CFLR Project (Name/Number): Grandfather Restoration Project, 019
National Forest(s): National Forests in North Carolina, Pisgah National Forest

1. Match and Leveraged Funds:

a. FY17 Matching Funds Documentation

Fund Source – (CFLN/CFLR Funds Expended)	Total Funds Expended in Fiscal Year 2017
CFLN17	$223,233

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

Fund Source – (Funds expended from Washington Office funds (in addition to CFLR/CFLN) (please include a new row for each BLI))	Total Funds Expended in Fiscal Year 2017
NFVW	$147,543

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

Fund Source – (FS Matching Funds (please include a new row for each BLI)	Total Funds Expended in Fiscal Year 2017
CMTL	$30,011
CWKV	$1,787
NFLM	$14,386
NFTM	$29,746
NFVW	$62,209
NFWF	$19,681
RTRT	$45,359
SPFH	$7,062
WFHF	$27,169
WFSU	$88,257
Total	**$490,703**

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

Fund Source – (Partner In-Kind Contributions)	Total Funds Expended in Fiscal Year 2017
CWFS	$165,036
Wild South	$235,220
NC Wildlife Resources Commission	$72,773
Friends of Mountains to Sea Trail	$64,840

Fund Source – (Partner In-Kind Contributions)	Total Funds Expended in Fiscal Year 2017
American Conservation Experience	$61,096
Southern Appalachian Wilderness Stewards	$11,591
The Nature Conservancy	$10,449
North Carolina Forest Service	$10,000
Mountain True	$3,383
Western Carolina University	$2,363
Total	**$461,266**

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

b. Please provide a narrative or table describing leveraged funds in your landscape in FY2017 (one page maximum). 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
Prescribed burns for fuel reduction and restoration	690 acres of State Park land and 13 acres of private lands within CFLR landscape	$35,000	Partner Funds	NC State Parks NC Forest Service
Herbicide for invasive species treatments in Wilson Creek priority area	0.75 acres of Private Property within CFLR landscape	$300	Forest Service Funds	NFVW

(Optional) Additional narrative about leverage on the landscape if needed:

The North Carolina Forest Service and North Carolina State Parks conducted 2 prescribed burns totaling 690 acres at Lake James State Park, part of the CFLR landscape. 13 acres of private land were prescribed burned adjacent to Forest Service land as part of the Crawley Branch burn unit. Under authority provided from a

Wyden agreement, the Forest Service provided herbicide to 2 private landowners within with Wilson Creek priority landscape for NNIS treatment of Japanese Knotweed.

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 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. Monitoring results show a significant change in understory composition as a result of those burns. The FY2017 wildfire season and the interaction of wildfire with the prescribed fire units provides a picture of how these burns are also reducing the risk and spread of catastrophic wildfire.

FY2017 was a very active year for wildfires. There were 21 wildfires within the project area for a total of 11,172 acres. The 2016 fall fire season was a historic one. The 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.

Drought lasted through the New Year, impacting any window the project had for fall prescribed burning. A small window opened up in mid-winter for burning before the spring wildfire season. We were able to take advantage of that window to accomplish two priority burns at Adam's Mountain (340 acres) and Crawley Branch (566 acres).

White Creek Fire

The Crawley Branch unit was a new burn unit under the recently signed Restoration Burns EA. This unit was a priority for both fuel reduction and restoration. Portions of the Crawley Branch unit border the Bluffs Subdivision, as well as multiple individual landowners. Working with the North Carolina Forest Service and Pisgah National Forest, The Bluffs was selected for wildfire mitigation under the U.S. Forest Service's Community Protection Grant Program. Through the Community Protection Program, the N.C. Forest Service created a fire break between the community and the National Forest, clearing out brush in a 30-foot strip behind the community. Combined with the fuel reduction in the controlled burn area, this community is setting an example for wildfire risk mitigation that can be applied to communities across WNC.

After the short prescribed burning window, things dried out again for a big spring wildfire season. Fuels were still dry from the fall drought. The largest fires were the Sugar Cove (571 acres), White Creek (5,500) acres, and Dobson Knob (1,760 acres). The White Creek fire was the only natural ignition fire, and was managed for multiple objectives in an area with a significant history of wildfires and occurrences of endangered disturbance-dependent plants. The White Creek fire is discussed in detail in question 7.

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

FY 2017 Jobs Supported/Maintained (FY17 CFLR/CFLN/ WO carryover funding):

FY 2017 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	$217,243	$296,800
Forest and watershed restoration component	2	2	$25,354	$49,474
Mill processing component	10	27	$586,597	$1,434,242
Implementation and monitoring	9	10	$109,706	$132,268
Other Project Activities	0	0	$2,716	$4,592

FY 2017 Jobs Supported/Maintained	Jobs (Full and Part-Time) (Direct)	Jobs (Full and Part-Time) (Total)	Labor Income (Direct)	Labor Income (Total)
TOTALS:	**25**	**45**	**$941,616**	**$1,917,376**

FY 2017 Jobs Supported/Maintained (FY16 CFLR/CFLN/ WO carryover and matching funding):

FY 2017 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	6	$229,728	$313,857
Forest and watershed restoration component	3	5	$49,286	$96,175
Mill processing component	10	29	$620,309	$1,516,670
Implementation and monitoring	15	17	$261,729	$315,555
Other Project Activities	0	0	$5,281	$8,927
TOTALS:	**33**	**56**	**$1,166,333**	**$2,251,184**

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)
Relationship Building / Collaborative Work	Long-standing collaborative relationships fostered through the CFLRP have built a level of trust in partners that has led to efficiencies in work and a more varied application of partner support. Many agreements are in place to use partners for implementation and monitoring work. These partners are mainly local groups that are highly invested in the local community. In FY17 the project invested in building stronger relationships between local emergency responders by participating in Fire Adapted Community meetings and hosting a Community Mitigation Assistance Team in McDowell County. The CMAT worked with regional and local partners to create a list of steps to increase awareness of wildfire risk and capacity to do risk reduction work, help partners work together, and share best practices to leverage funding, person-power, and opportunities. The project also invested efforts in developing stronger relationships within rock climbing	Community Mitigation Assistance Team report: Community mitigation assistance team

Indicator	Brief Description of Impacts, Successes, and Challenges	Links to reports or other published materials (if available)
	communities, looping one more interests group in to our shared stewardship.	
Volunteer Participation	Collaboration under CFLR has created a climate where the agency, partners, volunteers are working together, with steady increases in the number of hours of volunteer work on trail sustainability (nearly 13,500 hours in FY17) and number of volunteers engaged (over 400 in FY17). Challenges remain with how to best support volunteers with limited USFS recreation staff.	Linville Gorge Community Trail Work blog: Linville Gorge Community Trail Work blog: http://www.lgmaps.org/?page_id=61
Job training opportunities	Job training programs were utilized for veterans and youth in FY17. A VetsWork intern was sponsored through the Mt. Adams institute to help with volunteer coordination. The intern was subsequently hired on as a temporary USFS employee. The students in fire program brought on 2 student trainees to assist with prescribed fire implementation. 2 youth crews from American Conservation Experience (ACE) were used for invasive species treatments.	Blog post from VetsWork intern: Blog post from VetsWork intern: https://mtadamsinstitute.org/vetswork-not-everyone-made-woods-thats-okay/
Media Citations	The Grandfather CFLRP remains a presence in the local media through its effective uses of news releases and partner participation in social media. Through effective communication, public support of the project has increased over time.	Grandfather Restoration Project Blog: Grandfather Restoration Project Blog http://www.grandfatherrestoration.wordpress.com/

(Optional) Additional narrative about leverage on the landscape:

One of the largest areas where the Grandfather CFLRP has had local social and economic impacts is through recreation. The Pisgah National Forest is the second most visited National Forest in the country (first if you remove visits from ski area). At the same time, tourism is the number one driver of most local economies. Because of recreation's high use / high economic benefit, it has made sense to focus a more significant portion of the project on sustainable trail management. Managing for sustainable trails meets not only the restoration goals of improving watershed health through decreased erosion, but also provides a direct benefit to people who use the landscape. It is fitting that this fiscal year, Wild South - the organization that provided the most partner match - is primarily focused on sustainable trail management. Recreation provides an opportunity to both improve the public's experience on the forest, but also to involve them in volunteer maintenance.

In FY2017, the project had a big focus on youth involvement. The Grandfather Restoration Project is not only working to restore the forests of today, but also has a keen understanding that engaging the youth in the importance of restoration will benefit these areas into the future. Youth involvement in volunteer groups increased significantly. This was demonstrated most effectively in the partner organization Wild South's coordination of volunteers in the Linville Gorge Wilderness. This past year, 40% of their over 300 volunteers

were under the age of 26. These volunteers did everything from brush out trails to naturalizing campsites. Wild South saw volunteers as young as 8 years old on a regular basis – truly the next generation of Wilderness stewards.

Figure Wild South Volunteers

This winter, the project hosted 2 students through the students in fire program, a regional program that matches current university and community college students with fire programs for 90 days of training and experience. The students were able to assist in the planning and implementation of prescribed burns, giving them both training and an appreciation for fire as a restoration tool.

The district continued work with the local veteran who was brought on last year through VetsWork AmeriCorps internship to assist with the CFLR program. The VetsWork program provides federal internship opportunities to veterans who are transitioning out of the military to give them experience with civilian employment. At the end of her internship, the VetsWork intern was hired as a temporary employee using the veteran's authority and continues to accomplish meaningful work under the CFLRP.

Over the summer, the project partnered with the American Conservation Experience (ACE) – part of the AmeriCorps program – to bring in 2 crews for invasive species (NNIS) treatments. Traditionally, ACE has been used for trail maintenance, but recently they expanded to restoration work. ACE Members spend 12 weeks in teams completing conservation projects throughout the Southeast. This program gives those interested in conservation careers an opportunity to grow both personally and professionally. Members who successfully complete their term of service receive an Education Award.

SAWS Trail Crew

The project also continued the partnership with the Southern Appalachian Wilderness Stewards (SAWS). SAWS staffed 2 wilderness rangers in Linville Gorge who worked on visitor education, trail and campsite restoration, and solitude monitoring, as well as a 5 person trail crew in the Harper Creek Wilderness Study Area. SAWS focuses on providing conservation education through hands-on work experience. The one-on-one contact with visitors helped to build an educated user community and instill wilderness and leave no trace ethics in users. Wilderness Rangers are participants in the Forest Service resource assistant program and are mentored by district staff. At the end of their season, they are eligible for hiring under the resource assistant authority.

5. Based on your project monitoring plan, **describe the multiparty monitoring process. 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 current weaknesses or shortcomings of the monitoring process? (Please limit answer to two pages. Include a link to your monitoring plan if it is available).

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 following monitoring efforts are in place through FY2020:

(1) In FY2015, an agreement was established with Western Carolina University to monitor fire effects on vegetation. This agreement will use 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 .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 will also provide analysis of data to allow for adaptive management in prescribed fire implementation.

Fire effects monitoring in FY2017 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?" This year's monitoring looked at that question. The Wilson Creek Burn unit is one of 2 units that has undergone 5 prescribed burns within the CFLR landscape. Due to the frequent burns, portions of this site are closer to a restored condition than any other site on the Grandfather. There is an ongoing agreement with Western North Carolina University for post-fire vegetation monitoring at this site, consistent with the protocols established for the Fire Learning Network. The goal of the monitoring is to characterize a "restored" site and monitor regrowth over time. Of primary concern is the regrowth of Kalmia (Mountain Laurel) and Rhododendron in the shrub layer. Working with botanists to identify forest types that may be in a restored state, plots were located in select areas throughout the burn unit and were sampled this summer. Data will be analyzed this winter, and plots will be resampled next summer to track growth over time.

With the data at the Wilson Creek site (burned 5 times) and the other monitoring site at Lake James (burned 2 times), fire managers have looked at how to burn to get the most benefit. The project has a large number of acres available for prescribed burning, but only a short window to burn each year. This means there is a lot of strategy in prioritizing burn units. Monitoring data is showing a more significant change to the ecosystem toward fire-adapted vegetation and structure with more repeated burns. This has shifted fire manager's strategy from burning more units at longer intervals, to focusing on high-priority units and returning at shorter intervals.

The Lake James burn unit monitoring is a key site for the Southern Blue Ridge Fire Learning Network as part of a larger network of monitoring sites that are informing managers at a regional scale. This site will be the focus of monitoring post-CFLRP. Currently, the Fire Learning Network receives funding through The Nature Conservancy to monitor these sites. However, that funding is not guaranteed year-to-year. The Forest is looking to support that monitoring effort as well to ensure that it will remain in place to meet the 15-year monitoring requirement.

Results for Lake James burn unit following 2 burns

(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. This year, Wilson Creek was a key area of focus for monitoring and analysis of data due to the high complexity around Japanese Knotweed. Wilson Creek is a Wild and Scenic Designated River with over 23.3 miles of riverfront with a mosaic of ownership with a heavy infestation of the invasive plant Japanese knotweed. Japanese knotweed is an invasive shrub-like herbaceous plant that grows in dense stands along the banks that degrades habitat, outcompetes native streamside vegetation, and potentially impacts trout habitat. Treatment of Japanese knotweed was conducted in the upper reaches Wilson Creek drainage between 2013 and 2016. Post treatment data was collected by Mountain True in 2014 and in 2017 along 25 - 100 foot transects.

Figure 1 Japanese Knotweed

The Nature Conservancy worked last year to convene stake holder meetings with a team of CFLR partners including TNC, Mountain True, USFS, and NC Forest Service around invasive species treatments in Wilson Creek. TNC worked with MountainTrue's data and input from the team to do a basic analysis on the results of the Knotweed monitoring. Unfortunately, the results of the monitoring showed the treatments were not as successful as expected. Cover of knotweed showed no reduction and stem count showed only a small reduction.

With this new data, the team of partners decided to take a holistic look at the current treatment approach and review best practices in the literature to see where others have been successful. The literature review conducted by TNC showed that a change in herbicide could increase treatment effectiveness. The team immediately recommended a switch in herbicide on ongoing treatments. Additionally, an untreated site on private property was identified to set up monitoring to look at treatment effectiveness under the new methods. MountainTrue set up monitoring transects on the new site (supported under a Wyden agreement with the property owner). Treatment will begin next year and MountainTrue is set to resample post treatment.

Additionally, the team identified a newly released herbicide that could potentially help in the treatment of Knotweed. However, that herbicide is not approved under the existing forest-wide invasive species treatment EA. The USFS is looking at timelines to update that EA in order to most effectively treat Knotweed in Wilson Creek.

6. FY 2017 accomplishments

Performance Measure	Unit of measure	Total Units Accomplished	Total Treatment Cost ($) *(Contract Costs)*
Acres of forest vegetation improved FOR-VEG-IMP	Acres	242	$45,360
Manage noxious weeds and invasive plants INVPLT-NXWD-FED-AC	Acre	1,840	$128,260
Highest priority acres treated for invasive terrestrial and aquatic species on NFS lands INVSPE-TERR-FED-AC	Acres	13.4	$9,060
Acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions. S&W-RSRC-IMP	Acres	184	$100,730
Acres of lake habitat restored or enhanced HBT-ENH-LAK	Acres	2	$62,230
Miles of stream habitat restored or enhanced HBT-ENH-STRM	Miles	2	$62,230
Acres of terrestrial habitat restored or enhanced HBT-ENH-TERR	Acres	8,198	$209,710
Miles of high clearance system roads receiving maintenance RD-HC-MAIN	Miles	4.89	$40,500
Miles of passenger car system roads receiving maintenance RD-PC-MAINT	Miles	18.63	$40,500
Miles of system trail maintained to standard TL-MAINT-STD	Miles	140.53	$56,010
Miles of system trail improved to standard TL-IMP-STD	Miles	0.25	$56,010
Miles of property line marked/maintained to standard LND-BL-MRK-MAINT	Miles	6.25	$27,360
Acres of forestlands treated using timber sales TMBR-SALES-TRT-AC	Acres	6	$29,750
Volume of timber sold TMBR-VOL-SLD	CCF	5,220.46	$29,750
Acres of wildland/urban interface (WUI) high priority hazardous fuels treated to reduce the risk of catastrophic wildland fire FP-FUELS-WUI	Acres	6,711	$46,170 *does not include wildfire cost
Please also include the acres of prescribed fire accomplished *(note: this performance measure will not show up in the WO gPAS reports – please use your own records)*	Acres	906	$46,170

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

7. **FY 2017 accomplishment narrative** – Summarize key accomplishments and evaluate project progress not already described elsewhere in this report. (Please limit answer to three pages.)

Habitat Restoration: 2 acres of lake habitat enhanced, 2 miles of stream habitat enhanced, 8,198 acres of terrestrial habitat enhanced

- Terrestrial habitat was restored through a variety of management, including maintenance of wildlife openings, prescribed burning, and vegetation improvement projects.
- Stream and lake habitat was restored through the removal of fish barriers and the installation of in-stream features benefiting aquatic organisms.
- The North Carolina Wildlife Resources Commission supported wildlife activities across the district including mowing of 549 acres of wildlife openings and 8 habitat surveys.

Invasive Species Treatments: 1,840 acres of nonnative invasive plant treatments, 13.4 acres of hemlock wooly adelgid treatments

- Invasive species were treated with herbicide in the White Creek Fire area (BAER), in the Catawba River Floodplain, and along Wilson Creek.
- Hemlock wooly adelgid (HWA) treatments were continued for Carolina and eastern hemlock across the district.
- Wild South, American Conservation Experience, and Southern Appalachian Wilderness Stewards surveyed and treated invasive species in post-fire sites.

Watershed Restoration: 184 acres of soil and water resources protected

- Stream and trail restoration protected 184 acres of resources.

Trail Restoration: 140 miles of trails maintained, 0.25 miles of trails improved

- Through USFS labor, contracts, and volunteers, over 140 miles of trails were maintained. This included work completed through agreements with Wild South and the Southern Area Wilderness Stewards.
- Wild South and its volunteers worked over 9,000 hours on trail maintenance and mapping in Linville Gorge.
- The Friends of the Mountain to Sea Trail volunteers worked over 2,500 hours on trail maintenance for the Mountain to Sea Trail.
- The Southern Area Wilderness Stewards worked over 400 hours on trail maintenance within Harpers Creek Wilderness Study Area and Linville Gorge Wilderness.

Fire Management: 6,711 acres of fuels treated

- Prescribed burns were conducted across 906 acres in 2 burn units at Adams Mountain and Crawley Branch.
- The 5,500 acre White Creek Fire was managed through a confine and contain strategy.
- A fall fire season briefing paper was created to demonstrate the successes in burning under the CFLRP in reducing wildfire risk.

- The Nature Conservancy, The North Carolina Forest Service, and the North Carolina Wildlife Resource Commission provided support for prescribed fire implementation.

Crawley Branch Prescribed Burn

Timber and Silviculture: 242 acres of forest vegetation improved, 5,220 CCF of timber sold

- Silviculture treatments to release planted shortleaf pines from competition at the Roses Creek site were implemented on 242 acres.
- In FY2016 the Armstrong Project was sold, it was awarded in FY2017 and 6 acres (one unit) was cut.
- Partners, including MountainTrue, Southern Environmental Law Center, and The Nature Conservancy, provided support for identification of future project sites to be implemented under the new Farm Bill CE authority for Southern Pine Beetle recovery.

Accomplishment Spotlight – White Creek Fire

Management Strategy –

Since 2014, the Grandfather district has managed 6 natural ignition wildfires for resource benefit. The 2017 White Creek fire was the largest by far. Managing natural ignitions allows for more fire on the landscape, and the district's move toward managing fire for resource benefit has been influenced by management and communication established under the CFLR. Good practices of monitoring smoke and notifying the public early on prescribed burn activities has set the stage to have the same conversation, a common language and a trusted voice in wildfire response. This transparency has also aided public support for managing natural ignitions for resource benefit. With that we're reducing per acre costs of wildfire response, minimizing firefighter exposure and allowing us to take better measure of the resources and values at risk.

The area within the White Creek Fire east of Shortoff Mountain has burned 3 times in the past 10 years, all from wildfires. The Shortoff Fire burned the area in 2007, during an extreme drought. The two fires that recently burned in the area were managed for resource benefit. The Blue Gravel fire in 2014 burned 521 acres, and the White Creek fire in 2017 burned 5,531 acres. The response of the forest vegetation in this area is a lush grassy understory and abundant southern yellow pine regeneration.

Wildfires managed for resource benefit (all lightning caused)

Name	Date	Acres
Brown Mountain	04/14	550
Blue Gravel	04/15	521
Bald Knob	07/15	1268
Wolf Creek	08/15	305
Upper Creek	06/16	169
White Creek	03/17	5538

Firefighters utilized indirect techniques to contain the White Creek fire, working from defensible fire lines. Use of existing natural barriers, roads and containment lines minimized impacts to the landscape from fire line construction. Burn out operations to remove fuels within the established containment area starved the fire of fuel. This indirect approach followed incident objectives of protecting public and firefighter safety and minimizing impacts in the Wilderness. The recognition by fire managers of low values at risk, highly fire adapted vegetation, and tactics to minimize firefighter exposure led to successful implementations of the confine and contain strategy.

Restoring Fire Adapted Plant Communities –

While much of the landscape of the White Creek fire is fire adapted, of particular interest to land managers and partners are two federally listed rare plant species located within the White Creek Fire boundary, mountain golden heather (*Hudsonia montana*) and Heller's blazing star (*Liatris helleri*). This rocky summit community is fire adapted, as are the two federally listed species. Fire intensity and severity varied from moderate to unburned across the rocky summit community.

About 70% of all the documented mountain golden-heather range wide occur within the White Creek wildfire. Prescribed burns have been documented as beneficial to this tiny shrub reducing competition from other overtopping shrub species. Previous prescribed fires, at both low and high intensity and severity, have resulted in population increases. Based on previous data the White Creek Fire should result in a beneficial effect on mountain golden heather. A 2008/2009 census following the Shortoff wildfire within this area indicated a 300% increase. Monitoring is planned over the next 2 years

Mountain Golden Heather post-fire

Collaborative Management for Invasive Species –

BAER assessments showed the White Creek fire had the potential to expand non-native invasive species (NNIS) infestations, but also presented an opportunity to treat NNIS in a priority area. Existing scattered occurrences of NNIS were found within the White Creek wildfire in the more intensely burned areas. These species have been previously documented to expand in areas with more exposed soil after area wildfires. Previous outbreaks of NNIS after past wildfires have been controlled with herbicides east of Linville Gorge Wilderness although spot infestations still remain. Control within the Wilderness had been limited to cutting and pulling and mainly restricted to seedling recruitment and the trail corridors.

Hand-pulling Princess Tree

Within the White Creek wildfire the greatest risk of new nonnative plant species invasions was found to be in high fire intensity areas with total or partial canopy loss and moderate intensity areas that also occur in the

open areas that resulted from the 2007 wildfire. Without treatment, these infestations would spread within the surrounding burned areas. If NNIS increased post burn, the critical values at risk would be the untrammeled nature of the native plant communities within Linville Gorge Wilderness and impacts to the two federally listed plant species, mountain golden heather and Heller's blazing star. Because of this, treatment of NNIS became a priority for FY2017 in this area.

The process in which treatments were accomplished is a great example of how collaborative relationships through CFLR can be used to respond to new management challenges. Using 3 separate challenge cost share agreements with partner organizations American Conservation Experience, Wild South, and Southern Appalachian Wilderness Stewards, a strategy was put in place to survey and treat invasive species within the fire boundary. An extensive survey and treatment effort took place this summer and fall, with partner organizations working together under the guidance of the forest service to survey and treat across a huge area. Work focused on detection and removal or treatment of princess tree, Chinese silver grass, and mullein. Over 1,500 acres have been treated for NNIS within the fire boundary. This work is critical not only to controlling existing populations of NNIS from this fire, but informing the district on how NNIS interacts with fire treatments on a large scale.

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

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

Fiscal Year Estimated Cumulative Footprint of Acres (2010 or 2012 through 2017)	**Footprint of Acres Treated (without counting an acre of treatment on the land in more than one treatment category)**
FY12	5,622
FY13	6,528
FY14	5,947
FY15	9,837
FY16	6,131
FY17	9,002
Total *Total is cumulative and includes re-entry acres	43,067

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 accomplishment for the EDW estimate (8,485 acres) was accurate for those accomplishments that are spatially recorded, however it does not consider accomplishments recorded as miles (which do not require

spatial extents in the database of record). The following calculations were used and added to the 8,485 acres for a total of 9,002 acres.

Accomplishments recorded in units other than acres were converted to acres using the following methodology:

- Road maintenance (RD-PC/HC-MAINT-MI) impacts a 60ft wide corridor to include road work and brushing. Total road accomplishments were 23.52 miles, for an equivalent of 237 acres.
- Trail maintenance (TL-MAINT-STD) and improvement (TL-IMP-STD) takes place within a 16ft corridor. Total trail accomplishments were 140.75 miles, for an equivalent of 273 acres.
- Stream habitat enhanced (HBT-ENH-STRM) was estimated to impact a 30ft corridor (10ft stream channel and 20ft riparian area). Total stream accomplishments were 2 miles, for an equivalent of 7 acres.
- Landline accomplishments (LND-MAINT-STD) were not included, because there was no logical way to convert those 6.25 miles to acres

There was no way to determine re-entry acres over the life of the project with the information currently available. An in-depth analysis of spatial data from 2012-present would have to be conducted to determine areas of re-entry vs. new treatment.

9. **Describe any reasons that the FY 2017 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).

Accomplishments for FY2017 should match closely. Adjustments are made throughout the life of the project as priorities change and new areas of focus emerge. This often produces a change in accomplishments for the project as planned. One accomplishment in particular that was different then planned this year was the acres of invasive species treated. This area far exceeded the planned accomplishment due to NNIS work following a wildfire.

10. Planned FY 2019 Accomplishments

* means blank cell

Performance Measure Code	Unit of measure	Work Plan 2019	Planned Accomplishment For 2019	Amount ($)
Manage noxious weeds and invasive plants INVPLT-NXWD-FED-AC	Acre	*	250	$50,000
Miles of stream habitat restored or enhanced HBT-ENH-STRM	Miles	*	2	$60,000

Performance Measure Code	Unit of measure	Work Plan 2019	Planned Accomplishment For 2019	Amount ($)
Acres of terrestrial habitat restored or enhanced HBT-ENH-TERR	Acres	*	6,000	$150,000
Miles of road decommissioned RD-DECOM	Miles	*	3	$20,000
Miles of passenger car system roads improved RD-PC-IMP	Miles	*	25	$50,000
Miles of high clearance system road improved RD-HC-IMP	Miles	*	5	$50,000
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	$100,000

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

11. **Planned accomplishment narrative and justification if planned FY 2018/19 accomplishments and/or funding differs from CFLRP project work plan** (no more than 1 page):

In FY2019 we plan to treat 250 acres of NNIS at priority sites. We plan to enhance approximately 2 mile of stream habitat through restoration of stream function at Boone Fork. We plan to decommission 3 miles of illegal roads through the placement of boulders, working with district law enforcement. We plan to prescribed burn an estimated 5,000 acres, which will also enhance terrestrial habitat.

In addition to the accomplishments listed in the table, 25 acres will be treated for hemlock wooly adelgid. We will maintain 30 miles of road to reduce sedimentation into streams. 10 miles of trail will be maintained or improved to reduce soil movement in nearby streams. 6 miles of property landlines will be maintained to support project work.

Timber accomplishment for FY2019 differ from the project work plan due to priority project not on the CFLR area to manage the timber target across the zone at a larger landscape.

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.

CFLRP Partner Organizations	*denotes new member for FY2017
Appalachian Designs	NC Wildlife Resources Commission

Defenders of Wildlife	North Carolina State University
Fish and Wildlife Service	Quality Deer Management
Foothills Land Conservancy	Southern Appalachian Wilderness Stewards
Forest Stewards	Southern Blue Ridge Fire Learning Network
Grandfather Mountain Land Conservancy	Southern Research Station
Land of Sky Regional Council	The Nature Conservancy
MountainTrue	The Wilderness Society
National Forest Foundation	Trout Unlimited
National Park Service	Western Carolina University
National Wild Turkey Foundation	Wild South
NC Forest Service	Friends of the Mountains to Sea Trail
NC State Parks	American Conservation Experience*
Carolina Climbers Coalition*	Access Fund*

The project partnered with the American Conservation Experience (ACE) to treat invasive species in Wilson Creek and for the White Creek Fire BAER. Partnerships were established with climbing stakeholders in the Carolina Limbers Coalition and Access Fund for Planning efforts around rock climbing access and trail sustainability in the Linville Gorge Wilderness

13. **Did you project try any new approaches to increasing partner match funding in FY2017** (both In-Kind contributions and through agreements)? (No more than one page):

The project has put emphasis on using challenge cost share agreements with partner organizations where possible instead of contracts. A great example of this is with the American Conservation Experience. Partnering with ACE allowed the project to work more efficiently and capture more partner match while achieving planned goals. Similar agreements exist with The Nature Conservancy, Mountain True, Wild South, SAWS, and Western Carolina University.

In FY2017 we were able to better account for volunteer hours for match. The district has a large volunteer base, and in the past has not been able to adequately track this. Due to the involvement of partner organization Wild South, we are much better able to track the hours in the Linville Gorge area. At the same time, the volunteer hours this year increased significantly over last year.

14. **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.

Publications:

Southern Region Extension Forestry Pamphlet on the Fire Learning Trail: Wildland Fire in the Southeast
http://www.southernwildfire.net/success-stories/the-fire-learning-trail/at_download/file

Television:

Crews perform prescribed burn in Lenoir, February 14, 2017

http://www.wsoctv.com/news/local/crews-perform-prescribed-burn-in-lenoir/494185090

Newspaper:

Guest Columnist: Must Heed Wildfire Wakeup Call, November 21, 2016
Guest column in Asheville Citizen Times from partner Josh Kelly, MountainTrue
Guest Columnist: Must Heed Wildfire Wakeup Call, November 21, 2016
"Ironically, another part of the problem is that there hasn't been enough of the right kind of fire. The Paddy's Creek fire on the western side of Linville Gorge hasn't gotten nearly as much press, and with good reason. That fire started on Oct. 25 and was completely contained two days later, by Oct. 27. The blaze started from an abandoned campfire and spread into the woods. Fortunately, those woods have had several controlled burns as part of the Grandfather Restoration Project, a collaborative project that MountainTrue and dozens of other organizations helped to found in 2012. The Paddy's Creek fire was held to just 11 acres despite the steep and rugged terrain because controlled burns decreased fuel loads. The fires that are raging through our region now are so difficult to stop in part because they are moving through dry, dense vegetation that hasn't burned in 50 – 100 years. Another benefit of controlled burns is that they are planned in weather conditions where smoke is lifted high into the atmosphere."

Prescribed burns begin in Pisgah National Forest, February 10, 2017
Prescribed burns begin in Pisgah National Forest, February 10, 2017
"The Grandfather District has a long history of controlled burning that has made a difference in wildfires, she said. Of the four significant wildfires on the Grandfather District this fall, two fell within controlled burn units - the Paddys Creek and Buck Creek fires. These areas have seen controlled burning under the Grandfather Restoration Project, a 10-year project focused around restoring fire resilient ecosystems while providing for community protection. Reduced fuels in the controlled burn areas and existing fire lines meant firefighters were able to contain these fires quickly."

Social Media:

Grandfather Restoration Project Blog
Grandfather Restoration Project Blog
- Crawley Branch Southern Restoration Project
- Black Bears and Forest Management on the Grandfather

Temporary Closure Affects Woods Mountain Loop on Grandfather Ranger District, January 3, 2017
Temporary Closure Affects Woods Mountain Loop on Grandfather Ranger District, January 3, 2017
"This project is part of the Grandfather Restoration Collaborative Forest Landscape Restoration (CFLR) Project, an 8-year project designed to restore 40,000 acres of the Grandfather Ranger District. The Armstrong Creek project will include four of the five CFLR objectives including restoring fire adapted vegetation, improving wildlife habitat and forest composition, maintaining viable native plant communities, and improving watersheds."

Signatures:

Recommended by (Project Coordinator(s)):

Approved by (Forest Supervisor(s)):