



2016 Uncompaghre Plateau Collaborative Forest Landscape Restoration Project

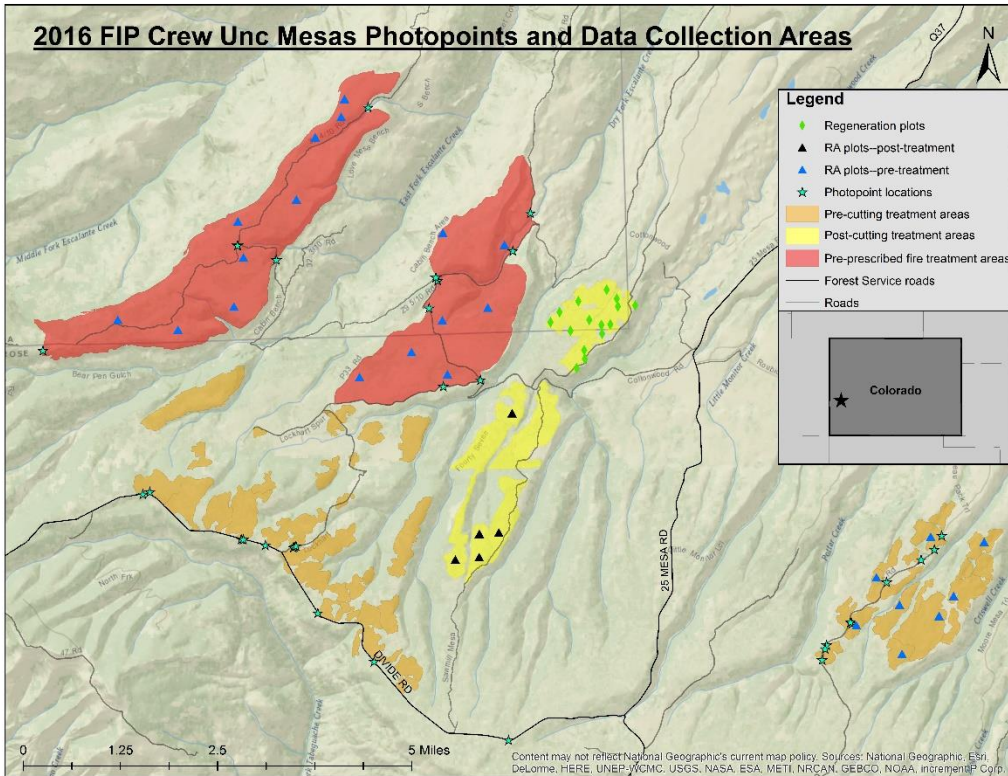
Forestry Internship Program (FIP) Progress Summary

CFRI-1602

This report presents a summary of progress and data collected from the Uncompaghre Mesas project area in the summer of 2016. In 2016, members of the Montrose High School Forestry Internship Program (FIP) crew (shown below), led by Lyle Motley and managed and supported by the Colorado Forest Restoration Institute (CFRI), collected data on trees, surface fuels, and understory cover in pre- and post- harvest and prescribed burn treatment areas on the Uncompaghre National Forest. The FIP crew collected data in post-treatment areas where pre-treatment data has already been collected in years past (black triangles on map, page 2). The majority of the 2016 FIP crew progress included collecting pre-treatment data in areas where cutting and or prescribed fire will occur in the near future, starting in fall 2016 (blue triangles on map, page 2). The FIP crew also took pre-treatment photo-points in several project areas where treatment has not yet occurred to use as an important visual tool to evaluate forest change before and after treatment to supplement data collection in these areas (blue stars on map, page 2). Additionally, the crew collected a small portion of regeneration data in a post-harvest treatment area to supplement regeneration data that was collected in previous years (green diamonds on map, page 2).

At right: The 2016 Forestry Internship Program (FIP) crew (from top left): Gavi Lightsey, Megan Horkans, Lyle Motley (crew leader), Daniel Culver, and Logan Porter.





At left: Map of 2016 data collection sites, photo-point areas, and treatment areas in the Unc Mesas Project area, Uncompaghre National Forest, CO.

2016 Accomplishments:

- 1) Data collection in post-harvest treatment areas.** The FIP crew collected data in 5 3/5th acre plots (black triangles in map above) in post-harvest treatment areas (areas depicted in yellow in map above). These plots had pre-treatment data collected in 2014-2015 prior to harvest, and CFRI will perform analyses to report on changes to basal area, species composition, fuels and expected fire behavior, understory and forest floor cover, and tree regeneration if sufficient data allows.



At right: Photo of a post-treatment plot taken by FIP crew in 2016. Treatments aimed to reduce the density of standing trees, ladder fuels, and shade tolerant species, while creating more open stand conditions, retaining large ponderosa pine and aspen, and increasing light to forest floor to encourage the growth of understory vegetation and shade intolerant species such as ponderosa pine.

2) **Data collection in pre-harvest treatment areas.** CFRI and the 2016 FIP crew implemented data collection in the 7N treatment area (area depicted in orange on west side of map, page 2). Cutting will commence in this area in the fall of 2016 and will be on going for several years. Pre-treatment data was collected in 8 3/5th plots in this treatment area in the hopes that future funding will



Above: Photo of a pre-treatment plot in the 7N treatment area. Treatments that will begin in 2016 will decrease stand density, thinning out shade tolerant species, while retaining aspen and ponderosa pine, and opening up the canopy floor to light.

allow the continuation of post-treatment data collection in this treatment area, and continued CFRI analyses will report on changes to forest, fuel, and regeneration conditions.

3) **Data collection in pre-prescribed burn treatment areas.** In 2016, CFRI and the FIP crew implemented data collection in pre-prescribed burning treatment areas, where burning will take place starting in fall 2016. The FIP crew will return in 2017 to collect post-burn data if prescribed burns have been implemented.

a. **Love Mesa prescribed burn area.** Data was collected in 9 plots in the Love Mesa treatment area (area depicted in red on the far-east side of map, page 2). There



was some thinning and harvesting treatments that

At left: Photo of a pre-prescribed burn plot in the Love Mesa treatment area. Surface fuels (dead and down aspen boles) and ladder fuels (regenerating aspen and ponderosa saplings) may be burned by prescribed burn in the fall of 2016.

occurred in this area in the 1980-1990's, and prescribed burning will occur in the fall of 2016.

- b. Cottonwood Mesa prescribed burn area.** Data was collected in 7 plots in the Cottonwood Mesa area (area depicted in red in center of map, page 2). Some mechanical treatments did occur in this area in the past, and a prior prescribed burn occurred >10 years prior to 2016, but was considered a cold burn. This area will also be prescription burned in fall 2016.

4) Collection of regeneration data in post-treatment areas. In 2015, CFRI and the FIP crew implemented the collection of regeneration data across several post-treatment areas to better understand future forest dynamics following treatments in this area. In 2016, the FIP crew collected regeneration data in an area that had not previously been surveyed in 2015, collecting data in an additional ~20 plots (green diamonds in map, page 2) to augment the 2015 regeneration monitoring efforts.

5) Collection of pre-treatment area photo-points. In 2016, CFRI and the FIP crew took 30 photos at strategic points of pre-treatment areas (blue stars on map, page 2). These “photo-points” were strategically placed along roads within or on the boundary of pre-treatment areas so as to be easily accessed again to take post-treatment photos. These photo-points will also be useful stopping areas for UP-CFLRP field trips in the future, where attendees will see the post-treatment area, with the contrast of a copy of the pre-treatment photo in hand to understand what the area looked like prior to treatment. Additionally, several photo-points were strategically placed in areas where an untreated area will be directly next to or across the road from a treated area, so that a “control” and “treatment” visual comparison can be made for future educational opportunities such as field trips. Post-treatment photos will attempt to recreate each pre-treatment photo using landmarks, such as trail signs, unusual trees, or very large trees. Photo-points will generally serve as a supplemental visual tool to evaluate changes pre- and post-treatment in conjunction with data collection performed by the FIP crew and analysis performed by CFRI. Pre-treatment photo-points were taken in the

At right: “photo-point” photo taken in the Love Mesa pre-prescribed burn area. Photo is taken near a road, and has a clear permanent marker (trail sign). Post-treatment photo will attempt to recreate this same photo, illustrating post-burn conditions.



7N and Lockhart pre-cutting treatment areas, as well as in the Cottonwood Mesa and Love Mesa pre-prescribed burn treatment areas. Care was taken in marking photo-point locations with rock cairns and flagging, as well as recording point locations in GPS and photo-point notes to ease the relocation of photo-point locations.

Future Steps:

- 1) CFRI will present FIP crew progress at the Uncompaghre Plateau Collaborative Forest Landscape Restoration annual meeting in spring 2017.** This will include an update on the 2016 FIP crew progress, as well as a report of any analyses that will occur, if there is sufficient data sampled to analyze.
- 2) Collect post-treatment data in remaining Sawmill and Lockhart treatment areas if treatments have been completed.** Pre-treatment data was collected in 2015 in the Lockhart and Sawmill treatment area. Data collection in 5 post-treatment plots was completed in 2016, but there are more that could be collected in 2017. Marin Chambers (CFRI) and Todd Gardiner (USFS, Ouray and Norwood Ranger Districts) will communicate about the completion of treatments in these areas.
- 3) Collect additional targeted pre-prescribed fire data in the Love Mesa and Cottonwood Mesa prescribed burn areas.** 17 pre-treatment plots were established in 2016; Marin Chambers will consult with burn boss to determine if these areas are likely to be burned, and if not, will add additional plots in areas very likely to be burned. If prescribed burning occurs in fall of 2017 in these two treatment areas, the FIP crew will return to collect 1 year post-treatment data.
- 4) Collect additional targeted pre-prescribed fire data in other areas of the Uncompaghre Plateau treatment areas.** Data collection could be prioritized in areas that are prioritized to be burned in the fall of 2017. Marin Chambers will consult with burn bosses to ensure the priority areas for pre-prescribed burning data collection to take place.
- 5) Implement enhanced photo-point collection in pre-prescribed burning plots.** Photo-point protocol typically taken at t-posts in rapid assessment plots will be enhanced to include photos taken at each cardinal direction from each t-post in plot, as opposed to only along east-west line to capture visual image into the plot. This will allow for greater visual reference of prescribed burn area. If time allows, crew can revisit 2016 plots in Love and Cottonwood Mesa areas to gather additional photos at t-posts.
- 6) Revisit several 2016 Regeneration plots.** Some GPS names and coordinates do not match plot names on datasheets. Tags were put in nearest tree to plot center, so we need to fix plot names using tags.
- 7) Revisit 2015 & 2016 Regeneration plots to collect regeneration data to gather additional tree recruitment data.** Dozens of regeneration plots were established in 2015-2016 in and around the Sawmill treatment area; these plots were located in uncut, cut, and cut and burned areas. Returning 2 years following initial data

collection will enable tree recruitment monitoring in the first years following cutting or prescribed burning and will allow for the opportunity to collect post-mechanical and pre-prescribed burning data in areas where prescribed burning will occur in 2017 or 2018.

- 8) **Take post-treatment photos at photo-points in treatment areas where treatment has occurred.** Treatments may be complete in some areas of the Lockhart treatment area. Marin Chambers (CFRI) and Todd Gardiner (USFS, Ouray and Norwood Ranger Districts) will communicate about the completion of treatments in this and other areas.
- 9) **Add additional pre-treatment photos points in treatment areas ~100 m of the road in treatment areas.** This will be especially important in areas where prescribed burning will take place as burning does not always occur at the road edge. Marin Chambers will consult with burn bosses to ensure that the locations of the photo-points are likely to be burned within prescribed burn treatment areas.
- 10) **Future possibilities: Collect additional pre-treatment data in the 7N treatment area if funding for UP-CFLRP may continue past 2019.** 8 plots were completed in 2016; several more could be added if deemed appropriate.
- 11) **Future possibilities: Establish control plots in untreated areas.** Dan Binkley (CSU forest ecologist, UP-CLFRP collaborative) has suggested establishing control plots for several years. If deemed appropriate, CFRI will identify control areas, and FIP crew will collect data in control plots. Alternatively, photo-points could be added in untreated areas representative of larger monitoring area.



At left: “photo-point” photo taken in the Love Mesa pre-prescribed burn area. Photo is taken near a road, and large ponderosa in left rear of photo is the landmark. Post-treatment photo will attempt to recreate this same photo, illustrating post-burn conditions.

