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

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

1. Match and Leveraged Funds:

a. FY19 Matching Funds Documentation

Fund Source – (CFLN/CFLR Funds Expended)	Total Funds Expended in Fiscal Year 2019
CFLN	$371,298

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 – (FS Matching Funds (please include a new row for each BLI)	Total Funds Expended in Fiscal Year 2019
NFHF	$1,250,547[1]
NFWF	$85,194**
NFTM	$57,837
Total	**$1,393,578***

This amount should match the amount of matching funds 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.

[1] This amount reported in FY19 is the NFHF funding for all North Carolina Forests. The actual amount spent on the Grandfather Restoration CFLRP is $122,453, making the total FY19 (matching funds)*= $265,484. **NFWF not captured in the Agency database of record.

Fund Source – (Funds contributed through agreements)	Total Funds Expended in Fiscal Year 2019
CWFS	$6,000**

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 the WIT database. **CWFS not captured in the Agency database of record.

Fund Source – (Partner In-Kind Contributions)	Total Funds Expended in Fiscal Year 2019
Trout Unlimited	$29,113
Wild South	$229,224
Friends of the Mountains to Sea Trail	$74,712
The Nature Conservancy	$26,011
A Clean Wilson's Creek	$23,856
American Conservation Experience	$18,348
North Carolina Wildlife Resources Commission	$15,199
North Carolina Forest Service	$10,000
Carolina Climbers Coalition	$7,872
Northwest NC Mountain Bike Alliance	$7,320
MountainTrue	$4,340
Western Carolina University	$2,238

Southern Appalachian Wilderness Stewards	$576
Total	**$ 448,809**

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.

b. Please fill in the table describing leveraged funds in your landscape in FY2019. Leveraged funds refer to funds or in-kind services that help the project achieve proposed objectives but do not meet match qualifications. Examples include but are not limited to: investments within landscape on non-NFS lands, investments in restoration equipment, worker training for implementation and monitoring, research conducted that helps project achieve proposed objectives, and purchase of equipment for wood processing that will use restoration by-products from CFLR projects. See "Instructions" document for additional information.

Description of item	Where activity/item is located or impacted area	Estimated total amount	Forest Service or Partner Funds?	Source of funds
Hazard Reduction Prescribed Fire Treatments	**105 acres of state land within CFLR landscape**	**$5,250**	**Partner Funds**	**NC State Parks**
Hazard Reduction Prescribed Fire Treatments	**204 acres of state and private land within CFLR landscape**	**$10,200**	**Partner Funds**	**NC Forest Service**
Aquatic Organism Passage	**One crossing improved private lands within CFLR landscape**	**$79,435**	**Partner Funds**	**Trout Unlimited**

Prescribed Burn Lake James State Park

FY2019 was a below-average year for fire in the CFLR landscape (see write up below) on NFS lands, but partners such as the NC State Parks, NC Forest Service, and NC Wildlife Resources Commission implemented prescribed fire and other fuels reduction treatments in adjacent areas to the CFLR project that help to extend landscape-scale benefits of fire and fuels management to surrounding areas. In March 2019, a free prescribed burning workshop was conducted by many cooperating agencies at Lake James State Park (flyer here) to increase public education and awareness of using "good

fire" on the landscape, using the direction of the Firewise USA program. This workshop included a live prescribed burn demo, hands-on learning for creating defensible space around homes, and information on becoming a Firewise community. In ways such as this, our partners are able to effectively leverage their available funds to increase public understanding of fire management and how good fire leads to healthy forests, while also helping to build more resilient communities within fire-adapted landscapes.

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 (sometimes more than once) either through prescribed fire or wildfire occurrences within the footprint of the Grandfather Restoration Project (see attached image on page 7). 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 the 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 that 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.

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.

FY2019 Overview

FY19 Activity Description (Agency performance measures)	**Acres**
Number of acres treated by prescribed fire	0
Number of acres treated by mechanical thinning	132
Number of acres of natural ignitions that are allowed to burn under strategies that result in desired conditions	n/a
Number of acres treated to restore fire-adapted ecosystems which are maintained in desired condition	0
Number of acres mitigated to reduce fire risk	132

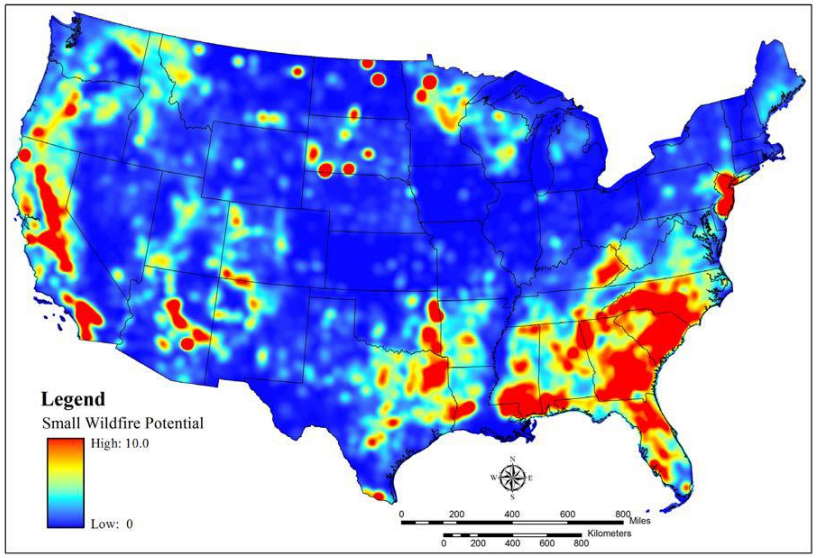
Please provide a narrative overview of treatments completed in FY19, including data on whether your project has expanded the pace and/or scale of treatments over time, and if so, how you've accomplished that – what were the key enabling factors? ***For projects finishing their tenth year***, if you have any additional insights from your cumulative work over the course of the project please share those here as well.

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

FY2019 offered a few challenges that impeded the implementation of prescribed fire treatments that were anticipated for the year, temporarily reducing the scale and intensity of fire treatments. The new-year began with a federal shutdown, causing cascading effects related to delayed or shortened planning time that extended to the spring fire season, which was compounded by weather patterns that didn't open enough suitable windows for burning. Regardless of the absence of planned fire ignitions, ongoing mechanical treatments were implemented in 2019, making progress

towards desired conditions, especially regarding the reduction of fire risk and increased firefighter safety through fuels reduction in and surrounding the treated areas for the future.

The Grandfather Restoration Project lies in an area classified as having high potential for small wildfires based on the map of the analysis of fire potential given in RMRS-P-73 (Dillon et al. 2015[1]). All vegetation treatments and past uses of prescribed fire and managed wildfire (summarized above) have helped to build resistance on this landscape to larger, severe fire disturbances, and enable land managers to more safely utilize smaller, natural ignitions for resource benefit where applicable.



Map of small wildfire potential, a scaled ignition density surface for all fires less than 300 acres from 1992 to 2010. Image from Dillion et al. 2015.

Throughout this project we've learned that leveraging work with partners is an integral component of moving closer to desired conditions on the landscape. Even though we were not able to meet prescribed fire targets on NFS lands in FY2019 due to reasons descried above, partners such as the NC State Parks and NC Forest Service were able to conduct smaller prescribed burns on state and private lands adjacent to or within the CFLR footprint, providing greater landscape scale benefits. These burns are additive to the progress we've made on NFS lands and our partners on state and private lands over the course of the Grandfather Restoration CFLR project lifetime.

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.

[1] Dillion, G., J. Menakis, and F. Fay. 2015. Wildland Fire Potential: A tool for assessing wildfire risk and fuels management needs. In: Keane, Robert E.; Jolly, Matt; Parsons, Russell; Riley, Karin. 2015. Proceedings of the large wildland fires conference; May 19-23, 2014; Missoula, MT. Proc. RMRS-P-73. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 345 p.

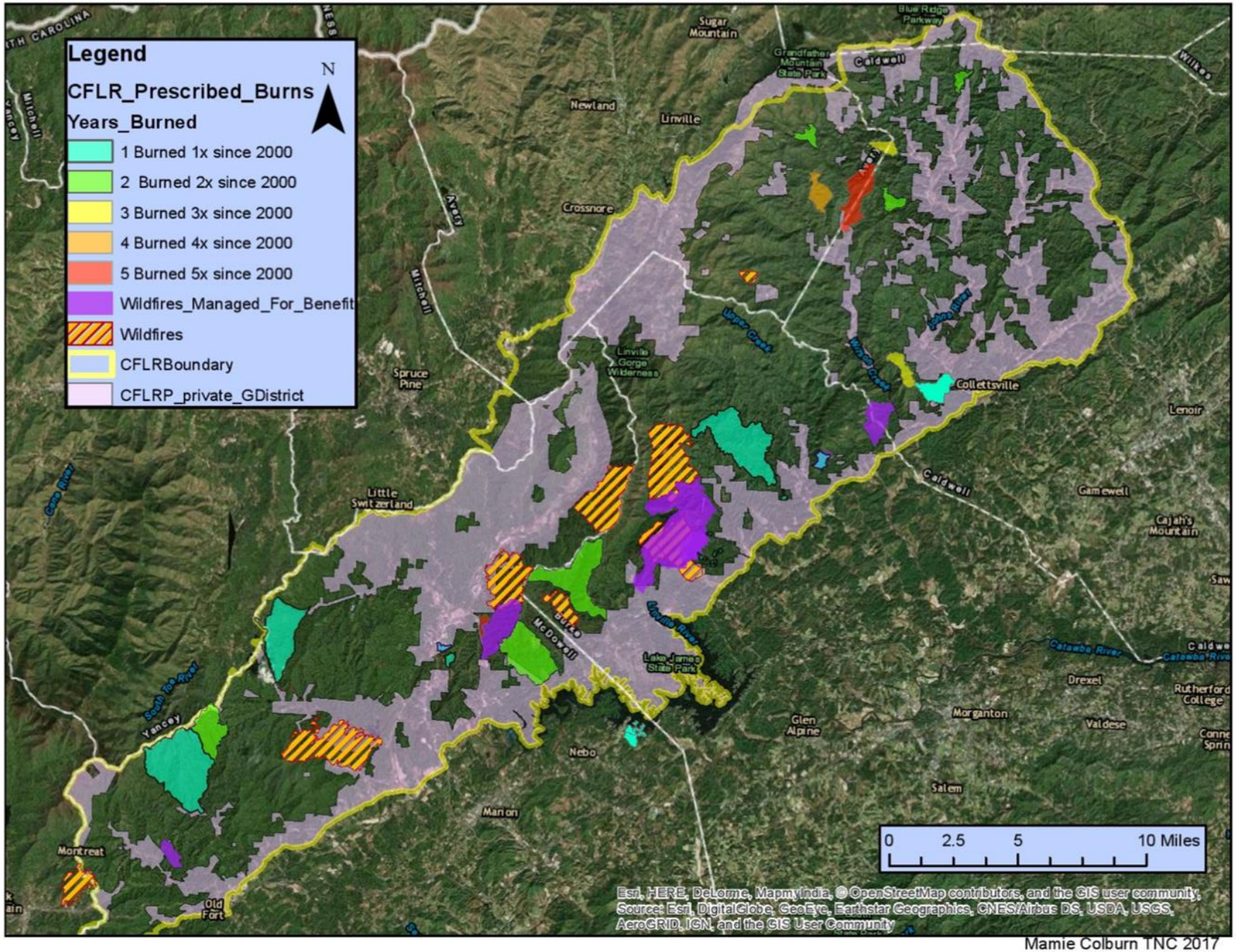
Before and After Highlights:

Lake James State Park monitoring plots, before burning (2010) and after 2 burns (2012).

Before and after fuels reduction treatment completed at Coffey's general Store in the Wilson Creek Watershed (see accomplishment spotlight for more information).

Swannanoa Creek Restoration. Photo 1: Swannanoa Creek eroded bank May 11, 2017; Photo 2: Swannanoa current condition, 2019.

Grandfather CFLR Prescribed Burns



Mamie Colburn TNC 2017

Expenditures

Category	**$**
FY2019 Wildfire Preparedness[2]	276,490
FY2019 Wildfire Suppression[3]	26,325
The cost of managing fires for resource benefit if appropriate (i.e. full suppression versus managing)	0
FY2019 Hazardous Fuels Treatment Costs (CFLN)	0
FY2019 Hazardous Fuels Treatment Costs (other BLIs)	121,203

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.* ***For projects finishing their tenth year****, if you have any additional insights from your cumulative work over the course of the project please share those here as well.*

As of FY19, 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 both reducing both the costs and risks associated 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.

[2] 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).

[3] 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.

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?

No formal assessments of cost reduction or cost avoidance were conducted in FY19, 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 FY2019, and no additional assessments have been completed since the FY2017 CFLRP annual report on fires within the CFLRP area (note: FY2018 did not have a significant fire within the CFLR boundary either).

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.

Assumptions:

- 1 FTE for every (approximately) 60,000 in funding from forced accounts.
- Proportions of contract funding and forced accounts have been relatively consistent over the life of the project.
- Proportions of contract funding distributions have been fairly consistent over the life of the project.

FY 2019 Jobs Supported/Maintained (FY19 CFLR/CFLN/ WO funding):

FY 2019 Jobs Supported/Maintained	Jobs (Full and Part-Time) (Direct)	Jobs (Full and Part-Time) (Total)	Labor Income (Direct)	Labor Income (Total)
Timber harvesting component	4	5	184,708	240,177
Forest and watershed restoration component	5	5	55,974	84,431
Mill processing component	9	19	480,079	895,294
Implementation and monitoring	2	2	74,521	87,877
Commercial firewood and contracted monitoring	0	0	0	0
TOTALS:	19	32	795,281	1,307,779

FY 2019 Jobs Supported/Maintained (FY19 CFLR/CFLN/ WO and matching funding):

FY 2019 Jobs Supported/Maintained	Jobs (Full and Part-Time) (Direct)	Jobs (Full and Part-Time) (Total)	Labor Income (Direct)	Labor Income (Total)
Timber harvesting component	4	5	184,708	240,177
Forest and watershed restoration component	6	7	68,260	102,963
Mill processing component	9	20	480,079	915,312
Implementation and monitoring	5	6	150,962	178,019
Commercial firewood and contracted monitoring	0	0	0	0
TOTALS:	23	37	884,008	1,436,471

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	Links to reports or other published materials (if available)
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 14,900 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 which volunteer their time and resources on a regular basis.	https://wildsouth.org/fighting-a-wildfire-in-the-linville-gorge/ https://ridenwnctrails.com/2019-volunteer-work-starting-off-at-a-record-setting-pace/ https://ridenwnctrails.com/event/lake-james-state-park-work-party-july-2019/?instance_id=1471 https://acleanwilsoncreek.org/blog/f/our-first-joint-task-force-initiative-acwc-nfs-caldwell-county https://myemail.constantcontact.com/Trail-News--From-the-NC-Mountains-to-the-Sea.html?soid=1102224436222&aid=RK-W9EHX1OU
% 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,	https://public.tableau.com/views/FIATPOOneClickBETA/Factsheet?%3AshowVizHome=no#5 https://forestry.ces.ncsu.edu/2019/01/timber-industry-in-north-carolina-

Indicator	Brief Description of Impacts, Successes, and Challenges	Links to reports or other published materials (if available)
	and resources directly back to the communities around the project area (see table 3). Further, contributing products to these businesses helps to support continued forest management in the area which increases landscape diversity and complexity.	contributed-over-915-million-in-2017/ https://www.ncforestservice.gov/Managing_your_forest/timber_buyers.htm
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 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).	https://www.hikewnc.info/trailheads/grandfather-ranger-district/ https://www.hcn.org/issues/51.8/recreation-how-recreation-boosts-the-economy https://www.outdooralliance.org/nantahalapisgah-economic-reports/ Headwater's Economic Report: Public Lands (2019): https://documentcloud.adobe.com/link/track?uri=urn%3Aaaid%3Ascds%3AUS%3A39ea9c06-4e2b-414d-8a19-d37a20e353a5
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 FY19, the VetsWork program (through the Mt. Adams Institute and in partnership with AmeriCorps) supported the professional growth and development of two veteran interns who helped support the CFLR project's mission by conducting trails improvements, engaging with the public, and supporting the recreation and fire programs.	https://mtadamsinstitute.org/vetswork-environment/ https://www.thesca.org/USFS-IFRI

Indicator	Brief Description of Impacts, Successes, and Challenges	Links to reports or other published materials (if available)
	Additionally, one SCA fire and recreation intern (IFR) gained experience in a multifaceted position for 14 weeks (plus 2 weeks training). During this time, the intern was trained for wildland firefighting and participated in trail maintenance and management. 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. You may simply reference your ecological indicator reports here if they adequately represent your multiparty monitoring process**. If further information is needed, please answer the questions below.

- *What parties (who) are involved in monitoring, and how?*
- *What is being monitored? Please briefly share key broad monitoring results and how results received to date are informing subsequent management activities (e.g. adaptive management), if at all. What are the major positive and negative ecological, social and economic shifts observed through monitoring? Any modifications of subsequent treatment prescriptions and methods in response to these shifts?*
- *What are the current weaknesses or shortcomings of the monitoring process? How might the CFLRP monitoring process be improved? (Please limit answer to one page.).*
- *Please provide a link to your most up-to-date multi-party monitoring plan and any available monitoring results from FY19.*

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 FY2020:

(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 along three 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 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 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 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 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 will focus on high priority areas identified as part of the CFLR. This agreement will provide survey assistance in identifying new treatment areas as well as look at the effectiveness of existing treatments. Monitoring efforts will 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 are seeming 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 2019 Agency performance measure accomplishments:

Performance Measure	Unit of measure	Total Units Accomplished	Treatment Cost ($)
Acres of forest vegetation established FOR-VEG-EST	Acres	4	$ 963
Acres of forest vegetation improved FOR-VEG-IMP	Acres	225	$ 54,150
Manage noxious weeds and invasive plants INVPLT-NXWD-FED-AC	Acres	780.4	$ 29,655
Acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions. S&W-RSRC-IMP	Acres	6.6	$ 30,950*
Miles of stream habitat restored or enhanced HBT-ENH-STRM	Miles	1.32	Item reported together with above
Acres of terrestrial habitat restored or enhanced HBT-ENH-TERR	Acres	6,779.6	$ 30,398
Miles of system trail maintained to standard TL-MAINT-STD (calc. average to be $748/mi)	Miles	215.8	$ 215,800
Miles of system trail improved to standard TL-IMP-STD	Miles	1.6	$ 48,000
Acres of forestlands treated using timber sales TMBR-SALES-TRT-AC	Acres	32	0
Volume of timber sold TMBR-VOL-SLD	CCF	150.3	0
Acres of wildland/urban interface (WUI) high priority hazardous fuels treated to reduce the risk of catastrophic wildland fire FP-FUELS-WUI	Acres	100	*$ 21,062*

Performance Measures not showing in gPAS:

Performance Measure	Unit of measure	Total Units Accomplished	Treatment Cost ($)
Acres mitigated FP-FUELS-ALL-MIT-NFS	Acres	8,795**	n/a
Miles of property line marked/maintained to standard LND-BL-MRK-MAINT	Miles	11.62	*$ 18,993*
Miles of passenger car system roads improved RD-PC-IMP	Miles		
Miles of high clearance system road improved RD-HC-IMP	Miles		
Volume of Timber Harvested TMBR-VOL-HVST	CCF	4,438	0
Acres of prescribed fire accomplished	Acres	0	0
Number of priority acres treated annually for invasive species on Federal lands SP-INVSPE-FED-AC	Acres	69	$ 6,900

Units accomplished should match the accomplishments recorded in the Databases of Record. Costs pulled from FACTS, INFRA, or WIT databases unless otherwise noted. Costs in *italics* were estimated based on average per unit costs from prior years. *Items reported together. **ALL Pisgah NF, not delineated by district.

7. **FY 2019 accomplishment narrative** – Summarize key accomplishments and evaluate project progress *not already described elsewhere* in this report. ***For projects finishing their tenth year***, if you have any additional insights from your cumulative work over the course of the project please share those here as well. (Please limit answer to three pages.)

Habitat Restoration: nearly 6,780 acres of terrestrial habitat and 1.32 miles of stream habitat enhanced

- Terrestrial habitat was restored through a variety of management, including maintenance of wildlife openings, and vegetation improvement projects.
- The North Carolina Wildlife Resources Commission supported wildlife activities across the district including mowing 144 acres of wildlife openings, maintaining 85 miles of linear openings, and conducting habitat surveys.
- Stream habitat was restored through the construction of 10 instream structures designed to reestablish a stable stream channel. The project was implemented to reduce erosion and sources of sedimentation into the stream channel, resulting in improved aquatic diversity and riparian habitat.
- Trout Unlimited and volunteers conducted surveys to assess barrier potential at 74 stream crossings.

Timber and Silviculture: 150.3 CCF of timber products sold, 4 acres of forest vegetation established, and 225 acres of forest vegetation improved.

- Silviculture treatments for timber stand improvement, release treatments, and vine removal on 225 acres were completed within the CFLR project area.
- 4 acres of shortleaf pine was established through planting following a harvest in the Armstrong project area. The plantings were located near an existing permanent wildlife opening, and the newly created young forest structure will provide more beneficial habitat for wildlife.
- In FY2019, 150.3 CCF of mixed forest products were sold from harvests implemented in the Crawley Branch and Armstrong Creek timber sales and shortleaf pine restoration projects. These sales supplied local mills with hardwood and softwood sawtimber, pulpwood, and other forest products.

Trail Restoration: 215.75 miles maintained and 1.5 miles improved

- Through USFS labor, contracts, and volunteers, over 215 miles of trails were maintained. This included work completed through agreements with Wild South, Northwest NC Mountain Bike Alliance, and the Southern Appalachian Wilderness Stewards.
- Wild South and its volunteers worked over 9,500 hours on trail maintenance and mapping in the Linville Gorge and elsewhere in the Grandfather Restoration Project footprint.
- Trout Unlimited and volunteers completed sedimentation surveys on 3 miles of the Mountains to Sea trail and support ongoing surveys on Harper Creek Trail and Thorps Creek Trail.

Invasive Species Treatments: 780 acres treated for noxious weeds and invasive plants, 69 acres of hemlock wooly adelgid treatments

- Accomplished 69 acres of hemlock wooly adelgid treatments for Eastern and Carolina Hemlocks across the project area using soil injections to ward off infestations and protect these ecologically valuable trees.
- MountainTrue helped to design the Lover's Branch Restoration Project in FY19. In the process, they mapped 11 miles of perennial and ephemeral streams, at least 114 locations of invasive plant species totaling more than 50 acres, and more than 60 rare plant locations.
- Non-native invasive plants were treated in areas previously burned by wildfires near the Linville Gorge, as well as targeting Japanese knotweed at Wilson Creek.

Fuels Reduction: 100 acres of fuels treatments completed

- Fuels reduction treatments were conducted both in the forest setting and surrounding infrastructure in the Wildland Urban Interface (WUI) to reduce the risk of severe wildfire and to help protect against personal

property losses associated with wildfire. These treatments also help to increase firefighter and public safety in the instance of future wildfire.

Accomplishment Spotlight: Swannanoa Creek Stream Enhancement Project

Within an approximately 1,200 feet stream reach of Swannanoa Creek, work was accomplished during 2019 to stabilize erosion and sources of sedimentation and improve aquatic habitat diversity.

Under a Wyden Agreement with the neighboring landowner, work occurred approximately 300 feet upstream from the Old US Highway 70 Bridge crossing on Swannanoa Creek. Nine stream structures were constructed using imported and local boulders and trees from the surrounding area. These structures are designed to protect stream banks from erosion and reestablish natural riffle-pool bedform features, and thus increase habitat quality and diversity.

Along with the in-stream structures, channel substrate alteration occurred within the reach to achieve natural channel design objectives and support aquatic habitat. Access points to the stream and stabilized banks were graded and covered with coir fiber matting and all disturbed soil was seeded and mulched.

Accomplishment Spotlight: Wilson Creek

Mitigation work: Fire adapted communities, safe and effective wildfire response.

Southern Blue Ridge FLN Partners (Appalachian RC&D FAC Coalition, US Forest Service, NC Forest Service, TNC Southern Blue Ridge Fire Crew) joined up to conduct a workday at the Wilson Creek Township. Justin Query (NCFS Wildfire Mitigation Forester) and Christina Newhouse (Carolina Land & Lakes RC&D Firewise Project Manager) put on an informative and dynamic presentation for close to 50 visitors at the Wilson Creek Visitor Center. Guests then traveled up the road a bit where the TNC SBR Fire Crew created defensible space for the recently re-opened Coffey's General Store, which was constructed some time before 1895. Justin took folks on a tour around the store to talk about what defensible space and home hardening looks like. This store will likely be a gathering place for years to come and serve as a model for how to prepare a structure for wildfire.

In addition to the WUI fuels reduction treatment, the working fire crews treated some nearby hemlock trees to guard them against the non-native, invasive insect pest: the hemlock wooly adelgid.

Stream Improvement

Trout Unlimited led several multi-group collaborations to conduct outreach events and surveys in FY2019, and prepare for stream restoration and aquatic organism passage improvements in the Wilson Creek area. With the help of volunteers, staff, and partner agencies, Trout Unlimited trained and conducted sedimentation and barrier surveys, surveying 74 stream crossings to assess barrier potential and 3 miles of the FS192-Mountains to Sea trail. The group also planned, developed, and co-hosted the 50th Anniversary Celebration of Wild and Scenic Rivers on November 3, 2018 (link). Further, they developed proposals in support of an aquatic organism passage and stream restoration project, and road/trail remediation work to be implemented in FY20.

Accomplishment Spotlight: Armstrong Creek Project

The Armstrong Creek Project, residing within the Grandfather Restoration Project footprint, began in 2016 with intent to maintain and improve the existing condition of the Armstrong Watershed and to act in accordance with the management direction outlined in the forest plan for the Pisgah and Nantahala National Forests. The needs identified during scoping for the Armstrong Creek Project included items such as increasing large woody debris (LWD), reducing sedimentation in creeks, replacing culverts, and restoring native species diversity, including assessments of sites for the reestablishment of the American chestnut. Some of the management practices that have been designed to address these needs include felling larger hemlocks that have been killed by the hemlock wooly adelgid into streams to increase the LWD component in order to create more diverse and healthy aquatic habitats, bank stabilization along a 200 feet stretch of the Bee Rock Creek, reclassifying FS trail #223 to be for foot traffic only, put in drainage improvements, rerouting a problematic trail section away from the stream, and controlling infestations of six non-native, invasive species.

Additionally, in the Armstrong Creek watershed there was a need to create 0-10 year age classes at the stand level, to commercially thin overstocked units, a need for non-commercial stand improvements to reduce density and shape desired species compositions, and to create small openings and patches for wildlife. These needs have been addressed, in part, through recent timber harvests and stand improvements that have occurred in the Armstrong Creek Project area over the last few years. The treatments have included commercial harvests targeting white pine, yellow-poplar, red maple, and scarlet oak, while retaining white oak, chestnut oak, and yellow pines, vine reductions and other non-commercial stand improvement practices, crop tree release, and shortleaf pine plantings. Site prep burns were used in areas before planting shortleaf pine. Prescribed fires have been implemented in other areas of the project footprint to create small gaps or wildlife openings and to increase the number of small patches characterized by early successional vegetation, to aid in the restoration of that missing component on the landscape. Commercial timber harvesting continued within the footprint of the Armstrong Creek project throughout FY2019, resulting in the harvest of approximately 2,716 CCF of sawtimber and 626 CCF of pulpwood. To date, the timber and wood products harvested from this area have been sold to local mills and processing plants, supporting the local economy and the practice of forestry in the Appalachians where it originated.

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 2019	8,523.10 acres
Estimated Cumulative Footprint of Acres (2012 through 2019)	**58,704 acres***

**Total is cumulative and includes re-entry acres across years*

Fiscal year	Acres
FY12	5,622
FY13	6,528
FY14	5,947
FY15	9,837
FY16	6,131
FY17	9,002
FY18	7,114
FY19	8,523

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?

The EDW calculation was used for FY2019.

9. **Describe any reasons that the FY 2019 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? ***For projects finishing their tenth year***, if you have any additional insights from your cumulative work over the course of the project please share those here as well. (Please limit answer to two pages).

In FY2019, there were some unforeseen complications that resulted in not reaching prescribed fire targets that had been set for the year. Firstly, the 35 day government shutdown, which occurred between December 2018 and January 2019, caused planning efforts to be delayed. This delay during the time of the year often set aside for planning out the program of work for the upcoming field season took its toll. Additively, the weather in the spring of 2019 was quite wet. This spring fire season is the typical time that prescribed fire is implemented in the Southern Blue Ridge Mountains where the Grandfather Restoration Project resides. By combining the lack of planning time with weather not conducive to prescribed burning, we were not able to complete the acres of prescribed fire we anticipated for the fiscal year.

Annually, throughout the Grandfather Restoration CFLR project, we have set out to accomplish 5,000 acres of prescribed fire. Most years of the CFLR project, we have met or exceeded the prescribed fire target, and have been able to apply fire to the same areas multiple times in some cases. Through this repeated treatment, we have been able to restore this natural disturbance to some areas in which it had been absent for several years. In past years we've reported on the successes of these treatments, which have included seeing a positive response in the population of a federally

threatened species, mountain golden heather (*Hudsonia montana*) following prescribed fires and wildfires that have burned in their habitat over the lifetime of the Grandfather Project (see: 2017 annual report).

10. *Project selected in 2012 and 2013 ONLY* - Planned FY 2020 Accomplishments

Performance Measure Code	**Unit of measure**	**Planned Accomplishment for 2020** (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	*unknown*
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	*unknown*
High priority acres treated for invasive terrestrial and aquatic species INVSPE-TERR-FED-AC	Acres	20	*unknown*
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	25 (combined PC and HC)	*unknown*
Volume of timber sold TMBR-VOL-SLD	CCF	5,300	*unknown*
TMBR-SALES-TRT-AC	Acre	204	*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	N/A	*unknown*
Acres of wildland/urban interface (WUI) high priority hazardous fuels treated to reduce the risk of catastrophic wildland fire FP-FUELS-WUI	Acres	5,000	500

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

11. ***Project selected in 2012 and 2013 ONLY* -** *Planned accomplishment narrative and justification if planned FY 2020 accomplishments and/or funding differs from CFLRP project work plan (no more than 1 page):*

Planned accomplishments and funding for FY2020 are consistent with the CFLRP project work plan.

[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.

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.*

A new CFLR collaborator group, A Clean Wilson's Creek, contributed 994 volunteer hours in 2019 on Wilson's Creek, which flows through the Grandfather Restoration CFLR project area. A Clean Wilson's Creek (501C(3) non-profit) is a team of local and regional partners who have joined together to protect the Wild and Scenic Wilson's Creek and preserve the creek's outstandingly remarkable values for future generations. A Clean Wilson's Creek funds river patrols that reduce trash and cleans up left by recreational users and site visitors, and also cleans up or restores vandalized objects. They also join with other agencies and organizations to help in implementing stream protections, and contribute to education and outreach.

CFLRP Partner Organizations

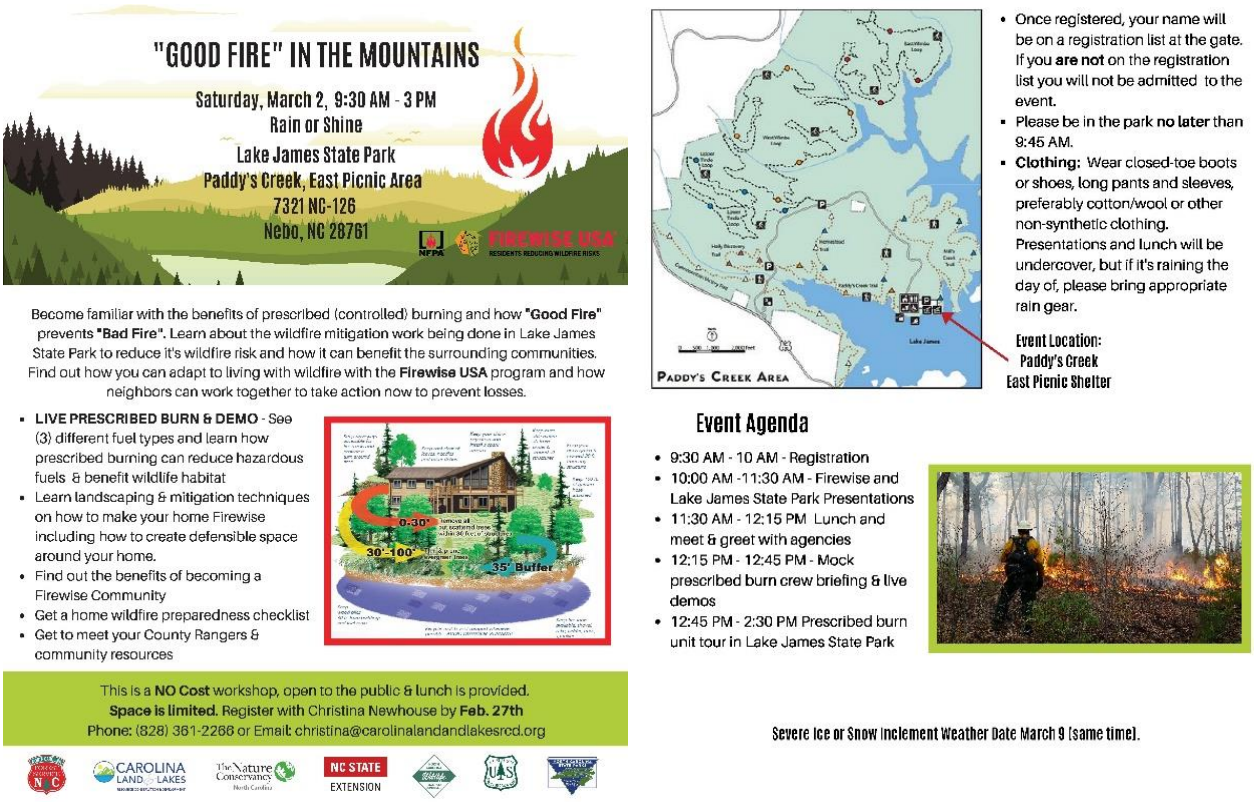
Access Fund	NC Forest Service
A Clean Wilson Creek	NC State Parks
American Conservation Experience	North Carolina State University
Appalachian Designs	NC Wildlife Resources Commission
Carolina Climbers Coalition	Northwest North Carolina Mountain Bike Alliance
Defenders of Wildlife	Quality Deer Management
Fish and Wildlife Service	Southern Appalachian Wilderness Stewards
Foothills Land Conservancy	Southern Blue Ridge Fire Learning Network
Forest Stewards	Southern Research Station
Friends of the Mountains to Sea Trail	The Nature Conservancy
MountainTrue	The Wilderness Society
National Forest Foundation	Trout Unlimited
National Park Service	Western Carolina University
National Wild Turkey Foundation	Wild South

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.*

The following items are not specific to the Grandfather Restoration Project, but they portray the use of prescribed fire in lands adjacent to the project area, volunteers assisting with wildfire suppression efforts and conducting trail work in the Linville Gorge and on the Mountains to Sea trail within the CFLR footprint.

Good Fire in the Mountains Workshop: *March 2, 2019*

- "'Good Fire' program to teach about prescribed burns", in The News Herald by Justin Epley on Feb. 22, 2019. https://www.morganton.com/news/good-fire-program-to-teach-about-prescribed-burns/article_c2b99090-36d7-11e9-b41a-c330fea937aa.html
- Good Fire in the Mountains: Prescribed Fire Workshop at Lake James State Park (NC State) https://youtu.be/mDdIlvPAqq8
- Good Fire in the Mountains- Controlled Burn Workshop (Carolina Land and Lakes RCD) https://youtu.be/mqRtEf6YUnc



Prescribed Burns in Lake James State Park

"The prescribed fires will take place with assistance from the N.C. Forest Service and the Nature Conservancy in sections, totaling about 300 acres at the park's Paddy's Creek Area, up to 1,000 acres on the Long Arm Peninsula, and about 200 acres at the Catawba River Area."

- "Lake James State Park to conduct prescribed fires throughout spring" in Asheville Citizen Times by Karen Chavez on Feb. 28, 2019 https://www.citizen-times.com/story/news/local/2019/02/28/lake-james-state-park-conduct-prescribed-fires-spring/3015003002/
- "Successful Fire Season in the Park" on May 3, 2019 https://www.lakejamesstatepark.org/news/2019/5/3/successful-fire-season-for-park
- Awesome Controlled Burn Aerial Shots - Lake James State Park: https://youtu.be/mHbkAujPgL8

News from our Partners

- *"Wild South's goal when assisting with wildfires is to free up highly-trained fire personnel by playing a supporting role to their efforts. In this situation, we were able to relay reports from witnesses to personnel, monitor trailheads to notify visitors of trail closures, and coordinate with area residents to set up emergency vehicle parking."* Wild South, June 2, 2019. https://wildsouth.org/fighting-a-wildfire-in-the-linville-gorge/
- *"The joint participation and resources provided by both the National Forest Service and Caldwell County Sheriff's Department was a critical asset in setting a new tone for management and oversight for high use weekends on Wilson Creek."* Sept.12, 2019. https://acleanwilsoncreek.org/blog/f/our-first-joint-task-force-initiative-acwc-nfs-caldwell-county

- Trail Briefs – Mountains: "*Thanks to a $5,000 grant from REI stores in Charlotte, we were able to restore 4.4 miles of the MST in the Pisgah National Forest (MST Segment 4) that follow old, eroded road beds along Betsy's Ridge in Linville Gorge. The funds were used to hire a professional trail builder to re-contour the trail and create water diversions with a small backhoe. 22 volunteers from the Central Blue Ridge Task Force did the finish work of smoothing out 35 water diversions by hand. REI's Charlotte Market Coordinator Joy Shuck joined the task force on a beautiful winter's day. REI stores in Raleigh and Durham also support the trail with a $20,000 grant. Thanks to REI for its steady support!"* https://myemail.constantcontact.com/Trail-News--From-the-NC-Mountains-to-the-Sea.html?soid=1102224436222&aid=RK-W9EHX1OU
- *"We worked shoulder-to-shoulder with our Forest Service partners on 10 National Forests in eight states: North Carolina, South Carolina, Tennessee, Georgia, Virginia, West Virginia, Kentucky and Arkansas. SAWS mobilized 30,000 service hours on trails in your backyard, valued at over $750,000. Our field crews alone maintained and repaired over 57 miles of trails and removed over 2000 trees that were blocking trails in 15 wilderness areas. Our boots-on-the-ground work helps to maintain trails, support safe access, and protect the wilderness character of the places we all love."* From SAWS 2019 Accomplishments by Eric Giebelstein on Nov. 27, 2019. https://wildernessstewards.org/blog/saws-2019-accomplishments/

Signatures:

Recommended by (Project Coordinator(s)):

Approved by (Forest Supervisor(s)):

Draft reviewed by (collaborative chair or representative- Wild South):