

# Red Hot Tips

## Planned burning on private land

### Weather and planned burning

Weather (especially wind speed, wind direction and humidity) is one of the biggest factors influencing fire behaviour. Getting the weather conditions right for the burn being planned can make the difference between a successful burn and one which either gets out of control or doesn't burn at all.

Use the following steps to help you get the weather for your burn right.

*For detailed information on planned burning refer to the Planned Burning Manual – guidelines to enable safe and effective planned burning on private land.*

#### 1. Leading up to the burn

Monitor the weather forecasts for consistent, stable high pressure systems starting 7 days before and then daily to the proposed planned burn date. What you are looking for is a weather forecast that doesn't change much for the day of your planned burn (ie the forecast each day is consistent with the days before).

It is also important to assess what the weather conditions will be following the planned burn. For example, a cold front bringing rain a few days post-burn would be ideal... however a departing high with strong winds brings the potential for flare ups and escapes.

*If you are finding it difficult to forecast weather conditions, help is available by phoning the BoM general enquiries on (03) 6221 2000.*

#### 2. On the day of the burn

On the day of the burn check the weather forecast again to make sure the forecast for the day of, and for the days following, the burn hasn't changed.

It is recommended a copy of the forecast is printed and kept with other records from the day (Figure 2).

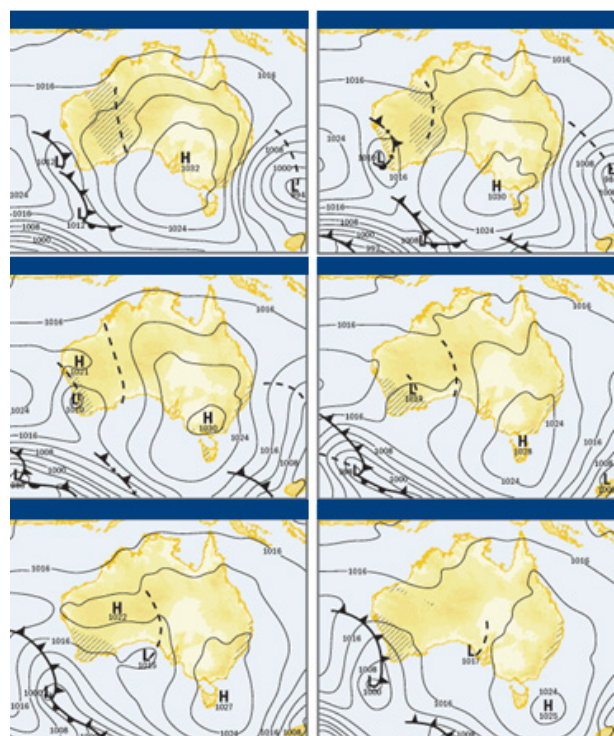


Figure 1: A forecast map (from the Bureau of Meteorology (BoM) <http://www.bom.gov.au/>) can show the expected weather in the lead up to and after the burn. Consistent stable high pressure systems over Tasmania (as shown in the weather maps above) are ideal for planned burning.



Figure 2: A typical weather forecast showing temperature, wind direction and speed. (This is available on the Bureau of Meteorology's website - [www.bom.gov.au](http://www.bom.gov.au))

## When planning how you will light the burn, assess on site:

- Wind speed and direction
- Relative humidity (RH)
- Temperature
- Fuel moisture

These factors can be assessed using any of the methods listed in the following table.

METHOD	FACTOR/S MEASURED	ADVANTAGES	DISADVANTAGES
Pocket weather meter*	<ul style="list-style-type: none"><li>• Wind speed (km/hr)</li><li>• Temperature</li><li>• Relative humidity</li></ul>	<ul style="list-style-type: none"><li>• Accurate, reliable data</li><li>• Site specific</li><li>• Use for other farm activities (e.g. harvesting, spraying etc).</li></ul>	<ul style="list-style-type: none"><li>• Cost (approx. \$300)*</li><li>• May occasionally require calibrating.</li></ul>
Nearest weather station	<ul style="list-style-type: none"><li>• Wind speed (km/hr)</li><li>• Temperature</li><li>• Relative humidity</li></ul>	<ul style="list-style-type: none"><li>• No cost</li></ul>	<ul style="list-style-type: none"><li>• Not site specific</li><li>• Must have internet access at the burn site</li></ul>
Single leaf test	<ul style="list-style-type: none"><li>• Fuel moisture</li></ul>	<ul style="list-style-type: none"><li>• Simple</li><li>• Very site specific</li></ul>	<ul style="list-style-type: none"><li>• Only gives fuel moisture for the sample tested (must repeat a number of times)</li><li>• Subject to human error if leaf is picked from wrong location(s)</li></ul>
Beaufort scale	<ul style="list-style-type: none"><li>• Wind speed (km/hr)</li></ul>	<ul style="list-style-type: none"><li>• No cost</li></ul>	<ul style="list-style-type: none"><li>• Subject to human error</li></ul>
Compass	<ul style="list-style-type: none"><li>• Wind direction</li></ul>	<ul style="list-style-type: none"><li>• Accurate, reliable data</li><li>• Site specific</li></ul>	

\*Refer to the Fire Equipment Supplies factsheet to find out where you can buy the pocket weather meter. The compass and some of the above weather readings are available on smart phone Apps.

Record on the burn plan the conditions as assessed at the time of planning.

### Just before lighting the burn re-assess on site:

- Wind speed and direction
- Relative humidity (RH)
- Temperature
- Fuel Moisture

Record on your burn plan or using the table provided. (Table 1, on page 3.)

If the conditions have changed since the first pre-planning assessment was made, you will need to decide whether it is still safe to proceed and/or if there is a need to adjust the plan.

It is important at the start of the burn to light very small patches to observe the fire behaviour. You will then be able to determine whether the fire is burning as expected or if not it may be necessary to adjust the burn plan.



### While the burn is underway

Remember to monitor the weather conditions and fire intensity continuously and adjust the burn plan where necessary (e.g. back off on the lighting intensity if the fire is burning too quickly and/or hot).

It is important to stop, check, and record the weather conditions during the burn. It is especially important to monitor if the actual weather is different to what was forecast. For example, if the winds are stronger and the RH is lower, you may decide to not light up as big an area, or change your lighting pattern, or stop the burn altogether.

At a minimum a weather check should be done every hour during burning, or before lighting a new section of the burn. It should be recorded more frequently when:

- Lighting a block that has unsecured boundaries
- If any change in weather or fire behaviour is observed.

### After the burn

Thoroughly check the burn site during the morning and afternoon for at least 2 days after the burn, and the next warm windy day after the burn. Keep an eye out for smoke or smouldering patches at the site until you are confident that the burn is completely extinguished.



Beaufort Wind Scale			
	Category	Speed (km/h)	Description
0	calm	<1	smoke rises vertically
1	light air	1-5	smoke drifts slowly, slight leaf movements
2	light breeze	6-10	wind felt on face, leaves rustle
3	light wind	11-20	leaves and small twigs move
4	moderate wind	21-30	dust raised, small branches moved
5	fresh wind	31-40	small trees sway
6	strong wind	41-50	large branches moved, wires whistle
7	near gale	51-60	large trees sway
8	gale	61-75	twigs and small branches broken off
9	full gale	75-90	large branches broken off
10	storm	91-115	trees uprooted, severe building structural damage






Single leaf test	
	<b>Leaf will not burn, even if pointed straight down</b> <ul style="list-style-type: none"> <li>fuel too wet to burn block</li> <li>if from boundary, then boundary is too wet to carry fire</li> </ul>
	<b>Leaf burns only if pointed straight down</b> <ul style="list-style-type: none"> <li>if from top of fuel array, fuel too wet, do not burn</li> </ul>
	<b>Leaf burns if angled down at 45° but not if level</b> <ul style="list-style-type: none"> <li>if from bottom of fuel array, fuel moisture may be ok</li> <li>if from top of fuel array, fire will burn at low intensity</li> <li>will require wind and/or slope to carry fire</li> </ul> <b>Leaf burns if level but not if angled upwards at 45°</b> <ul style="list-style-type: none"> <li>if from bottom of fuel array, fuel moisture ok</li> <li>if from top of fuel array, fire will burn at moderate intensity</li> </ul>
	<b>Leaf burns if angled upwards at 45° but not if vertical</b> <ul style="list-style-type: none"> <li>if from bottom of fuel array, too dry to perform burn</li> <li>if from top of fuel array, fire will burn at high intensity</li> <li>wind speed and/or slope needs to be minimised</li> </ul>
	<b>Leaf burns if angled vertically upwards</b> <ul style="list-style-type: none"> <li>fuel too dry, do not burn</li> </ul>

Table 1: Planned burning weather observation record sheet.\*

PLANNED BURNING WEATHER OBSERVATIONS					
Date:			Time burn started:		
Temp °C	RH %	Wind speed km/h	Wind direction	Fuel Moisture	Observations/comments

\*this weather observation record sheet is available as a Word document from [www.sfmactas.gov.au](http://www.sfmactas.gov.au)