

# What can a smoke plume tell us?

A large smoke plume formed above the State Mine Fire in the afternoon of 17 October 2013. The iconic Blue Mountains ridge in the middle ground of this photo and the Grose Valley below, show the scale of the fire and the relative height of the smoke plume. Fire Behaviour Analysts in State Operations used similar photos to help prepare their prediction of fire behaviour over the coming 12 hours.

Photo by Gary P Hayes



Atmosphere above (warmer air) is conditionally capping the column. The wispy clouds, an indication of strong upper winds.

The angle of the smoke plume reveals there is a strong wind blowing from the left to right NW to SE.

Scale: The sheer scale of this smoke plume gives insight to the size of the fire. In this case the fire is developing into a very large landscape scale event.

Shows clouds forming where the temperature of the smoke is reaching dew point. These clouds are called pyro cumulus.

Dark smoke indicates a high intensity fire; probably in a forested area with heavy fuel loads.