

**SHORTLEAF-BLUESTEM COMMUNITY**  
**Ouachita National Forest**  
**Arkansas-Oklahoma**

**Executive Summary: Shortleaf-Bluestem Community, Ouachita NF: Arkansas and Oklahoma**

Dominant forest type(s): *Shortleaf Pine-Oak Forest and Woodland*

Total acreage of the landscape: **348,482**

Total acreage to receive treatment: **320,000**

Total number of NEPA ready acres: **256,447**

Total number of acres in NEPA process: **36,184**

**Description of the most significant restoration needs and actions on the landscape:** This project is designed to advance the 20-year ongoing and extensive efforts of restoring large contiguous public lands into shortleaf pine-bluestem habitat. The dense second-growth forests long protected from fire need to be thinned and burned periodically to restore open, species-rich woodlands. Restored pine-bluestem woodlands provide habitat for a suite of rare, endangered, and/or sensitive species that thrive only or primarily under such conditions. Fire-influenced (pine-grass) old growth forests and woodlands are rare on the landscape and represent a significant restoration need. Maintenance of shortleaf pine-bluestem systems requires periodic thinning, frequent prescribed burns, and occasional regeneration treatments.

**Description of the highest priority desired outcomes of the project at the end of the 10 year period:** Desired condition is mature shortleaf pine and scattered oaks in the overstory and bluestem grasses and other “prairie” species forming the ground layer. **This is not an experimental restoration effort.** With no appeals and no litigation, our collaborative efforts have completed over 183,000 acres into an advanced or intermediate stage of restoration. CFLRP funds and the Ouachita NF combined funding will allow the burning of 100,000 acres a year with 5,000 acres of wildlife stand improvement (midstory reduction) and 6,000 acres of thinning. The additional CFLRP dollars will build upon this intensive restoration program to transform 320,000 acres into an advanced or intermediate stage of restoration. This is 92% of the project area. This scale of treatments is what is needed to advance and maintain these huge blocks of forests. **At the end of 10 years, almost a million acres will have received treatment,** which includes acres receiving multiple treatments.

**Description of the most significant utilization opportunities linked to this project:** An estimated 30,000 dry tons of small diameter material will be harvested from restoration efforts over 10 years. These materials will help supply the AES Shady Point power plant as it transitions from coal-only to include woody material. Under an MOU, the Ouachita NF will ramp up small-diameter utilization over the next decade. An additional 5,000 acres of commercial harvesting will provide raw materials to the 24 mills within the proclamation boundary.

**Name of the National Forest, collaborative groups, and other major partner categories involved in project development:** Ouachita National Forest: *Ouachita Mountains Shortleaf-Bluestem Alliance* includes the following collaborators: The Nature Conservancy, Audubon Arkansas, Arkansas Audubon Society, US Fish and Wildlife Service, Natural Resources Conservation Service, Arkansas Game & Fish Commission, Oklahoma Department of Wildlife Conservation, Arkansas Natural Heritage, Arkansas Forestry Commission, Oklahoma Forestry Commission, Weyerhaeuser, Ouachita Timber Purchasers, Oklahoma Biological Survey, Arkansas State University, University of Arkansas, Oklahoma State University, Tall Timbers, Southern Research Station, Northern Research Station, Arkansas Technical University, National Wild Turkey Federation, Quail Unlimited, Arkansas Wildlife Federation, Monarch Watch, Monarch Joint Venture.

**Describe the community benefit including number and types of jobs created.** This project will create 207 additional jobs in timber and other restoration related activities (TREAT). Other community benefits include increased nature tourism, improved hunting, and other enhanced recreational opportunities.

Total dollar amount requested in FY11: \$341,500

Total dollar amount requested for life of project: \$21,927,000

Total dollar amount provided as Forest Service match in FY11: \$2,797,370

Total dollar amount provided as Forest Service match for life of project: \$28,190,244

Total dollar amount provided in Partnership Match in FY11: \$0

Total dollar amount provided in Partnership Match for life of project: \$475,000









Total in-kind amount provided in Partnership Match in FY11: \$51,200

Total in-kind amount provided in Partnership Match for life of project: \$1,014,096

Time frame for the project (from start to finish): 2011-2020



## Table of Contents

 <b>Ecological, Social and Economic Context.....</b>	<b>Page 2</b>
 <b>Summary of Landscape Strategy.....</b>	<b>Page 4</b>
 <b>Proposed Treatment.....</b>	<b>Page 8</b>
 <b>Collaboration and Multi-Party Monitoring.....</b>	<b>Page 12</b>
 <b>Utilization.....</b>	<b>Page 15</b>
 <b>Benefits to Local Economies.....</b>	<b>Page 16</b>
 <b>Funding Plan.....</b>	<b>Page 17</b>
 <b>Attachments</b>	
▪ <b>Attachment A: Planned Accomplishment Table</b>	
▪ <b>Attachment B: Reduction of related Wildfire Management Costs</b>	
○ <b>“Results-Cost Savings” of R-CAT spreadsheet</b>	
○ <b>R-CAT documentation of assumptions and data sources</b>	
▪ <b>Attachment C: Members of the Collaborative Table</b>	
▪ <b>Attachment D: Letter of Commitment</b>	
▪ <b>Attachment E: Predicted Jobs Table from TREAT spreadsheet</b>	
▪ <b>Attachment F: Funding Estimates</b>	
▪ <b>Attachment G: Maps</b>	



## Ecological, Social and Economic Context

This project of 348,482 acres includes large blocks of contiguous National Forest, state, and private lands in one of the nation's poorest regions (see Attachment G for overview map of project area). In addition, there are thousands of acres of private land interspersed or adjacent to the public lands with owners who work with the Forest Service in a variety of projects, including burning. Building on existing collaborative efforts, there are significant opportunities in the Ouachita Mountains to restore ecological balance and expand economic opportunities in this impoverished area. Benefits of restoration are a healthy ecosystem well stocked with native plants and animals including valuable wood products, clean water and the expansion of recreational opportunities.

Currently the majority of the proposed treatment area is in Fire Regime Condition Class (FRCC) 3, with 61,000 acres in FRCC 2 and 122,000 acres in FRCC 1. The areas that are in advanced stages of restoration approaching FRCC 1 require less effort for wildfire suppression since a modified approach to suppression can be used. As more frequent prescribed burn treatments are applied, more acres are converted from FRCC 3 to FRCC 1, and the fuel loading is reduced from 6-10 tons per acre in FRCC 3 to 2-4 tons in FRCC 1.

Due to current budget and personnel constraints, continued restoration efforts will not be expandable into the FRCC 3 and FRCC 2 acres within the project area, but will only be minimally maintained in FRCC1 areas. This project encompasses one of the few opportunities to restore shortleaf pine-bluestem habitat on 'large' contiguous landscape level tracts of public lands. The potential in the Ouachita Mountains to continue restoration and maintenance of these large blocks of shortleaf pine-bluestem habitat is only possible with increased funding.

Early travelers described this landscape as dominated by pine, pine-hardwood and mixed-oak forest communities with fire-dependent and floristically rich grass and forb understories (Figure 1). Large grazing herbivores including elk, bison, and white-tailed deer were once abundant. Fire return intervals averaged less than 10 years for most sites. Tree densities averaged 170 trees per acre (420/ha), and the mean tree diameter was 11.4 inches (29 cm).



Figure 1. Virgin old growth bluegrass stand in the 1920's (left). Pre-restoration fire protected, second growth habitat (right).

Today the Ouachita Mountains are still dominated by forests, but the structure and composition of these forests have changed dramatically. The typical density of trees has increased to 200 to 250 trees per acre (494-618/ha) and their mean diameter is now 9 inches (23 cm). Understories are now dominated by woody vegetation, midstories are crowded, and many once prominent grasses and forbs are uncommon. Elk and bison have been extirpated. Other species, such as Bachman's Sparrow and the Brown-headed Nuthatch, have been affected negatively by habitat loss, and the Red-cockaded Woodpecker (RCW) is now endangered. Average fire return intervals are now more than 40 years. Commercial exploitation of the original forests and suppression of fires has resulted in almost the complete loss of fire-maintained woodlands in the Ouachita Mountains.

There are approximately seven invasive plant species in small, localized populations within the project area. When inventories locate infestations they will be treated for control/eradication. The current road system is the primary source of sediments to streams. This project will include closing, relocating, or maintaining existing road to decrease watershed stress using the NF's Best Management Practices (BMP) standards.

Active restoration efforts include timber harvesting, reduction of the woody midstory using wildlife stand improvement (WSI) and prescribed burning. Non-commercial activities are funded through retained timber sales receipts (Knutson-Vandenberg Act), appropriated dollars, state funding, partner contributions, and stewardship projects. With the recent economic downturn and low stumpage prices, timber sales do not yield sufficient revenue to pay for all the needed follow-up treatments. The CFLRP grant funds will ensure that the successful restoration and maintenance activities of the last two decades will grow dramatically instead of decline due to lack of funds.

This restoration effort takes place in a landscape marked by widespread low incomes. The two counties primarily within the project area, Scott County, Arkansas, and LeFlore County, Oklahoma, have 20-25% of the population at or below the poverty level (Figure 2). Populations for these two counties range from 11,000 to 48,000. The TREAT model (Treatments for Restoration Economic Analysis Tool) projects the creation of 207 full and part time jobs. Using an income multiplier, for every \$100 in wages paid out, an additional \$100 is added to the total payroll of the surrounding area.

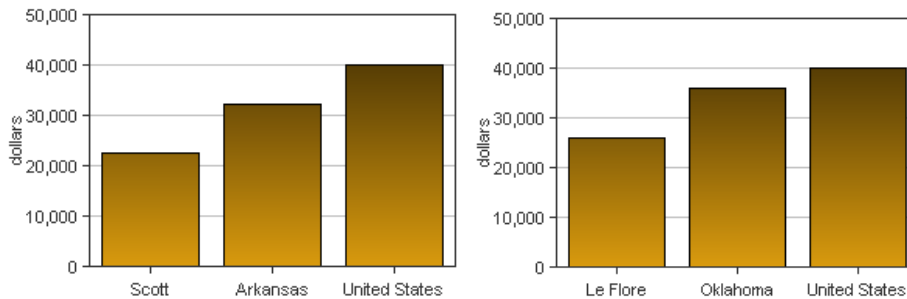


Figure 2. Per capita income (PCPI) in 2008 was \$22,527 for Scott County, which was 56% of the national average. LeFlore County's PCPI was \$26,033, which was 65% of the national average.

These rural communities are dependent upon forestry related jobs. Funding of this project will not only allow for continued efforts towards restoration of shortleaf pine-bluestem habitat at an

extensive landscape level benefiting obligate plant and animal species, but also provide an economic boost to local impoverished communities.

### **Summary of Landscape Strategy**

Our proposal is to restore the shortleaf pine-bluestem community that was historically the dominant cultural landscape in the Ouachita Mountains. Rural communities within the Ouachita Mountains are dependent upon traditional forest products. Cultures that have developed around these traditional forestry practices of timber management and burning will benefit from the increase in restoration funds.

The pine-bluestem project embodies elements of landscape ecology, restoration ecology, and endangered species recovery seeking to restore an entire ecosystem on today's Ouachita Mountains landscape. The Ouachita NF restoration project has also demonstrated that managing for ecosystem integrity need not result in significant reductions in timber resources for traditional human uses and may contribute to the long-term viability of wood fiber industries in the area. The following are key elements of the large-scale ecological restoration project in the Ouachita Mountains. See <http://fs.usda.gov/ouachita> and "click on Pine Bluestem quick link" for additional details.

**Increasing the use of prescribed fire and timber harvesting to simulate natural disturbance patterns and return forests to more open woodland conditions.** Reduction of basal area is accomplished primarily by commercial thinning activities. Old large trees are retained. There are no clearcutting methods used for restoration treatments. Stand regeneration is accomplished by commercial timber sales using irregular seed tree and irregular shelterwood methods. With either regeneration method, most of the seed trees are retained indefinitely. The size of prescribed burning units encompasses landscapes rather than smaller stand-sized blocks. Prescribed burning units in the Ouachita Mountains average 600 acres but are as large as 8,000 acres. This burning program reflects the efficiency and prowess of the Ouachita NF and multi-agency crews working cooperatively. In the past, most prescribed burning occurred during the dormant season from October to March. Growing season burns are now in the Ouachita NF toolbox for restoration as of the 2005 Revised Land and Resource Management Plan. These growing season burns, along with the cool season burns, better emulate historic fire occurrence and intensity patterns.

- **Using a modified control strategy for wildfires.** The Forest recognizes that some wildfires are beneficial and should be managed rather than suppressed. These managed fires help to increase the area restored by fire each year. In those instances where wildfires are burning within prescription, occurring in suitable areas and not threatening human safety or property, wildfires can be allowed to burn to the nearest man-made or natural barrier.
- **Increasing rotation age.** The minimum time between regeneration cutting, or rotation age, has been increased from 70 to 120 years for shortleaf pine forest types. This allows for a greater number of acres of older trees and results in increased mast production from hardwoods retained in these pine stands. The older trees are also required by Red-cockaded Woodpeckers (RCWs) and other cavity-dependent species. Cavity development is associated with a fungal heart rot infection that occurs in stands greater than 70 years of age.

- **Maintaining mixtures of native pines and hardwoods.** An important part of the restoration process is to replace off-site trees (primarily loblolly pine) as needed and retain mixtures of native pines and hardwoods everywhere on the landscape. Retention of mast-producing hardwoods has been a significant issue for the Ouachita NF for many years, and this project explicitly addresses that issue by ensuring that hardwoods as well as pines are perpetuated.
- **Developing and maintaining forested linkages among mature forest habitats.** Minimizing ecotonal differences between contiguous stands and reducing habitat fragmentation is important to many bird species. Each timber harvest proposal is examined for ways to keep forest regeneration localized, which maximizes the size of areas that support mature stands. We have increased the size of regeneration areas from 25 to 80 acres (16-32 ha). Because the total amount of regeneration per year or decade is fixed by the rotation age, achieving it on fewer, larger areas rather than many smaller areas reduces the total edge between dissimilar conditions. This also maximizes the area of contiguous mature habitat.

Research and monitoring results are discussed as a collaborative in open forums as well as multiple meetings throughout the year. Decisions are made by an informed collaborative through consensus. This continuous interaction has been successful in the Ouachita Mountains and is used to monitor the activity and effectiveness of our projects and guide the restoration effort.

Our restoration strategy originated with focusing on endangered RCWs, mainly due to their imminent extirpation on the Ouachita NF. In the late 1980's and early 1990's, personnel from the Ouachita NF, private timber industry, universities, and conservation groups including Arkansas Audubon Society, worked cooperatively to document all active and inactive RCW clusters. These data formed the basis for a biologically-informed landscape strategy. The most concentrated active RCW clusters received first priority for restoration. Additional acres were added in potentially suitable surrounding habitat to allow for population expansion. Habitat restoration work within recently inactive/ abandoned clusters was the next priority. Restoration treatments resulted in improved habitat and bird populations slowly and then, more recently, rapidly increased (Figure 3).

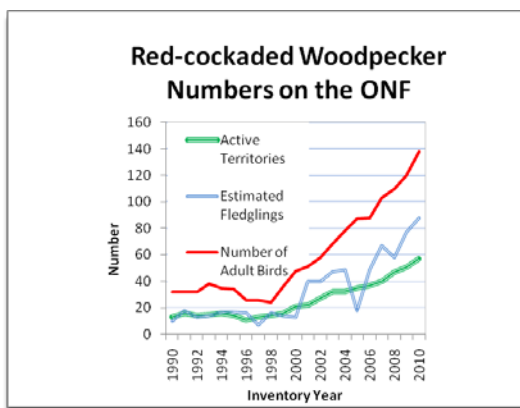


Figure 3. RCWs have increased within the project area, Ouachita NF, 1990-2010.



Habitat restoration towards recovery of the RCWs grew into an ecosystem-based approach founded on best science with substantial partner and public involvement. Research on the effects of restoration activities found an incredible diversity of plants and animals within RCW cluster sites. As RCW populations began to increase, and more information was collected about the shortleaf pine-bluestem community, an ecosystem management strategy emerged. This strategy addresses both human and the plant and animal species needs, including RCWs, which has been embraced by the growing coalition.



An excerpt from one of the many research publications associated with this effort neatly summarizes why so many conservation interests are excited by and committed to this project: “The abundance of nectar resources was significantly higher in treated areas compared to controls, peaking in the first growing season following burning and declining thereafter. Overall abundance and species richness of butterflies, amphibians, reptiles, mammals, and birds were generally greater in restored areas compared to controls. Many species of conservation concern, including Diana fritillary (*Speyeria diana*), Red-cockaded Woodpecker, Northern Bobwhite (*Colinus virginianus*), Prairie Warbler (*Dendroica discolor*), Brown-headed Nuthatch (*Sitta pusilla*), and Bachman's Sparrow (*Aimophila aestivalis*), also responded positively to restoration. Of the taxonomic groups studied, few maintained higher abundances in the control areas. Overall, regional abundance and natural patterns of diversity of the examined taxa will be enhanced with restoration of shortleaf pine-bluestem communities on appropriate sites in the Ouachita Mountains.” (R.E. Thill, D.C. Rudolph, and N.E. Koerth, *Shortleaf pine-bluestem restoration for Red-cockaded Woodpeckers in the Ouachita Mountains: implications for other taxa*. 2003).

Our landscape strategy also takes into account that the large block of the Ouachita NF provides a habitat reservoir on the edge of distributional ranges. Restoration of historical habitat benefits 29 endemic animals in the Ouachita Mountains: seven crayfish, five invertebrates, seven fish, six salamanders, and four mussels. Most of the endemics are considered rare and two are federally listed. Figure 4 depicts species numbers benefitting from restoration efforts.

The Southern Research Station (SRS), University of Arkansas, Oklahoma State University, and Weyerhaeuser have examined the effects of pine-bluestem management on water quality. Long term data suggests that harvesting and prescribed burning operations do not produce short-term impacts on base-flow sediment or nutrient concentrations. With CFLRP funds, the SRS will continue to collect and analyze water samples taken at restoration sites.

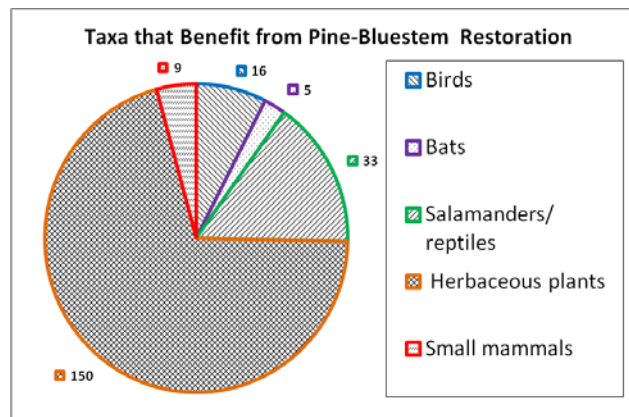


Figure 4. Numbers of taxa that benefit from restoration efforts.

Restoration at the landscape scale is highly feasible in the Ouachita Mountains and has potential to help recover RCWs as well as benefit many other animal and plant species. Restoration efforts already enhance RCW populations across state lines. Data from banded birds demonstrate connections between RCWs in Arkansas, Oklahoma, and Louisiana. The synergistic association with other RCW populations accelerates RCW recovery and will advance even further with CFLRP funding. Nowhere else within the range of RCW is there potential to restore such large contiguous forests.

Restoration treatments are proposed on 348,482 acres. This acreage is divided into three variations on the theme of pine-bluestem restoration. First, Pine Bluestem Ecosystem Renewal



and RCW Recovery (R&R) areas encompass 206,965 acres (see Attachment G). The other two types of areas are designated old growth restoration areas and American burying beetle (ABB) conservation areas.

Old growth restoration areas totaling 70,379 acres, ranging in size from 600-6,000 acres, are scattered across the Ouachita NF. Emphasis is for restoration and perpetuation of old growth forests, woodlands and other old growth conditions associated with frequent fire. Portions are suitable for timber production under 160-year rotation. Redheart disease, downed woody debris, and snags are common in restored old growth areas.

In the ABB areas (ABBA) (71,638 acres) the emphasis is on restoring pine-woodland habitat associated with frequent fires. Not much is known about the life history or habitat requirements of the endangered ABB, but current theory is that open grassy areas should improve ABB populations on the Ouachita NF. The selection of the ABB conservation areas was a collaborative effort between the Ouachita NF and US Fish and Wildlife Service based upon ABB capture locations and where concentrated management efforts would most likely yield the most positive results. Additional acres were added in potentially suitable habitat surrounding these areas to allow for potential ABB population expansion. The ABB Conservation Plan was approved in April, 2010. The R&R, old growth, and ABB areas are ranked as the highest priorities for restoration on the Ouachita NF.



**Biodiversity, recreation opportunities, and timber supplies are used to measure restoration success because all were significant issues in recent planning efforts.**

- **Biodiversity:** Research efforts have helped us understand how restoration works in the Ouachita Mountains. In one project, for example, 10 species of ground/shrub-foraging species (Yellow-breasted Chat, Brown-headed Cowbird, Carolina Wren, Northern Cardinal, Eastern Wild Turkey, Indigo Bunting, Northern Bobwhite, Chipping Sparrow) and shrub nesting species (American Goldfinch, Prairie Warbler) were favored by thinning and prescribed burning, as compared with controls. In another project, small mammals were found to increase in numbers and species on restored sites. Other projects have demonstrated that prescribed burning produces higher herbaceous species richness and diversity, as well as forb and legume abundance in the project area.
- **Recreation Opportunities:** Outdoor recreationists, including hunters and bird watching enthusiasts, are attracted to these restored lands. In 'A Birder's Guide to Arkansas', the project area was featured as a unique opportunity to view RCWs, Brown-headed Nuthatch and Bachman's Sparrow. Reduction of tree basal area, reduction of midstory and prescribed burning resulted in higher Northern Bobwhite numbers. Forage production for white-tailed deer increased sixfold in the project area. Improved habitat for these game animals will likely increase local economies.
- **Timber Supply:** The Ouachita NF implementation of this strategy, because of favorable age class distribution, projected that timber harvest volumes would remain relatively constant during the next two decades, and decline slightly from 29.2 to 27.5 million cubic feet of wood by the fifth decade. The decline in long-term sustained yield is largely a function of increasing the rotation age from 70 to 120 years (Figure 5).

In summary, our proposal will accelerate the ongoing success of the pine-bluestem project. This scale is impossible elsewhere in the eastern United States.

## Proposed Treatment

Our restoration strategy originated with focusing on endangered RCWs, mainly due to their imminent extirpation on the Ouachita NF. The most concentrated active RCW clusters received first priority for restoration (see Attachment G for priority treatment maps). Additional acres were added in potentially suitable surrounding habitat to allow for population expansion. Habitat restoration work within recently inactive/ abandoned clusters was the next priority. Restoration treatments resulted in improved habitat and bird populations slowly and then, more recently, rapidly increased. With populations increasing, restoration grew into an ecosystem-based approach founded on best science with substantial partner and public involvement.

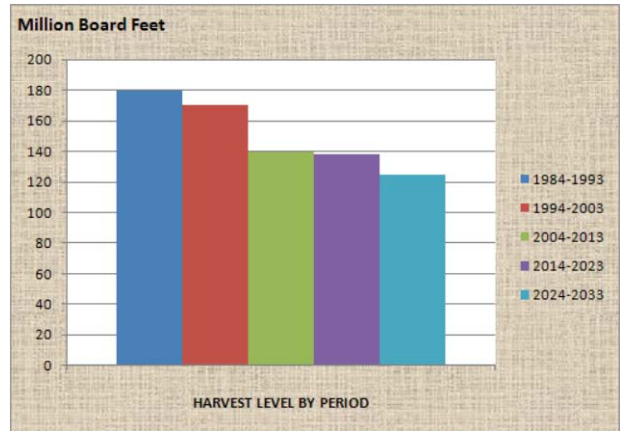


Figure 5. The projected timber volumes from shortleaf pine-bluestem restoration, Ouachita NF.

Collaborative efforts have resulted in 183,000 acres in an advanced or intermediate stage of restoration. These efforts have occurred with no litigation. There are 256,447 acres of NEPA ready acres within the project area of 348,482 acres (see Attachment G for NEPA map). None of the NEPA for this restoration has been appealed by the public.

Our ecological restoration strategy focuses on the resilience of Ouachita NF lands that have long provided a broad range of sustainable ecosystem services. Healthy and resilient landscapes exhibit greater capacity to survive natural disturbances and large scale threats to sustainability, especially under uncertain environmental conditions. The Ouachita Mountains is the only area within the range of the shortleaf pine where this pine species is the historical dominant forest type. Hardy shortleaf pines are dominant due to their ability to grow in these shallow rocky soils and are thought to be more tolerant of conditions associated with climate change.

The Ouachita NF has been working at restoration since the early 1990's. Over these two decades we have developed a set of treatment tools for our landscape strategy.

Mechanisms for restoration include the following steps:

- Watershed units are inventoried for existing conditions of vegetation, watershed function, transportation system, soils, and other resources. This includes an inventory of non-native invasive species (NNIS) as well as the transportation system. The latter typically includes examination of roads for closure, relocation, and maintenance needs. These existing conditions are compared to desired conditions found in the Forest Plan and other guiding documents, and management opportunities are determined to decrease watershed stress. Forest density, RCW and ABB habitat, road density, and NNIS priority treatments are

examined and management practices are packaged into a proposed action for NEPA compliance. The general prescription for successful restoration of the shortleaf pine-bluestem community is as follows:

- Timber harvesting of the overstory trees is the initial step of restoration actions to reduce the density of woody stems to that suitable for pine-bluestem habitat. This is accomplished through timber sales using commercial thinning and scattered regeneration harvests. Agency personnel are used almost exclusively to carry out this step and are funded with appropriated dollars.
- The next step is the reduction of the midstory and co-dominant pine and hardwood to achieve open, park-like conditions. This is accomplished with Wildlife Stand Improvement (WSI) and Timber Stand Improvement (TSI). These are funded using KV, stewardship contracts, receipts retained from stewardship projects and appropriated dollars.
- The third step is rotational prescribed burning on a landscape scale to reduce fuel loading, reduce understory vegetation, and stimulate grass and forb growth. This is funded through KV, retained stewardship projects, and appropriated dollars.

Watershed units are evaluated for NEPA on a 10-15 year rotation. Restoration projects areas (R&R, ABB, and old growth) have priority over all other watershed units. Almost 300,000 acres of the project area are NEPA ready or are in process (Figure 6). The MCWA is on state lands and does not require NEPA. Private lands are not considered in this project area. Although there are approximately 2,000 acres of private lands burned each year surrounding the project area.

The restoration prescription includes reducing density of overstory trees. The initial basal average of 120 sq. ft. per acre is reduced to 60 sq. ft. per acre through commercial thinning, followed with WSI and then prescribed burns at 3-5 year intervals. Most acres are burned in March and April, but prescribed burns occur during all months of the year to restore the maximum number of acres. The objective is to top kill 65-80% of re-sprouts. Reintroducing fire on a landscape scale is key to restoration success.

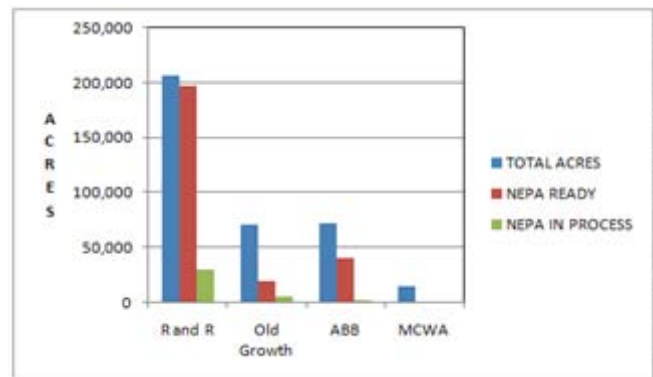


Figure 6. Total number of acres in project area is 348,482. Almost 300,000 acres are NEPA ready or are in the NEPA process for restoration treatments.

Desired conditions of the pine-bluestem woodland are open overstory canopies, mid-stories with little woody vegetation and native understory vegetation of grasses and forbs. These conditions can be achieved in 10-12 years with timber harvesting, WSI, and three effective prescribed burns. The condition can be maintained indefinitely by periodic thinnings to keep basal areas between 60-80 sq. ft. per acre and prescribed burns at 3-5 year intervals.

Long term perpetuation of the overstory shortleaf pine-bluestem community is accomplished by shelterwood regeneration harvesting at 120-year intervals for RR Areas, at 160-year intervals in the old growth areas and 70-year intervals for ABB areas.

There are 122,000 acres in an advanced stage of restoration (FRCC 1). These acres are characterized by an open midstory and a grassy understory with a fuel loading of 2-4 tons/acre. Approximately 61,000 acres in the project area are in an intermediate stage (FRCC 2). The majority of the project area, 165,482 acres is in FRCC3. These areas that have had no treatment characterized by heavy fuel loading (6-10 tons/acre) and an altered vegetation state with over stocked stands and an abundance of shade tolerate tree species in the midstory.

Three factors: heavy fuel loading, shrub layer, and overstocked stands, combine to make wildfires more destructive. Wildfires are able to transition from surface fires to the crown as the fires moves from the heavy fuels on the ground to the shrub layer in the midstory to the dense stand canopy. It is not uncommon for wildfires that occur in areas that are in FRCC 3 to result in 10-25 percent mortality among overstory trees. Fires that make the transition to the crown can result in near 100 percent morality of overstory trees. Wildfires that occur in areas that are in FRCC 3 are harder to suppress compared to those in treatment areas of FRCC 1. The decreased fuel loading and absence of a thick midstory found in FRCC 1 allows firefighters to utilize existing roads or natural breaks. This modified tactic is for better burn out operations instead of going direct against the fire, thus reducing the exposure of firefighters to undue risk during wildfire suppression activities.

In areas where we have not been able to prescribe burn due to personnel shortage, time or budget constraints, wildfires have a greater potential for overstory damage, private property damage, and pose a greater threat to firefighters. These areas of heavy fuel loadings are designated FRCC 3. There is usually an abundance of the larger 10-hour, 100-hour and 1000-hour fuels and fire residence time is longer.

**The burning program on the Ouachita NF is one of the most aggressive in the Region.**

CFLRP funding will boost our annual burning capacity and further reduce the threat of catastrophic wildfire. In order to accomplish the 3 year rotation desired for the treatment area, we will accomplish 50,000 acres per year with CFLR funds and the remaining 50,000 acres from appropriated funds.

Our restoration treatments are also designed to protect water quality. Research on the Ouachita NF has shown that water resources benefit when fire intensities are modest. By contrast, unplanned ignitions in FRCC 3 areas can result in intense fires with severe loss of mature trees, destruction of duff layers, and resulting spikes in sedimentation to impacted streams.

Figure 7 displays the treatment of prescribed burning and thinning activities over time with wildfire acres and southern pine beetle (SPB) infestations for the last 20 years. Prescribed burning has continued to increase on the Forest while wildfire activity has remained at low levels. Two peaks in the wildfire acres indicate two events during drought conditions. As depicted by the near-zero levels of SPB infestations, insect and disease

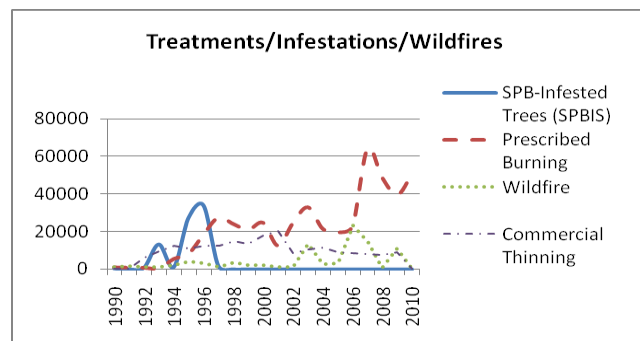


Figure 7: Prescribed burning, thinning, wildfire and SPB infestation acres within project area, 1990-2010.



outbreaks within the project area appear to be lowered by the active management of thinning the overstory and midstory combined with rotational burning.

Currently, an average of 56,000 acres is treated annually in the project area on the Ouachita NF. There are on average 50,000 acres prescribed burned, with 2,500 acres of WSI and 3,500 acres of commercial thinning conducted.

The term “advanced restoration” is for those acres that now mainly require periodic burning in order to maintain desired condition. “Intermediate restoration” acres are those that have been thinned, thinned with WSI, or thinned with WSI and one or more prescribed burns applied. Because of the large project scale and long implementation time frame, a large number of acres in the R&R, in the old growth areas and all of the ABB acres have not yet received any treatment. Burning is the primary focus of our treatment because burning is the bottle neck in getting acres restored. Due to the need of rotational burning every 3-5 years, the current funds do not permit the expansion of restoration on significant forest blocks. Without these additional funds, it is very difficult to move more acres to an advanced stage of restoration.

There are 206,465 acres in R&R areas. Currently, about 46% (95,000 acres) are in the advanced stage. About 18% (38,000 acres) are in the intermediate stage and 36% (73,465 acres) have received no treatment.

There are 70,379 acres of old growth. Currently, about 39% (27,000 acres) are in the advanced stage: 33% (23,000 acres) are in the intermediate stage; and 28% (20,379 acres) has not received treatment.

With CFLRP, an additional 55,000 acres will be treated each year from 2012-2020: 50,000 acres of prescribed burning; 2,500 acres of additional WSI and 2,500 acres of commercial thinning. With CFLRP funds for 2011, only an additional 6,000 acres will be treated; 5,000 prescribed burning; 500 acres of WSI and 500 acres of commercial thinning.

In the R&R, at the end of 10 years with CFLRP funding, it is projected 75% (155,000 acres) will be in the advanced stage, 20% (41,000 acres) in the intermediate stage, and 5% (10,465 acres) will have not received any treatment.

In old growth areas, at the end of 10 years with CFLRP funding, it is projected 75% (52,500 acres) will be in the advanced stage, 20% (14,000 acres) will be the intermediate stage, and 5% (3,879 acres) will not have received any treatment.

None of the 71,638 acres within the ABBA have received any restoration treatments. The NEPA ready acres total 40,581 acres. It is projected that at the end of 10 years, with CFLRP funds, these ABBA would have 50 % (36,000 acres) in the advanced stage, 30 % (21,500 acres) in the intermediate stage, and 20% (14,138 acres) would not have had any treatment.

CFLRP funds and the Ouachita NF combined funding will allow the burning of 100,000 acres a year with 5,000 acres of WSI and 6,000 acres of thinning. The additional CFLRP dollars will build upon this intensive restoration program to transform 320,000 acres into an advanced or

intermediate stage of restoration. This is 92% of the project area. This scale of treatments is what is needed to advance and maintain these huge blocks of forests. At the end of 10 years, almost a million acres will have received treatment, which includes acres receiving multiple treatments (Figure 8).

**This is not an experimental restoration effort.** The Ouachita NF has a long history of restoring the landscape. The workforce and timber industry infrastructure is in place in the Ouachita Mountains and with additional funds we can immediately begin treating even larger blocks to increase restoration efforts.

The 50,000 acres of additional burning with CFLRP funds does not include burning or other treatments on the state lands of

MCWA. MCWA is surrounded by R&R areas on the Ouachita NF (Attachment G). Currently on the MCWA (14,000 acres): 5,000 acres are in the advanced stage of restoration: 7,000 acres are intermediate; and 2,000 have had no treatment. The Forest will continue its frequent cooperative burning of 6,000 acres on the MCWA. The last known population of RCW in Oklahoma is on the MCWA. Accelerated efforts on the Ouachita NF surrounding MCWA will aid in providing habitat for this small RCW population.

Firewise Communities are within the project area. The National Fire Protection Association FireWise community program “encourages local solutions for wildfire safety by involving homeowners, community leaders, planners, developers, firefighters, and others in the effort to protect people and property from the risk of wildfires” (see Attachment G for communities at risk within and surrounding Ouachita NF). The Ouachita NF cooperatively burns approximately 2,000 acres of adjacent private lands each year under the Stevens Act and Wyden Amendment. These acres combined with the area burned on the MCWA reduce prescribed burning costs by eliminating the need for firelines to exclude adjacent lands, which also benefits both private, state and USFS lands by reducing fuel loads.

Since the average treatment duration is an average of three years, the total area treated includes many acres treated more than one time to maintain restored conditions. Using the R-CAT model, it is anticipated that the wildfire program savings for this project would be \$97,938, 307, calculated in discounted dollars.

**Collaboration and Multi-party Monitoring**

Partners in this collaborative effort have diverse roles. A broad array of public and private entities, economic interests, county governments, environmental groups, universities, state, and

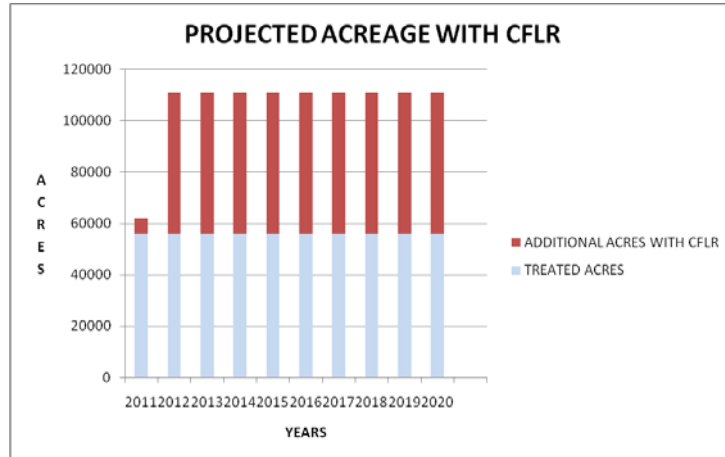


Figure 8. CFLRP funds would increase restoration to treat almost one million acres.

other federal agencies, and interested private citizens have worked together since 1991 to design and implement ecological restoration and recovery efforts on the Ouachita NF.

Research with activity and effectiveness monitoring remain integral to restoration. For 20 years, partners have carried out a research program to enhance understanding of the relationships between management actions and plant and animal population responses. Peer-reviewed publications, graduate projects, and administrative studies have provided an in-depth understanding of the ecological impacts (positive and negative) associated with pine-bluestem restoration. The studies have been broad: zoological, botanical, soils and nutrient regimes, water quality as well as economic.

These research and monitoring results are discussed as a collaborative in open public forums as well as multiple meetings throughout the year. Decisions are made by an informed collaborative through consensus. This continuous interaction has been successful in the Ouachita Mountains and has resulted in the following restoration accomplishments:

- Two symposiums, one of which was published
- Restoration treatments on 183,000 acres
- No litigation, no appeals of NEPA
- RCW adult population has increased from 24 to 138
- Collaboratives varied interests and ideas from public and informal meetings along with their active participation resulted in the successful amending of the Forest Plan. The amendment defined desired future conditions and created landscape scale restoration of the pine-bluestem woodlands.
- 11 graduate students have received advanced degrees from studying restoration on the Ouachita NF
- An economic study was published by Zhang et al. (2010), “Forest Policy Impact Assessment in the Ouachita National Forest and the Valuation of Conserving Red-cockaded Woodpeckers” American Journal of Applied Sciences.
- More than 52 scientific publications in peer reviewed journals from research and monitoring restoration efforts on the Ouachita NF. For the reference/publication listing, see: [http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5261917.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5261917.pdf)

One such study concludes that “Pine-grassland habitat restoration enhances overall vertebrate diversity, as indicated by studies of small mammals and breeding birds, and forage production studies for white-tailed deer. Restoration will most likely result in greater representation of typical, grassland, rodent species, and continued maintenance of woodland species. Increased standing crop of native vegetation in the understory will support a greater abundance of small mammals.” (Summarized from *Small Mammal Response to Pine-Grassland Restoration for Red-cockaded Woodpeckers* by Masters et al. published in Wildlife Society Bulletin (1998)).

In the beginning, timber purchasers were wary because they thought management favoring RCWs might mean the end of logging on the Ouachita NF. Timber purchasers represented local mills and hundreds of jobs involved in the logging and milling industry. At the other end of the spectrum, the Ouachita Watch League and Sierra Club were parties to a lawsuit that targeted clearcutting and herbicide use. People representing conflicting interests eventually sat at the table to craft solutions that could advance RCW recovery and ecosystem restoration. Timber concerns

were largely resolved when it became clear that intensive commercial thinning would sustain open, park-like habitat, plus the jobs and mills in the Ouachita region. Conservation groups were also satisfied with the knowledge that restoring historical habitat would increase populations of RCW. We continue to move forward with this collaborative approach.

Other concerns included Arkansas Game & Fish Commission (AGFC) and Oklahoma Department of Wildlife Conservation (ODWC) representing the hunting and fishing community that could be impacted by management on the Ouachita NF. A series of research projects demonstrated conclusively that deer benefits from ecosystem restoration efforts because forage plants increase as stands became more open. The same conclusions emerged from a series of research efforts involving Northern Bobwhites.

In partnership with universities and other researchers, many components of the shortleaf pine-bluestem grass ecosystem were examined. One study, for example, looked at how non-game birds were impacted by an ecosystem approach. This concern was expressed by several conservation groups, including Audubon Arkansas and Arkansas Audubon Society. Studies found bird species diversity increases with restoration efforts. Arkansas Audubon Society provided funding for several research projects, and Audubon Arkansas will collaborate to continue bird surveys with CFLRP funding.

Universities and the Southern Research Station have been involved in the collaborative effort to improve the scientific basis for management. In all, eleven graduate students have received advanced degrees by studying some aspect of restoration on the Ouachita NF. Oklahoma State University students and faculty have studied effects of management on vegetation, birds, small mammals, bobwhites, deer forage, and economics. Faculty and students at the University of Arkansas have completed studies on RCWs and early successional habitats for Neotropical migratory birds. University of Arkansas at Monticello faculty worked with the Forest Soil Scientist and others to analyze how restoration activities impact soil and foliar nutrients. Contributions by the Southern Research Station include studies of the effects of restoration treatments on reptiles, amphibians, butterflies and their nectar sources, and moths. Below are the various collaborators involved in past and on-going studies and in making decisions within the project area (Table 1).

Shortleaf pine-bluestem restoration has resulted in an improvement in soil fertility and productivity on the Ouachita NF. Forbs and grasses, such as the bluestems through their rich and fibrous root systems, help transform the soils into a darker, more productive and prairie-like medium. This has translated into the enhancement of soil characteristics and values such as soil structure and color, organic matter and carbon contents, base saturation, cation exchange capacity, soil pH, and mineralizable nitrogen.

These collaborative partnership accomplishments were recognized by the Chief's Ecosystem Management Award in 1999 and the Chief's Wings Over America Award in 2005. Audubon Arkansas recognized the shortleaf pine-bluestem project area by designating it as their first Important Bird Area in Arkansas.



Table 1. Collaborative partners involved in shortleaf pine-bluestem restoration work on Ouachita NF.

<b>Collaborative Partners</b>	
<b>Conservation Agencies</b>	<b>Research Groups</b>
US Fish and Wildlife Service	OK Biological Survey
AR Game and Fish Commission	Arkansas State University
OK Department of Wildlife Conservation	University of Arkansas
AR Natural Heritage Commission	Oklahoma State University
AR Forestry Commission	Tall Timbers
OK Forestry Services	University of Missouri
Natural Resource Conservation Service	Southern Research Station
	Northern Research Station
<b>Conservation Organizations</b>	Arkansas Tech University
The Nature Conservancy	
Audubon Arkansas	<b>Industry</b>
Arkansas Audubon Society	Ouachita Timber Purchasers
Ouachita Watch League	Jim Crouch and Associates
Monarch Joint Venture	Weyerhaeuser
Monarch Watch	Deltic Timber
Arkansas Chapter of The Wildlife Society	Travis Lumber
Arkansas Chapter of American Fisheries Society	Bean Lumber
	Hatfield Lumber
<b>Sportsmen/Recreation Groups</b>	Green Bay Packaging
National Wild Turkey Federation	
Quail Unlimited	
Arkansas Wildlife Federation	
Arkansas Trail Blazers	
Ouachita ATV Club	

Successful collaboration demands on-going communication with partners and public. Observing on-the-ground results in restoring a historic landscape is an excellent way to keep dialogue open and progressive. The collaborative helps conduct about 25 eco-tours every year through the shortleaf pine-bluestem restoration area. These tours are for the collaborative, as well as for organizations, university groups, conservation groups and other interested parties. These joint presentations in the field facilitate information exchange, technology transfer, and expansion of partnership opportunities. About 400-600 people go on these tours annually. An auto tour with interpretive signs and a booklet are also available. To view the booklet, see: [http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5261917.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5261917.pdf).

Educating others about the importance of native landscapes has been ongoing with a team of partners: local counties, churches, museums and public schools, Arkansas Game and Fish Commission, The Nature Conservancy, National Wild Turkey Federation, Audubon Arkansas, Arkansas Historic Preservation Program, Arkansas Highway Department and the Natural Resource Conservation Service. This team has been teaching area students and teachers with seasonal hikes through restoration areas and through environmental educational efforts. To foster stewardship, high school students are mentoring elementary school kids through observations of seasonal landscape changes and the biotic shifts that occur from converting to native habitats.

**Utilization**

The timber industry infrastructure is in place and can accommodate all of our restoration needs.

Harvests associated with restoration efforts could produce an estimated 30,000 tons of small diameter wood over the 10 year period. Small diameter wood is the un-merchantable timber that is 4.5 inches dbh or less for hardwood and 5.0 inches dbh or less for pine. These materials will help supply the AES power plant in Shady Point, Oklahoma. Shady Point is about 35 miles from the project area and within operable hauling distances of most of the project area (Figure 9).

The AES Shady Point power plant (currently coal-fired) is about ten miles north of Poteau Oklahoma. The plant conducted test burns with woody biomass in early January, 2011, and plans to begin co-generation of electricity with wood within a year.

Under an MOU, the AES Shady Point power plant and the Ouachita NF will work together toward increased utilization of small diameter material, including tree tops and midstory stems. Reducing the fuel after timber harvesting and WSI actions will not only increase utilization of wood and reduce the risk of wildfire damage on the site, but also reduce the complexity of the first 2-3 prescribed burns conducted in the area. Typically, areas that have had commercial or non-commercial thinning, including WSI treatments, require burning as a separate unit under conditions that produce a "cooler" burn. Burns of this kind add significant expense and risk to the operation, and are typically separated out for 2-3 burn rotations before the fuels are uniform enough to burn with the rest of the surrounding landscape. These "cooler" burns would not be needed, reducing the cost of prescribed burning.

Harvest of stems within WSI areas has the possibility of significantly reducing the service contract cost of \$100/acre or eliminating it entirely. Planned procurement of biomass for the AES plant is estimated to pay out \$1-2 dollars per dry ton for stems nearby the plant. Under the MOU, the Ouachita NF will work with AES to efficiently yard, load and transport woody biomass to the plant, ramping up the annual dry tons harvested through the life of the project.

Total savings for the project period, including the reduction in the cost of small separate prescribed burns combined with the potential of eliminating midstory reduction treatment costs is estimated conservatively at \$800,000.

### Benefits to local economies

Our project is about restoring ecological and economic balance in the Ouachita Mountains. People who live in this area are among the poorest in the nation and they depend heavily upon the forest and forest products for income. Local communities will benefit with an increase in timber production and related jobs. Restoration improves habitat for game such as quail, deer and

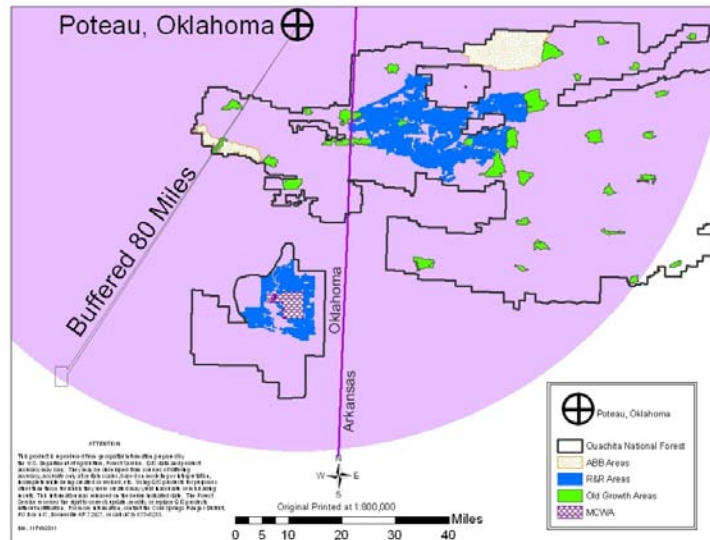


Figure 9. An 80-mile radius from the AES Power Plant encompasses most of the project area on the Ouachita NF.

turkey, with increased hunting comes increased revenue to local economies. Prescribed fire crews add their incomes to local communities and this adds or supports service jobs. Increased prescribed burning also decreases the threat of catastrophic fires that damage timber and negatively impacts water resources.

Timber harvesting is an essential part of these restoration efforts. Annual sawtimber sold from the Ouachita NF ranges from 150,000-200,000 CCF (approximately 75-100 MMBF), benefitting 24 mills within the proclamation boundary. The workforce and timber industry infrastructure is in place in the Ouachita Mountains with the following mechanisms to accomplish restoration:

- Stewardship contracts always using Best Value Criteria (BVC)
- Excellent local purchaser pools
- Competitive and competent service contractors and multi-year contracts (IDIQ)
- Agreements (Memorandum Of Understanding, Challenge Cost Shares, Interagency Agreements)

With CFLRP funding only (excluding all matching funds and in-kind contributions), it is projected that 207 additional jobs would be created in timber and restoration related activities based on TREAT analysis. This includes 120 commercial forest product jobs, 55 jobs from other project activities, and 32 jobs from Forest Service implementation and monitoring.

Local training from 2012-2020 with CFLRP funds will occur for:

- Adding a 20 person fire crew: 14 of the 20 person crew will be hired from local communities and the other 6 will be out of state detailers. This crew will travel throughout the project area and boost local economies for 6 weeks. TNC and Quail Upland Wildfire Federation will also provide fire crews to be trained in restoration work. Currently, fire crews are trained on the Ouachita NF from out west as well as locally.
- Youth Conservation Corp (YCC): Ten local high school students and a supervisor will be hired for 8 weeks in the summer.
- Job Corp: Ten students will be hired to help with preparation for prescribed burning by raking around RCW cavity trees and fireline work in the riparian areas.
- Ten local high school students hired seasonally to collect and sow milkweed seed at the Ouachita NF Seed Orchard. Working in partnership with Monarch Watch and Monarch Joint Venture, native milkweeds will be re-established in 2,000 acres across the project area.

## **Funding Plan**

The monitoring needs on the Ouachita NF are not high due to past and on-going research and monitoring efforts with the collaborative. Peer-reviewed publications, graduate projects, and administrative studies have provided an in-depth understanding of the ecological impacts (positive and negative) associated with pine-bluestem restoration. The studies have been broad: zoological, botanical, soils and nutrient regimes, water quality as well as economic.

Needs for CFLRP funding of multi-party monitoring to fill in the gaps from past work include:

- The Nature Conservancy (TNC) will monitor 96 vegetative plots over the entire restoration area from 2012-2020.
- Audubon Arkansas will monitor the response of songbirds that require restored pine-bluestem conditions and conduct environmental education classes for students, educators and community leaders about the importance of native landscapes.
- The Sebascott Economic Development Council (sebascott.org) will provide guidance for design and development of the economic analysis and evaluation for the project. Sebascott is a non-profit working to better Sebastian and Scott counties, Arkansas. Scott County is one of the two main counties within the project area.
- Scott County will monitor non-native invasive plants. Scott County and the Ouachita NF have an MOU for cooperatively monitoring and controlling exotic and invasive plants along roadsides. Native seeds are harvested at the Ouachita Seed Orchard and these seeds are used throughout the Forest at sites of disturbance. In-kind contribution from Scott County is \$15,000 a year (2012-2020). Ouachita NF contribution is also \$15,000. No CFLRP funds are needed for these efforts.

The objectives based monitoring program of TNC will be geared toward answering the following questions:

- 1) Are ecological restoration activities reducing hazardous fuels?
- 2) Is the health of the forest being enhanced and maintained?
- 3) Are restoration activities resulting in the expansion of RCW habitat?
- 4) Are restoration activities resulting in an increase in habitat and populations of Bachman's Sparrow, Brown-headed Nuthatch, Prairie Warbler, and Yellow-breasted Chat?

Forest health in the pine-bluestem restoration area will be defined by TNC and other collaboratives with a suite of desired ecological parameters including:

1. The existing set of native ecological systems is maintained within the project site and the regeneration of overstory trees is within the desired range of variation.
2. The density and diversity of overstory woody species, midstory and understory woody species, native herbaceous understory layer and the frequency, seasonality, and intensity of fire are maintained within the desired range of variation.
3. Non-native species are not a dominant component of any ecological system and are reduced or maintained below problem levels.

Success will be measured in several ways by tracking the implementation of treatments so that (1) the Ouachita NF and its partners can show that they did what they said they are going to do, and (2) outcomes were as predicted in moving forest conditions to the desired state.

Audubon Arkansas will also lead trainings for students, educators, and community leaders in the project area that empower workforce skills and forest stewardship. Trainings will include habitat awareness, habitat monitoring, and STEM (Science, Technology, Engineering, and Math) skill integration with school curriculum projects focused on pine-bluestem grass restoration.



The seasonal and part-time jobs are shown in Table 2 and 3. The jobs are for every year for 2012-2020 (Table 2). These jobs are represented with the TREAT projections.

Table 2. CFLRP monies needed to create jobs, partner in-kind contributions and Ouachita NF contributions.

EFFORT	JOBS	CFLRP \$	PARTNERS	IN-KIND	FS Contribution
Monitor Veg	3	30,000	TNC, Arkansas Heritage	30,000	10,000
Monitor Birds	3	32,000	Audubon Arkansas	10,000	10,000
Monarch	10	10,000	Schools, Public	5,000	15,000
Job Corp	10	2,000	Job Corp	1,000	1,000
YCC	11	40,000	Local High Schools	2,000	10,000
Economics	1	10,000	Sebascott Economic Dev.	10,000	
Monitor Water	1	8,000	Southern Research Station		8,000
<b>Total</b>	<b>39</b>	<b>\$132,000</b>	<b>Partner and FS Contribution \$112,000</b>	<b>\$58,000</b>	<b>\$54,000</b>

Concerns from the collaborative of prescribed burning on the ground nesting, Eastern Wild Turkey, resulted in a study to examine potential impacts. Collaborators: Arkansas Game and Fish Commission, National Wild Turkey Federation, Arkansas State University, University of Arkansas and the Ouachita NF have developed a research plan and brought on a PhD student. A National Wild Turkey Federation grant was submitted in 2011 and will likely be funded for an additional partnership contribution of \$30,000. CFLRP monies could provide funds for intensive monitoring of fire regimes to determine potential impacts. There will be 7 part-time jobs created with this study for years 2011-2014 (Table 3).

Table 3. Research costs and partnership contributions to study possible correlations of prescribed burning regimes and Eastern Wild Turkey reproductive success.

Year	Ouachita NF Contribution	Arkansas Game & Fish Commission	Nation Wild Turkey Federation	Arkansas State University	Audubon Arkansas	CFLR Request	Total Project Cost
2011	166,070	31,200		8,500	1,500	30,000	237,270
2012	31,470	43,000	15,000	5,000	1,500	40,000	135,970
2013	31,470	31,200	15,000	5,000	1,500	40,000	124,170
2014				19,196			19,196
<b>Total</b>	<b>\$229,010</b>					<b>\$110,000</b>	<b>\$516,606</b>

Other non-federal partners, The Nature Conservancy, Arkansas Wildlife Federation, and National Wild Turkey Federation will also contribute an average of \$10,000 each year over the 10 years (2011-2020). This contribution may be in the form of dollars or personnel for prescribed burning, studies, WSI work, or in-kind contributions.

Watershed work will begin in 2011 on recreational trails within the project area using \$32,000 of non-federal grant monies, and labor efforts of Arkansas Trail Blazers, Ouachita ATV Club, and Ouachita NF. Efforts will reduce sedimentation on Sugar Creek Trail, a 37 mile trail primarily used by OHVs. Sections of trail will be relocated off of private lands, other sections reconstructed and hardened with gravel. Parking will be created at the trailhead and graveled to reduce erosion. No CFLRP funds are needed to complete this watershed restoration work.

Continued watershed work in the project area will be accomplished in 2012-2014 by replacing three stream crossings. These crossings will restore passage on 14 miles on two streams. The threatened leopard darter occurs in both of these streams. Partner contributions include: \$50,000 grant from USFWS; \$400,000 from Oklahoma Department of Wildlife Conservation and McCurtain County and \$100,000 from the Ouachita NF. No CFLRP funds are needed to complete this watershed restoration work.



Non-federal partners will contribute \$1,489,096 towards more intensive monitoring, project implementation, research and restoration education in the treatment of almost a million acres.

We request CFLRP funds each year of \$2,257,500 for treatment of 50,000 acres of burning at \$28/acre; 2,500 acres of WSI at \$118/acre; and 2,500 acres of thinning at \$225/acre. Ouachita NF contribution for treatment is \$2,482,500 for our annual 50,000 acres of burning at \$28/acre; 2,500 acres of WSI at \$118/acre; and 3,500 acres of thinning at \$225/acre. The remainder of CFLRP request is for monitoring and employment at a cost of \$132,000 each year. Total request for the Eastern Wild Turkey project is an additional \$110,000.

In summary:

- CFLRP grant funds will ensure that the successful restoration and maintenance activities of the last two decades will grow dramatically instead of decline due to lack of funds.
- Annual prescribed burning of 100,000 acres is what is needed to advance and maintain huge blocks of forests.
- Restoring this size of contiguous landscape using proven methods is impossible elsewhere in the eastern United States. Project actions will restore 320,000 acres by the end of 10 years.
- The project area has three federally listed species: leopard darter (threatened), and RCW and ABB (endangered).
- This is not an experimental restoration. The Ouachita NF has the skills, collaborators, markets, and contractors to put results on the landscape.
- Local communities will benefit with an increase in timber production, including a developing biomass market, and add over 200 jobs to rural communities in Arkansas and Oklahoma.

Our proposal is to restore the shortleaf pine-bluestem community that was historically the dominant cultural landscape in the Ouachita Mountains. Rural communities within the Ouachita Mountains are dependent upon traditional forest products. Cultures that have developed around these traditional forestry practices of timber management and burning will benefit from the increase in restoration funds. Building on existing collaborative efforts with increased funding, there exists significant opportunities in the Ouachita Mountains to restore ecological balance and expand economic opportunities.