

If You Go For A Hike in the Jemez Today - You're Sure to Have a Surprise

by Charles R. Mansfield (C) 2001

This is the story of a short afternoon hike in a part of the burned area left by the Cerro Grande fire. The photographic record of this hike demonstrates the extreme variability of the burn patterns of a wildfire. The area of the hike is just west of SR 501 between Valle Canyon and Pajarito Canyon. The topography of this area is dominated by the gentle eastern down slope of the Pajarito Plateau and by a pair of earthquake faults that have created two benches (relatively flat areas) above SR 501.

The Cerro Grande fire broke out of Frijoles Canyon on the evening of May 7, 2000 and made an advance on nearly a mile wide front toward Los Alamos National Laboratory. This advance was driven by winds and directed to some extent by a set of man made fire barriers. The barriers consist of roads, fire breaks, logging areas and thinned areas. In addition the fire was contained to some extent by the regrowth left by a wildfire in this area in about 1955. A map of the area showing the route of travel, roads, firebreaks, logging areas and thinning areas is presented as Figure 1. The approximate location and direction of each photograph is also shown.



Figure 1. Route of a Hike west of State Road 501. The fire burned in all areas west of SR 501. Thinning and logging was done on both sides of SR 501 after the La Mesa fire in 1977.

The hike begins at the head of the Pajarito Canyon truck trail on SR 501. This point is about 0.5 mi South of the Two Mile Mesa entrance to LANL technical areas. The southern branch of this road ascends the ridge on the south side of Pajarito Canyon. This road has been used for multiple use access to the area. The road has not been maintained and has been blocked in several places to reduce erosion. SR 501 can be seen in the right background in Photo 1. SR 501 served as a major firebreak.



Photo 1 Pajarito Canyon truck trail near SR 501. The Highway can be seen in the left center.



Photo 2 Truck trail to thinning and logging operations.

At a point about 200 yards South West of the first photo location the truck trail begins to climb steeply up the ridge on the north side of a small drainage to a series of logging areas. These logging areas and the road probably helped to blunt the initial advance of the crown fire into Los Alamos County. Photo 2 shows this road where it climbs through an area that was thinned after the La Mesa fire. Low intensity ground fires burned throughout this area and removed a large amount of fuels.

Photo 3 was taken from a point a few feet to the south of photo 2. This photo is representative of the state of the forest near SR 501 after the Cerro Grande fire. The stumps remain from the thinning operations after the La Mesa fire. A large amount of firewood was gathered from the trees that were felled during the thinning operations. Note that many of these trees do not seem to have sustained major injury during the Cerro Grande fire. A few trees in the left background have died as evidenced by the reddish brown needles on the trees. These trees may have died as the result of fire induced damage.



Photo 3 Thinned forest after the Cerro Grande fire near the truck trail.

A hiking trail begins near photo location 3. This trail climbs a steep hillside to what I call the first bench (relatively level area). On this hillside the fuels were denser and there were occasional flareups of the fire that burned individual trees. The trail meets a road, that originates in Water Canyon, at the edge of the bench. This



Photo 4 Lightly burned area on the first bench

road has been here for many years and has provided access for a multitude of uses. In some areas the forest has been thinned for firewood and logging in this area. The Cerro Grande fire burned across this bench with generally low intensity. In a few instances there were flareups that were confined to individual trees. Photo 4 was taken in a North West direction. A few fire destroyed trees can be seen in the upper right center of the scene. These trees mark the edge of the heavily burned area on the north end of the second bench.

The road leads through a park like area that is the result of logging operations several years ago. The fire did open up vistas in the park by burning the Gambles Oak, small Ponderosa Pine and other small brush. This park like aspect will only last a few years as the brush and oak have sent up several shoots to replace each above ground stem burned by the fire. In addition there will probably be increased sprouting of pines and mixed conifers throughout this area. A number of low cut stumps resulting from the logging activities can be seen in Photo 5. The ability of deciduous plants such as oak to resprout from roots leads to the normal fire recovery sequence. The broad brush description of fire recovery is that deciduous plants (brush and trees) and grasses will first fill a fire area. As these plants mature, pines and mixed conifers begin to grow in spaces with enough



Photo 5 View of the forest 200 yards south of the Photo 4 location.

sunlight to allow them to develop. The climax forest that eventually develops in the western U.S. generally consists of pines and mixed conifers. Without the intervention of man, this process can take several hundred years.



Photo 6 Brush thicket on the hillside between the first and second benches.

A branch road leading from the first bench may have been built for access during a fire in the 1950's. Photo 6 shows a scene on the steep hillside along this branch of the road. The fire burned through this area with such low intensity that the fire potential is still high on this hillside.

Photo 7 shows a scene in the 1950's fire area a couple of hundred yards west of the Photo 6 location. The fire burned with higher intensity in this area. A few trees were killed by the fire and much of the litter on the forest floor was removed. A problem that is not widely recognized is that the trees remaining after a fire may be under considerable stress for several years as a result of damage to their root systems. Many of these trees may not be able to withstand attack by insects and disease.



Photo 7 Ponderosa Pine thickets in the burn area of the mid 1950's fire area.

There are several Aspen thickets near the edge of Valle Canyon. These thickets were relatively unaffected by the Cerro Grande fire. Photo 8 shows one of these Aspen thickets surrounded by very dense Ponderosa pine forest. The pine thickets between this point and the steep hillside to the west received light to moderate fire damage. Some larger trees were destroyed and stumps burned deep into the ground along the root systems. There are pockets in this area that received low fire damage in spite of the density of the forest. The view from the edge of Valle Canyon about 100 yards south of this point reveals that there was relatively little damage to the forest in the immediate area. Some strips of trees were killed by heat from strong ground fires; but, a majority of the trees seem to have survived. It is possible to see some of the complete devastation a few hundred yards to the west in Valle canyon from the canyon rim.



Photo 8 A stand of Aspen survived the fire.



Photo 9 Western boundary of the lightly burned area along an old road.

The remains of an old road along the western edge of the second bench probably did some good in slowing the advance of the fire. My suspicion has been that this road formed part of the western fire line of the 1950's fire. Photo 9 shows a scene along this road looking in a northerly direction. The boundary between the pine and mixed conifer forest is about 50 yards west of the road. The mixed conifer forest has been completely destroyed by the CG fire in this area.

The route of the hike continues along this road to the north for around 200 yards leads to the edge of a heavily burned area. When the fire broke out of Frijoles canyon and began its run toward Los Alamos it was driven by heavy winds. The fire seems to have broken out of Water canyon and crossed Valle canyon on a mile wide front. At the northern end of the old fire line there is complete devastation of the mixed conifer forest. Photo 10 was taken near the end of the old fire line. Some green forest can be seen in the middle distance on the lower slopes of Pajarito Mtn. The relative intensity of a fire can be judged from the remains. In this area, all of the vegetation was killed. However, the fire was not at extreme intensity as judged by the amount of small sized branches left on the trees. As judged by the oxidation line on the rocks, the fire and subsequent erosion removed from 2 to 4 inches of duff and topsoil in this area. Some of the seed spread by the aerial operations has taken hold on this steep hillside. Straw and other erosion control efforts have limited the erosion damage at this location. (This was a rocky hillside before the fire..)



Photo 10 Main burn area in Pajarito Canyon.

The route of the hike now turns toward the east along the top of the ridge. To the south of the ridge the fire burned with light to moderate intensity in the old fire area. The caterpillar tractor fire line on this ridge built during the old fire had heavily overgrown and was not a factor in the Cerro Grande fire. A fair number of the



Photo 11 Burned hillside just north of the old fire area.

Ponderosa pines have survived and the deciduous brush has sent up a profusion of new sprouts. On the north side of the ridge the seeded grasses have taken hold where the slope of the hill side decreases. In Photo 11, the anti erosion bundles of straw and some hand spread straw can be seen. A few of the buildings of LANL Technical Area 3 and some of the buildings of the town center of Los Alamos can be seen in the center of the photo.

The route of the hike follows the ridge to the second bench and then follows an old fireline to the first bench. In the efforts to mitigate the fire danger after the La Mesa fire there were a series of small logging operations that took place in the Ponderosa pine forests. Photo 12 shows one logging area at the extreme north end of the first bench. This photo was taken about 100 yards north west of the point where the initial trail arrives at the first bench. The stumps left from the logging can be seen in this photo. It appears that about ½ of the



Photo 12 Small logging operation on the first bench.

trees were removed during this operation. There were three or four similar logging operations on the ridge immediately to the north of this location. These operations and the roads helped to stop the crown fire that ran from Water Canyon to near this point.

This hike has taken the reader through a sampling of the results of the changes in the forests of the Jemez Mountains wrought by the Cerro Grande fire. It is neither easy to reconstruct the patterns of burning of a wildfire nor is it easy to predict the results of a wildfire before it takes place. There is evidence that the fire mitigation efforts that took place after the La Mesa fire were successful in slowing the initial advance of the fire into Los Alamos County. Would logging and thinning of the mixed conifer forests in the upper reaches of Water Canyon and Valle Canyon provided the needed margin to prevent the disaster of May 10 once the fire broke out of Frijoles Canyon? My personal belief is that the combination of the reduced fuel loading and the ability to get firefighters and equipment into these locations would have provided that margin. Could protection for the Jemez Salamander have been provided during logging and thinning operations? There is no question that it would have been possible. In hindsight, logging and thinning would have protected that species from the total loss that did occur in those areas from the Cerro Grande fire.

The results of the Cerro Grande fire are a good example of the “Law of Unintended Consequences.” In their rush to “protect” the forests, the people that sought to preserve them by changing sound management practices have lost those forests for at least a generation. The wildlife in the area of this hike are abundant. Deer and Elk are feasting on the new grasses and tender shoots of the brush. Birds of all types are to be seen including a Northern Goshawk that was patrolling for an easy meal. Of real concern are the beetles that are eating the dead trees. The beetle population will probably grow out of control and cause considerable damage to the stressed trees that remain from the fire.