Longleaf Pine Ecosystem Restoration & Hazardous Fuels Reduction (CFLR023)

National Forests in Mississippi, De Soto Ranger District

1. CFLRP Expenditures, Match, and Leveraged Funds:

a. FY21 CFLN and Matching Funds Documentation

Fund Source – (CFLN Funds Expended)	Total Funds Expended in Fiscal Year 2021
CFLN (2021)	$708,053
CFLN (2020)	$231,173
CFLN (2019)	$8,016
CFLN (2018)	$372
CFLN (2016)	$3,041
CFLN (2015)	$2,232
CFLN (2013)	$60,888
TOTAL	**$1,013,031**

This amount should match the amount of CFLN 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 2021
NSCF	$952,698
TOTAL	**$952,698**

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 for details.

Fund Source – (Forest Service Discretionary Matching Funds)	Total Funds Expended in Fiscal Year 2021
CFRD	$189,883
CFHF	$18,193
CFKV	$122,111
TOTAL	**$330,187**

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 if aligned with CFLRP proposal implementation within the landscape.

Fund Source – (Partner Match)	In-Kind Contribution or Funding Provided?	Total Estimated Funds/Value for FY21	Description of CFLRP implementation or monitoring activity	Where activity/item is located or impacted area
DOD/Camp Shelby	☒ **In-kind contribution** ☐ **Funding**	**$48,750** **$124,395 on other lands**	**126 acres of NNIS herbicide treatments** **306.84 on other lands within CFLRP landscape**	☒ **National Forest System Lands**

Fund Source – (Partner Match)	In-Kind Contribution or Funding Provided?	Total Estimated Funds/Value for FY21	Description of CFLRP implementation or monitoring activity	Where activity/item is located or impacted area
		within CLFRP landscape		☒ **Other lands within CFLRP landscape: DOD Camp Shelby**
DOD/Camp Shelby	☒ **In-kind contribution** ☐ **Funding**	**$47,188**	**Feral Pig Eradication 6,252 acres**	☒ **National Forest System Lands** ☒ **Other lands within CFLRP landscape:**
DOD/The Nature Conservancy	☒ **In-kind contribution** ☐ **Funding**	**$285,000**	**Resource Monitoring (Gopher Tortoise, Louisiana quillwort, Black pine snake and rare species) 58,500 acres on Forest System lands**	☒ **National Forest System Lands** ☒ **Other lands within CFLRP landscape:**
MS Forestry Commission (MFC)	☒ **In-kind contribution** ☐ **Funding**	**$54,750**	**219 acres of Longleaf Pine Establishment**	☐ **National Forest System Lands** ☒ **Other lands within CFLRP landscape:**
MFC	☒ **In-kind contribution** ☒ **Funding** Budget Line Item, if relevant: **NFHF**, **State & Private**	**$7,450** **$49,825 NFHF**	**2,103 acres of Prescribe Burning**	☐ **National Forest System Lands** ☒ **Other lands within CFLRP landscape: Board of Ed. (16th Sect.) and Private**
MS Department of Wildlife, Fisheries, & Parks (MDWFP)	☒ **In-kind contribution** ☐ **Funding**	**$41,000**	**167 acres of Longleaf Establishment and Maintenance**	☐ **National Forest System Lands** ☒ **Other lands within CFLRP landscape:**
MDWFP	☒ **In-kind contribution** ☐ **Funding**	**$53,500**	**2,140 acres of Prescribed Burning**	☐ **National Forest System Lands** ☒ **Other lands within CFLRP landscape:**

Fund Source – (Partner Match)	In-Kind Contribution or Funding Provided?	Total Estimated Funds/Value for FY21	Description of CFLRP implementation or monitoring activity	Where activity/item is located or impacted area
NRCS	☒ In-kind contribution ☐ Funding	**$2,077,750**	**8,311 acres of Longleaf Pine Establishment**	☐ National Forest System Lands ☒ Other lands within CFLRP landscape:
NRCS	☒ In-kind contribution ☐ Funding	**$197,250**	**7,890 acres of Prescribed Burning**	☐ National Forest System Lands ☒ Other lands within CFLRP landscape:
NRCS	☒ In-kind contribution ☐ Funding	**$247,680**	**2,064 acres of Longleaf Pine Maintenance Activities**	☐ National Forest System Lands ☒ Other lands within CFLRP landscape:
USFWS	☒ In-kind contribution ☐ Funding	**$42,750**	**171 acres of Longleaf Pine Establishment**	☐ National Forest System Lands ☒ Other lands within CFLRP landscape:
USFWS	☒ In-kind contribution ☐ Funding	**$7,200**	**288 acres of Prescribed Burning**	☐ National Forest System Lands ☒ Other lands within CFLRP landscape:
Mississippi Department of Environmental Quality	☐ In-kind contribution ☒ Funding **NFXN1018**	**$119,075**	**6,486 acres of Prescribed Burning** **166 acres of NNIPS Treatment**	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:
Mississippi Department of Environmental Quality (The Corps Network)	☒ In-kind contribution ☐ Funding	**$42,313**	**1,500 acres surveyed for T&E and NNIPS** **18 treated NNIPS**	☒ National Forest System Lands ☐ Other lands within CFLRP landscape:

Fund Source – (Partner Match)	In-Kind Contribution or Funding Provided?	Total Estimated Funds/Value for FY21	Description of CFLRP implementation or monitoring activity	Where activity/item is located or impacted area
Non-Industrial Private Lands	☒ **In-kind contribution** ☐ **Funding**	**$13,500**	**540 acres of Prescribed Burning**	☐ **National Forest System Lands** ☒ **Other lands within CFLRP landscape:**
TOTALS	**Total In-Kind Contributions: $3,166,081** **Total Funding: $168,900**			

Total partner in-kind contributions for implementation and monitoring of a CFLR project across **all lands** within the CFLRP landscape. For CFLRP projects under the CFLRP Common Monitoring Strategy, note that this table addresses the core CFLRP common monitoring strategy question, "If and to what extent has CFLRP investments attracted partner investments across the landscapes?"

Service work accomplishment through goods-for services funding within a stewardship contract (for contracts awarded in FY21)	Totals
Total revised non-monetary credit limit for contracts awarded in FY21	$0
Revenue generated through Good Neighbor Agreements	**Totals**
	$0

Revised non-monetary credit limits should be the amount in contract's "Progress Report for Stewardship Credits, Integrated Resources Contracts or Agreements," the "Revised Non-Monetary Credit Limit," as of September 30. Additional information on the Progress Reports is available in CFLR Annual Report Instructions document.
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 project's proposed restoration strategies and in alignment with the CFLRP authorizing legislation

b. *(OPTIONAL)* Describe additional leveraged funds in your landscape in FY2121, if relevant. Leveraged funds refer to funds or in-kind services that help the project achieve proposed objectives *but do not meet match qualifications*- examples include research (not monitoring) and planning funds.

Fund Source – (Funds contributed through agreements)	Total Funds Expended in Fiscal Year 2021
Fund Source – (Partner In-Kind Contributions)	**Total Funds Expended in Fiscal Year 2021**
Camp Shelby and The Nature Conservancy	$464,100

ORGANIZATION	ACTIVITY	ACRES	TOTALS
Camp Shelby/DOD-(within the CFLR landscape, but not on Forest Service land)	Hazardous Fuel Reduction (Mowing, herbicide and other reduction of woody fuels	462	$237,000
Camp Shelby/DOD-(within the CFLR landscape, but not on Forest Service land)	TSI/Release of LL Pine	448	$90,000
Camp Shelby/DOD (within the CFLR landscape, but not on Forest Service land)	Prescribed fire (estimated $25/acre)	5,484	137,100
GRAND TOTAL			**$464,100**

2. Please tell us about the CFLR **project's progress to date in restoring a more fire-adapted ecosystem as described in the project proposal** and **how it has contributed to wildfire risk reduction goals**.

FY2021 Overview

FY21 Activity Description (Agency performance measures)	Acres
Number of acres treated by prescribed fire	37,800
Number of acres treated by mechanical thinning	690
Number of acres of natural ignitions that are allowed to burn under strategies that result in desired conditions	10
Number of acres mitigated to reduce fire risk	38,500

Please provide a narrative overview of treatments completed in FY21, 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?

Prescribed fire treatment accomplishments were flat from FY20. The late Fall season was too wet to get anything done and the Winter and Spring season rainfall was well above average. Hurricane Zeta directly hit our area in late October 2020. The rains from this started our rainy season early. Following that, we spent a lot of effort to reopen roads. Despite this we were able to get fire on the ground in areas available to us per Section 106, archeology clearance by State and/or Tribal partners. COVID-19 proved an issue, but we worked around it by keeping the north and south crews separated and intermixing detailers with our crews to be as productive as possible. We were able to accomplish 37,800 acres last year with burning into early June. The De Soto Ranger District is a Wildland Urban Interface (WUI) area with communities and homes intermixed with the Forest. The summer growing season was cut short by the National Fire Preparedness Level going to 5, the highest level, again this summer. Majority of the District firefighter personnel were supporting wildfires across the nation from late June into early October.

These burns were in our high priority areas with other factors being endangered species habitat improvement and longleaf pine restoration. Using an interdisciplinary approach, the district has developed a plan for yearly, and daily, prioritization of burn units. Specific locations for each burn unit, by year, cannot be anticipated. The average number of days available for prescribed fire on the De Soto Ranger District is about 45 per year. Each day is utilized for maximum benefit. After a burn season is complete, we produce a map showing the departure from desired return interval.

Normally, an overall goal of 84,000 acres per year is reasonable and attainable; realizing that some years may be less, and hopefully others are more productive.

The following summarizes the classification criteria utilized by the Interdisciplinary Team (IDT) to develop the plan.

CLASSIFICATION CRITERIA

1) Purple – Low Priority, 7-15+ Year Return Interval
   a. Close to major highways, especially up drainage from highways. From our safety engagement training, "the benefits of the work task are not worth the associated risks".
   b. Ecological significance. North slopes. Steep hardwood ridges. Mesic slopes. Generally, soils and vegetation that does not require frequent fire to maintain the ecosystem. And/or, intense fire may damage the desired ecosystem.
   c. Small, labor intensive, inefficient areas. Or, another phrase from the safety engagement sessions, "the juice is NOT worth the squeeze".
   d. These areas that are low priority and/or low frequency for prescribed fire may in turn be high priority for other fuels treatments such as mechanical or herbicides.

2) Magenta - Very High Priority, 18 – 24-month Return Interval
   a. Critical T&E habitat
      i. Gopher frog pond area
      ii. Buttercup flats
      iii. Large areas of gopher tortoise priority soils, with gophers.
      iv. Within RCW HMAs and gopher tortoise present.
      v. Proposed sandhill crane habitat
   b. Critical hazardous fuels areas. (high fire occurrence, WUI, etc.)

3) Orange - High Priority, 3-4 Year Return Interval
   a. The remaining parts of RCW HMAs and priority soils areas
   b. Some selected longleaf dominated areas of the district that have been well maintained and should continue to be maintained by fire.
   c. Some critical longleaf restoration sites
   d. High density of pitcher plant bogs
   e. Camp Shelby burrowing crayfish
   f. Important hazardous fuels areas

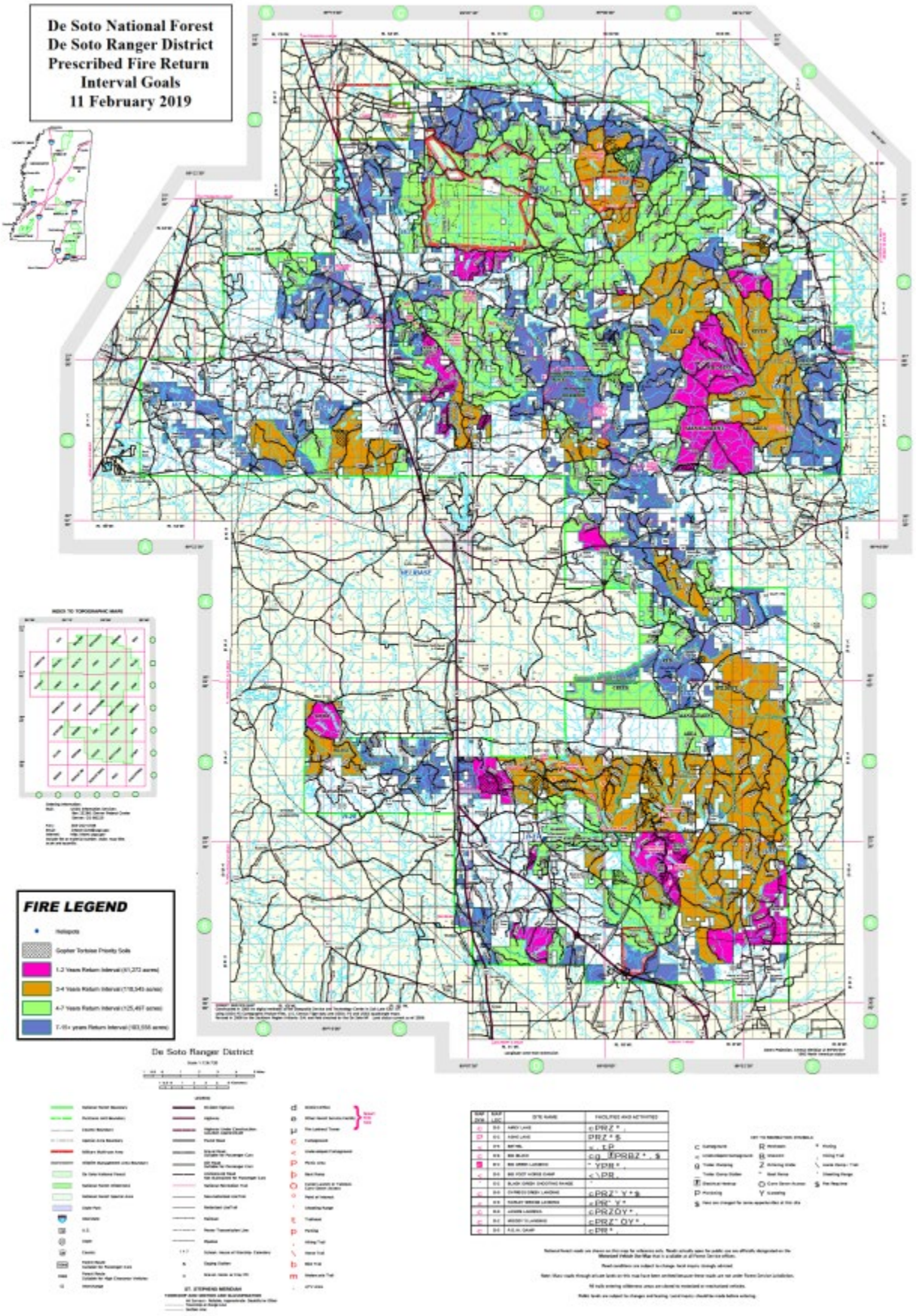
4) Green - Moderate Priority, 4-7 Year Return Interval - everything else.

The following table and map utilize the above rationale, separating the burnable areas of the district into four desired return interval classifications, or “priorities”.

YEARLY PRESCRIBED FIRE GOALS BY RETURN INTERVAL CLASS

MAP COLOR	BURN PRIORITY*	AVERAGE RETURN INTERVAL GOALS (YEARS)	BURNABLE ACRES	ESTIMATED BURN ROTATION (YEARS)	GOAL ACRES PER YEAR
PURPLE	LOW	8 – 15+	80,000	11	7000
GREEN	MODERATE	7-Apr	103,000	6	17,000
ORANGE	HIGH	4-Mar	96,000	3	32,000
MAGENTA	VERY HIGH	1 – 2	37,000	2	19,000
		TOTALS	**316,000**		**84,000***

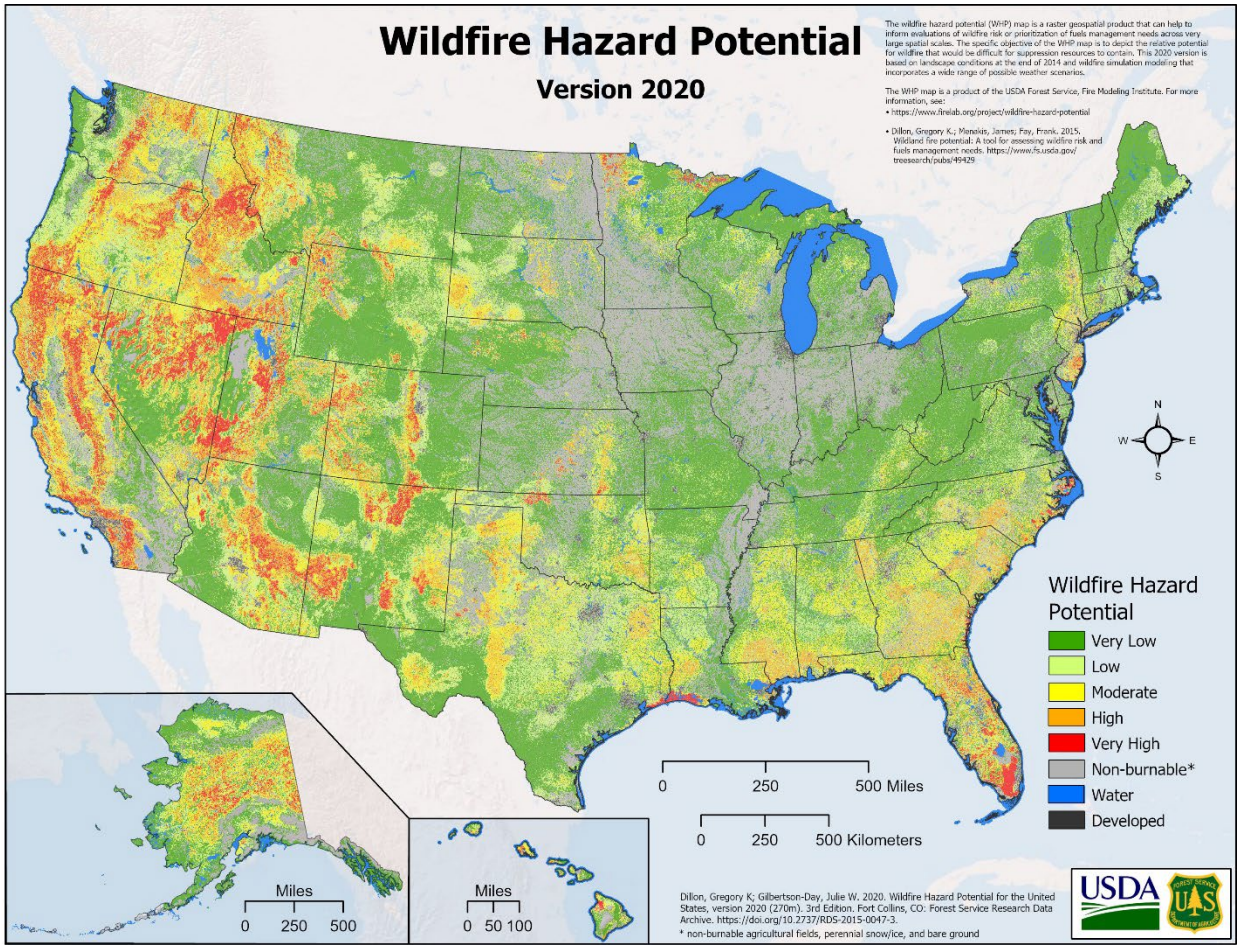
*NFMS Land and Resource Management Plan has an annual goal to accomplish 84,000 acres of prescribed burning to on the De Soto Ranger District. There's a difference in the sum of the De Soto's burn prioritization acres because each is a stand-alone priority and is subject to change due to uncontrollable climatic factors. Annually, more than 100,000+ acres in burn plans are prepared to have the flexibility make necessary adjustments when facing unforeseen obstacles. Yet, the overall goal remains to accomplish 84,000 acres of prescribed burns on the De Soto RD.


De Soto National Forest
De Soto Ranger District
Prescribed Fire Return
Interval Goals
11 February 2019
FIRE LEGEND
Gopher Tortoise Priority Soils
De Soto Ranger District

- **How was this area prioritized for treatment?** What kinds of information, input, and/or analyses were used to prioritize? Please provide a summary or links to any quantitative analyses completed.
  The prioritization of the areas we burn was discussed in the CLASSIFICATION CRITERIA section just above this.

- **Please tell us whether these treatments were in "high or very high wildfire hazard area** from the "wildfire hazard potential map" (https://www.firelab.org/project/wildfire-hazard-potential)

  The Wildfire Hazard Potential, 2020, map below shows the area of the De Soto Ranger District, located in the south end of Mississippi just north of the Gulf Coast, is in the High Potential. All our treatments would be in the same classification.

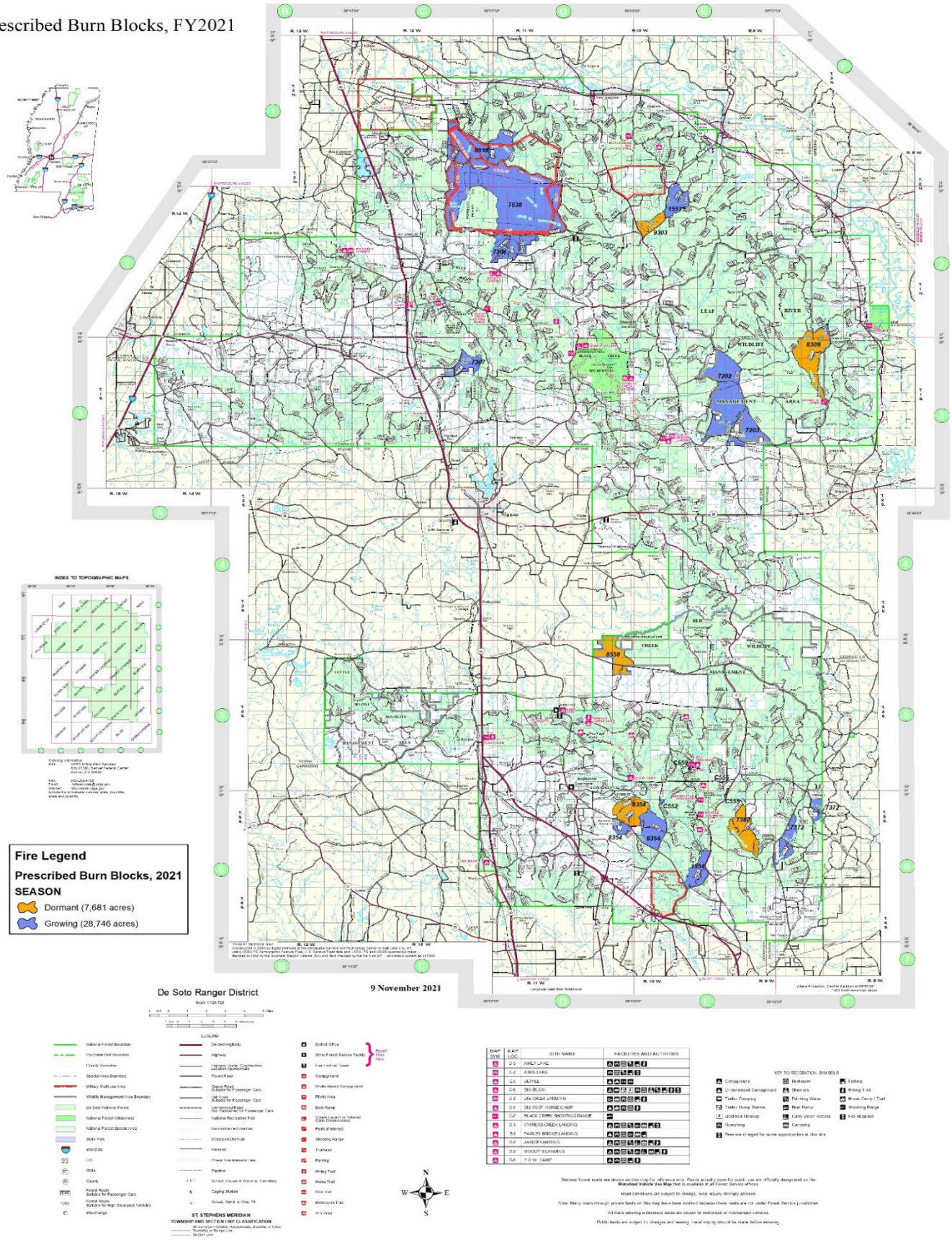


  All the De Soto Ranger District is in a Wildland Urban Interface area with numerous communities scattered in and around the Forest. Almost every burn unit has private lands, homes, and communities on or near the border of every unit we burn. Numerous high volume traffic corridors intersect our District including state and federal highways, and nearby Interstates.

- **What did you learn** about the interaction between treatment prioritization, scale, and cost reduction? What didn't work? Please provide data and further context here.

  The interaction between treatment prioritization, scale, and cost reduction is a balancing act. Often our scale, or size of the burn unit, is limited due to being divided by private lands. Burning larger tracts does lower costs, but we can only get so large before running into property boundaries. Also, the larger the area we burn, the more smoke we create. In an urban interface this can lead to problems with traffic on roads the following morning. We often cut back on our size due to limitations of smoke dispersal. We have been successful with this in limiting problems due to smoke impacting traffic corridors the morning following a prescribe burn.

This is a map of our successful prescribe burns in FY 2021;



Expenditures

Category	$
FY21 Wildfire Preparedness[1]	$5,000 *(A)
FY21 Wildfire Suppression[2]	$87,500 *(B)
The cost of managing fires for resource benefit if appropriate (i.e., full suppression versus managing)	*(C)
FY21 Hazardous Fuels Treatment Costs (CFLN)	*(D)
FY21 Hazardous Fuels Treatment Costs (other BLIs)	$1,202,224 *(E)

*(A) Wildfire preparedness funds were reduced this year due to budget modernization.
*(B) Wildfire suppression actual costs may differ than report estimates. The 10-year average for suppression until controlled is as follows, Type 5 fires cost $500-$1,000 per day, Type 4 fires cost $1,500-$2,500 per day. There were no Type 3,2, or 1 fires on the district this year.
*(C) No wildfires were managed for resource benefit. However, all wildfires were suppressed utilizing appropriate management response tactics.
*(D) Expenditures were not separated between projects, but generally large-scale understory prescribed burns cost around $29 per acre
*(E) Costs were estimated at $29 per acre with 41,456 acres accomplished which includes mechanical acreage as well.

How may the treatments that were implemented contribute to reducing fire costs?

Wildfire occurrence on the De Soto in FY 2021 was 58 wildfires for a total of 5,083 acres. All were contained in the initial attack phase. Six (6) wildfire occurrences were in a location that had been prescribe burned in the previous 3 years and we saw a reduction in effort to control the wildfire. Ease of suppression effort will equal a reduction in costs, but quantifying that would be problematic.

Wildfire Preparedness costs are down at the local unit, primarily due to the local units no longer paying directly for fixed costs. Fixed costs for preparedness with salary and equipment are now covered at the regional level. Preparedness funds appropriated to the district are reduced by the new budget practice from previous years.

Have there been any assessments or reports conducted within your CFLRP landscape that provide information on cost reduction, cost avoidance, and/or other cost related data as it relates to fuels treatment and fires?

Ongoing collaboration in the form of annual meetings and multi-party monitoring are part of the overall approach, in accordance with the Healthy Forests Restoration Act, to continue to build and maintain working relationships with forest stakeholders. Forest Service and multi-party monitoring is conducted to assess how proposed actions maintain or make progress toward desired conditions and objectives consistent with the goals of the purpose and need of the purpose and need of the proposed actions and forest plan direction. Monitoring is also designed to provide feedback for planning, implementation, and improvement of management techniques.

Annual collaborative meeting and field days are conducted to provide partners and collaborators with opportunities for input and shaping of the program of work associated with the proposed actions. Multi-party monitoring is being

[1] 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).
[2] Include emergency fire suppression and BAER within the project landscape. Describe acres of fires contained and not contained by initial attack. Describe acres of resource benefits achieved by unplanned ignitions within the landscape. Where existing fuel treatments within the landscape are tested by wildfire, summary and reference the fuel treatment effectiveness report.

incorporated into annual collaborative review field trips and/or associated field days to allow Forest Service personnel and forest stakeholders to work side by side in assessing and evaluating results of the proposed actions.

Management activities would be monitored by randomly selecting points within a subset of stands that received treatments in each compartment or project area.

Monitoring would be conducted:

- During the late summer and fall (September to November)
- 2 to 5 years after project/sale area closure; and
- At a rate of one plot for every 100 acres for a project/sale area up to 1,000 acres; for project or sale areas over 1,000 acres, one plot would be added for every additional 200 acres.

Seedling and reforestation success for longleaf pine: Longleaf pine seedling survival checks are a standard Forest Service measurement of silvicultural treatment and reforestation success. These survival checks would be completed in the first and third years after planting to ensure survival of a minimum of 300 seedlings per acre. Replanting of longleaf pine seedlings would occur if this mark was not achieved.

Monitoring for insects and disease will be done by the Forest Health Protection Unit of the Forest Service.

Please include acres of fires contained and not contained by initial attack and acres of resource benefits achieved by unplanned ignitions within the landscape, and costs.

All wildfires on the De Soto were contained in the initial attack phase, for a total of 5083 acres. Although no wildfires were managed for resource benefits, almost all the fires produced desirable outcomes by reducing fuel loads, and maintaining a longleaf ecosystem, or by changing the ecology to move more towards a longleaf favorable condition.

No BAER requests were made for any of these wildfires.

If a wildfire interacted with a previously treated area within the CFLR boundary:

Each unit is required to complete and submit a standard fuels treatment effectiveness monitoring (FTEM) entry in the FTEM database (see FSM 5140) when a wildfire occurs within or enters into a fuel treatment area. **For fuel treatment areas within the CFLR boundary, please copy/paste that entry here and respond to the following supplemental questions. Note that the intent of these questions is to understand progress as well as identify challenges and what didn't work as expected to promote learning and adaptation.**

There were 6 wildfires for 1,484 acres that occurred within units that been burned within the previous 3 years. There was a positive benefit and a reduction in complexity of wildfire as well as overall safety of the public and firefighters being improved.

- *Please describe if/how partners or community members engaged in the planning or implementation of the relevant fuels treatment.* Partners are engaged in the planning phase on an annual basis at planning and collaboration meetings. Such partners are Camp Shelby JFTC, Mississippi Forestry Commission, Mississippi Department of Wildlife, Fisheries, and Parks, University of Southern Mississippi as well as CFLRP community meetings with the public at large.
- *Did treatments include coordinated efforts on other federal, tribal, state, private, etc. lands within or adjacent to the CFLR landscape?* Yes, with Camp Shelby JFTC, Department of Defense Lands, and State administered lands or special use permit areas.
- *What resource values were you and your partners concerned with protecting or enhancing? Did the treatments help to address these value concerns? First priority was life and property with secondary benefit to Threatened*

and Endangered Species as well as restoring the Longleaf Ecosystem. Yes, by providing a reduction in hazardous fuels.

- *Did the treatments do what you expected them to do? Did they have the intended effect on fire behavior or outcomes?* Yes, the treatments had an overall positive benefit due to the reduction of fuels.
- *What is your key takeaway from this event – what would you have done differently? What elements will you continue to apply in the future?* Continue to promote prescribed fires upon the landscape.

If a wildfire occurred within the CFLR landscape on an area planned for treatment but not yet treated: *In FY21, there were 36 wildfires for 3,180 acres that occurred within the Desoto Ranger District that are under burn plans.*

- Please include:
  - *Acres impacted and severity of impact.* There was a total of 3,180 acres with minimal impact.
  - *Brief description of the planned treatment for the area.* Prescribed fire in the units to reduce fuels and maintain the Longleaf Ecosystem.
  - *Summary of next steps – will the project implement treatments elsewhere? Will they complete an assessment?* The next steps, continue prescribed fire at the first opportunity to enter the unit post fire. Then, assess the post-treatment results to determine next entry will continue.
  - *Description of collaborative involvement in determining next steps.* Annual meetings with Camp Shelby JFTC on fires ignited by munitions.
  - 3. **What assumptions were used in generating the numbers and/or percentages you plugged into the TREAT tool**? The assumption is the FY21 Longleaf Pine Restoration and Hazardous Fuel Reduction landscape-scale projects and supporting efforts were a benefit to the environment and the local economy.

Looking at your CFLRP project's TREAT Data Entry "Full Project Details" Tab, what percent of funding was used for contracts within the local impact area? According to the TREAT Data, approximately 40% funding went into contracts.

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

Description	Project Percent
Equipment intensive work	15%
Labor-intensive work	50%
Material-intensive work	15%
Technical services	13%
Professional services	2%
Contracted Monitoring	5%
TOTALS:	**100%**

Please provide a brief description of the local businesses that benefited from CFLRP related contracts and agreements, <u>if known</u>. Several surrounding businesses such as non-profit organizations, institutions of higher learning; 21st Century Conservation Corps such as Climb Community Development Center, AmeriCorps NCCC, and The Corps Network, and tribal crews; as well as veteran-owned, women-owned, and minority-owned businesses benefitted from supporting in landscape scale project work. Majority were small businesses within the State of Mississippi and others were from neighboring states.

FY2021 Modelled Jobs Supported or Maintained (CFLN and Matching Funds):

FY 2021 Jobs Supported/Maintained	Jobs (Full and Part-Time) (Direct)	Jobs (Full and Part-Time) (Total)	Labor Income (Direct)	Labor Income (Total)
Timber harvesting component	**29**	**41**	**$1,576,751**	**$1,953,951**

FY 2021 Jobs Supported/Maintained	Jobs (Full and Part-Time) (Direct)	Jobs (Full and Part-Time) (Total)	Labor Income (Direct)	Labor Income (Total)
Forest and watershed restoration component	**10**	**15**	**$372,545**	**$539,700**
Mill processing component	**55**	**120**	**$3,563,544**	**$6,552,382**
Implementation and monitoring	**21**	**24**	**$869,808**	**$965,695**
Other Project Activities	**0**	**1**	**$28,636**	**$36,890**
TOTALS:	**116**	**201**	**$6,411,284**	**$10,048,619**

4. **Briefly describe a community benefits that align with the CFLRP proposal and strategies socioeconomic goals**. **How has CFLR and related activities benefitted your community(ies) from a social and/or economic standpoint?** Through collaboration efforts, partners we were able to reach across state lines and have a supplemental partnership agreement with the National Deer Alliance (NDA), formerly Quality Deer Management Association and National Deer Association. This year a stewardship agreement was established to administer a timber sale and provide service work for mutual benefits as the non-profit organization develops more partnerships and expand their portfolio. The current and future stewardship projects may deliver approximately 10 years of stable work, ultimately providing more jobs and more revenue to the local communities.

Benefits to communities across the landscape range from direct financial benefits and increase safety to the long-term health of natural systems and continued impacts of ecosystem services.

Contract Information

Of the $2.2 million appropriated to De Soto Ranger District for high priority accelerated ecosystem restoration, *over $1 million* went to job creation and the private sector workforce. The jobs created or maintained by the project in FY 2021 are mostly technical and manual labor positions utilized in new and existing contracts. Small and large businesses in our area have benefitted from the implementation of the project. Almost all contractors are based in south Mississippi. The table below contains contract information for major projects on the De Soto Ranger District utilized for high priority accelerated ecosystem restoration implementation.

Contract Description	Funding Obligated or Spent in FY 2021	Contractor Location
Release of LL seedlings	$127,273	Alabama & Mississippi
Mechanical Site Prep (for planting LL Pine)	$74,250	Mississippi
Tree Planting (Longleaf Pine)	$27,048	Arkansas
Pitcher Plant Bog Restoration	$24,000	Mississippi
NNIPS Treatments (cogon grass)	$53,800	Mississippi
Landline Maintenance	$70,578	Mississippi
Road Maintenance	$351,836	Mississippi
Trail Maintenance	$5,000	Unknown
Helicopter for Prescribed Burning	160,567	Georgia & Montana
RCW Cluster Maintenance (LLA Agreement)	$125,000	Florida
Challenge Cost Share Agreements (Universities)	$144,000	Alabama & Mississippi
MS Forestry Commission GNA (NNIS)	$40,670	Mississippi
Jena Band of Choctaw Nation SPA	$50,000	Louisiana
Total Contracts & Agreements	$947,651	

Jobs include tree harvesting, tree planting, heavy machinery operation, timber sale layout, timber cruising, survey work in preparation for treatments, herbicide application, and boundary marking. Also, local fuel, food service, equipment supply, and lodging vendors benefit from these contracts.

Local Agreements

Two Challenge Cost Share Agreements were utilized with University of Southern Mississippi. USM employees are working on vegetation, soil, pollinator, fungi, and microorganism monitoring that support and inform CFLR and high priority accelerated ecosystem restoration activities as well as conducting survey work to support treatments.

The University of South Alabama (USA) Agreement continues to involve students and professors providing technical assistance with field surveys, evaluations, and reports in support of priority longleaf pine ecosystem restoration and management efforts. This work serves as on-the-job training for student employees and provides them with valuable technical skills. Approximately 4,240 acres were surveyed, costing a total of $144,000.

The Mississippi Forestry Commission (MFC) Good Neighbor Authority (GNA): The State of Mississippi MFC provided employees to assist with timber sale preparation and stand inventory on approximately 2,500 acres. MFC also provided employees, supplies and equipment to treat 128 acres of cogongrass around the impact area of Camp Shelby and within the Leaf River Wildlife Management Area. This work will allow MFC employees to apply skills and enhance work experience in identified skill areas. The Forest Service will benefit by the additional capacity in timber sale preparation and stand inventory provided by the State; with a total of $42,000. The total cost of non-native species herbicide treatments was approximately $40,670.

The De Soto Ranger District continues to host a Resource Assistant Program (RAP) intern via a cooperative agreement funded by The Corps Network (TCN), The Nature Conservancy (TNC), and Climb Community Development Corporation (CDC) from the prior year (FY19) funding. The new and developing professionals serve as integrated resource aids primarily to recreation and/or archeology programs, and other programs such as fire, wildlife, timber/silviculture as opportunities allow. Climb CDC's Gulf Corps Crew continues to support bog restoration, Non-Native Invasive Species assessments, treatments, T&E surveys, mapping, and other projects to aid in the watershed improvement within the longleaf pine ecosystem.

A non-funded challenge cost share agreement with TCN was developed to restore the hydrologic connectivity of Back Bay Biloxi. TCN is being funded through a grant from the National Fish and Wildlife Foundation and the Gulf Environmental Benefit Fund. Restoration acres accomplished are shown as partner-in-kind contributions.

This year, the Mississippi Army National Guard entered into a Master Agreement with the Forest Service for stewardship (Camp Shelby Stewardship Project Phase II), which includes wildlife habitat restoration, hazardous fuel reduction, watershed restoration and invasive species control. It is expected that work on those tasks will begin in FY22 under a supplementary project agreement.

The Supplement Project Agreement renewal with the Jena Band Choctaw Nation is in progress to provide a tribal crew to support in heritage surveys for approximately 100 acres of mechanical fuel reduction, post-implementation firelines, flood mitigation, and assist with other project needs such as conservation education and outreach. Crewmembers will develop work skills experience, training opportunities, and possibly qualifications in prescribe fire efforts. The tribal crew will consist of 4 to 6 crew members for approximate 4-6 weeks at approximately $50,000.

Additionally, the 2021 Gulf Hurricane Recovery Team from Student Conservation Association (SCA) provided a crew to support in the recovery efforts to cut and remove debris and heavy fuels from the Bethel OHV Trail and Ashe Lake Recreation Area. These trails also serve as a firebreaks during prescribed burns and wildfire suppression efforts. Camp

Shelby's Youth Challenge Group has expressed an interest in partnering and volunteering services on the De Soto National Forest. Currently, we're at the initial discussion and planning stage to determine the appropriate agreement.

Local Markets

In FY21, there was no green wood sold to the local markets due to COVID-19 delays and pending concurrences from the State Historic Preservation Office and our tribal partners.

Impact on the Landscape of South Mississippi

The De Soto Ranger District occupies a large portion of the landscape in south Mississippi. In addition to basic ecosystem services such as providing clean air, clean water, carbon sequestration, and nutrient cycling, specific impacts of high priority accelerated ecosystem restoration on the landscape and surrounding communities are noteworthy.

Activity	Result	Benefit on the Landscape
Re-establish (restore) Longleaf Pine	Increased Forest Health = Longleaf are less susceptible to wind events (hurricanes, tornados), disease, insects (SPB outbreaks), & fire	Provide for a large part of the landscape to be less susceptible to widespread damage from natural disasters and outbreaks (SPB). Also supply wood to local markets during restoration operations.
Hazardous Fuel Reduction (PXB, Thinning, Herbicide)	Safer fuel condition class, Improved smoke management	Defensible WUI, Protection of resources on and off the Forest. Supply wood to local markets via thinning.
Wildlife Habitat Improvement	Provide healthy habitat for a diversity of plants and animals	Forest provides natural systems for forage, cover, cache, and dens as these areas become less common on adjacent lands.
NNIS Treatment	Eradication or control of invasive pests	Help prevent the spread of these plants and animals to adjacent state and private lands where treatment and effects of NNIS prove costly.
Pitcher Plant Bog Restoration	Maintenance or reclamation of unique and sensitive ecosystems.	Provide habitat for a diversity of rare plant and animal species including many host plants and pollinators. Very few of these unique ecosystems are found on adjacent lands due to modification of the landscape.
Pollinator Habitat Maintenance and Improvement	Open, diverse herbaceous communities are restored and maintained.	Pollinator diversity and abundance is maintained and improved across the landscape.

Indicator	Brief Description of Impacts, Successes, and Challenges	Links to reports or other published materials (if available)
Contributions to local Economy	The above-mentioned contracts have helped with local economy by contractors using Hotels, purchase of fuel, food, supplies at hardware stores, etc.	
Relationship building/Collaborative work	The project has added new partnerships and collaborators which has resulted in additional acres being treated on private lands and NGO lands.	
Job training opportunities	We have worked with AmeriCorps, Gulf Corps, Jobs Corps, and Veterans in fire Programs, to train Vets and students, provide job-related skills, qualifications, and employment opportunities.	
Cross-institutional agreements	We have agreements in place with the University of South Alabama, University of Southern Mississippi, and Mississippi State University for cultural resource surveys, soil & plant monitoring, summer intern programs.	

5. ***Based on your project monitoring plan, describe the multiparty monitoring process.***

Extensive collaboration with partners, other agencies, and the public was conducted during the process of completing our Healthy Forest Restoration Act (HFRA) EA for Longleaf Pine Ecosystem Restoration and Hazardous Fuels Reduction (2020). This EA authorizes most of the CFLRP and high priority accelerated ecosystem restoration activities. Many of the same collaborators were involved in the CFLRP proposal process. We strongly value our relationship with our collaborators and provide open access to our projects at any phase of development or implementation. Some of these relationships and associated monitoring are discussed in the answers to questions below.

Informal multi-party monitoring has been conducted on an annual basis by hosting collaborative team field trips to view actual on the ground successes and challenges. COVID-19 and variants have caused some delays and postponements in meetings and trips. Virtual connection has happened to replace some of the regular face to face meetings. When possible, partners, congressional staffers, researchers, members of the public, and representatives from our sister agencies join De Soto Ranger District specialists on site visits to ecosystem restoration areas to have open honest dialogue and discussion about site selection, design criteria for resource protection, restoration methodologies, and expected versus actual results. Sometimes these field outings are addressing specific needs about threatened and endangered species habitat restoration techniques as part of overall collaboration and responsiveness to working factions of the collaborative group. During these field expositions, input is gathered both verbally and in writing via open conversation and survey/comment forms for site locations and types. Seeing is believing, and we find this collaborative approach to reviewing and planning our work gives the best opportunity for gathering information pertinent to attainable and sustainable restoration practices. Formal monitoring is also a topic of conversation during these field excursions and inputs and outputs are discussed throughout the day. Formal monitoring is discussed below.

- *What parties (who) are involved in monitoring, and how?*
- *What is being monitored? Please briefly share key broad monitoring results and how results received to date are informing subsequent management activities (e.g. adaptive management), if at all. What are the major positive and negative ecological, social and economic shifts observed through monitoring? Any modifications of subsequent treatment prescriptions and methods in response to these shifts?*

The University of Southern Mississippi, The Nature Conservancy, Mississippi Army National Guard, and USGS are involved in formal monitoring protocols.

The Nature Conservancy (TNC) and Camp Shelby

The De Soto Ranger District and the Mississippi Army National Guard (a member of our collaborative team) have a long history of working together to ensure protection of the Forest on the 117,000 acres of land utilized under special use permit for training troops. Collaboration between agencies has provided valuable data on federally threatened and endangered species as well as Forest Service sensitive species on the De Soto Ranger District. The Nature Conservancy Camp Shelby Conservation Program provides rare species and habitat monitoring services for the Mississippi Army National Guard on Forest Service, Department of Defense and State of Mississippi lands included within the Camp Shelby Joint Forces Training Center boundaries.

The Nature Conservancy monitoring focuses on the following species and their habitat: Louisiana quillwort (federally listed as endangered), gopher tortoise (federally listed as threatened), black pine snake (federally listed as threatened), Camp Shelby burrowing crayfish (lives in pitcher plant bogs - monitoring required as part of US Fish and Wildlife Service agreement to remove from candidate status), and cogon grass and kudzu (invasive species). This monitoring is funded by the Department of Defense National Guard Bureau and annual reports are provided to De Soto Ranger District. Because the areas monitoring includes activities associated with accelerated restoration (prescribed fire, thinning, hazardous fuel reduction, etc.) This is valuable information for assessing effects of various treatments on a large portion of our landscape.

Forest Service Monitoring across the Landscape of De Soto Ranger District

The De Soto Ranger District monitors RCW populations on our Forest. We also collect and review annual bird point data. Every 5 years, a district wide gopher tortoise survey on gopher tortoise priority soils is conducted via contract. We also collect data on fuel loading and fuel reduction associated with prescribed burning. The De Soto also began a black pine snake monitoring program with TNC on the southern portion of the District this year. A catalog of species caught in the traps is maintained by District Personnel. Many species of snakes, rodents, frogs, lizards, and salamanders were cataloged. A description of our overall management and treatment effectiveness on the landscape can be extrapolated when all of the data from partners, contractors, and Forest Service work are gathered and reviewed.

University of Southern Mississippi

The University of Southern Mississippi (USM) has entered into 2 Challenge Cost Share Agreements with the De Soto Ranger District. These agreements utilize the skill and expertise of this nearby institution to monitor and study the effects of specific restoration efforts identified in our CFLR Proposal. Several departments at USM were part of the collaborative team for the De Soto CFLR proposal and now play a greater role in monitoring effects on the landscape. The monitoring of CFLR and high priority accelerated ecosystem restoration activities in these agreements has been designed to provide descriptive data for tracking and analyses of project effectiveness. A past agreement incorporated dendrochronology research to help inform current prescribed burning management practices. Results of this dendrochronological fire scar study is available at this link.
https://aquila.usm.edu/cgi/viewcontent.cgi?article=1142&amp=&context=masters_theses&amp=&sei-redir=1&referer=https%253A%252F%252Fwww.bing.com%252Fsearch%253Fq%253Ddendrochronolgoy%252Bde%252Bsoto%252Bnational%252Bforest%2526src%253DIE-SearchBox%2526FORM%253DIESR4N#search=%22dendrochronolgoy%20de%20soto%20national%20forest%22
Currently, USM biology and geology staff are collecting data from shared monitoring points on the De Soto Ranger District. These monitoring points are in areas planned for or currently experiencing CFLR and high priority accelerated ecosystem restoration activities. USM is collecting soil samples to conduct and provide analyses for organic matter, total nitrogen, extractable phosphorus, pH, moisture content, particle size, fungi, microorganisms, and other parameters requested by the Forest Service as the project progresses.

USM is also collecting and analyzing data from monitoring sites with regard to vegetation structure and composition including but not limited to species identification, species diversity, species richness, canopy cover, litter type and depth, stem counts, pollinator diversity and herbaceous understory cover in treated and untreated areas. Photo points are also utilized as part of the monitoring process.

Results of this monitoring will be used to support or modify current and future treatments on the landscape based on observable changes through the longleaf ecosystem restoration process and associated hazardous fuel reduction. Results are still being analyzed with only a couple of years of post-treatment data in most cases.

Air Quality

Ozone monitoring was conducted in FY 2012 by a Forest Service Air Specialist. The results indicated that levels were normal with no issues or concerns to address at this time.

Local Sources of Technical Information
The Southern Research Station and Harrison Experimental Forest are conducting research related to Longleaf Pine Restoration, Carbon Sequestration, and Long-Term Climate Change. The De Soto has facilitated timber sales, site preparations, and reforestation efforts for this project. Although these studies are not specifically monitoring our restoration efforts, the information provided from these local studies may inform decision making and management on the De Soto Ranger District. This type of expertise is beneficial to have on our Forest.

Monitoring sites are spread out across the District. Treatment implementation cycles take time. Actual measured and potentially significant results of monitoring will paint a picture of treatment effectiveness, but this is a long-term project. We are implementing treatments and conducting monitoring and awaiting results patiently.

6. FY 2021 Agency performance measure accomplishments:

Performance Measure	Unit of measure	Total Units Accomplished	Total Treatment Cost ($) *(Contract Costs)*
Acres of forest vegetation established FOR-VEG-EST	Acres	420	27,048
Acres of forest vegetation improved FOR-VEG-IMP	Acres	676	127,273
Manage noxious weeds and invasive plants INVPLT-NXWD-FED-AC	Acre	440	$53,800
Highest priority acres treated for invasive terrestrial and aquatic species on NFS lands INVSPE-TERR-FED-AC	Acres	6253	
Acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions. S&W-RSRC-IMP	Acres	7253	
Acres of lake habitat restored or enhanced HBT-ENH-LAK	Acres		
Miles of stream habitat restored or enhanced HBT-ENH-STRM	Miles	33	
Acres of terrestrial habitat restored or enhanced HBT-ENH-TERR	Acres	51,518	
Acres of rangeland vegetation improved RG-VEG-IMP	Acres		
Miles of high clearance system roads receiving maintenance RD-HC-MAIN	Miles	149	$170,754
Miles of passenger car system roads receiving maintenance RD-PC-MAINT	Miles	158	$181,082
Miles of road decommissioned RD-DECOM	Miles		
Miles of passenger car system roads improved RD-PC-IMP	Miles		
Miles of high clearance system road improved RD-HC-IMP	Miles		
Road Storage *While this isn't tracked in the USFS Agency database, please provide road storage miles completed if this work is in support of your CFLRP restoration strategy for tracking at the program level.*	Miles		
Number of stream crossings constructed or reconstructed to provide for aquatic organism passage STRM-CROS-MTG-STD	Number		
Miles of system trail maintained to standard TL-MAINT-STD	Miles	40	$5,000
Miles of system trail improved to standard TL-IMP-STD	Miles		
Miles of property line marked/maintained to standard LND-BL-MRK-MAINT	Miles	76.3	$70,578
Acres of forestlands treated using timber sales TMBR-SALES-TRT-AC	Acres		
Volume of Timber Harvested TMBR-VOL-HVST*	CCF		
Volume of timber sold TMBR-VOL-SLD*	CCF	18,957	
Green tons from small diameter and low value trees removed from NFS lands and made available for bio-energy production BIO-NRG*	Green tons		
Acres of hazardous fuels treated outside the wildland/urban interface (WUI) to reduce the risk of catastrophic wildland fire FP-FUELS-NON-WUI	Acre		
Acres of wildland/urban interface (WUI) high priority hazardous fuels treated to reduce the risk of catastrophic wildland fire FP-FUELS-WUI	Acres	37,810	
Acres mitigated FP-FUELS-ALL-MIT-NFS	Acres	38,500	
Please also include the acres of prescribed fire accomplished	Acres	37,800	

Performance Measure	Unit of measure	Total Units Accomplished	Total Treatment Cost ($) *(Contract Costs)*
(Optional) Other performance measure not listed above	*Acres*		
(Optional) Other performance measure not listed above	*Acres*		

Units accomplished should match the accomplishments recorded in the Databases of Record. For CFLRP projects under the CFLRP Common Monitoring Strategy, items marked with a * help to address the core CFLRP common monitoring strategy question, "Did CFLRP increase economic utilization of restoration byproducts?"

7. **The Washington Office (Enterprise Data Warehouse) will use spatial data provided in the databases of record to estimate a treatment footprint for each CFLRP project's review and verification**. This information will be posted here on the internal SharePoint site for verification *after the databases of record close October 31*.

- **If the estimate is consistent and accurate**, please confirm that below and skip this question.
- **If the gPAS spatial information does NOT appear accurate**, note the total acres treated below.

Fiscal Year	**Footprint of Acres Treated** (without counting an acre of treatment on the land in more than one treatment category)
FY 2021	97,048 acres
Estimated Cumulative Footprint of Acres (CFLRP start year through 2021)	FY2012 – 109,746 acres FY2013 – 120,276 acres FY2014 – 96,890 acres FY2015 – 58,727 acres FY2016 – 56,065 acres FY2017 – 37,683 acres FY2018 – 71,501 acres FY2019—29,111 acres FY2020—32,554 acres Total (including FY21) 709,601 acres

If you did not use the EDW estimate, please briefly describe how you arrived at the total number of footprint acres: what approach did you use to calculate the footprint? Default to the EDW estimate.

8. **Describe any reasons that the FY2021 annual report does not reflect your project proposal, previously reported planned accomplishments, or work plan.**

In addition to budget delays, the biggest hurdle this year was the global pandemic. The agency's mitigation measures challenged the workforce to for managing natural resources. To minimize impacts, our workforce to keep a separate crew for north and south. This would allow us to respond to wildfires even if one of the crews were impacted by COVID-19 and had to be quarantined. Also, in this year the southern region experienced higher than normal rainfall with our District passing the normal annual rainfall amounts by June. This limited our number of days we could burn effectively to achieve desired results.

Delays in funding allocation due to continuous resolution and budget modernization further restricted the ability to procure essential supplies, untimely submittal and award of contracts, as well as new agreements or agreement modifications. Therefore, more efforts were spent on expending prior-year funds to meet time critical needs.

As a result, the National Forests in Mississippi transferred $220,000 CFLN funds to the Pisgah National Forests' Grandfather Restoration Project to expand their capacity and support to implement projects through construction and/or service work contracts and agreements with various organizations.

(*OPTIONAL*) FY 2021 Additional accomplishment narrative – If desired, please use this space to describe additional accomplishments the CFLRP project participants are proud of from FY21 *not already described elsewhere* in this report.

(*OPTIONAL*) FOR INTERNAL USE: The following responses are directed towards feedback on *internal* bottlenecks or issues that may impact your project. Please use this space to raise awareness on key internal issues, or opportunities to improve processes moving forward. Responses will be included in an internal document. What are the limiting factors to success or more success of the CFLR? How can the National Forest and its collaborators operate in a more integrated and synergized way?

9. Planned FY 2022 Accomplishments (for CFLRP projects with **known** ongoing funding in FY22)[3]

Performance Measure Code	**Unit of measure**	**Planned Accomplishment for 2022** (National Forest System)	***Planned Accomplishment on non-NFS lands within the CFLRP landscape***[4]
Acres of forest vegetation established FOR-VEG-EST	Acres	218	0
Manage noxious weeds and invasive plants INVPLT-NXWD-FED-AC	Acre		
Miles of stream habitat restored or enhanced HBT-ENH-STRM	Miles		
Acres of terrestrial habitat restored or enhanced HBT-ENH-TERR	Acres		
Miles of road decommissioned RD-DECOM	Miles		
Miles of passenger car system roads improved RD-PC-IMP	Miles		
Miles of high clearance system road improved RD-HC-IMP	Miles	1.38	
Volume of timber sold TMBR-VOL-SLD	CCF	45,000	
Green tons from small diameter and low value trees removed from NFS lands and made available for bio-energy production BIO-NRG	Green tons		

[3] Projects funded beginning in FY21, or extensions of 5 years or more, will be following the new Common Monitoring Strategy and will be asked to provide information on invasives, wildlife habitat, and reduction in fuels that go beyond acre tallies. Please work with your Regional CFLRP Coordinator as these are implemented.

[4] If relevant for your project area, please provide estimates for planned work on non-NFS lands within the CFLRP areas for work that generally corresponds with the Agency performance measure to the left and supports the CFLRP landscape strategy

Performance Measure Code	Unit of measure	Planned Accomplishment for 2022 (National Forest System)	*Planned Accomplishment on non-NFS lands within the CFLRP landscape*[4]
Miles of property line marked/maintained to standard LND-BL-MRK-MAINT	Miles	96	
Acres of hazardous fuels treated outside the wildland/urban interface (WUI) to reduce the risk of catastrophic wildland fire FP-FUELS-NON-WUI	Acre		
Acres of wildland/urban interface (WUI) high priority hazardous fuels treated to reduce the risk of catastrophic wildland fire FP-FUELS-WUI	Acres	84,000	

Please include all relevant planned accomplishments, assuming that funding specified in the CFLRP project proposal for FY 2021 is available.

10. **Planned accomplishment narrative and justification if planned FY 2022 accomplishments and/or funding differs from CFLRP project work plan** (for CFLRP projects with **known** ongoing funding in FY22): For FY22, we are planning to have over 4600 acres is stewardship accomplished. In accordance with the Five-Year Plan for Longleaf Pine ecosystem restoration on the De Soto Ranger District, we are planning to restore 1700 acres of Longleaf Pine, through means of mechanical and prescribe burning site preparation and handplanting. However, these planned activities are contingent on the Endangered Species Act and National Historic Preservation Act consultation process with State and Tribal partners.

11. **Please include an up to date list of the members of your collaborative if it has changed from previous years**. If the information is available online, you can simply include the hyperlink here. If you have engaged new collaborative members this year, please provide a brief description of their engagement.[5]

No changes.

(OPTIONAL) **Media recap**. Please share with us any hyperlinks to videos, newspaper articles, press releases, scholarly works, and photos of your project that you have available. You are welcome to include links or to copy/paste.

(OPTIONAL) **For CFLRP Projects in the final year of their initial 10 year funding plans**. Please use this space to provide any key reflections on lessons learned and opportunities for improvement for CFLRP moving forward – this could be bullets, a few brief paragraphs, or links to reports you would like to share on this topic.

Despite the various challenges (maximum telework, unprecedent weather, budget modernization, etc.) in FY21, there has been great strides to achieve the unit's goals of longleaf pine ecosystem restoration and hazardous fuels reduction. Partner's contributions are a major piece in the footprint of acres treated and accomplishments over the past 10-years. Yet, there's a lot of ecosystem needs and potential partnerships for mutual benefits that remains. The pending approval of the six-year CFLRP extension would be instrumental in the continuous efforts.

[5] For CFLRP projects under the CFLRP Common Monitoring Strategy, this table addresses the core CFLRP common monitoring strategy question, "Who is involved in the collaborative and if/how does that change over time?"

Signatures:

Recommended by (Project Coordinator(s)): /s/ Chandra D. Roberts

Approved by (Forest Supervisor(s)): _____

Draft reviewed by (collaborative chair or representative): _____