CFLR Project (Name/Number): Grandfather Restoration Project, 019

National Forest(s): National Forests of North Carolina, Pisgah National Forest

1. CFLRP Expenditures, Match, and Leveraged Funds:

a. FY20 CFLN and Matching Funds Documentation

Fund Source – (CFLN Funds Expended)	Total Funds Expended in Fiscal Year 2020
CFLN20	$262,609

This amount should match the amount of CFLN dollars obligated 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 – (FS Matching Funds)	Total Funds Expended in Fiscal Year 2020
CMRD	$8,273
CMTL	$99,357
NFHF	$79,125[1]
NFTM	$79,399
NFVW	$17,047
NFWF	$38,131
RTRT	$43,759
SPFH	$10,620
TOTAL	**$375,711**

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) listed below. Per the updated Program Funding Guidance, federal dollars spent on non-NFS lands (for example, through Wyden authority) may be included here if aligned with CFLRP proposal implementation within the CFLRP landscape. NOTE: In FY20, projects received their allocation only in CFLN – there are no "Washington Office funds" to report.

[1] This amount does not show in the FMMI CFLRP expenditure report; however it was obtained through the transaction record.

Fund Source – Partner Match	In-Kind Contribution or Funding Provided?	Total Estimated Funds/Value for FY20	Description of CFLRP implementation or monitoring activity	Where activity/item is located or impacted area
Trout Unlimited	☒ **In-kind contribution** ☐ **Funding**	**$3,019**	**Data collection on stream barrier crossings and sources of sedimentation**	☒ **National Forest System Lands** ☐ **Other lands within CFLRP landscape:**
Wild South	☒ **In-kind contribution** ☐ **Funding**	**$149,192**	**Volunteer coordination, non-profit boards, partnerships, wilderness trail maintenance and construction**	☒ **National Forest System Lands** ☐ **Other lands within CFLRP landscape:**

Fund Source – Partner Match	In-Kind Contribution or Funding Provided?	Total Estimated Funds/Value for FY20	Description of CFLRP implementation or monitoring activity	Where activity/item is located or impacted area
The Nature Conservancy	IZ In-kind contribution ☐ Funding	$4,783	Prescribed burn implementation, data collection, Fire Adapted Community work	IZ National Forest System Lands IZ Other lands within CFLRP landscape:
Backcountry Horsemen of the Blue Ridge	IZ In-kind contribution ☐ Funding	$12,076	Patrols, data analysis, developed and dispersed resource maintenance and improvement, and trail maintenance	IZ National Forest System Lands ☐ Other lands within CFLRP landscape:
Western Carolina University	IZ In-kind contribution ☐ Funding	$2,238	Monitoring	IZ National Forest System Lands ☐ Other lands within CFLRP landscape:
MountainTrue	IZ In-kind contribution ☐ Funding	$2,651	Monitoring, invasive species	IZ National Forest System Lands ☐ Other lands within CFLRP landscape:
A Clean Wilson Creek	IZ In-kind contribution ☐ Funding	$7,208	Developed and dispersed resource maintenance and improvement	IZ National Forest System Lands ☐ Other lands within CFLRP landscape:
Northwest NC Mountain Bike Alliance	IZ In-kind contribution ☐ Funding	$12,430	Trail maintenance	IZ National Forest System Lands ☐ Other lands within CFLRP landscape:
Carolina Climbers Coalition	IZ In-kind contribution ☐ Funding	$34,680	Education and outreach, monitoring, data management and analysis, rehabilitation and restoration, trail maintenance	IZ National Forest System Lands ☐ Other lands within CFLRP landscape:

Fund Source – Partner Match	In-Kind Contribution or Funding Provided?	Total Estimated Funds/Value for FY20	Description of CFLRP implementation or monitoring activity	Where activity/item is located or impacted area
Altapass History and Archaeology	IZ In-kind contribution ☐ Funding	**$571**	**Education and Outreach**	IZ National Forest System Lands ☐ Other lands within CFLRP landscape:
North Carolina Forest Service	IZ In-kind contribution ☐ Funding	**$6,000**	**Prescribed burn line preparation and implementation**	IZ National Forest System Lands ☐ Other lands within CFLRP landscape:
North Carolina Wildlife Resources Commission	IZ In-kind contribution ☐ Funding	**$20,798**	**Habitat Maintenance/ Improvement, NNIS treatment**	IZ National Forest System Lands ☐ Other lands within CFLRP landscape:
Other volunteers	IZ In-kind contribution ☐ Funding	**$36,123**	**Trail maintenance, monitoring**	IZ National Forest System Lands ☐ Other lands within CFLRP landscape:
Mountain Valleys RC&D	IZ In-kind contribution ☐ Funding	**$218,350**	**Limekiln Creek restoration project; engineering, construction, and planting**	☐ National Forest System Lands IZ Other lands within CFLRP landscape: Marion, NC. McDowell County
North Carolina State Parks	IZ In-kind contribution ☐ Funding	**$7,688**	**Prescribed burn implementation**	☐ National Forest System Lands IZ Other lands within CFLRP landscape: Lake James State Park McDowell County
Total	IZ In-kind contribution ☐ Funding	**$517,807**		IZ National Forest System Lands IZ Other lands within CFLRP landscape:

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

Service work accomplishment through goods-for services funding within a stewardship contract (for contracts awarded in FY20)	**Totals**
Total revised non-monetary credit limit for contracts awarded in FY20	$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" 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. Information for contracts awarded prior to FY20 were captured in previous annual reports. 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. ***(If needed)*** **Describe additional leveraged funds in your landscape in FY2020**. Leveraged funds refer to funds or in-kind services that help the project achieve proposed objectives but do not meet match qualifications. *NOTE: Work on non-National Forest System lands previously reported in this section should now be reported under Partner Match.* Additional leverage might include investments in restoration equipment, research (not monitoring), and planning funds.

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***.

To date, the Grandfather CFLRP project has made significant progress in restoring fire-adapted ecosystems. Since 2012, over 15,000 unique acres on the landscape have been treated with prescribed fire and numerous acres have been burned multiple times either through prescribed fire or wildfire occurrences within the footprint of the Grandfather Restoration Project (see attached image on page 6). Treatments that have been implemented since the initiation of the Grandfather Restoration Project (including mechanical, fire, and habitat enhancement practices) are making progress towards realizing forestland conditions that support natural fire regimes where applicable and increase the manageability of future fires. A brief recap of yearly fire progress since 2015 is as follows:

2015: FY2015 saw 30 wildfires within the project area, totaling 2,935 acres (26 were human caused). The human-caused wildfires (which mainly originated on non-FS lands) were immediately suppressed, while 3 of the 4 lightning-caused wildfires were managed for resource benefit using a "confine and contain" strategy (Blue Gravel- 521ac, Wolf Creek- 305ac, and Bald Knob- 1,200ac). Within established fire lines, these fires could grow gradually and consume fuels, reducing residual fuels and lessening the risk of a severe fire in the area in the future. This strategy was successful in part because prior fuels reduction treatments or fires had occurred in close proximity. Additionally, in FY2015 we reported 7,497 acres of treated fuels (inclusive of prescribed fire) in the annual accomplishments.

2016: FY2016 had a less active than average fire season. The first fire didn't occur until mid-March, beginning a short period of fire activity. In all, there were 12 wildfires (11 human-caused) covering 1,074 acres. The Upper Creek Fire (169 acres) was the only lightning-caused fire of the fiscal year and was managed for resource benefit. We also recorded 4,063 acres of WUI fuel reduction accomplishments, which includes prescribed burns for the year.

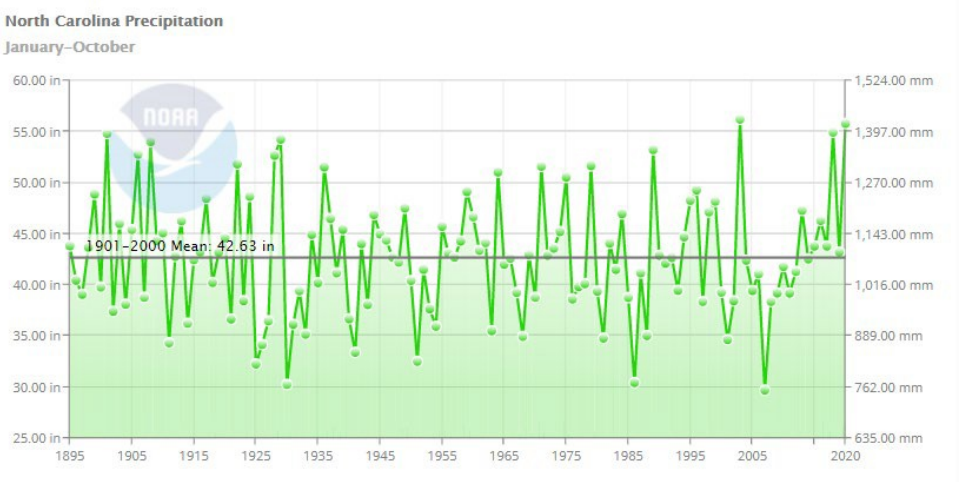
2017: FY2017 was a very active year for wildfires. There were 21 wildfires within the project area for a total of 11,172 acres. Dick's Creek Fire started on October 23rd on the Nantahala Ranger District. By Thanksgiving across Western

North Carolina there were 383 fires covering 63,139 acres. Western North Carolina experienced extreme drought conditions through the fall of 2016, defining new maximums for KDBI. These widespread drought conditions led to significantly higher fire activity. During the intense and widespread outbreak of fires, 4 wildfires escaped initial attack within the CFLR boundary: the Paddy's Creek Fire (8 acres), the Buck Creek Gap Fire (8 acres), the Piney Mountain Fire (56 acres), and the Clear Creek Fire (3,163 acres). The largest and most complex, Clear Creek Fire, threatening 353 homes, was supported by 23 NC state and local departments, 18 neighboring state natural resource departments and 6 federal agencies. Of the four significant wildfires on the Grandfather Ranger District, two fell within prescribed burn units and two fell in previously unburned areas. The areas burned by the Paddy's Creek Fire (Dobson Knob unit burned in 2015) and the Buck Creek Gap Fire (Singecat unit burned in 2014) have both seen prescribed burning under the Grandfather Restoration Project. These areas had established containment lines that allowed managers to move quickly in suppression, and reduced fuel loads that slowed wildfire spread. In FY2017, 906 acres of prescribed fire were recorded in the annual accomplishments.

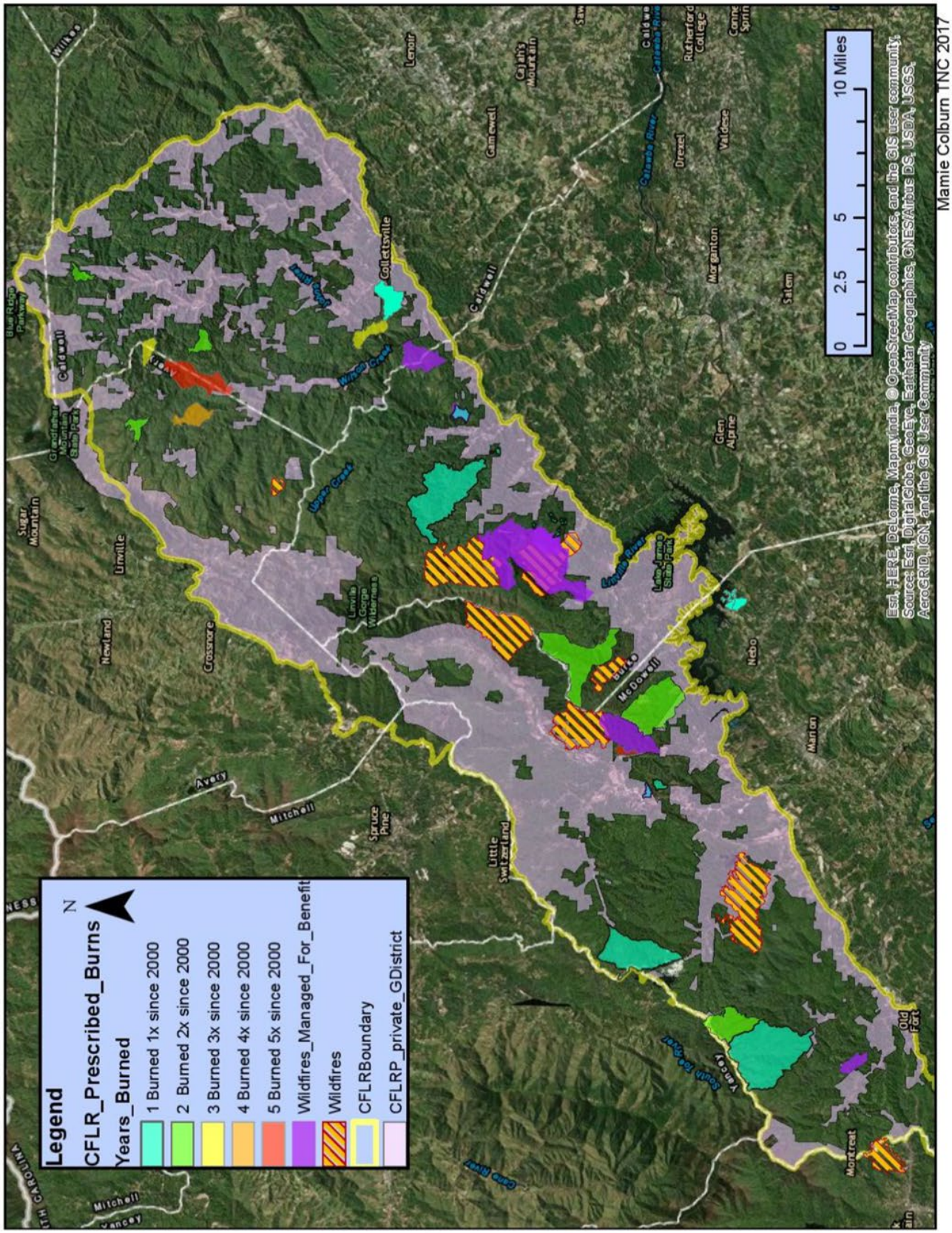
2018: FY2018 had significantly less wildfire than usual due to an excess of wet weather. In all, 9 wildfires ignited in the project area totaling 171 acres. Despite the light year for wildfire, we met targets for prescribed fire, burning 5,000 acres across 2 units.

2019: FY2019 saw the least wildfire of all years in the lifetime of the Grandfather project. There were 6 small wildfires within the project area for a total of 3.9 acres. The FY2019 wildfire season had approximately 22% of the average number of fire starts and < 1% of the average fire acres. All the FY2019 wildfires were human caused, and no fires escaped initial attack. A short write up of a fire that began on April 28, 2019 in the Linville Gorge can be seen here: https://wildsouth.org/fighting-a-wildfire-in-the-linville-gorge/ as reported by Wild South on June 2, 2019.

2020: FY2020 saw similar wildfire activity to FY2019. There were 10 total fires for 15.9 acres in the project area which were all human caused and contained during initial attack.



To date, the Grandfather Restoration Project fuel treatments have been integral to restoring more fire-adapted ecosystems and allowing for the appropriate fire management response to wildfires, leading to more fires being managed for resource benefits while allowing for public and firefighter safety over the life of the project. Fuel treatments along with management of natural ignition wildfires have moved the fire-adapted vegetation closer towards the desired condition of fire resilient landscapes. The Grandfather Restoration Project is reducing risk and helping to create fire adapted communities through FS and partner support. The McDowell Community Wildfire Network is a prime example of that. https://www.mountainvalleysrcd.org/mcdowell-community-wildfire-network


Grandfather CFLR Prescribed Burns
Legend
CFLR_Prescribed_Burns
Years_Burned
1 Burned 1x since 2000
2 Burned 2x since 2000
3 Burned 3x since 2000
4 Burned 4x since 2000
5 Burned 5x since 2000
Wildfires_Managed_For_Benefit
Wildfires
CFLRBoundary
CFLRP_private_GDistrict
N
0 2.5 5 10 Miles
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Mamie Colburn TNC 2017

FY2020 Overview

FY20 Activity Description (Agency performance measures)	**Acres**
Number of acres treated by prescribed fire	1,314
Number of acres treated by mechanical thinning	256
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	1,314
Number of acres mitigated to reduce fire risk	1,510

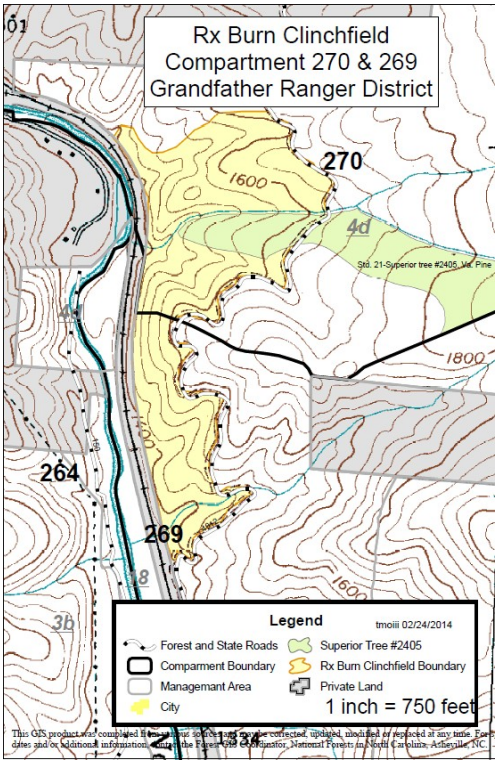
Please provide a narrative overview of treatments completed in FY20, including data on whether your project has expanded the pace and/or scale of treatments over time, and if so, how you've accomplished that – what were the key enabling factors?

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

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.

The Dobson Knob prescribed burn was ignited March 1, 2020. The backing fire crept through the unit for several weeks after the initial ignition. This unit was initially prioritized for treatment after numerous lightning strikes sparked wildfires in the general area through the mid-2000s. Additionally, the eco-math exercise conducted across the District prioritizing burn units ranked Dobson Knob in the lower third of priorities but other values at risk such as WUI, two sets of communication towers, and the adjacent Linville Gorge wilderness increased the priority. The wildfire hazard potential map shows the area as mixed with some moderate and high classification. This burn was started on a Sunday which is a non-traditional burn day in the southern Appalachians. The additional funding from the CFLR project was an enabling factor to bring in needed out-of-area resources to conduct the burn. This unit had originally been burned separately in two blocks with aerial ignition. No aircraft was available so the District chose to "blackline" the entire unit in hopes of returning with aircraft to complete the burn which never occurred due to the COVID-19 shutdown. Adaptability to conditions and commitment of resources were also key enabling factors. Fire practitioners here have gained valuable experience over the lifetime of the CFLR project which is directly reflected in the cost reduction of implementation and the changing structure and composition of the burn units. A green bar paper was developed to share with partners and the public.

The Clinchfield prescribed burn was implemented the following Sunday on March 8, 2020. This burn unit has a long history on the District dating back to the 1940s. The unit lies along the Clinchfield railroad which is operated by CSX. The wildfire hazard potential map shows the area as mixed with some moderate and high classification. This is a relatively small burn and proves that smaller burns aren't always easier to implement. Existing mid-slope control lines prove to be difficult to hold at every entry. As this is an existing burn unit, we are limited to using the lines that are approved. Much discussion has occurred around how it is implemented considering the challenging layout. The diversity of the CFLR partners is a key enabling factor in the extension of knowledge around prescribed burning in the southern Appalachians. We have experimented with different layouts, burning under different conditions at different times of year in different ecozones. Around 90% of our burns occur when a Forest or Regional variance is needed for conditions such as wind speed too high or relative humidity too low. Open communication, willingness to share, commitment to fundamentals, and a desire to try new things has helped this program evolve over the last 10 years.



Expenditures

Category	**$**
FY2020 Wildfire Preparedness[1]	$390,654
FY2020 Wildfire Suppression[2]	$11,456
The cost of managing fires for resource benefit if appropriate (i.e. full suppression versus managing)	n/a
FY2020 Hazardous Fuels Treatment Costs (CFLN)	$13,297
FY2020 Hazardous Fuels Treatment Costs (other BLIs)	$79,125

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.

As of FY20, there have been no formal reviews of suppression costs comparatively between areas treated with prescribed fire and unburned areas within the Grandfather CFLR landscape. Regardless, the 2018 report noted that, "fire managers have demonstrated that the active management as well as the ability to manage unplanned ignitions for resource benefit are reducing both the costs and risks associated

[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.

with fire suppression. These concepts are locally described in 2015 Bald Knob Wildfire Briefing and Fuels Effectiveness Report as well as the fall 2016 Fire Season Briefing."

Many areas within the Grandfather Restoration Project area are categorized as fire-adapted plant communities. The Grandfather Restoration Project has largely focused on restoring fire to its innate role as a natural disturbance in these plant communities while also reducing risk of severe wildfire on private and natural values, such as homes, infrastructure, human safety, water and wildlife. Our work reduces risk in and around the communities that are integrated into the Forest and extends lowered risk outside of the Forest boundary to those in surrounding areas. This work also helps to guard our valuable and dynamic forest systems and the ecosystems services they provide against loss due to significant disturbances.

It is widely acknowledged that firefighter safety is increased in areas that have been treated at least once prior (particularly prescribed fire and/or fuels reduction treatments) because fuel loading is often lessened, and the arrangement of fuels differs. Further, these factors often combine to allow for more aggressive attacks on future fires in the area (should the situation warrant it) due to firefighters having a greater knowledge of the area such as the locations of prior containment lines and values at risk, topography, potential hazards, and adjacent land ownership (facilitating greater collaboration). The work we are conducting on the ground today in the Grandfather Restoration Project footprint should allow for greater firefighter safety and increased management of future wildfires for resource benefit.

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:

No formal assessments of cost reduction or cost avoidance were conducted in FY20 or have been developed in prior years. However, while the following attachments (included in prior year reports) don't explicitly analyze costs, they do express the benefits of having an active prescribed fire treatment program, which creates efficiencies for wildfire management:

Bald Knob Fuel Effectiveness Report: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd482844.pdf

Bald Knob Fire Briefing:
https://www.conservationgateway.org/ConservationPractices/FireLandscapes/FireLearningNetwork/NetworkProducts/Documents/SBR-BaldKnobWildfireBrief-31Aug15.pdf "

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

No significant wildfires occurred within the Grandfather Restoration Project boundary in FY20, and no additional assessments have been completed since the FY2017 CFLRP annual report on fires within the CFLRP area (note: FY18 and FY19 did not have a significant fire within the CFLR boundary either). There were 10 total fires for 15.9 acres in the project area which were all human caused and contained during initial attack.

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.

- 1 FTE for every (approximately) $60,000 in funding from force accounts.
- Proportions of contract funding and force accounts have been fairly consistent over the life of the project.
- Table 3 and 4 were completed by Pisgah Zone TMA.

FY 2020 Jobs Supported/Maintained (CFLN and matching funding):

FY 2020 Jobs Supported/Maintained	Jobs (Full and Part-Time) (Direct)	Jobs (Full and Part-Time) (Total)	Labor Income (Direct)	Labor Income (Total)
Timber harvesting component	1	1	$50,013	$69,958
Forest and watershed restoration component	6	9	$72,352	$201,256
Mill processing component	3	6	$144,751	$276,359
Implementation and monitoring	7	8	$134,081	$162,578
Other Project Activities	0	1	$22,771	$33,101
TOTALS:	17	25	$423,968	$743,252

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).

Indicator	Brief Description of Impacts, Successes, and Challenges
Volunteer participation	The Grandfather Project is fortunate to be located in an area where numerous people value the land and the opportunities and the services it provides and are willing to donate their time for the betterment of the land and those valued resources. In FY2019, volunteers with Wild South, NW NC Mountain Bike Alliance, ACE, A Clean Wilson Creek, Friends of MST, SAWS and Climbers Coalition have collectively contributed over 11,900 hours of volunteer services. These parties have spent numerous hours on trail maintenance and improvements, litter clean up, public education and outreach, graffiti removal, invasive species removal, campsite inventory, and monitoring. Many of the successes recognized by the Grandfather Restoration Project are closely tied to the efforts of these organizations, individuals, and others who volunteer their time and resources on a regular basis.
% Locally retained contracts	A large proportion, if not all, of the timber products harvested in timber sales that are a part of the Grandfather Restoration Project have been sold to and processed in local mills. Selling and processing these products locally contributes income, jobs, and resources directly back to the communities around the project area (see TREAT table 3). Further, contributing products to these businesses helps to support continued forest management in the area which increases landscape diversity and complexity.
Contributions to local recreation/tourism economy.	Recreation is a major component of the multiple uses of the Pisgah National Forest and of the area that makes up the Grandfather Restoration Project CFLR footprint. In the project area and surrounding the project footprint there are active mountain biking, hiking, climbing, and horseback riding enthusiasts that use and help to maintain the wide assortment of available recreation trails as volunteers. Through

Indicator	Brief Description of Impacts, Successes, and Challenges
	internal work (FS) and collaborations with other groups, maintenance and improvements to system trails over the lifetime of this project have increased user satisfaction and contribute to drawing more users into the area. The availability and development of more recreation opportunities also increases revenue to local economies and helps to create jobs. Collectively, the counties where the Grandfather Restoration Project is located have experienced a 43% growth in travel and tourism industries between 1998 and 2016 (Headwaters Economics 2019).
Job training opportunities	The Grandfather Restoration Project CFLRP has afforded the opportunity for numerous people to get on the job training in natural resources work throughout the lifetime of this project including, but not limited to, students, recent graduates, and veterans. In FY20, 1039s helped support the CFLR project's mission by conducting trails improvements, engaging with the public, and supporting the recreation and fire programs. Additionally, one SCA fire and recreation intern (IFRI) gained experience in a multifaceted position for 14 weeks (plus 2 weeks training). During this time, the intern was trained for wildland firefighting, prescribed burning, participated in trail maintenance and worked on the NFsNC COVID-19 working group. Following the completion of the internship, the intern is afforded the ability to apply for merit-based positions, providing a valuable entryway into a career with the US Forest Service.

5. Based on your project monitoring plan, **describe the multiparty monitoring process.** (Please limitanswer to two pages).

Grandfather CFLR Fire Effects Monitoring – 2020 Update, link

The Grandfather Restoration Project Collaborative has a monitoring committee that is open to all participants in the collaborative. The collaborative at large has prioritized monitoring efforts to include forest restoration (focusing on restoration of fire regimes), invasive species treatments, fish and wildlife habitat, watershed, roads, trails, and social and economic impacts. The collaborative continues to follow the monitoring plan enacted in April 2014 when planning monitoring activities. The implementation of monitoring under the Grandfather CFLR focuses on determining the effectiveness of 2 key priorities – (1) prescribed fire treatments and (2) NNIS treatments. Monitoring in these areas is key to adaptive management under the CFLR.

The following monitoring efforts are in place through FY2021:

(1) In FY2015, an agreement was established with Western Carolina University (WCU) to monitor fire effects on vegetation. This agreement uses the vegetation monitoring methodology developed by the Southern Blue Ridge Fire Learning Network (SBRFLN) to monitor fire effects on vegetation. This methodology consists of installing 0.1 acre permanent plots that record all woody vegetation over 4" dbh, measuring sapling density in a nested sapling plot, recording percent cover of shrubs and herbs, and measuring fuels alongthree

transects. The agreement also provides analysis of data to allow for adaptive management in prescribed fire implementation.

Fire effects monitoring has focused on characterizing target conditions for restoring fire adapted ecosystems. A question that often arises in adaptive management is "how many times must we burn on a frequent interval before we reach maintenance phase?" FY2018 monitoring looked deeper into that question, following field observations in FY2017 that necessitated the establishment of additional monitoring plots in burn units in order to better assess the effects of canopy openness. Three categories of openness (open canopy, canopy gaps, and closed canopy) and plots representative of each condition were established. The goal of the monitoring, led by Western North Carolina University, is to characterize a "restored" site and monitor regrowth over time. Of primary concern is the regrowth of *Kalmia sp.* (Mountain Laurel) and *Rhododendron sp.* in the shrub layer, which they are collecting data on through measurements of stem density and crown characteristics using a point-quarter sampling procedure (SBRFLN). Once this data is amassed and analyzed, the results will give insight into re-growth rates of target species to determine if the number of burns affected sprouting vigor.

Also in FY2018, Western Carolina University improved the monitoring of herbaceous species where they performed detailed botanical inventories in 5 plots representing each canopy class. A complete botanical census was performed for a 10m x 10m square within each plot using protocols adapted from the Carolina Vegetation Survey and for wildlife activity where they used paired cameras at 2 points within each canopy class and an additional 2 points located outside of the burn unit.

In FY2019, data was collected as in years past on all permanent plots, where overstory, tree and shrub regeneration, herbaceous sampling, and fuels transect measurements were conducted. Monitoring efforts in FY2019, initiated a stronger effort to quantify canopy openness using spherical densitometer readings at each monitoring plot in the Wilson Creek burn unit and in a selected sample of plots on the Lake James burn unit.

The Blue Gravel burn unit was monitored for the first time in FY2019. Like the Wilson Creek burn unit (see 2018 report), Blue Gravel has been burned multiple times in the past several decades, and at least some portions of this burn unit are approaching a desired condition. In 2019, WCU established 10 standard fire-effects monitoring plots in the Blue Gravel unit to better assess stand conditions in a unit that has been burned multiple times. To supplement those data, they also collected the following:

1. Detailed botanical inventory: conducted detailed botanical inventories in all plots to provide more comprehensive data on species composition and assess the presence of fire adapted species.
2. Mountain laurel sprouting vigor: measured mountain laurel density and crown characteristics in all plots using the point-quarter sampling procedure.
3. Canopy openness: measured canopy openness with a spherical densitometer at all plots.

Data analysis for fire effects is still ongoing, so no conclusive results are yet available. Still WCU is seeing trends in the data that suggest that prescribed fire is creating a mosaic of forest conditions in burn units, reducing overstory density by increased mortality in smaller diameter stems, mortality in larger stems rising after multiple burns, regeneration density increases following burns, mountain laurel is readily top-killed by fire but resprouts vigorously, and litter and duff appear to be reduced. Further, WNC is noticing relationships between canopy openness and percent bare ground (lower where canopy is open), cover of grasses (higher where canopy is open), herbs (higher), and, although resprouted, mountain laurel height and cover is lower in all burned areas versus unburned areas regardless of canopy openness.

The 2019 botanical assessment found that total herb layer cover differed significantly between the canopy openness classes, with burned/open and burned/gap conditions having the greatest total cover. Relative cover of fire-adapted herbs also differed significantly, and the burned/open canopy class had greatest relative cover of fire-adapted species of the four condition classes. Relative cover of fire-intolerant species also differed significantly with the burned/closed and unburned classes having the greatest relative cover of fire-intolerant species

(2) In FY2015, an agreement was established with MountainTrue, a local non-profit organization, to monitor invasive plant species occurrence and treatment effectiveness. The agreement focuses on high priority areas identified as part of the CFLR. This agreement provides survey assistance in identifying new treatment areas as well as look at the effectiveness of existing treatments. Monitoring efforts allow specialists to test a variety of treatment methods to determine the most effective way to treat invasive plant species.

MountainTrue monitors invasive species in high priority areas across the district. One key target species to monitor is Japanese knotweed, which can be particularly aggressive along stream corridors within the Southern Appalachians. Within the Grandfather CFLR, chemical treatments have been implemented along a 3-mile stretch of the Wilson Creek Wild and Scenic River. Previous annual or semiannual treatments have been marginally successful. For the past three years, more frequent treatments combined with including a mix of herbicides have been implemented and appear to be more effective than using the single herbicide (Triclopyr 3a) alone as we had used in years prior (see 2018 report for most recent monitoring results).

In FY2019, MountainTrue monitored Japanese Knotweed (*Reynoutria japonica*) populations in Wilson Creek and on the Pritchett property and monitored multiple non-native, invasive species on the North Fork of the Catawba River. The results of these monitoring data are still being analyzed. MountainTrue also mapped 50 acres of invasive plant occurrences within the Lover's Branch Restoration Area in 2019. These newly mapped invasive species will be targeted for treatment in upcoming phases of the restoration project.

6. FY 2020 Agency performance measure accomplishments:

Performance Measure	Unit of measure	Total Units Accomplished	Total Treatment Cost ($) *(Contract Costs)*[3]
Acres of forest vegetation established FOR-VEG-EST	Acres	71	$17,093
Acres of forest vegetation improved FOR-VEG-IMP	Acres	256	$61,610

[3] Please include the costs associated with a contract to complete acres reported, if this level of detail is available, including partner funds

Performance Measure	Unit of measure	Total Units Accomplished	Total Treatment Cost ($) *(Contract Costs)*[3]
Manage noxious weeds and invasive plants INVPLT-NXWD-FED-AC	Acre	254	$9,651
Acres of terrestrial habitat restored or enhanced HBT-ENH-TERR	Acres	342	n/a
Miles of high clearance system road improved RD-HC-IMP	Miles	22[1]	$28,671
Miles of passenger car system roads receiving maintenance RD-PC-MAINT	Miles	66[1]	$86,105
Number of stream crossings constructed or reconstructed to provide for aquatic organism passage STRM-CROS-MTG-STD	Number	3[1]	$36,422
Miles of system trail maintained to standard TL-MAINT-STD	Miles	211.3	n/a
Miles of system trail improved to standard TL-IMP-STD	Miles	4.4	n/a
Miles of property line marked/maintained to standard LND-BL-MRK-MAINT	Miles	8	n/a
Acres of forestlands treated using timber sales TMBR-SALES-TRT-AC	Acres	119[1]	n/a
Volume of Timber Harvested TMBR-VOL-HVST	CCF	2325[1]	n/a
Volume of timber sold TMBR-VOL-SLD	CCF	52.97	n/a
Acres of hazardous fuels treated outside the wildland/urban interface (WUI) to reduce the risk of catastrophic wildland fire FP-FUELS-NON-WUI	Acre	0	n/a
Acres of wildland/urban interface (WUI) high priority hazardous fuels treated to reduce the risk of catastrophic wildland fire FP-FUELS-WUI	Acres	1314	n/a
Acres mitigated FP-FUELS-ALL-MIT-NFS	Acres	1510	$23,520
Please also include the acres of prescribed fire accomplished	Acres	1314	n/a

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

1. Not reported in database of record

7. FY 2020 accomplishment narrative – Summarize key accomplishments and evaluate project progress *not already described elsewhere* in this report. What impact, if any, has Shared Stewardship in your region had on your CFLRP work? (This could be from an Shared Stewardship MOU or the general emphasis in your region on working cross-boundary on shared priorities at the scale needed to have your desired impact). (Please limit answer to two pages).

A sub-set of partners has established itself as the McDowell Community Wildfire Network to implement on the ground wildfire hazard mitigation in McDowell County. This seed was planted in September 2017 when the USFS Community Mitigation Assistance Team (CMAT) was ordered to help us build sustainable local capacity for community wildfire mitigation. (report) This work is cross-boundary mechanical fuels reduction that can provide a margin of safety for firefighters and first responders in the event of a wildfire and more strategically can lead to prescribed burning in our highest risk areas in McDowell County in the project area. Here is a link to one of the reports from a workday in August.

For high-risk areas, the Network will be able to offer a free wildfire mitigation tool cache, free home and community assessments, and Fire Adapted Community Education.

WILSON CREEK WILD & SCENIC WATERSHED FOCAL AREA

Part of the Grandfather District Cooperative Forest Landscape Restoration Project

Trout Unlimited Contributions for 2018 – 2020

As of 11.20.20

Total Value of Cash and In-Kind Service Contributions to Date Brought by Trout Unlimited to the Wilson Creek Focal Area within the Grandfather CFLRP since 2018 = $363,784.05. This involves community science assessments, fundraising and construction projects.

• Construction underway at Thorps Creek AOP (Mortimer Campground Bridge) and is complete at Thorps Creek Stream Rehabilitation project.

a. Stream Rehabilitation completed under contract with NorthState Environmental from Winston Salem working under supervision of USFS Hydrologist Brady Dodd.
b. Bridge project is in process under contract with TAG Contracting from Old Fort under supervision of USFS Engineers Lynn Difiore and Karl Buckholz and with construction administration services provided by Alpha & Omega engineering group who designed the bridge in 2011.
c. Bridge project original contract end date was December 30, 2020 but due to some unexpected but necessary change orders due to unforeseen circumstances on the project is now expected to be complete in February 2021. The project is approximately $50,000 overbudget.
d. Trout Unlimited is managing the contracts for both of these projects.

• Contract for one section of Marks Mountain Loop Trail Rehabilitation on FSR4062 has been awarded to TerraTek Trails LLC and is expected to move into construction in December 2020 with a contract end date of April 2021.

• Two other sections of Marks Mountain Loop Trail Rehab project (FSR 192 and 451) have not yet been contracted but are expected to proceed to construction in Winter/Spring 2021.
a. Bidding process was undertaken for FSR 192 – also known as the Mountains to Sea Trail. Only one bid was received and it was over 2x the contractor's estimate. Review of the bid indicated that the bidders were way off base on their budget as compared to Trout Unlimited's own research, which gave TU a no-confidence in their understanding and ability to do the project.
b. TU is considering constructing the FS 192 project in-house utilizing Job Corps students from the USDA job corps centers in the region under TU supervision.
c. TAG Contracting was invited to submit a cost proposal on the FSR451 AOP and Landslide Repairs. Their cost far exceeded the USFS engineer's estimate. We are planning to put this project out for bid in winter/spring 2021.

• Coordinated Planning, Development and Hosting of 50th Anniversary Celebration of Wild and Scenic Rivers Act at Wilson Creek Visitor Center on November 3, 2018.
a. Event planned by TU, USFS and 19 Other Partners. In-Kind Value $7,200
b. Event sponsored by 16 organizations. In-Kind & Cash Value of $8,639
c. Attendance of 250+ persons at Event
• Recruited Private Lands AOP Project on John Wilson Property (Rockhouse Creek) and Facilitated Planning, Permitting and Solicitation Process for Engineers and Contractors. Fall 2018.
a. Bridge Construction - $75,707. Paid by Wilson Family
b. Consulting Fees Paid to TU - $3,728. Paid by Wilson Family

• Recruitment, Training and Coordination of Volunteer Citizen Scientists Collecting Fish Passage Barrier Data at Stream Crossings and Sedimentation Data on Roads and Trails. All 2019.
a. Trained 12 persons on sedimentation survey protocol (National Forests in NC, TU & NCWRC)
b. $4,544.09 in-kind value on sedimentation surveys on trails and roads
c. Trained 21 persons on barrier survey protocol (Southeast Aquatic Resources Partnership)
d. $10,006.54 in-kind value on barrier surveys at road-stream crossings
e. NC Wildlife Resources Commission staff support to program = $825 Current Value.
f. Virtually all stream crossings on national forest system lands have been surveyed by TU's community science volunteers
g. Most of the trails in the Wilson Creek watershed have been surveyed by TU's community science volunteers

• Developed Proposals in Support of Thorps Creek Aquatic Organism Passage (Mortimer Campground Bridge Project) and Stream Rehabilitation Project at Mortimer Campground and Road/Trail Remediation Work on Marks Mountain Loop Trail (FS192 – FS4062 - FS451). All 2019. All three were awarded.
a. NC Recreational Trails Program Grant – Asked for $100,000. Awarded $100,000.
b. NC Clean Water Management Trust Fund Grant – Asked for $77,500. Awarded $77,500.
c. US Fish & Wildlife Service – Asked for $69,534. Awarded $69,534.

8. The WO (EDW) will use spatial data provided in the databases of record to **estimate a treatment footprint** for your 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**, 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 2020	2237 acres	
Estimated Cumulative Footprint of Acres (2012-2020)	**60,941 acres*** **Total is cumulative and includes re-entry acres across years*	
	FY12 – 5,622 FY13 – 6,528 FY14 – 5,947 FY15 – 9,837	FY16 – 6,131 FY17 – 9,002 FY18 - 7,114 FY19 - 8,523

9. Describe any reasons that the FY 2020 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).

In FY2020, there were some unforeseen complications that resulted in not reaching prescribed fire targets that had been set for the year. The COVID-19 pandemic resulted in a Region 8 prescribed burning shutdown in March through the end of the dormant season which is when we get the majority of our burning accomplished. We got off to a good start burning on the only two windows that were available. We utilized non-traditional windows by burning on Sundays

which is new to the District. Additionally, the extraordinarily wet conditions persisted through 2020 reducing prescribed burning opportunities outside of the shutdown and the potential for natural ignition wildfires. Fire and militia employees also supported hurricane, wildfire and COVID response locally and nationally as needs were increased during the extended season. The District employees spent 338 people-days on assignment in 2020.

9b. (OPTIONAL) FOR INTERNAL USE:

Shelf stock NEPA decisions for vegetation management and fuels management on Forest Service lands continue to be the largest limiting factor. Recent decisions have demonstrated planning efficiencies; however, work has been hand-to-mouth, implementing immediately after a decision is issued. Greater NEPA efficiencies and dedication of planning funds or regional level planning efforts could help us to focus on implementation.

Partners who are engaged in the Grandfather CFLR collaborative are also heavily involved in Forest Plan Revision, NC wide Strategies, other public lands, private lands and neighboring district activities, which has impacted their time and capacity to engage to their fullest extent on the CFLR. Meanwhile, the CFLR has built trust of how future activities can be implemented and provides a forum and landscape to implement the Draft plan's emphasis on collaboration and transparency.

We would still like the ability to retain receipts in Stewardship Agreements. In FY18 we planned to implement a project as a Stewardship Agreement with the National Wild Turkey Federation. This was a focused project and generated more timber receipts than planned service work within the project area. The flexibility to retain these receipts under an agreement to be used in either another agreement or another project area, similar to the stewardship contracting authorities, would have provided direct match and greater engagement from our partner.

Continuing to staff up and improve contracting and grants agreements support to forests will continue to enable the project to work directly with our partners and contractors to deliver at scale.

10. Planned FY 2021 Accomplishments

Performance Measure Code	**Unit of measure**	**Planned Accomplishment for 2021** (National Forest System)	***Planned Accomplishment on non-NFS lands within the CFLRP landscape***[4]
Acres of forest vegetation established FOR-VEG-EST	Acres	N/A	*unknown*
Manage noxious weeds and invasive plants INVPLT-NXWD-FED-AC	Acre	125	*25*
Miles of stream habitat restored or enhanced HBT-ENH-STRM	Miles	2	*unknown*
Acres of terrestrial habitat restored or enhanced HBT-ENH-TERR	Acres	5,500	*500*
High priority acres treated for invasive terrestrial and aquatic species INVSPE-TERR-FED-AC	Acres	20	*unknown*

[4] As we shift to more emphasis on sharing results across all lands within the CFLRP projects – 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. Give your best estimate at this point; if it's unknown how much work will occur off NFS lands, simply state unknown.

Performance Measure Code	Unit of measure	Planned Accomplishment for 2021 (National Forest System)	*Planned Accomplishment on non-NFS lands within the CFLRP landscape*[4]
Miles of passenger car system roads improved RD-PC-IMP	Miles	25 (combined PC and HC)	*unknown*
Miles of high clearance system road improved RD-HC-IMP	Miles		*unknown*
Volume of timber sold TMBR-VOL-SLD	CCF	8,000	*unknown*
TMBR-SALES-TRT-AC	Acre	390	*unknown*
Acres of hazardous fuels treated outside the wildland/urban interface (WUI) to reduce the risk of catastrophic wildland fire FP-FUELS-NON-WUI	Acre	0	*unknown*
Acres of wildland/urban interface (WUI) high priority hazardous fuels treated to reduce the risk of catastrophic wildland fire FP-FUELS-WUI	Acres	5,500	500

Please include all relevant planned accomplishments, assuming that funding specified in the CFLRP project proposal for FY 2020 is available.

11. Planned accomplishment narrative and justification if planned FY 2021 accomplishments and/or funding differs from CFLRP project work plan (no more than 1 page): N/A

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. No change.

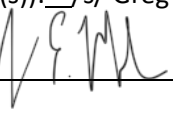
13. Media recap. Please share with us any hyperlinks to videos, newspaper articles, press releases, scholarly works, and photos of your project in the media that you have available. You are welcome to include links or to copy/paste.

Guided virtual hike on Woods Mountain. Part 1 https://www.youtube.com/watch?v=2ti9V7Kkd_A

Guided virtual hike on Woods Mountain. Part 2 https://www.youtube.com/watch?v=4-pMX0ObxAw

Signatures:

Recommended by (Project Coordinator(s)): /s/ Greg Philipp

Approved by (Forest Supervisor(s)): 

Draft reviewed by (collaborative chair or representative):