

COPPERTON RX

Cibola National Forest-Mt. Taylor Ranger District

May 4 – 7, 2021

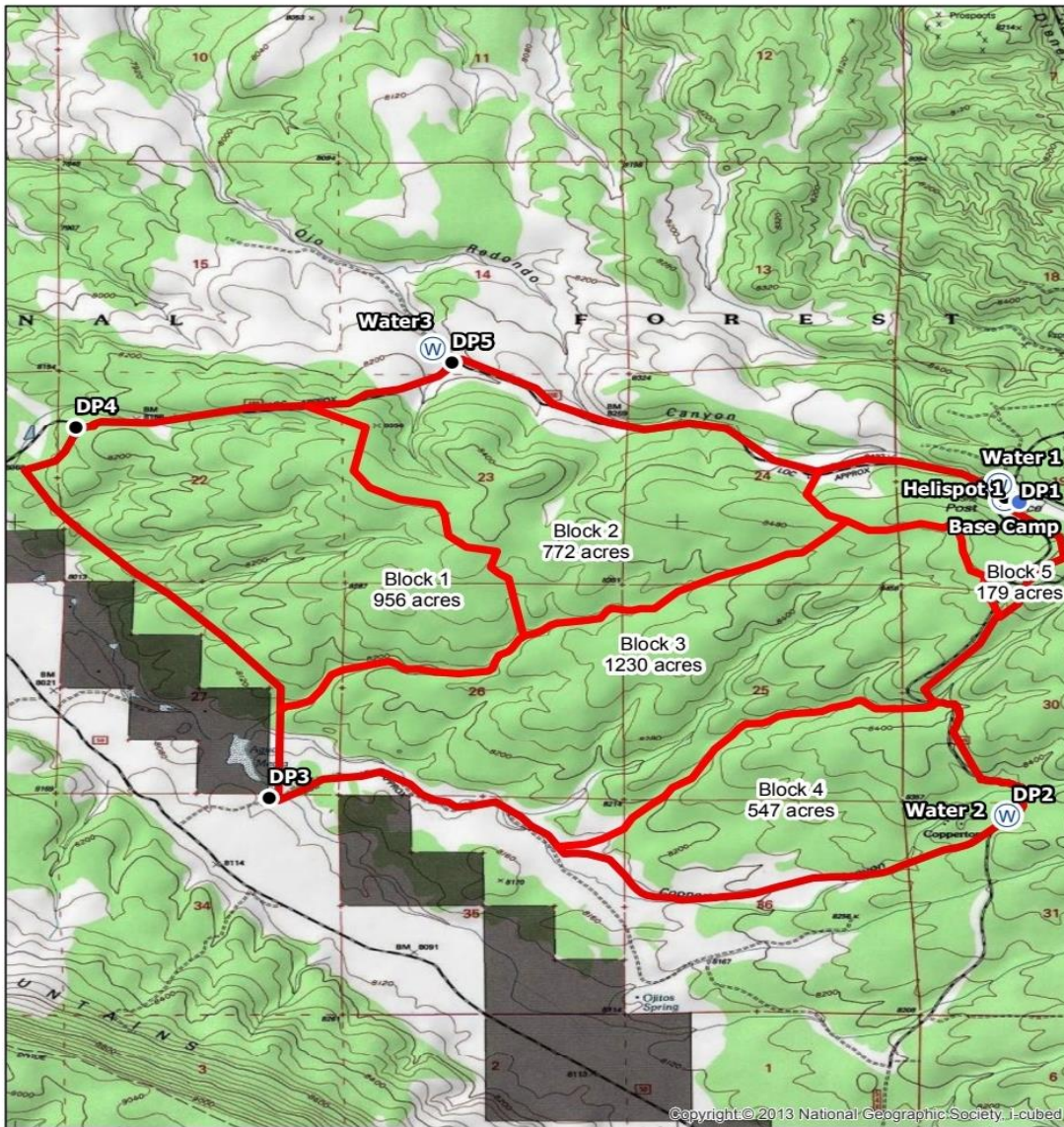


Report Prepared by

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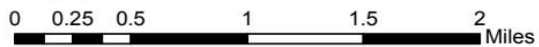
Kodi Leslie- FEMO-Mt. Taylor Hotshots





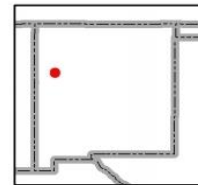
Copperton Prescribed Burn 2021

- Base Camp
- Drop Point
- Helispot
- Water
- Copperton Boundary



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United States Department of Agriculture
 United States Forest Service
 Cibola National Forest and National Grasslands
 Mt. Taylor Ranger District
 1800 Lobo Canyon Rd.;
 Grants, NM 87020



PROJECT OVERVIEW

The Copperton Block of the Redondo Rx consists of primarily ponderosa pine overstory with some shrub and pinon pine and juniper components. It is part of the 2003 Bluewater EIS and for the past decade has been part of the Zuni Mountains Collaborative Forest Landscape Restoration Program (Zuni CFLRP) project. The Zuni CFLRP is a 210K acre landscape restoration project focused on restoring the ponderosa pine ecosystem in the Zuni Mountains through restoring forest structure and process with large-scale thinning and application of prescribed fire. The unit has been logged and thinned with moderate loading of dead and down activity fuels. This will be the second entry with prescribed fire. The Copperton Block is in the Zuni Mountains 8 miles south of the Bluewater community and 16 miles southeast of Thoreau and 14 miles west of Grants/Milan New Mexico. The Copperton Block is 3800 acres in size and ranges from 7600 to 8500 feet in elevation.

The Forest Stewards Guild has been a long-time partner on the Bluewater EIS implementation since 2005 and a core partner in the Zuni CFLRP. The Guild was able to partner on this prescribed fire through Collaborative Forest Restoration Program project, that is a companion 3-year project to the Zuni CFLRP.

PROJECT OBJECTIVES

The overarching project objectives of the Copperton Block are to reduce fuel loading and reintroduce fire to the landscape reducing the chance of catastrophic wildfire while improving watershed health and wildlife biodiversity. Specific objectives of this entry with prescribed fire were to:

- Reduce the current fuel loading in the unit to help prevent uncharacteristic wildfire.
- Reduce the threat of wildfire to private property.
- Manage smoke for public safety.

PROJECT RESOURCES

Burn Boss Type 2	Anthony Pacheco Howard Kenny (T)
Agency Administrator	Yolynda Begay, District Ranger
Firing Boss, Group 1	Vernon Jackson
	Mt. Taylor IHC Squad 1
Firing Boss, Group 2	Eric McKenna
	Mt. Taylor IHC Squad 2

Aerial Firing	Sandia gTA with Eddie Baca
Holding Boss	Chris Sanchez
	Mt. Taylor E-622, Ryan Carabajal +2 Mt Taylor E-623, Nathaniel Vallo +2
	Crew 32, Chris Sanchez +2 Sandia E-651, Dillon Padilla +1
	Sandia Helitack, Courtright +3 Forest Stewards Guild +2
	Bernalillo County T6, Damion Gonzales +2
EMT	Alec Tiscareno
Fuel	Christian Brashears
Fire Effects Monitoring	Kodi Leslie Eytan Krasilovsky
Archeology	Ryan Washam
Contingency Resources (On Site)	E623 +2 on Initial Attack
Duty Officer	Edward Baca

Note: Adjustments were made to the organizational chart based on staffing, tactics, and training.

SUMMARY OF BURN OPERATIONS

TEST BURN

The test burn occurred on 5/4/21 slightly north of DP2 west of Forest Road 548 shortly before 1100. The fuels were still drying from the rain the area received on 5/3/21, weather was cool with a dry bulb of 50 and an Rh around 40%. During test fire, fire behavior was low intensity creeping with the primary carrier of grass into cured slash piles.

IGNITION SUMMARY, 5/4/21

Ignitions began with the two firing teams slowly working the area near DP2 between 1100 and 1200 creating a blackline. Around 1200 the firing teams split with firing team 1 continuing north along FR 548 and firing team 2 heading south around the Copperton archeological site and eventually continuing along the southern line of Block 4. The FEMOs split with Leslie staying with firing team 2 along the south boundary and Krasilovsky staying with firing team 1 along the north boundary. As the firing teams made progress around Block 4, 9TA started aerial firing igniting the interior beginning after 1300. There were multiple slot overs across forest road 548, with 9TA utilizing buckets to help ground resources prevent the spread of fire outside of the blackline.

IGNITION SUMMARY, 5/5/21

Ignitions began on Block 3 at 1000 with two teams. A Sandia Helitack firing team began blacklining along the southern end of forest road 548 while the Mt. Taylor Hotshots worked to improve handline along the northern boundary of Block 3. 9TA began aerial ignitions around 1200 but was stopped around 1300 due to single and isolated group torching. Ignitions resumed by 1730 and fire effects had moderated without group tree torching, due to lowering temperatures and moderating RH values. Ignitions were complete by 2000 with Mt. Taylor IHC and the Sadia Helitak completing the blacklining operations.

IGNITION SUMMARY, 5/6/21

Ignitions were very limited on 5/6/21 with a focus on some interior pockets. After an hour of hand ignitions of interior pockets, ignitions ceased due to fire activity and prescription thresholds. Ignitions of Copperton Blocks 1 and 2 were not resumed due to critical fire weather and conditions

WEATHER SUMMARY

The Burn Boss and Burn Boss Trainee reported that in general, the spot forecasts aligned with the hourly observations each day. The site received precipitation on Monday 5/3/21 which limited spread and reduced fire behavior until about 1300 on 5/5/21, after which dry fuels returned. New Mexico and much of the West is in drought conditions with a particularly dry winter, though the Zuni Mountains were reported to have several feet of snowpack persist in the winter.

The prescription for the burn called for not more than 5% tree mortality, average flame lengths of 2.7 feet, 20 ft. winds of less than 18 mph, dry bulbs between 50 and 89 degrees, and relative humidity's between 10 and 30%. Desired effects were to reduce 1- and 10-hour fuels by 75% and 100- and 1000-hour fuels by 50% with ranges allowed for each of those fuel types.

Date	Max Temp/Time	Min Temp and Time	Max Rh/Time	Min Rh/Time	Winds	Notes
5/4/21	66, 1600	50, 1015	45, 1100	10, 1600	SW, NW, W, gusts to 15 at 1700	Multiple spots across FR 548
5/5/21	70, 1600	49, 0800	45, 0900	12, 1600	W, NW, gusts to 13 at 1400	Increased cloud cover, isolated and group torching
5/6/21	71, 1300	57, 0900	26, 0900	11, 1600	SE, S, SW, gusts to 12 at 1600	Increased cloud cover moderated temps.
5/7/21	73, 1300	47, 0800	54, 0800	11, 1500	S, SW, gusts to 15 at 1400	No ignitions

Figure 1. Daily weather observation summaries.

FIRE BEHAVIOR SUMMARY

During the blacklining operations there was diverse fire behavior depending on available fuels, weather and topography. The primary carrier of most fire behavior was in the grass, pine litter and brush fuel components. Ground fire characteristics were observed mostly in the pine litter and in the shorter grass with creeping and smoldering. Surface fire was observed in the pine litter, grass and brush fuel components, with low to moderate intensity. Ground fire at times, when influence by fuels, weather and topography, did display active runs only to be slowed down by running into itself. Isolated and group torching occurred in the ponderosa pine and pinon fuel types. Torching was limited to the availability of ladder fuels leaning into the lower canopies. Fire activity was mostly a backing and flanking fire depending on the orientation of the units being burned in the relation to the wind. Head fires were observed on southern boundaries of the burn units, sending head fires towards the interior of the units. Rates of spread ranged between 0.25 chains/hr to 10 chains/hr mostly with wind influences as most of the burn units were burned on a slope no greater than 30%



Figure 2. Low intensity fire behavior in Block 4 on 5/4/21



Figure 3. Moderate fire activity in exposed brushed brush in Block 4 during the late afternoon hours on 5/4.



Figure 4. Wind driven running surface fire in the ponderosa pine litter understory in Block 3 on 5/4.



Figure 5. Strips are seen growing together on northern handline of Block 3 on 5/5.



Figure 6. Low intensity fire behavior in Block 4 on 5/4/21 with slash jackpot flames in background.



Figure 7. Low intensity fire behavior in Block 3 on 5/5/21 . Delayed ignitions were intentional for reduced fire behavior.

SMOKE SUMMARY

Smoke impacts to communities were an important factor in decision making by the Burn Boss and Burn Boss Trainee. Smoke from 5/4/21 were pushed with a southwest wind and transported smoke to the Grants area. With a nighttime diurnal flow smoke impacted the Bluewater area, causing smoke to funnel down in the lower drainages. On 5/5/21 a west - northwest wind smoke impacted sparsely populated areas along the highway 53 corridor off the east-southeast. 5/5/21 the change in wind direction provided smoke relief to the Bluewater Acres community. There were minimal interior ignitions on 5/6/21 that produced localized smoke impacts. Following clean up ignitions, of interior pockets, smoke was produced by interior fire growing together. In general, smoke was white with some yellow and at times grey in color. Smoke concentrations, depending on fuels, weather and topography, was observed as light/wispy and light to moderate in density. The above ground levels of smoke ranged from 200 ft. AGL to 1800 ft AGL depending on wind and fuel loading influences. With the winds as a major factor in smoke dispersal, smoke was not rising very high due to sheering of the wind upon canopy clearance.



Figure 8. Smoke from roughly 1700 on 5/4/21 from Block 4 looking south, showing the smoke transport to the east and northeast.



Figure 9. Smoke from roughly 1200 on 5/5/21 from Block 3, before aerial ignitions paused. Smoke transport was to the east and southeast.

FIRE EFFECTS SUMMARY

First order fire effects reflected the low to moderate fire behavior that was observed with minimal crown scorch and tree torching. Surface fuels were consumed within the prescription ranges.



Figure 10. Taken of Block 4 3 days after ignitions, showing a mosaic burn with ponderosa pine seedlings green and unburned.



Figure 11. Pre and post photos from Block 4 showing slash and needle cast reduction with overstory retention.



Figure 12. 1000 fuel reduction by 40-60%.



Figure 13. Pre and post photos from Block 4 showing carry and consumption in the grass and needle litter, a mosaic burn pattern, and minimal impact to the sapling tree.



Figure 14. Pre and post photos showing legacy snag that became large woody debris three days after ignitions.

COMMENTS

The spring 2021 Copperton Rx successfully met objectives for firefighter safety, public safety, it met the ecological objectives, and met the wildfire risk reduction objectives. Additionally, the Copperton Rx was able to host two collaborative partners on 5/5/21 by providing them supervised fire observation, field education and an operational hand in ignitions. The professional staffing and implementation of the burn made a positive impact on the representatives from NM State University and the NM Native Plants Society. Smoke impacts to communities were always considered in burn decisions, which is particularly important given an aging population in the context of an ongoing pandemic. Ecologically the burn was a low intensity second entry burn that recycled nutrients, was at an appropriate return interval for ponderosa pine, retained seedlings and saplings, retained old and large trees, and both left and created ecologically important large standing and down woody debris.

APPENDICES