

# FIRE NOTE

ISSUE 24 OCTOBER 2008

## SEASONAL BUSHFIRE ASSESSMENT 2008-2009

### AUSTRALIAN FIRE SEASON OUTLOOK - OCTOBER 2008

#### SUMMARY

Across southern Australia, above-normal fire potential is expected for the southwestern Western Australia and southern portions of South Australia. Conditions in eastern Tasmania and southern Victoria also suggest above normal fire potential and this also applies in south-east Queensland and in northern and central regions of New South Wales. Below-normal levels of fire activity are expected in the centre of Australia.

These are the main conclusions of the Southern Seasonal Bushfire Assessment Workshop, held from 20-21 August 2008 in Melbourne. This workshop, supported by the Bushfire Cooperative Research Centre, brought fire managers, severe weather meteorologists and climatologists together to evaluate the fire potential for the upcoming season for the southern portions of Australia.

The results have been combined with those from the Northern Seasonal Bushfire Assessment held in Darwin in May to create the national outlook in the map (Figure 1). The map reflects the outlook through to February 2009.

This document is a summary of the full Seasonal Bushfire Outlook, which will soon be available to Bushfire CRC members.

#### DEFINING FIRE POTENTIAL

The chance of a fire or number of fires occurring of such size, complexity or other impact (e.g. biodiversity or global emissions) that requires resources (from both a pre-emptive management and suppression capability) beyond the area in which it or they originate.

Fire potential depends on many factors including weather and climate, fuel abundance and availability, recent fire history and fire-fighting resources available in an area.

#### ANTECEDENT CONDITIONS

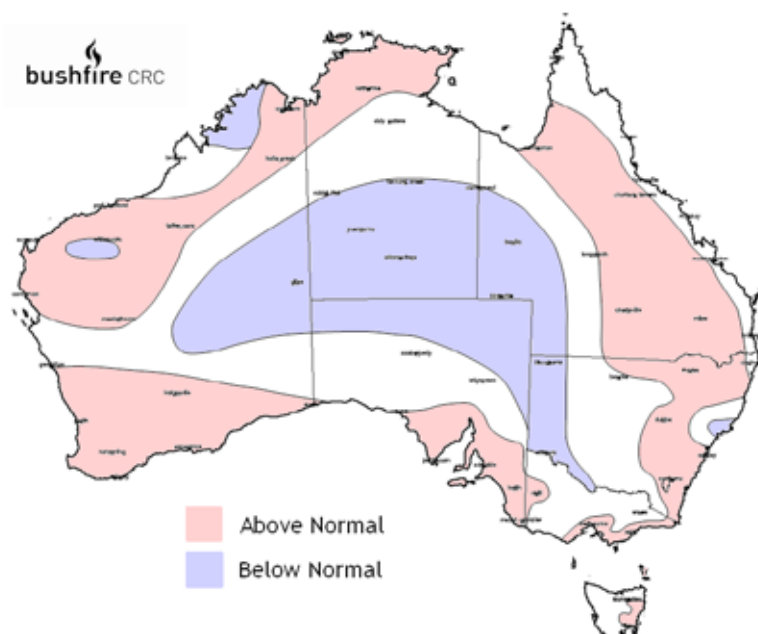
La Niña conditions were observed during the latter portion of 2007 and early 2008. Associated with this pattern of sea surface temperature, much of the northern portions of Australia received above normal precipitation (Figure 2). This is particularly true in the Top End, the Kimberley and north-eastern Queensland. Unfortunately, the enhanced rainfall often associated with La Niña failed to materialize in the southern reaches of Australia. Rainfall in southern Northern Territory, South Australia, Victoria, Tasmania and eastern Western Australia has been below normal since the beginning of the year; a trend that has persisted as the cooler waters in the central and eastern Pacific have receded. The northern NSW coast and southwestern Western Australia have received normal to above normal precipitation during the first half of the year. However, since early-August

southwestern Western Australia has seen very much below normal rainfall totals. Along with this precipitation pattern, maximum temperatures have generally been normal to above-normal over winter (not shown), and minimum temperatures running near normal to slightly below (not shown). More recently, the strong La Niña pattern has broken down, leaving neutral conditions across the Pacific; anomalies in the sea surface temperatures in the region are generally small.

#### EXPECTED CLIMATE SCENARIO

The current climate outlooks suggest that the Pacific will remain in a neutral state. It is not expected that El Niño conditions or a return to La Niña conditions will develop through to the end of the year. A corollary of this observation is that the Pacific should play only a small role in forcing the Australian climate over the next few months; the Indian Ocean

**FIRE POTENTIAL OUTLOOK FOR AUSTRALIA 2008-9 (FIGURE 1)**



outlook is expected to be the main driver over this period. The current seasonal outlooks (from statistical models) indicate about even odds for exceeding median rainfall over most of the country (Figure 3), the exceptions being an above-median expectation in southwestern Western Australia and a below-median rainfall in a broad region of southeastern Australia. The outlooks also suggest above-median maximum temperatures (not shown) across northern Australia, the far west and southeastern Australia. Above-median minimum temperatures (not shown) are expected across most of the country, with portions of NSW and Queensland being the exception.

## REGIONAL SUMMARY

### WESTERN AUSTRALIA

Above-normal fire potential is expected for the Goldfields and eastern South Coast due to scrub and woodland vegetation being drought affected. Similar conditions are also expected in a small region on the west coast. If the expected spring rainfall does not materialise, the fire season throughout the South West Land Division will likely begin four to six weeks earlier than normal. Heavy winter rains promoted good growth but a very dry August moved the Soil Dryness Indices into record territory. The good recent rains have had a moderating impact, but there are still strong signs of underlying dryness in many areas.

### SOUTHERN SOUTH AUSTRALIA, SOUTH-WEST VICTORIA

Long-term rainfall deficits have increased the forest fuel in these regions. An early start to the fire season is likely in some areas, particularly in the eastern regions. Forest areas have the largest risk.

### COASTAL VICTORIA

Rainfall deficits over several years have allowed the accumulation of abundant forest fuels. Above normal fire potential is expected. An early start to the fire season is likely. Normal or above-normal spring rains would moderate this forecast.

### TASMANIA

The fire season will commence early on Flinders Island and in the eastern half of the state. Significant rainfalls are required to reduce the fire potential to normal levels in these areas. Heavy fuels are very dry due to the prolonged drought. Regional firefighting resources are expected to be sufficient unless an extended fire occurs.

### NORTHERN NSW, SOUTH-EAST QUEENSLAND

Grass loads over the region are much higher than normal as a result of the copious rainfall over the past year. Recent cool temperatures have allowed this grass to 'frost-cure'. Forest fuels are also dry and ready to burn.

### CENTRAL NSW

Grass fuels are plentiful and will burn easily without adequate spring rains. Should this eventuate, the fires will likely spread into the adjacent forested areas that similarly have normal to high fuel loads.

### SOUTH-EAST NSW

While much of the region has experienced consistent rain, these areas traditionally dry out quickly. This, combined with more recent climate outlooks suggesting above-median temperatures across the state, indicates that coastal urban areas from the Hunter Valley to Eden in the south of the state now pose a greater risk for bushfire. This area extends inland, encompassing the Great Dividing Range.

### CENTRAL AUSTRALIA

Below-normal fire potential is expected through a large portion of the centre of the country. Rainfall totals throughout this region have been well-below normal for several years, and hence fuel loads are quite low.

FIGURE 2: RAINFALL DECILES FOR AUSTRALIA BETWEEN FEBRUARY AND JULY 2008.

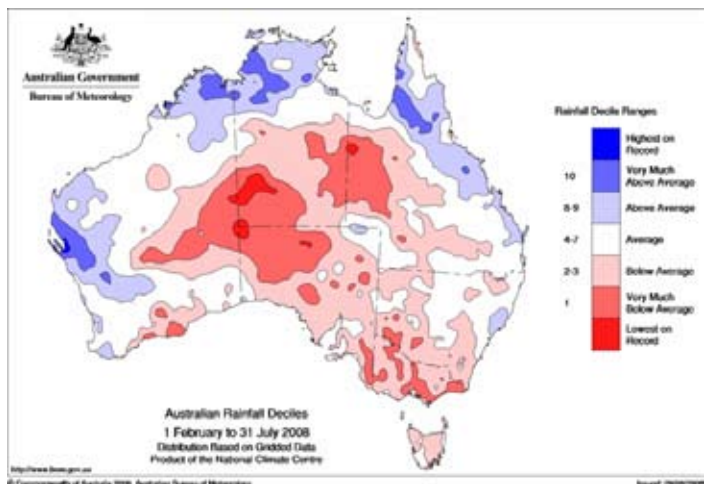
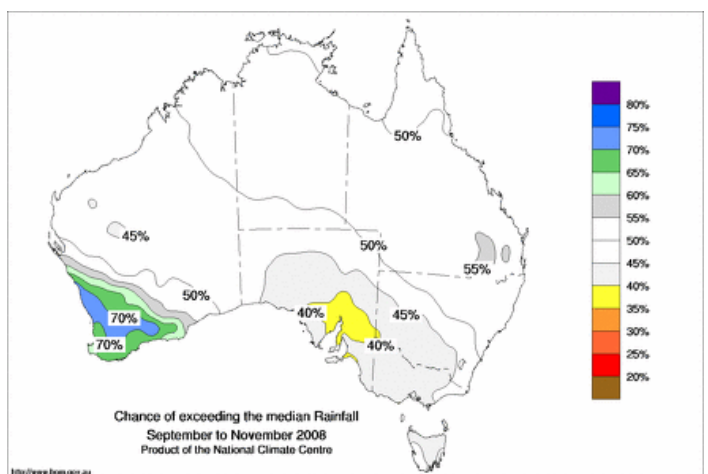


FIGURE 3: RAINFALL OUTLOOK (CHANCE OF EXCEEDING MEDIAN RAINFALL) FOR SPRING 2008 FROM THE NATIONAL CLIMATE CENTRE.



## BUSHFIRE POTENTIAL

Bushfire potential depends on multiple factors. The stage is set by the antecedent rainfall. This is important for estimating the fuel amounts and growth, as well as determining the timing of the drying or curing of the fuel. The climate outlook for the next few months is a crucial factor. Of particular interest are the future tendencies of Pacific sea surface temperature associated with the El Niño-Southern Oscillation, a major climate driver over Australia. Other, less quantifiable factors, such as the distribution and readiness of fire-fighting resources, are also considered. The participants of the workshop discussed these factors to obtain the consensus outlook presented here.

## VALUE OF THE OUTLOOK

The Seasonal Bushfire Outlook provides information to assist fire authorities in making strategic decisions such as resource planning and prescribed fire management and to reduce the negative impacts of bushfire.

For enquiries on Bushfire CRC Fire Weather project A 2.1 contact Dr Chris Lucas (c.lucas@bom.gov.au) or Dr Graham Mills (g.mills@bom.gov.au) at the Bureau of Meteorology.

## Participants in Seasonal Bushfire Assessment Workshop

- Bureau of Meteorology
- Queensland Fire and Rescue Service
- New South Wales Rural Fire Service
- New South Wales Fire Brigades
- Melbourne Water
- Victoria Department of Sustainability and Environment
- Victoria Country Fire Authority
- South Australia Country Fire Service
- Tasmania Parks and Wildlife Service
- Tasmania Fire Service
- Western Australia Department of Environment and Conservation
- Western Australia Fire and Emergency Services Authority
- Bushfire CRC