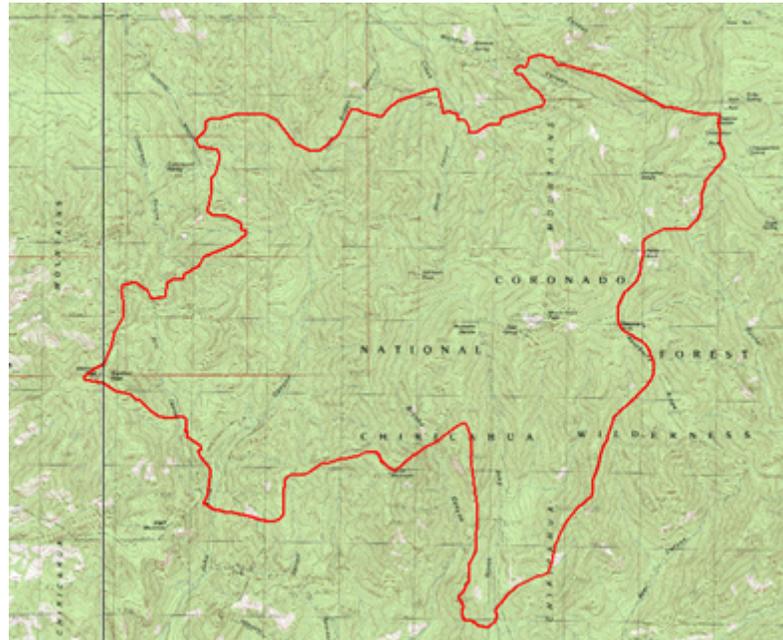


**Johnson Peak Prescribed Burn Mitigation Plan
Douglas Ranger District
Coronado National Forest
March 7, 2006**



Background

The Johnson Peak Fire Management Plan was approved in 1998. The project boundary encompasses 32,000 acres of mostly Chiricahua Wilderness, and ranges from 5300 to 9375 feet in elevation and transitions from an Oak Woodland to a Mixed Conifer Forest. The Johnson Peak Fire Management Plan allows prescription fire and wildland fire use as options of reintroduction of fire into its fire adapted ecosystem. The plan gives these options to treat the area within its boundary for maintenance and enhancement of wilderness values, reduction of hazardous fuels, improvement of wildlife habitat and to reduce the local risk of catastrophic loss due to wildfire that is becoming increasingly common in the drought stricken west. The plan was broadened in 1999 to give us the opportunity to use these options between October 1st and the end of March after two attempts of treatment with little to no success because of the tight windows and parameters placed on it at its inception. The first attempt at ignitions using prescription fire was initiated in December of 1998 that left 20 lightly treated acres. After the parameters were broadened, the second attempt was conducted in October of 1999, leaving another 40 acres of mixed conifer forest treated with a little more success of reducing hazardous fuels. Both attempts at using prescription fire were done before typical fall / winter precipitation bring such operations to a halt. Other attempts at burning in the Johnson Peak Area in the years since then have been fruitless because of wet conditions that would not produce desired affects.

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2005 Operations

The Johnson Peak Prescription Burn of October 2005 was initiated on October 27. Several weeks of planning, preparing and monitoring weather and fuel conditions were done prior to any operations being done on the project area. Burning conditions during the first week of operations were limited to the warmest part of the day which was generally from 1030 to 1430 and was consuming all the 1hr, 10hr and 100hr fuels and most of the 1000 hr fuels during this time frame. Smoldering occurred into the evening and the fire would put itself out for the most part at night and would only survive the night in jackpots of dead and down fuel. Approximately 40 acres were treated the first week of operations which were hampered by short burn windows, high RH recovery and logistical difficulties. There were no smokes showing the week of October 30th through November 5th. The second week of burning on the Johnson Peak Burn occurred the week of November 6th. Ignitions did not occur until November 8th and lasted through the 10th with approximately another 60 acres of treatment occurring north and east of Monte Vista Lookout. Fire behavior was minimal and resembled what was experienced the week of October 27th.

Another trip was made to Johnson Peak on November 14th and ignitions again resumed the 15th. The fire was now backing into the Turkey Creek drainage with no further ignitions planned. Fire behavior was limited to a backing fire with 1 foot flame lengths in the duff with increasing consumption in fuels. The fire was then managed to ensure a low intensity backing fire was coming off the higher elevations and into the canyons where they eventually transitioned into the Oak Woodlands of the Johnson Peak Fire Management Area and would put itself out as the fine fuels at these lower elevations would not carry fire unless backed by a strong enough wind. The fire was then transitioned from the west facing slope of Monte Vista to the south facing slope where eventually the fire was backing into the North Fork of Rucker Canyon, Brushy Canyon, John Long Canyon, Pole Bridge Canyon, Morse Canyon and Turkey Creek Canyon. The fire backed into the lower elevations and put itself out in all of the major canyons except the North Fork of Rucker Canyon and John Long Canyon, which is predominantly a mix of Apache and Chihuahua Pine. Small holding crews were used to construct check line to stop its spread in these canyons. The fire then backed into Mormon Canyon and had several fingers of flanking and backing fire coming off of Chiricahua Peak. Our holding features around this area had already been prepped and crews were active in holding operations along the Mormon Ridge Trail and Trail 360 from Junction Saddle to Rucker Canyon on the eastern side of Chiricahua Peak. On December 12th, 2005 the fire area received approximately .75 inches of rain and stopped fire spread.

Smoke was nonexistent for 2 weeks, when smoke was observed on Chiricahua Peak on December 28th, 2005. Weekly hiking patrols were conducted after this. Creeping and smoldering were observed in pockets of unburned fuel, on the west side of Chiricahua Peak, as the fire consumed the top duff layer of what was not burned before the 12th of December. These pockets of unburned fuel continued to smolder and creep in the duff and were consuming 1hr, 10hr and 100 hr fuels. Flame lengths are 1-6 inches in small jackpots of 10 – 100hr fuels. Consumption of duff layer ranged from 10 to 100 percent in these areas and is surrounded by black with the same consumption range. They were all interior pockets and at least 1/4 of a mile away from the burns edge. Heat was

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discovered on the east side of Chiricahua Peak on January 4th 2006. The burn was allowed to creep on the Eastern side of Chiricahua Peak until it tied into another already secure part our burn to ensure a solid containment line. Ignitions to accelerate the process were not done since; limiting the amount of smoke produced daily was a high priority. Direct handline was constructed on the smoldering stretch approximately seven chains long on February 14, 2006. No smoke or heat has been detected on Eastern Chiricahua Peak since February 17th 2006. The burn had backed and side sloped 2 chains between January 14th and February 14th based on monitoring of fuel consumption and rates of spread there. Picture #1 is of the smoke on the west Side of Chiricahua Peak and the Picture #2 is the smoldering occurring on the east side above the trail.



Picture #1



Picture #2

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Weather

Two storms have passed through the fire area that yielded approximately 0.12 inches apiece on January 25th and February 10th, and a third and fourth storm yielding 3 and 4 inches of snow respectively came through the area on February 17 and February 23rd. Relative humidity has stabilized and recent readings have been 24 -34 percent during the day and nighttime recoveries of 60-70 percent. Temperatures have been 45 - 55 during the day and 22 - 32 at night. The wind has generally been 5-10 mph out of the southwest and shifting upslope 5 -10 mph at night. Numerous wind events with gusts to 45 MPH have passed through the burn area with no flare ups or significant change in smoke production has been observed.

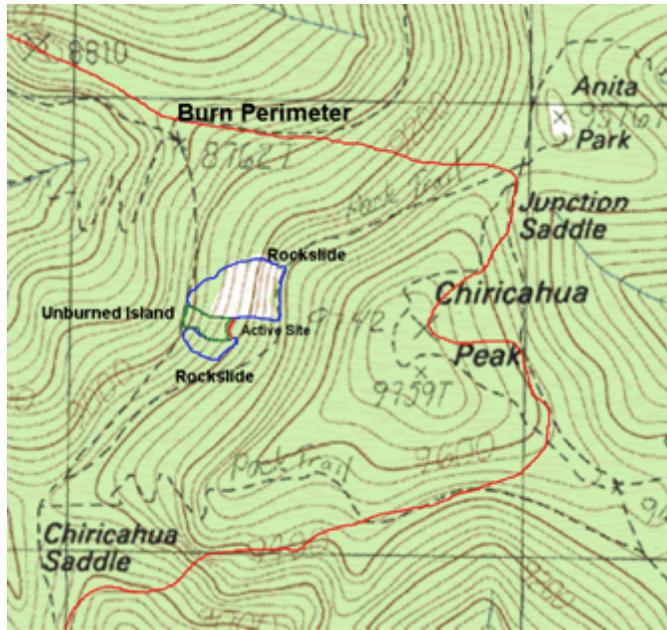
Evaluation

On February 12, 2006 an assessment of the fire and burning conditions was made to develop a mitigation plan for the Johnson Peak Prescription Burn. A burn spread assessment with Behave Plus 3.0 runs was prepared by Tom Jones, who is on detail to the Coronado National Forest as a Fire Behavior Analyst. It is in the project record and has been taken into consideration when planning a course of action. To gather more information on actual fuels and burning conditions exiting on site, a walk through was conducted on February 14th & 16th by District Fire Personnel that had been working on the burn since its initiation and therefore had the most first hand knowledge of fire behavior associated with this burn. An aerial recon and mapping flight was taken on February 17, 2006, with the Fire Management Officer, Wildlife Biologist and District Ranger aboard.

Observations

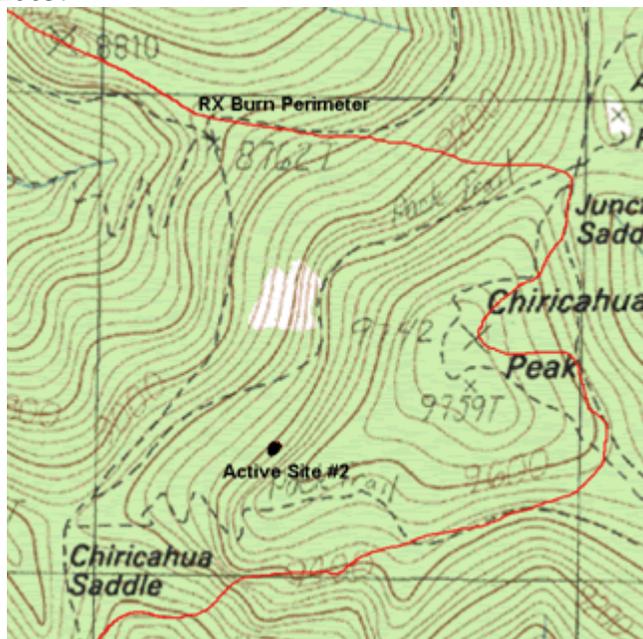
Due to the most recent precipitation that fell on the area, fuels are still semi damp on the surface and snow still exists on the north facing slopes. Two areas producing smoke were observed on the aerial recon and the walk through. Both are on the western slope of Chiricahua Peak and are burning around rockslides. The northern most area is between the Crest Trail and the Mormon Ridge Trail. It has been backing down the 80-100 percent slopes. Smoldering and creeping were observed and had traveled approximately 4 chains down slope since January 27, through needle cast of mixed conifer. It was observed at that time to have crossed the Crest Trail in an unburned island between two rockslides that extend to the Mormon Ridge Trail. The conditions at the time had a cold black duff layer up slope and to the south, a rockslide to the north and approximately 4 - 5 chains of unburned fuel below it to the Mormon Ridge Trail, where solid cold black exists for at least 1 ¼ miles. The unburned area was approximately 1½ to 2 acres. It is ¼ mile from the closest part of burn perimeter. Map #1 represented the activity on the first smoke on west side on February 17th 2005.

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Map #1

The second active area was southeast of the first. It was burning uphill and into an aspen stand where the only carrier will be leaf litter and was also completely surrounded by black that also ranged from 10 to 100 consumption of duff layer. The area is above the crest trail and southwest of Chiricahua Peak and about 18 chains from the burn perimeter. The fire behavior was creeping with 1 foot flame lengths which drastically became nothing as it burned into the aspen leaf liter. Fire behavior is being influenced by slopes averaging above 100 percent although the numerous rockslides in the vicinity have kept it in check. The area is completely surrounded by a duff layer that has a consumption range from 10-100%. Map # 2 represents activity on the second smoke on the west side on February 17th 2005.



Map #2

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Current Situation

There has been no smoke showing on Chiricahua Peak since February 24th, 2006, when a patrol hiked through the area and found 2-4 inches of snow on the ground with no heat showing anywhere. Another storm is currently drizzling and snowing on the area and a higher probability for precipitation on March 8th, 2006. There has been a definite increase in storm frequency on the burn area since mid February; although there has not been enough precipitation in any one storm to extinguish all smoldering material, there has been a definite decrease in area and amount of smoke being produced as each storm passes.

Calculating Probability

Considering all the different variables that influence fire behavior and taking into account everything that has taken place, we have tried to calculate our risk if all variables remained the same. The burn spread assessment, seasonal red flag warning probability, and the probability of having a continuous fuel bed were used as risk factors that might influence the burn with an increase in fire behavior to get it out of the project boundary. It would mean all of these factors would need to align at the same point in time in order to have enough influence on the burn to influence an escape. The method used to calculate probabilities in the Wildland Fire Situation Analysis Program (WFSAP) was used to get a baseline in probability for our risk on the Johnson Peak Prescribed Burn. A 10 percent chance was given to all factors in the burn spread assessment lining up for an escape. A 10 percent chance was given for red flag probability between now and the beginning of monsoon season or a probability of red flag warnings once every ten days, and a 10 percent chance was given that a continuous fuel bed could be found that would also lead to an escape. Therefore $10\% \times 10\% \times 10\% = .1\%$, or $(.10 \times .10 \times .10 = .001)$.

Mitigation Plan

We will continue to manage the Johnson Peak Prescribed Burn until it is completely out. Daily visual assessments of the burn area will take place for the next two weeks from nearby vantage points. We will limit our site visits as long as no signs of heat are showing. A scheduled site visit will take place every two weeks for the next month. Reassessment of our schedule will take place at that time and will decrease in frequency if the lack of burn activity continues. If any sign of smoke or heat is visible on the east side of Chiricahua Peak or in close proximity to the project boundary a hiking patrol will take place as soon as possible for an on site assessment to ensure the burn stays within the project boundary. Signs of smoke or heat on the western Chiricahua Peak will be assessed from nearby vantage points or on the next site visit as these interior islands are considered as low risk for escape.