

SOUTH PARK RD FUEL/WEATHER TRIGGER POINTS

TRIGGER POINTS	EXTREME	HIGH	MODERATE	LOW
WX FACTORS				
Temperature (deg)	85+	70 TO 85	60 TO 70	<60
RH (%)	<7	8 TO 15	15 TO 25	>25
Previous Nights RH Recovery (%)	<20 & multiple days of it	20 to 30	30 to 50	50+
Winds (20 foot)	30+	20 to 30	10 to 20	<10
Cloud Cover (%)	<10	10 to 20	30 to 50	50+
Haines Index	6	5	4	3/2/1
FUEL CONDITIONS				
Live Foliar (%)	<85	85 to 100	100 to 120	>120
Live Oak (%)**	<100	100 to 125	125 to 170	>170
Duff (%)	<6	6 to 9	10 to 15	>15
Litter (%)	<2	3 to 5	6 to 12	>12
10 (%)	<3	3 to 5	6 to 15	>15
100 (%)	<4	4 to 7	8 to 15	>15
1000 (%)	<6	6 to 12	12 to 20	>20
LG RAWs 1000 Calibration (%)	<6	6 to 12	12 to 20	>20
Grass	Thick, old thatch, Continuous, >1 ft. & Cured	Mostly continuous, 6-12" & cured	<4", non-continuous, &/or partially green	Sparse, short, &/or green
INDICES				
BI - FMG	80+	50 to 80	30 to 50	<30

**** Active, consistent crowning can be expected in Gambel's Oak Brush at approximately 125% and below. Rh's below about 15% and/or higher wind speeds (>15 eye level), as well as topkill and/or heavy cured grass loading, can lower that threshold (ie. FM's >125%). Use caution in the whole "moderate" range, but especially around the active crowning threshold, slight changes in sun, wind, RH, temperature, etc. can be the difference between a creeping ground fire and crown fire. Expect active "crown" fire in dormant, and high to extreme fire behavior in dormant oak w/ dead leaves still on, or frost damaged/killed live oak. Be wary of under burned oak and/or areas of continuous oak brush with little or no safety zones.**

Note: Almost all local large fires have occurred on the day after one or more nights of little or no humidity recover (<25%). Also, watch for the convergence of 1/10/100 hr dead fuel moistures.

FIRE BEHAVIOR

Extreme:

Expect high intensity sustained active crown runs with potential FL's in excess of 100 feet and spread rates of 1 to 3 mph. Fire will often run independent of terrain. Extensive spotting with long range of ¼ to ½ mile or more will occur. Fires have spread 5 to almost 20 miles in one burning period during these conditions on the Forest. Typical spread is to the Northeast with the prevailing winds, but Fronts or other factors can spread the fire in other directions. Multi-period burning occurs with aggressive backing fires at toe or flanks through out the night. Transition to crown fires is often very quick and can start early in the day. High intensity surface fires will move through aspen stands. North and east stands that have low flammability at lesser conditions are very flammability. Large safety zones required.

Early initiation and quick transition to crown fire in the oak brush also occurs. Flame lengths of 20 to 50 feet are possible with spread rates of 3 to 6 plus mph. Fire may run independent of terrain, but much less likely than with timber types. Wind can easily drive fire downhill even on steeper terrain. Backing fire is aggressive.

High:

Quick transitions to crown fire can occur, but usually later in the day than extreme. Large sustained crown fires are still possible, with more typical flame lengths of 50 to 100 feet and spread rates of .5 mile to 2 mph. Fire is less likely to run independent of terrain and spotting is still extensive, but more moderate (<.25 mile typically). Single day runs are usually only a few miles. Some riparian and/or aspen areas, flammable under extreme conditions, may not be under high. North or east facing conifer stands still highly flammable. Multiple burning periods occur, but often fire makes a one day extensive, high intensity run.

Crown fire in the oak brush still initiates easily and quickly, but with lesser intensities (15 to 40' FL's & ROS's of 1 to 5 mph). Spotting is still significant, but usually less than ¼ mile. Backing fire has less torching and is more confined to the under-story.

Moderate:

Moderate is more typical of prescribed burning conditions. Fire behavior is more influenced by fuel bed and terrain. Actual sustained dependent crown fire runs are rare, but require relatively heavy down/dead loadings and/or closed canopies with high winds or steep terrain. Group and individual tree torching is more typical. Actual crown runs are short duration, if they occur. Extreme winds (for example, sustained 30+ with higher gusts) can overwhelm conditions and create longer runs in the right locations. Spotting can be extensive, but is short range, typically less than 1/10th of a mile. Fires typically lose momentum quickly with loss of heavy fuel beds or wind, breaks in continuity, aspect change, ridge tops, nightfall, etc. Multi-period burning is rare.

Crown fire in oak brush may occur. However, fire behavior is typical of dormant season oak (without leaves) or higher growing season live fuel moistures. Typical flame lengths of 5 to 15 feet and spread rates of 20 to 100 chains/hour. Spotting is moderate and usually less than several hundred feet. Backing fire may still occur and fire spread through mostly under burning is more common. Fire behavior can be very sensitive to Relatively small changes in sunlight, aspect, humidity, wind speed, etc can change the fire behavior between under burning and canopy. Like everything, extreme winds, such as spring or fall Chinooks can create much higher intensities and rates of spread and drive fire downhill.

Low:

These conditions are often typical too low for prescribed fire. Fire is often not sustainable without heavy fuels or ponderosa straw. Torching is rare. Intensities are usually less than one foot and rates of spread are less than a ch/hr. Spotting can occur, but is rare. Very high winds can overcome other weather/fuel moistures to create more active fire behavior while the winds blow. Typical fire behavior though is smoldering or creeping.

Normal fire behavior in the oak brush is under-story creeping if the grass is cured or litter is dry enough, otherwise fire will not usually even sustain itself. Occasional torching with heavier ground fuels or if the dead leaves are still attached, but is rare.