2020 Medio Wildfire: Santa Fe National Forest

Santa Fe's Backyard: A Fuels Treatment Success Story

Introduction

The Medio fire was a lightning caused wildfire reported on August 17, 2020 on the Española Ranger District. Conditions were unseasonably dry for August, resembling those experienced in June: temperatures were reaching the high 80's, humidity's in the teens, 1000-hour fuels were in the single digits, and the Energy Release Component close to the 90th percentile. The Medio Fire burned 4,010 acres and was located southwest of the Pacheco Fire (Figure 1). The fire started within a sub-drainage of the Rio Nambe. Strong north winds kept pushing the fire towards the southeast. The fire eventually burned within three main drainages: the Rio Nambe on the north, the Rio en Medio, and Pacheco Canyon (Rio Chupadero) on the south.

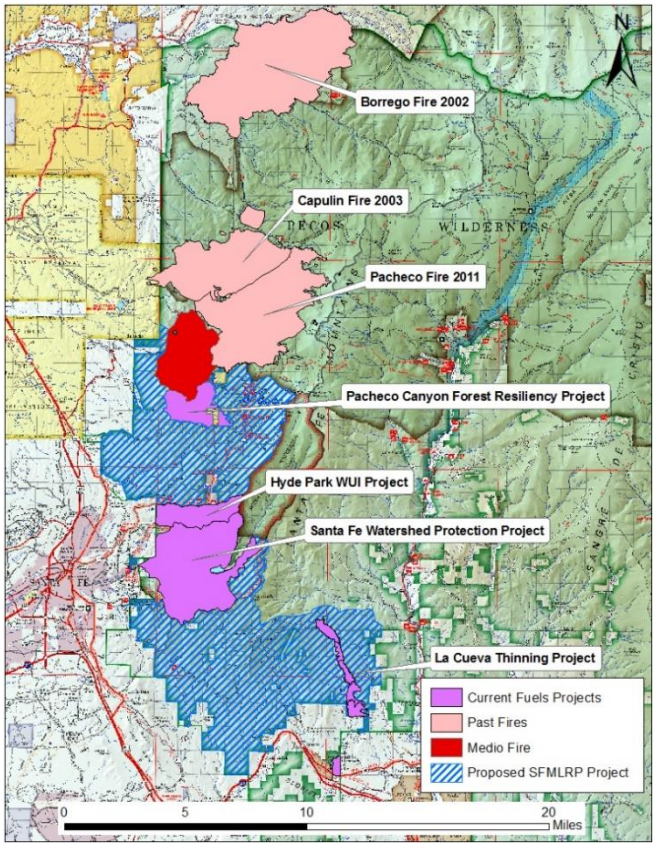

Figure 1. Current and future projects. Past fire activity.

There are numerous values at risk in the area:

- Culturally sensitive sites on Forest Service land and the Pueblo lands of Tesuque and Nambe.
- The Nambe Reservoir and watershed infrastructure downstream, as well as watersheds that provide water to communities downstream.
- The Santa Fe Watershed to the south, which provides nearly half of the municipal water supply the City of Santa Fe.
- Busy recreational sites including the Santa Fe Ski Area, Aspen Vista, Big Tesuque, Hyde Park and a network of forest trails.
- Homes within Pacheco Canyon and the villages of Chupadero and En Medio.
- A powerline feeding the Santa Fe Ski Area and the Tesuque Peak communications site, which is critical for both commercial and emergency services.

Greater Santa Fe Fireshed Coalition

The GSFFC is a collaboration of federal, state, tribal, local agencies, universities, non-governmental community organizations, and private landowners partnering together to manage forests and watersheds on a landscape scale. A primary focus of the GSFFC is to restore structure, function and resilience in frequent fire forests and reduce the potential for uncharacteristically severe and intense wildfires. This partnership helps target priority areas within the fireshed for fuels reduction treatments and prescribed fire such as the

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Pacheco Canyon Forest Resiliency Project and the Santa Fe Mountains Lands Resiliency Project.

The Pacheco Canyon Forest Resiliency Project fuels treatments had a very positive impact on the Medio Fire. Treatments were funded in part by the NM Department of Game and Fish, as well the Tesuque Pueblo through BIA's Reserved Treaty Rights program. These treatments were strategically chosen to reduce the risk of catastrophic fire within Pacheco Canyon, protecting pueblo of Tesuque lands, busy recreation areas, and the Santa Fe Ski Area. The proposed Santa Fe Mountains Lands Resiliency Project aims to build upon existing fuels reduction projects to treat the frequent fire regimes to create a more fire resilient forest. As seen from past fire activity most fires occur within a band of historically frequent fire forest (Figure 1). Past fire history studies have shown that a fire historically occurred in the area every four to five years, on average (Margolis, 2017). Lack of fire for over a century has allowed fuel to accumulate and increased the risk of high-severity fire.

A large portion of the Medio fire burned within the SFMLRP proposed footprint. Treatments within this proposed project have a high probability of success at reducing fire behavior and being a successful barrier to the spread of catastrophic wildfire.

The 2019 Pacheco Rx and the fuel break thinning treatments played the biggest role in reducing fire intensities and preventing the further fire progression to the south and east and are discussed in detail below, Fuel Treatment Effectiveness (Figure 2).

Fuel Treatment Effectiveness

Figure 3. 2019 Pacheco Rx and an adjacent unburned stand.

The Pacheco Canyon Forest Resiliency Project is a 2042-acre fuels reduction project that began in 2018. The project utilizes a combination of prescribed fire, thinning and piling. The objective is to reduce the amount of burnable material, leading to a reduced risk of crown fire and lower fire intensities. Starting in May of 2019, the Pacheco Rx, a 550-acre prescribed burn, was conducted on the south facing slopes of Pacheco Canyon in a predominately ponderosa pine stand. This burn reduced ground fuels, raised canopy heights, and thinned some of the understory (Figure 3).

During the summer of 2019 a fuel break was created on the ridgeline separating the Rio En Medio drainage and Pacheco Canyon. This was a thinning project on either side of the ridge to serve as containment line for the next prescribed burn. On the south side of Pacheco Canyon, ridgelines were similarly thinned. The first cut and pile thinning unit 1 was also completed the summer of 2019. See figure 2 for treatment locations.

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Figure 4. Looking north into Rio en Medio

Figure 5. Looking south along fuel break.

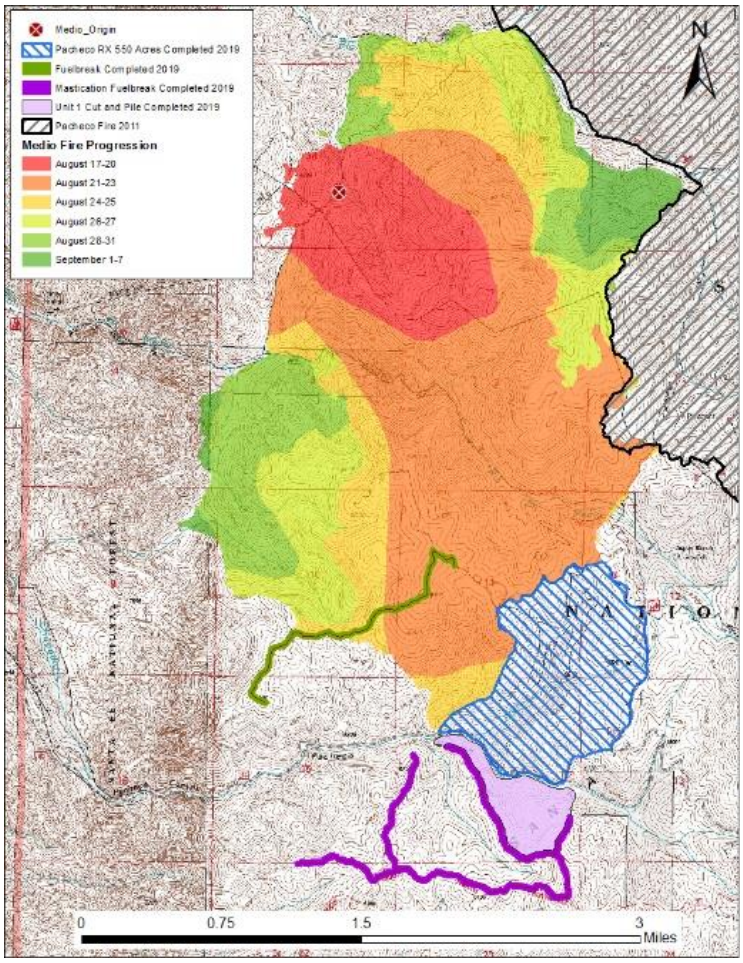

Figure 2. Fuels Treatment Effectiveness.

The Medio fire started in a sub-drainage of the Nambe watershed. During the first couple of days August 17-20, the Medio fire made some significant sustained crown runs. Thick fuels, steep canyons, and winds from the north were in alignment. The fire activity and difficult access made engaging the fire very unsafe. On August 21 the fire spotted across the Rio en Medio and made another crown run towards Pacheco Canyon (Figure 4). This run reached the fuel break late that afternoon and went from an active crown fire to a surface fire when it reached the treatment, despite the continued strong winds from the north (Figure 5). That evening fire crews were able to anchor fire off the 2019 Pacheco Rx and build a black line along the north side of the prescribed burn to the 2011 Pacheco fire scar to create a back burn ahead of the main fire essentially cutting off the southern and eastern progression of the main fire. The reduced fuel loading and thinned understory in the prescribed fire allowed fire crews to safely burn during unfavorable conditions. Spot fires were picked up in Pacheco Canyon a quarter mile ahead of the fire front. Those spot fires found within the prescribed burn experienced very little spread and were contained at less than a quarter acre each. Spots outside of the prescribed burn, came together and continued backing downhill into the morning of August 22nd. The next day fire crews were able to utilize the western flank of the prescribed fire as a holding feature keeping the fire even and backing down into Pacheco Canyon. Simultaneously, firefighters were able to light a backing fire on the northern side of the fuel break to stay ahead of the main fire still in Rio En Medio.

Ridgelines, roads, and streams are often utilized as containment lines for lighting burns ahead of an approaching wildfire. However, this takes a lot of time and manpower to

accomplish and often requires crews to work miles ahead of the main fire. The fuels treatments in the Pacheco Project provided fire crews with ready containment lines and a break in the fuel to safely, and successfully block the continued progress of the Medio fire.

Summary

- Fuels treatments in the Pacheco Project provided fire crews with ready containment lines and a break in the fuel to safely, and successfully stop the continued progress of the Medio fire.
- Reduction of fuel resulting from the May 2019 Pacheco Rx kept the fire from progressing towards the Tesuque Watershed.
- Spot fires within the Pacheco Rx were very slow to spread due to the reduced fuel and raised canopy heights. New lightning strikes within prescribed burns will be equally slow to spread.
- Fire went from an active crown fire to a surface fire when it reached the fuel break.
- Most wildfire activity occurs within a band of historically frequent fire forest.
- The Medio fire illustrates the overall importance of our continued fuels reduction efforts and reintroduction of fire, such as the proposed Santa Fe Mountains Lands Resiliency Project.

Citation:

Margolis, E.Q., 2017. Historical fire regimes in mixed-conifer forests of the west slope of the Southern Sangre de Cristo Mountains, New Mexico. Progress Report for the USGS-USFS IAA.

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