

Existing & Desired Conditions in SWJM Area – from EA-Documents

1997- San Juan Mesa Prescribed Burn EA—

In general, the overly dense stands of small trees, high fuel loadings, lack of grasses, forbs and shrubs, and long term exclusion of naturally occurring low intensity fires have created an unhealthy and hazardous forest condition. These conditions predispose the area to extensive tree mortality by insects and/or diseases attracted to stressed trees, continued stagnation of forest habitat development (such as large, mature trees, grasses, forbs and shrubs), and the risk of catastrophic wildfire in close proximity to urban interfaces (Vallecitos de los Indios, Cerro los Pinos, Los Alamos, and private lands).

The current forest conditions are considered to be outside the limit of a healthy sustainable environment that ecologists would expect to see in this forest vegetation type. If the current trend continues, the ecological structures and functions needed to support a diverse mixture of plant and animal life would be limited. Catastrophic wildfires threaten human life and property. They cause irreparable damage to archaeological sites, and they can result in serious short or long term damage or destruction to soil productivity, water quality, air quality, wildlife and habitat, forest vegetation, scenery and recreational qualities.

The project objectives are to:

1. Reduce the hazards and high costs associated with intense crown fires, and reduce threats to all forest resources, including human life and property, associated with the current conditions.
2. Re-establish fire's role in sustaining this ecosystem, initiating a trend toward conditions that would occur under natural fire frequencies, intensities, and behavior.
3. Reduce fuel loading (the amount of forest debris comprised of live and dead vegetation) and minimize the risk of catastrophic wildfire.
4. Improve forest health by moving toward a wider variety of vegetation age classes, sizes, and lower tree densities, in a mosaic pattern over the landscape.
5. Improve wildlife habitat suitability by increasing plant diversity, vigor, and palatability, including grass, forb, and shrub species, while providing for forage.

2004 Jemez Wildland Urban Interface Fuel Reduction EA

Desired Condition:

-Reduce hazardous fuels surrounding WUI areas for the purpose of:

- increasing the safety and effectiveness of fire suppression activities;
- reducing the likelihood of fire entering the community;
- reducing the likelihood of a fire burning to the Forest from the community;
- reducing the potential of indirect effects to the community as a result of post fire erosion.

-Strategically locate areas of reduced fuel loadings where fire suppression can be conducted effectively and safely around the community.

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-Establish anchors for indirect suppression actions., and reduce quantity and continuity of hazardous fuels to provide safe egress for residents and access for firefighters in the even of a fire.

2002 Jemez National Recreation Area Assessment

See separate NRA Assessment. The public participated through correspondence, phone calls, small meetings, and large community meetings in Cañon, Bernalillo, Los Alamos, and Santa Fe. Additional input came from other agencies, tribes, interest groups, and other Forest Service resource specialists.

2005- San Diego Burn- draft EA

Fire played a dominant role in establishing and maintaining the forest ecosystems in New Mexico prior to European settlement. As settlement began, fire's influence was limited by: 1) a reduction in the amount of fuel available to carry fire, primarily from the grazing of livestock and the clearing of land for homes and infrastructure; 2) the aggressive suppression of wildfires; and 3) little or no use of prescribed fire other than to burn residual debris created by logging activities.

Eliminating fire from the landscape in the southwest caused significant environmental changes. Natural accumulations of forest fuels (living, dead and downed forest vegetation) increased. Understory seedlings in ponderosa pine and mixed conifer stands survived in unprecedented numbers. Gambel oak, that fire maintained in a patchy mosaic, became even-aged. As the canopies in brush and timbered stands became more dense, grasses and forbs in the understory became less vigorous.

Effects of these changes include increased susceptibility to disease and insects, conversion from fire-adapted species to fire-intolerant species, and reduced habitat diversity for plants and animals. These changes have to create ecosystems that have declined in health and diversity and are increasingly susceptible to devastating, stand replacement fires (large fires which consume all vegetation and kill 85-100% of the trees over an entire landscape such as a mesa or canyon or watershed). These types of fires present a threat to public and firefighter's safety, loss of homes and property, increased smoke emissions, and increased costs in fire suppression.

Prior to the Buchanan burn in April of 1993, the San Diego Project area showed the common signs of long term fire exclusion. The pine stands were stagnated by an understory which contained 700-1700 trees per acre with almost no forbs or grasses. The mixed conifer stands were also stagnated by a dense understory of small diameter trees and were moderately to heavily infested with insects. The oak vegetation was stagnated, with very little new growth or age-class diversity. The P/J was existing with a sparse understory, lacking in vegetative or age class diversity.

Monitoring of the Buchanan burn showed success in reducing the overall wildfire hazard, as well as an increase in grasses and shrubs due to nutrient recycling and a reduction in shading. Post burn effects such as excessive needle cast in some ponderosa pine stands limited some of the desired understory growth. Environmental and fuel conditions limited treatment within the P/J and gambel oak to less than 10%, and treatment of the mixed conifer to less than 50 % (see table on page 8).

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Continued management is needed to maintain desired conditions resulting from the 1993 prescribed burn, to reintroduce fire into the untreated areas, to allow fire to maintain its role in the ecosystem and to meet the long-term management goals identified on page 2 for these EMA's.

The San Diego Project objectives are:

1. Establish a sustainable level of diversity in plant species and animal habitats with regard to structure and composition.
 2. Create and maintain forest fuel conditions which present a low risk of burning with high intensities.
 3. Re-establish natural, fire adapted ecological patterns (composition, structure and function) to the maximum extent consistent with the protection of persons, property and other resources at risk.
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2005 Paliza Thinning and Burning- EA

The primary objective of the thinning and burning is to restore or enhance diverse ecological conditions that have declined and to restore healthy ecosystems. Specific objectives are to:

- Reestablish some open stands of mature pine
- Promote growth of large trees and mature-old growth habitat
- Increase the representation of pine seedlings-saplings
- Maintain or reestablish a sustainable distribution of age classes
- Reestablish aspen, meadows, young oak and other shrubs, plus grasses and herbaceous vegetation
- Reduce the severity of and susceptibility to damaging insects and diseases
- Enhance the scenery along major travel routes
- Reduce the risk of catastrophic wildfires

The objective of road obliteration and closures are to: improve soils, riparian and water quality conditions; reduce wildlife habitat disturbance; increase opportunities for non-motorized recreation; enhance visual quality; and reduce damage/vandalism to cultural resource sites.

Desired Condition Summary: (developed through public participation process)

In ponderosa pine, there would be periodic fires that imitate natural fire regimes. Multi-aged pine would contain a sustainable distribution of age classes, with a greater abundance of seedlings-saplings and older-aged trees, and patches of even-aged pine. There would be fewer acres with epidemic levels of dwarf mistletoe. There would be a lower stand density in some of the dense areas, thereby creating a higher resistance to bark beetle, defoliation, and root rot. There would be less accumulation of logging slash and needles, fewer acres of ladder fuels and overall a much lower risk of catastrophic wildfire.

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Mixed conifer forest would continue to provide uneven-age, mixed forest species habitat on the moist and dry sites where it occurs.

Pinon-juniper would have a variable distribution of age classes and densities, with an abundance of grasses, forbs and shrubs. Vegetation would cover at least 50% of the ground and soil erosion would be at natural levels.

Ecosystems in the area would be biologically diverse, providing habitats for species associated with early, mid and late seral stage habitats, and all species adapted to the ecosystems in this area..

Riparian vegetation would be diverse, abundant and healthy. Erosion and sedimentation would be within standards, to meet state water quality standards. Water quality and potential fisheries habitat would be good. Paliza and San Juan creeks would have consistent perennial flows.

Scenery along main travel routes, especially FR 10, and perhaps FR 266 and 137, would emphasize large pine trees and aspen, clumpy or uneven forest patterns and some small openings, with no visible logging slash or high stumps in the foreground.

Road density would be about 1.5 miles per square mile or less for the whole area. There would be no unnecessary roads left open to motorized use.

2002 Virgin Mesa Draft EA

(Virgin, Holiday, and lower Stable Mesas, and Virgin and Cebollita Canyons)

The purpose is to reduce the risk of catastrophic wildland fire, improve ecosystem resilience, and initiate a trend towards plant community composition, structure, and landscape pattern as would be expected to occur under natural patterns of disturbance in ponderosa pine ecosystems.

Historical logging, fire exclusion and other human caused activities have combined to alter the vegetative structure and composition of the project area, especially on the mesas. Mesa tops once dominated by ponderosa pine growing in open stands (<40% canopy closure) are now characterized by dense stands of ponderosa pine trees less than 18" (most less than 14") in diameter. Inventories conducted in the early 1900s showed open stands averaging 36 trees per acre in ponderosa pine stands on the west side of the Santa Fe National Forest. Current number of trees in ponderosa pine stands on the Jemez Ranger District exceeds 1200 trees per acre, and many stands on Virgin and Holiday Mesas contain over 3000 trees per acre. Over 31% of the stands on Virgin Mesa have stand density index where growth is limited by competition, and 25% have a stand density index indicating that mortality from excess competition can be expected. Only 19% are growing in a relatively open condition. Over 11,000 acres of the project area are rated at high to extreme risk to crown fire due to tree density and structure.

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The north facing slopes previously dominated by pine and Douglas fir are now supporting dense stands of white fir, in an uncharacteristic multistoried structure.

Riparian areas in Virgin Canyon are in good condition, supporting willow, narrow leaf cottonwood and a variety of riparian obligates as well as grasses, flowers, and shrubs along the meandering stream, however conifers are beginning to encroach onto the floodplain.

The forest understory that 100 years ago consisted of abundant grasses and flowers is now carpeted by a deep layer of pine needles with very little herbaceous growth. Springs have dried up over time. This loss of water and grasses affects wildlife by limiting water, browse, seeds, and seed sources. The insects, birds, rodents, and mammals that rely on seeds and grasses provide the food source for carnivores and so on; eventually affecting species throughout the food web.

Early logging removed many of the large trees and left poorly formed trees susceptible to mistletoe or diseases as seed trees. Large trees and snags (dead, standing trees) are important habitat components for TES (threatened, endangered and sensitive species) that inhabit the area such as spotted owls and goshawks. The overall lack of diversity in understory species, and overstory structure and age-class, limits the habitat suitability and sustainability for many species.

The changes in vegetative conditions as previously described have the potential to drastically change how a fire would burn the project area. Current conditions on Virgin and Holiday Mesas could support an active crown fire under average summer burning conditions and an independent crown fire under severe conditions. Two fires, which burned adjacent to and partially within the project area in the 1970's, burned thousands of acres as active crown fires driven by strong winds and extreme hot, dry conditions. The Henry fire, which burned in 1991 burned almost exclusively as a crown fire with no significant wind and on flat ground. In late August, 2002, the Lake Fire burned just over 4000 acres. This fire burned under "average" worst conditions as opposed to extreme burning conditions. The initial run of this fire burned over 2000 acres exclusively as a crown fire due to the stand density. These fires spread as a crownfire simply due to the fuel profile created by the overcrowded forest. Under severe conditions in 2000, the Viveash Fire burned on the east side of the Santa Fe National Forest as uncontrolled crown fire with little wind but consuming close to 30,000 acres. Other Fires on the west side of the forest in the past 25 years include the Cerro Grande fire that consumed 40,000 acres and burned over 200 homes in 2000, the La Mesa Fire also in the 1970s and the Dome fire of 1996 burned 15,000+ acres each with approximately 80% of these areas burning as active crown fires. All these fires had severe long-term impacts to soils, water, vegetation, and wildlife habitat. An active or independent crown fire in the project area would threaten these same resources as well as habitat for threatened and endangered species. Such a fire could, and, most likely would cause irreparable damage to heritage resources (cultural or archeological resources) significant to the Jemez Pueblo.

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The current road density within the project area is high. Many of the roads were constructed during times of historic logging and never effectively closed. Alternative routes have been made by vehicles trying to navigate around deeply rutted or washed out areas. The overall condition of the roads is poor. The ruts and washes are accelerating erosion, affecting natural and cultural resources.

- **Objectives:** Reduce hazardous fuels including ladder fuels, surface fuels, low tree crowns, and horizontal crown continuity. Protect communities and domestic water supplies (Agua Durma Springs). Create conditions for safer, more successful, and less costly management of fire.
 - Protect natural and heritage resources from long-term impacts caused by high severity wildfires.
 - Protect the habitat of TES species known to occupy the project area.
 - Provide effective access for fire management and fuels reduction. Reduce barriers to water/snow penetration.
 - Initiate trends in ecological structure, composition and function that are representative of the ecosystem under an expected or natural disturbance pattern.
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1999 East Fork Jemez Wild and Scenic River EA

Summary of current outstanding values (per designation) to be protected and enhanced:

Scenic Values: The scenic beauty of the landscapes within and surrounding the WSR is extraordinary. The geology of the Jemez Mountains provides a variety of dramatic landforms with vibrant colors. Scenic attractions include striking views of conifer-covered mountain peaks, open mountain meadows, impressive volcanic rock formations, dazzling multicolored rock cliff faces, and the tumbling river with its lush vegetation. The color, variety, and vastness of the landscapes are unique when compared to the arid landscapes beyond the Jemez Mountains where the WSR flows.

The river originates as a small meandering stream in the vast grassland crater of the Valles Caldera. Through the Recreation segment, the river winds its way through small pastoral riparian meadows. Within the Wild segment, the river enters a rugged stretch of canyon where cliffs and huge boulders emerge among slopes densely covered with mixed varieties of conifers. In places the river flows from canyon wall to canyon wall, making passage impossible without wading or using footbridges along the stream. Occasionally, a bend in the river will lead to an open meadow alive with seasonal wildflowers.

The Scenic segment of the river continues through another rugged canyon, and tumbles over the bedrock creating Jemez Falls, a cascade dropping more than one hundred feet. From the falls, the river flows through a steep canyon with limited access. The canyon opens up as it approaches the looming solid rhyolite monument of Battleship Rock; here the riverbanks provide exquisite beauty.

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The many varicolored cliffs around the confluence thrust up to a typical azure sky; shadows and sunlight playing across the landscape complete a dazzling mosaic.

Recreational Values: The WSR corridor has long been a recreation destination for visitors from the region, as well as from around the country. Local users center their recreation activities around multi-generational family gatherings where there is water. For some, a hike along the Trail 137 is not complete without a relaxing dip in the natural pools at McCauley Warm Spring. Throughout the WSR corridor, day use is high in the summer months, and overnight use, both in developed sites and dispersed sites, occurs spring through autumn. Commonly observed activities include hiking, fishing, camping, photography and sightseeing. After snowfall, day use is again high when cross-country skiing, snowmobiling, tubing, and snowshoeing are popular.

The Recreation segment has two developed sites, Las Conchas Fishing Access and Las Conchas Trailhead located about ½ mile apart along Highway 4. Trail 137 is accessed only from the trailhead. This portion of the trail closely follows the river for a mile, and its gentle grades and spectacular scenery make this a popular stretch. In the Wild segment, the canyon walls are right up to the river, but anglers often hike up the box canyon to their favorite fishing spots. Half a mile in from the highway at each end of the box canyon, people access the river for a variety of other recreational activities. The very large boulders and deep pools in the river create popular sites for jumping and swimming. Snowplay, cross-country skiing, and snowmobiling also occur in this area. The Scenic segment is a destination for anglers from all over the state, especially the urban areas of Albuquerque and Santa Fe. Access is primarily up the river from Battleship Rock. Other visitors take Trail 137 along the ridge to McCauley Warm Spring and Jemez Falls. This affords the opportunity to experience a truly stunning landscape view across to the walls of Jemez Canyon.

Geologic Values: From sheer cliff faces to pock-marked tuff exposures, flat-topped mesas to lush canyon bottoms, the wide expanse of the Valle Grande to the domed peak of Redondo, this extraordinary landscape was created by eons of gradual and cataclysmic geologic events. North of the WSR the Preserve contains nine miles of headwaters for the East Fork. Cataclysmic eruptions rocked the area 1.2 million years ago and 50 cubic miles of volcanic ash and rock were ejected.

Around 85,000 years ago, the volcano erupted again. This recent geologic event produced Battleship Rock, a colorful, striking vertical abutment at the confluence of San Antonio Creek and the East Fork. Battleship Rock was put in place all at once by a volcanic flow into an ancient river canyon cutting through sedimentary rock formations. Weathering over time has removed the relatively softer sediments, leaving the “prow” of the battleship exposed as a towering monolith.

Ecological Values. The WSR passes through a variety of vegetation communities including meadows, conifer stands, riverine habitat, rock cliffs and volcanic formations. Each community is comprised of a mosaic of smaller habitats. Elevation is as high as 8600 feet at its eastern edge with the Preserve, to 6700 feet at Battleship Rock. This variety has resulted in a diversity of ecological systems within the WSR corridor. With a diversity of communities, come edges and ecotones at the

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point where these habitats join. The abundance and diversity of life forms is often greatest in and around edges, and many plant and animal species are dependent on these transition areas for life.

Two unique plant species occur within the corridor, giant helleborine and bunchberry dogwood (referred to in previous documents as chatterbox orchid and Canadian dogwood, respectively). The giant helleborine is proposed as a rare species in New Mexico, and the bunchberry dogwood population in the WSR is thought to represent the extreme southern range of this species.

Fisheries Values: The East Fork, as part of the Jemez River, once hosted the largest populations of Rio Grande cutthroat trout (RGCT) in the Jemez Mountains. Historically, the native fish assemblage throughout the East Fork was comprised of RGCT, Rio Grande chub, Rio Grande sucker, longnose dace, and fathead minnow. The current native fish assemblage excludes RGCT, last found in this drainage in 1950. Since then, German brown trout, rainbow trout, Yellowstone cutthroat trout and other non-natives have replaced RGCT.

Due to the geology of the area, habitat diversity is dynamic, creating chutes, waterfalls, deep pools, cascades and meandering channels. The Jemez River, fed in part by the East Fork, has a regional reputation for high quality cold-water fishing, a phenomenon rare in the arid Southwest.

Wildlife Values. The wide variety of vegetative communities allows for a diverse complex of wildlife species. Periodic surveys and field visits by wildlife biologists have revealed the variety of wildlife species throughout the corridor. During certain times of the year, the river becomes a passageway for wildlife moving off the Preserve (e.g. Rocky Mountain elk). People have seen bear, elk, deer, mountain lion and bobcat within the WSR corridor.

The WSR provides suitable habitat for a few species listed as federally threatened or Forest Service sensitive, such as Mexican spotted owl (threatened), Jemez Mountain salamander (sensitive) and northern goshawk (sensitive). Some uncommon species, such as the spotted bat and black swift, have been found within the WSR. These two species could be an indication of the benefit brought by ecotones for enhancing species diversity. The black swift is of particular interest since it is the only known colony in the state of New Mexico.
