EYE ON FIRE BEHAVIOUR

TOPIC 29

ELEVATION

Elevation, in predicting fire behaviour at a specific location, the effects of two broad elevation factors need to be interpreted – elevation above sea level and elevation in relation to the rest of the country. Elevation above mean sea level influences the general climate of the area and in turn has a long-term effect on vegetation. Although growth is slower at higher elevations, fuels are slower to decompose, usually giving higher than normal proportion of dead fuels.
Elevation above sea level influences the general climate and affects fuel availability by:

- ✓ Amount of precipitation received
- ✓ Snow melt dates
- ✓ Fuel types and loadings
- ✓ Dates of curing for vegetation
- ✓ Length of season
- ✓ Severity of daily and seasonal fire danger

Temperature generally decreases with elevation. Air temperature and relative humidity vary with elevation, which in turn, affects fuel moisture. The variation in temperature with altitude in a well-mixed atmosphere is about 10° C/1000 m, which is also the dry adiabatic lapse rate.
Relative Humidity generally increases with elevation due, in part, to the decrease in air temperature. Slower rates of drying can be expected with elevation due to depressed temperatures and inflated relative humidity. Precipitation and winds generally increases with elevation.
Different slope positions (lower, middle, and upper) can drastically influence diurnal changes in temperature, relative humidity, and wind due to exposure and variation to solar radiation, which can have a strong effect on fuel moisture and fire behaviour. Variation in temperature and relative humidity caused by topography differences (elevation and aspects) also causes fuel types, fuel loading, and fuel moisture to vary. Fires starting at the base of the slope become larger because of the availability of fuel upslope.