CFLRP Project Name (CFLR#): Shortleaf-Bluestem Community (CFLR018)

National Forest(s): Ouachita National Forest

1. Executive Summary

The Ouachita National Forest (ONF) and partners continue to make progress toward restoration of the shortleaf pine – bluestem ecosystem. CFLRP planning, funding, and implementation over these last twelve (12) years, has undoubtedly increased the pace and scale of work completed on the ground, broadened and bolstered partner relationships and synergy toward the goals of the Collaborative, and has significantly stimulated local, rural economies.

Vegetation monitoring is conducted jointly between ONF and The Nature Conservancy. The Project monitoring, data analysis and reporting is currently in its 3rd Remeasure phase (with a new monitoring report being written in winter/spring 2024). Ecosystem monitoring over the life of the project has confirmed that vegetation management and prescribed fire prescriptions are producing results in-line with ecological Desired Condition. Moreover, monitoring has also indicated that implementing only a portion of the prescription, either ecological thinning or prescribed burning alone, has not significantly improved forest condition.

The Unit, with partners, continues to make great strides toward restoration goals. Our collaborative efforts have transformed **310,533 acres** of the total CFLR Project area of 363,829 acres or **85% of NFS lands** having received treatments resulting in those lands being in advanced or intermediate stages of restoration (Figure 2). The Project continues to partner with industry for accomplishing much of the vegetation work, having provided over **587,500 CCF** of timber product, which, in turn has provided continued support for jobs and communities in the area. Lastly, increased capacity through the life of the Project, has facilitated expanded acres treated with prescribed fire, having completed over **657,600 acres**.

Figure 1. Tour of a signature area of restored Shortleaf Pine - Bluestem ecosystem (Buffalo Road) on the Poteau-Cold Springs Ranger District, Ouachita National Forest (Photo credit: Eric Hunt, member of the Arkansas Native Plant Society), Botany Field Tour, May 2023.

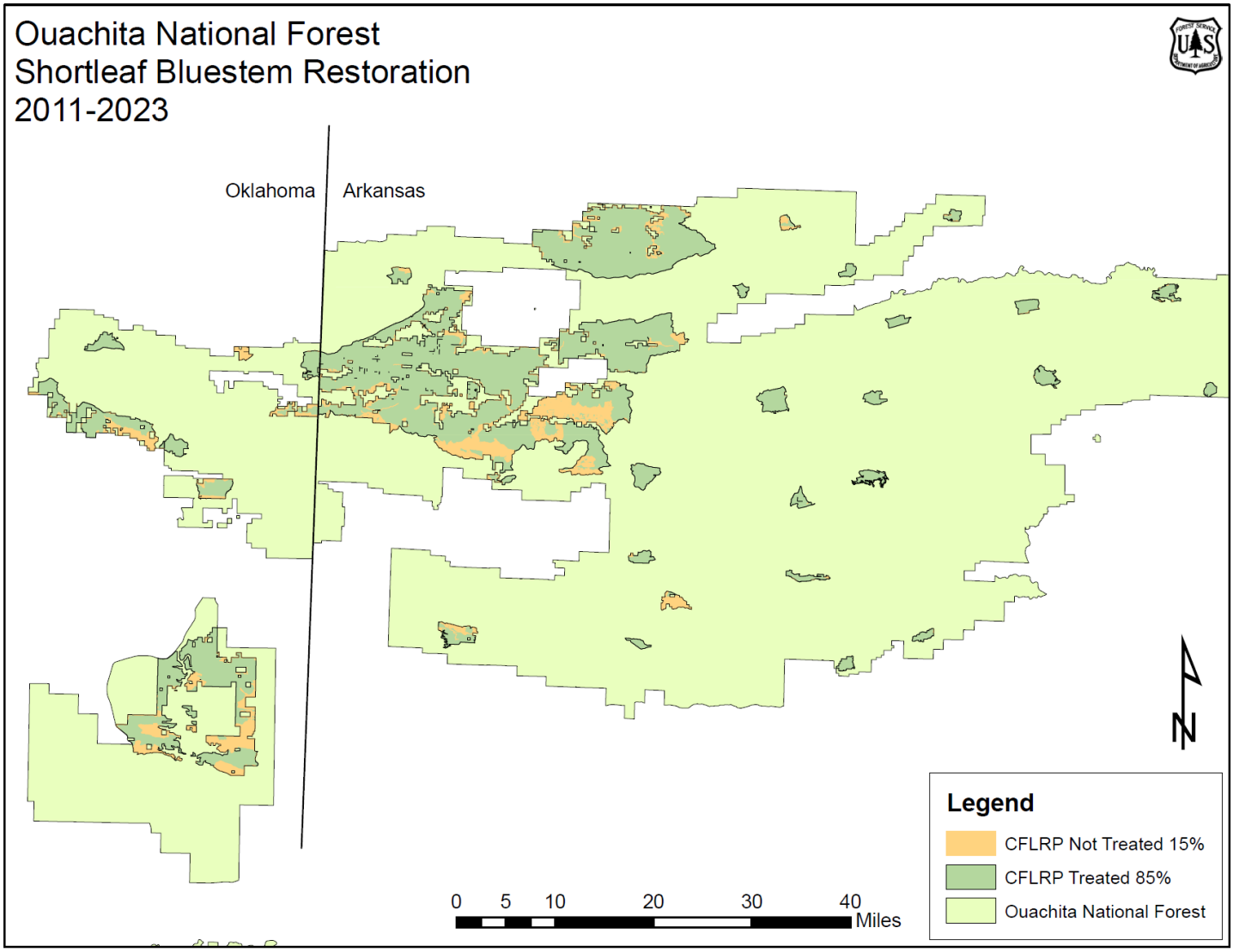

Figure 2. A map depicting the areas yet to be treated in the Shortleaf Bluestem Community CFLR Project area.

2. Funding

CFLRP and Forest Service Match Expenditures

Fund Source: CFLN and/or CFIX Funds Expended	Total Funds Expended in Fiscal Year 2023
CFLN23 CFLN22 CFLN14 **TOTAL**	$742,029 $138,336 $2,326 **$882,681**

This amount should match the amount of CFLN/CFIX dollars spent in the FMMI CFLRP expenditure report. Include prior year CFLN dollars expended in this Fiscal Year. CFLN funds can only be spent on NFS lands.

Fund Source: Forest Service Salary and Expense Match Expended	Total Funds Expended in Fiscal Year 2023
NSCF23 WSCF23 **TOTAL**	$231,673 $554,711 **$786,384**

This amount should match the amount of matching funds in the FMMI CFLRP expenditure report for Salary and Expenses. Staff time spent on CFLRP proposal implementation and monitoring may be counted as CFLRP match – see Program Funding Guidance.

Fund Source: Forest Service Discretionary Matching Funds	Total Funds Expended in Fiscal Year 2023
CWKV15 CMRD23 NFHF23 **TOTAL**	$31,920 $220,243 $363 **$252,526**

This amount should match the amount of matching funds in the FMMI CFLRP expenditure report, minus any partner funds contributed through agreements (such as NFEX, SPEX, WFEX, CMEX, and CWFS) which should be reported in the partner contribution table below. Per the Program Funding Guidance, federal dollars spent on non-NFS lands may be included as match if aligned with CFLRP proposal implementation.

Partner Match Contributions[1]

Fund Source: Partner Match	In-Kind Contribution or Funding Provided?	Total Estimated Funds/Value for FY23	Description of CFLRP implementation or monitoring activity	Where activity/item is located or impacted area
The Nature Conservancy - Arkansas	☒ In-kind contribution ☐ Funding	$16,266.70		☒ National Forest System Lands ☒ Other lands within CFLRP landscape:
McCurtain County Wilderness Area – ODWC (Oklahoma Department of Wildlife Conservation)	☒ In-kind contribution ☐ Funding	$80,000	Funds include salaries for MCWA Personnel, area maintenance, RCW habitat management (nestling/fledging checks, banding, RCW translocation planning, midstory management), fire preparations, COOP operations (prescribed fire)	☒ National Forest System Lands ☒ Other lands within CFLRP landscape:
Natural Resource Conservation	☒ In-kind contribution ☐ Funding	Polk & Scott Counties $143,195	Financial assistance dollars pay landowners to implement forestry	☒ National Forest System Lands

[1] Addresses Core Monitoring Question #13

Fund Source: Partner Match	In-Kind Contribution or Funding Provided?	Total Estimated Funds/Value for FY23	Description of CFLRP implementation or monitoring activity	Where activity/item is located or impacted area
Service - Arkansas		Certified (completed) and planned practices, $11,456 Technical Assistance	practices on private land. Practices included: tree/shrub site preparation and planting, prescribed burning, fire breaks, riparian forest buffers, and forest stand improvements. Technical assistance $ pays NRCS employees and/or partners, like the Division of Forestry, to give the necessary technical information to landowners to implement the practices.	☒ Other lands within CFLRP landscape:
USDI – Bureau of Land Management	☐ In-kind contribution ☒ Funding	$34,794	Assistance with Prescribed Fire within SBC CFLR Project area, funded through R8 funds	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:
Arkansas Game and Fish Commission	☒ In-kind contribution ☐ Funding	$23,700	AGFC work included assessment of Black Bear populations and feral hogs; assistance with prescribed burns in CFLR Project area. Mulching brush, and liming, fertilizing, seeding permanent food plots.	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:

Total In-Kind Contributions: $ 274,618

Total Funding: $34,794

Total partner in-kind contributions for implementation and monitoring of a CFLR project across all lands within the CFLRP landscape.

Goods for Services Match

Service work accomplishment through goods-for services funding within a stewardship contract (for contracts awarded in FY23)	Totals
Total revised non-monetary credit limit for contracts awarded in FY23	$0
Revenue generated through Good Neighbor Agreements	Totals
	$0

"Revised non-monetary credit limit" should be the amount in the "Progress Report for Stewardship Credits, Integrated Resources Contracts or Agreements" as of September 30. Additional information on the Progress Reports available in CFLR Annual Report Instructions. "Revenue generated from GNA" should only be reported for CFLRP match if the funds are intended to be spent within the CFLRP project area for work in line with the CFLRP proposal and work plan.

3. Activities on the Ground

FY 2023 Agency Performance Measure Accomplishments[2] - Units accomplished should match the accomplishments recorded in the Databases of Record. Please note any discrepancies.

Core Restoration Treatments	Agency Performance Measure	NFS Acres	Non-NFS Acres	Total Acres
Hazardous Fuels Reduction (acres) in the Wildland Urban Interface	FP-FUELS-WUI (reported in FACTS)[3]	50,390	0	50,390
Hazardous Fuels Reduction (acres) in the Wildland Urban Interface - COMPLETED	FP-FUELS-WUI-CMPLT (reported in FACTS)[4]	50,872	0	50,872
Hazardous Fuels Reduction (acres) outside the Wildland Urban Interface	FP-FUELS-NON-WUI (reported in FACTS)[3]	23,695	0	23,695
Hazardous Fuels Reduction (acres) outside the Wildland Urban Interface - COMPLETED	FP-FUELS-NON-WUI-CMPLT (reported in FACTS)[4]	23,347	0	23,347
Wildfire Risk Mitigation Outcomes - Acres treated to mitigate wildfire risk	FP-FUELS-ALL-MIT-NFS (reported in FACTS)	52,057	0	52,057
Prescribed Fire (acres)	Activity component of FP-FUELS-ALL (reported in FACTS)	74,219	2,060	76,279
Invasive Species Treatments (acres) - Noxious weeds and invasive plants	INVPLT-NXWD-FED-AC (reported in FACTS)[3]	0	0	0
Invasive Species Treatments (acres) - Noxious weeds and invasive plants - COMPLETED	INVPLT-NXWD-FED-AC-CMPLT (reported in FACTS)[4]	0	0	0

[2] This question helps track progress towards the CFLRP projects lifetime goals outlined in your CFLRP Proposal & Work Plan. Adapt table as needed.

[3] For service contracts, the date accomplished is the date of contract award. For Force Account, the date accomplished is the date the work is completed

[4] New Agency measure reported in FACTS when completed

Core Restoration Treatments	Agency Performance Measure	NFS Acres	Non-NFS Acres	Total Acres
Invasive Species Treatments (acres) - Terrestrial and aquatic species	INVSPE-TERR-FED-AC (reported in FACTS)[35]	0	0	0
Invasive Species Treatments (acres) - Terrestrial and aquatic species - COMPLETED	INVSPE-TERR-FED-AC- CMPLT (reported in FACTS)[46]	0	0	0
Road Decommissioning (Unauthorized Road) (miles)	RD-DECOM-NON-SYS (Roads reporting)	0	0	0
Road Decommissioning (National Forest System Road) (miles)	RD-DECOM-SYS (Roads reporting)	0	0	0
Road Improvement (High Clearance) (miles)	RD-HC-IMP-MI (Roads reporting)	0*	0	0
Road Improvement (Passenger Car System) (miles)	RD-PC-IMP-MI (Roads reporting)	0*	0	0
Road Maintenance (High Clearance) (miles)	RD-HC-MAINT-MI (Roads reporting)	0	0	0
Road Maintenance (Passenger Car System) (miles)	RD-PC-MAINT-MI (Roads reporting)	476.3*	0	0
Trail Improvement (miles)	TL-IMP-STD (Trails reporting)	0	0	0
Trail Maintenance (miles)	TL-MAINT-STD (Trails reporting)	0*	0	0
Wildlife Habitat Restoration (acres)	HBT-ENH-TERR (reported in WIT)	80,179	0	80,179
Stream Crossings Mitigated (i.e. AOPs) (number)	STRM-CROS-MITG-STD (reported in WIT)	0	0	0
Stream Habitat Enhanced (miles)	HBT-ENH-STRM (reported in WIT)	0	0	0
Lake Habitat Enhanced (acres)	HBT-ENH-LAK (reported in WIT)	0	0	0
Water or Soil Resources Protected, Maintained, or Improved (acres)	S&W-RSRC-IMP (reported in WIT)	0	0	0
Stand Improvement (acres)	FOR-VEG-IMP (reported in FACTS)	824	1000	1824
Reforestation and revegetation (acres)	FOR-VEG-EST (reported in FACTS)	84	2469	2553
Forests treated using timber sales (acres)	TMBR-SALES-TRT-AC (reported in FACTS)	964	0	964
Rangeland Vegetation Improvement (acres)	RG-VEG-IMP (reported in FACTS)	0	89	89**

*Values for accomplishments on the Pine–Bluestem Community CFLR Project were either not correctly tagged as work accomplished in the CFLRP area or were not reported in-time for the databases of record, which result in zero (0). However, actual work accomplished in these treatment areas were as follows: RD-HC-IMP-MI = 6.95; RD-PC-IMP-MI = 0.76; RD-PC-MAINT-MI = 476.3; TL-MAINT-STD = 36.0.

** Though the Pine – Bluestem Community CFLR Project does not have rangeland improvement objectives, it is important to capture activities occurring within the CFLR Project area. USDA NRCS assisted private landowners in silvopasture improvements through the Farm Production and Conservation Program in FY23. This work is counted as match.

- **Is there any background or context you would like to provide regarding the information reported in the table above?**

For accomplishments reported on non-NFS lands, the Natural Resources Conservation Service – Arkansas performed considerable treatments on private lands in the CFLR project area in 2023 as reported above. This work exemplifies the cross-boundary, all-lands approach to ecosystem health this collaborative is committed to.

Reflecting on treatments implemented in FY23, if/how has your CFLRP project aligned with other efforts to accomplish work at landscape scales?

This Project, over the past twelve years, has focused on the ecological benefits of restoring the Shortleaf Pine - Bluestem community in the Ouachita Mountains at an increased pace and scale. The objectives of the restoration are in concert with accomplishing that work at landscape scales. For example, instead of looking at small blocks around the Forest, this Project has allowed us to look at landscape strategies that improve thousands of acres, contiguous across the landscape, for comprehensive watershed health and where that restoration makes sense ecologically. It also aligns with the reduction of hazardous fuels that not only increases herbaceous habitat but also decreases the intensity of any wildfire inside the treatment area for 3-5 years. Instead of suppressing a wildfire in Fuel Model 6 with heavy fuel loading, we can utilize a smaller number of resources and suppress a fire in Fuel Model 1, an open pine-grassland. This conversion to pine-grasslands lowers the effort of suppression and decreases the mortality of desired timber/habitat. In addition, most (80%) of the designated CFLR project area is defined as Wildland Urban Interface.

Project planning and implementation with partners has been key to maximizing acres treated on the ground. The Ouachita continues to utilize, to a substantial degree, off-Forest and partner resources to carry-out larger prescribed fires than in the past.

4. Restoring Fire-Adapted Landscapes and Reducing Hazardous Fuels

Narrative Overview of <u>Treatments Completed in FY23</u> to restore fire-adapted landscapes and reduce hazardous fuels, including data on whether your project has expanded the pace and/or scale of treatments over time, and if so, how you've accomplished that – what were the key enabling factors?

In Fiscal Year 2023, the Ouachita National Forest (ONF) successfully implemented **74,219** acres of prescribed fire within the CFLRP project area. A national "Prescribed Fire Pause" required several additional changes to the way prescribed fire is conducted. As a result, ignitions were delayed while waiting on new national guidance, updating burn plans, and coordinating district visits from the Forest Supervisor. Prescribed Burning programs were modified and adjusted to meet the 10- Year Wildfire Crisis Strategy.

The Forest has increased their staffing in other program areas. With expanding Timber and Silviculture programs the need and desire to have and implement fire on the landscape is increased. The need for broader application of fire can be illustrated on the district by highlighting the areas that have a normal (historical) application of fire compared to those that don't (wilderness areas and small areas interspersed with heavy Wildland Urban Interface (WUI)). These areas highlight the condition of the forest when fire is almost entirely excluded. Our wilderness areas suffer from mid and upper story canopy lock and the lack of pine seedlings in these areas is evident. Additionally, areas that exclude fire

for reasons of convenience (Too small of a block or too many logistical challenges) have much the same conditions with heavy under and mid-story components, causing an increase in large fire potential.

Prescribed burning is a key factor in the restoration of the shortleaf pine bluestem ecosystem. As we move closer to the treatment of 1,062,000 acres restored, the maintenance acres increased. With maintaining the work we have accomplished and continue to restore additional acres, the Forest has found efficiencies to increase pace and scale.

Figure 3. Lenox Rx Burn, CFLR Project area, Oklahoma Ranger District, 2023. Photo courtesy of Tim Davis, USFS.

Efficiencies:

1. Forest Leadership has committed to the CFLRP project and as leadership changes, the project's importance is reiterated and established as a priority.
2. During our normal burn windows of January-April, districts will request the use of aviation for aerial burning. In this request CFLRP acres are highlighted and given priority use of helicopters.
3. We worked with R8 to extend our helicopter contracts from a 65 day use to 75 day use on and added those days on the front end of the contract. During this extension period, we prioritized any CFLRP acres for that helicopter to ignite. This created a jump start on the season in the project areas.
4. We took advantage of the new Administratively Determined (AD) authority by allowing 50K in funds to be allocated to hiring AD's for additional assistance during the burn season. This was an extremely efficient way to hire/pay/layoff workers. It also allowed the district to test local candidates for future hire. Getting training and experience for the employee gave them fire experience to be more competitive for their application.
5. At the district level, employees have learned to work together so each action supports and promotes efficiencies between programs. An example would be, if a timber stand in CFLRP is going to be marked and sold, they will coordinate with the Fire Management Officer to prioritize those acres for that year so they can go in and paint them for harvest. It might be several years those stands will be there before the contractor will harvest the timber. During that wait, those stands are subject to wildfire. If they are burned before painting, that RX burn will provide added protection to those stands for several years from wildfire. The RX burn also helps timber markers navigate the unit easier. If Timber coordinates with Fire, employees from Timber can open up roads that benefit both programs. With the roads opened up adjacent to burn/timber units those serve several purposes. The open roads serve as fire lines while making the timber harvest more attractive to the price of the contract with less road maintenance written in the contract. This coordination between programs at the district level is critical.
6. There were over 500 Off-Forest employees that participated in RX burning from around the country from January to April. These relationships built with other Forests add to our ability to burn multiple burns on each district. We have built relationships with these visiting resources and each year we gain efficiencies as they

return to the same district. Budget modernization has helped the pool of resources that travel to our Forest to assist us reach our program of work. Outside of the FS, we have reached out to other resources through agreements. The BLM, FWS and other DOI agencies have an R8 agreement that allows those resources to assist in implementing our program as well. The Poteau/Cold Springs Ranger District (a district that has 57% of the CFLRP project area) has entered into an agreement with Ocean Side Fire Department in Oceanside California to send employees looking to understand RX burning and learn the techniques and fire effects in Arkansas to implement a program in California.

7. Region 8 allowed us to utilize a dozer, and this dozer was essential in adding capacity to the districts it worked on. The added dozer served as a replacement if one of our own had mechanical problems. We have asked the Region to continue this support in the coming years.

Figure 4. Fire effects from a summer prescribed fire on the Poteau-Cold Springs Ranger District, August 2023. Left side of trail is unburned; right side burned.

Wildland Urban Interface (WUI) remains a National priority for the Fire/Fuels communities. As we came out of the 90 Day RX burn pause, focus on the WUI became even more important. Roughly 65% of the **74,219** acres (48,242 WUI acres) burned this year were in or adjacent the WUI. As we continue to work in and around houses, we assume some risk to those values. In one of the burn blocks we were burning adjacent a private structure and ended up causing some damage to the residence. This fire was studied and a Lessons Learned was completed with assistance from a team and Regional support. One thing that we need to keep in mind as we grow our program is that the larger and faster we go there is an increase in risk. Fire/Fuels management at times can be difficult to predict. Even with the best science and practitioners there is still room for error.

Pace and scale are a balancing act between quantity and quality and knowing that the WUI will continue to be a focus, we need to focus on minimizing risk to values and firefighters. One way to accomplish the work is to diversify the tools. Some examples of tools we hope to explore more is through use of mechanical treatments adjacent to values by using a skid steer to treat the fuels pre-burn. There are advancements in technology and one of those is the use of Unmanned Aerial Systems (UAS). We have brought in several UAS modules this year on CFLRP units adding to our limited resources and the availability of aircraft. UAS can be used at any time through the year minimizing exposure to pilots and ground resources. The UAS can function in smoke/cloudy conditions and can limit the number of miles our employees have to travel on foot.

FY23 Wildfire/Hazardous Fuels Expenditures

Category	$
FY23 Wildfire Preparedness*	$872,000 for CFLRP area (excluding aviation)
FY23 Wildfire Suppression**	$70,000 for CFLRP area based on number of fires
FY23 Hazardous Fuels Treatment Costs (CFLN, CFIX)	$2,010,000 (excluding aviation)
FY23 Hazardous Fuels Treatment Costs (other BLIs)	N/A

* Include base salaries, training, and resource costs borne by the unit(s) that sponsors the CFLRP project. If costs are directly applicable to the project landscape, describe full costs. If costs are borne at the unit level(s), describe what proportions of the costs apply to the project landscape. This may be as simple as Total Costs X (Landscape Acres/Unit Acres).
** Include emergency fire suppression and BAER within the project landscape.

How may the treatments that were implemented contribute to reducing fire costs? If you have seen a reduction in fire suppression costs over time, please include that here. (If not relevant for this year, note "N/A")

The graphs below (Figure 5) display the relationship of a downward trend in wildfire starts compared to an upward trend of acres prescribe burned. This comparison is within CFLRP areas across the Poteau/Cold Springs, Mena/Oden, and Oklahoma Ranger Districts.

This chart could be deceiving due to the dynamic changes in weather trends. As we continue to increase the number of acres burnt and decrease the condition class, it is possible that some fire starts self-extinguish because of reduced fuel loading and an increase in fine fuel which limit fire spread in adverse conditions.

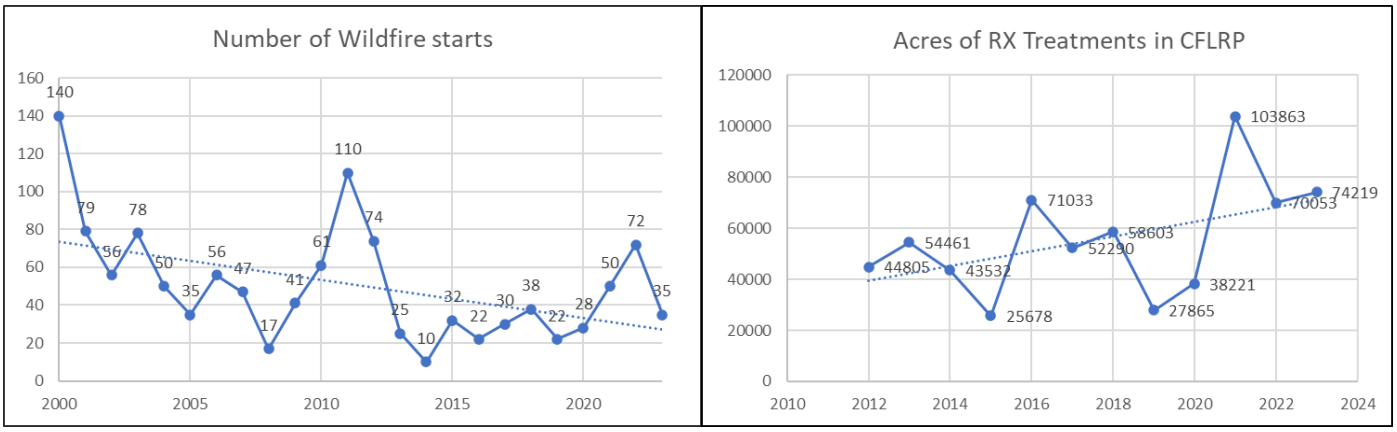

Figure 5a, 5b. Graphs showing wildfire starts since 2000 on the Ouachita National Forest (5a) relative to number of acres receiving prescribed fire treatments over the life of the Shortleaf Bluestem Community CFLR project.

IF a wildfire interacted with a previously treated area within the CFLRP boundary:

Wildfires within previously treated acres did occur in 2023. One example was the Blue Moon Fire which started on private property from an escaped pile burn and quickly spread into an area that was prescribe burned in 2021. The following is a summary based from FTEM documentation describing the changes in fire behavior and suppression tactics. The fire behavior drastically changed after the fire left private property and entered a previously burned CFLRP area. Observed flame lengths on private property were 3-4 feet with a moderate rate of spread. Upon entering the previously burned area the flame lengths immediately dropped to 1-2 feet and the rate of spread become low. The previous treatment was specifically located next to the private property as part of a WUI project and to reduce fuel loadings for a planned timber sale. Treatments were completed by federal resources two years prior to the wildfire, and a timber sale

had been marked and sold within the affected acres. The reduced fuel loading made the fire easy to control and protected marked timber values. Burn intensities had no negative effects of fuel arrangements that would change future fuel treatment strategies. The overall takeaway learned from the Blue Moon Fire was that investing time and money into WUI projects enhances our ability to successfully protect private and federal values, control wildfires, and minimize risk to firefighters. In the future this strategy will continue to be implemented and expanded on a larger scale.

5. Additional Ecological Goals

Narrative Overview of Treatments Completed in FY23 to achieve ecological goals outlined in your CFLRP proposal and work plan. One of the main goals when this project started was to improve habitat for the endangered red-cockaded woodpecker (RCW). By improving the shortleaf pine bluestem habitat, RCW and other species associated with this habitat type should increase. The following chart (Figure 6) shows an upward trend in RCW nesting attempts which is what the biologists here use to indicate improving habitat and populations. This may include, and isn't limited to, activities related to habitat enhancement, invasives, and watershed condition. Inside the CFLRP area, mulching, brush hogging, wildlife stand improvement, prescribed burning and other treatments were completed, maintaining or moving the CFLRP closer to desired habitat. Overall indicators forest-wide indicate an uptrend in brown-headed nuthatches and red-cockaded woodpecker active territories increased in both Arkansas and Oklahoma. Oklahoma had their first successful nesting this year, fledgling 2 of 2 in 2023. Nest attempts in Arkansas increased by 1%. The 588 acres of wildlife restoration may not include all activities (ie. roadside mowing) occurring inside CFLRP areas in relation to RCW colony maintenance, which adds additional opportunities for native plants to thrive, thus providing foraging habitat for multiple species. Prescribed burning of NF lands and private totaled 76,279 acres of which 74, 219 was NF inside the CFLRP area. Total timber harvested was 964 acres on FS lands, this along with the wildlife restoration (588 ac) on FS lands, 1,824 acres of stand improvement and 2,553 acres of reforestation on all lands, created habitat diversity needed for a variety of species inside the area.

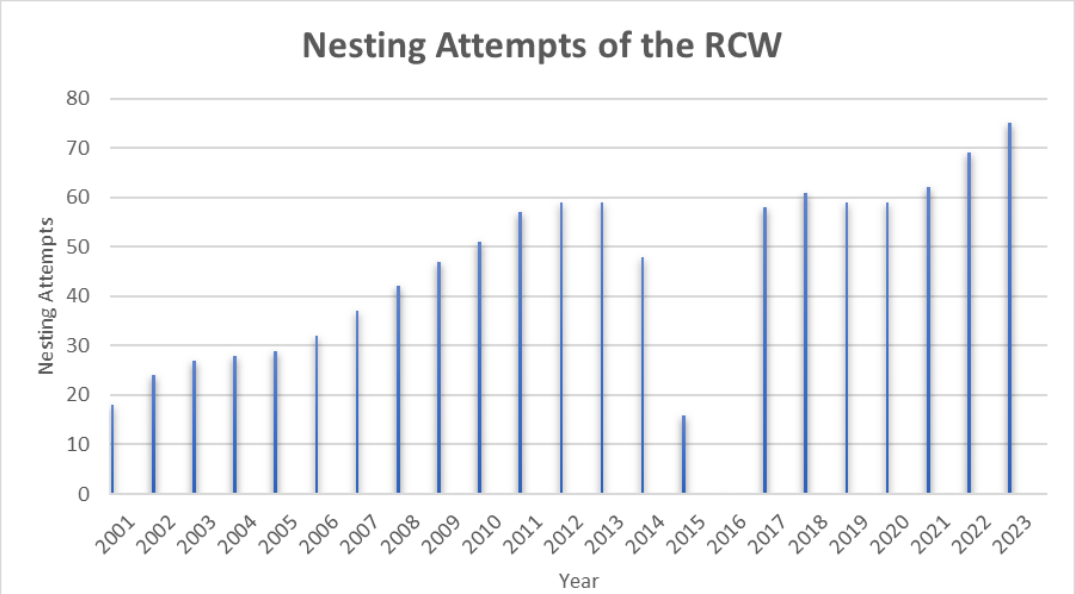

Figure 6. Graph depicting documented nesting attempts by red-cockaded woodpecker (*Dryobates borealis*) in the CFLR project area. During 2014-2016, data was not collected (the gap does not represent a decrease in nesting attempts). 2023 was the first successful nesting attempts for the Oklahoma population.

Ecological monitoring continues on a recurring basis (see Section 9 for detail). These efforts show that the treatments within the CFLR Project area reflect change ecological conditions congruent with Desired Conditions. The Plant Community Monitoring Report – 2nd Re-measure of the Ouachita National Forest Collaborative Forest Landscape Restoration Project (CFLRP), by Gabriel De Jong and Douglas Zollner of The Nature Conservancy (September 2022), states:

Ground layer diversity and cover had increased on a landscape scale. Total species richness and average ground layer species richness per macroplot increased in all topographic positions and covertypes. The average number of herbaceous species per macroplot was at 14 species/macroplot, which was near the desired condition (15+ species/macroplot, on average), an increase of five species since baseline. Average Floristic Quality Index (FQI) per macroplot also increased between years. Ridgetops, south slopes, and riparian communities were meeting the desired ecological condition for average number of herbaceous species per macroplot.

Figure 7. Native *Echinacea pallida* associated with shortleaf pine – bluestem community restoration, Poteau-Cold Springs Ranger District, 2023. Photo by Eric Hunt, Arkansas Native Plant Society.

As the Project continues to move forward with restoration goals over the coming years, either through 1st entry or repeat entry work, ecological goals of meeting desired condition will increase.

6. Socioeconomic Goals

Narrative overview of activities completed in FY23 to achieve socioeconomic goals outlined in your CFLRP proposal and work plan.

Results from the Treatment for Restoration Economic Analysis Toolkit (TREAT). For guidance, training, and resources, see materials on Restoration Economics SharePoint.[7] After submitting your data entry form to the Forest Service Washington Office Economist Team, they will provide the analysis results needed to respond to the following prompts.

Percent of funding that stayed within the local impact area: **59 %**

Contract Funding Distributions Table ("Full Project Details" Tab):

Description	Project Percent
Equipment intensive work	9%
Labor-intensive work	43%
Material-intensive work	19%
Technical services	29%
Professional services	0%
Contracted Monitoring	0%
TOTALS:	100%

Modelled Jobs Supported/Maintained (CFLRP and matching funding):

Jobs Supported/Maintained in FY 2023	Direct Jobs (Full & Part-Time)	Total Jobs (Full & Part-Time)	Direct Labor Income	Total Labor Income
Timber harvesting component	**40**	**50**	**$2,729,026**	**$3,679,007**
Forest and watershed restoration component	**5**	**7**	**$241,559**	**$386,964**
Mill processing component	**56**	**126**	**$4,319,967**	**$8,708,606**
Implementation and monitoring	**1**	**1**	**$43,028**	**$62,634**
Other Project Activities	**0**	**0**	**$9,435**	**$13,532**
TOTALS:	**102**	**184**	**$7,343,015**	**$12,850,743**

- **Were there any assumptions you needed to make in your TREAT data entry you would like to note here? To what extent do the TREAT results align with your observations or other monitoring on the ground**?
  None

[7] Addresses Core Monitoring Question #7

Please provide a brief description of the local businesses that benefited from CFLRP related contracts and agreements, including characteristics such as tribally-owned firms, veteran-owned firms, women-owned firms, minority-owned firms, and business size.[8]

Both small and large timber processing mills in and around the project area contribute greatly to the local economies. These businesses contain a significant percentage of minority laborers. It is unknown at this time what local businesses are tribally-owned, veteran-owned, women-owned and minority-owned and how they may have benefited this FY or other previous years.

7. Wood Products Utilization

Timber & Biomass Volume Table[9]

Performance Measure	Unit of measure	Total Units Accomplished
Volume of Timber Harvested TMBR-VOL-HVST	CCF	39,620
Volume of timber sold TMBR-VOL-SLD	CCF	44,297
Green tons from small diameter and low value trees removed from NFS lands and made available for bio-energy production BIO-NRG	Green tons	82

- **Reviewing the data above, do you have additional data sources or description to add in terms of wood product utilization (for example, work on non-National Forest System lands not included in the table)?** No additional data sources to be added.

8. Collaboration

Please include an up-to-date list of the core members of your collaborative if it has changed from your proposal/work plan (if it has not changed, note below).[10] Briefly summarize and describe changes below.

Partners have remained consistent in recent years, though there have been fluctuations in involvement and activities. For example, the Ouachita NF and Missouri Department of Conservation did not translocate any brown-headed nuthatches in 2023, thus no matching salary and activities occurred to that end in FY23. On November 7, 2022, the Arkansas Department of Agriculture Forestry Division hosted the Arkansas Timber Purchaser's meeting. The Ouachita NF assisted with the planning and execution of the meeting. There were approximately 60 attendees, some of which were new to the group. These meetings are extremely beneficial for keeping partners to the restoration effort informed about the CFLR projects as well as introducing potential new partners to the line-up. A follow-up annual meeting occurred on October 27, 2023 in which 32 attendees were present. With the retirement of the Arkansas State Forester in summer 2023, attendance was a bit lower. The Collaborative will continue to utilize venues like this to share the status of the Shortleaf Bluestem CFLR project and invoke more involvement.

[8] Addresses Core Monitoring Question #8
[9] Addresses Core Monitoring Question #10
[10] Addresses Core Monitoring Question #11

Moreover, a presentation by the Ouachita NF of the status of the Shortleaf Bluestem Community CFLR Project was provided at the Interior Highlands Shortleaf Pine Initiative Summit meeting, July 25-27.

Figure 8. Retired USFS Integrated Resources Staff Officer for the Ouachita National Forest, Larry Hendrick, shares the vision for the Shortleaf Bluestem Community with the Forest Leadership Team from the National Forest of Louisiana during a Shortleaf Pine Bluestem Tour, October 2022. Photo credit: Virginia McDaniel, USFS Southern Research Station.

9. Monitoring Process

Briefly describe your current status in terms of developing, refining, implementing, and/or reevaluating your CFLRP monitoring plan and multiparty monitoring process.

The Collaborative Forest Landscape Restoration Project on the Ouachita National Forest was designed to improve forest health within the shortleaf pine-bluestem plant community (Management Area 22). The Nature Conservancy in Arkansas (TNC), based out of Little Rock, leads the plant community monitoring efforts on the CFLRP and coordinates these efforts with the Ranger Districts, that also contribute time and resources to refreshing plots and assisting with data collection.

Data collection occurs over two successive summers, which are followed by a year to analyze and report on these data. The Nature Conservancy and Forest Service personnel established 100 macroplots in this management area (50 plots in Arkansas and 50 in Oklahoma) to monitor the progress of this plant community towards the desired ecological conditions within the project's boundaries. Baseline date was collected during the summers of 2012 and 2013 and then re-measured three and six years later, in 2015/2016 (Repeat 1) and 2018/2019 (Repeat 2), respectively. Macroplots are randomly placed across the landscape in four general topographic positions: ridgetops, north slopes, south slopes, and

riparian. Data was analyzed by topographic position, cover type (shortleaf pine vs. loblolly pine plantation) and management activity (no management, thinned-only, burned-only, and burned and thinned).

TNC is responsible for managing the data, analyzing it, and communicating results through technical reports and presentations. The reporting of the plant community monitoring data seeks to answer pertinent questions for managers, so that decisions can be made regarding the specific treatment prescriptions. Thanks to a recent collaborative effort between agencies and NGOs in Arkansas to develop Coefficients of Conservatism for the Arkansas Flora, monitoring reports have incorporated a Floristic Quality Analysis. This has been added to the metrics that describe the composition and structure of the Pine Bluestem community.

Figure 9. Quadrat plot in a restored section of Shortleaf Bluestem. Mena-Oden Ranger District. Photo credit: Virginia McDaniel, USFS Southern Research Station.

Repeat 3 measurements occurred in 2020/2021. The *Plant Community Monitoring Report - 3rd Re-measure of the Ouachita National Forest Collaborative Forest Landscape Restoration Project* is in process of completion with a final expected in spring 2024.

10. Conclusion

Describe any reasons that the FY 2023 annual report does not reflect your proposal or work plan. Are there expected changes to your FY 2024 plans you would like to highlight?

The Forest and Collaborative will continue to make strides toward completing objectives and goals of the Project. Some areas of change may be looking for and planning opportunities for summer burning. There are barriers to overcome, and every year is different with respect to available resources mid- to late-summer due to National fire planning levels.

As the Collaborative and Project moves into its 13th year, we will continue to explore opportunities to be more collaborative and be resilient and durable to constant and ever-evolving disruptions to the flow of progress toward Project goals.

Optional Prompts

FY 2023 Additional Accomplishment Narrative and/or Lessons Learned Highlights

Media Recap

Articles:

McDaniel, V.L. "A profusion of beautiful and curious flowers." *Claytonia* 43(2): pgs 10-11. https://arkansasnativeplant.files.wordpress.com/2023/09/2023-fall-claytonia_final_9_6_2023.pdf

Conference Presentations:

Crotteau, Michael, 2023. Update on the Shortleaf Bluestem Community CFLR Project. 2023 Interior Highlands Shortleaf Pine Initiative Summit. West Plains, MO. July 25-27, 2023.

V.L. McDaniel*, G. L. DeJong, D.M. Zollner, S.L. Hooks, T.L. Keyser, and D.C. Bragg. 2023. Using fire and thinning to restore open woodlands in the Ouachita National Forest. 22nd Biennial Southern Silvicultural Research Conference. Nacogdoches, TX. March 21-23, 2023.

Field Tours:

McDaniel V.L. and J.O. Ogle. Botany field tour of the Pine Bluestem Restoration Project on the Ouachita National Forest. 25 May 2023. Waldon, AR.

Hedrick, L., V.L. McDaniel, and A. Strothers. Shortleaf pine bluestem woodland restoration tour on Poteau-Cold Springs RD. Tour for TNC international land managers. 26 April 2023. Waldron, AR.

Webinar:

McDaniel, V.L.; DeJong, G.L., Zollner, D.M.; Hooks, S.L.; Keyser, T.L.; Bragg. D.C. Diversity Explodes with Another Boring Burn. Webinar presented to Oak Woodlands and Forests Fire Consortium. 17 January 2023. https://oakfirescience.com/video/diversity-explodes-with-another-boring-burn-woodland-restoration-on-the-ouachita-national-forest/

Promo video for panel series includes photos from this CFLRP:

Fueling Collaboration promotional video. 2023. Video editing and production by V.L. McDaniel. https://www.youtube.com/watch?v=gKljEdx0Tn0

Radio Interview:

Diversity Explodes with Another Boring Burn with USDA Forest Service's Virginia McDaniel. On *From the Forest* a program on Catskill Forest Association WIOXradio.org. https://www.podbean.com/media/share/pb-4pmrk-13e9897

For Internal Use

None

Signatures

Recommended by (Project Coordinator(s)):

MICHAEL CROTTEAU Digitally signed by MICHAEL CROTTEAU Date: 2023.12.14 10:37:29 -06'00'

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Michael Crotteau
Integrated Resources Staff Officer
Ouachita National Forest

Approved by (Forest Supervisor(s)):

DANIEL OLSEN Digitally signed by DANIEL OLSEN Date: 2023.12.13 15:53:19 -06'00'

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Dan Olsen
Forest Supervisor
Ouachita National Forest

Draft reviewed by (collaborative representative):

_____

McRee Anderson
Director, Interior Highlands and Fire Restoration Programs
The Nature Conservancy

Attachment: CFLRP Common Monitoring Strategy Core Questions

The 2022 cohort will complete the Common Monitoring Strategy questions in FY23. The 2022 cohort includes: Lakeview, Missouri Pine Oak Woodlands, North Yuba, North Central Washington, Northeast Washington, Rio Chama, Rogue Basin, Shortleaf Bluestem, Southern Blues, Southwest Colorado, Western Klamath, Zuni

2021 funded projects (Deschutes, Dinkey, Northern Blues) will only need to address the annual questions (Q1, Q5, Q7, Q10, Q11, Q13). For CFLRP projects awarded (or extended) in FY23, the Attachment is NOT required. However, please note it will be required in FY24.

The CFLRP Common Monitoring Strategy is designed to reflect lessons learned from the first ten years of the program, expand monitoring capacity, and improve landscape-scale monitoring. It is intended to strike a balance between standardization and local flexibility and to be responsive to feedback that more guidance and capacity are needed. Questions are standardized nationally and indicators are standardized regionally. Many CFLRP projects have been implementing restoration treatments and monitoring progress prior to the Common Monitoring Strategy. This effort may not capture the progress of every project over its lifetime but provides an opportunity for all projects to take a step together in a unified monitoring approach.

- Question 1: “What is the reduction in fuel hazard based on our treatments?”
- Question 2: “What is the effect of the treatments on moving the forest landscape toward a more sustainable condition?”
- Question 3: “What are the specific effects of restoration treatments on the habitat of at-risk species and/or the habitat of species of collaborative concern across the CFLRP project area”
- Question 4: “What is the status and trend of watershed conditions in the CFLR area, with a focus on the physical and biological conditions that support key soil, hydrologic and aquatic processes?”
- Question 5: “What is the trend in invasive species within the CFLRP project area?”
- Question 6: “How has the social and economic context changed, if at all?”
- Question 7: “How have CFLRP activities supported local jobs and labor income?”
- Question 8: “How do sales, contracts, and agreements associated with the CFLRP affect local communities?”
- Question 9: “Did CFLRP maintain or increase the number and/or diversity of wood products that can be processed locally?”
- Question 10: “Did CFLRP increase economic utilization of restoration byproducts?”
- Question 11: “Who is involved in the collaborative and if/how does that change over time?”
- Question 12: “How well is CFLRP encouraging an effective and meaningful collaborative approach?”
- Question 13: “If and to what extent have CFLRP investments attracted partner investments across the landscapes?”

The tables in the section below are copy/pasted from the suggested monitoring tracking templates to help organize data across CFLRP projects. Adapt the reporting tables as needed to align with regional monitoring indicators.

Monitoring Question #1: "What is the reduction in fuel hazard based on our treatments?"

The metrics for measuring hazardous fuel reduction and the definition of hazardous fuel varies by region and forest. In some systems ladder fuels can result in crown fires. In other systems, leaf litter fuel from encroaching mesophytic species can reduce biodiversity in fire dependent systems. Both should be considered hazardous fuel, but the metrics used to measure the reduction of them is different. In the case of ladder fuels, we can measure crown fire reduction. In the case of leaf litter, we can measure the increase in plant diversity (and over all biodiversity) in a system.

Hazardous fuel reduction in the Shortleaf Pine-Bluestem area have been successful in areas that have been treated with fire and thinning. The mesophication and buildup of leaf litter and duff in these systems have been halted as measured by an increase in biodiversity. Monitoring data shows a doubling of herbaceous plant diversity in treated areas has occurred since the start of the CFLRP. The midstory has been reduced to the desired future condition in these areas as well. Both of these metrics demonstrate a reduction in hazardous fuel that will both prevent catastrophic crown fires and increase biodiversity.

Table 1. Fire intensity (predicted flame lengths) from IFTDSS

IFTDSS Auto-97th percentile flame length output	*Non-burnable*	*0 – 1ft. flame lengths*	*1 - 4 ft. flame lengths*	*>4 - 8 ft. flame lengths*	*>8 - 11 ft. flame lengths*	*>11 - 25 ft. flame lengths*	*>25 ft. flame lengths*
Initial landscape model (Baseline under CMS)	(371,877 acres) 1%	17%	80%	1%	0	0	0
Landscape model 2 (Second year of CMS) N/A in first reporting year							
Area treated in FY23							

- **Briefly describe monitoring results in table above – include an interpretation of the data provided and whether the indicator is trending toward or away from desired conditions for your landscape.**

This is a baseline report that used 2022 LandFire fuels data and 97th percentile fuel moisture to estimate fire behavior on the landscape. There are several factors that need to be fine-tuned with these models before we can make management decisions. A couple considerations is the pine/hardwood mix and the effects of leaf off during our prescribed fire season. There is a much different effect (and maybe a different fuel model needed to be evaluated based on fire effects) on the outcome when these factors are adjusted.

Table 2. Crown fire activity from IFTDSS

IFTDSS Auto-97th crown fire activity output by watershed	Watershed Name	Unburnable	Surface Fire	Passive Crown Fire	Active Crown Fire	Crown Fire (combined)
Initial landscape model (Baseline under CMS)	MA 14* MA 21*	1%	98%	0	0	0
Area treated in FY23	MA 14, 21		76,279 AC			

- **Briefly describe monitoring results in table above – include an interpretation of the data provided, and whether the indicator is trending toward or away from desired conditions for your landscape.**

The data shown above is accurate, almost all of our treated acres remained a surface fire in MA 14* (Ouachita Mountains habitat Diversity Emphasis) and MA 21* (Old Growth Restoration).

- **Does your CFLRP project have additional hazardous-fuels related monitoring results to summarize and interpret?** N/A
- **Based on the information in this section, (and any other relevant monitoring information and discussion), what (if any) actions or changes are you considering?**

No changes are needed to meet the intent of the restoration efforts, except to focus on the maintenance of work completed and prioritized treatment on areas that remain in an undesired condition class inside the project boundaries.

Monitoring Question #2: "What is the effect of the treatments on moving the forest landscape toward a more sustainable condition?" (Reporting frequency determined by Regional indicator)

Regions have standardized on one of the four following metrics to address Indicator 1 for ecological departure. For your region's chosen metric, please insert the matching table that corresponds with your indicator from the reporting template (abbreviated examples below).

If Region is reporting on indicator 2 (acres burned by wildfire and by prescribed burning annually), fill in this table:

Table 1. Fire Regime Condition Class Within the CFLRP Area 2012-2027

Fire Regime Condition Class	2012		2023		2027 Goal	
	Acres	%	Acres	%	Acres	%
FRCC 1	122,000	35	167,400	45	206,000	55
FRCC 2	61,000	17	145,080	39	118,000	32
FRCC 3	167,000	48	59,520	16	48,000	13
TOTALS	**350,000**	**100**	**372,000**	**100**	**372,000**	**100**

Table 1: The Forest has used Fire Regime Condition Class (FRCC) as a common monitoring standard. The table above highlights the continued effort maintaining acres and a shift out of FRCC 3 toward the desired FRCC 1. FRCC 3 is viewed as the biggest threat for damaging wildfire and not the desired condition for the RCW. At the end of the project, we hope to maintain under 13% of the acres in FRCC 3.

- **Briefly summarize how your landscape has departed from historic ecological conditions including disturbance**. Historically, 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. 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). Commercial exploitation of the original forests and suppression of fires has resulted in the almost complete loss of fire-maintained woodlands in the Ouachita Mountains.

  The historical structure and composition of the forests in the Ouachita Mountains has 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. Native bluestem grasses and forbs are mostly absent. Average fire return intervals are now more than 40 years.

  In the pine-oak forests of the Ouachita National Forest, frequent fire (on a rotation of about every 3 years) is considered a stabilizing force. This means that when fire is present, species composition and structure remains relatively constant. When fire is removed from the system, this is a disturbance that causes changes in species composition and structure and a loss of biodiversity. Thirty years ago, the Ouachita National Forest realized the disturbing effects of fire suppression and began reintroducing fire to the Forest on a small scale. Researchers documented the results between managed and unmanaged forest and found that thinning and reintroducing fire improved habitat conditions for many plants and animals including the endangered red-cockaded woodpecker. The funding from the Collaborative Forest Landscape Restoration Program on the Ouachita National Forest in the Shortleaf Pine-Bluestem area has allowed this work to continue and, as a result, biodiversity has been steadily increasing alone with the population of red-cockaded woodpeckers.

- **Briefly describe monitoring results – include an interpretation of the data provided above, and whether the indicator is trending toward or away from desired conditions for your landscape** (including resiliency to future disturbances and climate projections). If the data above does not accurately reflect condition on your landscape, please note and provide context.

  The Ouachita National Forest, The Nature Conservancy, and USFS Southern Research Station monitored plant community plots in both the CFLRP woodland restoration area (MA-22) and the areas the Forest manages for Habitat Diversity (MA-14). Plots were randomly installed in these areas and are located in treated and untreated areas. The monitoring data suggest that fire alone or in conjunction with thinning has moved the landscape closer to desired conditions over a period from 2012 to 2016 (DeJong and Zollner, 2018) and continued after the last monitoring in 2019 (McDaniel et al. 2023, unpublished data). In CFLRP plots the composition and structure of the midstory tree layer was in or near the desired condition in burned plots. Ground layer diversity and cover had increased on a landscape scale. Total species richness and average ground layer and herbaceous layer species richness per macroplot increased in all topographic positions and covertypes. By the first re-measure, ridgetops and pine stands had met the desired condition for ground layer and herbaceous layer species richness per macroplot. Plots that were not treated or only thinned did not move toward desired conditions often due to an increase in midstory which increased shading thus reducing understory diversity. Monitoring reports by TNC clearly show areas treated with fire and thinning (in both CFLRP areas and MA-14) have promoted the desired forest structure which then enables the growth and proliferation of ground flora diversity. We know from decades of other research that increase in plant diversity and open forest structure benefits many species from reptiles to birds to mammals.

  See documents from 2023 that discuss this further:

  McDaniel, V.L. “A profusion of beautiful and curious flowers.” *Claytonia* 43(2): pgs 10-11. https://arkansasnativeplant.files.wordpress.com/2023/09/2023-fall-claytonia_final_9_6_2023.pdf

  V.L. McDaniel*, G. L. DeJong, D.M. Zollner, S.L. Hooks, T.L. Keyser, and D.C. Bragg. 2023. Using fire and thinning to restore open woodlands in the Ouachita National Forest. 22nd Biennial Southern Silvicultural Research Conference. Nacogdoches, TX. March 21-23, 2023.

  McDaniel, V.L.; DeJong, G.L., Zollner, D.M.; Hooks, S.L.; Keyser, T.L.; Bragg. D.C. Diversity Explodes with Another Boring Burn. Webinar presented to Oak Woodlands and Forests Fire Consortium. 17 January 2023. https://oakfirescience.com/video/diversity-explodes-with-another-boring-burn-woodland-restoration-on-the-ouachita-national-forest/

  Fueling Collaboration promotional video. 2023. Video editing and production by V.L. McDaniel. https://www.youtube.com/watch?v=gKljEdx0Tn0

  Diversity Explodes with Another Boring Burn with USDA Forest Service’s Virginia McDaniel. On *From the Forest* a program on Catskill Forest Association WIOXradio.org. https://www.podbean.com/media/share/pb-4pmrk-13e9897

Monitoring Questions #3: "What are the specific effects of restoration treatments on the habitat of at-risk species and/or the habitat of species of collaborative concern across the CFLRP project area?" (Reporting frequency determined by Regional indicator)

If reporting on indicator 1 or 2 (wildlife habitat indicators), fill in this table:

Wildlife Habitat Descrip.	Regional or Project-Specific Indicator?	Indicator and Unit of Measure	Target Range	Value in Initial Year of CMS*	Value in Next Reporting Year of CMS* N/A in 2023	Desired or Undesired Change? N/A in 2023	Percent Change N/A in 2023	Acres of Habitat Treated to Improve this Indicator in this Fiscal Year
Open wood and/forest habitat (pine-bluestem; oak-pine woodland)	Project-Specific	Basal Area per acre	10 ft^2 or less and overstory 30-70 BA per acre	77[1] (09/2022)	NA	NA	NA	964
Diversity by plant community structure in non-riparian habitat (herbaceous, midstory and overstory)	Project-Specific	Total number of species, Average C Value, and FQI	25 species on average	22[1] species on average; C-Value = 4.9; FQI=22.3 (09/2022)	NA	NA	NA	80,148

1 **De Jong, Gabriel and Douglas Zollner.** Ouachita National Forest Collaborative Forest Landscape Restoration Project (CFLRP) in Arkansas and Oklahoma Plant Community Monitoring Report- 2nd Re-measure. The Nature Conservancy. September 2022.

If reporting on indicator 3 (wildlife populations and/or diversity indicators), fill in this table:

Wildlife Species Name(s)	Indicator and Unit of Measure	Target Range	Value in Initial Year of CMS	Acres of Habitat Treated to Improve this Indicator
Red–cockaded Woodpecker	Active breeding groups	250-AR[1] 50-OK	81-AR 2-OK (12/01/2023)	77,595
Brown-headed nuthatch	Monitoring in mid-march following Kendrick protocol [2]	116 pair/mi^2	114 pair/mi^2	77,595

1 RCW recovery plan has 250 breeding groups assigned to the ONF. The Forest Plans states it has habitat for up to 400.

2 **Kendrick, Sarah, Thompson, Frank III, Bonnot, Thomas.** 2019. Brown-Headed Nuthatch Reintroduction Supporting Work. Partner Meeting August 14, 2019. Paper should be out in 2024 per Bonnot.

For the table or table(s) above:

- **Briefly interpret the monitoring results in the table above, including whether the indicator is trending toward or away from desired conditions for your landscape.** Since the implementation of the CFLRP, Red-cockaded Woodpeckers nesting attempt have been used as a monitoring standard. Since CFLRP implementation, RCW populations have increased every few years from 69 active territories to 75. Nesting attempts have gone from 58 (per egg) to 75. Oklahoma had two out of two successful nesting attempts this year, fledging two chicks. A record year.
- The pine-bluestem work done in the CLFRP areas have also allowed brown-headed nuthatches to flourish enough to donate 46 birds in 2020 and 56 birds in 2021, to the Mark Twain National Forest. The CFLRP area is 20% of the total Ouachita National Forest. Breeding bird surveys have been implemented since the late 90's and the Ouachita has an average of 275 points, which are monitored from May 15-June 15. These points represent the forest trends over the years and can change location when one point grows out of the seral stage it was chosen to monitor. Therefore, these can be unreliable and hard to predict areas inside of the CFLRP area at one point in time. Brown-headed nuthatches, for example, are more active prior to May 15. Kendrick et al (2019) sampled the Ouachita NF in mid-March of 2019, aware that the breeding bird points were not detecting them at their peak. They estimated that from the point counts the population would be around 8,745 birds (based on past bird monitoring) for the forest but the mid-March sample suggested 21,018 individuals present or 114 pair per mi^2. Therefore, the Ouachita would like to pursue monitoring a few permanent points for brown-headed nuthatches inside the CFLRP areas outside of the breeding bird timeframe. Acoustic wildlife monitors would be set out from the second week of March to the end of March in permanent plots. A professional ornithologist will be consulted for length of monitoring at each site and number of permanent plots required.

Monitoring Question #4: "What is the status and trend of watershed conditions in the CFLRP area?" (Reported every 5 years)

Summary of Watershed Condition Scores for the priority HUC12 watersheds within CFLRP boundary:

HUC12 Watershed Name and 12-digit HUC	Affected by Treatment, Disturbance Events, or Both?	Date Before Treatment and/or Disturbance Event	Watershed Condition Score Prior to Treatment	Watershed Condition Score After Treatment
Upper South Fork Ouachita River (80401010401)	Treatments	10/1/2019	1.5 Functioning Properly	1.4 Functioning Properly
Middle South Fork Ouachita River (80401010402)	Treatments	10/1/2019	1.8 Functioning At Risk	1.8 Functioning At Risk
Holly Creek Mountain Fork (111401080305)	Treatments	10/1/2019	2.0 Functioning At Risk	1.9 Functioning At Risk
Carter Creek (111401070207)	Treatments	10/1/2019	1.7 Functioning At Risk	1.5 Functioning At Risk

Watershed Condition Score averaged across all affected identified subwatersheds within CFLRP boundary:

Indicator Number	Indicator Name	Avg. Indicator Value	Date
Aquatic Physical (Weighted 30%)			
1	Water Quality	1.8	2023
2	Water Quantity	1.1	2023
3	Aquatic Habitat	2.1	2023
Aquatic Biological (Weighted 30%)			
4	Aquatic Biota	1.4	2023
5	Riparian/Wetland Vegetation	1.9	2023
Terrestrial Physical (Weighted 30%)			
6	Roads & Trails	2.4	2023
7	Soils	1.3	2023
Terrestrial Biological (Weighted 10%)			
8	Fire Regime or Wildfire	2.1	2023
9	Forest Cover	1.0	2023
10	Rangeland Vegetation	N/A	2023
11	Terrestrial Invasive Species	2.0	2023
12	Forest Health	1.0	2023
	Avg. Watershed Condition Score	**1.6**	

- **Briefly interpret the monitoring results in the table above, including whether the indicator is trending toward or away from desired conditions for your landscape.** If the data above does not accurately reflect watershed condition on your landscape, please note that and provide context.

In the case of the WCATT priority watersheds, these were selected for reasons beyond the scope of the CFLRP and improvements didn't necessarily arise from CFLRP activities. There are opportunities to reassess watershed condition in these priority areas in light of CFLPR activities and it is anticipated that additional improvements in the watershed score would be realized. Watershed Condition Score averaged across the CFLRP area includes 94 watersheds. In many cases, the CFLRP area only intersects small portions of the total watershed area. In these cases, the CFLRP treatments only have marginal impacts to the watershed score. As a results, averaged scores show little change over time.

- **Does your CFLRP project have additional watershed condition-related monitoring results to summarize and interpret?** If so, please provide that here.

Watershed condition surveys within the CFLRP area is ongoing and we expect to detect improvements in the watershed condition scores with future surveys.

Monitoring Question #5: "What is the trend in invasive species within the CFLRP project area?" (Reported Annually)

Table 1. Treatment data for priority invasive species within FY23 (plants, animals, terrestrial, aquatic).
Treatment data for priority invasive species:

Common Name	Treatment Action	Acres Treated[1]	Acres Monitored	Avg. "Percent Efficacy"	Acres Restored[2]	Response of Desirable Species[3]
Sericea lespedeza	NA	0 (FY23)		NA	0 (FY23)	NA

[1] "Treated" is defined as prevented, controlled or eradicated.

[2] Agency performance accomplishment code INVPLT-INVSPE-REST-FED-AC, which is calculated in FACTS.

[3] "Desirable Species" includes everything that is not an undesirable species or bare ground. If not monitored, write N/A.

Please insert table 2 from the reporting template if you are using field plots.

Table 2. Summary of plot-based field monitoring for invasive species (if applicable)

The monitoring in the CFLR area was not designed to monitoring invasive species, specifically. It was designed to monitor all plant species in the natural communities. Naturally then, it does capture data on invasives that show up in the plots. If the monitoring had been set up to just capture invasive species, it would have been set up differently. Since we can, we do report frequencies, cover values, and importance values for NNIS. So, we can track changes in these variables over time and compare them to those for native species in the plots.

Data source(s): Plant Community Monitoring
Were the plots fixed or in different locations year to year? Fixed
Were the plots randomly placed? Yes, stratified random.
If so, how? ArcMap random location generator within a given area
What statistical assumptions or models did you use? The invasive species monitoring is more of a biproduct of the plant community monitoring methodology that was developed. TNC is not aware of any modeling that was done when setting up the macroplots for PCM.
Were photos taken at each plot? Yes
Link to full results: https://tnc.box.com/s/268iki479b28sj8pp6rs044ixse1knqf

Treatment Group Name	Brief Treatment Group Description	Date(s) Surveyed	Number of Plots Sampled	Avg. Percent Canopy Cover of Invasive Species per Plot	"Percent Change"[1] N/A in 2023	Avg. Percent Canopy Cover of Desirable Species per Plot	"Percent Change"[11] N/A in 2023
Treated Areas	Thinning followed by prescribed burning	6/27-28/2023					
Non-treated Areas	No thinning, no prescribed burning, and no wildfire	6/27-28/2023					

[11] Important: You must indicate in a footnote the date and source of the baseline data that you are using as a comparison to calculate percent change. In the year(s) you are still collecting baseline data, write N/A for the percent change columns.

For reporting on plot-based field monitoring, please include a summary of the results here:

- **Briefly summarize the key points from the reporting template for your invasive species-related indicators.** We have noticed a slight increase in the number and coverage of invasive species over the last 11 years of monitoring, mostly occuring in treated areas. The increase in native species in the plots has far exceeded the increase in non-native species.

- **Briefly interpret the monitoring results in the table above, including whether the indicator is trending toward or away from desired conditions for your landscape.** If the data above does not accurately reflect the condition on your landscape, please note that and provide context.

Again, the monitoring program was not set up to monitor specifically for NNIS. However, slight indicators suggesting that NNIS may be increasing in treated areas over untreated areas.

- **Does your CFLRP project have additional invasives-related monitoring results to summarize and interpret?** If so, please provide that here.

  The Plant Community Monitoring Report - 2nd Re-measure of the Ouachita National Forest Collaborative Forest Landscape Restoration Project (CFLRP) by Gabriel De Jong and Douglas Zollner of the Nature Conservancy was completed in 2022.

  From the Report:

  Non-native species were more likely to be present in plots that had been burned or burned and thinned, suggesting that management activities might be introducing species and/or creating disturbances that encourage invasion. Seven non-native species were observed including Japanese bush-clover (Kummerowia striata), sericea lespedeza (Lespedeza cuneata), Japanese honeysuckle (Lonicera japonica), field bindweed (Convolvulus arvensis), Queen Anne's-lace (Daucus carota), Korean bush-clover (K. stipulacea), and beefsteak plant (Perilla frutescens). These increased from 12% to 18% in frequency between the last 2 inventories and the current one. Most of the increases occurred in the ridgetop communities with most of the increases in stands receiving thinning and burning treatments.

  While the presence of non-native, invasive species (NNIS) remain at low levels overall within the CFLR area, there has been a documented increase in frequency in the landscape over the project period. Importantly, NNIS have occurred more frequently in areas that received more restoration treatments (thinning and burning). This suggests that more disturbance, through forest management activities, may be introducing species into new areas and perhaps creating conditions for some of those species to establish. Considering this, we have suggested that treatments for NNIS be focused on areas that have experienced more frequent and recent timber and fire management.

The following questions apply across the topics addressed across Questions 1-5:

- **Are there accomplishments towards long-term goals which may not be reflected in short-term monitoring? Are there short-term treatments that work towards long-term goals which may be reflected adversely in short-term monitoring? Briefly summarize short- & long-term tradeoffs of your landscape treatments and goals.**

Long-term goals of restoring the shortleaf pine – bluestem community on the Ouachita National Forest are being realized. The early focal species for recovery, associated with the shortleaf pine – bluestem community restoration, has been the red-cockaded woodpecker (RCW). RCW monitoring since the 1990s has shown a marked increase in populations and nesting attempts to the highest levels in 2023.

Restoration of this ecosystem not only has proven successful for focal species, but it has opened-up greater diversity in flora and fauna in the system as a whole. These changes continue to be in line with Forest Plan Desired Conditions.

Vegetation monitoring is showing slight increases in NNIS in areas treated with mechanical equipment and prescribed fire. Increased diligence in protections from the spread of NNIS and focused treatments in areas of identified problems should occur in subsequent years.

Monitoring Questions #6: "How has the social and economic context changed, if at all?" (Reported every 5 years)

INITIAL YEAR / BASELINE FOR SHORTLEAF BLUESTEM COMMUNITY CFLR PROJECT

Indicators	Response for Initial Year of Common Monitoring Strategy	Notes (Optional)
"Population" most recent year available (tab 1, Forest Service report)	**1,170,214**	Not including Lawton Co, and Oklahoma Counties in OK
"Percent of total, race & ethnicity" most recent year available (tab 11, Forest Service report)	White alone – 69.5% Black or African American – 17.5% American Indian – 2.7% Hispanic ethnicity – 7.3% Non-Hispanic Ethnicity – **92.7**%	Not including Lawton Co, and Oklahoma Counties in OK
"Unemployment rate" most recent year available (tab 1, Forest Service report)	4.4%	Not including Lawton Co, and Oklahoma Counties in OK
"Per capita income" most recent year available (tab 1, Forest Service report)	$52,593	Not including Lawton Co, and Oklahoma Counties in OK

"Wildfire Exposure, % of Total, Homes" most recent year available (see Wildfire Risk report)	Homes Directly Exposed - 50% Homes Indirectly Exposed - 35% Homes Not Exposed - 14%	Not including Lawton Co, and Oklahoma Counties in OK

- **Provide a brief, narrative context for the data provided above, including any other key socioeconomic conditions to highlight for your landscape.** If the data above does not accurately reflect socioeconomic conditions in/around your landscape please note and provide context.
  The Ouachita National Forest utilized the county list from within the Treatments for Restoration Economic Analysis Tool (TREAT) for this analysis, which includes 19 counties in Arkansas and 5 counting in Oklahoma. The Headwaters Economics Economic Profile System provided the baseline economics. For this analysis, two counties were removed from the analysis merely based on distance from the project area: Lawton Co and Oklahoma County, which includes Oklahoma City. The Forest felt those distant counties and demographics may not represent a realistic picture of what the Forest wanted to capture. The full suite of counties was run through the Headwaters Economics Economic Profile System for baseline purposes. The outcome of that model run is capture in project files.
- **Would you expect CFLRP activities to directly or indirectly impact any of these social and/or economic conditions?** It is the expectation that, by default, closer, more local populations will benefit to a greater degree than more distant populations.
- **Does your CFLRP project have additional socioeconomic monitoring results to summarize and interpret?** If so, please provide that here.
  No additional socioeconomic monitoring results to share beyond what is already available through the annual CFLRP annual reports. In 2023, the Shortleaf – Bluestem Community CFLR Project supported approximately 184 full- and part-time jobs resulting in a total labor income impact of $12.85M.
- **Based on the information reported, (and any other relevant monitoring information and discussion), what (if any) actions or changes are you considering?**
  The Unit will continue to track contracts as required by the CFLRP monitoring to document economic impacts of this project. No changes are considered at this time.

(Monitoring Questions #7 & #8 covered earlier in annual report template)

Monitoring Questions #9 "Did CFLRP maintain or increase the number and/or diversity of wood products that can be processed locally?" (Reported every 5 years)

- Data will be provided to 2022 cohort projects to address this question in the FY23 report. If your CFLRP project has data available about the current timber harvest by county and/or product, the number of active processing facilities in the area, or other data about forest products infrastructure please provide here.

Information forthcoming; discussions on how to approach this question are in-progress with the Region and WO.

(Monitoring Questions #10 & #11 covered earlier in annual report template)

Monitoring Questions #12: "How well is CFLRP encouraging an effective and meaningful collaborative approach?" (Reported every 2-3 years)

Data will be provided to 2022 cohort projects to address this question in the FY23 report. For detailed guidance, training, and resources, see corresponding reporting template here. Please upload your completed assessment summary provided by the Southwestern Ecological Restoration Institutes here and use it to respond to the prompts below:

- **Reflecting on the summary provided, do you have any additional context for the results to share?**

No additional context to share.

- **Do you have any feedback about the assessment process?**

The Assessment is very helpful for understanding the current pulse of a long-standing Collaborative and where changes could and should occur. The success of groups rises and falls on leadership. We'd like to see the Collaborative functioning like an effective collaborative as 36% of the respondents felt that this Collaborative is only "somewhat collaborative" (Figure 4). Digging deeper into the Assessment and why that may be the case, it comes back to involving the collaborative in planning efforts, adding more stakeholders that represent the wood products companies, loggers and sawmills, as well as a broader outreach to NGOs, tribal partners, the state forestry association, local communities, and counties.

The results of the Assessment will be beneficial to communications with the Collaborative on how can we make this Collaborative better. It represents strengths and weaknesses to communicate and use as a framework for change.

- **What have you done, or plan to do, in response to the challenges, needs, and recommendations identified in the collaboration assessment? Please provide up to 3 specific actions.**

To begin with, the Ouachita National Forest, State of Arkansas and other organizations have gone through significant leadership change in the last year. The Assessment identified Personnel Turnover as a major disruption to a well-functioning Collaborative. The Assessment states also that, "Having diversity and redundancy in leadership roles is critical for continuity through personnel turnover."

With the change-over of leadership at the Ouachita National Forest (the Forest Supervisor, Deputy Forest Supervisor and Integrated Resources Staff Officer all came in NEW in June 2023), a number of actions have occurred:

1. The building of relationships and making connections. This takes time as does that building of trust and rapport. Forest leadership have met with and begun working with the Arkansas Forestry Association, Arkansas Timber Purchasers Group (though monthly meetings and an in-person meeting on October 31, 2023), and the new Arkansas State Forester.
2. The Ozark-Ouachita Interior Highlands Collaborative have a scheduled in-person meeting on January 24, 2024. Results of the Assessment will be shared in a presentation at the meeting and will provide a framework by which

to address short-comings of the Collaborative and where we can make improvements, such as increasing collaborative engagement and becoming more inclusive of other interest groups.

3. Reach-out and engage a broader breadth of stakeholders. The report speaks to increasing collaboration with more "wood products companies, loggers and sawmills, as well as a broader outreach to NGOs, tribal partners, the state forestry association, local communities, and counties." The Forest and Collaboration will continue to do this purposefully through meetings with the Tribes, at Timber Purchaser's Meetings, and through our existing Collaborative members.

- **What types of support or guidance do you need to address any of the challenges, needs, and recommendations identified in the collaboration assessment?**

Perhaps creative and engaging ways to solicit interest from individuals and groups to get involved. Even though there is only four years left in CFLR-funded activities, the hope and desire is to continue on in collaboration with partners to continue to great restorative work that has been happening for many years and build redundancy and depth in leadership considering the uncontrolled nature of member and personnel turnover.

(Monitoring Question #13 covered earlier in annual report template)