches that were within the 25-75% range box and nine waterbodies showed catches within the 10-90% legs of the boxes (Figure 38.) Two new high catch records and three new low records were set in 2008. Story and North Fork had their third and fifth lowest bass catches respectively, and Cedar Creek had its second lowest catch. Dry Fork had it third highest catch rate for bass with Lake Sylvia and Cove Creek Lake having their highest bass catch rates.

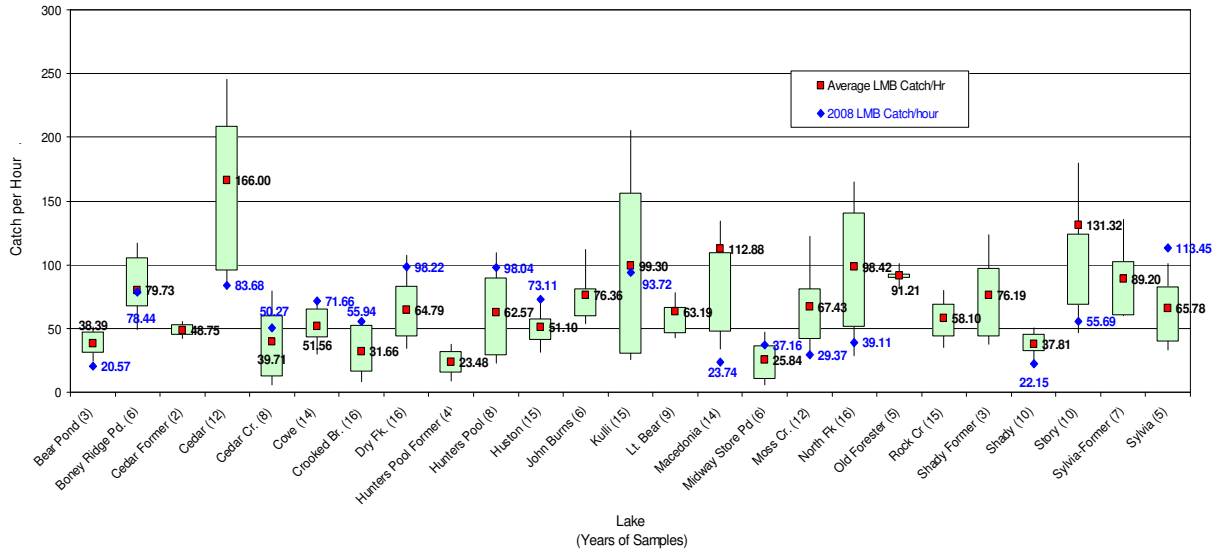


Figure 38. Largemouth Bass Catch per Hour by Lake

Harvestability of quality-sized largemouth bass continued to rise in 2008 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 39). Quality bass are those equal to or larger than 300 mm (11.8 inches) and stock size is 200 mm (7.9 inches).

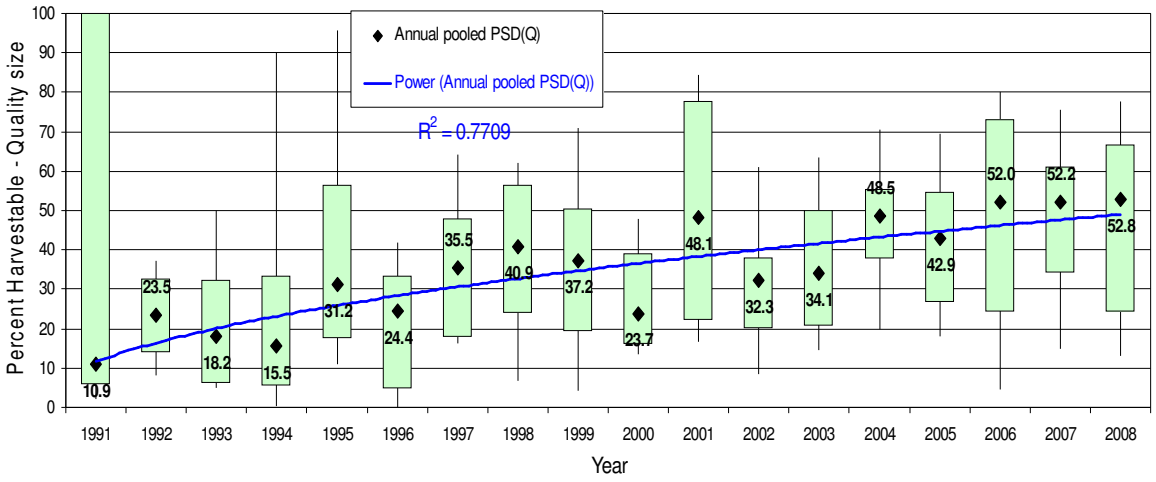


Figure 39. Proportional Size Distribution for Largemouth Bass by Year

Bass harvestability (PSD) values were well above average for Cedar Lake and Kulli Pond in Oklahoma, and North Fork and Dry Fork lakes, in Arkansas (Figure 40). Bass PSD was well below average for Crooked Branch, Huston, Shady and Sylvia Lakes and Midway Store Pond. Bear Pond, sampled for the third time in 2008, had no harvestable-sized bass, but the bass population could still be too young/small to have reached the 11.8 inch size. With most 2008 PSD values distributed outside of long-term averages of each waterbody, there is additional support for the assumption of sampling/weather inconsistencies.

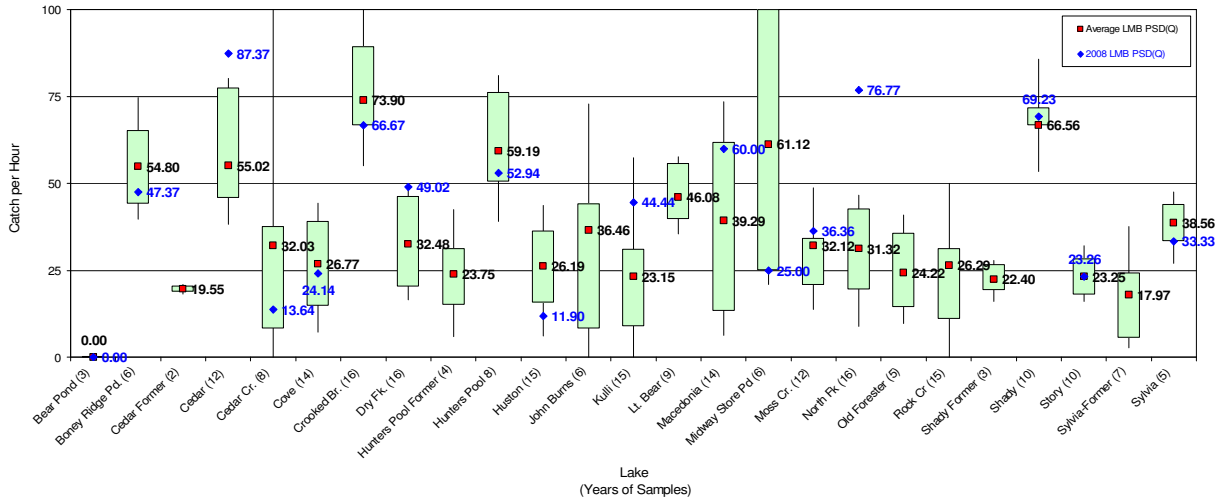


Figure 40. Proportional Size Distribution for Largemouth Bass by Waterbody

Largemouth bass catch of preferred lengths (380 mm or 14.9 inches) was the second highest in the 18 years of samples with a pooled value of 17.22% of the total catch of stock size bass and larger and is only slightly lower than last year's value (Figure 41). However, there is no statistically significant trend for these values.

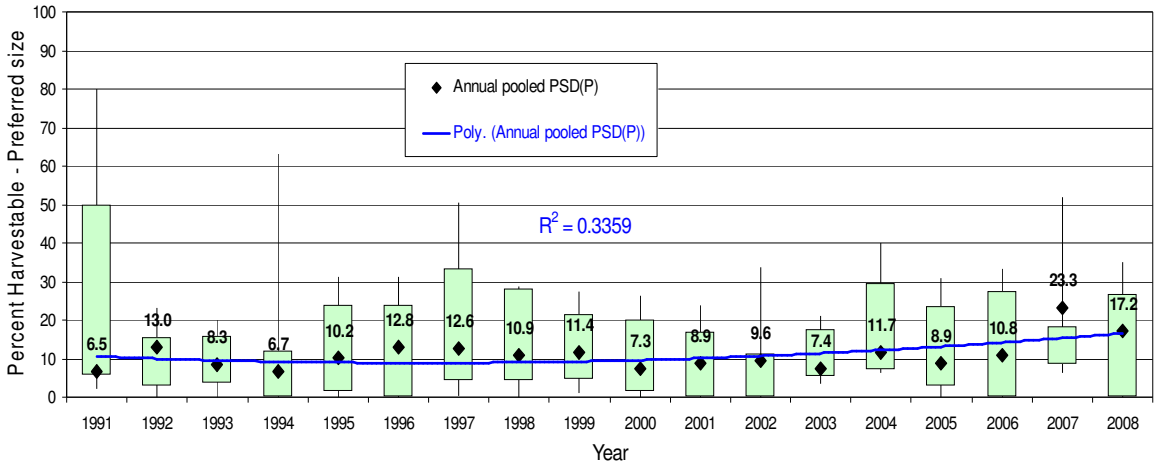


Figure 41. Proportional Size Distribution (Preferred) for Largemouth Bass by Year

For 2008 samples, largemouth bass PSD (P) is within the 25-75% range for six lakes and ponds, within 10-25% or 75-90% for ten waters, and outside of the 10-90% range for two waterbodies (Figure 42). Bear Pond has three samples with none of its bass yet reaching the 14.9 inch range. Eight of the waterbodies had PSD (P) values above their average value.

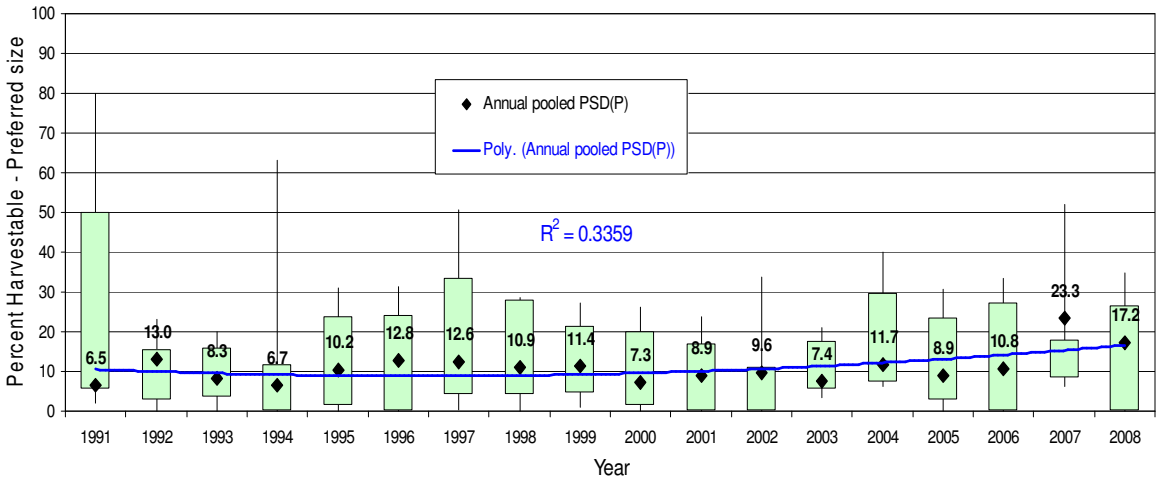


Figure 42. Proportional Size Distribution (Preferred) for Largemouth Bass by Waterbody

Disappointingly, no trophy bass were caught at Cedar Lake in 2008 but, based on results; sampling was too early in the season to have caught the largest female bass spawning. As sampled in FY 2008, largemouth bass populations across the Ouachita National Forest are at suitable and sustainable levels and their viability is not in question.

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 18 years. The redear sunfish catch in 2008 is the second highest annual catch of redear sunfish (Figure 43). While the redear sunfish annual pooled catch rate trend line shows a slight increase since 1998, the trend is just barely statistically significant.

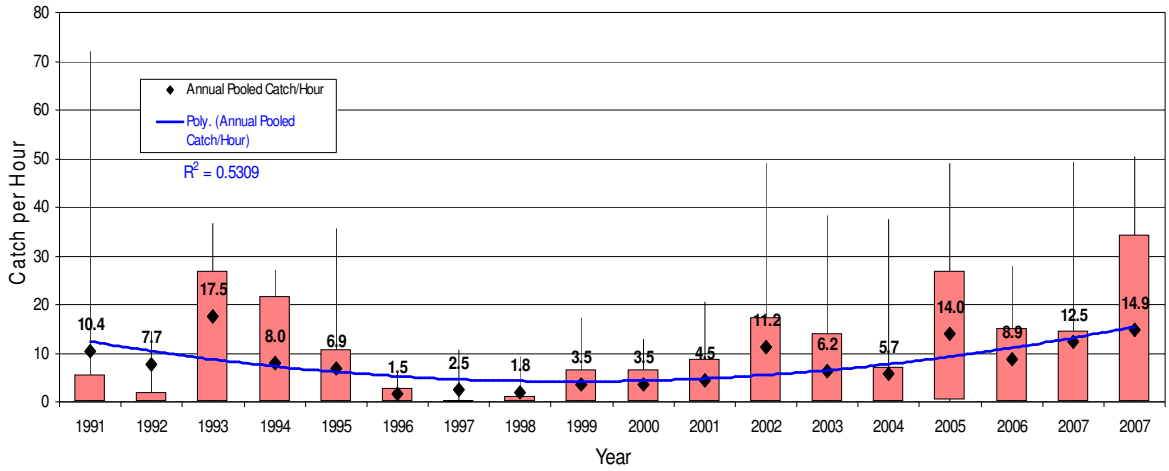


Figure 43. Annual Pooled Redear Sunfish Catch per Hour

The 2008 redear catch was dominated by the catch of 129.41 redear per hour at Hunters Pool (Figure 44). Capture of redear sunfish in Hunters Pool prior to and since its rebuilding and restocking has always been greater than elsewhere on the Ouachita National Forest. This could be expected for the species, as its native waters are coastal plain pools and backwaters. Hunters Pool is the one of the southern-most, most intensively-managed sport fisheries on the Ouachita National Forest. Eight of the waterbodies had 2008 results above their average annual redear catch per hour, three were below average, and six waterbodies had zero catch of redears for all years.

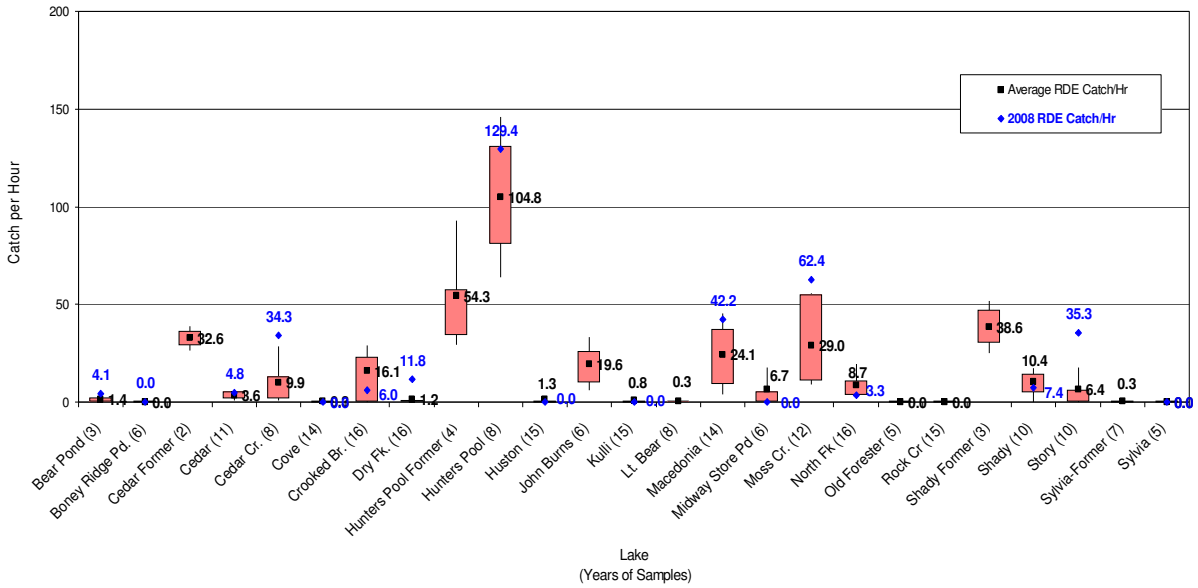


Figure 44. Redear Sunfish Catch per Hour by Lake

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 seven years. While the trend line peaked in 2000-2001 and has slowly been decreasing since, it is not statistically significant (Figure 45).

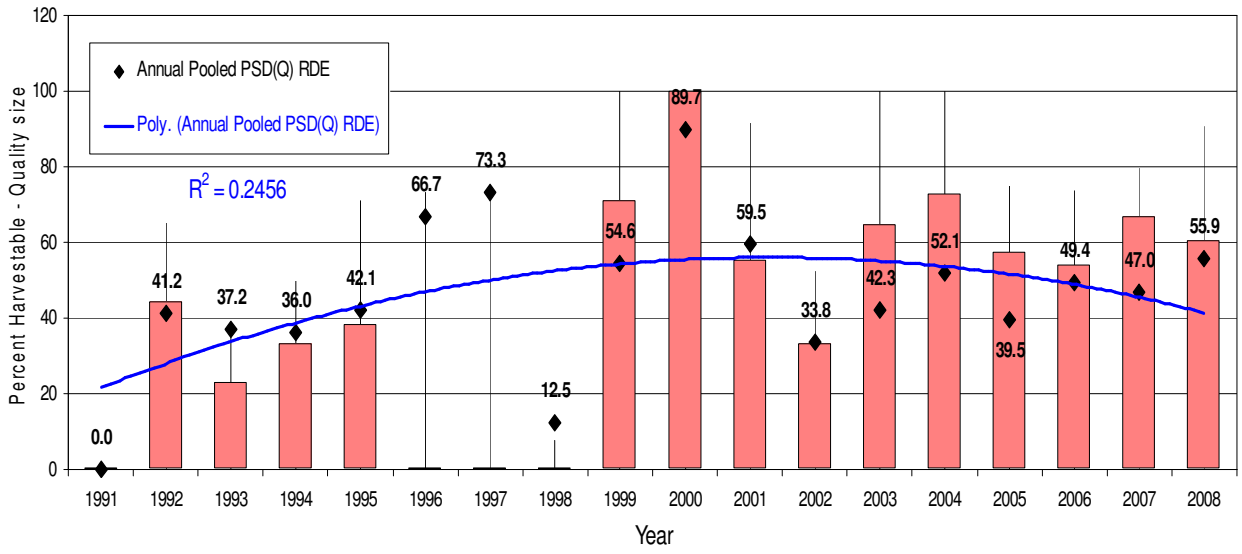


Figure 45. Proportional Size Distribution for Redear Sunfish by Year

The 2008 catch of redear sunfish was dominated by quality sized and larger redear sunfish at Bear, Cedar, Crooked Branch, Dry Fork, Story and John Burns Pond, with Bear, Crooked Branch, Dry Fork and Hunters Pool having percentages above the 90 percentile of their annual samples (Figure 46). Macedonia Pond and Moss Creek Pond had harvestable sized redear sunfish just below their long-term average. The particular sunken woody debris structure in Moss Creek, where the majority of large redear sunfish have been caught, appears to have rotted to the point it is providing less cover for redear sunfish. This structure will continue to be sampled, and it has been recommended to the District that additional fish attracting structures be added to existing structure. Typically, redear sunfish are generally only in shallower waters for spawning in the spring and their schooling in the fall may be on structures too deep to efficiently electrofish. However, Hunters Pool, which is quite shallow, has the highest catch rates for this species. With a dense population of redears and less deep water, the pond's redear harvestability rate shows less variability than the other lakes and ponds with deep holes and heavy cover.

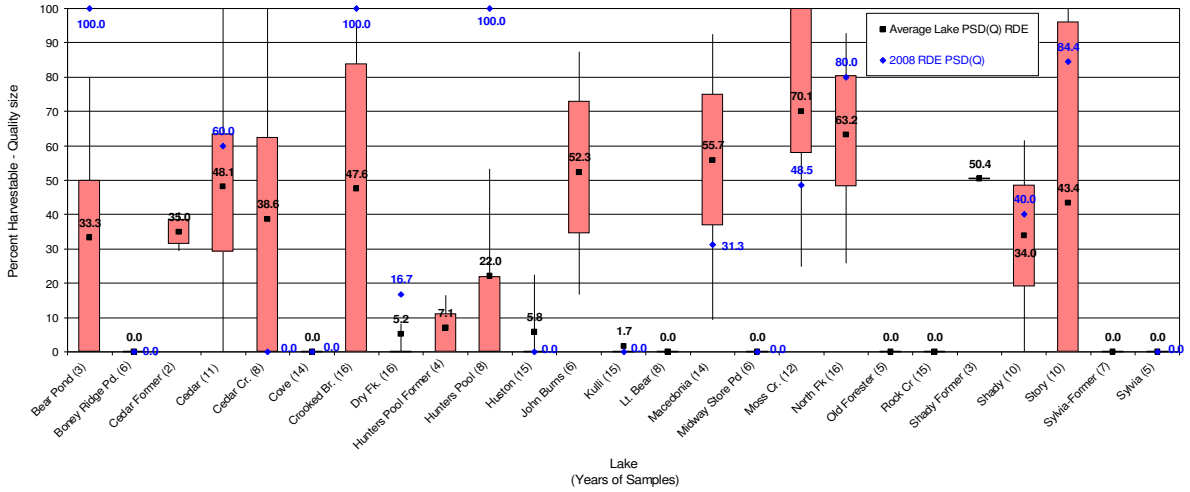


Figure 46. Proportional Size Distribution for Redear Sunfish by Waterbody

For the larger, preferred sized redear sunfish (230 mm or 9 inches), PSD (P) was just barely higher in 2008 than in 2007 but lower than the 2006 figure (Figure 47). The trend line, that peaked in 2000 and since has been showing a downward trend, is not statistically significant.

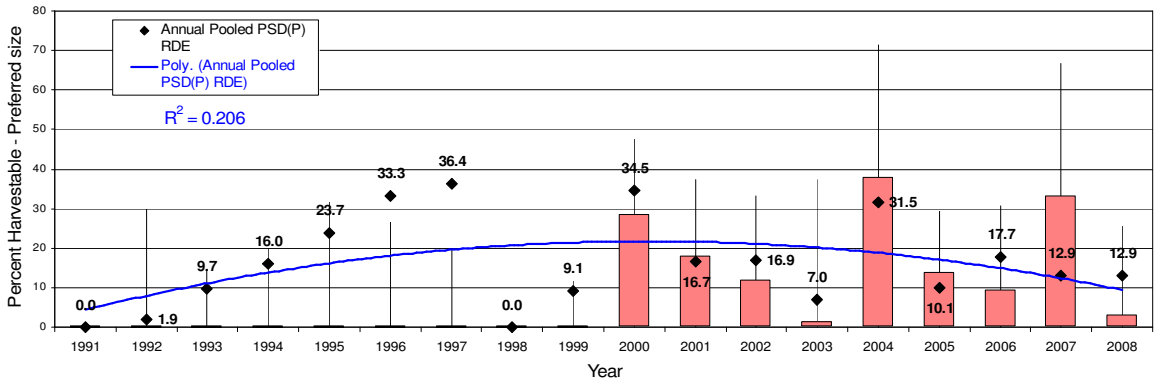


Figure 47. Proportional Size Distribution (Preferred) for Redear Sunfish by Year

The 2008 redear catch of preferred stock size redear sunfish is above average for only three lakes and ponds (Figure 48) and below average for two waters and zero for twelve. None of Hunters Pool quality-sized redear sunfish achieved the preferred size class. Because of the difficulty in catching large redear 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.

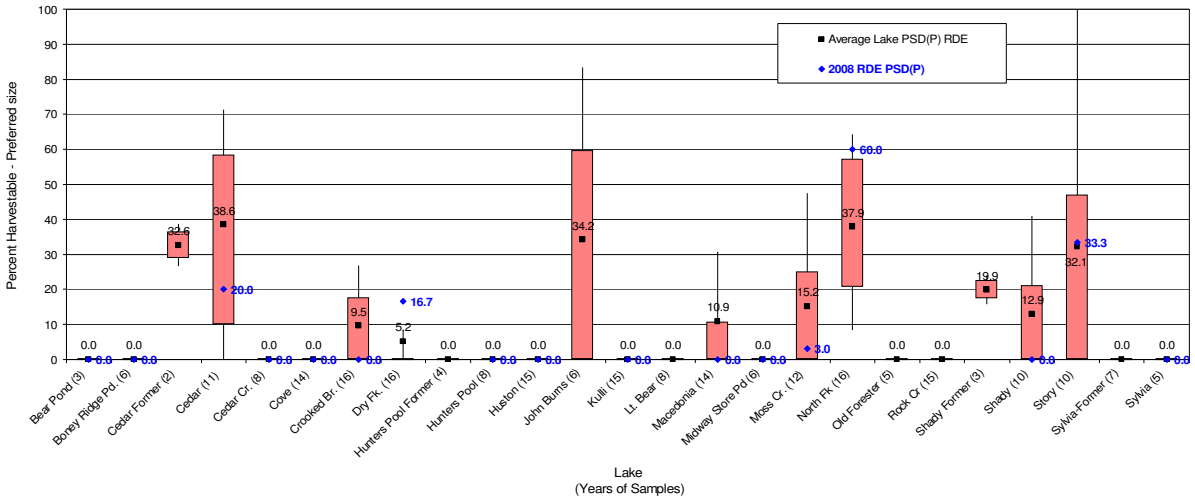


Figure 48. Proportional Size Distribution (Preferred) for Redear Sunfish by Waterbody

As sampled in 2008, the redear sunfish populations across the Ouachita National Forest 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 2008, 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 National Forest waters are not nearly as abundant, thus this species is not a Forest-wide MIS. The population in Dry Fork Lake is also being tracked to follow its cyclic population. Most years 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 49.) During 2007, crappie were caught in the low ebb of their population numbers (low catch rates) and show some of the highest harvestability scores for quality and preferred sized crappie. The 2008 crappie data shows a low catch rate with no larger, preferred sized, crappie were caught. The 2008 results look somewhat similar to 2004 results. Whether this cyclic variability is actually present in the crappie population or is a sampling issue is unknown. This crappie population will continue to be monitored.

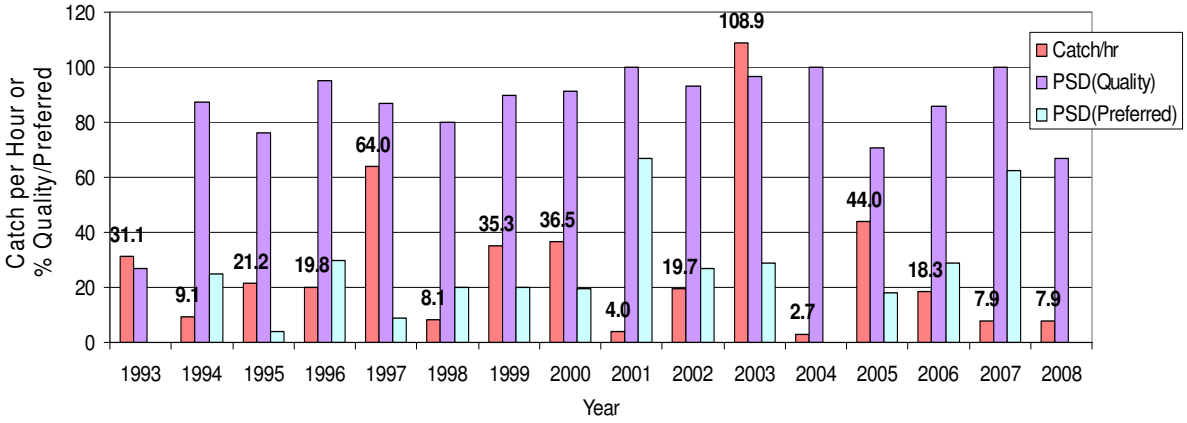


Figure 49. White Crappie Catch per Hour, Proportional Size Distribution (Quality) and (Preferred) for Dry Fork Lake, Perry County

Gizzard Shad *(Dorosoma cepedianum)*

Due to concern that the gizzard shad population in Cedar Lake was expanding and could impact the 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 2008. The gizzard shad length frequencies (Figure 50) indicate three year classes were caught in the nets in 2006, three or more in 2007 with only two year classes caught in 2008. 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 a late spawn by the shad. That year class appears to be missing in the 2008 netting catch.

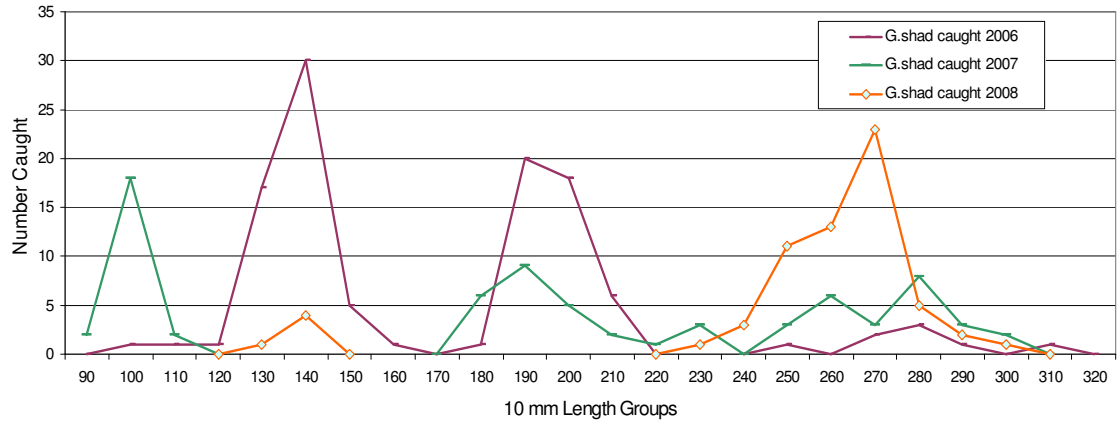


Figure 50. Cedar Lake Gizzard Shad Length Frequencies from Gill Nets (2) for 2006 - FY 2008

The catch per hour is low for gizzard shad and very low for the non-targeted species (Figure 51). 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 fished compared to the past three year's net footages and effort. Catch result differences for 2006 through 2008 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.

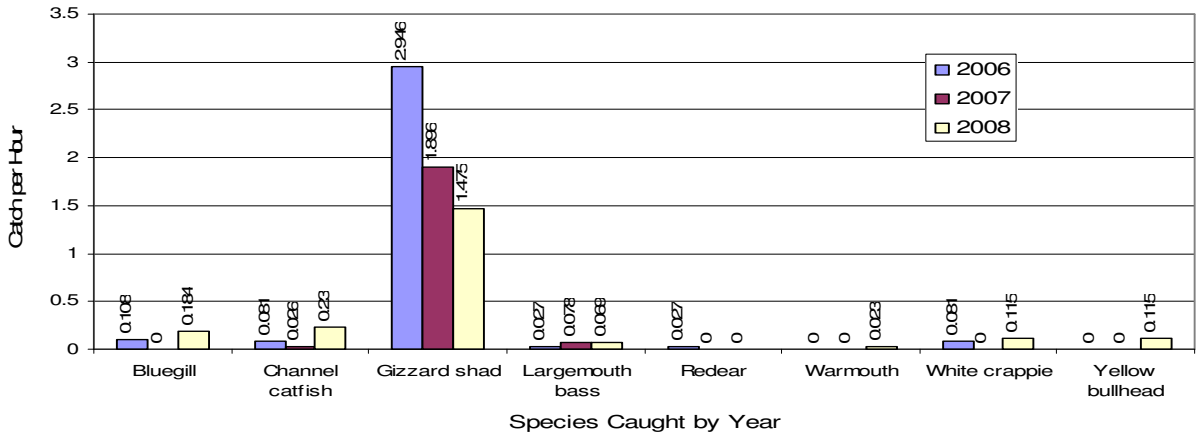


Figure 51. Cedar Lake Gizzard Shad Catch per Hour per Year, Combined Nets

The 2008 netting had more by-catch of species other than gizzard shad (5 additional species in 2006, 2 additional species in 2007 and 6 additional species in 2008). Nine less gizzard shad were caught in 2008 with 6 more hours of same soak time than the 2007 catch. Smaller gizzard shad were caught in 2006 and 2007. More and larger channel catfish were caught in 2008 including a nearly 19 pound channel catfish 35 inches long (Figure 52).

Figure 52. Cedar Lake Gill Net Capture of a 18.95 lb Channel Catfish

With only three years of data for two nets, set only one night each year, insufficient data exists for significant interpretation of results. Trends in the gizzard shad population will continue to be monitored by gill netting in order to detect any over population or change in abundance or length frequencies within the gizzard shad population.

Threadfin Shad *(Dorosoma petenense)*

During 2006 fall electrofishing of North Fork Lake, 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 and caught 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 and 2008, set in the same locations and for 47 hours combined fishing time in 2007 and 49.5 hours in 2008. Results showed a significantly higher catch per hour of threadfin shad in FY 2007 than what was caught in 2006 and the lowest catch in 2008 (Figure 53).

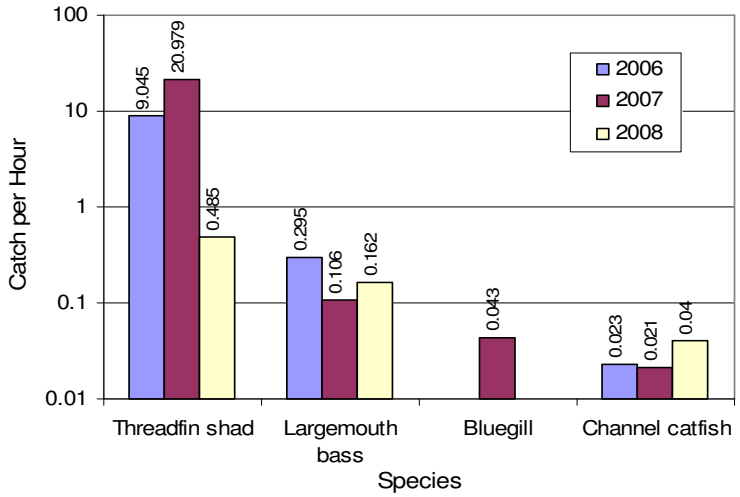


Figure 53. North Fork Lake Gill Nets (2) Catch per Hour for 2006 - FY 2008

The 2008 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.

With only three years of data for two nets set only one night each year, insufficient data exists for significant interpretation of results. It does appear the threadfin shad population is 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 54.)

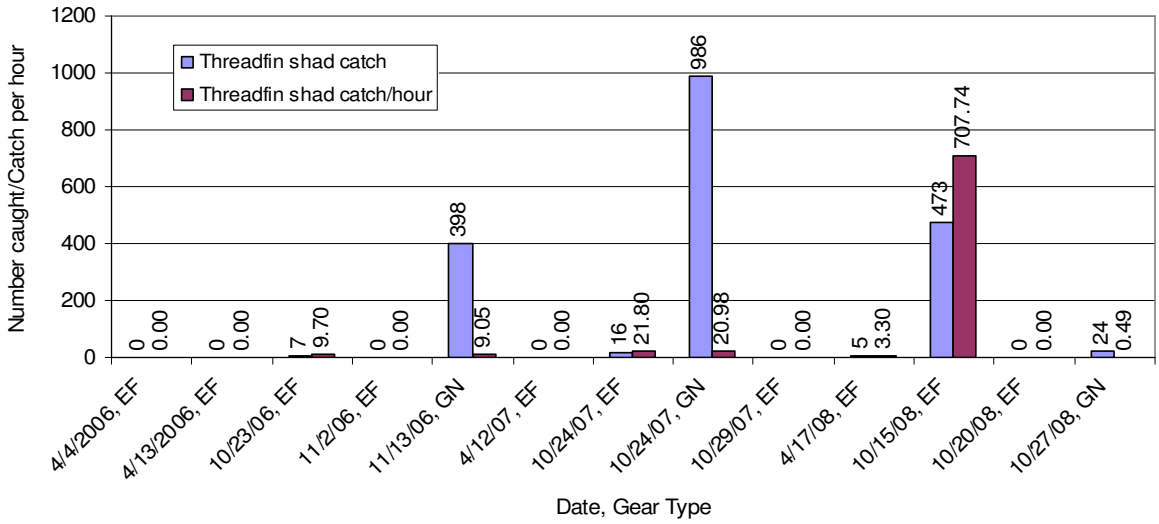


Figure 54. North Fork Lake Threadfin Shad Catch Length Frequencies per Year, Combined Nets

More smaller-sized threadfin shad were caught in 2006 and 2007 (Figure 55). No threadfin shad were caught in the net near the dam in 2007 or in 2008 and the vast majority of the 2007 caught threadfin shad were caught in the half inch mesh (865 out of the total of 986 shad netted). Sizes of the threadfin shads per sampling year are comparable, though in 2008, the larger shad lengths seen in 2006 and 2007 were not present in the catch. While the threadfin shad catch rate is still considered low, they should increase the forage base for largemouth bass. However, they are also likely to compete with panfish (Mike Armstrong, AGFC Fisheries Chief, personal communication). Monitoring of this threadfin shad population will continue with fall gill netting. The net set near the dam will be set elsewhere since it has been empty or nearly so for the past two years.

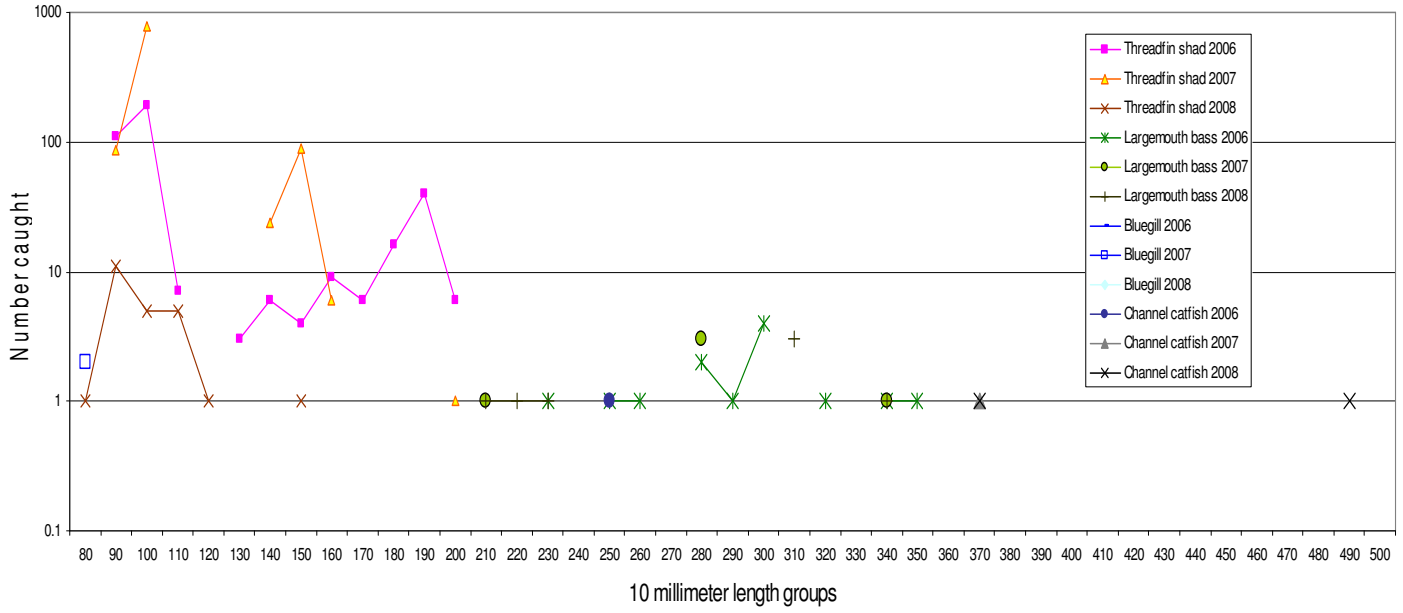


Figure 55. North Fork Lake Catch Length Frequencies per Year, Combined Nets

Shoreline Seining

Shoreline seining was conducted in 27 lakes and ponds across the Ouachita National Forest. Five addition seining efforts were conducted as repeats 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 the first full week of 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.

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

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. 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.

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

Additional monitoring for white crappie, gizzard shad, and threadfin shad was conducted during 2008 even though these are not MIS species. The white crappie population in Dry Fork Lake is monitored because it has been the most abundant crappie population on the Ouachita National Forest. Gizzard shad in Cedar Lake are monitored to determine if the population is expanding, and 2008 was the third year for monitoring of this species. Insufficient data exists for significant interpretation of results of the gill nettings and monitoring of Cedar Lake will continue. Threadfin shad were discovered in North Fork Lake during 2006 electrofishing efforts. Results from the 2008 gill netting show a significantly lower catch of threadfin shad from gill netting but a higher catch with electrofishing than in prior years. Monitoring for these data 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. Data for the Johnny and channel darter 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?

For stream fishes, three data sources are readily available to the forest. Data sources include the Basin Area Streams Survey (BASS), 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. Analysis of stream fish data was conducted within the three watershed associated ecoregions, referred to as the Arkansas River Valley (ARV), Upper Ouachita Mountain (UOM) and Lower Ouachita Mountain (LOM) ecoregions.

Yellow Bullhead (*Ictalurus natalis*)
The number of collections with yellow bullheads from Jack, South Alum, and Bread Creeks was of insufficient size to determine trends. The percent occurrence of yellow bullhead samples for Brushy and Caney Creeks is presented in the tabulation below. Brushy and Caney Creeks both had a decline in percent occurrence over time although Caney Creek showed a sharp increase in 2006. Continued monitoring efforts will either support this as a trend or prove it to be an anomaly. In comparing Brushy Creek to Caney Creek, Brushy Creek initially had higher percent occurrences than Caney Creek through 1992. From 1996 through 2001, yellow bullhead median densities are similar to percent site occurrence for the managed stream, Brushy Creek. Percent site occurrence of yellow bullhead for the 2006 survey revealed a lower percentage than the referenced stream (40.0% vs. 83.3%).

Percent Site Occurrence of Yellow Bullhead by Year, BASS Surveys

Stream	1990	1991	1992	1996	2001	2006
Brushy (Managed, LOM)	85.2	75.9	60.0	34.4	46.9	40.0
Caney (Reference, LOM)	67.5	54.0	41.7	39.3	41.1	83.3

Interpretation of Trends: Insufficient information is available to determine percent occurrence trends for the Arkansas River Valley or the Upper Ouachita Mountain ecoregions. Initially, there appears to be a higher occurrence of yellow bullhead in managed streams than in reference streams in the Lower Ouachita Mountain ecoregion (1990-1992); and in addition, there were declines in the number of occurrences over time for both streams until 2001. Comparisons of population densities suggest that managed streams have a decreasing population density in comparison to reference streams. The L-TSSR sites have shown a high percent site occurrence of this species through time in the Lower Ouachita Mountain and Upper Ouachita Mountain ecoregions. Population densities for 16 of the 27 sites where the yellow bullhead occurred fell within the natural range of variability; however, there appears to be a declining trend within the Lower Ouachita Mountain. Catch per unit effort (CPUE) values show a rapid decline in Lower Ouachita Mountain streams from 1996 - 2007.

Implications for Management: Yellow bullheads are common throughout much of the Lower Ouachita Mountains. The distributions between BASS managed and reference streams for all years combined and individual years are similar, but recent data show a decline in population occurrence and densities in managed streams. The implications for management are unknown at this time because 2006 was the first survey year where the managed stream percent site occurrence is significantly different from the managed stream percent site occurrence. If forest use patterns were comparable to the use patterns of the early 1990's, it is unlikely that there will be a long-term or permanent decline of this species; however, the Forest has seen a large increase in unmanaged recreation in conjunction with long-term declines in road and trail maintenance. Given potential for increases in OHV use and the Forest's inability to conduct adequate road and trail maintenance due to lack of funding, the yellow bullhead will need to be closely monitored.

Pirate Perch *(Aphredoderus sayanus)*

The percent site occurrence of samples where pirate perch were found in the Upper Ouachita Mountain BASS inventories is presented in the following tabulation. Comparing the percent occurrence of Bread and South Alum Creeks by year, Bread Creek has lower occurrences for all years than South Alum except for 2006, and significantly lower percentages for 1991, 1992, and 2001. Looking at percent occurrence over time, Bread and South Alum creeks both show similar patterns with declines in 1991 and 1992.

Percent Site Occurrence of Pirate Perch by Year, BASS Surveys

Stream	1990	1991	1992	1996	2001	2006
Bread Creek (Managed, UOM)	35.7	0.0	4.5	31.8	11.8	75.0
South Alum Creek (Reference, UOM)	46.7	16.7	22.7	38.1	30.4	71.4

In comparing the natural range of variability for population density, there appears to be little difference attributable to management activities between 1990, 1996, and for all years combined.

Interpretation of Trends: Percent site occurrence indicates that managed streams may have a lower site occurrence, but similar population densities. There was a marked decline in population densities for three of the six years sampled.

Implications for Management: Given similar population densities where there is adequate sample size, there appears to be no effect on populations attributable to management. The conservation of this species is more closely linked to the Gulf Coastal Ecoregion on which there is little influence by Ouachita National Forest management activities. However, from the evidence available from the BASS inventories, there do not appear to be problems with the conservation of this species.

Central Stonerollers (*Campostoma anomalum*)
Central stonerollers are common across the forest. As shown in the following tabulation, the BASS data indicate that percent site occurrence was generally high across all streams and stayed fairly consistent throughout the years as shown in the following tabulation.

Percent Site Occurrence of Central Stonerollers by Year, BASS Surveys

Stream	1990	1991	1992	1996	2001	2006
Jack (Managed, ARV)	76.9	90.5	87.5	100.0	88.2	100.0
Dry (Reference, ARV)	100.0	100.0	87.5	100.0	100.0	100.0
Bread Creek (Managed, UOM)	28.6	28.6	59.1	18.2	35.3	87.5
South Alum Creek (Reference, UOM)	40.0	8.3	40.9	33.3	21.7	28.6
Brushy Creek (Managed, LOM)	92.6	72.4	80.0	75.0	85.7	90.0
Caney Creek (Reference, LOM)	92.5	82.0	85.4	75.0	87.1	94.4

A comparison of population densities for central stonerollers for all years and ecoregions show little difference between managed and reference steams.

Population Trends: Populations of central stonerollers fluctuate from year to year. Many factors, biotic and abiotic, natural and anthropogenic, contribute to these fluctuations. Over time these populations appear to be stable

Interpretation of Trends: Percent site occurrence and population densities indicate that managed streams and reference streams are similar. There are no indications that central stonerollers are increasing attributable to management except in the Lower Ouachita Mountain where median population densities in managed steams are higher since 1992.

Implications for Management: Central stonerollers are widely distributed throughout all of the ecoregions found on the forest. The conservation of this species across the forest is not in question. Based on BASS and L-TSSR, there appears to be no adverse effect on central stoneroller populations attributable to forest management activities in the Arkansas River Valley and Upper Ouachita Mountain ecoregions. The Lower Ouachita Mountain has had an increase in unmanaged recreation in the last ten years that may be reflected in the increases in central stoneroller population densities. This, in combination with decreased road and trail maintenance suggests an increase in central stoneroller densities attributable to potential habitat alteration from the detrimental influences of increased sediment entering the streams.

Creek Chubsucker (*Erimyzon oblongus*)
The tabulation below displays percent site occurrence for creek chubsucker. The percent of sample occurrence over time was essentially even for Bread and South Alum Creek (UOM). Jack Creek (ARV, managed) had a general increase over time, while Dry Creek (ARV reference) experienced a general decrease until 2006. Comparing streams by ecoregion, within the Arkansas River Valley, the Managed Jack Creek had a greater percent occurrence of creek chubsuckers for four of six years than the Reference Dry Creek. Within the Upper Ouachita Mountain ecoregion, Managed Bread Creek had a lower percent occurrence for five of six years and was approximately half of the percent occurrence of the Reference South Alum for three years (1990, 1992, and 1996).

Percent Site Occurrence of Creek Chubsuckers by Year, BASS Surveys

Stream	1990	1991	1992	1996	2001	2006
Jack (Managed, ARV)	7.7	23.8	37.5	33.3	11.1	44.4
Dry (Reference, ARV)	41.7	20.0	6.3	9.1	28.6	50.0
Bread (Managed, UOM)	21.4	21.4	18.2	18.2	29.4	75.0
South Alum (Reference, UOM)	40.0	25.0	40.9	38.1	30.4	42.9

There was insufficient sample size to adequately compare population densities by year for the Arkansas River Valley.

Interpretation of Trends: Percent population site occurrences were similar over time for Bread, South Alum, Jack, and Dry Creeks.

Implications for Management: Percent site occurrence and population densities are similar for creek chubsuckers in the Arkansas River Valley and Upper Ouachita Mountain and suggest that the conservation of the species is not an issue. Population densities for all years combined in the Arkansas River Valley and Upper Ouachita Mountain by reference and managed watersheds showed little difference. There is no indication that management activities are having an effect on populations of creek chubsuckers.

Orangebelly Darter (*Etheostoma radiosum*)

Orangebelly darters are common throughout much of the Lower Ouachita Mountain and Upper Ouachita Mountain ecoregions. As shown in the following tabulation, the percent site occurrence in the Lower Ouachita Mountain ranged from 87.5 to as high as 100%. Present occurrence in Caney Creek (reference) compared to Brushy Creek (managed) were lower through 1996 and higher in 2001 and 2006.

Percent Site Occurrence of Orangebelly Darters by year, BASS surveys

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

Interpretation of Trends: There is a very high occurrence of orangebelly darters in the Ouachita National Forest, particularly in the Lower Ouachita Mountain ecoregion. In general the population appear to be stable over the period surveyed. However, percent site occurrence between managed and reference streams has reversed between 1996 and 2001. In addition, population densities appear to have reversed in 2006.

Implications for Management: Orangebelly darters are commonly distributed throughout much of the Lower Ouachita Mountain and Upper Ouachita Mountain ecoregions. The conservation of this species within these ecoregions is not in question. Based on BASS and L-TSSR data, there is cause for concern that current forest management activities within the Lower Ouachita Mountain ecoregion are causing adverse effects on orangebelly darter populations when looking at percent occurrence and population densities. Increases in unmanaged recreation (OHV use) and a lack of road and trail maintenance funds may cause declines in population occurrence

and densities in managed streams. The effects of degraded aquatic habitat from increased sediment are suggested as well in yellow bullhead, green sunfish, and central stonerollers (USDA Forest Service. 2008. A Summary and Analysis of Data pertaining to MIS for the Ouachita National Forest, November 2008).

Redfin Darter *(Etheostoma whipplei)*

Redfin darters are common throughout much of the Arkansas River Valley and Upper Ouachita Mountain ecoregions. The percent site occurrence in the Arkansas River Valley was dominated by Dry Creek (Reference) and as high as 100% for five of six years. Percent site occurrence was evenly divided in the Upper Ouachita Mountain for Bread (Managed) and South Alum (Reference) Creeks. As shown in the following tabulation, the redfin darter was rarely found to occur in the Lower Ouachita Mountain.

Percent Site Occurrence of Redfin Darters by Year, BASS Surveys

Stream	1990	1991	1992	1996	2001	2006
Jack (Managed, ARV)	76.9	85.7	62.5	88.9	88.2	100.0
Dry (Reference, ARV)	100.0	100.0	68.8	100.0	100.0	100.0
Bread (Managed, UOM)	78.6	57.1	45.5	50.0	52.9	87.5
South Alum (Reference, UOM)	73.3	25.0	59.1	76.2	78.3	57.1
Brushy Creek (Managed, LOM)	0.0	3.4	0.0	0.0	4.8	0.0
Caney Creek (Reference, LOM)	5.0	0.0	0.0	0.0	0.0	0.0

Population Trends: It appears that while populations of redfin darter fluctuate from year to year they appear to be stable over time.

Interpretation of Trends: Percent site occurrence and population densities indicate that managed streams and reference streams are similar for redfin darter.

Implications for Management: Redfin darters are commonly distributed throughout much of the Arkansas River Valley and Upper Ouachita Mountain Ecoregions. The conservation of this species is not in question. Based on Forest BASS and L-TSSR data, there appears to be no adverse effect on redfin darter populations from forest management activities.

Northern Studfish (*Fundulus catenatus*)
The tabulation below displays the percent site occurrence for northern studfish in Brushy and Caney Creeks for the years displayed.

Percent Site Occurrence of Northern Studfish by Year, BASS Surveys

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

Interpretation of Trends: Occurrence varied widely. Brushy Creek had relatively high percentage occurrences in all years. Caney Creek data indicated a decline from 1990 through 1996 then a recovery to former levels in 2001 and 2006.

Implications for Management: Northern studfish are commonly distributed throughout the Lower Ouachita Mountain ecoregion. Wide fluctuations of percent occurrence and population densities appear to be common. Because of the common occurrence across a wide area the conservation of this species is not threatened. However, additional monitoring will provide insight into the nature of the wide annual fluctuations. There are no adverse implications for northern studfish populations attributable to management activities.

Northern Hog Sucker (*Hypentelium nigricans*)
In the Ouachita Mountains, the northern hog sucker is restricted to the Ouachita, Caddo, Little Missouri, and Saline drainages. It is absent from the Cossatot River Drainage where the Reference and Managed watersheds for the Lower Ouachita Mountain ecoregion occur; therefore, this species is absent from the BASS inventories.

Interpretation of Trends: It appears that northern hog sucker populations on the Ouachita National Forest remain stable.

Implications for Management: There is no information to suggest that management activities are having a direct or indirect effect on populations of the northern hog sucker; and there are no conservation concerns on the Ouachita National Forest.

Green Sunfish *(Lepomis cyanellus)*
Green sunfish are found throughout much of the Ouachita National Forest. The tabulation below shows that the percent site occurrence in the Arkansas River Valley was higher in Dry Creek (Reference) for four of six years, and South Alum Creek (Reference) was higher in the Upper Ouachita Mountains for five of six years. As also shown in the tabulation below, percent site occurrence in the Lower Ouachita Mountains was generally lower than the Arkansas River Valley and Upper Ouachita Mountains paired streams; however in contrast, Brushy Creek (Managed) had a greater occurrence than Caney Creek (Reference) for all six years.

Percent Site Occurrence of Green Sunfish by Year, BASS Surveys

Stream	1990	1991	1992	1996	2001	2006
Jack (Managed, ARV)	23.1	23.8	56.3	38.9	35.3	44.4

Dry (Reference, ARV)	50.0	20.0	50.0	54.5	85.7	100.0
Bread Creek (Managed, UOM)	28.6	28.6	36.4	27.3	41.2	75.0
South Alum Creek (Reference, UOM)	66.7	16.7	68.2	47.6	47.8	85.7
Brushy Creek (Managed, LOM)	51.9	17.2	20.0	9.4	14.3	10.0
Caney Creek (Reference, LOM)	2.5	8.0	12.5	0.0	0.0	0.0

Interpretation of Trends: Percent site occurrence and population densities indicate that managed streams and reference streams are similar for green sunfish with the exception of the Lower Ouachita Mountain. There are no indications that green sunfish are increasing attributable to management in the Arkansas River Valley or Upper Ouachita Mountain. However, the percent occurrence of green sunfish in Brushy Creek (Managed LOM) compared to the lack of occurrence in Caney Creek (Reference LOM) show, consistently since 1990, that the aquatic habitat favors this very tolerant species within the Lower Ouachita Mountain.

Implications for Management: Green sunfish are commonly distributed throughout much of the Arkansas River Valley and Upper Ouachita Mountain ecoregions and to a lesser degree the Lower Ouachita Mountain ecoregion. The conservation of this species across this ecoregion is not in question. Based on BASS and L-TSSR, there appears to be no adverse effect on green sunfish populations attributable to forest management activities. However the percent occurrences within the Lower Ouachita Mountain in managed streams suggest that the implications for management are potentially adverse given potential for increases in OHV (managed and otherwise) use and the inability to conduct sufficient road and trail maintenance in the Lower Ouachita Mountains.

Longear Sunfish (*Lepomis megalotis*)

Longear sunfish are common throughout much of the Upper Ouachita Mountain and Lower Ouachita Mountain ecoregions. The percent site occurrence in the Arkansas River Valley was limited to Jack Creek (Reference). In the Upper Ouachita Mountain ecoregion, South Alum Creek (Reference) had a higher percentage occurrence from 1990 through 1992, and Bread Creek had a higher percent occurrence from 1996 through 2006. As shown in the following tabulation, Brushy Creek (Managed) had a slightly higher percent occurrence in the Lower Ouachita Mountain ecoregion for all years except 2006.

Percent Site Occurrence of Longear Sunfish by Year, BASS Surveys

Stream	1990	1991	1992	1996	2001	2006
Jack (Managed, ARV)	7.7	28.6	37.5	38.9	47.1	44.4
Dry (Reference, ARV)	0.0	0.0	0.0	0.0	0.0	0.0
Bread (Managed, UOM)	28.6	42.9	45.5	59.1	47.1	75.0
South Alum (Reference, UOM)	33.3	50.0	68.2	23.8	43.5	28.6
Brushy Creek (Managed, LOM)	66.7	34.5	50.0	40.6	66.7	55.0
Caney Creek (Reference, LOM)	55.0	30.0	37.5	32.1	61.3	66.7

A comparison of population densities for longear sunfish in the Upper Ouachita Mountain ecoregion for all years and individual years shows that managed streams and reference streams have similar population densities for all years except for 1991 and 2006. It appears that while populations of longear sunfish fluctuate from year to year, populations appear to be stable over time.

Interpretation of Trends: Percent site occurrence and population densities indicate that managed streams and reference streams are similar.

Implications for Management: Longear sunfish are commonly distributed throughout much of the Upper Ouachita Mountain and Lower Ouachita Mountain ecoregions. The conservation status of this species across these ecoregions appears secure. Based on BASS and L-TSSR, there appears to be no adverse effect on longear sunfish populations from forest management activities.

Striped Shiner *(Luxilus chrysocephalus)*
The tabulation below displays the percent site occurrence of striped shiners for Brushy and Caney Creeks for all years sampled. Comparing Brushy Creek to Caney Creek by year, Brushy Creek has a lower percent occurrence for five of six years.

Percent Site Occurrence of Striped Shiners by Year, BASS Surveys

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

Interpretation of Trends: There appear to be wide fluctuations in populations of striped shiners on the Forest, with no apparent upward or downward trends.

Implications for Management: Striped shiners are common throughout the Lower Ouachita Mountain ecoregions. The conservation of this species in the Ouachita National Forest is not in question. Based on BASS and L-TSSR data, there appears to be no adverse effect on striped shiner populations from forest management activities.

Smallmouth Bass *(Micropterus dolomieu)*
The tabulation below displays the percent site occurrence of smallmouth bass for Brushy and Caney Creeks for all years sampled. Both streams show a decline in the percent occurrence from 1990 to 1991 and another sharp decline in 1996 with some recovery through 2006.

Percent Site Occurrence of Smallmouth Bass by Year, BASS Surveys

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

When BASS population densities for Brushy Creek (managed) and Caney Creek (reference) are compared for all years and individual years, it shows that the population densities for reference and managed streams are comparable, although there are fluctuations from year to year. Both streams may have a slight decrease in population densities in 2001 and 2006.

Interpretation of Trends: There appear to be wide fluctuations in populations of smallmouth bass on the Forest, with no apparent trends. A slight decline may be appearing in the population densities from BASS data in 2001 and 2006.

Implications for Management: Smallmouth bass are commonly distributed throughout the Lower Ouachita Mountain ecoregion. There is minor risk for conservation of the species. Additional monitoring will provide insight as to the nature of the wide annual fluctuations. Because both site occurrence percentages and population densities are similar between reference and managed watersheds (BASS data), there is no indication that forest management activities are having an adverse effect on smallmouth bass populations.

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. All darter seen are identified to species during the snorkeling of each transect 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 56) 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. However 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. Trend lines for Johnny and channel darters show a downward trend but only the trend line for the channel darter is statistically significant and that significance is very low.

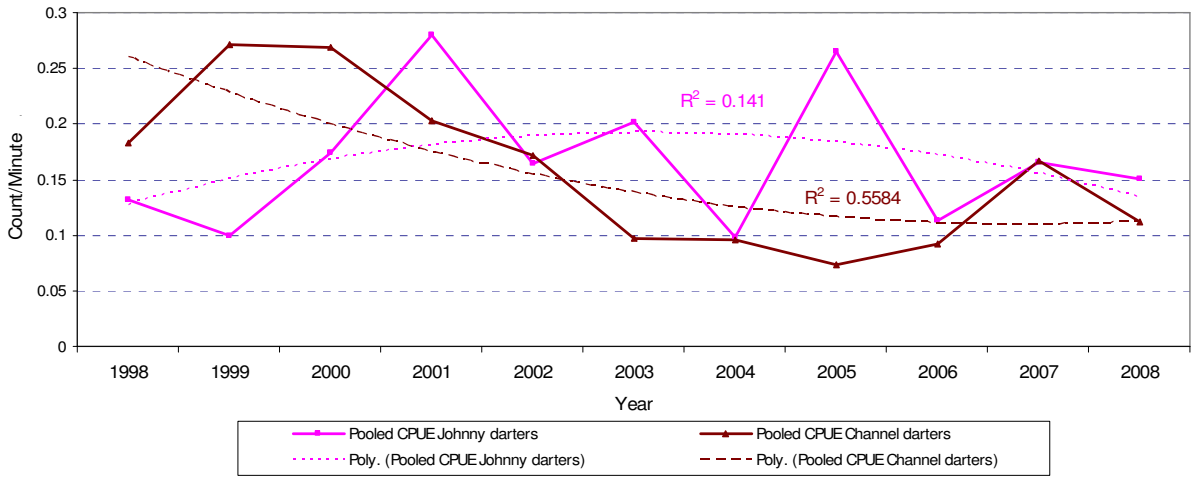


Figure 56. Johnny and Channel Darter Annual Pooled Counts per Minute

Most Johnny darter counts were highly variable in FY 2008 with seven sites at or above their median values, five counts below their median values for the sites and four sites with zero counts (Figure 57). As is normal, the Mountain Fork River site at the Oklahoma Highway 4 Bridge had the highest single count for Johnny darters.

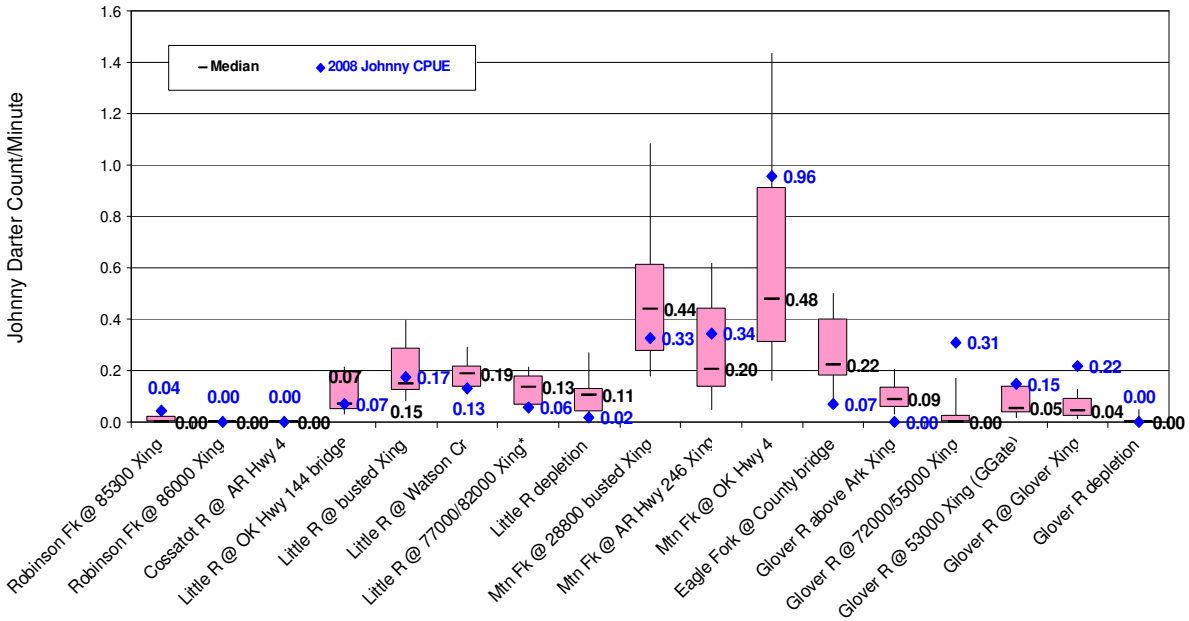


Figure 57. Johnny Darter Counts per Minute by Site

For channel darters, seven of the counts were above the median count per site, seven sites were below the median, and three sites had zero counts (Figure 58.) The highest count for channel darters for FY 2008 came from the lower most sites on the Mountain Fork and the Glover Rivers.

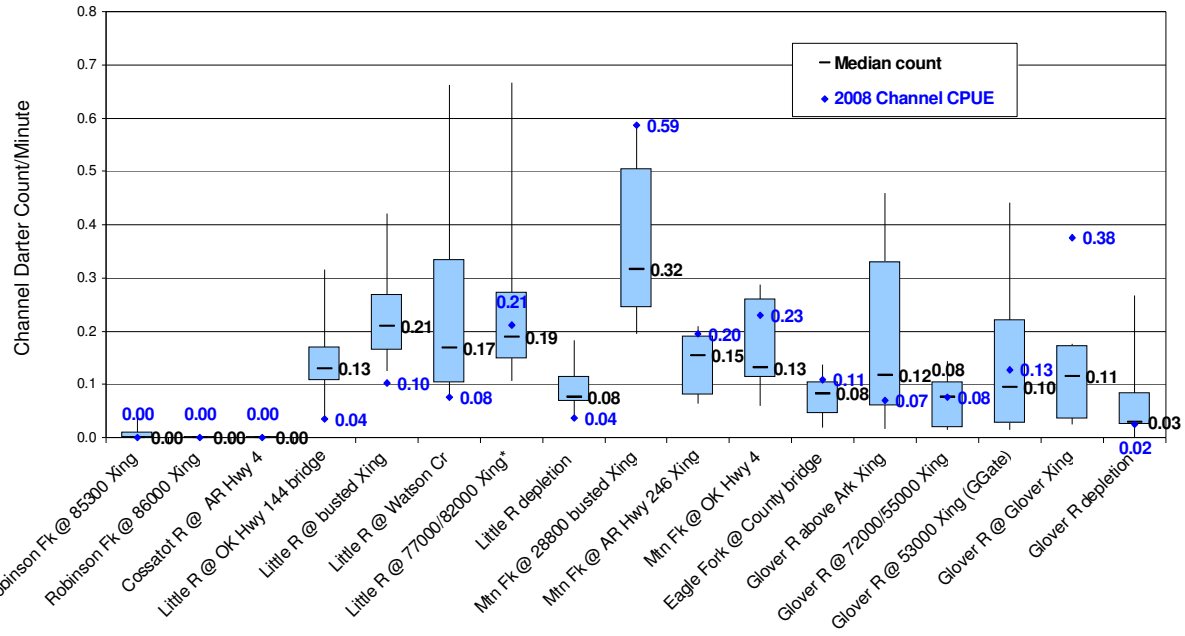


Figure 58. Channel Darter Counts per Minute by Site

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. 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 due to lack of funding. The travel management project that will designate a system of roads and trails for use by motorized vehicles will allow the Forest 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	(*Ictalurus natalis*)	Stable	Declining	Sustainable – Viability not in Question	Manage OHV use, maintain roads and trails
Pirate perch	*(Aphredoderus sayanus)*	Stable	Stable	Sustainable – Viability not in Question	None
Central Stoneroller	(*Campostoma anomalum*)	Stable	Increasing	Sustainable – Viability not in Question	Manage OHV use, maintain roads and trails
Creek chubsucker	(*Erimyzon oblongus*)	Stable	Stable	Sustainable – Viability not in Question	None
Orangebelly darter	(*Etheostoma radiosum*)	Stable	Potentially Decreasing	Sustainable – Viability not in Question	Manage OHV use, maintain roads and trails
Redfin darter	*(Etheostoma whipplei)*	Stable	Stable	Sustainable – Viability not in Question	None
Northern studfish	(*Fundulus catenatus*)	Stable		Sustainable – Viability not in Question	None
Northern hog sucker	(*Hypentelium nigricans*)	Stable	Stable	Sustainable – Viability not in Question	None
Green sunfish	*(Lepomis cyanellus)*	Stable	Increasing	Sustainable – Viability not in Question	Manage OHV use, maintain roads and trails
Longear sunfish	(*Lepomis megalotis*)	Stable	Stable	Sustainable – Viability not in Question	None
Striped shiner	*(Luxilus chrysocephalus)*	Stable	Stable	Sustainable – Viability not in Question	None
Smallmouth Bass	*(Micropterus dolomieu)*	Stable	Stable	Sustainable – Viability not in Question	None
Johnny darter	*(Etheostoma nigrum)*	Stable	Stable	Sustainable – Viability not in Question	None
Channel darter	*(Percina copelandi)*	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.*

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 snorkel surveys are conducted in late summer/early fall. The diversion of Forest funds to cover national fire fighting expenses put a stop to renting canoes for the 2008 survey. Before arrangements could be made to borrow canoes to continue with the survey, storm events raised the river to levels too high to effectively survey. *Based on* surveys completed in previous years, 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.

What are the status and trends of federally listed species' populations?

Red-cockaded Woodpecker *(Picoides borealis)*

Red-cockaded Woodpecker: The Red-cockaded Woodpecker data for FY 2008 indicated 110 adult birds and 58 fledglings compared to 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
Augmentations	0	0	0
Artificial Cavities	26	41	9
Cavity Restrictors	4	17	11
Predator Guards	30	12	13
Cluster Predator Control	41	49	86
Midstory Reduction for RCW (acres)	4,935	2,034	550
Prescribed Fire for RCW (acres)	8,670	21,164	11,590

Annually report numbers or acres accomplished for each of the following activities.

Maintenance of Threatened, Endangered or Sensitive Species Structures (SNEDS-Snake Excluding Device Structure, SQUEDS-Squirrel Excluding Device Structure, restrictors): 265 Structures

Harperella (*Ptilimnium nodosum*)
Harperella is the only endangered plant known to occur on the Ouachita National Forest. 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 National Forest, 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*, *Dulchium arundinaceum*, and *Eleocharis quadrangulata*.

Eight sites were monitored: one site on Rainey Creek, four on Irons Fork Creek, two on Fiddler Creek, and a new location on the Fourche LaFave River reported by AR Natural Heritage Commission. Seven of the sites occupied areas similar to previous years, and population numbers were estimated to be similar to those in previous years. All sites were healthy and had an abundance of flowering and fruiting individuals. There were 12 miles of stream survey completed by US Forest Service for harperella; and there were no new populations of harperella discovered in the survey areas by the US Forest Service.

Cossatot leafcup, *(Polymnia cossatotensis [Asteraceae])*
Cossatot leafcup is an endemic species of the Interior Highlands region of Arkansas. 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 National Forest. 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.

During FY 2008, 250 acres of potential habitat were surveyed for the leafcup. No new location was located during the survey.

Leopard Darter *(Percina pantherina)*
Leopard Darters: Based on the counts at the 18 permanent monitoring sites snorkeled during the summer of 2008, leopard darter counts were the third lowest (annual pooled count per minute) since the use of permanent monitoring sites began in 1998. Leopard darter counts in 2008 were nearly half that of the counts from the summer of 2007 (Figure 59.) 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 is followed by a crash in 2008. It is expected 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. (See discussion of storm responses in the preceding Johnny and channel darter section of this report.) The trend line is not statistically significant.

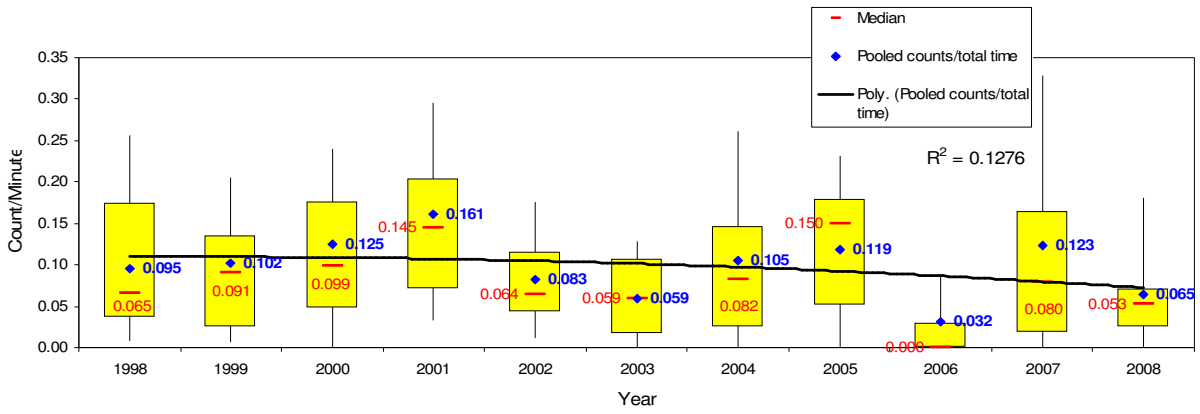


Figure 59. Leopard Darter Annual Pooled Counts

Leopard darters were not seen at two of the 17 sites and were below the ten percentile mark at one site in 2008 (Figure 60). The 2008 leopard darter counts were in the lower portion of the 25-75 percentile boxes for four sites, in the top end of the 25-75 percentile boxes for two sites, and between the 10 and 25 percentile points at five sites. One site had a count above the 90 percentile. 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.

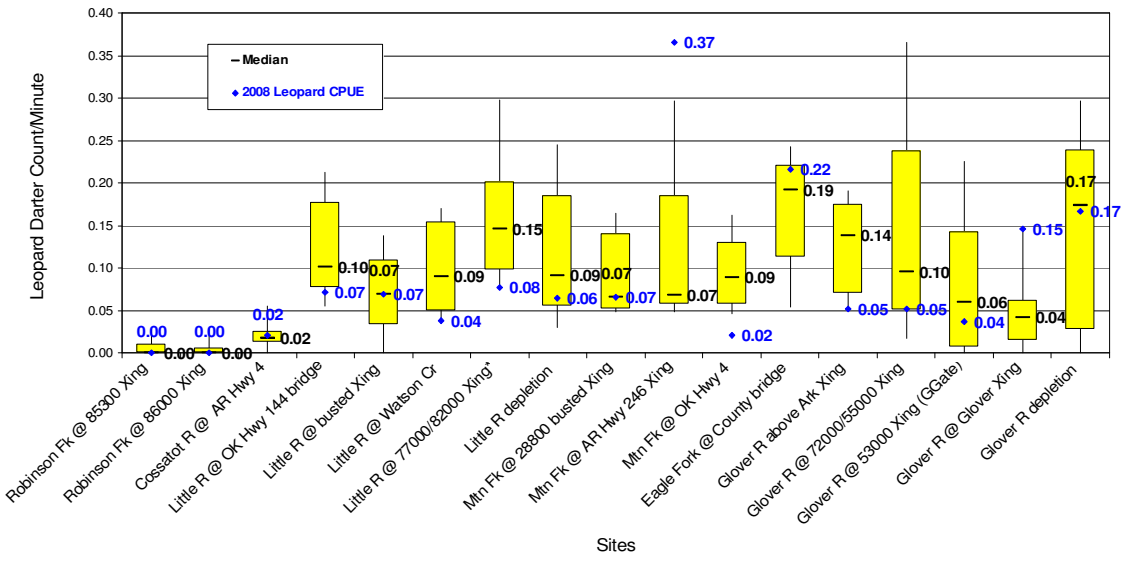


Figure 60. Leopard Darter Counts per Minute by Site

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 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 took the Bald Eagle off the endangered species list: however the Ouachita National Forest still tracks its nesting activities on the Forest. The Bald Eagle will still be protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The Ouachita National Forest had one active Bald Eagle nest during FY 2008. Two fledglings were observed on May 6, 2008, Figure 61 below.

Figure 61. 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 three years (FY 2006, FY 2007, or FY 2008).

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 2008 located 4 alligators in Red Slough and Ward Lake as opposed to 8 alligators counted in FY 2007 and 12 alligators counted in FY 2006.

	2006	2007	2008
Alligators counted	12	8	4

American Burying Beetle *(Nicrophorus americanus)*
One American burying beetle (ABB) was caught during 711 trap nights on established transects lines and three were caught on the Fletcher Timber sale unit and relocated. The Cold Springs Ranger District accepted, re-located, and provisioned 28 American burying beetles that were captured in areas off of the Forest. During FY 2006, three ABB were caught during 921 trap nights and during FY 2007, two were trapped during 432 trap nights.

	2006	2007	2008
ABB	3	2	1**
Trap nights	921	432*	711

*ABB were captured during 432 trap nights on the Poteau/Cold Springs RD; although total trap nights equaled 920
**3 ABB 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 2008; however work accomplished during 2007 was finalized and reported. Freshwater mussel surveys were conducted in the Caddo, Ouachita and the Saline river systems during 2007, in conjunction with the USFWS Aquatic Specialist and the AGFC malacologist to provide information for the Arkansas Fatmucket *(Lampsilis powellii)* five-year status review. The 2008 report indicates that this freshwater mussel species is even more imperiled than previously known. The USFWS concluded that the Arkansas fatmucket should be reclassified as endangered throughout its range, i.e., it meet the Endangered Species Act definition of endangered, which is that a species is in danger of extinction throughout all or a significant portion of its range. The following is a summarization of the USFWS report.

Extant populations of the Arkansas fatmucket mussels *(Lampsilis powellii)* occur throughout most of the historic range which includes the Ouachita River upstream of Lake Ouachita, South Fork Ouachita River upstream of Lake Ouachita, Alum Fork Saline River, Middle Fork Saline River, North Fork Saline River, Saline River upstream of the Fall Line and the Caddo River. Significant population declines and reduced distribution have been documented since the USFWS listing. Catastrophic population declines have resulted in the extirpation of Arkansas fatmucket from the South Fork Saline River. The Caddo River, Ouachita River, South Fork Ouachita River, Middle Fork Saline River, and North Fork Saline River have experienced and continue to experience population declines with extirpation of Arkansas fatmucket from several stream reaches. Increasingly small and isolated populations are becoming increasingly more susceptible to stochastic events and ongoing and/or increasing anthropogenic impacts.

Without continued and immediate efforts to restore historic habitat, conserve existing habitat, and subsequently augment and reintroduce populations in areas experiencing population decline or extirpation, this species will likely become extirpated across much of its range in the next 10 to 20 years. The Alum Fork Saline River and Saline River appear to be the only stream populations that are currently stable, but these populations are faced with encroaching urbanization from nearby cities.

No new information has become available for this review that indicates that threats to the species have been sufficiently curtailed to show that the Arkansas fatmucket should be delisted. To the contrary, new information has become available since listing that indicates that threats to the species have and continue to increase, i.e., Arkansas fatmucket distribution is becoming increasingly disjunct in smaller numbers, and there has been a significant range wide decline in Arkansas fatmucket populations.

The degree of threat to the Arkansas fatmucket is high because there is a continual threat to its habitat (e.g. primarily from land use practices that are detrimental to habitat and water quality,

illegal activities such as gravel mining, and habitat fragmentation). The recovery potential is moderate because the biology, as well as ecological factors affecting the biology, is well understood.

Researchers are currently investigating the limits and phylogeography of *Lampsilinae* in Arkansas with emphasis on species of *Lampsilis*. Pending the results of ongoing genetic analyses, the USFWS concludes that the Arkansas fatmucket should be reclassified as endangered throughout its range, i.e., meets the ESA definition of endangered, which is that a species is in danger of extinction throughout all or a significant portion of its range. If the ongoing genetic analyses refute unequivocally the current taxonomic status of Arkansas fatmucket, the species should be delisted since it would be merged with the more widespread and common *Lampsilis siliquoidea* (fatmucket). No action either direction should be taken until the final results of the genetic analysis has been widely accepted by the scientific community.

The Journal of the Southwestern Association of Naturalists published the following: STATUS OF RARE AND ENDANGERED FRESHWATER MUSSELS IN SOUTHEASTERN OKLAHOMA, by HEATHER S. GALBRAITH, DANIEL E. SPOONER, AND CARYN C. VAUGHN of the University of Oklahoma, Oklahoma Biological Survey and Department of Zoology.

This study surveyed the freshwater mussel fauna (*Bivalvia: Unionidae*) of the Mountain Fork River, a major tributary of the Little River in eastern Oklahoma and western Arkansas. Twenty-two species of unionids as well as the exotic Asian clam, *Corbicula fluminea*, were found to occur in the Mountain Fork. Total mussel abundance (mussels found/hour) ranged from 0 to 312 with a mean of 40 +/-84 individuals per site. Mussel species richness per site ranged from 0 to 13 species, with a mean of 6 (+/- 4). The mussel fauna in the Mountain Fork River is dominated by the Interior Highlands endemic the Ouachita kidneyshell, *Ptychobranchus occidentalis*, the three-ridge, *Amblema plicata*, the pistolgrip, *Tritogonia verrucosa*, the plain pocketbook, *Lampsilis cardium*, and the pigtoe, *Fusconaia flava*. Rarer species include the Ouachita creekshell, *Villosa arkansasensis*, and the Southern hickorynut, *Obovaria jacksoniana*. Both of these species are Ouachita endemic mussels.

The major threats to mussel populations in the Mountain Fork River above Lake Broken Bow include siltation from timber harvest and runoff from agricultural activities and residential construction. If these activities are managed, the Mountain Fork River should maintain a healthy and diverse mussel fauna in the future.

Mussel surveys will continue to be conducted, in conjunction with the USFWS aquatic specialist 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.

Slit-mouth snail - Annually report slit-mouth snail survey results in comparison to past surveys.

Rich Mountain Slit-mouth Snail (*Stenotrema pilsbryi)*
Nine thirty-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 thirty-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 thirty-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).

	2006	2007	2008
# Rich Mountain Slit-mouth Snail	8	15	16
30-Minute Surveys	5	6	9

Endemic Salamanders
Report survey results in comparison to past surveys for the Rich Mountain, Caddo Mountain, and Fourche Mountain salamanders:

The Rich Mountain Salamander is endemic to the Ouachita Mountains of southeastern Oklahoma and west-central Arkansas, and is mainly restricted to mesic forest (Petranka 1998). The Ouachita Mountains are unique among mountain ranges in North America because they trend east–west. This orientation results in mesic forest, and thus the Rich Mountain Salamander is primarily found on high-elevation, north-facing slopes (Blair & Lindsay 1965; Duncan & Highton 1979; Foti & Glenn 1991; Trauth & Wilhide 1999). This salamander occurs only at the higher elevations on six major mountains: Kiamichi, Round, Rich, Black Fork, Winding Stair, and Buffalo.

In FY 2007, biologists from New York and Oklahoma AGFC with assistance from herpetologist, Kelly Irwin of the AGFC, collected salamander specimens to identify and define species and species boundaries within the *Plethodon ouachitae* complex which includes the several closely related salamander species, Caddo Mountain *(Plethodon caddoensis)*, Rich Mountain *(Plethodon ouachitae),* and Fourche Mountain *(Plethodon fourchensis)*, using modern DNA sequence techniques. This work was essential in order to determine the true endemic plethodontid salamander diversity and its distribution in the Ouachita Mountains of Arkansas. In FY 2008 the results of data were published in Molecular Ecology (2008) 17, 5315-5335, entitled "Lineage diversification and historical demography of a sky island salamander, *Plethodon ouachitae*, from the Interior Highlands". Results of the study revealed that *Plethodon ouachitae* is composed of seven well- supported and geographically structured lineages across six major mountains. To date, 125 Rich Mountain Salamander from 20 localities, 125 Fourche Mountain Salamander from 33 localities, and 78 Caddo Mountain Salamander from 20 localities have been collected in Arkansas (Fig. xx). Significant discoveries include: (1) the first record of Rich Mountain Salamander in Scott County; (2) the first record of Rich Mountain Salamander from Cedar Mountain (part of Round Mtn); (3) the first record of Fourche Mountain Salamander in Montgomery County, extending its known range eastward; (4) the first specimens of Fourche Mountain Salamander collected from Shut In Mountain in Scott County, extending the known range northwestwardly; (5) the first record of Caddo Mountain Salamander from the Gillham Lake area in Howard County, extending the known range southward; and (6) the first records of Caddo Mountain Salamander from Sharptop Mountain.

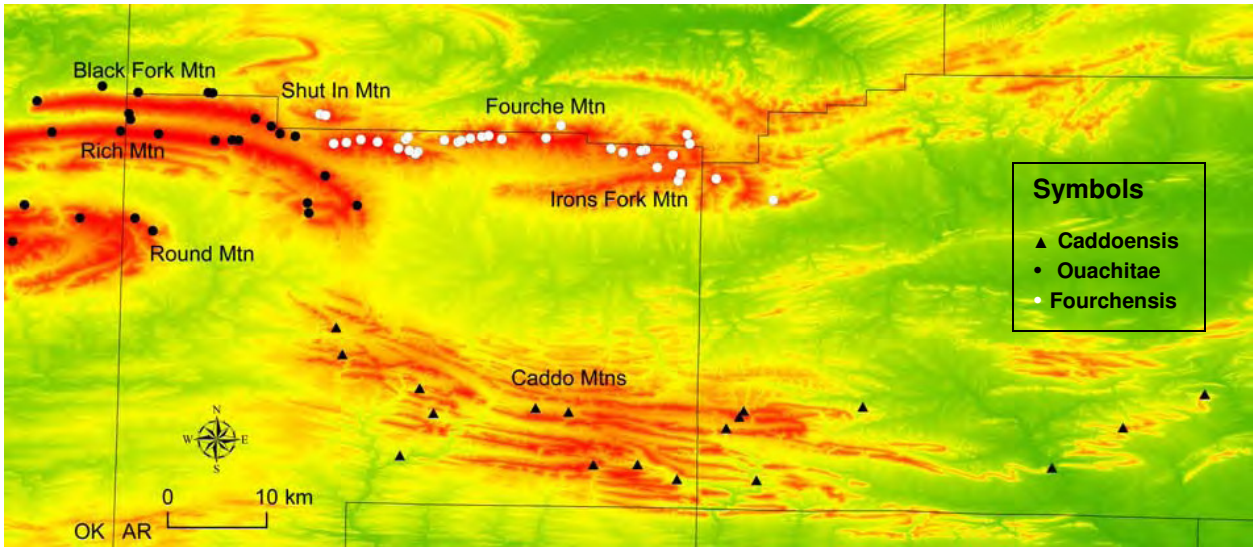


Figure 61. Map of collection localities for Plethodon ouachitae, Plethodon fourchensis, Plethodon caddoensis. Red indicates suitable habitat by elevation for these salamanders.

Geologic Resources Desired Conditions

Geologic Resources Desired Condition
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.

Report any geologic resources and hazards identified and monitoring results for value of resources discovered and risk of geologic hazards.

During FY 2008, 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 National Forest in both Arkansas and Oklahoma. Where such threats are identified, appropriate actions will be taken to minimize them. Threats identified by Ouachita National Forest 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 **Land Administration Desired Condition**
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.

Landline Location or Maintenance

How many miles of Forest boundaries have been located or maintained?
There were miles of 135.4 landline location or maintenance accomplished on the Ouachita National Forest, compared to 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 13 encroachments were resolved.

Land

How many acres of land have been purchased?
FY 2008 was unusual in that no lands were purchased. 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?
FY 2008 was unusual in that no lands were exchanged. During FY 2007, there were 3,978 acres of lands exchanged (To Proponent, 556; to FS, 3,422) as compared to FY 2006 acres of land exchanged of 72.95 acres (To Proponent, 31.95; to FS, 41.0)

How many acres of land have been sold?
No lands were sold during FY 2008.

ROW

How many ROW acquisition cases have been accomplished?
Three road easements were acquired during FY 2008.

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 National Forest 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 2008, the Ouachita National Forest hosted a number of local volunteers who assist with collections management in the Supervisor's Office. This group provided over 500 hours of service (valued at over $9,000). 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 9,200 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. Thirty-nine archeological and historic sites were revisited by heritage staff to reassess their conditions.

Heritage Resource Evaluations

Report number of properties of heritage resource evaluation accomplished.

No archeological sites were formally evaluated for eligibility for inclusion on the National Register during 2008.

Heritage Resource Survey

Report number of acres of heritage resource survey accomplished.

Archeological survey was undertaken on 10,448 acres during the year as a part of Section 106 activities. As a result, 98 archeological sites were found and documented.

Heritage Resources **Tribal and Native American Interests Desired Condition**
The Ouachita National Forest 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 National Forest. The Ouachita National Forest 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 National Forest 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 National Forest, 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), the Caddo Nation (2004), the Absentee Shawnee Tribe (2005), the Muskogee (Creek) Nation (2006) and the Chickasaw Nation (2007)

The 2008 To Bridge A Gap conference was co-hosted by the Choctaw Nation of Oklahoma, the Ouachita National Forest and the Ozark-St. Francis National Forests in Fort Smith, Arkansas 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 National Forest continues to work with the Oklahoma Tribes.

The Ouachita and Ozark-St. Francis National Forests 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 National Forest?
There are a total of 118 recreation sites managed by the Ouachita National Forest.

How many recreation sites were maintained to standard?
There were 115 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 5.

Table 5. Recreation Sites Estimated Occupancy Rates, Ouachita National Forest

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

* Data not available

As can be seen within Table 5, use of FS maintained fee use recreation areas varies widely, from one reported use to a high of an average occupancy of 52% at Camp Clearfork. Other sites receiving relatively high use are Cedar Lake Campground and Horse Camp (32% and 22% average occupancy, respectively), Albert Pike Campground (29% average occupancy), Little Pines Campground (32% average occupancy), and Charlton Campground (32% average occupancy).

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 National Forest 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 90 presentations were offered and over 35,000 persons, not including those reached by newspaper or television audiences, received information from, or participated in, Forest Service programs. 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 National Forest 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?
Nine timber management projects, one of which was in a Wild and Scenic River Corridor with a VERY HIGH SIO, and one special use project for road construction through the Upper Kiamichi River Wilderness area, also having a SIO of VERY HIGH, were conducted in 2008. The special use project is ongoing with more monitoring planned for 2009 and 2010 at the least. FY 2008 activity compares to FY 2007 activity of seven timber management projects, two of which were in Wild and Scenic River Corridors with a very HIGH SIO, and one special use project for a buried electric line adjacent to a wilderness area were conducted.

How many landscape architecture consultations occurred?
Eighteen consultations occurred with a Landscape Architect for the above nine projects. This compares to FY 2007 activity of fourteen consultations for the eight FY 2007 projects.

To what degree were SIOs maintained/achieved?
The Forest exceeded 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.

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. Law Enforcement continues, however, to work under declining budgets and downsized staff levels. In FY 2008, budget deficits required a continued reduction of 33% in the seven Cooperative Law Enforcement Agreements that support local county law enforcement assistance in Arkansas and Oklahoma. The number of Forest law enforcement officers (LEOs) in FY 2008 remained at eight and one Reserve LEO, the same as FY 2006 and FY 2007. The historical high of LEOs forest-wide was twelve and the low was five during FY 2005.. LEOs often work 120-150 hours in a normal 80-hour, two-week pay period. During FY 08 a total of 3,754 hours of Administratively Uncontrollable Overtime (AUO) was worked by LEOs.

During FY 2008, Ouachita National Forest Law Enforcement personnel spent approximately 1,246 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 Forest, a total of 246 Federal Violation Notices, 513 State Violations, 463 Warning Notices, and 444 Incident Reports were issued. A comparison of LE activity with FY 2006 and FY 2007 is provided in the tabulation below.

Fiscal Year	Federal Violation Notices	State Violations	Warning Notices	Incident Reports
2006	256	230	331	444
2007	285	436	370	610
2008	246	513	463	444

Approximately 742 marijuana plants were eradicated from within and adjacent to the Ouachita National Forest. There were 97 separate investigations initiated in FY 2008 including 36 felony drug cases. Additionally, 50 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. Nineteen arson fires were investigated during the fiscal year. A comparison of LE activity with FY 2006 and FY 2007 is provided in the tabulation below.

Fiscal Year	Marijuana Plants	Investigations	Felony Drug Cases	Misdemeanor Drug Cases
2006	6,300	97	41	51
2007	8,775	89	29	98
2008	742	97	36	50

Ouachita National Forest Law Enforcement personnel spent 270 hours in public relation programs for Drug Prevention, Hunter Safety and Girl Scouts. Forest LEOs traveled a total of 206,438 miles in FY 2008, in support of public and agency safety, as well as protection of natural resources and property. Law Enforcement reports show a total of 22,811 public contacts during FY 2008.
A comparison of LE activity with FY 2006 and FY 2007 is provided in the tabulation below.

Fiscal Year	Public Relations Programs	Miles Traveled	Public Contacts
2006	32*	196,423	12,236
2007	252	229,220	19,375
2008	270	206,436	22,811

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

How many facilities were maintained to standard?
The Ouachita National Forest facility inventory included 348 buildings that are categorized as follows: Existing - Active, Existing - Inactive, or Existing - Excess. Of those 348 buildings, 289 have a Facility Condition Rating (FCR) rating of good or fair. The percentage of buildings with an FCR of good or fair is 83%. 22 buildings are rated poor and 37 are unrated. The majority 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 National Forest.

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 National Forest 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 National Forest 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 National Forest 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 2008 are presented in Table 6.

Table 7. Maintenance Level 1- 5 FS Roads, FY 2008, Ouachita National Forest

Maintenance Level	FY 2008 Miles	Percentage
1 - Basic Custodial Care (Closed)	2600	45.4%
2 - High Clearance Vehicles	1645	28.8%
3 - Suitable For Passenger Cars	1217	21.3%
4 - Moderate Degree of User Comfort	205	3.6%
5 - High Degree of User Comfort	20	0.3%
Decommission	35	0.6%
Total	5,721	100.0%

How many miles of roads were operated and maintained to meet the objective maintenance level and class?
During FY 2008, 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 2008, 10.54 miles of arterial/collector roads (4 roads) were reconstructed. During FY 2007, there were 6.44 miles of arterial/collector roads (4 roads) reconstructed as compared to 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, or FY 2008.

How many miles of local roads were reconstructed this year?
During FY 2008, 28.17 miles of local roads were reconstructed. During FY 2007, there were 34.20 miles of local roads reconstructed as compared to 55.4 miles during FY 2006.

How many miles of local roads were constructed this year? How many miles were added (classified) to the system?
During FY 2008, 8.54 miles of local roads (8 roads) were constructed and added to the system. During FY 2007, there were 4.28 miles of local roads (8 roads) constructed and added to the system as compared to 15.99 miles of local roads (22 roads) during FY 2006.

How many miles of road were removed from the system (decommissioned)?
There were 2.70 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 National Forest, LEO's responded to or assisted with 45 accidents. These numbers include minor injuries (sprains, dog bites, etc), ATV, motorcycle, and motor vehicle accidents. Twenty one accidents were motor vehicles with two resulting in

fatalities, eight ATV accidents, eleven motorcycle accidents and four personal injury accidents. Fourteen separate search and rescue operations were conducted during FY 2008. LEO's investigated one logging accident fatality, investigated/assisted with one unattended death, one drowning, one assault on a County Deputy and one suicide attempt. Officers conducted twenty seven compliance checkpoints to address the growing traffic, ATV, and alcohol violations occurring as a result of increased public visitation on the Ouachita. Officers assisted in three separate manhunts for violent suspects and an escaped prisoner. Additionally, in FY 2008, LE&I experienced a felony assault on a K-9 and had shots fired in their direction during a checkpoint.

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

*Data not reported in FY 2006

Were any visitor satisfaction surveys for roads or trails conducted during FY 2007?
No

How many miles of non-motorized trail exist?
There were 557.8 miles of open, non-motorized trail managed.

How many miles of motorized trail exist?
There were 176 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 2008.

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 National Forest in a manner that minimizes adverse impacts to surface and groundwater resources.

How many minerals cases were administered during this fiscal year?
There were 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

How many operating plans have been administered to standard?

For FY 2008, there were 67 operating plans for all levels of minerals activities were administered to standard as compared to 75 operating plans administered to standard during FY 2007.

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.

Commodity, Commercial, and Special Uses **Livestock Grazing Desired Condition**
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 National Forest, and it is expected that this trend will continue.

How many range allotments are currently active on the Ouachita National Forest?
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 6 in FY 2008.

How many acres of the Ouachita National Forest are in range allotments?
For FY 2007, there were 201,675 acres grazed; and in 2008, acres grazed dropped to 118,862 acres, a decline of 82,813 acres.

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

How many permittees are associated with the range allotments?
There is a general downward trend in the number of permittees holding range allotments. There were15 permittees in 2007, as compared to 8 in FY 2008.

Range Permittees	FY 2006	FY 2007	FY 2008
	20	15	8

How many Head Months are associated with the range allotments?
There were 1,813 head months grazed in 2007 and 978 grazed in 2008, a decline of 835 head months. For FY 2006, 2,274 head months were associated with range allotments.

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

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.

How many acres of range forage improvement were accomplished this year?
During FY 2008, there were 1000 acres of range forage improvement compared to 300 acres in 2007.

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?
There were 563 authorizations on the Ouachita National Forest during FY 2008 compared to 506 in FY 2007.

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

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 is increasing.

Firewood

How many cords of firewood were sold?

There were 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.

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 2008, specific hazardous fuel treatments were accomplished on 89,197 acres by prescribed fire with most of these acres being in the WUI area. Other fire treatments on the forest also improve conditions 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.

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 89,197 acres specifically designed to reduce hazardous fuels and 31,097 acres 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, or FY 2008.

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 2008, Steven's Act Burning by the Arkansas Forestry Commission exceeded 2.563 acres which compares to over 9,000 acres in FY 2007 and over 4,000 acres in FY 2006.

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 2008, 41 wildfires burned 460 acres on the Ouachita National Forest compared to FY 2007, when 68 wildfires burned 14,347 acres on the Ouachita National Forest. Of the total number of FRY 2008 fires, 9.8% were lightning-caused and 18% of the total acres burned were a result of these natural ignitions. Arson accounted for 58.5% of all fires and about 66% of the total acres burned. Other causes of wildfires include escapes from debris burning (7.3%), campfires (7.3%), equipment (4.9%), railroads (2.4%), and other miscellaneous causes (9.8%). Lightening caused 20% of the total number of fires. Arson accounted for 34% of all fires and about 8% of the total acres burned.

Wildfire Activity	FY 2006	FY 2007	FY 2008
Total Incidents	187	68	41
Total Acres	23,185	14,347	460

Wildfire by Cause (% of Total Number)			
Lightning	46	20	4
Arson	31	34	24
Escapes from other Fires	7	15	3
Campfires	3	7	3
Equipment	3	1	2
Railroads	1	12	1
Misc.	9	11	4

How many acres of Wildland Fire Use (WFU) were accomplished?
The second WFU project, Hawks Overlook, was undertaken by the Ouachita National Forest was on the Mena/Oden Ranger District cluster and included 58 acres. The WFU projects are naturally ignited fires (lightning) managed for resource benefits (rather than implementing a full suppression response). With the FY 2008 project, use of WFU has successfully been implemented for three consecutive years.

How many large/significant incidents occurred?
There were no large/significant incidents during 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 19,000 acres of growing season prescribed fires during FY 2008. This compares to no accomplished prescribed fire (understory) during the growing season accomplished between mid-April and the end of the fiscal year (September 30) during FY 2007.

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 National Forest 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 120,288 acres of prescribed fire were accomplished. This accomplishment was less than FY 2007 (145,354 acres) but greater than FY 2006 (43,093 acres) and somewhat short of the Forest Plan projection.

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 utilized biological control (grazing) to treat 335 acres of kudzu in Oklahoma.

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 12 projects as shown in the following tabulation. Also during FY 2008, work was initiated on six Roads/Travel Analyses that will be completed in FY 2009.

Projects and Project-Level Travel Analyses, Ouachita National Forest			
Completed in FY 2008		**Ongoing or Initiated in FY 2008**	
Project Name	**Ranger District**	**Project Name**	**Ranger District**
South Waldron Ridge	Poteau-Cold Springs Ranger District cluster	Mtn. View Watersheds	Caddo-Womble Ranger District cluster
Mill-Moss-Riley	Jessieville-Winona-Fourche Ranger District cluster	Dutch Creek Mountain Project (EA)	Jessieville Jessieville-Winona-Fourche Ranger District cluster
Polk/Mill Creek Watersheds	Caddo-Womble Ranger District cluster	Two Mile Watershed	Mena-Oden Ranger District cluster
Lower Sugar Creek	Poteau-Cold Springs Ranger District cluster	Eli Branch	Poteau-Cold Springs Ranger District cluster
Upper Cossatot Watershed	Mena-Oden Ranger District cluster	Alum Fork-Middle Fork Project (EA)	Jessieville-Winona-Fourche Ranger District cluster
Compartment 122 EA	Caddo-Womble Ranger District cluster	Buffalo Creek 1	Oklahoma Ranger District
Haw Creek	Poteau-Cold Springs Ranger District cluster		
Big Valley Watershed	Mena-Oden Ranger District cluster		
Pencil Bluff Watershed	Mena-Oden Ranger District cluster		
Blakely Watershed	Jessieville-Winona-Fourche Ranger District cluster		
Shawnee	Oklahoma Ranger District		
Compartment 1813-1814	Oklahoma Ranger District		

How many miles of road were decommissioned?

There were 2.70 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 FY2008, there were 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. This compares to 4,363 acres of early seral habitat created by regeneration harvest methods and 297 acres by wildlife habitat improvements during FY 2007. 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.

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?
Within Management Area (MA) 22, 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 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 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 2008, 2,028 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 3,008 acres of young susceptible pine stands were accomplished. Thinning of 10,981 acres reported for 2008 also reduce SPB susceptibility.

Report acres treated (thinned) and acres at risk. Report acres of pine harvest. Report acres at risk every five years.
During FY 2008, 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 2008, approximately 751 Acres of acquired private land previously in loblolly pine were planted with shortleaf pine.
There were also 193 acres of off-site loblolly pine forest/woodlands replaced with shortleaf pine and native hardwoods in FY 2008.

The Ouachita National Forest 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. In addition, a new FSVeg database interface tool (FSVeg Spatial) will be implemented on the Ouachita National Forest 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 GIS databases still need to be directly connected for monitoring purposes. Fire/Fuels activities should have 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 FY2009.

Insufficient data were available to answer the following questions, listed by objective number:

OBJ12. *Are landscape-level and stand level percent seral stages in the pine-bluestem woodland community within desirable ranges of variability?*

OBJ13. *How many acres of oak forests and woodlands have been treated for oak decline and other hardwood forest health problems?*

There were no acres treated specifically for oak decline. However wildlife stand improvement treatments provide for healthier hardwood stands, and treatments occurred on 1,522 acres.

OBJ14. *How many acres of pine forests and woodlands have been treated for southern pine beetle susceptibility?*

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

Soil, Water, and Air

How well are watershed conditions being protected, enhanced or maintained?
The Basin Area Stream Survey was conducted during FY 2006 to assess watershed conditions. It is described and explained below. These data along with previous surveys will be used for the five-year evaluation of the 2005 Plan effectiveness.

How many acres of soil and water improvement were accomplished this year?
There were 41 acres of soil and water improvement accomplished.

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?
There were no data collected in FY2008 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 collections. This activity occurs every few years, and 2006 was the sixth survey since 1990. 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. In additional to state BMPS, the 2005 Forest Plan includes standards for watershed protection.

This year, the determination of the effectiveness of the 2005 Forest Plan Standards and Best Management Practices (BMPs) was assessed primarily through the resurvey of the Basin Area Stream Surveys (BASS). This activity occurs every few years, and 2006 was the sixth survey since 1990. BMPs are basically a preventative rather than an enforcement system. BMPs are a whole management and planning system in relation to sound water quality goals, including both broad policy and site-specific prescriptions. In additional to state BMPS, the 2005 Forest Plan includes standards for watershed protection.

- In cooperation with the Southern Research Stations Center for Aquatic Technology Transfer (CATT), nine watersheds were intensively monitored on the Cold Springs, Jessieville, and Mena units of the Poteau/Cold Springs, Jessieville/Winona/Fourche, and Mena/Oden Ranger District clusters, respectively. This survey provided data for over 48,000 acres or 46 miles of stream. In addition, 17 sites on 15 streams were monitored extensively. Water: The Basin Area Stream Survey (BASS) was conducted in cooperation with the Southern Research Stations Center for Aquatic Technology Transfer (CATT) during FY 2006. Data from the nine watersheds surveyed under BASS was 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.

The Basin Area Stream Survey methodology provides a monitoring link from Best Management Practices (BMPs) to the aquatic ecosystem. The objectives of this study 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 National Forest 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. *Maintain or improve watershed health.*

How well are the stream and river aquatic habitat and watershed conditions being protected, enhanced or maintained? What was the result of soil quality monitoring this year?
During FY 2008, 14 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: 14, or 100%, met the standard.

How many of the impaired waterbodies are on or downstream of the Ouachita National Forest?
No data was available to answer this question.

How many acres of soil inventory have been accomplished?
No soil inventory was accomplished on the Ouachita National Forest.

What percent of treatment units are meeting soil quality standards this year?
During FY 2008, 100% of the treatment units met the soil quality Standard.

OBJ16. *Conduct watershed improvement actions on at least 40 acres per year.*

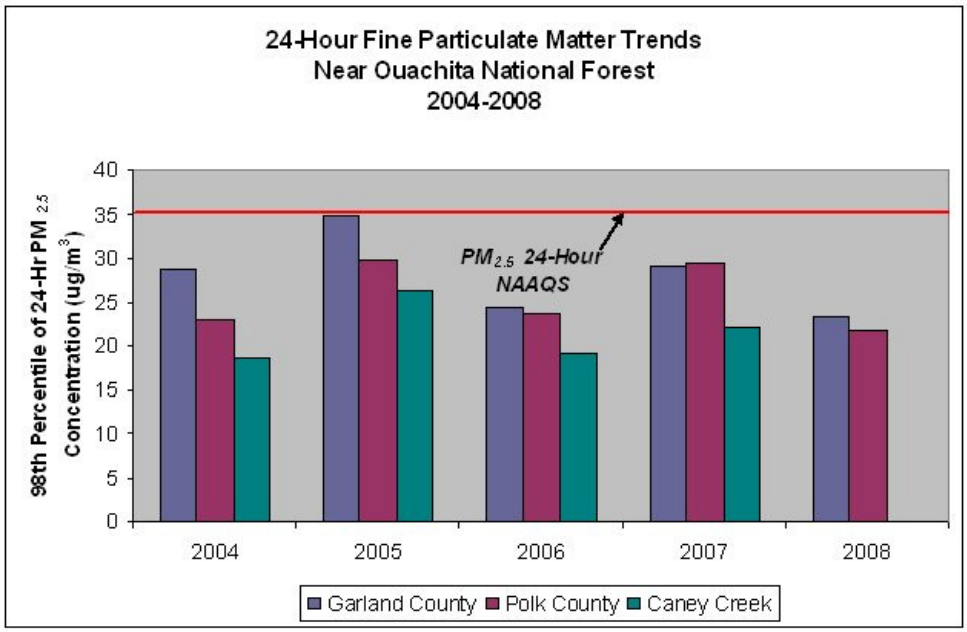
How many acres of watershed improvement actions have been accomplished?
The Ouachita National Forest exceeded the objective of completing 40 acres of watershed improvement actions per year by accomplishing 41 acres of watershed improvement or maintenance. The FY 2007 work included 35 acres of watershed improvement through normal project work and 10 acres of watershed improvement by restoring a tornado area that was harvested by a method of clear cutting. Most of the normal project restoration work involved stabilizing gullies and abandoned roads.

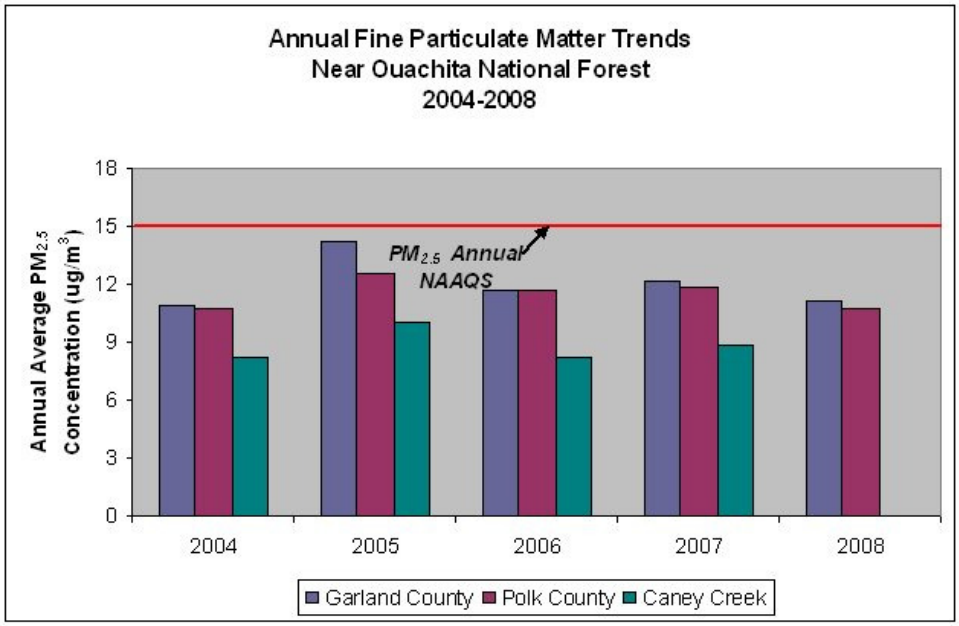
How many acres of watershed improvement maintenance have been accomplished?
There were 41 acres of soil and water improvement accomplished. This work typically includes re-applying stabilization measures, such as re-constructing waterbars and re-seeding, on areas of watershed improvement projects that were accomplished 1-3 years earlier but for various reasons are now (or expected to become) unstabilized and need additional treatment.

OBJ17. *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. Particularly, 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 $PM_{2.5}$, are the cause of regional haze. The Environmental Protection Agency has established $PM_{2.5}$ NAAQS to protect public health and the environment; the daily standard is set at 35 $\mu g/m^3$, while the annual standard is set at 15 $\mu g/m^3$. An ambient air quality monitoring site to measure fine particulate matter has been situated within the Ouachita National Forest 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 Forest 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 charts below and in subsequent discussion.





(Sources: http://www.epa.gov/air/data/geosel.html and http://vista.cira.colostate.edu/views/)

As shown, neither the daily or annual NAAQS for $PM_{2.5}$ is being exceeded at any of the monitoring sites located on or near the Forest. Although 2008 data is 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 table below summarizes the measured ozone concentrations at that location for each of the past three years.

Ozone Monitoring Location	*4th Highest Maximum Eight Hour Average Ozone Concentration (parts per million)*			*3-Year Average (parts per million)*
	2006	*2007*	*2008*	
Polk County, AR	0.073	0.079	0.069	0.074

(Source: http://www.epa.gov/air/data/geosel.html)

As shown, although the measured concentration in 2007 was above 0.075 ppm, the 3-year average was less than the ozone NAAQS.

Since both fine particulate matter monitoring as well as ozone monitoring conducted within or near to the Forest show levels of 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?
In the 1st and 4th quarters of 2007 the Caney Creek IMPROVE site achieved less than 90% of data collection. In the second quarter of 2007 they had at least 90% of data collection. In the third quarter of 2007, they had 100% of data collection.
(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 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.

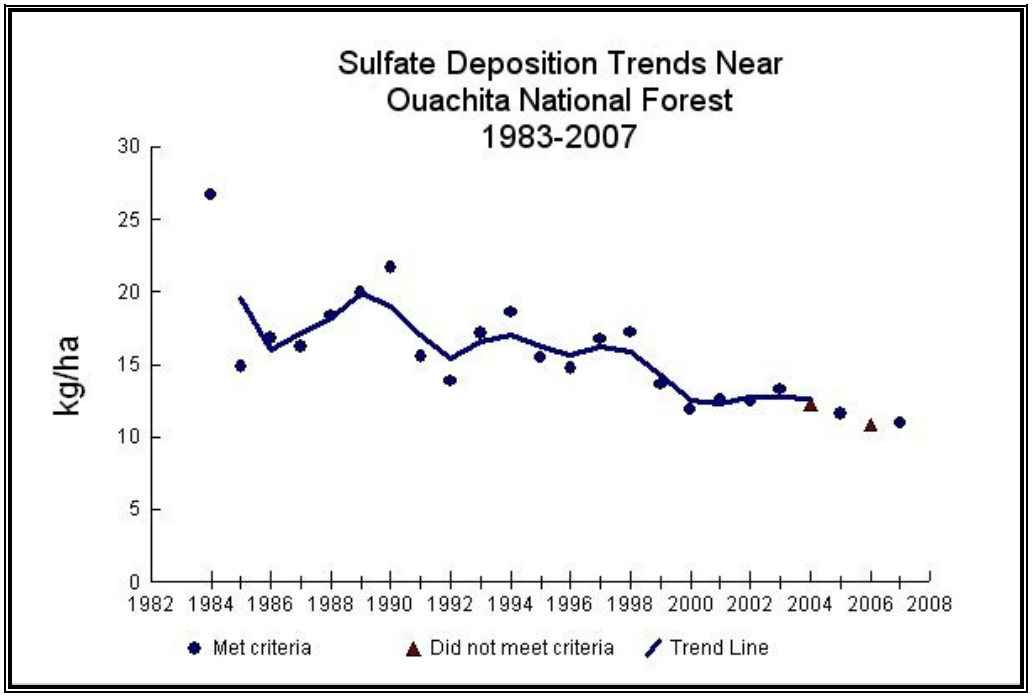
What were the findings (and trends) in comparison to previous monitoring efforts?
As shown above, fine particulate matter and ozone concentrations near the Forest have been measured for several years. Based on data analysis, no trends in ambient air quality concentrations of these two pollutants can be established.

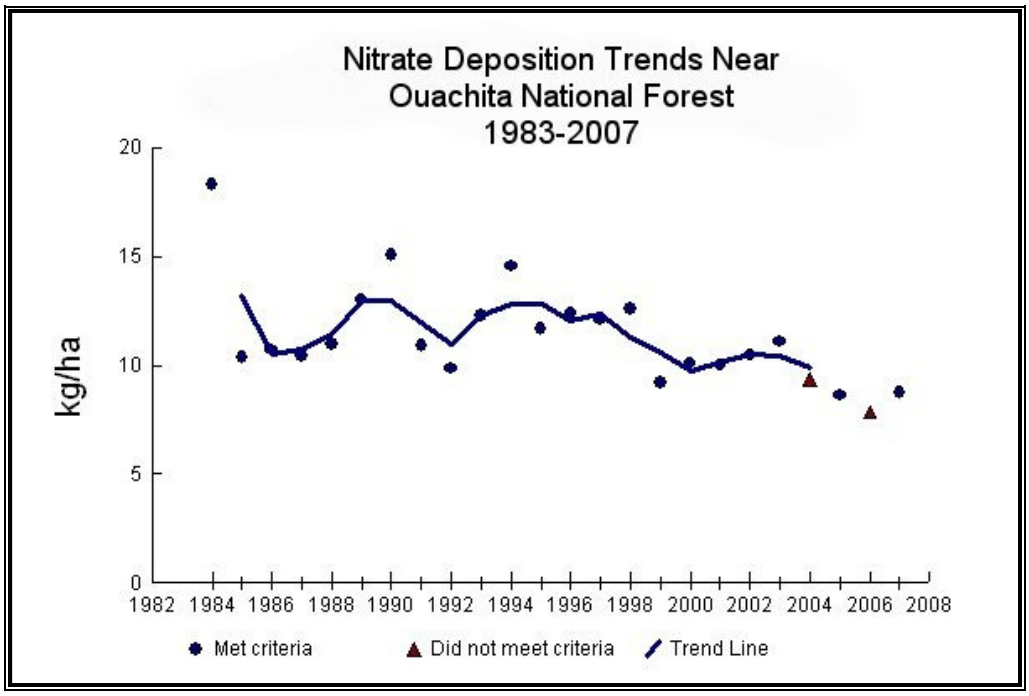
How many PSD permits were reviewed this year?
At lease five PSD permits were reviewed at some level. The most in depth review conducted was for John W. Turk, Jr. permit in Hempstead County.

How many regional air quality planning committees were participated in?
The zone air quality specialist participated in two committees for CENRAP (Central Regional Air Planning Association).

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?
The water chemistry (pH) data gathered as a part of Basin Area Stream Surveys will contribute to determining the potential influence from acid rain on water quality during the five-year evaluation process. 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 National Forest, 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 Forest in Clark County, Arkansas. Total sulfate and nitrate deposition values are available for the years 1983 through the present. The graphs below present the trends in acidic deposition near the Ouachita National Forest.





Lands

OBJ18. *Maintain landlines on a 10-year cycle.*

How many miles of landlines were located or maintained this year?
135.4

Minerals

OBJ19. *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 2006; however during FY 2007, four APDs for gas drilling (2 in Arkansas and 2 in Oklahoma) were received. During FY 2008, four APDs for gas drilling were also received, all processed timely.

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

OBJ20. *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 National Forest is working with only one company with reserved mineral rights. Processing operating proposals within required timeframes is accomplished by the District Ranger. Any new proposals will be similarly processed.

Heritage Stewardship and Tribal and Native American Interests

OBJ21. *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 has continued during the fiscal year to update the Heritage Resource Survey Coverage and Sites layers in GIS. This data is 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 National Forest to place its limited heritage funding where it will have the greatest benefit. The data generated was provided to a contractor who drafted much of the Heritage Overview during FY 2007 and 2008.

OBJ22. *Drawing upon the heritage resources overview, complete a Heritage Resources Management Plan by 2010.*

What progress was made this year towards completing a Heritage Resources Management Plan by 2010?

The Ouachita National Forest is continuing to gather data regarding the prehistory and history of the area encompassed by the Ouachita National Forest; most of the data is being generated through compliance with the Section 106 of the National Historic Preservation Act. This data, together with the Cultural Resources Overview, will allow a comprehensive management plan to be developed for the Ouachita National Forest by 2010, as included in OBJ 21.

OBJ23. *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 National Forests and the Advisory Council on Historic Preservation is currently in effect. After the Heritage Resources Overview and Heritage Resource Management Plan have been developed and approved, the Ouachita National Forest will have the basis for modifying the Programmatic Agreement as appropriate.

Public Use and Enjoyment

Provide Outdoor Recreation Opportunities

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

Within the 118 recognized recreation sites on the Ouachita National Forest, 2,445,970 PAOT days were utilized during FY 2008.

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.

Objectives

OBJ24. *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 245 miles of non-motorized trail.

OBJ25. *Maintain all recreation facilities to standard.*

How many recreation sites were maintained to standard this year?
Of 118 recreation sites, 115 (97%) were maintained to standard.

OBJ26. *Improve accessibility within at least one recreation site per year.*

Report sites improved for accessibility.

Funding was secured and initial design work was done to improve accessibility at the Cedar Lake Day Use Area and Albert Pike Campground.

OBJ27. *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 2008 public comments were analyzed and environmental analysis work was initiated. Work 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. The Forest plans to complete environmental review and develop the preferred action alternative during FY 2009.

OBJ28. *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, 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 National Forest 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 2008, 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 2008 a fishing pond was built at the Womble Ranger District office as a future Kids Fishing Derby site.

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 25.

OBJ29. *Improve or maintain all designated observation sites at least once per decade.*

How many designated scenic overlooks are maintained on the Ouachita National Forest?
There are a total of 38 observation sites maintained within the Ouachita National Forest.

How many observation sites were improved or maintained this year?
No hard improvements were made to any observation sites in 2008. Vegetation was removed for better viewing at five sites in 2008. One observation site is being reconstructed with a road contract and will be completed in 2009.

Wilderness

OBJ30. *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 is planned in FY09. Inventory work is planned in Poteau Mountain, Dry Creek, and Flatside Wilderness Areas.

OBJ31. *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

How many Wilderness Management Plans were updated this year?

There were no updates to Wilderness Management Plans in FY 2008. 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 and the target for this work will have to be extended.

Facility Operation and Maintenance

OBJ32. *Eliminate three leased facilities by 2015.*

How many leased facilities were eliminated in FY 2008?
None

OBJ33. *Eliminate 30 percent of other non-essential administrative facilities by 2015.*

How many non-essential facilities remain as a percentage of the FY 2005 baseline (to be determined)?
Identifying non-essential facilities is limited until District consolidation plans are complete. The baseline for measurement has not been determined.

OBJ34. *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 2010 to identify facilities requiring additional work to make them accessible.

OBJ35. *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 2010.

OBJ36. *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 National Forest is beginning to document safety inspections that they routinely conduct. This data had not previously been reported and was not available for every District for the FY 2008 M&E Report.

Transportation System and Public Use of Off-Highway Vehicles

OBJ37. *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.

OBJ38. *By 2015, identify all system roads that should be decommissioned.*

OBJ39. *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?
There were 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.

OBJ40. *Reduce miles of road under Forest Service maintenance.*

How many road miles are in road maintenance inventory?
At the end of FY 2008, there were 5,721 miles of road in Forest Service inventory, compared to FY 2007 with 5,550 miles of road in Forest Service inventory.

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.

OBJ41. *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?
Aquatic Organism Passage: Two major river crossings were rebuilt for fish friendly designs to restore fish passage to 11 miles of streams. Thirty-four miles of unauthorized OHV (Off Highway Vehicles) trails along and across streams were decommissioned restoring numerous crossings to natural conditions and reducing sediment impacts improving fish habitat and passage to 34 miles of streams. Two additional fish passage related projects were stopped by the freeze in spending due to fire borrowing. Nearly 100 crossings were assessed for aquatic organism passage by a team from the Center for Aquatic Technology Transfer, Blacksburg, Virginia.

Figure 61. Old 510 crossing of Little Missouri River

Figure 62. Replacement Road 510 low-water bridge

The Glover's "Golden Gate" Bridge crossing on road 53000 (Figure 63) was replaced by a precast low water bridge (Figure 64) that was designed specifically for fish passage within Critical Habitat of the threatened leopard darter and for safe passage over the river. The contract for this project was issued the end of fiscal year 2008 with completion of this project during the winter of 2008/2009. It restored river connectivity for six miles upstream and four miles downstream to the next low water crossings which are also barriers. The US Fish and Wildlife Service contributed $60,000 to the project and the remaining two-thirds of the project was funded with Federal Highway dollars committed to fish passage projects on National Forest roads.

Figure 63. Prior Glover 53000 Vented Low-water Crossing

Figure 64. New Glover 53000 Pre-cast Low-water Crossing Designed for Leopard Darter Passage

Commodity and Commercial Uses (Timber, Minerals, Energy)

OBJ42. *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 201,839.86 ccf of timber sold compared to 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 7 describes the volume of timber offered and sold during FY 2008. More timber was offered than was sold. This may result in timber offered during FY 2008 not being sold until FY 2009.

Table 7. Timber Offered and Sold (CCF), Including Method of Harvest

		FY 2006	FY 2007	FY 2008
Timber Offered	How many hundred cubic feet (ccf) of timber were offered?	75,699.20	198,605.81	215,206.18
Timber Sold	How many hundred cubic feet (ccf) of timber were sold?	199,270.45	206,356.58	201,839.86

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

Timber Resource Inventory

How many acres of timber resource inventory have been accomplished?

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

Fuels

OBJ43. *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 National Forest. Based on previous estimates done using FY 2000 data, there is an estimated 100,000 to 150,000 acres of the Ouachita National Forest that likely is in either condition class 1 or 2 (slightly less than 10% of the total Ouachita National Forest).

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.

OBJ44. *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 2008, 89,197 acres of hazardous fuel treatments were accomplished, most of which was in the WUI. Prescribed fire treatments for other objectives also help meet this objective. The tabulation below compares accomplishments for FY 2006, FY 2007, and FY 2008.

Hazardous Fuel Reduction	
Year	Acres
FY 2006	75,637
FY 2007	83,136
FY 2008	89,197

Budget

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

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

* The 2005 budget of $10.2 million included an additional appropriation of $1.1 million for timber sales.
** National Forest System funds in FY 2008 totaled $8,758,570.

The Ouachita National Forest experienced significant changes in National Forest System (NFS) budgets between FY 2002 and FY 2008. The NFS allocations do not include appropriations for Knutsen-Vandenburg or for construction and maintenance of facilities and infrastructure. While funding levels had increased in FY 2001 for ice storm recovery, they declined in FY 2002 due to fire borrowing (transfer of funds to fight major wildfires nationwide). Fire borrowing did not affect funding for either FY 2004 or FY 2005. Discounting that the 2005 budget was enhanced by a $1.1 million additional appropriation for timber management and that the Ouachita National Forest also held the Western Operations Center budget through FY 2006, the trend for National Forest System funding levels steadily decreased through FY 2007. In FY 2008, funding increased due to a change in regional distribution of timber management funding.

Performance History

Table 8 displays management accomplishments completed on the Ouachita National Forest during FY 2003 through FY 2008.

Table 8. Resource Management Accomplishments

Objective or Activity	Unit of Measure	FISCAL YEAR					
		2003	2004	2005	2006	2007	2008
Trail Construction	Miles	6	6	0	5	5	4
Trail Maintenance	Miles	293	288	293	299.8	300	245
Heritage Resource Survey	Acres	6,490	22,930	20,046	16,176	22,460	10,444
Waterhole Development	Structures	107	142	220	57	212	99
Midstory Reduction	Acres	3,014	353	1,350	7,715	4,935	2,410
Prescribed Fire	Acres	128,319	134,386	96,376	43,093	145,354	120,748
Lime, Fertilize And/Or Stock Lakes/Ponds	Acres	647	670	828.5	970	1,281	558
Livestock	Number	1,179	903	715	530	300	154
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)
Active Range Allotments	Number	20	17	16	16	16	6
Watershed Improvement & Maintenance	Acres	35	56	73	87	45	41
Minerals Administration	Cases	191	577	860	403	640	894
Timber Offered	Million cubic feet	13.11	17.77	20.02	7.57	19.86	21.52
Timber Sold	Million cubic feet	11.16	14.24	16.68	19.93	20.64	20.18
Acres Sold by Harvest Method:							
Salvage/Sanitation	Acres	118	539	1,008	995	69	2,300
Clearcut	Acres	0	0	0	74	0	193
Seedtree/ Shelterwood	Acres	460	2,068	2,702	2,602	4,363	3,186
Seedtree	Acres	N/A	N/A	N/A	1,503	3,594	2,984
Shelterwood	Acres	N/A	N/A	N/A	1,099	769	202
Thinning	Acres	5,873	12,073	8,933	13,046	9,922	10,981
Uneven-Aged Management*	Acres	1,334	2,760	3,289	3,216	3,065	1,246
Timber Harvested	Million cubic feet	12.24	11.40	16.47	16.67	13.93	18.32
Reforestation (planting & natural regeneration)	Acres	6,307	7,840	7,011	6,640	4,446	5,938
TSI & Reforestation Herbicide Treatment	Acres	1,344	1,452	2,891	1,124	3,253	6,881
Non-Herbicide Release	Acres	20,978	17,536	11,095	7,166	5,725	861

Objective or Activity	Unit of Measure	FISCAL YEAR					
		2003	2004	2005	2006	2007	2008
Treatment							
Land Line Location Or Maintenance	Miles	39.5	77.0	80.0	52.6	65.0	135.4
Rights-of-way	Cases	2	1	1	0	1	
Arterial/Collector Roads Reconstructed	Miles	33	4	14	15.56	6.44	10.54
Local Roads Constructed	Miles	5	5	5	15.99	4.28	8.54
Soil Inventory	Acres	50,000	0	9,090	3,240	0	0
Stream Inventory	Miles	N/A	N/A	N/A	46	10	10
Stream Inventory For Leopard Darter	Miles	N/A	N/A	N/A	8	8	8
Stream Inventory For Ouachita Darter	Miles	N/A	N/A	N/A	6	6	0
Total Stream Inventory	Miles	N/A	N/A	N/A	60	26	18
5 Yr. Basin Area Stream Survey (Water Resource Inventory)	Acres	N/A	N/A	N/A	48,237	N/A**	N/A**
Fish Attractors	Sites	45	26	6	16	65	48
Streams Monitored for Offsite Herbicide Movement	Sites	11	11	11	6	3	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 IMR was completed and is reproduced in Appendix E. As described in the attached report, a Forest Review team conducted an Implementation Monitoring Review of growing season prescribed fire projects on the Jessieville-Winona-Fourche Districts during June, 2007.

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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 National Forest 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. This type 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 National Forest 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 2009 monitoring.

FY 2008 Action Item (Planned)

- Supplement data from FSVeg and FACTS with data from TIMS, GIS data on Management Areas and fire databases to track landscape level accomplishments.
    - Vegetation Inventory Databases and Activity Tracking Systems: Supplement data from FSVeg and FACTS with data from TIMS, GIS data on Management Areas and fire databases to track landscape level accomplishments.

FY 2008 Action Item (Accomplished)

- Transition to FSVeg and FACTS is nearly complete, and it has become apparent that FSVeg and/or FACTS will not provide all of the data required to monitor silvicultural activities on the Ouachita NF. The TIMS program currently provides the most accurate data on timber harvest work accomplished. FACTS should now be adequate in reporting accomplishments, but FACTS data and, where appropriate, TIMS data need to be combined with GIS data by Management Area and fire databases to provide a more comprehensive picture of landscape level accomplishments.

FY 2009 Action Items

- Implement FSVeg Spatial on the Forest 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.

Forest Fuels: The 2005 Forest Plan (Objective 40) is as follows: “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. “ During FY 2006 and FY 2007, there was no working database to accurately track accomplishments in high priority areas.

FY 2008 Action Item (Planned)

- Implement the newly developed monitoring protocol utilizing GIS mapping to track fuel treatment accomplishments accurately in high priority areas.

FY 2008 Action Item (Accomplished)

- The 2008 all wildfire, prescribe burn and fuel treatment accomplishments are now tracked by the Forest according to the newly developed monitoring protocol utilizing GIS mapping as follows:
    - Accomplished Prescribed Burns – shapefile of polygon with front page of burn plan due July 15th of each fiscal year (FY),
    - Planned Prescribed Burns -- shapefile of polygon with either front page of burn plan or information linking the polygon to a name, type of burn and acres involved due October of each FY, and
    - Wildfires – reports completed and sent to AOICC within two weeks of containment. Polygons are mandatory for all incidents regardless of size. Fore each polygon or point, information linking it to a fire name, date, fire number, and cause need to be included. AOICC will also process these fire reports into FIRESTAT.

Mussel survey work: Freshwater mussel surveys were conducted in the Caddo, Ouachita and the Saline river systems during FY 2007, in conjunction with the USFWS aquatic specialist 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 during this survey were also noted. The USFWS concluded that the Arkansas fatmucket should be reclassified as endangered throughout its range, *i.e.,* it meets the Endangered Species Act definition of endangered, which is that a species is in danger of extinction throughout all or a significant portion of its range.

FY 2008 Action Item (Planned)

- Publish results of survey work on rare and endangered freshwater mussels.

FY 2008 Action Item (Accomplished)

- The Journal of the Southwestern Association of Naturalists published the following: STATUS OF RARE AND ENDANGERED FRESHWATER MUSSELS IN SOUTHEASTERN OKLAHOMA, by HEATHER S. GALBRAITH, DANIEL E. SPOONER, AND CARYN C. VAUGHN of the University of Oklahoma, Oklahoma Biological Survey and Department of Zoology based on the field surveys and fish host study work on the Arkansas fatmucket completed by Dr. Christian and graduate students from Arkansas State University under a cooperative project funded by the Ouachita National Forest during 2006.

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 2008 Action Item (Planned)

- Continue to work with the public to refine a system of roads, trails, and areas for public motor vehicle access. The Forest will complete an environmental review and develop the preferred action alternative during FY 2008.

FY 2008 Action Item (Accomplished)

- During FY 2008 public comments were analyzed and environmental analysis work was initiated. Work continued to update the GIS roads/trails layer as well as INFRA. The

Forest made significant progress, but did not complete the environmental review or develop the preferred action alternative during FY 2008. Work remains to complete designations for motor vehicle travel, and the target for this work has been extended.

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.

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 in wildernesses by 2010.

FY 2008 Action Item (Planned)

- Initiate surveys for non-native invasive species in wilderness areas (to be completed by 2010).

FY 2008 Action Item (Accomplished)

- Work to survey wilderness areas for non-native invasive species was not initiated during FY 2008. It is anticipated that the required work will be initiated during FY 2009 and completed by FY 2010.

FY 2009 Action Item

- 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).

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

FY 2008 Action Item (Planned)

- Complete the updates of wilderness management plans by 2008. Priority plan elements will be those that are in the Chief's 10-Year Wilderness Challenge.

FY 2008 Action Item (Accomplished)

- There were no updates to Wilderness Management Plans in FY 2008. Significant progress was made in the Chief's 10-Year Wilderness Stewardship Challenge. Improvement was made in all 10 elements. Work remains to update the Wilderness Management Plans, and the target for this work will have to be extended.

FY 2009 Action Item

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 2008 Action Item (Planned)

- Continue work initiated during FY 2007 to identify needed energy efficiency upgrades and complete work where feasible.

FY 2008 Action Item (Accomplished)

- Energy upgrades were accomplished during renovation of the Jessieville Work Center and the Big Cedar Work Center.

FY 2009 Action Item

- Continue work initiated during FY 2007 to identify needed energy efficiency upgrades and complete work where feasible.

Basin Area Stream Survey: Basin Area Stream Surveys are conducted periodically (typically on a five-year cycle); and at five-year intervals, the desired condition status of this habitat is evaluated.

FY 2008 Action Item (Planned)

- During FY 2008, complete the analysis of data collected during the FY 2006 Basin Area Stream Survey and report results on data from the nine watersheds surveyed under BASS.

FY 2008 Action Item (Accomplished)

- Analysis of data collected during the FY 2006 Basin Area Stream Survey was completed during FY 2008.

Management Indicator Species for stream and river aquatic habitat: Stream and river monitoring surveys were analyzed for changes in MIS fish populations.

FY 2008 Action Item (Planned)

- During FY 2008, analyze data for stream and river MIS species for changes in aquatic habitat conditions.

FY 2008 Action Item (Accomplished)

- The analyses of data collected from the 2006 Basin Area Stream Surveys and other long-term stream survey sites suggest detrimental effects to population trends for four fish species in the Lower Ouachita Mountain ecoregion. To address this source of fish habitat degradation, road and trail maintenance should be prioritized for this ecoregion and OHV use managed or reduced in areas showing damage.

FY 2009 Action Item

- During FY 2009, work with Engineering to develop priority areas for road and trail maintenance work.
- Work to complete the travel management project.

Endemic Salamanders: During FY 2007, 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 2008.

FY 2008 Action Item (Planned)

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

FY 2008 Action Item (Accomplished)

- During FY 2008, work was completed to identify salamander diversity and distribution in the Ouachita Mountains of Arkansas. Results of the 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

complete study by D. B. Shepard and F. T. Burbrink was published in 2008 in Molecular Ecology, " Lineage diversification and historical demography of a sky island salamander, *Plethodon ouachitae*, from the Interior Highlands."

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 was provided to an Archeological Contractor who has analyzed most of the data 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 National Forest to place its limited heritage funding where it will have the greatest benefit. The data generated was provided to a contractor who drafted much of the Heritage Overview during FY 2007 and 2008.

FY 2008 Action Item (Planned)

- Complete the Forest Overview of Heritage Resources.

FY 2008 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. This data is 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 National Forest to place its limited heritage funding where it will have the greatest benefit. The data generated was provided to a contractor who drafted much of the Heritage Overview during FY 2007 and 2008; however the document will require final work in FY 2009.

FY 2009 Action Item

- 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 is ongoing with monitoring planned for 2009 and 2010 at the least.

FY 2009 Action Item

- Design and conduct monitoring for the road construction in the Wilderness area.

Appendix A – List of Contributors and Preparers

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Appendix B – Conservation Education Activities

Contact Person & Unit	FY 2008 Date	Notes	Number of attendees	Activity & Partners
David Saugey Jessieville-Winona	2-Oct	I&E Presentation	100 students/ 6 adults	4- Bat Programs/ Glen Rose School (Requested by Pam Hall)
David Saugey Jessieville-Winona	3-Oct	I&E Presentation	35 children/ 10 adults	1-Bat Program/ Hot Springs Parks and Rec. Dept./ Wade Street Park (Requested by Denise Duvall)
David Saugey Jessieville-Winona	4-Oct	I&E Presentation	50 children/ 10 adults	1-Bat Program/ Caddo Hills School/Presented at Jessieville Workcenter/ (Requested by Joan Crosby)
John Nichols SO	13-Oct	Program and presentation	200	Program and presentation at Mt.Ida Quartz festival, Mt. Ida, Arkansas
David Saugey Jessieville-Winona	27-Oct	I&E Presentation	40 children/ 15 adults	1-Bat Program/White County Public Library/ Searcy, AR (Requested by Lisa Boatman, Librarian)
David Saugey Jessieville-Winona	31-Oct	I&E Presentation	55 adults	1-Bat Program/ Perryville Senior Citizens Center (Requested by Sue Ann Martin)
David Saugey Jessieville-Winona	20-Nov	I&E Presentation	376 children/ 15 adults	3-Bat Programs/Cabot Middle School South, Cabot, AR (Requested by Joyce Dalton)
Chris Morgan Caddo-Womble	22-Nov	National Native American Heritage Month & SPB Presentations	50 children/ 3 adults	2-Programs/Lakeside Primary & Intermediate Schools, Hot Springs, AR (Requested by Mrs. Karen Braughton & Mrs. Sears)
Betty Crump SO	3-Dec	I&E Presentation	250 children/ 10 adults	5 Herp Programs/ Taylor Jr. High School/Presented at Taylor, AR
David Saugey Jessieville-Winona	5-Dec	I&E Presentation	408 children/ 25 adults	7-Bat Programs/Pangburn Elementary School, Pangburn, AR (Requested by Autumn Yancy)
John C. Nichols SO	14-17 Feb	FS M&G Exhibit and programs at TGMS Show, Tucson, AZ	30,000	Forest Service Minerals and Geology outreach throughout 4 days (counted as 16 programs). Exhibit plus numerous presentations on NF M&G, TGMS, Tucson, Arizona
Chris Morgan Caddo-Womble	22-Feb	Water Cycle & Water Conservation Presentation	40 children/ 2 adults	2- Programs/Holly Harshman Elementary School & Louise Durham Elementary School, Mena, AR (Requested by Mrs. Marsha Riley & Mrs. Barbara Genung)
Betty Crump SO	1-Apr	I&E Presentation	20 children/ 5 adults	1 Herp Program/Leadership Hot Springs Youth, Hot Springs, AR (Requested by Mr. Leonard)
David Saugey Jessieville-Winona	1-Apr	I&E Presentation	20 children/ 5 adults	1-Bat Program/Leadership Hot Springs Youth, Hot Springs, AR (Requested by Mr. Leonard)

Contact Person & Unit	FY 2008 Date	Notes	Number of attendees	Activity & Partners
David Saugey Jessieville-Winona	3-Apr	Scientific Research Presentation	75 adults	1- Presentation: Small Footed Bat Biology/Arkansas Chapter of the Wildlife Society Meeting, Mount magazine State Park Lodge, AR (Requested by B. Sasse) Partner: Arkansas Game and Fish Commission
David Saugey Jessieville-Winona	10-Apr	I&E Presentation	100 children/ 10 adults	1-Bat program /Ftn. Lake Elementary School, Hot Springs, AR (Requested by Jim Berdahl) Partner: Hot Springs Village Optimist Club
David Saugey Jessieville-Winona	10-Apr	I&E Presentation	75 children/ 6 adults	1-Bat program/ Mtn. Pine Elementary School, Mtn. Pine, AR (Requested by Jim Berdahl) Partner: Hot Springs Village Optimist Club
David Saugey Jessieville-Winona	10-Apr	I&E Presentation	75 children/ 6 adults	1-Bat program/ Jessieville Elementary School, Jessieville, AR (Requested by Jim Berdahl) Partner: Hot Springs Village Optimist Club
David Saugey Jessieville-Winona	18-Apr	I&E Presentation	96 children/ 14 adults	2-Bat programs/ Gardner Science Magnet School, Hot Springs, AR (Requested by Listene Speed)
Hunter Speed Jessieville-Winona	18-Apr	I&E Presentation	96 children/ 14 adults	2-Forest ecology programs/ Gardner Science Magnet School, Hot Springs, AR (Requested by Listene Speed)
John C. Nichols SO	19-Apr	FS M&G Exhibit and programs	500	Forest Service Minerals and Geology outreach at Arkansas Kids day, Hot Springs, Arkansas
Betty Crump SO	22-Apr	I&E Presentation	150 students/ 10 adults	1 Earth Day Program/National Park Community College, Hot Springs, AR
David Saugey Jessieville-Winona	24-Apr	I&E Presentation	111 children/ 3 adults	3-Bat programs/ Southside Elementary School, Batesville, AR (Requested by Becky Carlile)
David Saugey Jessieville-Winona	28-Apr	I&E Presentation	66 children/ 4 adults	2-Bat programs/ Ramsey Junior High School, Ft. Smith, AR (Requested by Anne Butcher)
Betty Crump SO	28-Apr	I&E Presentation	85 children/ 4 adults	2 Herp programs/ Science Night @ Ramsey Junior High School, Ft. Smith, AR (Requested by Anne Butcher)
David Saugey Jessieville-Winona	9-May	I&E Presentation	41 children/ 2 adults	1-Habitat program/ Jessieville Elementary 2nd Grade/Friendship Trail and VIC (Requested by Mrs. Hall and Mrs. Kastner)
Richard Standage SO-IR	14-May	Aquatics Presentation	102 5th graders/ 1 adult	Presentations to four 5th grade classes at Lakeside Middle School, Mrs. Parker's WOW Team on Forest's Fisheries Program and fish identification
Richard Standage SO-IR	15-May	Aquatics Presentation	108 5th graders/ 1 adult	Presentations to four 5th grade classes at Lakeside Middle School, Mrs. Davis' NOW Team on the Forest's Fisheries Program and fish identification
David Saugey Jessieville-Winona	28-May	I&E Presentation	100 children/ 3 adults	3-Bat programs/Lake Hamilton Elementary School, Hot Springs, AR (Requested by Shari Dillard)
Betty Crump SO	29-May	I&E Presentation	30 students/ 6 adults	Aquatic Ecology Program on Dutch Creek w/Danville 5th graders (9 AM - 2 PM)

Contact Person & Unit	FY 2008 Date	Notes	Number of attendees	Activity & Partners
Betty Crump SO	5--June	I&E Presentation	30 students/ 6 adults	1 Herp Program/Cossatot Conservation Camp, Gilham Lake, AR
Betty Crump SO	5--June	I&E Presentation	30 students/ 6 adults	1 Bat Program/Cossatot Conservation Camp, Gilham Lake, AR
David Saugey Jessieville-Winona	11-Jun	I&E Presentation	200 children/ 50 adults	2-Bat programs/ Summer Education/Searcy Public Library, Searcy, AR (requested by Lisa Boatman)
Betty Crump SO	12-Jun	I&E Presentation	55 students/ 6 adults	1 Herp Program/Headstart @ Hollywood Park, Hot Springs, AR
Betty Crump SO	25-Jun	I&E Presentation	80 students/ 15 adults	4 Herp programs/ Summer Education/Searcy Public Library, Searcy, AR (requested by Lisa Boatman)
Betty Crump SO at Fourche	11-Jan	I&E Presentation	9 children/ 1 adult	Talked about bats (with specimens), bat myths, and bat boxes with pre-school children
Mary Lynn Mentz Fourche	11-Jan	I&E Presentation	79 students/ 3 adults	Showed "Life of Mammal" segment on bats and Arkansas bat specimens from ATU
Mary Lynn Mentz Fourche	1-Feb	I&E Presentation	84 students/ 3 adults	Spoke to classes about Polar Regions and showed Planet Earth segment on penguins
Mary Lynn Mentz Fourche	22-Apr	I&E Presentation	82 students/ 6 adults	Planted trees and picked up trash for Earth Day and talked about the "Leave No Trace" program
Mary Lynn Mentz Fourche	2-May	I&E Presentation	4 children/ 2 adults	Spoke with conservation ecology class in Danville High School about what FS does for conservation.
Mary Lynn Mentz Fourche	23-Jun	I&E Presentation	29 children/ 15 adults	Firefly programs for summer bug reading program, Yell County Library
David Saugey Jessieville-Winona	15-Jul	I&E Presentation	15 children/ 4 adults	1-Bat programs, Cabe Public Library, Gurdon, AR., requested by Julie Watson
David Saugey Jessieville-Winona	16-Jul	I&E Presentation	30 children/ 6 adults	1-Bat program, Garland County 4-H Summer Camp, Camp Storey, Buckville, AR., requested by Josh Wright
David Saugey Jessieville-Winona	23-Jul	I&E Presentation	10 children/ 3 adults	1-Bat program, Malvern Public Library, requested by Ashley Parker
David Saugey Jessieville-Winona	23-Jul	I&E Presentation	51 children/ 15 adults	1-Bat program, Garland County Library, requested by Tiffany Hough
David Saugey Jessieville-Winona	25-Jul	I&E Presentation	20 children/ 15 adults	1-Bat program for campers, Amphitheatre at Kirby Landing, USACOE, requested by Joe Crommett
John C. Nichols SO	20-Sep	FS M&G Exhibit and programs	500	Forest Service Minerals and Geology outreach at Hot Springs Recovery Walk, Hot Springs, Arkansas


CHEVROLET


Fireflies

Appendix C – Approved Communication Sites

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

Bee Mountain Electronic Site Mena RD, Polk County, AR NW1/4 of SE1/4 Section 13, T3S R31W This site is unoccupied and may be abandoned.	**Buck Knob** Oden RD, Scott County AR T1S. R28W, Sec. 1
Cove Mountain Fourche RD. Perry, Co. AR T3N, R21W, Sec. 14	**Crystal Mountain** Winona RD, Saline County, AR T2N, R18W, Sec. 8 This site is unoccupied and may be abandoned.
Danville Electronic Site Fourche RD, Yell Co. AR T 4N, R23W, Sec. 12	**Dutch Creek** Fourche RD, Yell County, AR, 2.3 Ac. T4N, R23W, Sec. 12 Microwave, mobile radio
Eagle Mountain Mena RD, Polk Co. AR SW1/4 Sec. 30 T3S, R29W	**High Peak** Caddo RD. Montgomery Co. AR T3S, R24W, Sec. 19
Kiamichi Mountain (Three Sticks Historical Monument) Kiamichi RD, LeFlore Co. OK T2N, R25E, Sec. 29	**Federal Aviation Agency, VORTAC Site** Choctaw RD, LeFlore Co. OK Sect. 6, T2N, R26E
Ouachita Pinnacle Jessieville RD, Garland Co. AR T1N, R21W, Sec. 15	**Paron Elec. Site** Winona RD, Saline Co, AR T2N, R18W, Sec. 11
Poteau Mtn. (Bates) Poteau RD. Sebastian Co. AR T4N, R32W, Sec. 34	**Rich Mtn. #1** Mena RD, Polk Co. AR NW1/4 Sec. 17, T1S, R31W
Rich Mtn. #2 Mena RD, Polk Co. AR NW1/4 Sec. 6, T2S, R30W	**Tall Peak** Mena RD, Polk Co. AR SE1/4 SE1/4, Sec. 24, T4S, R28W
White Oak Mtn. Cold Springs RD., Scott Co. AR T4N, R28W, Part of the NE NW, Sec. 26	**Sycamore** Choctaw RD, LeFlore Co. OK T3N, R23E, Sec. 33
Slatington Peak Caddo RD. Montgomery Co. AR NW1/4 NW1/4 Sec. 4, and NE1/4 NE1/4 Sec. 5, T4S, R27W Currently unoccupied, retain for future development.	**Hodgen** Choctaw RD, Leflore Co. OK T3N, R25E, Sec. 2 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
Allowable Sale Quantity	Million cubic feet/year	27	20.64	20.18
Timber offered for sale	Million cubic feet/year	20-30	19.86	21.52
Regeneration harvest (by modified seedtree/ shelterwood methods)*	Acres	5,000-6,000	4,363	3,186
Management Area 14	Acres	4,000-4,700	3,981	2,968
Management Area 15	Acres	140	0	179
Management Area 16	Acres		97	39
Management Area 17	Acres	250	0	0
Management Area 21	Acres	160	0	0
Management Area 22	Acres	1,000-1,200	285	0
Other MAs	Acres	250	0	0
Uneven-aged management*	Acres	9,000-12,500	3,065	1,246
Management Area 14	Acres	7,200-7,850	1,972	1,031
Management Area 16	Acres	1,000-1,300	676	114
Management Area 19	Acres	800-850	417	101
Commercial Thinning*	Acres	20,000-28,500	9,922	10,981
Management Area 14	Acres	10,000-13,700	7,368	9,070
Management Area 15	Acres	1,000	0	288
Management Area 16	Acres		608	0
Management Area 17	Acres	400-500	0	67
Management Area 21	Acres	1,500-1,600	0	615
Management Area 22	Acres	7,000-8,200	1,946	534
Midstory reduction	Acres	4,325-5,000	5,850	2,280
Management Area 21	Acres	500-600	1,220	734

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

*Reported figures based on acres sold.