CFLR Project (Longleaf Pine Ecosystem Restoration & Hazardous Fuels Reduction/CFLN023):

National Forest(National Forest in Mississippi):

1. Match and Leveraged Funds:

a. FY18 Matching Funds Documentation

Fund Source – (CFLN/CFLR Funds Expended)	Total Funds Expended in Fiscal Year 2018
CFLN17	$133,554
CFLN18	$1,615,067
Total	$1,748,621

This amount should match the amount of CFLR/CFLN dollars obligated in the FMMI CFLRP expenditure report. Include prior year CFLN dollars expended in this Fiscal Year.

Fund Source – (Funds expended from Washington Office funds (in addition to CFLR/CFLN) (please include a new row for each BLI))	Total Funds Expended in Fiscal Year 2018
NFTM	$889,078
WFHF	$300,000
Total	$1,189,078

This value (aka carryover funds or WO unobligated funds) should reflect the amount expended of the allocated funds as indicated in the program direction, but does not necessarily need to be in the same BLIs or budget fiscal year as indicated in the program direction.

Fund Source – (FS Matching Funds (please include a new row for each BLI)	Total Funds Expended in Fiscal Year 2018
CMRD	$268,076.54
CWKV	$361,237.19
NFHF	$193,086.81
NFLM	$47,146.51
NFTM	$227,825.91
NFVW	$5,006.88
NFWF	$99,243.55
SSCC	$461,000
Total	$1,662,623.39

This amount should match the amount of matching funds obligated in the FMMI CFLRP expenditure report, minus the Washington Office funds listed in the box above and any partner funds contributed through agreements (such as NFEX, SPEX, WFEX, CMEX, and CWFS) listed in the box below.

Fund Source – (Funds contributed through agreements)	Total Funds Expended in Fiscal Year 2018
NA	NA

Please document any partner contributions to implementation and monitoring of the CFLR project through an income funds agreement (**this should include partner funds captured through the FMMI CFLRP reports such as NFEX, SPEX, WFEX, CMEX, and CWFS**). Please list the partner organizations involved in the agreement. Partner contributions for Fish, Wildlife, Watershed work can be found in WIT database.

Fund Source – (Partner In-Kind Contributions)	Total Funds Expended in Fiscal Year 2018
Camp Shelby and The Nature Conservancy	$439,000

Break down of Total funds by activity type.

ORGANIZATION	ACTIVITY	ACRES	FUNDS Partner Match
Camp Shelby FS Land	Hazardous Fuel Reduction (Mowing and other reduction of woody fuels)		$104,889
Camp Shelby FS Land	Feral Pig Eradication	6,252	$15,343
TNC (117,000 ac Special Use Permit with Camp Shelby)	Resource Monitoring (Gopher Tortoise, LAQ, CSBC, etc.)	58,500	$263,192
TNC (117,000 ac Special Use Permit with Camp Shelby)	Invasive Species	54.5	$56,546
Totals			$439,970

Total partner in-kind contributions for implementation and monitoring of a CFLR project on NFS lands. Please list the partner organizations that provided in-kind contributions.

Service work accomplishment through goods-for services funding within a stewardship contract (for contracts awarded in FY18)	**Totals**
Total revised non-monetary credit limit for contracts awarded in FY18	$0

Revised non-monetary credit limits for contracts awarded prior to FY18 were captured in previous reports (FY16 and FY15). This should be the amount in contract's "Progress Report for Stewardship Credits, Integrated Resources Contracts or Agreements" in cell J46, the "Revised Non-Monetary Credit Limit," as of September 30. Additional information on the Progress Reports is available in CFLR Annual Report Instructions document.

b. Please fill in the table describing leveraged funds in your landscape in FY2018. Leveraged funds refer to funds or in-kind services that help the project achieve proposed objectives but do not meet match qualifications.

Description of item	Where activity/item is located or impacted area	Estimated total amount	Forest Service or Partner Funds?	Source of funds
354 Acres of Longleaf Pine Established	**Other State Lands**	**$141,600**	**Partner Funds**	**MS Forestry Commission**

Description of item	Where activity/item is located or impacted area	Estimated total amount	Forest Service or Partner Funds?	Source of funds
21,074 acres of Prescribed Burning	**State Lands**	**$632,220**	**Partner**	**MS Forestry Commission & MS Wildlife & Parks**
15,375 acres of Prescribed Burning	**Private Lands**	**$461,250**	**Partner**	**NRCS**
314 acres of Prescribed Burning	**Private Lands (NGO)**	**$9,420**	**Partner**	**TNC & Land Trust**
2402 acres of Maintenance activities in Longleaf (thinning, pre-commercial thinning, Mid-story removal, etc.)	**Private Lands**	**$360,300**	**Partner**	**NRCS & USFWS**
4154 acres of Longleaf Pine Established	**Private Lands in the SGA**	**$1,661,600**	**NRCS & USFWS**	**NRCS & USFWS**
43, 319 acres treated In the Longleaf Landscape (SGA)		**$3,124,790 Leveraged**		

(Optional) Additional narrative about leverage on the landscape if needed:
Camp Shelby owns several Department of Defense and State of Mississippi inholdings within and adjacent to Forest Service lands. Although they did not provide expenditures for prescribed fire, they burned 2,797 acres in FY2018. In addition they treated the invasive species, cogongrass on their inholdings, spending $34,447 to treat 33.2 acres.

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 the wildland fire goals in the *10-Year Comprehensive Strategy Implementation Plan***.

FY2018 Overview

FY18 Activity Description (Agency performance measures)	Acres
Number of acres treated by prescribed fire	62,500
Number of acres treated by mechanical thinning	1871
Number of acres of natural ignitions that are allowed to burn under strategies that result in desired conditions	0
Number of acres treated to restore fire-adapted ecosystems which are maintained in desired condition	65,519
Number of acres mitigated to reduce fire risk	65,519

Please provide a narrative overview of treatments completed in FY18, 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 treatments were increased by almost 40% over FY 2017. The biggest factor enabling increased accomplishments was the favorable weather patterns. Over the past 3 years we have averaged 33 available burn days. In FY 18 we had 50 good burn days. The total acres treated with fire was 62,500. About 50% of the treated acres were accomplished in the growing season. In addition to prescribed fire, 1148 acres of mechanical treatments were completed within the project area. Mechanical treatments included 824 acres of forestry brush-hogging/mastication, which targeted areas of high fire occurrence, fire dependent threatened and endangered species such as red-cockaded woodpecker colonies, and road corridors utilized for effective prescribed fire and wildfire breaks. Another 324 acres of firebreak/WUI line preparation was accomplished, by dozers, in dense, hazardous vegetation, in wildland-urban interface areas.

- **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.

PRESCRIBED FIRE PRIORITIZATION

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 40 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. An overall goal of 45,000 – 84,000 acres per year is reasonable and attainable. Realizing that some years may be less, and hopefully some are more productive.

The following summarizes the classification criteria utilized by the ID team to develop the plan.

CLASSIFICATION CRITERIA

1) **Purple – Low Priority, 7-15+ Year Return Interval**
    a. **Close to major 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) **<u>Magenta - Very High Priority, 1-2 Year Return Interval</u>**
   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 have gopher burrows present.**
      v. **Proposed sandhill crane habitat**
   b. **Critical hazardous fuels areas. (high fire occurrence, WUI, etc.)**

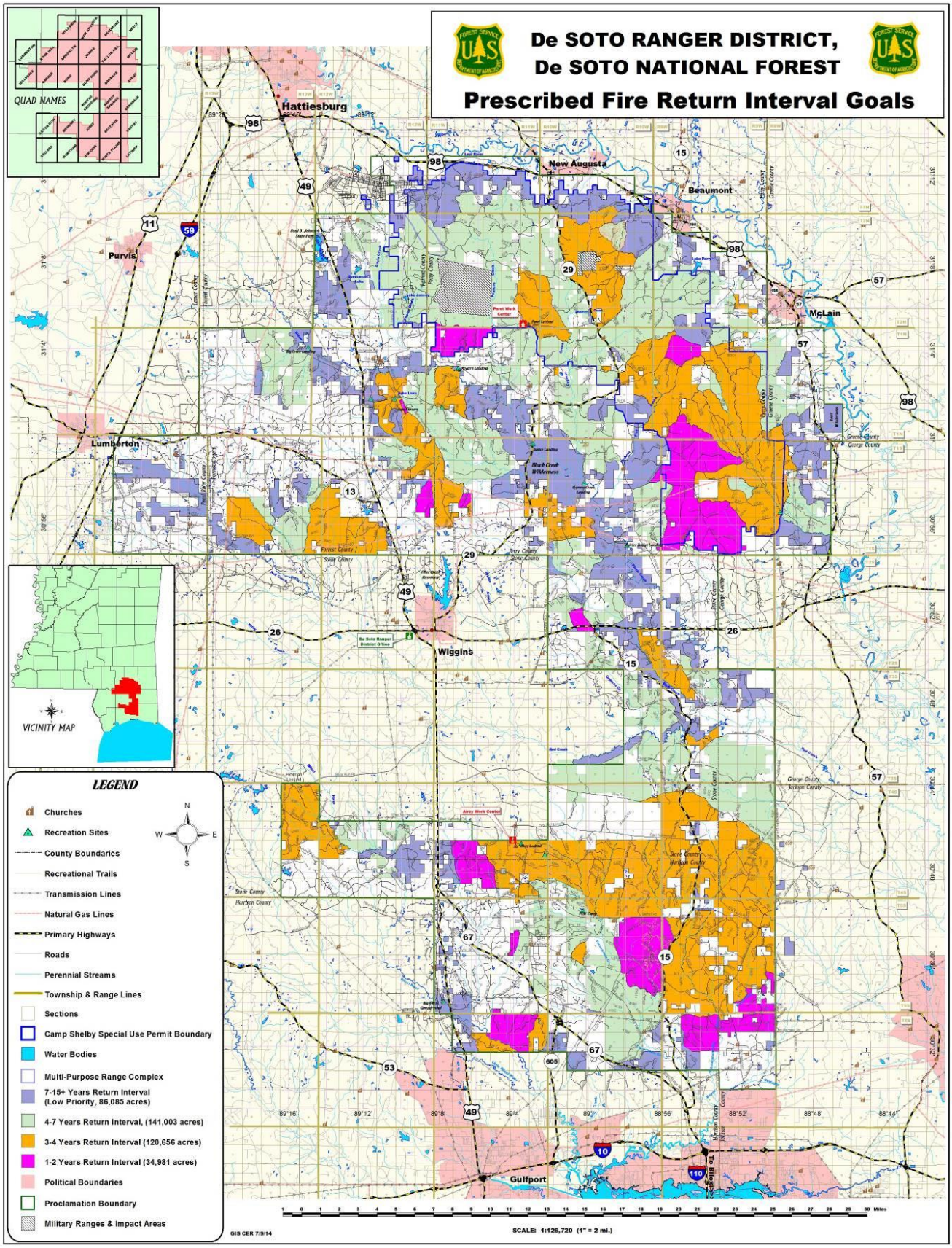
3) **<u>Orange - High Priority, 3-4 Year Return Interval</u>**
   a. **The remaining parts of RCW HMAs and priority soils areas**
   b. **Some selected longleaf dominated areas of the district that have been well maintained, and should continue to be maintained by fire.**
   c. **Some critical longleaf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

4) **<u>Green - Moderate Priority, 4-7 Year Return Interval</u> - are everything else.**

The following table and map utilizes 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+	80,500	15+	
GREEN	MODERATE	4 - 7	107,000	6	18,000
ORANGE	HIGH	3 - 4	94,500	3	31,500
MAGENTA	VERY HIGH	1 – 2	30,500	2	15,500
		TOTALS	312,500		65,000


De SOTO RANGER DISTRICT,
De SOTO NATIONAL FOREST
Prescribed Fire Return Interval Goals
QUAD NAMES
VICINITY MAP
LEGEND
Churches
Recreation Sites
County Boundaries
Recreational Trails
Transmission Lines
Natural Gas Lines
Primary Highways
Roads
Perennial Streams
Township & Range Lines
Sections
Camp Shelby Special Use Permit Boundary
Water Bodies
Multi-Purpose Range Complex
7-15+ Years Return Interval (Low Priority, 86,085 acres)
4-7 Years Return Interval, (141,003 acres)
3-4 Years Return Interval (120,656 acres)
1-2 Years Return Interval (34,981 acres)
Political Boundaries
Proclamation Boundary
Military Ranges & Impact Areas
GIS CER 7/9/14
SCALE: 1:126,720 (1" = 2 mi.)
Hattiesburg
New Augusta
Beaumont
Purvis
McLain
Lumberton
Wiggins
Gulfport
Black Creek Wilderness
De Soto Ranger District Office
Army Work Center
Forest County
Perry County
Stone County
George County
Harrison County
Jackson County
Green County

- **Please tell us whether these treatments were in "high or very high wildfire hazard area** from the "wildfire hazard potential map" (FireLab Link)

  All of the treatments were in HIGH Wildfire Hazard Areas.

  - Were the treatments in **proximity to a highly valued resource** like a community, a WUI area, communications site, campground, etc.?

    All of the treatments were in proximity to WUI areas, and communities. Many of the treatments were near communication sites, power and transmission lines, gas pipelines, campgrounds, and other recreation sites.

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

  Treatment prioritization – see above.

  Scale and cost reduction – Yearly fixed costs for district fuels planning and operations, including all salary and equipment, are around $1,500,000. Variable costs average around $4.50 per acre.

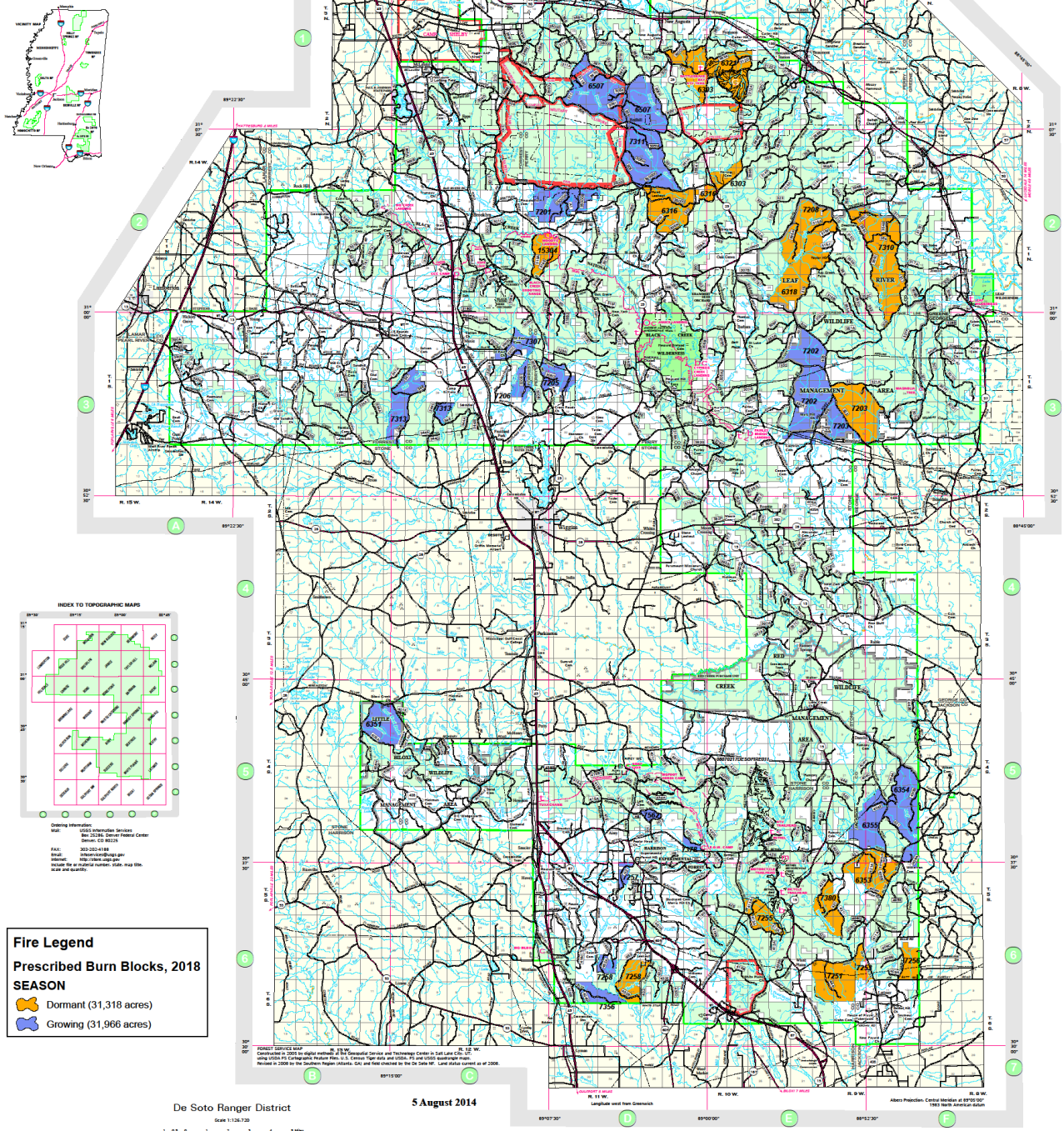
  Total fuels treatment costs per acre are drastically reduced by economy of scale.

  - **10,000 ac., $156 / ac.**
  - **30,000 ac., $59 / ac.**
  - **50,000 ac., $38 / ac.**
  - **70,000 ac., $28 / ac.**
  - **90,000 ac., $24 / ac.**
  - **130,000 ac., $20 / ac.**

Please provide visuals if available, including maps of the landscape and hazardous fuels treatments completed, before and after photos, and/or graphics from fire regime restoration analysis completed locally. You may copy and paste these below or provide a link to a website with these visuals.

Please see FY 2018 prescribed Fire Treatment Map below.

Prescribed Burn Blocks, FY2018



MAP SYM	MAP LOC	SITE NAME	FACILITIES AND ACTIVITIES
C	D-5	AIREY LAKE	cPRZ*,
P	D-2	ASHE LAKE	PRZ*$
<	E-5	BETHEL	<, tP
C	D-6	BIG BLOX	cg, FPRBZ*, $
■	B-2	BIG CREEK LANDING	", YPR*,
<	D-5	BIG FOOT HORSE CAMP	<,\PR,
<	D-2	BLACK CREEK SHOOTING RANGE	'
C	D-3	CYPRESS CREEK LANDING	cPRZ", Y*$
<	E-3	FAIRLEY BRIDGE LANDING	<PR", Y*
C	D-3	JANOE LANDING	cPRZOY*,
C	D-2	MOODY'S LANDING	cPRZ", OY*,
C	D-5	P.O.W. CAMP	cPR*

National forest roads are shown on this map for reference only. Roads actually open for public use are officially designated on the **Motorized Vehicle Use Map** that is available at all Forest Service offices.

Road conditions are subject to change. local inquiry strongly advised.

Note: Many roads through private lands on this map have been omitted because these roads are not under Forest Service jurisdiction.

All trails entering wilderness areas are closed to motorized or mechanized vehicles.

Public lands are subject to changes and leasing. Local inquiry should be made before entering.

Expenditures

Category	**$**
FY2018 Wildfire Preparedness[1]	**$110,000**
FY2018 Wildfire Suppression[2]	**$210,000**
The cost of managing fires for resource benefit if appropriate (i.e. full suppression versus managing)	**No fires were managed for resource benefit**
FY2018 Hazardous Fuels Treatment Costs (CFLN)	$1,000,000
FY2018 Hazardous Fuels Treatment Costs (other BLIs)	$493,000

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.

Wildfire occurrence on the De Soto continues to be below the 10 year average, at 54 fires for 2018. These wildfires burned about 5687 acres of Forest Service lands. Two fires in 2018 were not contained at initial attack but this was due to a contain strategy within surface-use-only areas (UXO present). Although no fires were managed for resource benefits, almost all of the wildfires produced desirable outcomes by reducing fuel loads, and maintaining a longleaf ecosystem, or by changing the ecology more towards a longleaf favorable condition. A typical yearly average for wildfire suppression cost would be around $315,000. In 2018 the suppression costs were down to around $210,000.

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? If so, please summarize or provide links here:

When a wildfire interacts with a previously treated area within the CFLR boundary:

If additional assessments have been completed since the FY2017 CFLRP annual report on fires within the CFLRP area, please note that and provide responses to the questions below.

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.**

[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.

Fuel treatment effectiveness is documented in the IFTDSS FETM database. In FY 2018, eleven wildfires occurred within areas that had received fuels treatments within the previous three years. Fire behavior and/or control of the fires were positively affected on every wildfire that occurred within treatment areas.

Clearly the hazardous fuel reduction work being done within this CFLRP project area is reducing the costs of suppression and making suppression efforts safer for our firefighters and the public.

No BAER was required within the project scope.

- *Please describe if/how partners or community members engaged in the planning or implementation of the relevant fuels treatment.*
  - **Yearly prescribed fire coordination meetings are conducted with the following goals:**
    1. **Review and update the Prescribed Fire Return Interval Goal Map**
       a. **Compare with Ecological Condition Map**
       b. **Compare with 5 year timber and restoration plans.**
       c. **Compare with other priorities; T&E, Military, WUI, Fire Occurrence, etc.**
       d. **Compare with Departure from Desired Return Interval analysis**
    2. **General review of map of district prescribed burn planned areas**
       a. **Compare with all the above.**
       b. **Discuss FY '19 priorities for prep and burning**
       c. **Discuss priorities for growing vs. dormant**
  - **Coordination meetings generally may include; US Fish and Wildlife, MS Department of Wildlife, Fisheries and Parks, and Military representatives.**
  - **In addition many partners and community members were engaged in the Environmental Assessment process for our fuels projects.**
  - **Many contacts are made, through social media, and email, prior to each prescribed burn including; Congressmen, Media, County Fire Coordinators, adjacent landowners, and cooperating agencies**

  - *Did treatments include coordinated efforts on other federal, tribal, state, private, etc. lands within or adjacent to the CFLR landscape?*
    - **Yes. In FY 2018 five treatments were coordinated efforts with Department of Defense. Two treatments were coordinated with Mississippi Forestry Commission on State lands.**
- *What resource values were you and your partners concerned with protecting or enhancing? Did the treatments help to address these value concerns?*
  - **Values at risk, to protect or enhance - RCW habitat, Dusky Gopher Frog habitat, Gopher Tortoise habitat, Black Pine Snake habitat, birds (some ground nesting) and other wildlife species, Louisiana Quillwort or other sensitive plant species, merchantable timber, pine plantations, Longleaf ecosystem, pitcher plant bog ecosystems, mesic slope ecosystems, Black Creek Wild and Scenic River, seed orchard, Harrison Experimental Forest, minerals and energy production facilities, soil and water values, and heritage resources.**
  - **Yes, treatments enhanced or protected these values.**
- *Did the treatments do what you expected them to do? Did they have the intended effect on fire behavior or outcomes? Please include a brief description.*
  - **Yes. On all wildfires, which interacted with prescribed fire treatments, the fire behavior was: less intense, less erratic, and results were less severe.**

- *What is your key takeaway from this event – what would you have done differently? What elements will you continue to apply in the future?*
    - **All treatments were effective and will continue to be used in the future. Possible methods of treatment to be considered in the future are: roller drum chopping, and hazardous fuel reduction with herbicides or endogenous biocides.**
- *What didn't work as expected, and why? What was learned?*
    - **All treatments were effective.**
- *Please include the costs of the treatments listed in the fuels treatment effectiveness report: how much CFLR/CFLN was spent? How much in other BLI's were spent? If cost estimates are not available, please note and briefly explain.*
    - **Expenditures were not separated between projects but generally large-scale understory prescribed burns cost around $25 per acre.**

When a wildfire occurs within the CFLR landscape on an area planned for treatment but not yet treated:

- Please include:
    - *Acres impacted and severity of impact*
        - **In FY 2018 ten wildfires occurred within areas planned for treatment but not yet treated. These 10 fires impacted 4892 acres. All impacts were positive and similar in effects to the prescribed fire treatments which were planned.**
    - *Brief description of the planned treatment for the area*
        - **Prescribed fire**
    - *Summary of next steps – will the project implement treatments elsewhere? Will they complete an assessment?*
        - **Yes, other treatment areas will be implemented. No additional assessment is necessary.**
    - *Description of collaborative involvement in determining next steps.*
        - **No additional collaborative involvement is necessary.**

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.

- **Contained by IA – 52 fires for 3672 acres.**
- **Not contained by IA – 2 fires for 2015 acres.**

- Include expenses in wildfire preparedness and suppression, where relevant
- Include summary of BAER requests and authorized levels within the project landscape, where relevant

3. **What assumptions were used in generating the numbers and/or percentages you plugged into the TREAT tool**? Information about Treatment for Restoration Economic Analysis Tool inputs and assumptions available here.

FY 2018 Jobs Supported/Maintained (FY18 CFLR/CFLN/ WO carryover funding):

Copy/paste the totals from TREAT spreadsheet provided for each project from USFS EMC Economics Team:

FY 2018 Jobs Supported/Maintained	Jobs (Full and Part-Time) (Direct)	Jobs (Full and Part-Time) (Total)	Labor Income (Direct)	Labor Income (Total)
Timber harvesting component	**12**	**18**	649,606	811,854

FY 2018 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	**8**	**10**	79,349	146,804
Mill processing component	**21**	**93**	1,418,453	4,265,570
Implementation and monitoring	**14**	**55**	1,655,546	1,890,206
Other Project Activities	**0**	**1**	21,200	27,461
TOTALS:	**89**	**176**	3,824,154	7,414,895

FY 2018 Jobs Supported/Maintained (FY18 CFLR/CFLN/ WO carryover and matching funding):

Copy/paste the totals from TREAT spreadsheet provided for each project from USFS EMC Economics Team:

FY 2018 Jobs Supported/Maintained	Jobs (Full and Part-Time) (Direct)	Jobs (Full and Part-Time) (Total)	Labor Income (Direct)	Labor Income (Total)
Timber harvesting component	**12**	**18**	**649,606**	**811,854**
Forest and watershed restoration component	**15**	**19**	**155,322**	**287,361**
Mill processing component	**21**	**93**	**1,418,453**	**4,265,570**
Implementation and monitoring	**54**	**65**	**2,287,519**	**2,611,755**
Other Project Activities	**1**	**1**	**41,497**	**53,753**
TOTALS:	**103**	**196**	**4,552,397**	**8,030,295**

4. **Describe other community benefits achieved and the methods used to gather information about these benefits**. **How has CFLR and related activities benefitted your community from a social and/or economic standpoint?** (Please limit answer to two pages).

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

Contract Information

Of the $2.75 million appropriated to De Soto Ranger District for high priority accelerated ecosystem restoration, *over $1.3 million* went to job creation and the private sector workforce. The jobs created or maintained by the project in FY 2018 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 De Soto Ranger District utilized for high priority accelerated ecosystem restoration implementation. Also, approximately $300,000 went to private sector business for supplies to carry out the program (Fire ignition spheres, Tracer Paint, Forestry Suppliers, local businesses, Juniper Systems, Landmark Spatial, etc.)

Contract Description	Funding Obligated or Spent in FY 2018	Contractor Location
Louisiana Quillwort Surveys	**$20,000**	**Mississippi**
Silvicultural Contract Layout and Inspection	**$75,000**	**Mississippi**
Timber Sale Preparation	**$39,315**	**Mississippi**
Release of LL seedlings	**$116,400**	**Mississippi**
Mechanical Site Prep (for planting LL Pine)	**$61,320**	**Mississippi**

Contract Description	Funding Obligated or Spent in FY 2018	Contractor Location
Tree Planting (Longleaf Pine)	**$61,560**	**Arkansas**
Botanical, NNIS, T&E Surveys	**$118,325**	**Mississippi**
NNIS Treatments (cogon grass)	**$29,920**	**Mississippi**
Landline Maintenance	**$110,000**	**Mississippi**
Road Maintenance	**$330,193**	**Mississippi**
Trail Maintenance	**$59,080**	**Mississippi**
Helicopter for Prescribed Burning	**$62,900**	**Georgia**
RCW Cluster Maintenance (LL Alliance)	**$20,000**	**Alabama**
Challenge Cost Share Agreements (Universities)	**$59,088**	**Mississippi**
Heritage Surveys (University of South Alabama)	**$300,000**	**Alabama**
Total Contracts & Agreements	**$1,463,101**	

Jobs include tree harvesting, tree planting, heavy machinery operation, timber sale layout, timber cruising, and survey work in preparation for treatments. 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. Students and professors are working on monitoring and research projects that support CFLRP and high priority accelerated ecosystem restoration activities as well as conducting survey work to support treatments. This work serves as on the job training for students and provides them with valuable technical skills in addition to some income. These agreements totaled $56,000 for FY18.

The De Soto Ranger District also continued a Challenge Cost Share Agreement with the Longleaf Alliance (LLA). The Forest Service paid $1,652 for four weeks of housing and $20,000 for 72 person days of work from the LLA Ecosystem Support Team. The LLA provided $10,000 match worth of products and services to the District. The LLA Ecosystem Support Team performs work to accelerated longleaf pine ecosystem restoration activities on the De Soto such as RCW cluster maintenance, RCW translocation, and T&E surveys prior to timber sales.

The Land Trust for the Mississippi Coastal Plain amended its Collection Agreement with the De Soto Ranger District to pay the Forest Service $6,425 to burn 257 acres of Forest Service property within Designated Critical Habitat for the dusky gopher frog. This project is in collaboration with the management of adjoining property owned by The Land Trust for the Mississippi Coastal Plain and also managed for the dusky gopher frog. Weather conditions prevented the prescribed burn in previous years, but the burn was completed in FY18.

Local Markets

Approximately 140,403 tons of green wood was sold to local in markets in FY 2018.

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 Americorp, Gulf Corps, Jobs Corps, and Veterans in fire Programs, to train Vets and students, provide job opportunities, etc.	
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 EA for Longleaf Pine Ecosystem Restoration and Hazardous Fuels Reduction. This EA authorizes most of our CFLRP and high priority accelerated ecosystem restoration activities. Many of the same collaborators were involved in the CFLRP proposal process. Accountability is essential to continue to do the work on the landscape. 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 formal 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. 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. 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 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? **AND**
- 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 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. CFLRP and high priority accelerated ecosystem restoration activities in the form of prescribed burning, NNIS eradication, thinning, longleaf re-establishment, native herbaceous understory seed collection, and more occur on these special use permit areas of the Forest.

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 cogongrass 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. This is valuable information for assessing effects of various treatments on a large portion of our landscape.

In FY 18, De Soto Ranger District worked collaboratively with the TNC to treat cogongrass in high priority T&E habitat, specifically in longleaf pine savannas with high concentrations of the federally threatened gopher tortoise as well as areas of high use military training on Camp Shelby Training Site. Approximately 70 acres of cogongrass are being treated with FY18 funds via contract in areas surveyed and mapped by the Nature Conservancy. In addition, TNC mapped and treated 54 acres of cogongrass. The TNC will also help with monitoring of treatment effectiveness in these important areas.

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. 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%253Ddendrochronology%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 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, 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 De Soto Ranger District. This type of expertise is beneficial to have on our Forest.

- What are the current weaknesses or shortcomings of the monitoring process? (Please limit answer to one page. Include a link to your monitoring plan if it is available).

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.

Please provide a link to your most up-to-date multi-party monitoring plan and any available monitoring results from FY18.

In Process.

6. FY 2018 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	648	$125,712
Acres of forest vegetation improved FOR-VEG-IMP	Acres	328	$37,350
Manage noxious weeds and invasive plants INVPLT-NXWD-FED-AC	Acre	175	$59,500
Highest priority acres treated for invasive terrestrial and aquatic species on NFS lands	Acres	6253	$937,950

Performance Measure	Unit of measure	Total Units Accomplished	Total Treatment Cost ($) *(Contract Costs)*
INVSPE-TERR-FED-AC			
Acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions. S&W-RSRC-IMP	Acres		
Acres of lake habitat restored or enhanced HBT-ENH-LAK	Acres		
Miles of stream habitat restored or enhanced HBT-ENH-STRM	Miles		
Acres of terrestrial habitat restored or enhanced HBT-ENH-TERR	Acres	71,501	$2,145,030
Acres of rangeland vegetation improved RG-VEG-IMP	Acres		
Miles of high clearance system roads receiving maintenance RD-HC-MAIN	Miles	194	$198,116
Miles of passenger car system roads receiving maintenance RD-PC-MAINT	Miles	125	$132,077
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		
Miles of system trail improved to standard TL-IMP-STD	Miles		
Miles of property line marked/maintained to standard LND-BL-MRK-MAINT	Miles	100*	$92,500
Acres of forestlands treated using timber sales TMBR-SALES-TRT-AC	Acres	1916* (71 reported in gPAS)	$182,020
Volume of Timber Harvested TMBR-VOL-HVST	CCF	15,609*	$143,700
Volume of timber sold TMBR-VOL-SLD	CCF	40,182	$803,640
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		

Performance Measure	Unit of measure	Total Units Accomplished	Total Treatment Cost ($) *(Contract Costs)*
Acres of wildland/urban interface (WUI) high priority hazardous fuels treated to reduce the risk of catastrophic wildland fire FP-FUELS-WUI	Acres	63,960	$1,916,670
Acres mitigated FP-FUELS-ALL-MIT-NFS	Acres		
Please also include the acres of prescribed fire accomplished	Acres		
Number of priority acres treated annually for invasive species on Federal lands SP-INVSPE-FED-AC	Acres		
Number of priority acres treated annually for native pests on Federal lands SP-NATIVE-FED-AC	Acres		

Units accomplished should match the accomplishments recorded in the Databases of Record.

*Accomplished but not reported in gPAS

BL-MRK-MAINT – 100 miles of Boundary lines were actually maintained but not reported in the Data Base of Record. The staff officer position responsible for putting that accomplishment in work plan was vacant at the time.

TMBR-SALES-TRT-AC – there were 1916 acres actually treated with timber sales, not sure where the difference is in gPAS.

TMBR-VOL-HVST – when I ran the report from the CWD back in late October, 15,609 CCF is the value it gave me.

7. **FY 2018 accomplishment narrative** – Summarize key accomplishments and evaluate project progress *not already described elsewhere* in this report. (Please limit answer to three pages.)

The District has also not received full matching funds through the life of the project (deficit of approximately $4 million), but we do the best we can do with what we have to work with. Despite these challenges, the accomplishments are adding up.

What we are most proud of is the ability to work together and the ability to do good work on the land. De Soto Ranger District personnel work very well across disciplines and strive for integrated target accomplishments. The absence of much needed positions requires employees to stretch into other areas to work toward our goals. The integration of hazardous fuel reduction and wildlife habitat improvement into our ecosystem restoration framework is a great example of getting more bang for the buck. Another by-product of that type of integration is a safer WUI areas and less danger for wildland firefighters. In another practical example, integration occurs via treatment of NNIS plants such as cogongrass, an extremely volatile fuel. Treating this NNIS reduces hazardous fuels, improves wildlife habitat, provides for increased forest health, and improves safety across the Forest and surrounding landscape.

This was our sixth year utilizing high priority accelerated ecosystem restoration funding. We accomplished work on much of our landscape and look forward to continuing high priority accelerated ecosystem restoration. The numbers speak well of where we are and where we are going.

The District also conducted 30 significant outreach activities during FY18. About half of these outreach events were tied specifically to communicating about the CFLR, sharing successes and challenges, as well as gathering additional input from collaborators.

8. **The WO (EDW) will use spatial data provided in the databases of record to estimate a treatment footprint for your review and verification**.

- **If the estimate is consistent and accurate**, please confirm that below and skip this question.
- **If the gPAS spatial information does NOT appear accurate**, describe the total acres treated in the course of the CFLR project below (cumulative footprint acres; not a cumulative total of performance accomplishments). What was the total number of acres treated?

Fiscal Year	Footprint of Acres Treated (without counting an acre of treatment on the land in more than one treatment category)
FY 2018	71,501 acres
Estimated Cumulative Footprint of Acres (2010 or 2012 through 2018)	FY 2012 – 109,746 acres FY 2013 – 120,276 acres FY 2014 – 96,890 acres FY 2015 – 58,727 acres FY 2016 – 56,065 acres FY 2017 – 37,683 acres Total (w/FY 18) 550,888 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?

9. **Describe any reasons that the FY 2018 annual report does not reflect your project proposal, previously reported planned accomplishments, or work plan.** Did you face any unexpected challenges this year that caused you to change what was outlined in your proposal? (Please limit answer to two pages). N/A

10. Planned FY 2019 Accomplishments

Performance Measure Code	Unit of measure	Work Plan 2019	Planned Accomplishment For 2019	Amount ($)
Acres of forest vegetation established FOR-VEG-EST	Acres	653	653	$126,682
Manage noxious weeds and invasive plants INVPLT-NXWD-FED-AC	Acre	130	130	$44,200
Miles of stream habitat restored or enhanced HBT-ENH-STRM	Miles			
Acres of terrestrial habitat restored or enhanced HBT-ENH-TERR	Acres	70,527	70,527	$2,115,810

Performance Measure Code	Unit of measure	Work Plan 2019	Planned Accomplishment For 2019	Amount ($)
Miles of road decommissioned RD-DECOM	Miles			
Miles of passenger car system roads improved RD-PC-IMP	Miles	200	200	$167,200
Miles of high clearance system road improved RD-HC-IMP	Miles	125	125	$104,500
Volume of timber sold TMBR-VOL-SLD	CCF	41,525	41,525	$830,500
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	65,000	65,000	$1,950,000

Please include all relevant planned accomplishments, assuming that funding specified in the CFLRP project proposal for FY 2019 is available. Use actual planned funding if quantity is less than specified in CFLRP project work plan.

11. **Planned accomplishment narrative and justification if planned FY 2019 accomplishments and/or funding differs from CFLRP project work plan** (no more than 1 page): If do want to compare lifetime goals to date, link here.

12. **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.

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

Signatures:

Recommended by (Project Coordinator(s)):_____

Approved by (Forest Supervisor(s)): 

Draft reviewed by (collaborative chair or representative): _____