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METEOROLOGICAL ASPECTS OF THE 7 FEBRUARY 2009 VICTORIAN FIRES, AN OVERVIEW



Australian Government
Bureau of Meteorology

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Cover image: Visible Satellite imagery valid at 3.50pm 7 February 2009. Smoke plumes can be seen streaming southeast from the Kilmore, Murrindindi, Bunyip, Churchill and Dargo fires. Image courtesy of MODIS Rapid Response Project at NASA/GSFC.

Royal Commission requests

(1) Relevant long term weather patterns, including drought;

(2) Temperature and rainfall recorded in Victoria between Nov 2008 and Feb 2009;

(3) The heatwave of late January 2009;

(4) The weather on 7 February 2009, with an explanation of the meteorological conditions that gave rise to the extreme heat and winds on that day;

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(5) Forecasts made for 7 February 2009 during the week priorⁱ, and

ⁱ includes fire weather warnings issued for Victoria during the period 4 to 7 February 2009.

(6) communication of those forecasts to Victorian authoritiesⁱⁱ

ⁱⁱ includes communication of those warnings to the media and Victorian authorities.



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EXECUTIVE SUMMARY

VICTORIAN BUSHFIRES 7 FEBRUARY 2009

A defining Australian natural disaster occurred in Victoria on Saturday 7 February 2009. On a day of unprecedented heat in Victoria fires in central and southeast parts of the State caused a level of death and destruction that surpassed previous fire events in the recorded history of Australia.

This report records the fire weather forecast service provided by the Commonwealth Bureau of Meteorology (the Bureau) leading up to and during this event, together with a factual account of climate and weather conditions leading up to and including the day.

Under the Meteorology Act 1955 (Cth) the functions of the Bureau of Meteorology include the issue of warnings of weather conditions likely to endanger life or property, including weather conditions likely to give rise to bush fires. The Bureau works closely with fire agencies to deliver forecast and warning services that meet the evolving operational requirements of the agencies. During recent Victorian fire weather seasons the Bureau has augmented its comprehensive services to fire and emergency services. In addition to providing forecasts and issuing fire weather warnings from the Bureau's Regional Forecast Centre, a Bureau meteorologist has provided briefing services at the Integrated Emergency Coordination Centre (iECC). This centre was established by DSE in 2007 and has now become an inter-agency centre for fire agencies and emergency services that provides a very effective vehicle for conveying meteorological advice. The presence of a meteorologist at the iECC has greatly assisted agencies in having rapid access to critical forecasts and updated information during significant events. Also, the Bureau's meteorologist can be acutely aware of the critical issues facing agencies and provide beneficial elaborative briefings.

The context for the weather on 7 February 2009 was the whole of southeast Australia suffering a severe and protracted drought that is without historical precedent. After a relatively mild start to 2009, exceptional heatwave conditions developed across southeast Australia in late January. In addition to its peak intensity, the 2009 heatwave was also notable for its duration. While there was some respite in temperatures across coastal southern Victoria in the few days preceding Saturday 7 February, the prolonged period of extreme heat persisted for inland Victoria.

The first indications that Saturday 7 February, in particular, could be "a problem day for Fire Weather" were provided at the regular morning routine briefing at the iECC on Sunday 1 February. These early indications were reinforced on Monday 2 February when the Bureau's forecasts for 7 February anticipated hot and windy conditions over much of Victoria ahead of a significant cooler change. In the extended weather outlook provided by the Bureau at the iECC the outlook for Saturday 7 February noted that "*Ahead of the frontal passage strong hot dry northwesterly winds will impact the state, including the east, with central and elevated areas seeing winds above 40km/h, possibly up to 60 – 80 km/h, in the morning to early afternoon, before cooler fresh to strong southwesterly winds push through... Fire danger will be extreme in both forest and grass due to the strong winds, low humidity and temperatures again in the 40s. Timing of the change may vary...*". The iECC briefing provided on the Tuesday for the Saturday continued this outlook.

By the afternoon of Wednesday (4 February) numerical weather model forecast guidance suggested to Bureau meteorologists that fire weather conditions on the Saturday would be even more extreme.

This was reflected in the fire weather forecasts provided to fire agencies and in public forecasts for Victoria.

On Thursday 5 February the iECC briefing indicated that Extreme fire weather conditions may start from 7am Saturday, that wind gusts of 100km/h would be possible, and that lightning might occur associated with fire-induced thunderstorms. In the afternoon issue of Fire Weather Estimates, many predicted Forest Fire Danger Indices (FFDI) and Grass Fire Danger Indices (GFDI) were well over 100. It should be noted that the McArthur Fire Danger Indices were originally designed to be on a scale of 0 to 100 where a rating of 100 was expected to be the worst conditions possible. Fire danger is considered extreme at values exceeding 50. The fire danger indices are based on fire behaviour algorithms using meteorological as well as fuel (forest or grass) inputs.

The briefing issued on the Friday morning for the Saturday reiterated the likely wind gusts of 80 to 100 km/h, and the afternoon Fire Weather Estimates of FFDI and GFDI were even higher due to the increase in expected wind speeds. At 11am on Friday the iECC Bureau meteorologist attended a teleconference hosted by DSE in the iECC to brief DSE Regional Fire Managers. It was confirmed that the extreme weather conditions forecast for Saturday were highly likely. At noon on Friday the meteorologist briefed the SES State Duty Officer in the iECC about the potential for severe weather over the next 5 days. The VICSES was informed that a Severe Weather Warning for damaging wind gusts had just been issued for Victoria for Saturday 7 February. In addition to the extensive forecasts during lead-up days, the Bureau provided a total of 205 public and fire weather publications (forecasts) between 11pm Friday 6 February and 5am Sunday 8 February as part of its routine service to the community.

In the early morning on Saturday 7 February there was a shallow incursion of cooler air along parts of coastal Victoria, with hot northerly winds persisting over inland Victoria. The briefing note issued at 10.47am Saturday summarises the complex nature of the meteorological situation; "... *The estimates look to be on track for today. There was an initial southerly wind shift across the far southwest but that was associated with elevated showers and was short in duration. Winds have since turned back to the north. The (timing of the wind) change reflected in the estimates still looks good*". The briefing also referred to conditions in the upper atmosphere that indicated peak (mean) wind speeds could be even 5-10 km/h higher than originally forecast.

As forecast by 11am Saturday the strong to gale-force northwesterly winds in the upper air began to reach ground level, temperatures had reached near 40 degrees in many parts of the State, with relative humidity values already below 20% through most of the State. Both Forest and Grass Fire Dangers were well into the Extreme category in western and central parts of the State.

At 12.30pm, the DSE and CFA State Duty Officers were informed that the weather radar from Laverton was showing two significant fire plumes - at Bunyip and Kilmore. During the afternoon, forecast wind change charts and spot fire forecasts were provided by the Bureau's Victorian Regional Forecasting Centre. The details of events are provided in Chapter 4 and Appendix 8.

Between 4pm and 4.45pm, the change began to surge northwards over the central areas of Victoria. Updates on the positions of wind changes were provided to the fire agencies.

By 5pm many places had now reported if not their hottest day on record, then their hottest February day. Record high temperatures for February were set in over 87% of Victoria on this day. Wind gusts

to 115km/h had been reported at Mt William and Mt Gellibrand, while gusts over 90 km/h had been recorded at a number of sites including Port Fairy, Aireys Inlet, Kilmore Gap, Dunns Hill and Mt Hotham. Northwesterly winds averaging 40-60 km/h and relative humidity values below 10% persisted across most of the State during the afternoon ahead of the wind change. The strong and gusty southwesterly wind change had moved eastwards to lie just past Wonthaggi and extended back through the western suburbs of Melbourne to just west of Hopetoun at 5pm. Fire Dangers remained well into the Extreme category ahead of the wind change and did not drop below Extreme until up to an hour after the change in central parts of the State.

Also by 5pm isolated thunderstorms, with associated lightning and shower activity began to occur near the cool change. Thunderstorms in the smoke plumes above fires east and northeast of Melbourne began to produce lightning, and fire-induced thunderstorms persisted during the evening.

Between 8 and 11pm winds in the Melbourne area behind the wind change became light and variable. Temperatures in this windflow rose slightly. Briefings were provided to the iECC to explain the nature of these conditions behind the change.

It took three to four hours after the initial cool change for the general southerly push to overwhelm this variable windflow and allow a secondary southerly surge through the Metropolitan area and West Gippsland with a consequent drop in air temperature. Wind speeds then settled down to average of between 20 and 30km/h.

The northwesterly winds ahead of the wind change and southwesterly winds behind the wind change are described in the report, but it is emphasised that the three dimensional nature of the frontal structure and the effects of mountainous terrain, together with fire induced thunderstorms over some areas of eastern Victoria, are likely to have resulted in a variety of local winds and a complex incursion of cooler air over north-eastern Victoria.

This report does provide a post-event analysis of the hourly surface positions of the wind change between noon on Saturday 7 February and the early hours of next morning, together with the locations of AWS and portable AWS locations. Observations from these locations, as well as analysis of radar data where the wind change can be discerned are the source of information for this analysis. Additional information from researchers currently undertaking detailed post-event studies may alter this analysis slightly.



Introduction

A defining Australian natural disaster occurred in Victoria on Saturday 7 February 2009. On a day of unprecedented heat in Victoria fires in central and southeast parts of the State caused a level of death and destruction that surpassed previous fire events in the recorded history of Australia.

The purpose of this report is to provide a factual account of climate and weather conditions leading up to and including the day. This report also records the Commonwealth Bureau of Meteorology's (Bureau's) Fire Weather Forecast Service associated with this event.

- Chapter 1 describes the forecasting and warning service provided by the Bureau;
- Chapter 2 describes the antecedent weather conditions, on both a long and short time scale;
- Chapter 3 provides a general synopsis of the weather conditions on Saturday 7 February 2009
- Chapter 4 lists the forecast and warning products issued leading up to and on the day and the communication of those forecasts to media, public and Victorian authorities.

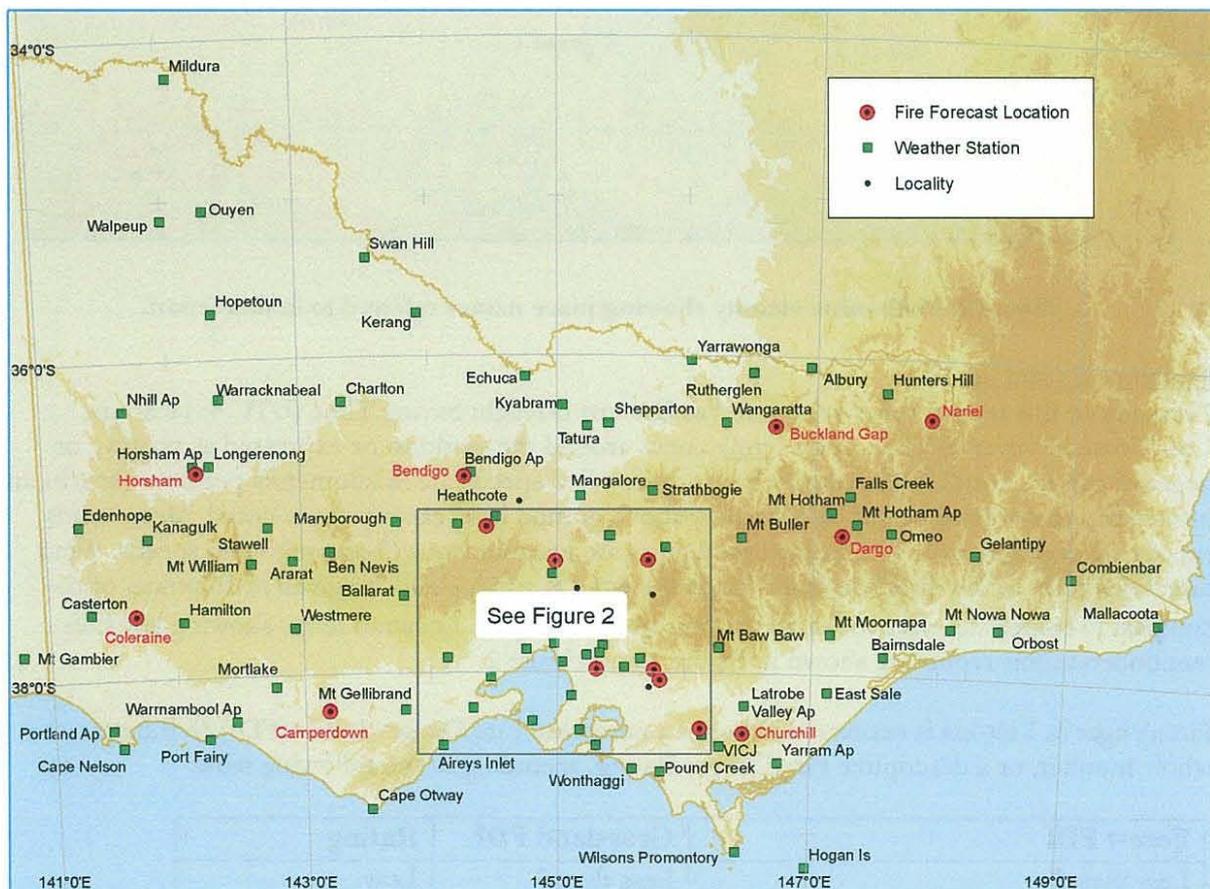


Figure 1: Victoria showing place names referred to in this report.



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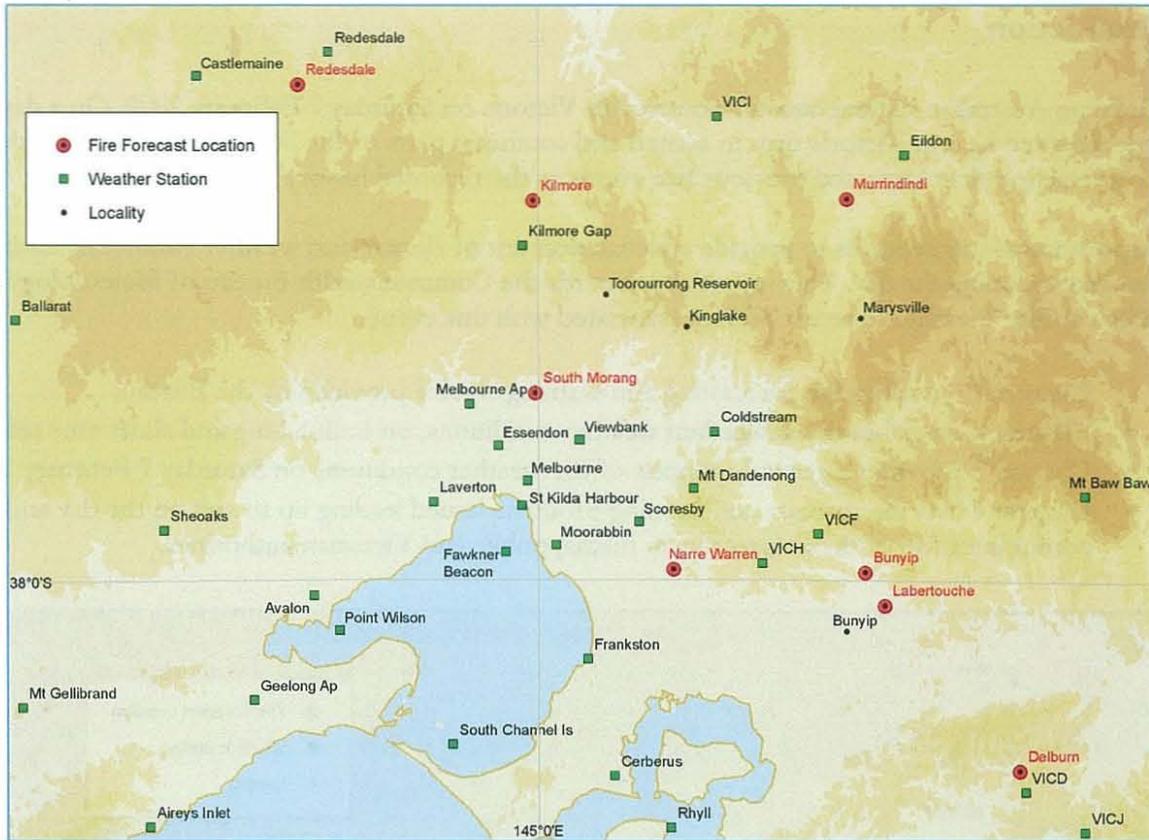


Figure 2: Melbourne vicinity showing place names referred to in this report.

Terminology and units

Throughout this report, times are quoted as Eastern Daylight Saving Time (UTC + 11 hours, Coordinated Universal Time, allows time zones around the world to be expressed as positive or negative offsets from UTC) except where noted. Wind speeds are in kilometres per hour (km/h) and measured at a standard height of 10 metres above ground level except where noted. Mean winds speeds are averaged over 10 minutes, wind gusts are instantaneous (3 second) wind speeds. Wind directions refer to the direction from which the wind is coming and are given in 16 points of the compass. Temperatures are measured in degrees Celsius (°C). Location maps showing key sites mentioned in this report are shown in Figure 1 and Figure 2.

Fire danger in Victoria is expressed either as a numerical Fire Danger Index (FDI) to the nearest whole number, or a descriptive Fire Danger Rating, according to the following table:

Forest FDI	Grassland FDI	Rating
Less than 5	Less than 3	Low
5 to 11	3 to 7	Moderate
12 to 23	8 to 19	High
24 to 49	20 to 49	Very high
Greater than 49	Greater than 49	Extreme

Forest Fire Danger Indices are calculated using the McArthur Mark 5 Forest Meter. Grassland Fire Danger Indices are calculated using the CSIRO-modified McArthur Mark 4 Grassland Meter.

Deciles

Deciles are used to give an element a ranking. For example, a decile rainfall map shows whether the rainfall is above average, average or below average for the time period indicated.

How deciles are calculated

If given 40 years of annual rainfall records, first the yearly totals are arranged in ascending order (from lowest to highest). They are split into 10 equal groups. In this example there would be 10 groups of four. The first group (the four lowest annual rainfalls on record) would be in decile range one, the second group in decile range two, up to the four highest annual totals (highest 10 per cent) being in decile range 10.

The rainfall decile maps used in this report are based on 110 years of annual rainfall records (1900 – 2008), so Figure 7, for example, shows the rainfall deciles for the month of October 2008 for Victoria. This means that for every Victorian rainfall station all 110 October rainfall totals have been arranged in ascending order and then split into 10 equal groups (each group containing 11 October totals for each station). Figure 7 shows that the rainfall recorded in October 2008 was in the bottom 11 totals out of the possible 110 for most rainfall stations in the State. As stated in the Figure description this was very much below average.

Bureau fire weather products

In undertaking these services the Bureau provides a range of products which include:

- forecasts of the weather conditions in the future
- fire weather forecasts and warnings
- spot fire forecasts
- reports of current or past conditions (observations) for a location or region in tabular or map form
- radar and satellite images
- climate summaries such as rainfall averages.

A warning is a specific type of Bureau forecast, warning of weather conditions reaching certain thresholds, for example winds between 46 and 63km/h (strong wind warning) or where fire dangers are expected to be extreme (fire weather warning) or where weather conditions will be conducive to causing frost (frost warning).



Chapter 1: Fire weather Forecasting and Warning Services

The Commonwealth Bureau of Meteorology (Bureau) provides fire weather services in Victoria as part of a national framework for the provision of such services in accordance with the *Meteorology Act 1955* (Cth). The pertinent section of the Act in relationship to fires is the following

6. (1) The functions of the Bureau are-
-
- (c) the issue of warnings of gales, storms and other weather conditions likely to endanger life or property, including weather conditions likely to give rise to floods or bush fires;
-

The full text of the Act is listed in Appendix 1.

The primary objectives of the fire weather service are:

- a) To provide the public with:
- Routine forecasts of fire danger during the fire season;
 - Fire Weather Warnings when the fire danger is expected to exceed a certain critical level; and
- b) To provide fire management authorities, police and other emergency service organisations with:
- Detailed routine forecasts during the fire season;
 - Fire Weather Warnings when the fire danger is expected to exceed a certain critical level (in Victoria, Fire Weather Warnings based on the morning or afternoon fire weather estimates are issued on a district basis when the McArthur Fire Danger Index (either grassland or forest) for 2 locations within the district is 50 or more. If one rating is 50 or more with another in the range 41-49, or all ratings are below 50, but two lie in the range 41-49, then a Fire Weather Warning will be issued only after consultation with Country Fire Authority (CFA) and Department of Sustainability and Environment (DSE));
 - Operational forecasts to assist in combating ongoing fires;
 - Special forecasts for hazard reduction burns;
 - Advice regarding the installation and operation of special meteorological stations operated by fire authorities;
 - Consultative advice and climatological information to assist with assessment of risk, development of fire prevention strategy, and other aspects of fire management.
- c) In Victoria, to provide CFA with advice on expected weather conditions when the declaring of a Total Fire Ban is being considered, usually this is when a Fire Weather Warning has been issued or is being considered.
- The chance of a Fire Weather Warning being issued for the next day is discussed by the iECC meteorologist with the respective agency State Duty Officers, with a formal face to face discussion organised usually at 3.30pm. At 3.30pm, State duty



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officers attend (DSE and CFA), and in most instances, the Chief Officer and Deputy Chief Officer of CFA also attend.

- The discussion to declare a Total Fire Ban is mostly based on the Bureau issuing a Fire Weather Warning, the reasoning behind the Fire Weather Warning related to weather, and the weather outlook the day after.)
- d) Once CFA has declared a Total Fire Ban for any part of Victoria, as part of the fire weather service:
- A Fire Ban Advice is issued by the Bureau
 - Notification of this Advice is included in the State Forecast and affected District and Town forecasts.

The Bureau is also noted in the Victorian Emergency Management Manual (<http://www.oesc.vic.gov.au/emergencymanual>) in the following sections:

Part 5.4 Victoria Emergency Management Council (VEMC) where the Bureau is listed as a member.

The Bureau also has membership of the following sub committees:

- State Flood Policy Committee
- State Emergency Response Planning Committee
- Communications Sub-Committee
- Emergency Management Public Information Sub-Committee

Part 7 – Agency Roles

Under “ABC Local Radio Victoria” the Bureau is a signatory to the MOU between the Emergency Services Organisations, the ABC and the Bureau
Under “Bureau of Meteorology” the role is described.

Part 8 – Appendices and Glossary Appendix 10 – Multi Agency Plans P8.32 the ABC MOU

Part 10- Emergency Management Contact Directory P10.5 Bureau contacts

The Victorian Fire Weather Service is set out in the document Fire Weather Directive (Victorian Regional Office), copies of which are provided to Victorian Fire Agencies. The service has been developed over the years in collaboration with the fire agencies, with any changes being agreed to between the Bureau and the fire agencies. For example brochures created for the fire agencies explaining changes to the Fire Weather Service for the 2008/2009 season are listed in Appendix 2.

During the Victorian Fire Weather Season (normally November through April, though this period varies depending on weather conditions at the time) the Bureau’s Victoria Regional Forecasting Centre (RFC) operates a dedicated fire weather forecasting shift seven days a week, typically between 7.30pm and 5.30pm. This meteorologist’s fire weather duties are listed in Sections 1.1 and 1.2.

Also during the Fire Weather Season a dedicated fire weather meteorologist is rostered on duty, on a daily basis, at the Integrated Emergency Coordination Centre (iECC), located at DSE headquarters in Nicholson Street, East Melbourne. They typically work between 7am and 5pm, to provide an

enhanced weather briefing service at a State level. This meteorologist's fire weather duties are listed in Section 4.3.2.

Outside the hours of the operational fire weather shifts, the Bureau's Victorian Regional Office shift supervisor is responsible for monitoring and providing the fire weather service.

In certain situations it may be appropriate for extra staff to be called in during the day or overnight. This was done on Saturday 7 February.

A diagram of the data and information flow between the Bureau, iECC, fire agencies and the public is shown in Figure 3.

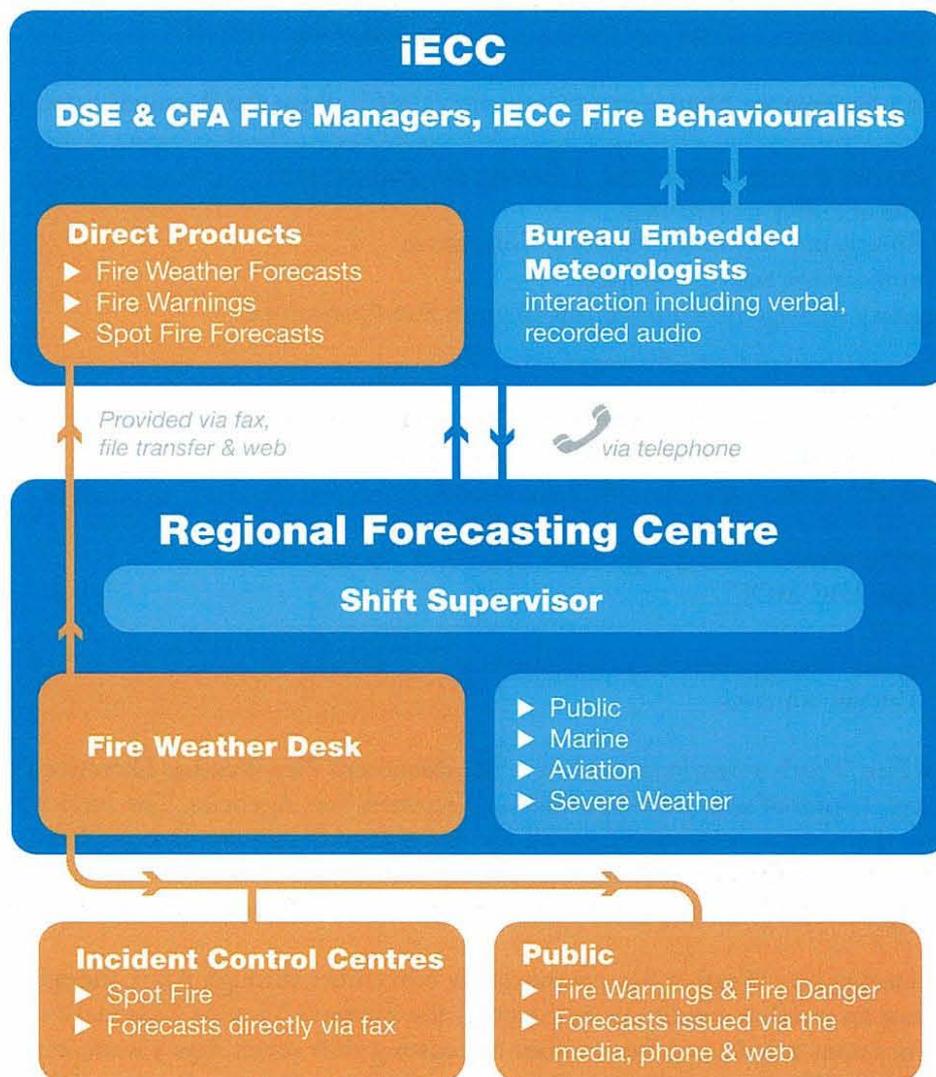


Figure 3: Diagram illustrating the data and information flow between the Bureau, iECC, fire agencies and the public



1.1 The qualifications and experience of Bureau meteorologists

All forecasts and warnings issued by the Bureau of Meteorology are prepared by qualified meteorologists using all available weather information. All of these meteorologists have BSc degrees or higher and have successfully completed the Bureau's meteorology course, which since 1995 has been accredited as a Graduate Diploma. All the meteorologists who perform the fire weather forecasting duties at both the Bureau's Regional Forecasting Centre at 1010 Latrobe Street or the iECC at DSE have had at least 5 years forecasting experience, and most have many years more.

In addition, two of the three meteorologists who worked at the iECC during the period leading up to and during the fires have worked in the USA Weather Service and the Bureau of Land Management during recent southern winters. During these overseas postings the meteorologists undertook fire weather forecasting and training activities, and became familiar with the latest procedures and techniques used in the USA. The experience gained by these meteorologists was invaluable. The other meteorologist who worked at the iECC during the period has some 20 year's experience and is one of the Bureau's most experienced meteorologists.

1.2 Routine service during the Fire Weather Season

During the fire season in Victoria, the Bureau's Victoria Regional Forecasting Centre (RFC) routinely provides the Country Fire Authority (CFA) and Department of Sustainability and Environment (DSE) with the following services:

- forecasts of weather and Forest and Grass Fire Danger Index for the current day for 25 Victorian locations issued at 6.30 am each morning;
- written Fire Weather Briefings issued at 10.45 am each morning that focus on current daytime conditions and how the situation described in the 6.30 am forecast is actually evolving;
- a 4-day forecast suite usually issued between 4.45pm and 4.50pm each afternoon comprising:
 - forecasts of weather and Forest and Grass Fire Danger Index data for the next four days for 25 locations around Victoria;
 - and a sequence of prognosis charts and accompanying text describing the expected evolution of the weather pattern over the next 4 days.

Forest Fire Danger Index (FFDI) and Grass Fire Danger Index (GFDI) information is calculated at the request of the fire agencies to provide an indication of expected fire danger. The FFDI uses wind speed, temperature, relative humidity and drought factor (an indication of the dryness of forest fuels) as inputs. The GFDI uses wind speed, temperature, relative humidity and curing (an indication of the dryness of grasses).

The original calculation of FFDI and GFDI was via a mechanical nomogram/circular slide rule, with their values limited to a maximum of 100. More recently, equations were developed to match the nomogram so that the indices could be calculated by computer. These equations allow values greater than 100 to be produced. At the time of publication of this report there is no quantitative comparison of FFDI/GFDI values greater than 100 with measures of fire behaviour.

Routine fire weather forecast information is also provided to the general community in the form of Fire Danger Ratings that are appended to the State, District and Town Forecasts for today and tomorrow.

1.3 Warnings and Special Fire Services

Additional services are provided when Extreme fire danger is expected and/or when fires are burning. These services include:

- Fire Weather Warnings (text product) issued on a District basis when the fire danger is expected to reach Extreme. These are issued publicly and are used by the CFA as a key input into decisions about the declaration of a Total Fire Ban;
- Wind Change Forecast Chart (graphic product). This is issued to the fire agencies on days of significant fire risk when a wind change is expected to affect the State. These charts show the broad, statewide, current and approximate expected future position of the change within the State and are used by agencies to assist in fire management;
- Spot Fire Forecasts (text product). These are highly detailed fire weather forecasts that are issued for specific locations in which a fire is burning or where a controlled burn is planned. They are initiated by a Spot Weather Forecast Request received by fax from a fire agency. An example of the Request form is listed in Appendix 3. They include information on the expected wind, temperature, relative humidity and other meteorological factors such as the timing of any wind changes. They are provided to the Incident Controller of the fire agency that is dealing with the specific fire and are also sent to the iECC. The Spot Fire Forecast is broken up into 3 sections. The first contains fire details and contact information. The second section gives a worded summary of the weather and assumptions and uncertainties associated with the spot forecast. The third section lists weather conditions for the specific location for the next 24 hours at 3 hourly intervals in one table and in an adjoining table provides space for observations to be recorded, as valuable feedback for the meteorologists. At the end of this section are some reminders and guidance for onsite observations to be relayed back to the Bureau.

In addition, to support agencies and emergency services the Bureau provides:

- Regular contact and consultation between Bureau meteorologists and the fire agencies, especially through the meteorologist located in the iECC. Bureau staff provide detailed briefing to fire chiefs, senior operational personnel and participate in operational briefings, both in person and by teleconference. This is discussed further in Section 4.3; and
- On request from Fire Agencies, a meteorologist may be 'outposted' to a fire incident control centre. This involves a meteorologist relocating to a local fire incident control centre near the fire, where they provide a dedicated fire weather service specifically for that fire. This service has usually been provided in the past to support long lasting fires (known as campaign fires). However, the location of a Bureau meteorologist in the recently established iECC is now seen by the Agencies and the Bureau as the most effective means of coordination between the Bureau and fire agencies.

Chapter 2: Antecedent weather conditions

2.1 Relevant long term weather patterns, including drought

2.1.1 The long dry

The whole of southeast Australia has suffered a severe and protracted drought which is without historical precedent. Figure 4 shows the rainfall deciles for the twelve year period from February 1997 through January 2009 (144 months) based on gridded climate data from 1900 to January 2009. This shows that many parts of Victoria received their lowest rainfall on record for a 12 year period.

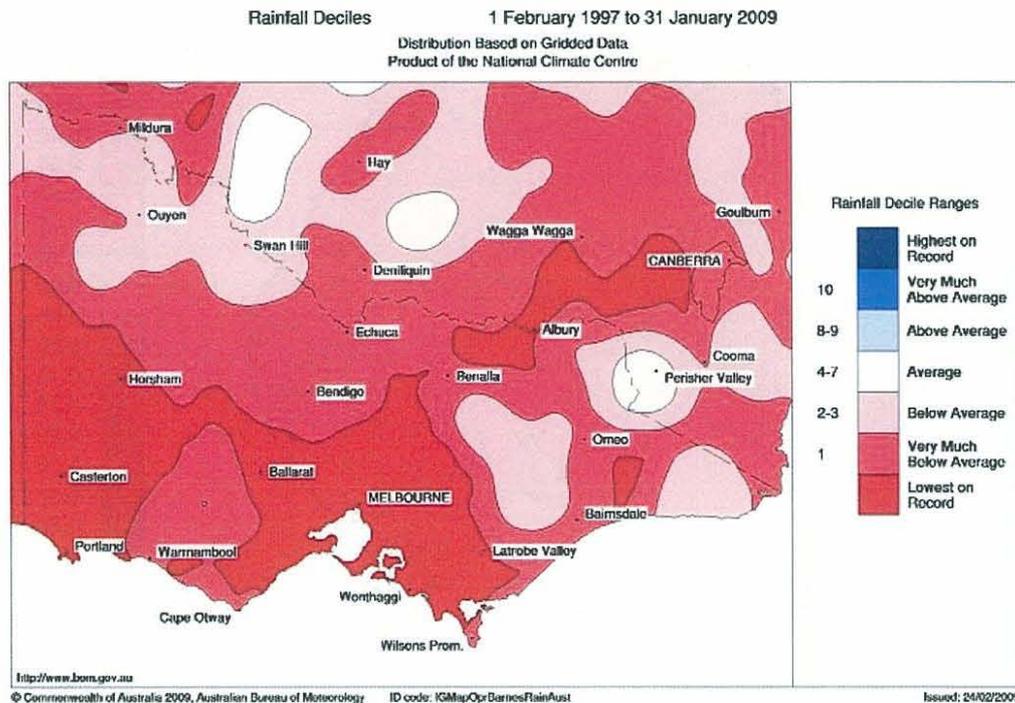


Figure 4: Rainfall deciles for the 12 years February 1997 to January 2009.

In central Victoria the twelve year rainfall totals have been around 10 to 20% below the 1961-90 average and 10-13% below the lowest on record for any twelve year period prior to 1997. Averaged across Victoria the average annual rainfall during this drought has been just 555mm compared to a long term average (1961-1990) of 653mm. Over the period of the drought the rainfall reduction across the whole State has averaged 15% with a cumulative loss of some 1180mm of rainfall being equivalent to nearly two years of average rainfall.

2.1.2 The Long-Term Warming Trend

Australia has experienced 0.9°C of warming over the last century¹ (Figure 5) with larger warming over inland regions and slightly less warming near parts of the coast and Tasmania. The warming is evident in both day and night time temperatures and has led to an increase in the frequency and severity of heatwave conditions across Australia². This warming trend is the regional reflection of global warming, noting that global warming is simply the average of warming trends across many parts of the world.

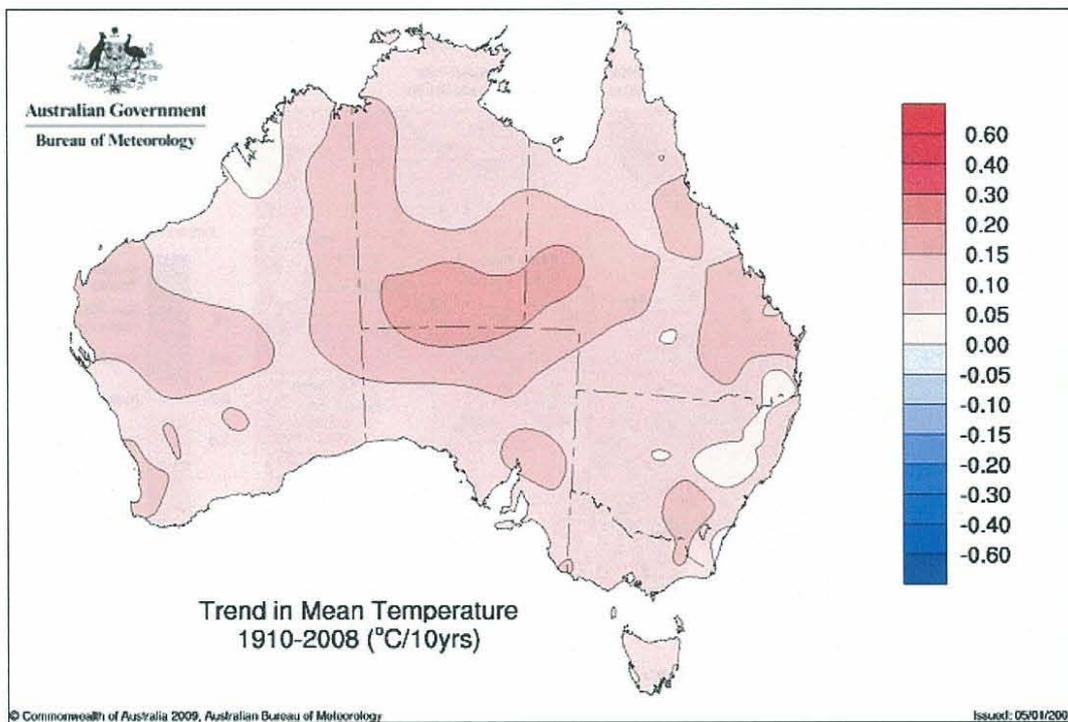


Figure 5: The trend in Australian mean annual temperature from 1910-2008. A warming trend of 0.1°C/10yrs equates to a total warming of around 1°C over the post-1910 period.

While Victorian temperature data for the past 60 years shows an overall warming trend superimposed on considerable interannual variability: the State has experienced nearly 1°C of warming since the 1950s (Figure 6). This warming is clearly reflected in the annual temperature during individual years; Victoria has now experienced 12 warmer-than-average years in a row (a record) and the last decade has been the warmest on record. The warmest recorded year in Victoria's history was 2007 with an average temperature anomaly of +1.2°C above the 1961-1990 average. 2008 was Victoria's tenth warmest year on record with an average temperature anomaly of +0.4°C.

¹ CSIRO/Bureau of Meteorology (2007), Climate Change in Australia technical report 2007. 148pp. Also available from <http://www.climatechangeinaustralia.com.au>

² Alexander, L, P. Hope, D.Collins, B. Trewin, A. Lynch and N. Nicholls, 2007: Trends in Australia's climate means and extremes: A global context. Australian Meteorological magazine, 56, 1-18

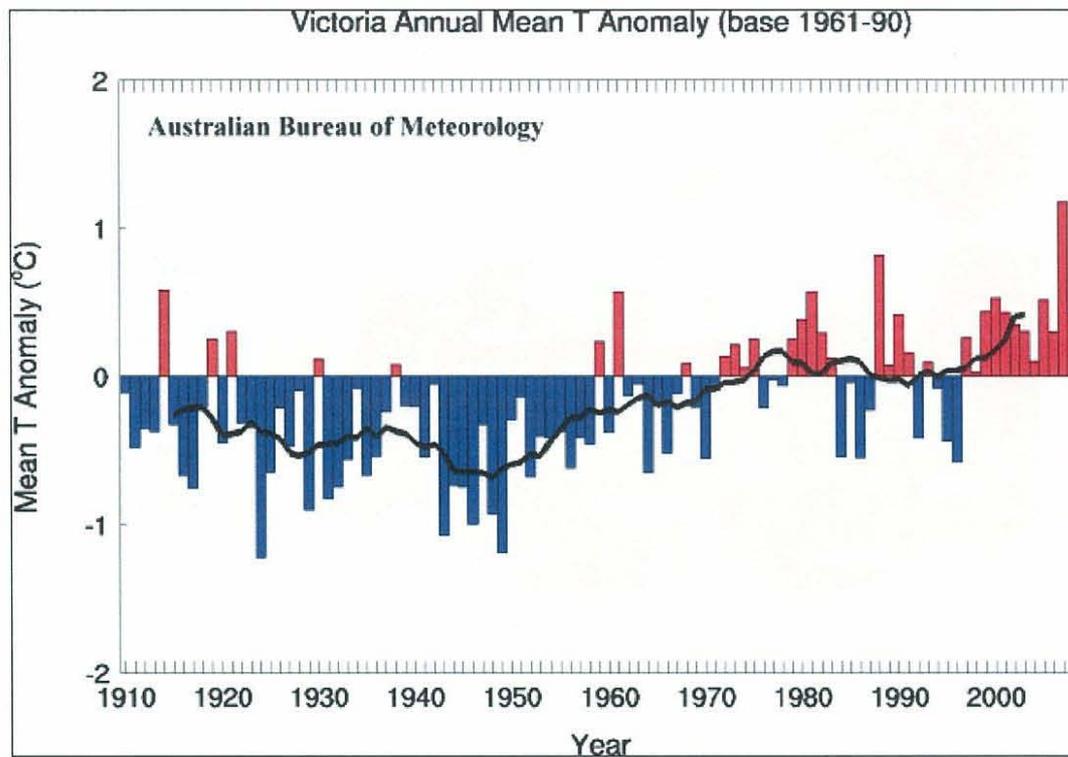


Figure 6: The annually averaged mean temperature for Victoria as an anomaly from the 1961-1990 average (14.1°C). (the solid line represents an 11 year moving average)

2.2 Weather aspects of the 2008/2009 Fire season up to February 2009

2.2.1 Rainfall

The first half of the 2008/09 fire season witnessed highly variable weather patterns with sharp variations in the resulting rainfall. October was an exceptionally dry month across the whole of Victoria with the entire State recording below to very much below average rainfall (Figure 7). An average across Victoria of just 14mm of rainfall was recorded during October (48mm below average) making it the third driest October on record (behind 2006 with 8.6mm and 1914 with 5.2mm).



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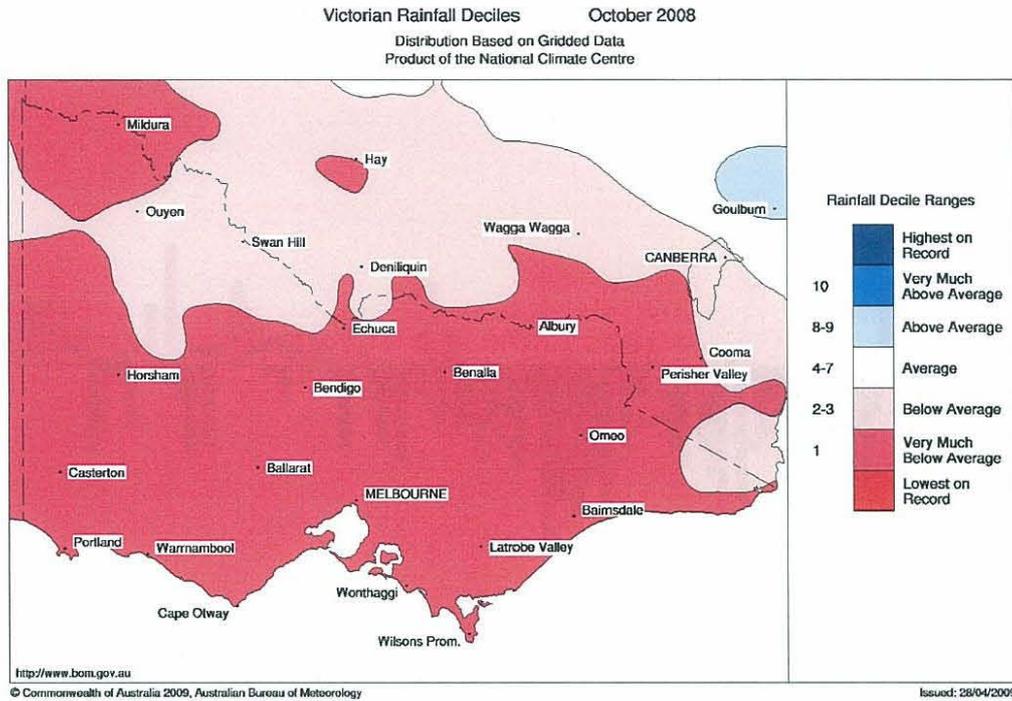


Figure 7: Rainfall deciles for the month of October 2008.

In contrast, in November and December heavy rainfall fell across parts of Victoria (Figure 8 and Figure 9). Averaged across the three months October to December 2008 most of Victoria received near average to above average rainfall.

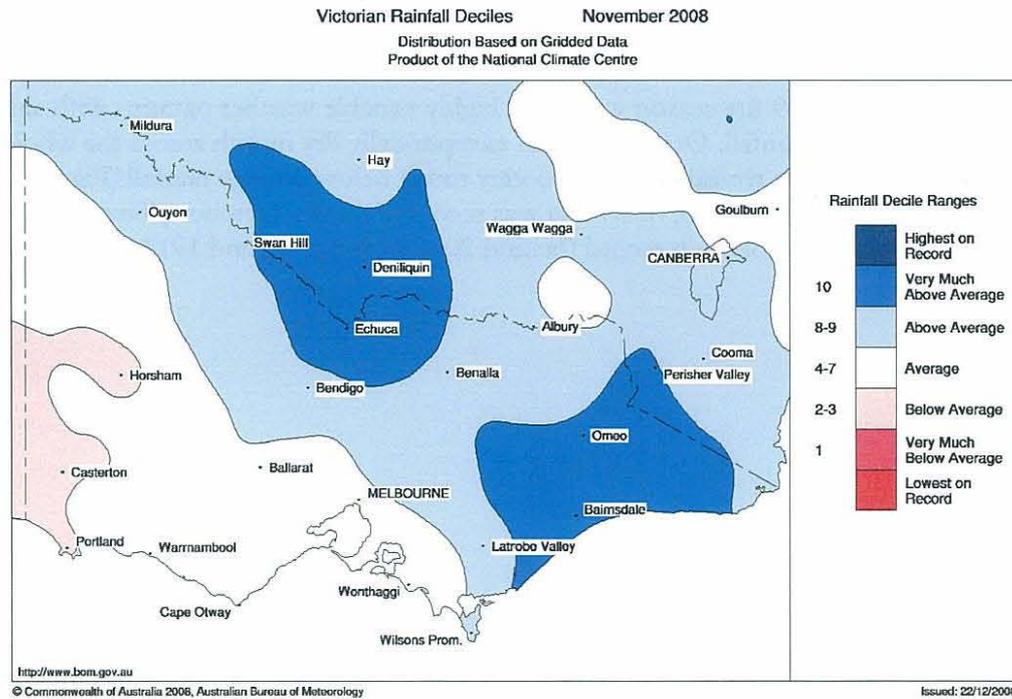


Figure 8: Rainfall deciles for the month of November 2008.

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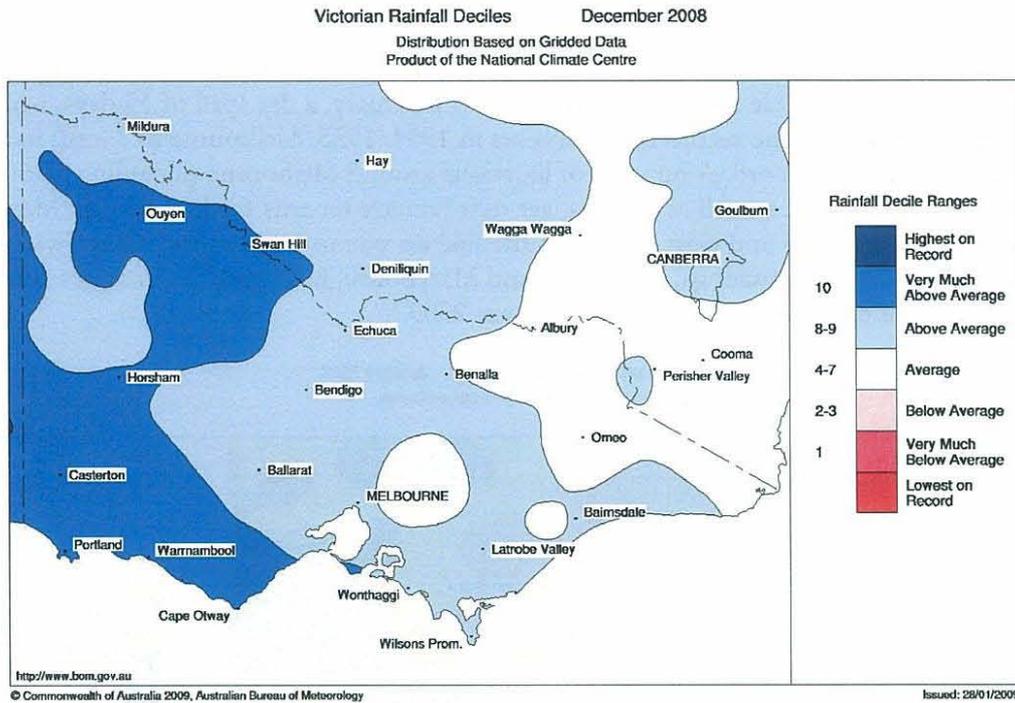


Figure 9: Rainfall deciles for the month of December 2008.

The early part of 2009 was exceptionally dry across Victoria with below average to record low rainfall for January (Figure 10).

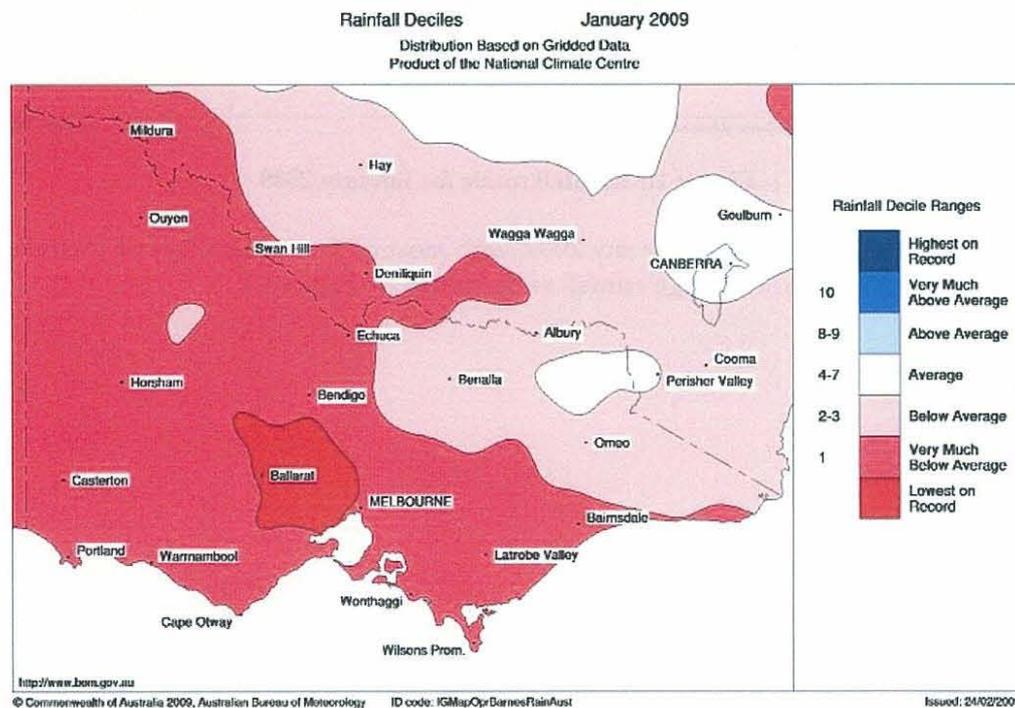


Figure 10: Rainfall deciles for the month of January 2009.

The dry start to 2009 was most severe in central and western parts of Victoria. For example, Melbourne had no measurable rain from 4 January to 7 February, a dry spell of 35 days, which was exceeded in length only by the record of 40 days set in 1954/1955. Melbourne (0.8 mm) had its second-driest January on record. A number of locations around Melbourne (including Toorourrong Reservoir, near Whittlesea), as well as Ballarat, set new January records for low rainfall. Many locations in Victoria's north and west of Melbourne had no rain in January, including Swan Hill, Nhill, Stawell, Bendigo, Yarrowonga, Heathcote and Maryborough. Figure 11 illustrates an analysis of the monthly rainfall totals across Victoria for January 2009.

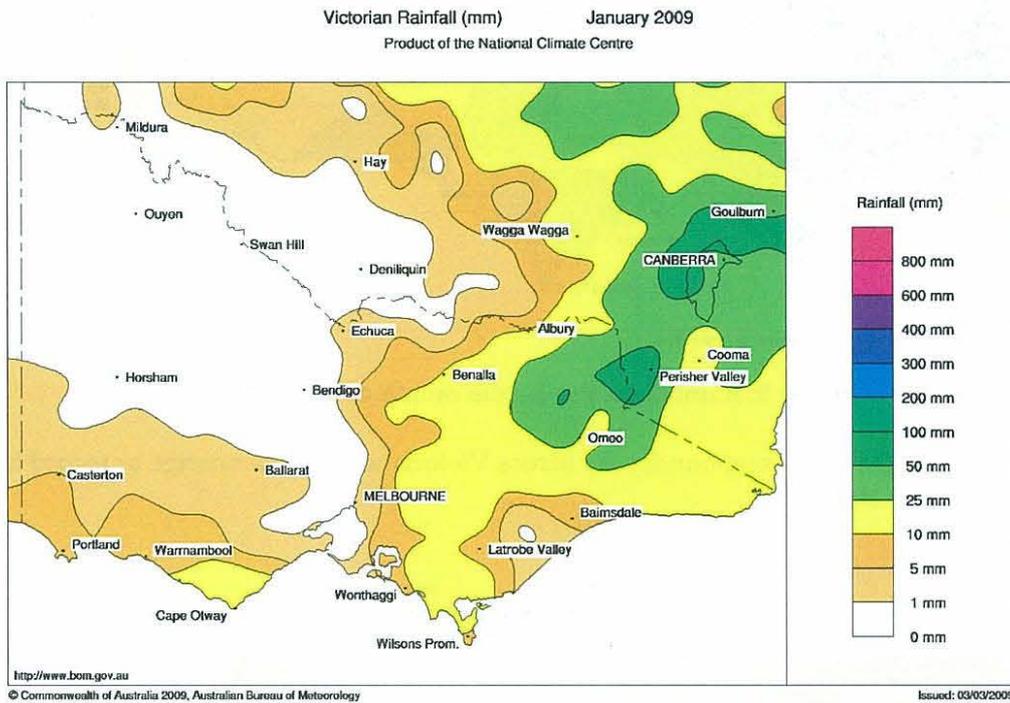


Figure 11: Rainfall totals for January 2009

The dry weather continued during February 2009, with most of the western half of Victoria experiencing very much below average rainfall as illustrated by Figure 12.

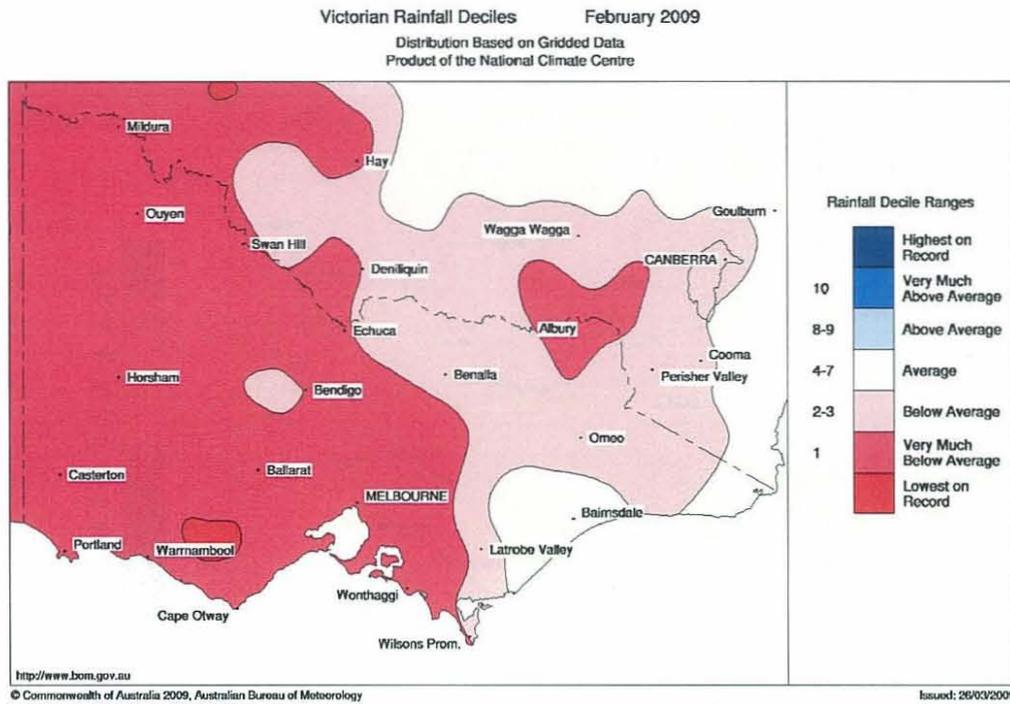


Figure 12: Rainfall deciles for the month of February 2009.

2.2.2 Temperature

The monthly maximum temperature anomalies across Victoria during the period October 2008 to February 2009 essentially mirrored the rainfall deciles. For October 2008, January 2009 and February 2009 Victorian maximum temperatures were generally higher than normal, while in December 2008 Victorian maximum temperatures were generally lower than normal. November 2008 maximum temperatures were essentially near normal across the State. This is illustrated in Figures 13 to 17.



WIT.013.001.0035

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Maximum Temperature Anomaly (°C) October 2008
Product of the National Climate Centre

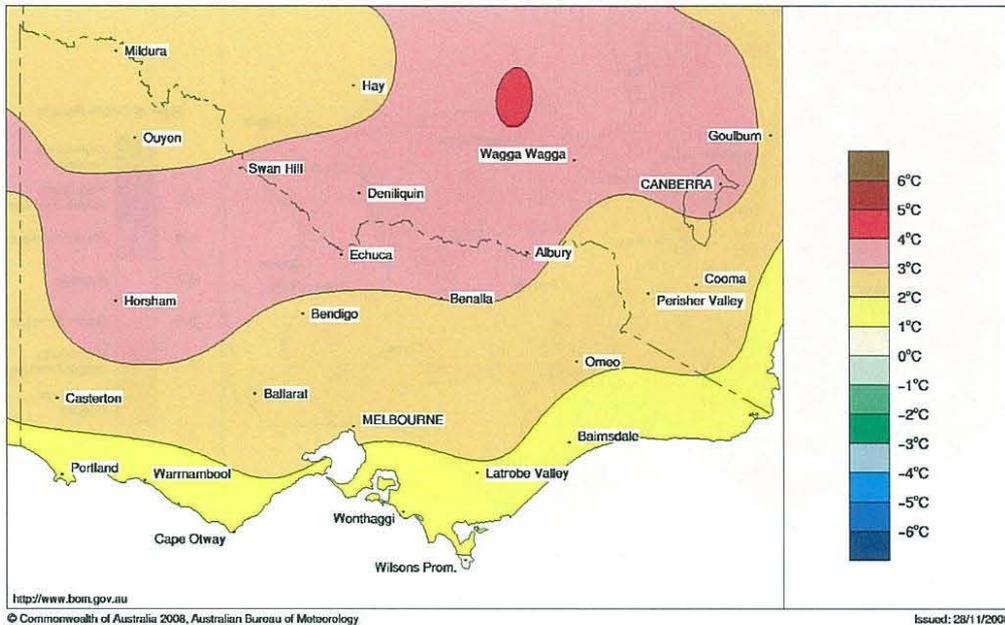


Figure 13: Maximum Temperature Anomaly for the month of October 2008.

Maximum Temperature Anomaly (°C) November 2008
Product of the National Climate Centre

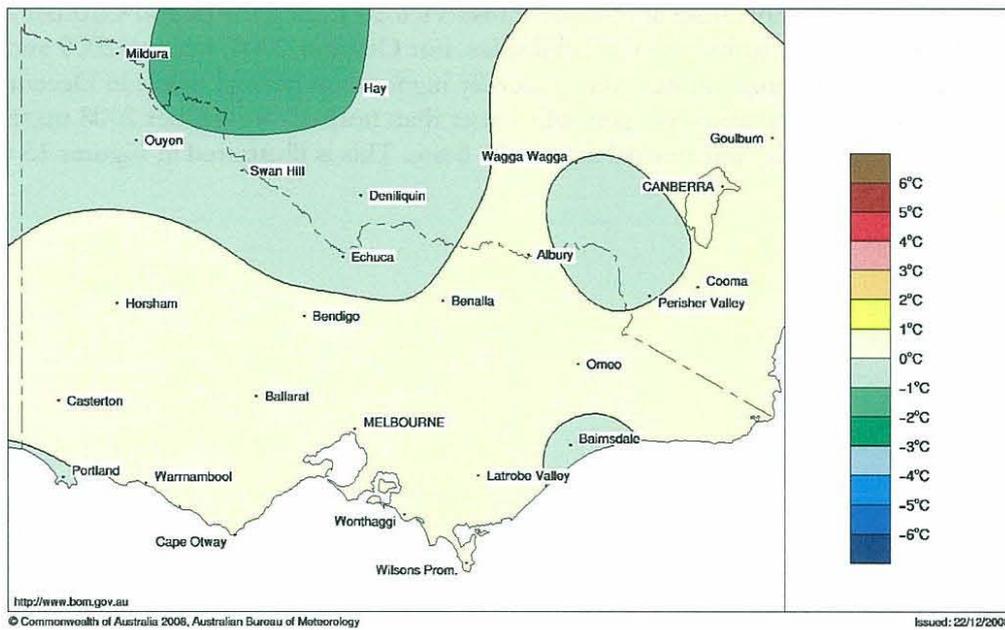


Figure 14: Maximum Temperature Anomaly for the month of November 2008.



WIT.013.001.0036

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Maximum Temperature Anomaly (°C) December 2008
Product of the National Climate Centre

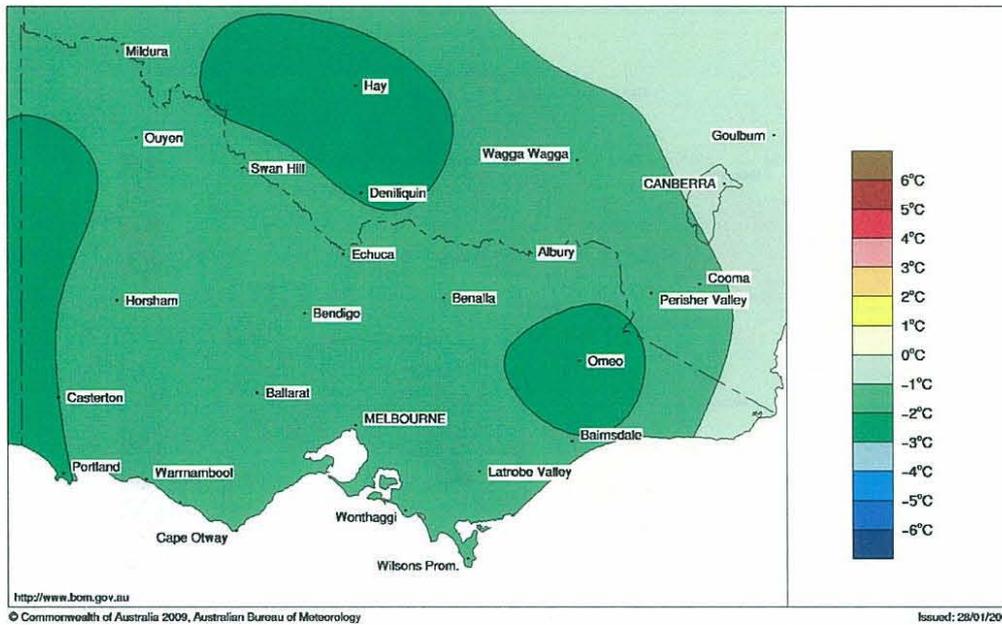


Figure 15: Maximum Temperature Anomaly for the month of December 2008.

Maximum Temperature Anomaly (°C) January 2009
Product of the National Climate Centre

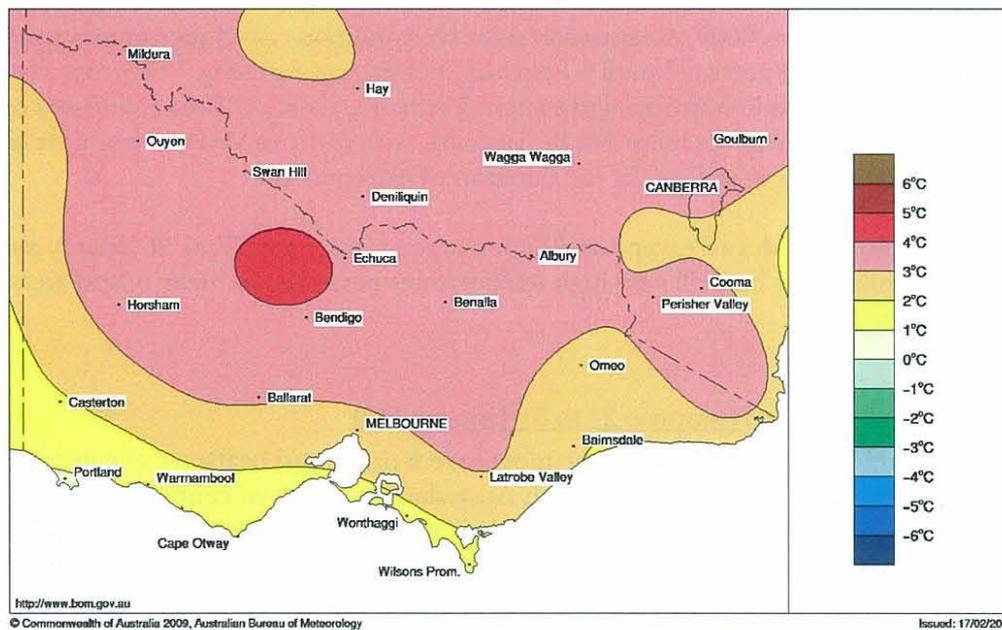


Figure 16: Maximum Temperature Anomaly for the month of January 2009.



WIT.013.001.0037

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Maximum Temperature Anomaly (°C) February 2009
Product of the National Climate Centre

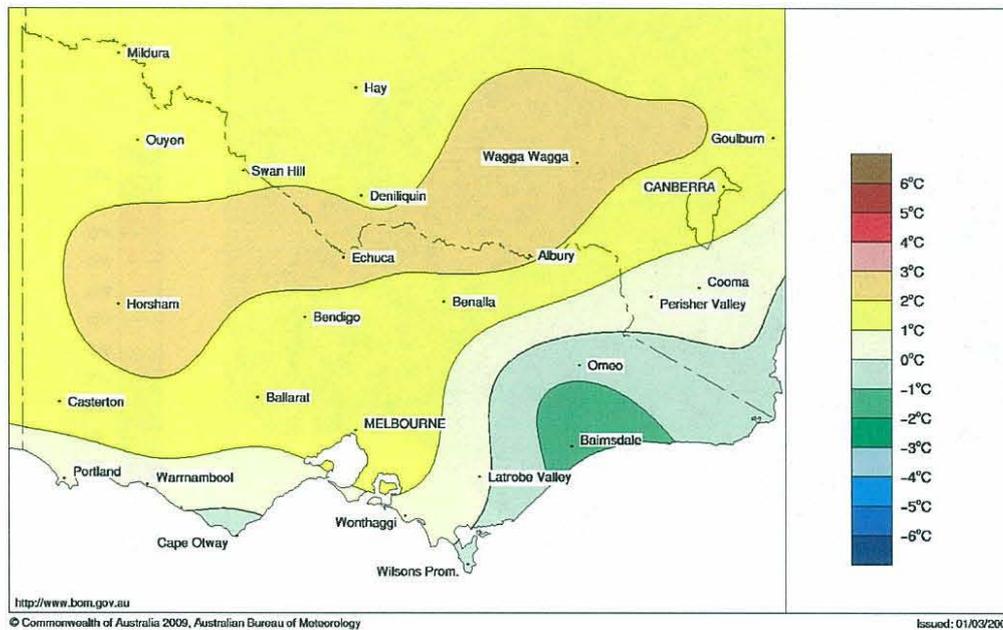


Figure 17: Maximum Temperature Anomaly for the month of February 2009.

2.2.3 The January-February 2009 heatwave in southeastern Australia

After a relatively mild start to 2009, exceptional heatwave conditions developed across southeast Australia in late January and persisted until 8 February, peaking on Saturday 7 February. The most extreme conditions occurred in northern and eastern Tasmania, most of Victoria and adjacent border areas of New South Wales, and southern South Australia, with many records set both for high day and night time temperatures as well as for the duration of extreme heat.

There were two major episodes of exceptional high temperatures, from 27 to 31 January and 6 to 8 February, with slightly lower but still very high temperatures persisting in many inland areas through the period in between.

2.2.4 The First Stage of the Heatwave: 27 to 31 January 2009

The last week of January witnessed one of the most severe prolonged heatwave events in southeast Australia's history (Figure 18). In southern South Australia, and much of central, southern and western Victoria, maximum temperatures reached their highest levels since at least 1939. Melbourne and Adelaide both narrowly missed all-time records during this initial heatwave period. Melbourne's 45.1°C on 30 January was, at the time, the second-highest on record behind 45.6°C on 13 January 1939. At a few mainland locations, including Geelong (45.3°C on 29 January) and Wilsons Promontory (41.4°C on the 30 January) even the 1939 marks were surpassed, while stations opened after 1939 where all-time records were set or equalled included Omeo and Mangalore.

Victoria's highest temperature during this part of the event was 45.8°C at Avalon Airport on 29 January and Charlton on 31 January. These values fell short of the State record at the time (47.2°C at Mildura in 1939).

Overnight minimum temperatures were also very high in many places during this part of the event. Melbourne Airport's minimum of 30.5°C on 29 January was only 0.4°C short of the Victorian record. The extremely high day and night temperatures combined to produce a record high daily average temperature at Melbourne (35.4°C on 30 January), which, along with the previous day (35.0°C) are the two highest average temperatures in Melbourne's history.

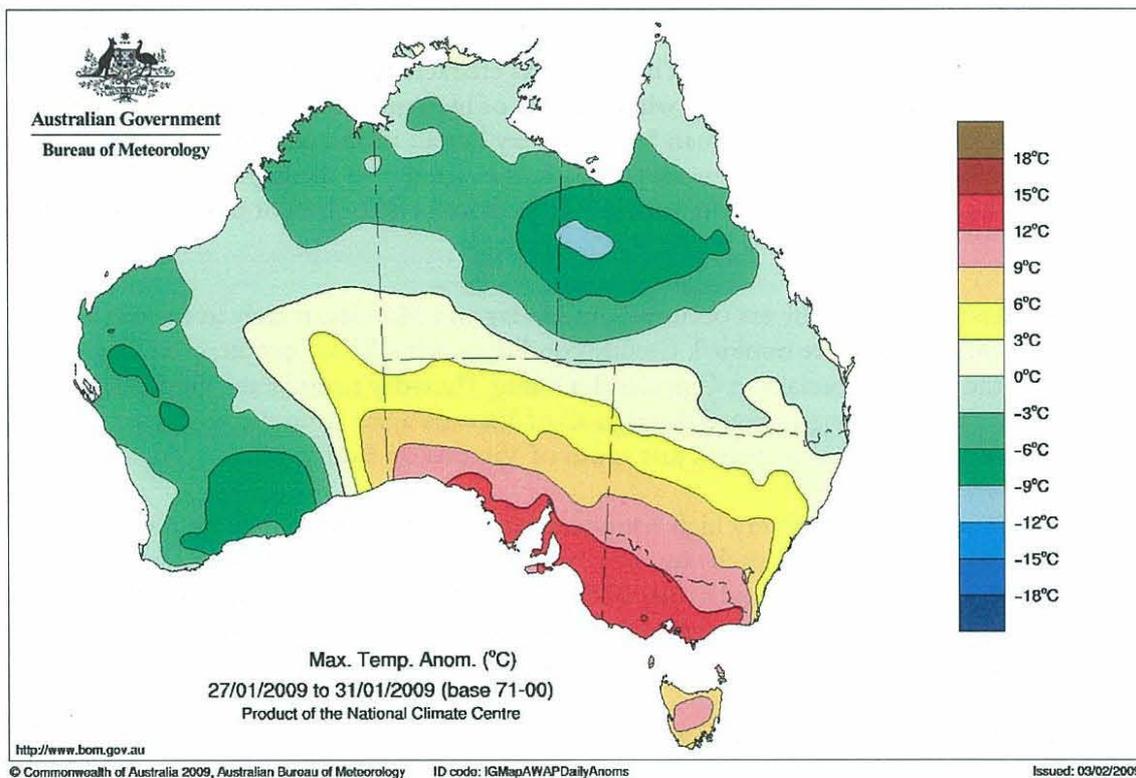


Figure 18: Maximum temperature anomalies (differences from the 1971-2000 average) for the five day period 27-31 January 2009.

2.2.5 The Unusual Duration of the 2009 Heatwave

In addition to its peak intensity, the 2009 heatwave was also notable for its duration. Appendix 4 shows a range of records set during the event for consecutive days above various thresholds, both by day and night. Melbourne set a record for the most consecutive days it experienced above 43°C (3 days).

At Mildura maximum temperatures remained above 40°C throughout the heatwave, making 12 consecutive days above 40°C, the longest such sequence ever recorded at a Victorian station. Nhill's six consecutive days above that level set a new record there, while Bendigo and Rutherglen both experienced five consecutive days above 40°C, setting a record at the former and equalling it at the

latter. Records were also set for consecutive days above more extreme thresholds at numerous inland locations, including Kerang and Nhill.

The prolonged nature of the heatwave, and in coastal areas the replacement of a very hot and dry air mass with a warm, humid one, also led to many records being set or approached for consecutive days with minimum temperatures above thresholds. Melbourne (six consecutive nights above 20°C) equalled its record set during the 1908 heatwave. At Mildura a record was set with seven consecutive nights above 24°C.

2.2 Sunday 1 February to Friday 6 February, the lead up weather conditions

Australian Mean Sea Level Pressure (MSLP) charts valid for 11am each day from Sunday 1 to Friday 6 February are presented in Appendix 5. The week was characterized by daily surface pressure troughs¹ in the vicinity of inland Victoria while a series of high pressure systems to the south moved eastwards from the Bight into the Tasman Sea. The very hot air inland remained, while in the south conditions were tempered by east to southeast winds associated with the high pressure systems, as well as seabreezes. Winds were generally stronger in the south and only light to moderate in the north.

Isolated thunderstorms and showers occurred on Sunday and Monday, mainly in eastern and central districts, but rainfall totals were minimal. Cloudy conditions with drizzle occurred on Tuesday and Wednesday in the south, especially in Gippsland. During Thursday a moderate wind change associated with a surface trough moved through all of Victoria apart from the northeast to be replaced by a weak high pressure system just south of Victoria on Friday.

In the north the combination of very high temperatures with only light to moderate winds produced generally Very High Fire Dangers each day, with marginal Extreme conditions experienced on Sunday, Thursday and Friday. On and south of the ranges, winds were generally moderate to fresh with cooler temperatures that produced Fire Dangers generally in the Moderate to High range apart from some areas reaching Very High on Thursday and Friday.

The relationship between Fire Danger Rating and Fire Danger Index is described in the Introduction and is repeated here for convenience.

Fire danger in Victoria is expressed either as a numerical Fire Danger Index (FDI) to the nearest whole number, or a descriptive Fire Danger Rating, according to the following table:

Forest FDI	Grassland FDI	Rating
Less than 5	Less than 3	Low
5 to 11	3 to 7	Moderate
12 to 23	8 to 19	High
24 to 49	20 to 49	Very high
Greater than 49	Greater than 49	Extreme

¹ A trough of low pressure is an elongated area where atmospheric pressure is low relative to its immediate surroundings. A trough of low pressure is sometimes indicated on the synoptic chart, for example in Figure 19, by a centre line or trough line denoted by a dashed line e.g. - - - -. The trough line often extends outward from a low pressure centre, or an enclosed area of relatively low pressure. A change in wind direction will generally be observed as you cross from one side of the trough to the other.

Forest Fire Danger Indices are calculated using the McArthur Mark 5 Forest Meter. Grassland Fire Danger Indices are calculated using the CSIRO-modified McArthur Mark 4 Grassland Meter.

Of note on the Australian MSLP chart for 11am Friday 6 February 2009 is the surface trough on the western side of Eyre Peninsula in South Australia and, south of Western Australia, a developing cold front¹ approaching the Australian continent with a deep, cold southerly flow behind it. This synoptic pattern (weather pattern on the scale of hundreds to a few thousand kilometres) was to be instrumental in producing the weather conditions experienced throughout Victoria on Saturday 7 February.

¹ A front is the boundary between air masses having different characteristics. A cold front is one that moves in such a way so that colder air replaces warmer air; the "leading edge" of a relatively cold air mass.



Chapter 3: Weather conditions 11pm Friday 6 February to 5am Sunday 8 February

This chapter describes the weather conditions experienced in Victoria from overnight Friday 6 February through to the morning of Sunday 8 February in six hourly periods. The period from 11am to 11pm Saturday 7 February is further broken down into three hourly periods. Figure 19 contains the six hourly MSLP analyses starting at 11pm Friday 6 February 2009 and finishing with 5am Sunday 8 February 2009. Appendix 6 lists weather and Fire Danger values for selected Victorian Automatic Weather Stations (AWSs) during the same time-span to provide more detail on the weather conditions before, during, and after the wind change that moved across Victoria during Saturday 7 February. These AWSs provide a representative coverage across the State and include stations near fire sites of note.

Figure 20 shows a post-event analysis of the hourly surface location of the wind change as it moved across Victoria. It is based on timing of a change in wind direction at AWSs (where the wind is measured at 10m above ground level) and several portable AWSs (where the wind is measured at 7.6m above ground level), as well as analysis of radar data where the wind change can be discerned. There are undoubtedly some fine-scale variations in structure caused by local topography or other conditions within these isochrones (lines which represent the same time), which cannot be quantified in the absence of additional observations. This uncertainty has been indicated by the stylised hatching around each hourly isochrone. To determine the actual uncertainty a highly detailed study would be needed that took into account factors such as topography, density of observations and weather modelling.

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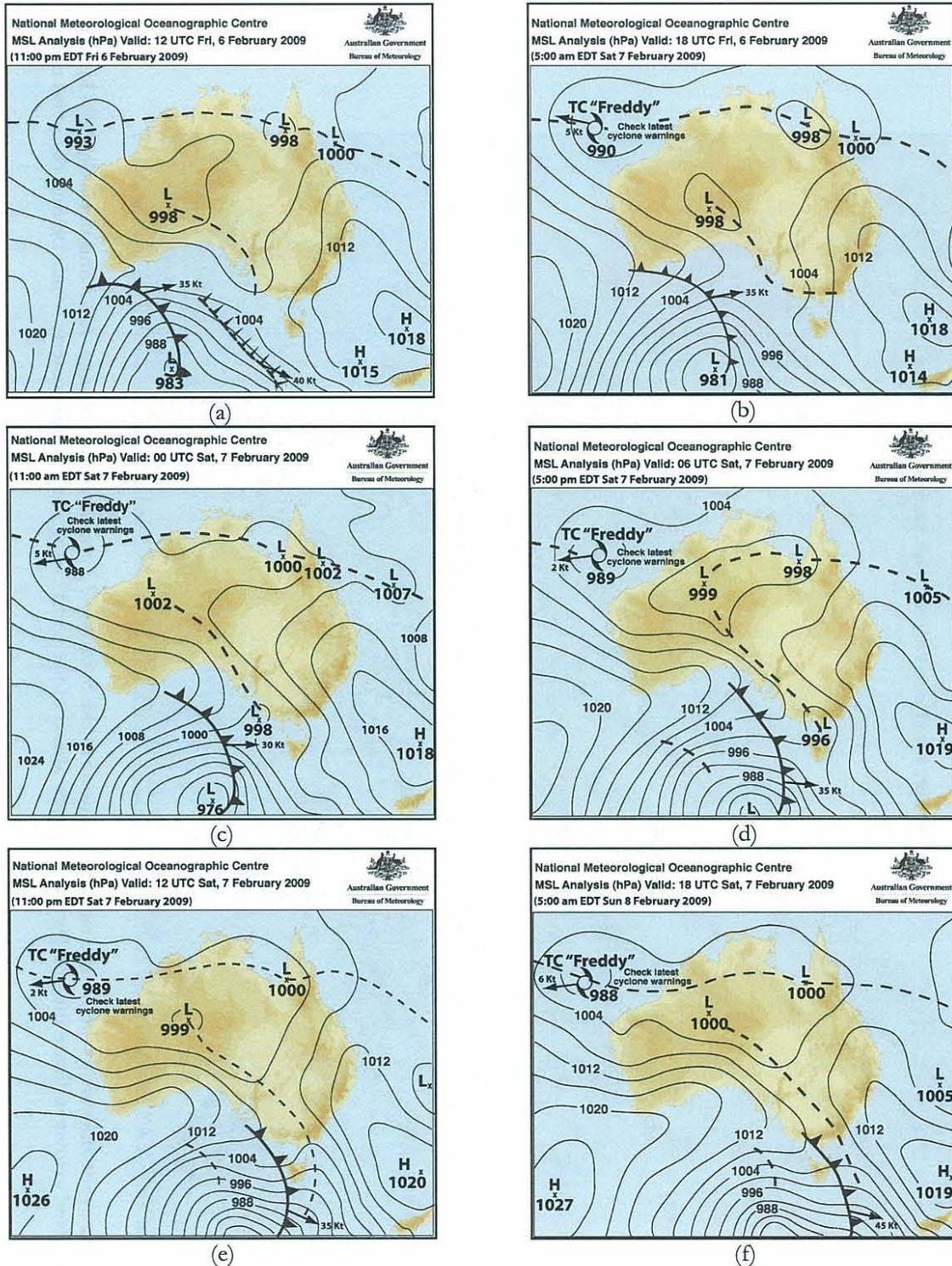


Figure 19: MSLP charts valid from 11pm 6 February 2009 to 5am 8 February 2009 in six hourly time steps.

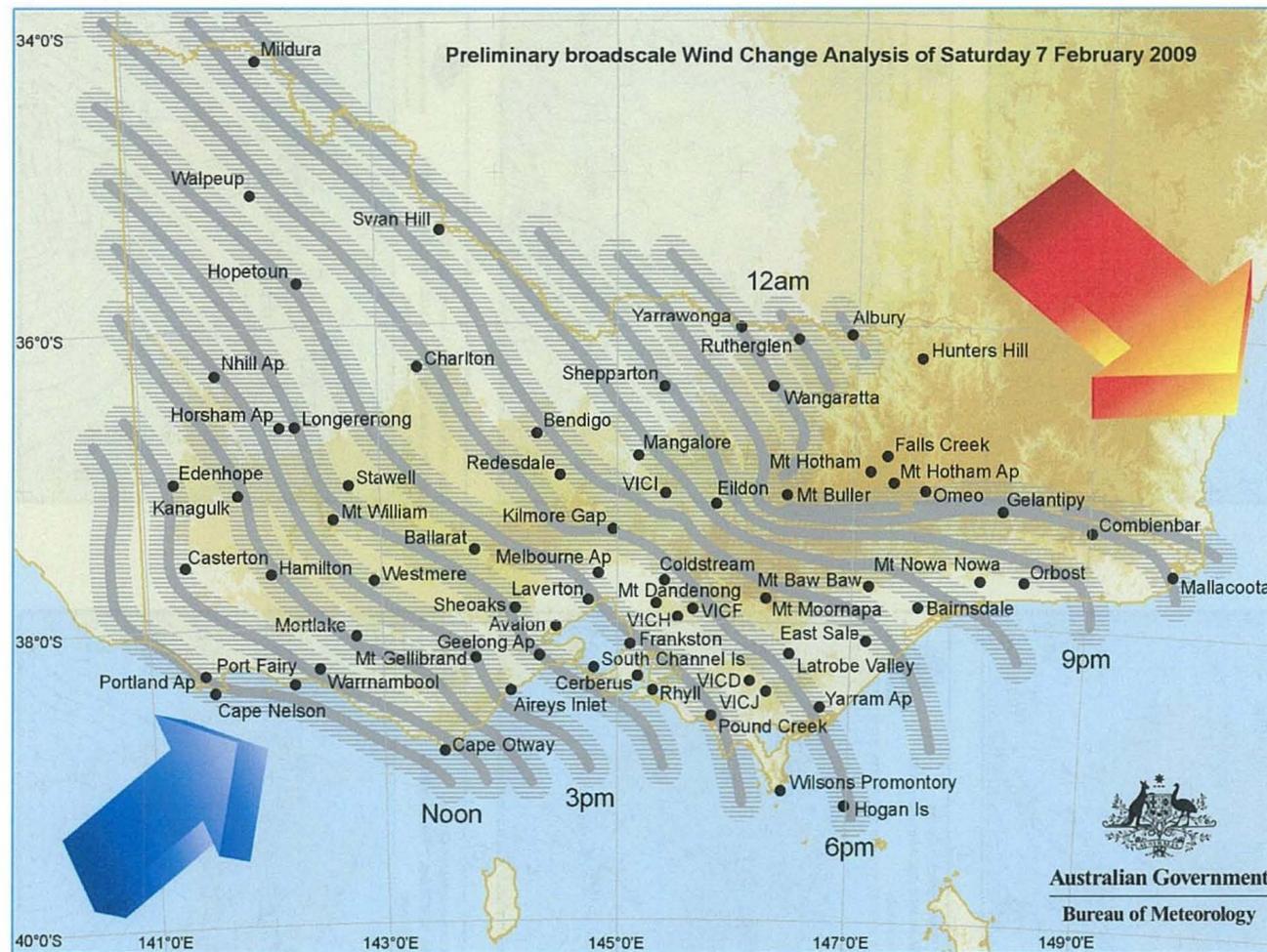


Figure 20: Post-event analysis of the hourly surface positions of the Saturday 7 February wind change. AWS and portable AWS locations indicated. Stylised arrows indicate the northwesterly winds ahead of the wind change and southwesterly winds behind the wind change.



3.1 11pm Friday 6 February

The surface trough in SA had moved east. The Southern Ocean cold front continued to move to the northeast (Figure 19a).

Figure 21 shows surface AWS observations in Victoria and southern NSW valid at 11pm Friday 6 February with wind arrows in black, the arrow points in the direction the wind is travelling. Standard meteorological convention is for the wind arrows (see Figure 21) to show the 10 minute average wind speed measured in knots (1 knot equals 1.85 km/h). However due to the fact that all public forecasts for land areas, as well as all forecasts for the fire agencies, use km/h for wind speed, it has been decided to use km/h for wind arrows in this document. Feathers on the arrow are in graduations of 50km/h for a flag (or pennant), 10 km/h for full feathers and 5 km/h for half feathers. A graphic illustrating these conventions is associated with Figure 21 and other similar figures. Surface temperature is indicated in blue and relative humidity is indicated in red below the temperature value: both values are drawn to either the upper or lower left of the start of the wind arrow. The start of the wind arrow is plotted at the geographical location of the AWS.

Accordingly, Figure 21 indicates that at 11pm surface winds were generally light to moderate from east to northeasterly. Temperatures were still generally very high throughout the State from the low to mid 30s in the northwest of the State grading to near 20°C on some parts of the coast and in the Alpine areas.

3.2 5am Saturday 7 February

The western tip of the southern ocean cold front had reached the southwest corner of Western Australia and was moving into the Bight. The surface trough lingered in the south of Victoria (Figure 19b).

Isolated high-based thunderstorms, with associated lightning, had formed near the southwest coast. A surface southerly wind change had pushed in from the southwest coast during the early morning. This cooler layer of air was replaced by hot northerly winds by dawn. Throughout Victoria the overnight temperatures had remained above 20°C apart from some coastal locations and in the Alps (Figure 22). A 4am wind flight¹ at Mt Gambier indicated that winds in the layer from 1 to 5 km above the ground averaged between 80 and 100km/h from the northwest, while a similar wind flight conducted at Melbourne Airport at the same time indicated 65 to 75 km/h winds from the north to northwest in the same layer. These wind flights indicated the possible winds that could reach the ground during the day.

¹ Process where a weather balloon is released and then tracked to provide a vertical profile of wind speed and direction above a fixed location.

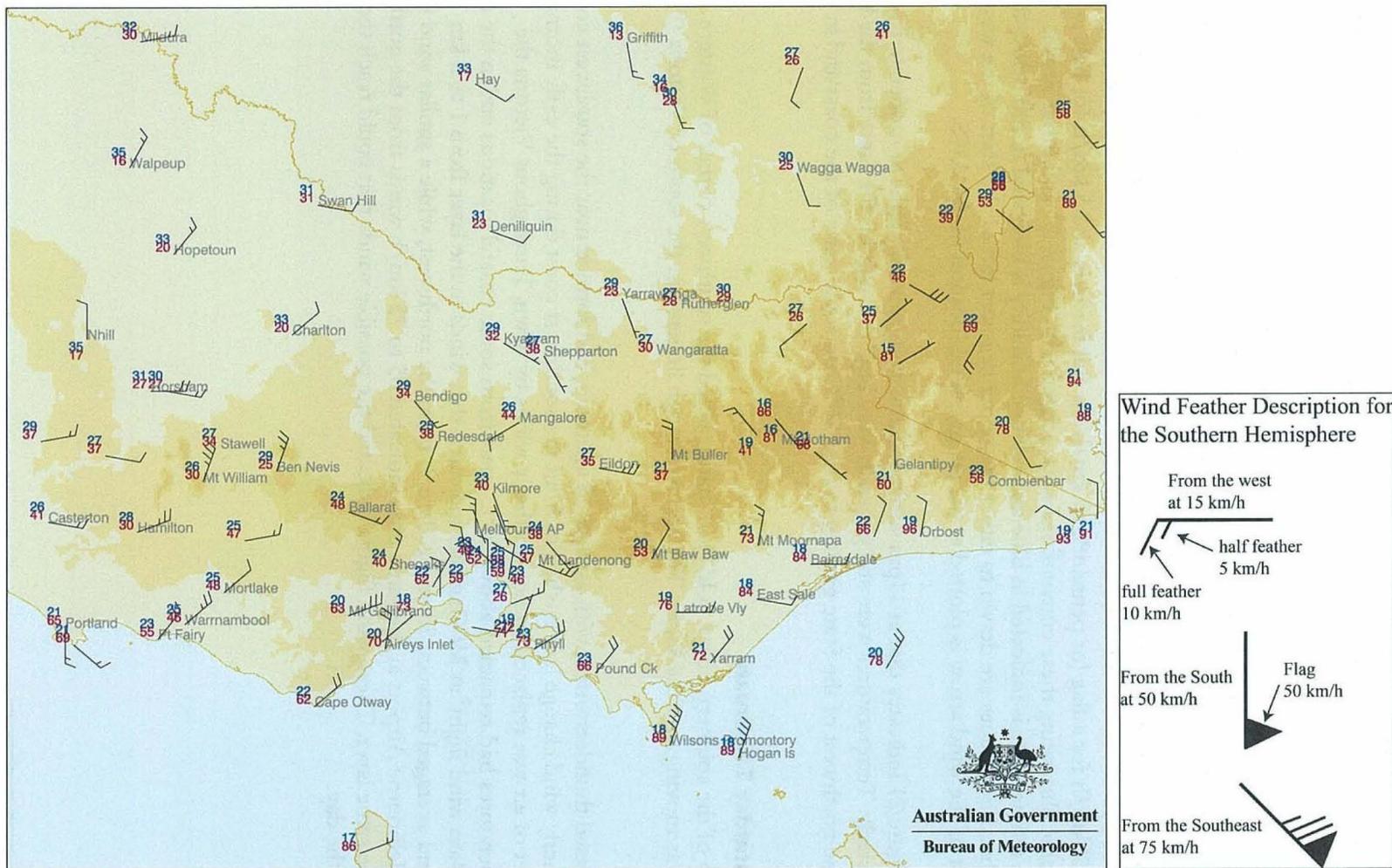


Figure 21: Victorian Automatic Weather Station observations of wind speed (km/h) and direction (shown in black wind arrows), surface temperature (in blue) and relative humidity (in red) at 11pm 6 February 2009.

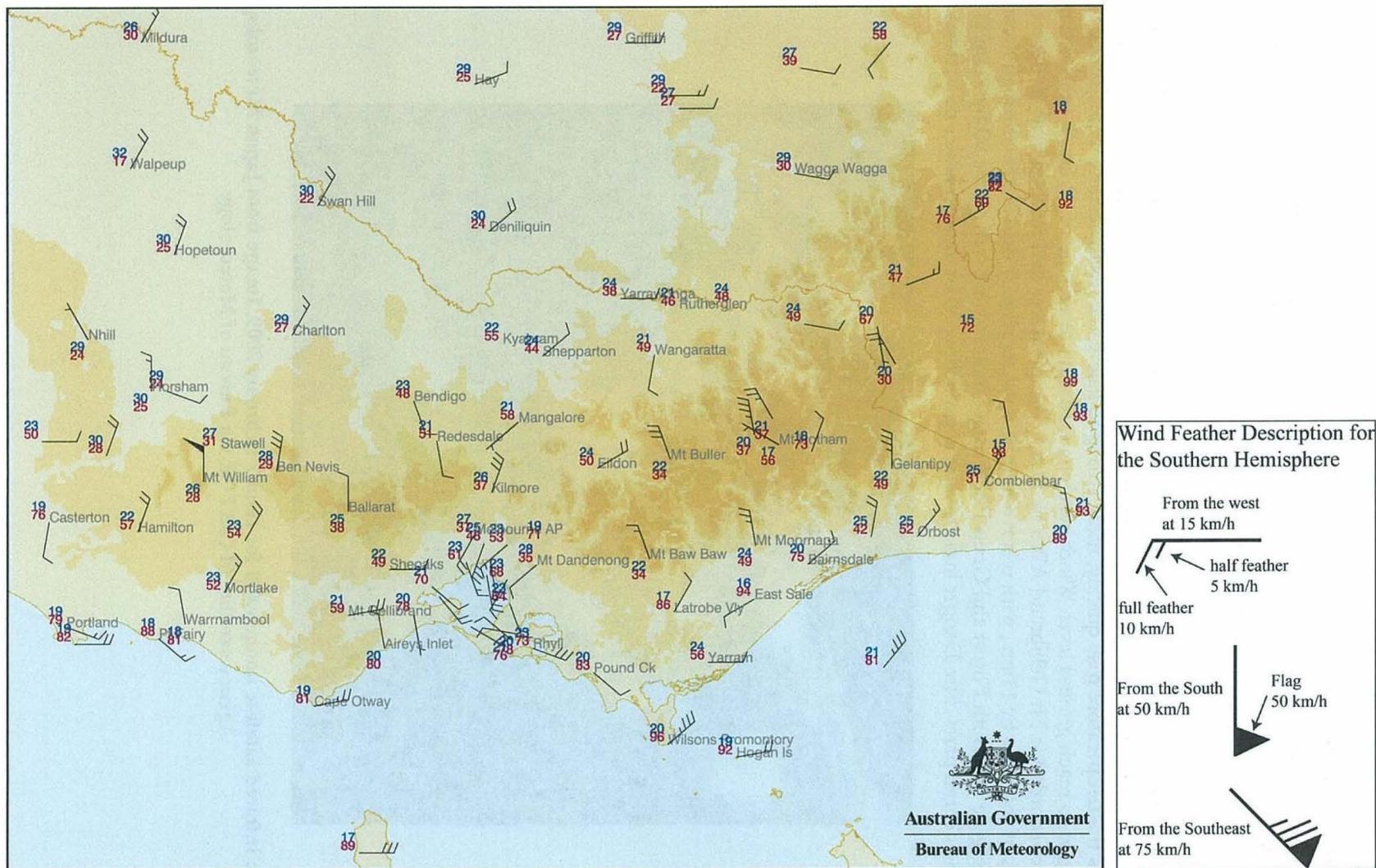


Figure 22: As for Figure 21 but valid for 5am 7 February 2009.

3.3 11am Saturday 7 February

The cold front continued to track eastwards. The surface pressure trough deepened with a low forming in the trough near the SA/Victorian border (Figure 19c). Infrared satellite imagery (Figure 23) indicated clear conditions over Victoria with any cloud at this stage associated with the cold front to the west.

Weather conditions changed dramatically during the morning. An 11am wind flight at Melbourne Airport indicated 60 – 95km/h mean winds from the northwest in the layer from 1 to 5km above the ground. As the temperature rose quickly, these strong to gale-force northwesterly winds above the surface began to reach ground level. Winds reaching a 10 minute average of 87 km/h (near storm force) were recorded at Mt Gellibrand AWS by 11am. Temperatures had reached near 40 degrees in many parts of the State by 11am , with relative humidity values already below 20% through most of the State (Figure 24). Both Forest and Grass Fire Danger indices were well above 50 by 11am in western and central parts. Fire Danger indices were approaching 50 in the remainder of Victoria.

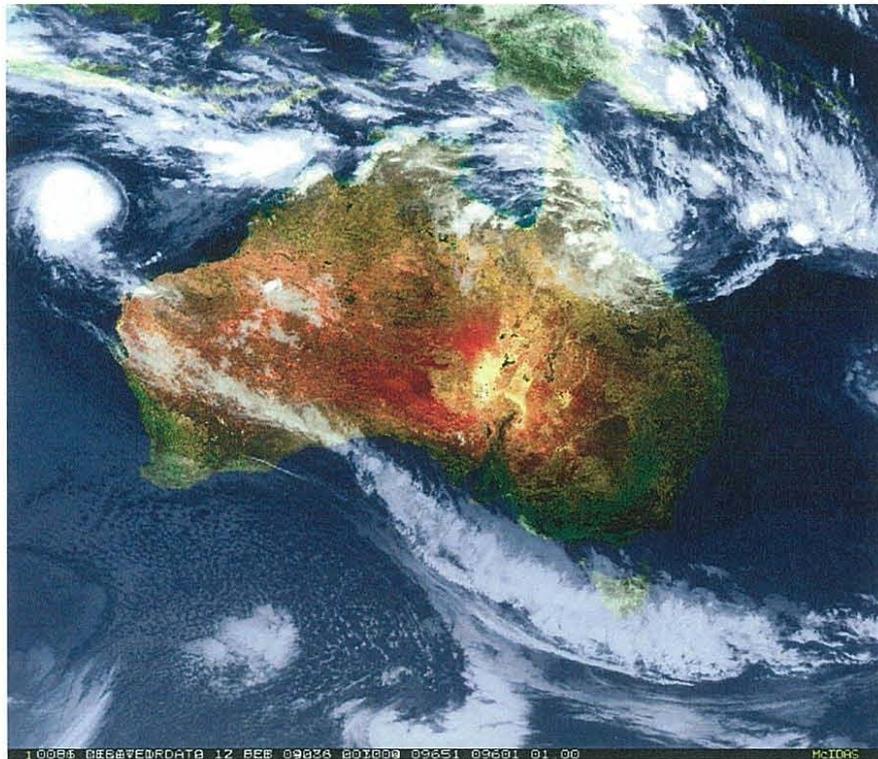


Figure 23: Infrared satellite image valid for 11am 7 February 2009. Image from Japan Meteorological Agency satellite MTSAT-1R via Bureau of Meteorology

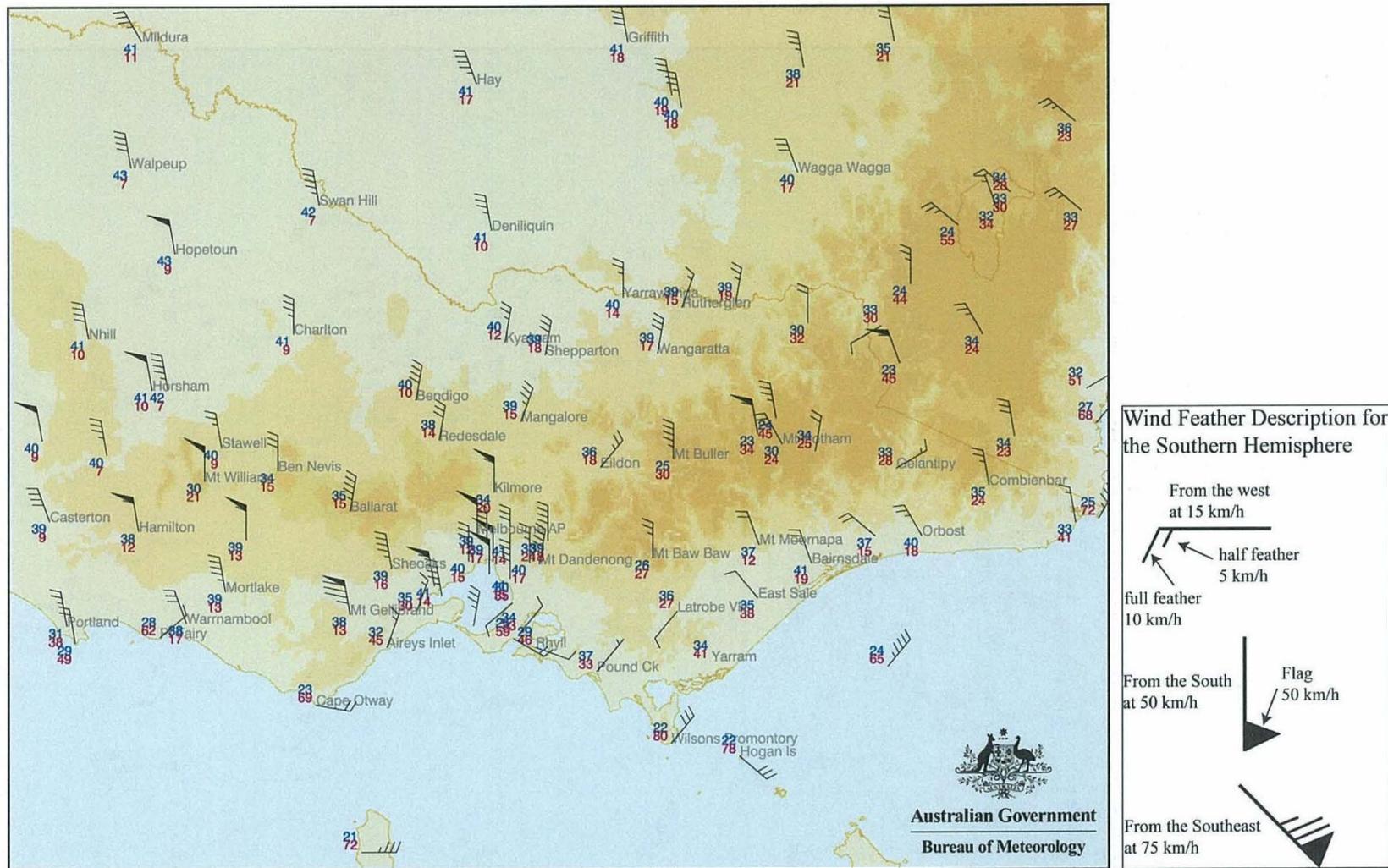


Figure 24: As for Figure 21 but valid for 11am 7 February 2009.

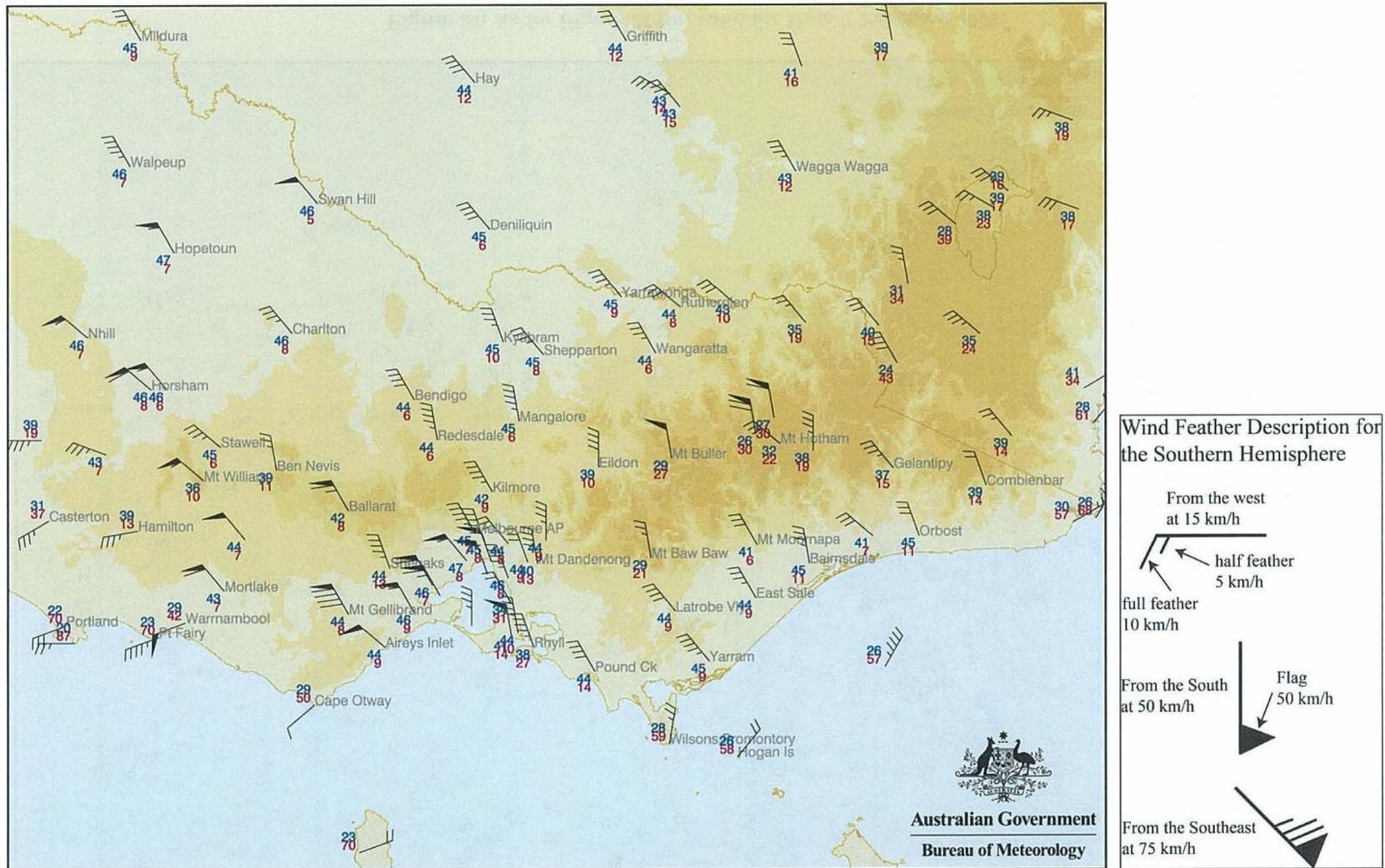


Figure 25: As for Figure 21 but valid for 2pm 7 February 2009.



3.4 2pm Saturday 7 February

Temperatures had reached the mid 40s in many parts of the State. Relative humidity values were mostly below 10% and the northwesterly winds had either maintained or increased in strength during the morning. Mt Gellibrand AWS was now recording 90km/h 10 minute average winds, and average winds of 40-60 km/h were being reported over much of the State (Figure 25). Forest and Grass Fire Danger indices were now significantly above 50, the lower limit of the Extreme category in nearly all of the State.

In the far south west a strong, gusty southwesterly wind change had moved into the State, dropping temperatures and increasing relative humidities. No shower activity was associated with the change at this stage, however.

3.5 5pm Saturday 7 February

The surface trough strengthened further and moved eastward to be in central Victorian parts in the south, trailing back to the SA border in the northwest of the State. The wind change was associated with this surface trough. The cold front was now in the eastern Bight and continued its eastern movement (Figure 19d).

Many places had by this time reported if not their hottest day on record, then their hottest for February. Wind gusts to 115km/h were reported at Mt William and Mt Gellibrand, while gusts over 90 km/h were recorded at a number of sites including Port Fairy, Aireys Inlet, Kilmore Gap, Mt Dandenong and Mt Hotham. The Melbourne Airport wind flight started just after 4pm indicated 70 – 85km/h northwesterly winds in the layer from 1 to 5km above the ground. The near surface northwesterly winds averaging 40-60 km/h and relative humidities below 10% had persisted through much of the State all afternoon ahead of the wind change (Figure 27 and Figure 28). The strong and gusty southwesterly wind change had now moved eastwards to lie just past Wonthaggi back through the western suburbs of Melbourne to just west of Hopetoun (Figure 20). Fire Dangers remained well into the Extreme category ahead of the wind change and did not drop below Extreme until up to an hour after the change in central parts of the State.

At this stage in the south the time it took to change from north or northwest to southwest was in terms of minutes while at some locations north of the ranges the change in wind direction took an hour or more (as indicated in Horsham's AWS reports in Appendix 6). Isolated thunderstorms, with associated lightning, and shower activity began to occur around the cool change, beginning first in the Wimmera and North Central District, then extended to the Central District. The thunderstorms forming in the smoke plumes above fires east and northeast of Melbourne began to produce lightning. These fire-induced thunderstorms are known as pyrocumulonimbus¹

¹ Pyrocumulonimbus is an extreme manifestation of forest fire and convection working symbiotically to generate plumes energetic enough to form a cumulonimbus cloud large enough to penetrate the tropopause (atmospheric boundary between the troposphere and the stratosphere). The pyrocumulus cloud is formed by rising thermals from the fire that convect water vapour beyond a height at which condensation forms. In well developed pyrocumulonimbus clouds, thunderstorm-related phenomena may occur such as lightning, precipitation and tornadoes. Well developed pyrocumulonimbus clouds can penetrate the tropopause and inject large amounts of smoke and ash into the lower stratosphere, similar to that of a volcanic eruption.

Figure 26 shows the Melbourne Airport radar image of fire smoke plumes to the east and northeast of Melbourne at 4pm. Weather radar normally shows rainfall but in this case the image shows smoke plumes from the fires near Kilmore, Murrindindi and Bunyip.

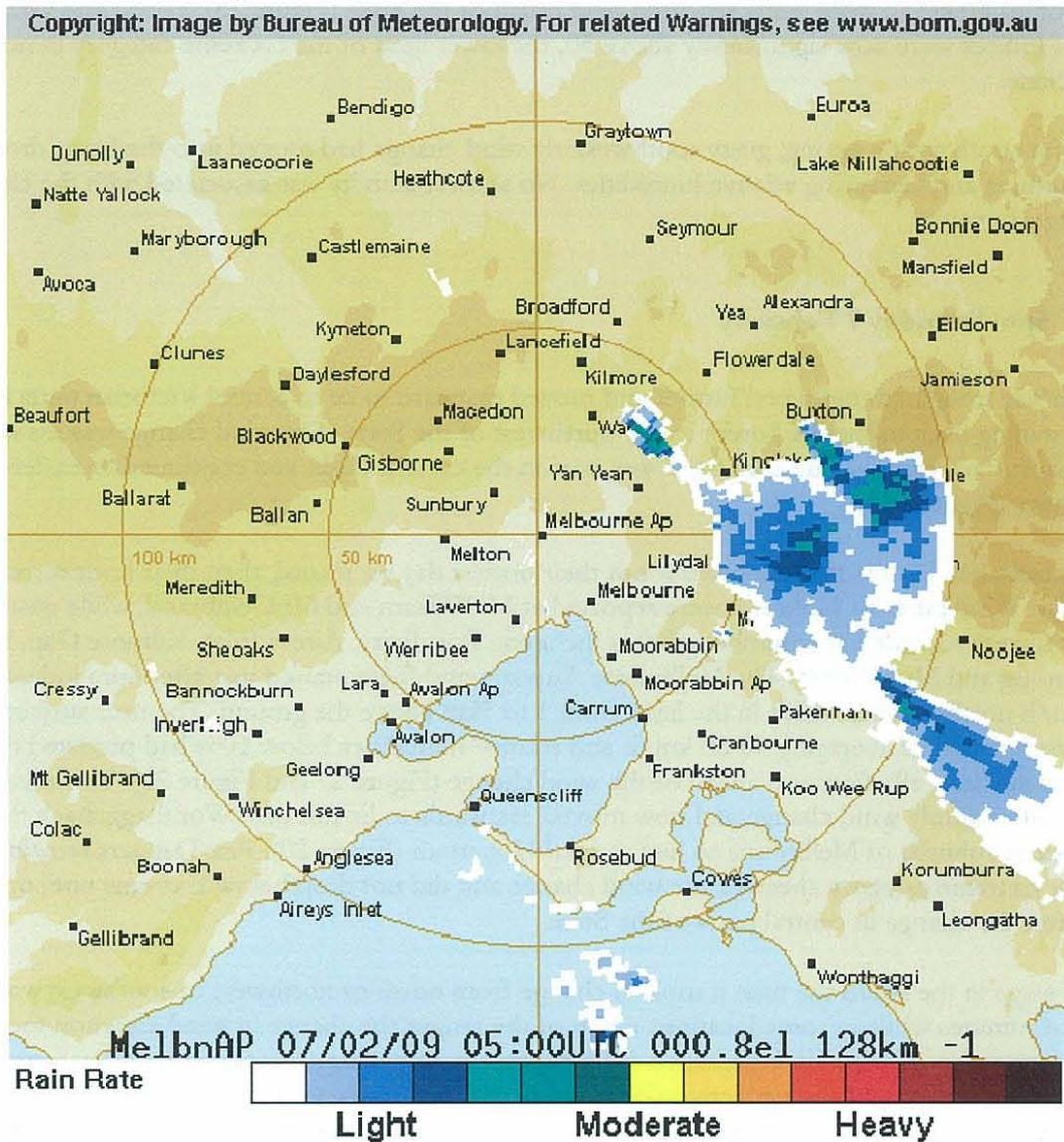


Figure 26: Melbourne Airport radar image valid for 4pm Saturday 7 February 2009 showing smoke plumes to the east and northeast of Melbourne

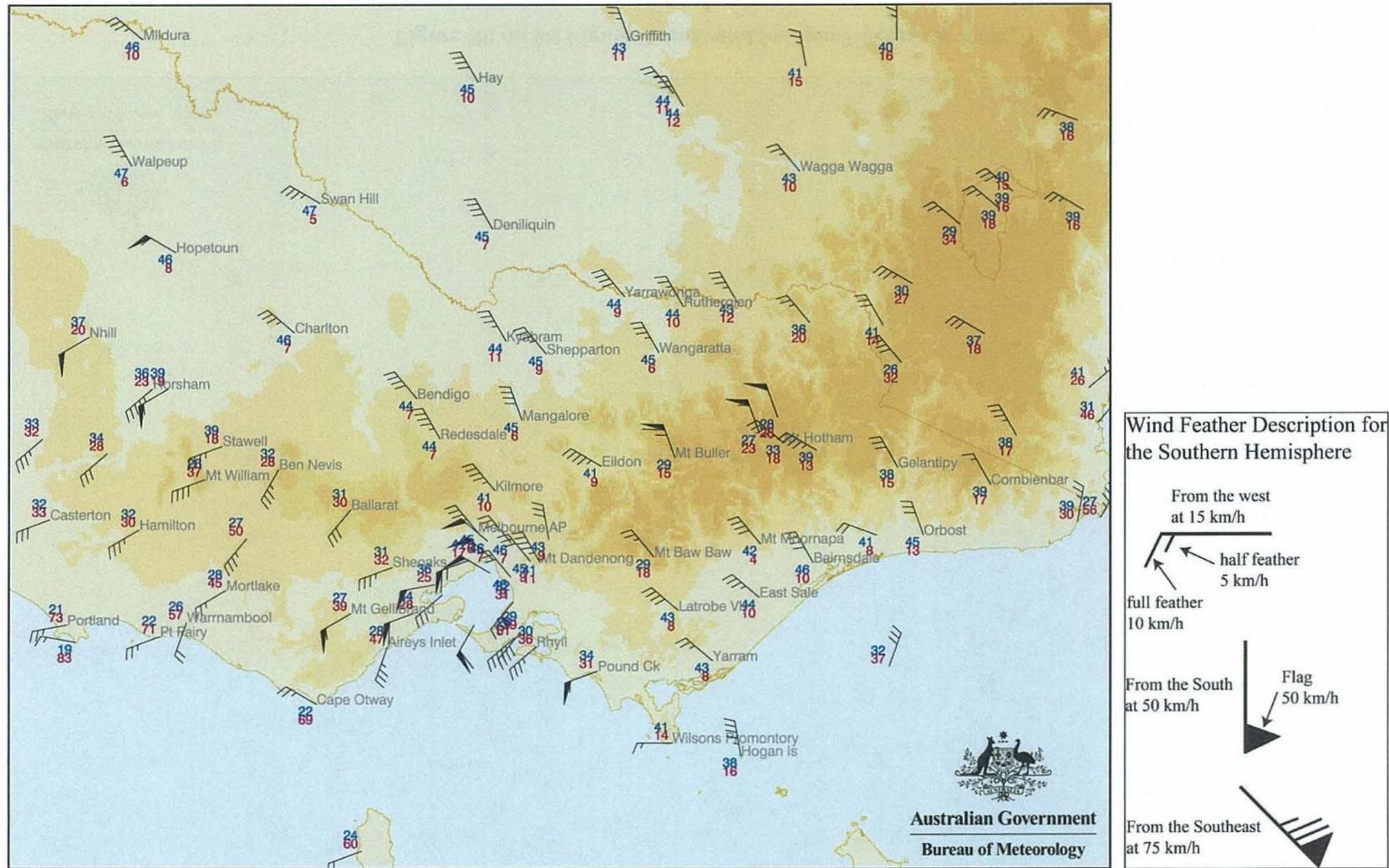


Figure 27: As for Figure 21 but valid for 5pm 7 February 2009.

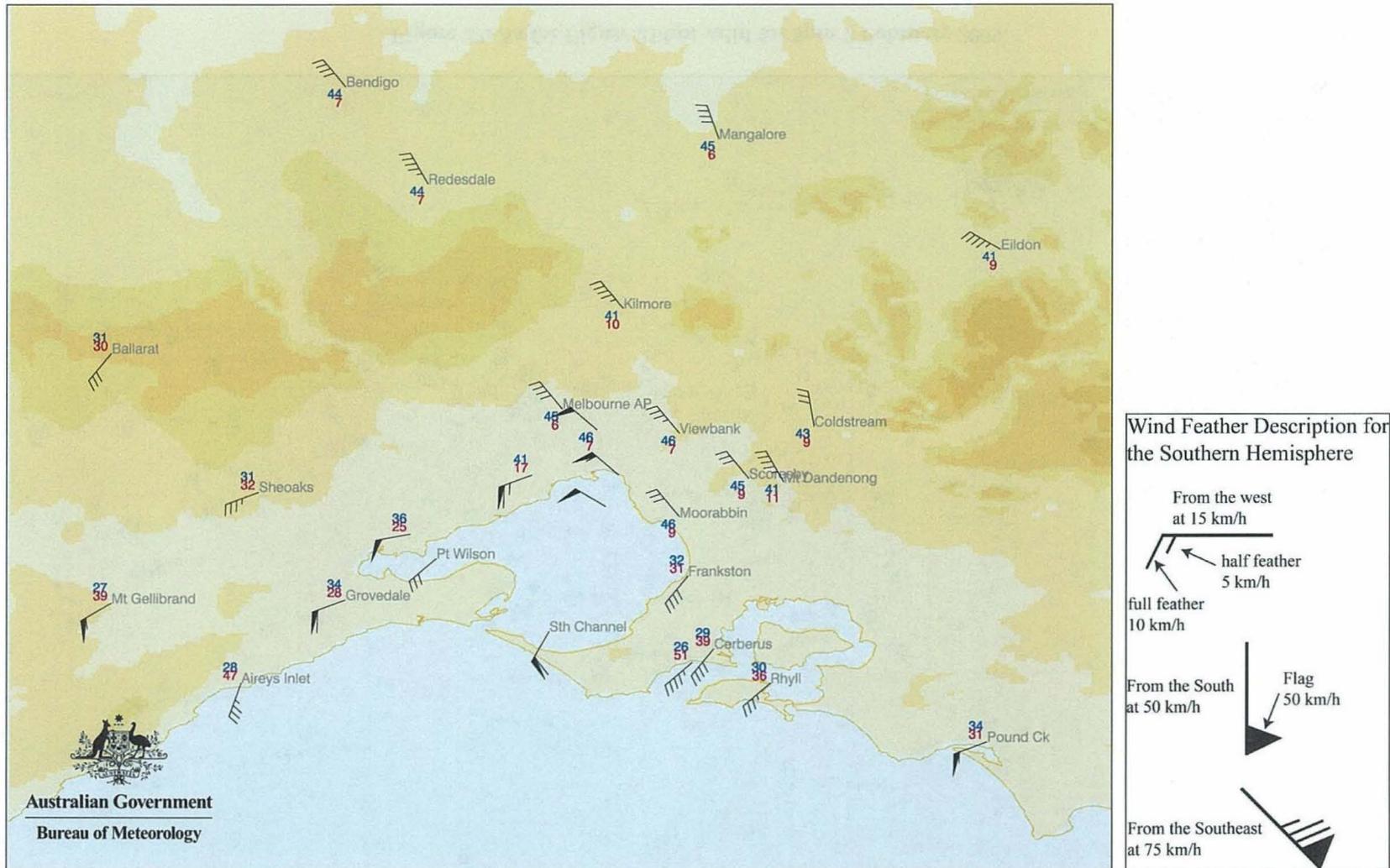


Figure 28: As for Figure 21 but valid for 5pm 7 February 2009.



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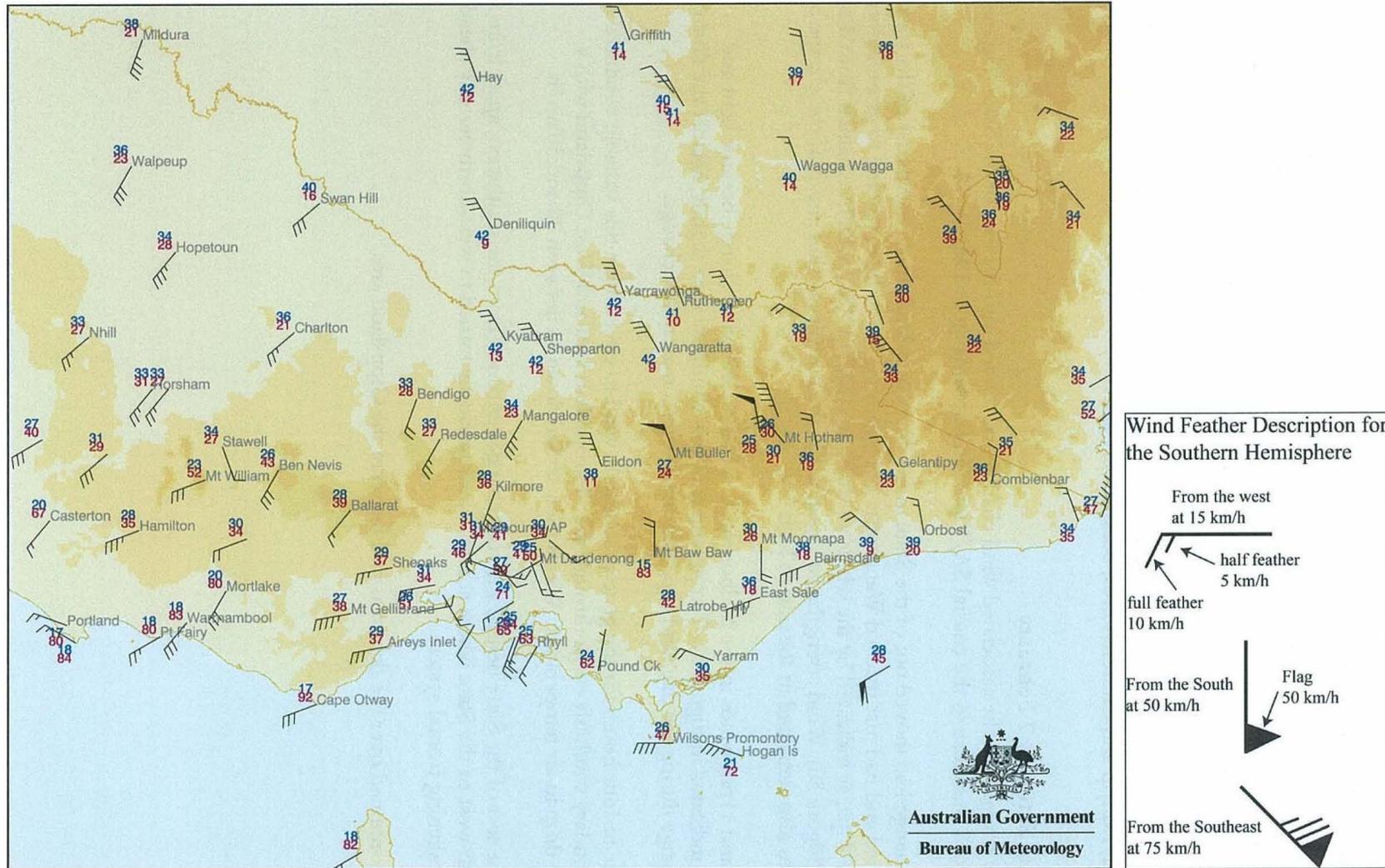


Figure 29: As for Figure 21 but valid for 8pm 7 February 2009.

3.6 8pm Saturday 7 February

Conditions were still very hot and windy ahead of the change. The wind change had now pushed along the Gippsland coast to be between Bairnsdale and Orbost (Figure 20). It had passed Mangalore and extended back to the northwest to just east of Swan Hill and Mildura. It appeared that in some areas there was a strong surge in the southwesterly winds behind the change before they eased off for a period (Figure 29).

Lightning, associated with convection in the smoke plumes over and to the southeast of the Kilmore, Murrindindi, Bunyip and Churchill fires, became very active.

3.7 11pm Saturday 7 February

The surface trough and the associated wind change had moved into the east of the State (Figure 20). The cold front was close to the coastal SA/Victorian border (Figure 19e).

The wind change had moved out of the State in far East Gippsland. In the northeast of the state it had weakened and had just reached Wangaratta but appeared not to be extending to greater altitudes through the Alps, as indicated by the winds at Mt Buller (1707m ASL) which remained from the northwest (Figure 30). Wind strengths had lessened in the northwesterlies ahead of the change but temperatures also remained in the mid to high 30s.

Between 8 and 11pm winds in the Melbourne area behind the wind change became light and variable, as indicated in Figure 31. Temperatures in this windflow rose slightly, against the diurnal (normal change during the day) and expected trend after a major cool change.

It took three to four hours for the general southerly wind to overwhelm this variable windflow and allow a secondary southerly surge through the Metropolitan area and West Gippsland with a consequent drop in air temperature. Winds then settled down to between 20 and 30km/h.

Winds in the rest of the State behind the cool change remained from the southwest, apart from in the far south west of the State where coastal winds gradually turned to west-northwesterly ahead of the next weakening frontal system.

Lightning continued over the fire areas and began in the Gippsland area.

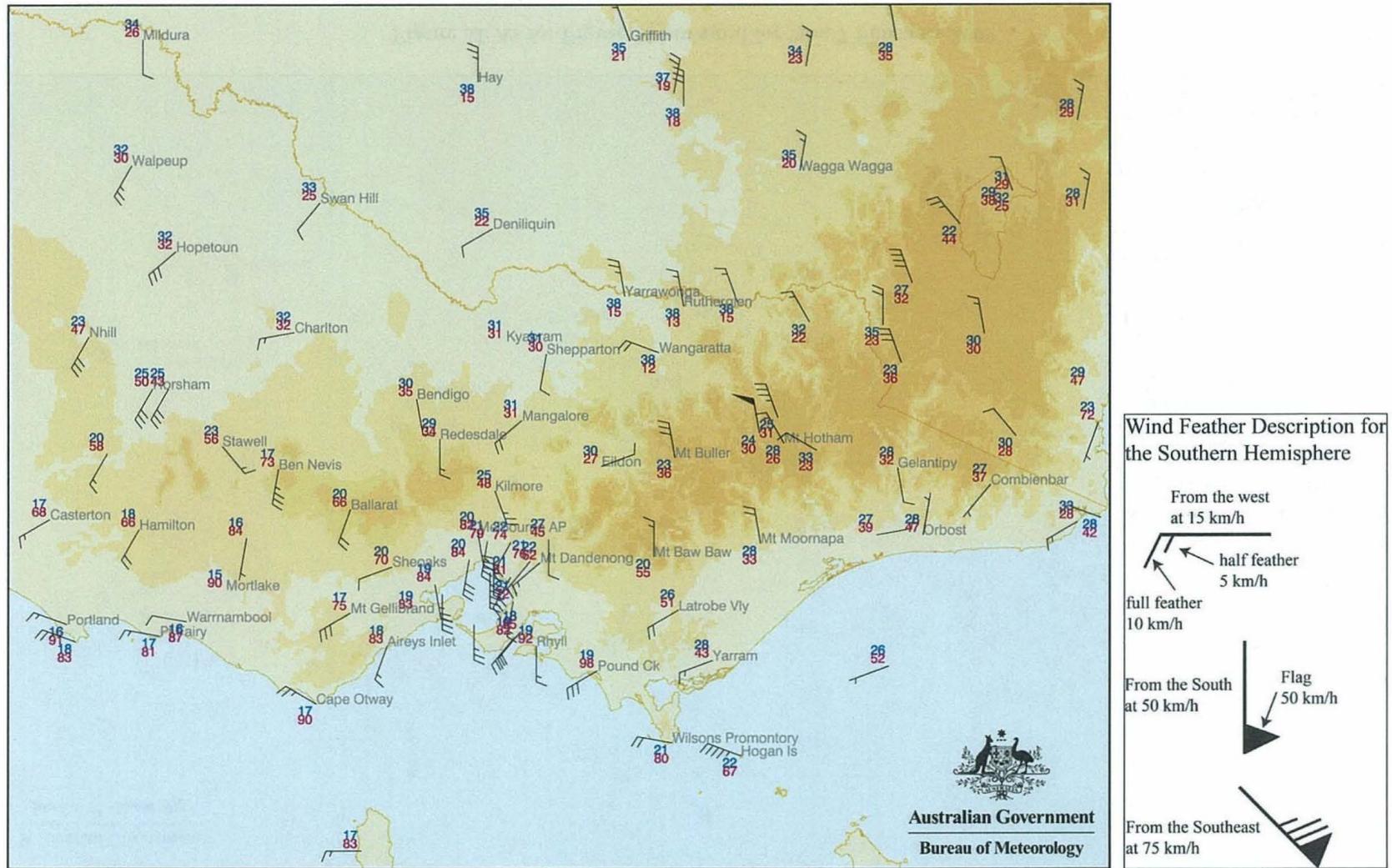


Figure 30: As for Figure 21 but valid for 11pm 7 February 2009.



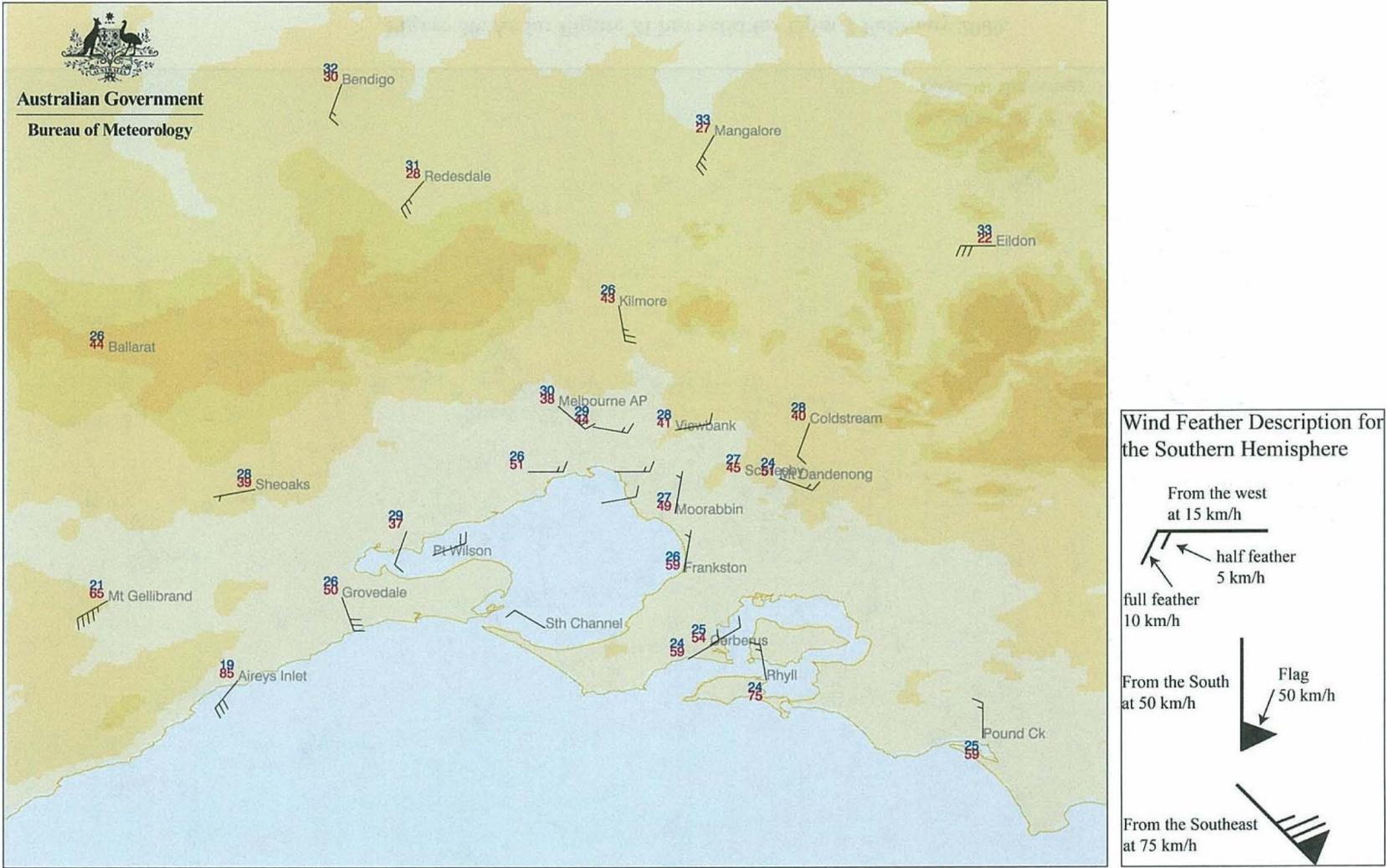


Figure 31: As for Figure 21 but valid for 9pm 7 February 2009.



3.8 5am Sunday 8 February

The surface trough had weakened and stagnated in the far east of the State, the cold front had also weakened but had reached central parts of the State in the south (Figure 19f).

The wind change had stalled in Victoria with a general southwest flow throughout the State apart from over the Alps and in the northeast of the State where winds over the Alps remained 25 to 35km/h from the northwest. Overnight temperatures were back to near average in areas that had experienced the cool change (Figure 32).

At about 12.30am isolated thunderstorms with associated lightning formed in the Falls Creek area, having developed on the smoke plume from the fire in the Beechworth area. Between 3.30am and 4am a very narrow line of thunderstorms with associated lightning, extending from Wilsons Promontory back northwest to Ballarat, developed and moved very slowly east.

3.9 Temperature records set on Saturday 7 February

Most of northern Victoria and large parts of central Victoria experienced maximum temperatures above 45°C on this day, with only small areas near the coast and at higher elevations failing to get above 42°C. An all-time Victorian state record was set at Hopetoun, in the State's north-west, where the temperature reached 48.8°C, exceeding the old record of 47.2°C set at Mildura in January 1939, by a considerable margin. Eight other sites, in the Mallee, Wimmera and in the area immediately west of Melbourne, also exceeded the old State record, including Walpeup (48.1°C), Avalon Airport (47.9°C), Horsham (47.6°C), Longerenong (47.6°C) and Laverton (47.5°C). The Hopetoun temperature is the highest temperature ever recorded in the world so far south.

Many all-time site records were set in Victoria on 7 February, including Melbourne (154 years of record), where the temperature reached 46.4°C, far exceeding its previous all-time record of 45.6°C set on Black Friday (13 January) 1939. It was also a full 3.2°C above the previous February record which was set in 1983, an extraordinary margin for a site with such a long record. Three of Melbourne's five hottest days have now occurred in 2009.

Geelong (47.4°C) and Wilsons Promontory (42.0°C) were among long-term sites which broke all-time records which had been set only the previous week. Record high temperatures for February were set in over 87% of Victoria on this day. Appendix 7 lists these records for stations with 35 years or more of temperature data.

3.10 The reasons for the temperatures reaching such a high value on Saturday 7 February

An initial analysis is provided here but the event itself will be the subject of extensive investigation at the Centre for Australian Weather and Climate Research (a partnership between CSIRO and the Bureau of Meteorology).

The very high temperatures that occurred on 7 February and during the preceding heat spell of 27 January – 1 February were the manifestation at the surface of a very warm large-scale mass of air that formed over inland Western Australia on approximately 25 January, and which subsequently extended across the southern half of the continent. This warm air mass was trapped by a deep warm

anticyclone¹ which extended to a depth of about 5km, and was very slow moving. The very warm air was eventually pushed towards the southeast corner of Australia ahead of the cold front as it moved into southern Western Australia. The abnormally hot upper air was mixed down to ground level in the turbulent winds associated with the cold front.

The major scientific elements are

- (i) the formation of a large-scale warm anticyclone over the continent; and
- (ii) the processes that bring the upper air down to give the hot temperatures at ground level.

To the Bureau's knowledge the occurrence of such deep warm anticyclones in the Australian region have not been previously studied or identified as discreet weather systems. It is noted that a similar warm anticyclone caused the Adelaide heatwave in March 2008.

The record low rainfalls may well have influenced the interaction of the deep anticyclone with the surface leading to such high temperatures over South Eastern Australia during these two heatwave events. The very dry soil means that almost all the incoming energy from the sun heats the soil (there is little moisture to evaporate) and so the drier soil becomes hotter. Dry convective thermals can mix this hot surface air to a greater depth than normal. Dry convective thermals are currents of air which rise above the hot land surface along with compensating downward currents of air originating from higher levels. These convective thermals can mix this hot surface air to a greater depth than normal, and this heat, stored in the atmosphere, can thus become available again to mix down to the surface.

3.11 The reasons for the very strong wind speeds across the State on Saturday 7 February.

The phenomenon leading to the very strong wind speeds is well understood, and is the typical situation for major fire events.

The major factor was the interaction between the deep warm air mass over the continent with a similarly deep cold air mass that approached the continent from the south as part of the circumpolar westerlies (or as part of the jet stream² circulation).

A strong, deep temperature contrast is a source of energy that is transformed into wind energy and on a global-scale is the basic reason for the existence of the jet streams. As the cool trough approaches from the south, this leads to a local jet stream in the middle troposphere (around 5km height). These very strong winds are brought down to the surface by the convective thermals in the warm air ahead of the change.

The second major factor is the process known as coastal frontogenesis. During summer months when a deep cool change approaches the southeast Australian coastline, it interacts with the warming of the land surface during the early daylight hours to form a surface cold front. This process concentrates the warm air ahead of the change and the cool air behind the change into a narrow zone of concentrated high wind and temperature gradient known as the change line. Once again, the very dry soils associated with years of drought have an influence on this process leading to stronger changes than in non-drought years.

¹ Atmospheric circulations that rotate anti-clockwise in the southern hemisphere.

² A flat, ribbon-like current of air usually located at the tropopause, the area in the Earth's atmosphere located between the troposphere and the stratosphere. These powerful winds are generated by strong pressure gradients which reflect the great temperature differences at high altitudes.

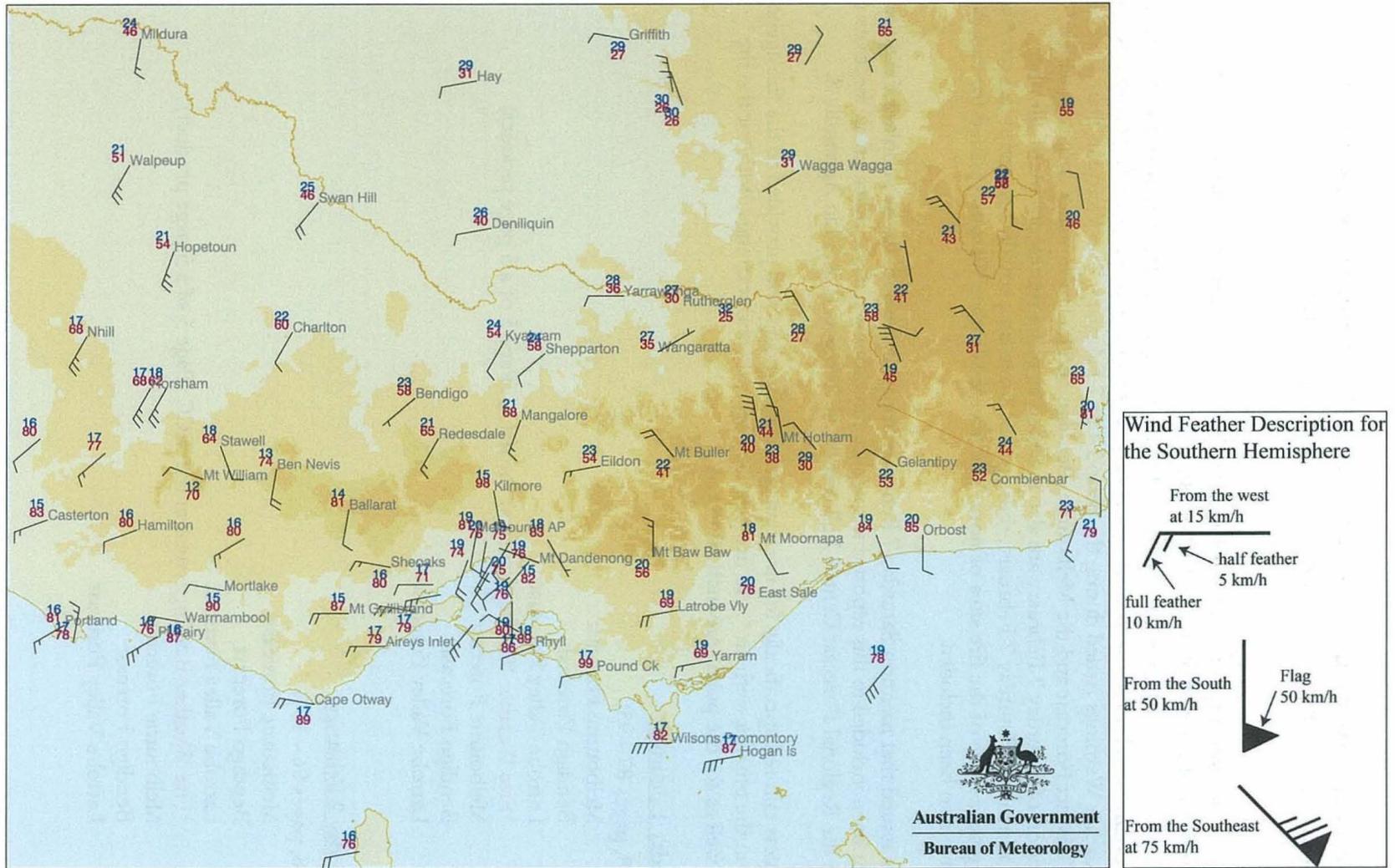


Figure 32: As for Figure 21 but valid for 5am 8 February 2009.

Chapter 4: Forecasts made for 7 February 2009 during the week prior and communication of those forecasts to Victorian authorities

4.1 Forecasts issued specifically for Saturday 7 February and fire weather warnings issued during the period 4 to 7 February

A timeline and list of fire weather forecasts issued to the fire agencies from Sunday 1 February to Friday 6 February, specifically for Saturday 7 February is set out below. Also included are Fire Ban and Fire Weather Warnings issued during the period 4 to 7 February. The Victorian State Forecast, the Central District Forecast and the Melbourne, Bendigo and LaTrobe Valley forecasts which include mention of Saturday 7 February are also included as being representative of all other forecasts that mention Saturday 7 February, these public forecasts provide a geographical coverage as well as being near some of the fire sites of note. The Severe Weather Warnings issued for Saturday 7 February have also been included.

All forecasts issued that mention Saturday 7 February are available and can be supplied if required but have not been included in this report due to space limitations. Unless indicated all forecasts were issued from the Regional Forecast Centre. Full text of all forecasts is listed in Appendix 8.

Note: Products tailored specifically for fire management purposes and provided to the fire agencies are marked in the timeline with an *. All fire weather forecasts and warnings, both for the fire agencies as well as for the public are marked in red.

4.1.1 Sunday 1 February

(Appendix 8, pages 87 - 95)

5.11am	Melbourne Forecast
5.33am	Bendigo Forecast
5.34am	Latrobe Valley Forecast
10.30am	*Fire Weather Briefing issued at the iECC (Page 5 of a 5 page product)
4.20pm	Melbourne Forecast
4.37pm	Bendigo Forecast
4.39pm	Latrobe Valley Forecast

4.1.2 Monday 2 February

(Appendix 8, pages 96 - 104)

5.10am	Melbourne Forecast
5.33am	Bendigo Forecast
5.34am	Latrobe Valley Forecast
10.30am	*Fire Weather Briefing issued at the iECC (Page 5 of a 5 page product)
4.21pm	Melbourne Forecast
4.45pm	Bendigo Forecast
4.47pm	Latrobe Valley Forecast



4.1.3 Tuesday 3 February

(Appendix 8, pages 105 - 118)

- 5.00am Melbourne Forecast
- 5.33am Bendigo Forecast
- 5.34am Latrobe Valley Forecast
- 10.30am ***Fire Weather Briefing** issued at the iECC (Page 5 of a 5 page product)
- 11.45am VICSES weather briefing at the iECC
- 3.53pm ***Fire Weather Outlook**
- 4.29pm Central District Forecast
- 4.30pm Victoria State Forecast
- 4.34pm Melbourne Forecast
- 4.47pm Bendigo Forecast
- 4.49pm Latrobe Valley Forecast
- 4.53pm ***Fire Weather Forecast** for Saturday 7 February 2009

4.1.4 Wednesday 4 February

(Appendix 8, pages 119 - 138)

- 4.41am **Fire Weather Warning**
- 4.47am **Fire Weather Warning**
- 5.00am Victoria State Forecast
- 5.17am Melbourne Forecast
- 5.39am Bendigo Forecast
- 5.40am Latrobe Valley Forecast
- 5.47am Central District Forecast
- 10.30am ***Fire Weather Briefing** issued at the iECC (Page 4 of a 5 page product)
- 3.56pm **Fire Ban Advice**
- 4.03pm **Fire Weather Warning**
- 4.15pm Central District Forecast
- 4.16pm ***Fire Weather Outlook**
- 4.20pm Melbourne Forecast
- 4.30pm Victoria State Forecast
- 4.33pm Bendigo Forecast
- 4.35pm Latrobe Valley Forecast
- 4.45pm ***Fire Weather Forecast** for Saturday 7 February 2009
- 5.25pm Updated Melbourne Forecast
- 10.37pm **Fire Ban Advice**
- 10.39pm **Fire Weather Warning**

4.1.5 Thursday 5 February

(Appendix 8, pages 139 - 158)

- 4.38am **Fire Weather Warning**
- 4.40am **Fire Ban Advice**
- 5.00am Victoria State Forecast
- 5.00am Melbourne Forecast
- 5.40am Bendigo Forecast
- 5.41am Latrobe Valley Forecast
- 5.47am Central District Forecast



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10.30am *Fire Weather Briefing issued at the iECC (Page 3 of a 5 page product)
4.11pm Fire Weather Warning
4.18pm Central District Forecast
4.20pm Melbourne Forecast
4.22pm Fire Ban Advice
4.30pm Victoria State Forecast
4.35pm Bendigo Forecast
4.38pm Latrobe Valley Forecast
4.46pm *Fire Weather Forecast for Saturday 7 February 2009
5.19pm *Fire Weather Outlook
6.24pm Fire Ban Advice
6.40pm Updated Victoria State Forecast

4.1.6 Friday 6 February

(Appendix 8, pages 159 - 183)

4.18am Fire Ban Advice
4.20am Fire Weather Warning
5.00am Victoria State Forecast
5.28am Melbourne Forecast
5.41am Bendigo Forecast
5.43am Latrobe Valley Forecast
5.49am Central District Forecast
8.30am *iECC meteorologist verbal comment on weather input to DSE Fire Behaviour Estimates
10.30am *Fire Weather Briefing issued at the iECC (Page 2 of a 5 page product)
11.30am Severe Weather Warning
11.57am Severe Weather Warning
12.00pm VICSES weather briefing at the iECC
12.38pm Fire Ban Advice
2.55pm Updated Victoria State Forecast
3.25pm *Updated Fire Weather Forecast for Saturday 7 February 2009
4.12pm Fire Weather Warning
4.17pm Central District Forecast
4.18pm *Fire Weather Outlook
4.20pm Melbourne Forecast
4.34pm Bendigo Forecast
4.38pm Latrobe Valley Forecast
4.43pm Victoria State Forecast
4.52pm *Fire Weather Forecast for Saturday 7 February 2009
5.07pm Fire Weather Warning
5.08pm Fire Weather Warning
6.00pm Severe Weather Warning
10.49pm Severe Weather Warning

4.1.7 Saturday 7 February

(Appendix 8, pages 184 - 237)

- 3.29am **Fire Ban Advice**
- 3.40am **Fire Weather Warning**
- 3.55am Severe Weather Warning
- 4.28am ***Spot Fire Weather Forecast** for Bunyip Complex
- 4.30am ***Spot Fire Weather Forecast** for Bunyip Complex
- 4.44am ***Spot Fire Weather Forecast** for Nariel – Ski Hut
- 5.00am Victoria State Forecast
- 5.00am Melbourne Forecast
- 5.41am Bendigo Forecast
- 5.43am Latrobe Valley Forecast
- 5.48am Central District Forecast
- 6.30 am ***Fire Weather Forecast** for Saturday 7 February
- 8.30am ***iECC meteorologist verbal comment on weather input to DSE Fire Behaviour Estimates**
- 9.02am ***Spot Fire Weather Forecast** for Delburn Complex
- 10.30am ***Fire Weather Product** issued by the iECC meteorologist (Page 1 of a 5 page product)
- 10.47am ***Fire Weather Briefing**
- 10.55am Severe Weather Warning
- 11.12am ***Spot Fire Weather Forecast** for Bunyip SP Complex
- 11.28am **Fire Weather Warning**
- 12.14pm ***Wind Change Forecast Chart**
- 12.35pm ***Spot Fire Weather Forecast** for Dargo – White Timber
- 1.39pm ***Spot Fire Weather Forecast** for Saunders Road (*Kilmore*)
- 1.51pm ***Wind Change Forecast Chart**
- 2.04pm ***Spot Fire Weather Forecast** for Bunyip SP complex
- 2.13pm ***Spot Fire Weather Forecast** for Rudolph Road (*Horsham*)
- 2.47pm ***Spot Fire Weather Forecast** for Coleraine – Glenelg Highway
- 2.55pm ***Spot Fire Weather Forecast** for Camperdown – Danedite
- 3.53pm ***Spot Fire Weather Forecast** for Labertouche
- 3.59pm ***Spot Fire Weather Forecast** for Churchill Glendonald
- 4.08pm **Fire Weather Warning**
- 4.23pm ***Spot Fire Weather Forecast** for Redesdale – Coliban Pk Road
- 4.27pm **Fire Weather Warning**
- 4.50pm ***Wind Change Forecast Chart**
- 4.36pm Victoria State Forecast
- 4.42pm Melbourne Forecast
- 4.57pm ***Spot Fire Weather Forecast** for Bunyip SP Complex
- 5.05pm Central District Forecast
- 5.21pm Bendigo Forecast
- 5.22pm Latrobe Valley Forecast
- 5.32pm ***Spot Fire Weather Forecast** for Redesdale – Coliban Pk Road
- 5.37pm ***Spot Fire Weather Forecast** for Saunders Road
- 5.56pm Updated Melbourne Forecast
- 6.09pm ***Spot Fire Weather Forecast** for Dargo – White Timber



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6.53pm	*Wind Change Forecast Chart
7.24pm	*Spot Fire Weather Forecast for Crawley Road (<i>Narre Warren North</i>)
8.34pm	*Spot Fire Weather Forecast for South Marang(<i>sic</i>) Plenty Gorge
8.36pm	*Spot Fire Weather Forecast for Buckland Gap (<i>Beechworth</i>)
8.44pm	*Spot Fire Weather Forecast for South Marang Plenty Gorge
10.04pm	*Spot Fire Weather Forecast for Bracewell St (<i>Bendigo</i>)
10.36pm	*Spot Fire Weather Forecast for Buckland Gap
10.40pm	Canellation of Severe Weather Warning

4.1.8 Sunday 8 February 2009

(Appendix 8, pages 238 - 245)

12.13am	*Spot Fire Weather Forecast for Saunders Rd
12.19am	*Spot Fire Weather Forecast for Redesdale – Coliban Pk Road
2.43am	*Spot Fire Weather Forecast for Churchill Jeeralang
3.37am	*Spot Fire Weather Forecast for Murrindindi
5.03am	*Spot Fire Weather Forecast for Murrindindi
5.04am	*Spot Fire Weather Forecast for Bunyip SP Complex

4.2 Forecasts and products available to the Victorian public and fire agencies.

Bureau web usage statistics showed that the main Bureau website www.bom.gov.au had 75,113,330 hits on Saturday 7 February 2009, compared with a daily average of 43,746,614 hits during February 2009.

Bureau radars providing coverage over Victoria located at Bairnsdale, Mt Gambier, Mildura and Yarrawonga were operational. Melbourne (Laverton) radar was offline from 2.18pm until 6.06pm due to a technical fault. While action was being taken to restore the Laverton radar, the alternate radar at Melbourne Airport was used both by forecasters and for display on the web, except for the period from 4.10pm to 5.40pm when Melbourne Airport radar was used to perform standard wind finding duties (process where the radar is used to track a weather balloon to ascertain a vertical profile of wind speed and direction).

From 11pm Friday 6 February to 5am Sunday 8 February 2009 public and fire weather products were issued.

Data from the 75 permanent Victorian AWSs were available in real time. Victorian AWSs report various weather parameters on a regular schedule. Normally this is hourly but during the fire season they are set to a 30 minute update schedule. Also if certain criteria are met such as a marked change in wind speed or direction, or a sudden rise or fall in temperature then a special observation (known as a SPECI) is taken at this unscheduled time. A total of 5,379 observations were produced during the period 3am Saturday 7 to 5am Sunday 8 February, where all except three AWSs performed as expected. The exceptions were as follows: Melbourne Airport AWS for the five observations between 3.03pm and 4.33pm when the dewpoint registered incorrectly (thus giving an incorrect humidity reading), East Sale AWS, which lost wind information (but retained temperature and dewpoint) at 11.30pm Saturday 7 February, returning at 7.30am Sunday 8 February; and Bairnsdale AWS, which was offline from just after 10.30pm Saturday 7 February, coming back on-line at 7.30am Monday 9 February.

All available public forecasts, warnings and observations were made freely accessible in near real-time via the web, ftp server and telephone during Saturday 7 February.

4.3 Communication of forecasts to Victorian authorities.

4.3.1 The role of the Regional Forecasting Centre in communicating forecasts and warnings to the media and the authorities

All forecasts and warnings are prepared in the Regional Forecasting Centre and are posted on the Bureau's web site. They are also disseminated to the media and the emergency services via email and facsimile. The media encompass all electronic media including TV, radio and internet. This is done automatically by the Bureau's computer systems to addressees that are predefined. The only forecasts which are sent "by hand" from a stand alone facsimile machine are spot fire forecasts which are sent to the requesting Incident Controller. These spot fire forecasts are also sent to standard emergency services addressees automatically.

All warnings, including fire weather warnings, are also posted to a phone service for the cost of a local call. Callers who ring 1300 659 217 can get the latest weather warnings at any time, including fire weather warnings.

A Bureau unit called the Weather Graphics Unit produces weather pages, including forecasts and maps, for most major newspapers in the country. The warnings are not published in the Bureau's newspaper forecasts, however, due to the delay between the time of transmission to the newspapers, which is in the early evening, and the time that they are read on the following day, and that they cannot be guaranteed to be up to date. Instead, when warnings are current, the following statement: "**WARNINGS** were current at 5pm yesterday. Information at www.bom.gov.au/weather, Phone 1300 659 217 (Cost of a local call)" is included in the text.

The meteorologists at the Regional Forecasting Centre also conduct a number of radio interviews at various times of the day. These are largely, but not exclusively, with the ABC. The purpose of these interviews is to expand upon the written forecasts and warnings in a conversational manner and to provide some additional detail where appropriate. When requested, meteorologists also conduct additional radio interviews, time permitting.

On days when the weather is likely to be of interest to the public, such as when conditions are, or are expected to be, unusual, TV crews arrange with the meteorologist to do TV interviews. Also on days of weather interest the on-line media make frequent requests for interviews to populate their pages.

On days when the media pressure is expected to be intense, an additional meteorologist is called in to carry all of the media work. This minimizes interruptions to other meteorologists. This was done on Saturday 7 February.

4.3.2 The role of the Bureau in the iECC in communicating forecasts and warnings to the authorities

The role of the meteorologists at the iECC is to enhance communication between the Bureau and the agencies. This works both ways. The meteorologists expand upon forecasts and outlooks and

articulate nuances in the weather by carrying out a number of routine duties, as well as providing information through face to face briefings to fire agency officials. The routine briefings are as follows:

- conduct an iECC fire weather briefing at 9am to all iECC staff;
- produce a 7 day outlook product at 10.30am and accompanying audio recording available to all iECC staff;
- participate in the DSE regional managers teleconference at 11am;
- comment to the iECC Fire Behaviour Analysts on automated weather data input provided for the fire spread models used by the iECC Fire Behaviour Analysts;
- conduct a CFA fire weather briefing on days prior to expected extreme fire weather conditions.
- Conduct a VICSES teleconference on Tuesdays and Fridays to discuss likelihood of widespread heavy rain or severe winds during the next five days.

The Bureau meteorologists at the iECC also benefit from receiving information directly from the agencies on operational issues which they are facing. This assists the meteorologist to direct fire weather information where it is most needed.

Very occasionally, when weather conditions are expected to be extreme, media conferences are held at the iECC to alert the public of an approaching dangerous situation. The Bureau normally participates in these media conferences at a high level, with the Regional Director attending if available. This occurred during the lead up to 7 February and during the weeks which followed.

There is normally one meteorologist rostered on duty at the iECC each day during the fire season. However, on exceptional days an extra meteorologist is rostered on during the evening to provide extended coverage. This happened on 7 February.

During the periods that a Bureau meteorologist is on duty at the iECC almost all of the communication between the Bureau and the agencies takes place at this point. At other times, when there is no Bureau meteorologist at the iECC, the agencies communicate with Bureau staff at the Regional Forecast Centre as required.

4.3.3 Communication of forecasts and warnings for Saturday 7 February to the media and the authorities for the week prior and on 7 February including fire weather warnings.

What follows is a chronological sequence of how Bureau meteorologists communicated forecasts, warnings and weather information pertinent to Saturday 7 February to the agencies and the public. These communications occurred both at the Bureau and the iECC.

Sunday 1 February**The iECC****Meteorologist Scott Williams**

The morning routine briefing at the iECC gave the first indications that the following Saturday 7 February could be “a problem day for Fire Weather”. He spoke of a deepening trough somewhere near central Victoria on Saturday with the potential for temperatures to reach well into the 40s east of the trough.

This briefing was repeated for a contingent from the State Opposition, including the Leader of the Opposition, at a strategy meeting at 2pm that afternoon.

The extended outlook weather product issued Sunday 1 February pertinent for Saturday 7 February is shown in Appendix 8.

Monday 2 February**The iECC****Meteorologist Claire Yeo**

The 9am briefing was attended by the DSE Chief Fire Officer and other DSE and CFA staff, the Secretary of DSE, and senior staff from DHS and Victorian Police. This was followed by the 11am teleconference with DSE Regional Managers in conjunction with the written 7 day forecast and voice recording that is also sent to all CFA regional managers. During these briefings Claire indicated that the weather on Saturday 7 February would be hot with temperatures in the 40s, very dry air, and very windy conditions possibly averaging 60-80km/h leading to State-wide Extreme fire danger ratings in both forest and grass. The meteorologist indicated that confidence was high, but that this many days ahead the timing of the wind change could not be forecast exactly.

The extended outlook weather product issued Monday 2 February pertinent for Saturday 7 February is shown in Appendix 8.

Tuesday 3 February**The iECC****Meteorologist Claire Yeo**

Claire highlighted at this early stage that although there was high confidence, that there was still the potential that the timing of the southwesterly change may differ from the forecast, and there could be considerable delay of a few hours between the wind shift and cooler temperatures. This would result in timing differences for extreme temperatures, however the probability looked high for southern areas to experience temperatures in the low 40s ranging to mid to high 40s in the north. The iECC State Emergency Strategy Team meeting chaired by Victoria Police used information for

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Saturday's weather which was based on face to face discussions with each of the parties and the fire weather product.

She noted – “the overnight 11pm computer weather model runs from Monday were still presenting the same picture, and in the 9am briefing stated, that “although the official Melbourne forecast presented during yesterday was 32 for Saturday, yesterday's late afternoon (5pm) and this mornings official public forecast is now 37, I believe this temperature possibly is conservative due to some uncertainty with the timing of the wind change. There are still strong consistent indicators that records may be broken, and Melbourne could well be into the mid 40s”. The strong gusty dry winds ahead of a strong gusty dry change and the potential for extreme fire weather was emphasised.

Senior staff from DSE (including the Secretary), DHS, CFA, SES and many others conversed with me about the week leading to Saturday and the confidence in the Saturday predictions. Based on the previous week's forecast and resulting weather and already going fires, the extreme fire weather days from Friday, the agencies decided to rest staff before Friday.”

The 11.45am VICSES weather outlook briefing highlighted Saturday's conditions from a severe weather wind perspective, as well as heat.

Some Ministers were also briefed this day using the Fire Weather product (Figure 33), which resulted in the Victorian Premier actually discussing Saturdays' forecast as early as Wednesday the 4th, then again on Friday the 6th.

The extended outlook weather product issued Tuesday 3 February pertinent for Saturday 7 February is shown below in Figure 33.

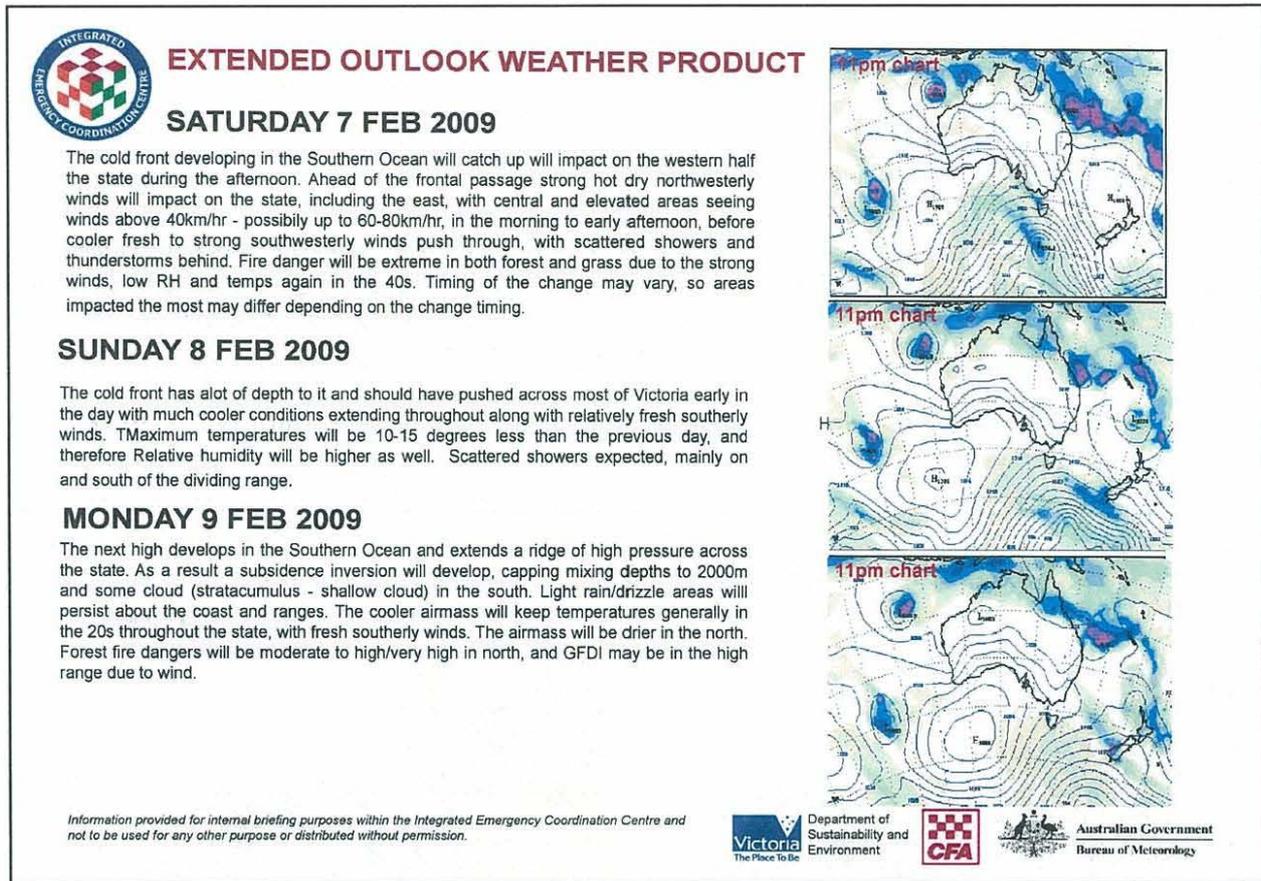


Figure 33: Fire Weather Briefing issued at the iECC (Page 5 of a 5 page product)

The Regional Forecast Centre

The four-day fire weather forecast, along with preliminary fire weather estimates were issued by the Regional Forecast Centre.

Wednesday 4 February

The iECC

Meteorologist Claire Yeo

The 9am iECC briefing had the audience described above. Again the 7 day forecasts with voice recording were distributed to DSE and CFA managers, and an 11am briefing was conducted. On the Wednesday, the Saturday chart described the fire weather situation as an “absolute extreme fire weather spike day”. Numerous briefings were conducted throughout the day.

The graphical weather forecast issued Wednesday 4 February pertinent for Saturday 7 February is shown below in Figure 34.

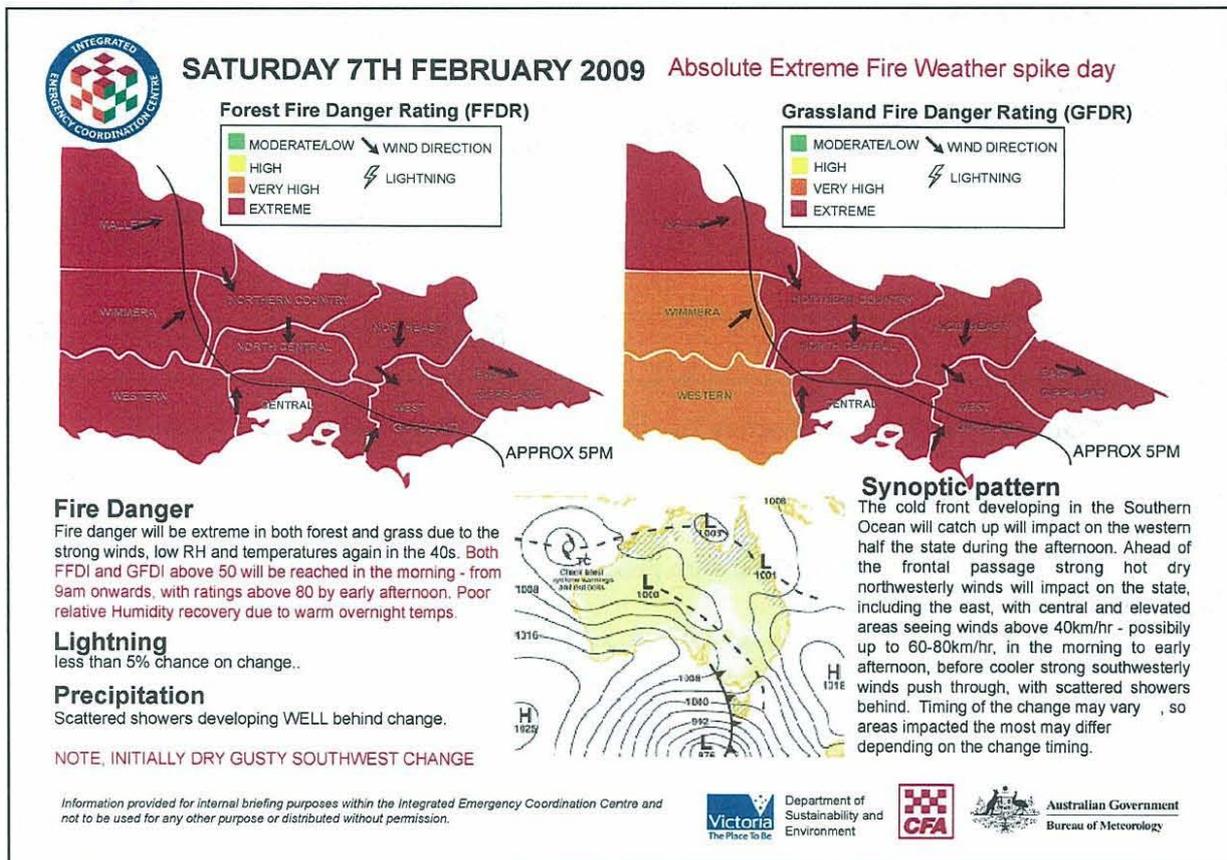


Figure 34: Fire Weather Briefing issued at the iECC (Page 4 of a 5 page product)

The Regional Forecast Centre

Fire Weather Meteorologist Scott Williams

Confidence had grown enough to step temperatures and wind speeds up significantly and to better refine a wind change. There was still some doubt about how quickly the change might enter the west, so the temperatures that were increased the most were over central and eastern Victoria, with

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Melbourne forecast being raised from 37°C to 43°C (thus forecasting, to the nearest digit, an equal February record for Melbourne three days prior, something never done before in Bureau history). These figures were incorporated into the forecasts.

The four day fire weather forecast, along with preliminary fire weather estimates were issued by the Regional Forecast Centre.

Thursday 5 February

The iECC

Meteorologist Claire Yeo

Numerous briefings occurred on Thursday, with the forecast picture being very clear. The audiences were similar to those on previous days. During the afternoon Claire conducted an extensive interview with ABC 774 radio regarding the expected extreme weather conditions on Saturday 7 February.

The Regional Forecast Centre

Fire Weather Meteorologist Scott Williams

The forecasts were further refined with extremely high temperatures up to 45°C being predicted in southern parts of the State. Also in the fire weather forecast the winds were refined, and in particular increasing northerly winds to the order of 55-60 km/h in many areas of southern and mountain Victoria ahead of the change, were incorporated into the forecasts.

The four day fire weather forecast, along with preliminary fire weather estimates were issued by the Regional Forecast Centre.

Friday 6 February

The iECC

Kevin Parkyn

Kevin conducted the 9am briefing to a full house. The briefing confirmed the information that had been passed to the authorities on the previous days. Following on from this he prepared the weather presentation that included fire weather forecast guidance from Friday 6 to Thursday 12 February with accompanying voice recording. This was distributed to all DSE and CFA managers.

At 11am he attended a teleconference hosted by DSE in the iECC set up for DSE Regional Fire Managers. He confirmed that extreme weather conditions forecast for Saturday were highly likely.

At noon he briefed the SES State Duty Officer in the iECC about the potential for severe weather over the next 5 days. The focus of the briefing was in relation to the extreme fire weather conditions forecast for Saturday 7 February. He informed the VICSES that a Severe Weather Warning for damaging wind gusts to 90km/h had just been issued for Victoria for Saturday 7 February.

The Regional Forecast Centre

The four-day fire weather forecast, along with fire weather estimates were issued by the Regional Forecast Centre.

Saturday 7 Feb

The iECC

Meteorologist 1, 7am till 5pm – Kevin Parkyn

At 7.10am, Kevin highlighted to the DSE State Duty Officer that lightning activity had occurred overnight along the southwest coast. They also discussed the increased fire behaviour at the Bunyip fire overnight, along with the weather forecast and warnings for the day.

At 9am, he delivered the weather presentation in the iECC. During the presentation it was commented that the weather scenario which had been forecast for Saturday over the last few days had not changed. The extreme fire weather nature of the day was again highlighted, with a Severe Weather Warning for damaging wind gusts issued, maximum temperatures potentially breaking previous records forecast, and a significant wind change forecast to cross the State.

At 10.30am, he briefed DSE and CFA staff that there was evidence of the wind change over the southwest coast, however the low level inversion had eroded and may push the change back off the coast. He also indicated that the lightning potential associated with the wind change had increased.

At 11am, he participated in the teleconference hosted by DSE in the iECC, which included DSE Regional Fire Managers. It was confirmed that extreme fire weather conditions as indicated in the Fire Weather Forecast remained on track.

At 12.30pm, it was highlighted to the DSE and CFA State Duty Officers that the weather radar from Laverton was showing two significant fire plumes - at Bunyip and Kilmore.

At 2.40pm, the Pakenham Incident Control Centre (ICC) requested updates on the hour on the position and forecast timing of the wind change through Bunyip.

At 4pm, he provided the CFA Chief Officer with a preliminary version of the Fire Weather Estimates for Sunday 8 February.

At 4.10pm, he initiated a request through Melbourne Central Support for a portable weather station from Tarrawingee to be deployed to the northern edge of the fire south of Yea.

At about 4.40pm he rang the Regional Forecasting Centre advising that he would call each of the ICCs to tell them that they were going to be affected by the wind change which was moving more quickly than forecast by the Wind Change Forecast Chart issued at 1.51pm. This was done to allow the Regional Forecasting Centre staff to concentrate on preparing forecasts for the fires.

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At 4.50pm, the Pakenham ICC was updated on the wind change. The latest guidance suggested the wind change would move across the Bunyip fire around 5.45-6pm.

At 5.05pm, he advised the Kilmore ICC and the RFC that the wind change was moving more quickly than indicated and would be at the Saunders Road fire [east of Kilmore] by 6.30pm.

At 5.20pm, he contacted the Bendigo ICC to update them that the wind change was moving faster than indicated in the Spot Fire Forecast for the Redesdale fire and was expected through the fire site about 6.30pm.

Meteorologist 2, 3pm till 2.30am Sunday – Scott Williams

Scott arrived at the iECC at 3pm and focussed on the progress of the wind change across the State by noting the times at which it crossed through each Automatic Weather Station.

Between 4pm and 4.45pm, it became apparent that over the central areas of Victoria, the change had begun to surge northwards faster than previous forecasts. At 4.50pm, he approached the State Duty Officer, and the Fire behaviour analysts to indicate that the change should arrive at the Whittlesea area between 6.30pm and 7pm and at the Churchill fires between 5.30pm and 6pm.

A series of communications followed between Kevin and Scott, and personnel at Incident Management Teams responsible for each of the major fires including Bendigo/Redesdale, Dargo, Traralgon, Yarrum and Yea.

Between 5 and 6pm senior staff from CFA and DSE, including the Chief Officer (CFA) and the Chief Fire Officer (DSE) were informed of the progress of the change. Scott was present as CFA staff sent urgent messages about the wind change being imminent.

At 6.22pm, he was approached about the timing of the change at Yea, and indicated 7 to 7.30pm. There was also advice given about weather at Narre Warren, where apparently another fire had broken out.

At 6.30pm, he indicated the latest timing of the change to the State Duty Officer and that the change appeared to be reasonably deep, close to 2000m. This was indicative of continued fairly rapid movement of the change for some time.

At 8.20pm, he was asked to give a briefing at an emergency management meeting, held in the Feathertop room adjacent to the iECC. The main points that he made to this group were that the change had been deep and fast, that winds were light and variable to the west of the fire ground where outflows were acting in opposite directions to prevailing flow, and that a consistent 30km/h southwesterly flow was expected to re-establish later in the evening.

At 10.15pm, he recognised that the south to southwest flow was returning. The Pakenham IMT was contacted to indicate this wind increase within the hour. The Benalla IMT, was also contacted to inform them of winds increasing through the North Central region.



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At 10.40pm, he phoned the Regional Forecast Centre, who indicated that the fire weather meteorologist in the Regional Forecast Centre had contacted personnel at spot fire forecast locations to advise them of freshening winds.

The Regional Forecasting Centre

Fire Weather Meteorologist, Brent Wachter (US National Weather Service)

Between 7.30am and 8.30am a call was received from Kevin Parkyn at the iECC to discuss the timing of the wind change forecast, which he thought could be quicker than what the forecast models were suggesting.

Between 09.30am and 10.00am communication again occurred with the meteorologist at the iECC. Again the timing of the wind change was discussed. The wind change was now moving more slowly than predicted by the models, which had predicted that the change would be moving into western Victoria by 10.00am. In reality the change had not crossed the coast at that time and all of Victoria was experiencing north to northwest winds. At this time Brent was of the opinion that models were moving the change too quickly, and that the original timing of the wind change listed in the forecasts were probably not too bad. However, he was aware that the change could pick up speed.

Between 11.00 and 11.30 Kevin Parkyn called from the iECC requesting that a wind change chart be done soon, even though the change was yet to hit the coast. It is normal practice to wait until the change has actually moved across the coast to make an initial assessment of movement before issuing the first wind change chart for the day. However, because the day was so extreme, Brent issued a wind change chart at 12.00pm to give an initial indication of expected movement of the change to the agencies.

Between 1pm and 2pm it had become apparent that the wind change had occurred a few hours earlier than anticipated along the southern Victorian coast. Contact was made with Kevin Parkyn to discuss issuing another wind change chart. A new wind change chart was issued at 1.50pm reflecting the faster movement of the change along the coast.

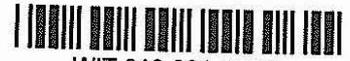
Brent issued another wind change chart at 4.30pm incorporating all of the latest data at the time.

There were several calls made between Brent and the meteorologists at the iECC between 3pm and 7pm. When it was clear that the wind change was moving so rapidly towards central Victoria Brent updated spot fire forecasts for the going fires. Brent called the relevant requesting officer when each spot fire forecast was issued. He issued another updated wind chart at 6.30pm.

In summary there were many phone conversations between the Regional Forecasting Centre and the meteorologists on the afternoon of the 7 February 2009.

Wind change charts and spot fire forecasts issued are shown in Appendix 8

An additional Senior Meteorologist, Terry Ryan, was rostered on duty from 9am till 9pm to carry out all of the media work, ensuring that meteorologists could concentrate on core forecasting duties without interruption.



Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

By about noon the telephone was ringing constantly with calls mainly from the ABC (news and 774), 3AW, FM stations, online news services and some of the TV stations. The emphasis at this time was the likely breaking of all-time temperature records. From about 3.30pm onwards the timing of the wind change became more topical. The listeners were informed that the change was estimated to come through the city around 5.30pm to 6pm and an hour or so later in the eastern suburbs. Radio interviews with ABC 774 and numerous other stations in the late afternoon and evening all focussed on the temperatures State-wide and the wind change. The phenomenon of pyrocumulonimbus, observed by radar and the GPATS lightning display (lightning display software used by the Bureau) in the Kinglake area was explained.

Conclusion

A defining Australian natural disaster occurred in Victoria on Saturday 7 February 2009. On a day of unprecedented heat in Victoria fires in central and southeast parts of the State caused a level of death and destruction that surpassed previous fire events in the recorded history of Australia.

In the pages of this report lie a factual account of climate and weather conditions leading up to and including the day. This report also records the Bureau's Fire Weather Forecast Service associated with this event.

Appendix 1
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Appendices

Appendix 1: The Meteorology Act 1955 (Commonwealth)

THE METEOROLOGY ACT 1955

METEOROLOGY

No. 6 of 1955¹

An Act relating to the Commonwealth Bureau of Meteorology.

[Assented to 23rd May, 1955]

[Date of Commencement, 20th June, 1955]

Be it enacted by the Queen's Most Excellent Majesty, the Senate, and the House of Representatives of the Commonwealth of Australia, as follows:

- | | |
|---|--|
| 1. This Act may be cited as the Meteorology Act 1955. | Short title |
| 2. The Meteorology Act 1906 is repealed. | Repeal |
| 3. In this Act, unless the contrary intention appears-
"the Bureau" means the Commonwealth Bureau of Meteorology
established by this Act;
"the Director" means the Director of Meteorology. | Definitions |
| 4. ¹ This Act extends to all the Territories of the Commonwealth. | Extension to
Territories |
| 5. (1) For the purposes of this Act, there shall be a Commonwealth
Bureau of Meteorology and a Director of Meteorology.
(2) The Bureau shall be under the charge of the Director, who
shall, subject to the directions of the Minister, have the
general administration of this Act. | The Common-
wealth Bureau
of Meteorology |
| 6. (1) The functions of the Bureau are-
(a) the taking and recording of meteorological observations
and other observations required for the purposes of
meteorology;
(b) the forecasting of weather and of the state of the atmosphere;
(c) the issue of warnings of gales, storms and other weather
conditions likely to endanger life or property, including
weather conditions likely to give rise to floods or bush fires; | Functions of
the Bureau |

¹ Amended by No.123 of 1973

Appendix 1

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

- (d) the supply of meteorological information;
 - (e) the publication of meteorological reports and bulletins;
 - (f) the promotion of the use of meteorological information;
 - (g) the promotion of the advancement of meteorological science, by means of meteorological research and investigation or otherwise;
 - (h) the furnishing of advice on meteorological matters; and
 - (i)¹ co-operation with the authority administering the meteorological service of any other country in relation to any of the matters specified in the preceding paragraphs of this sub-section.
- (2) The Bureau shall perform its functions under this Act in the public interest generally and in particular-
- (a) for the purposes of the Defence Force;
 - (b) for the purposes of navigation and shipping and of civil aviation; and
 - (c) for the purpose of assisting persons and authorities engaged in primary production, industry, trade and commerce.
7. (1) The Director has such powers as are necessary to enable the Bureau to perform its functions under the last preceding section, and, in particular, may-
- (a) establish meteorological offices and observing stations;
 - (b) arrange with any Department, authority or person to take and record meteorological observations and transmit meteorological reports and information;
 - (c) arrange means of communication for the transmission and reception of meteorological reports and information; and
 - (d) arrange for the training of persons in meteorology.
- (2)¹ The Departments and authorities with which, and the persons with whom, arrangements may be made under the last preceding sub-section include Departments and authorities of a State or Territory of the Commonwealth and persons in the service of such a State or Territory or of such a Department or authority.
8. The Director may, subject to any directions of the Minister, make charges for forecasts, information, advice, publications and other matter supplied in pursuance of this Act.
9. The Governor-General may make regulations, not inconsistent with this Act, prescribing all matters which by this Act are required or permitted to be prescribed, or which are necessary or convenient to be prescribed for carrying out or giving effect to this Act.



WIT.013.001.0079

Appendix 2

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Appendix 2: Brochures explaining changes to the Victorian fire weather service for the 2008/2009 season

> BUREAU OF METEOROLOGY
> WEATHER SERVICES
> DISASTER MITIGATION



Fire Forecast Service Changes for Victoria



Changes to the Fire Weather Service

The Bureau is upgrading its operational forecast system in the Victorian Regional Forecast Centre. Changes to the services in support of Fire agencies will include:

Fire Weather Estimates
The format used for the Day 1 estimates will be applied to Day 2, Day 3 and Day 4. This change means that the same level of detail will be supplied for each day out to 4 days. (For more detailed information see the Product Information sheet.)

Spot Fire Forecast
The layout of the Spot Fire Forecast has changed to include 3 hourly forecast parameters out to 24 hours. (For more detailed information see the Product Information sheet.)

Fire Weather Briefing
The fire weather briefing will no longer contain a descriptive outlook for the next 4 days, it will only contain information for the current day. The outlook information is available in the fire weather outlook product. There have been some minor changes to the names of the headings in the fire weather briefing.

Fire Weather Outlook
The Outlook will be issued by 1600hrs every day. No other significant changes to this product.

Preliminary Estimates
Preliminary estimates will *no longer* be issued each Friday morning (including public holidays) and on days prior to extreme fire danger. If there is a significant change in forecast policy that meets amendment criteria defined in the Fire Weather Directive then the Day 1 Fire Weather Estimates will be updated.

Fire Ban Advice
No significant change for the fire ban advice.

Fire Weather Warning
Warnings will still be issued on a weather district basis, but will now include a general statement on temperature, relative humidity and wind speed. The decision to issue a warning will be based on weather conditions across an entire weather district and not just at the sites defined in the fire weather estimates. As per current practice, the decision to issue a warning is always discussed with the fire agencies.

How to Access Fire Weather Services

The Bureau of Meteorology provides specialised fire weather products through the Bureau's registered user website and via ftp to the fire agencies to display on Fireweb. Fire danger ratings will continue to be appended to weather district forecasts.

FURTHER INFORMATION
www.bom.gov.au/nextgen
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Appendix 2

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

- > BUREAU OF METEOROLOGY
- > WEATHER SERVICES
- > DISASTER MITIGATION
- > PRODUCT INFORMATION



Fire Forecast Service Changes for Victoria Spot Fire Forecasts

The operational upgrade to the forecasting systems in the Victorian Regional Forecast Centre will enable the Bureau to provide more meaningful and detailed forecast services to assist fire management agencies.

Spot Fire Weather Forecast

Issued at 10:32 am EDT on Friday 10 October 2009.

Name of Fire: Hamilton
 Map Reference: Lat=-37.8480, Lon=142.0630
 Elevation: 241
 Fuel Type: wild
 Ignition / Request Time: 1000

Forecast No: 008
 Organisation: CFA
 Fax Number: (03) 88888888
 Contact Phone: (03) 88888888
 Contact Name: Mr. Spot 8

Weather overview

Assumptions and uncertainties associated with the forecast

24 Hour FORECAST										Fire Fighter OBSERVATIONS on site			
Time Local	Temp (C)	RH (%)	10m Wind (km/h) Dir/Spd Gust	1000m AGL Wind (km/h) Dir/Spd	FFDI*	GFDI**	Temp (C)	RH (%)	10m or 2m Wind (km/h) Dir/Spd Gust	FFDI	GFDI	Location: Drought Factor: Grass Curing: Fuel Load:	
1100	17	57	WNW 20g30	WNW 21	4	6							
1400	19	50	W 20g20	WNW 17	4	6							
1700	19	48	WSW 15g25	WNW 13	4	6							
2000	14	65	S 16g20	NW 11	4	6							
2300	10	82	ESE 6g10	NW 12	6	7							
0200	09	84	E 6g10	NW 14	7	9							
0500	09	82	NE 6g10	NW 16	7	9							
0800	12	74	NW 10g15	NW 22	7	9							
1100	18	59	WNW 10g15	NW 23	7	9							

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

* If forecast differs significantly from observed conditions, or for weather forecasters on (03) 9669 4923 or (03) 8642 1798.

** For firefighter and public safety make regular on-site weather observations and report to the weather forecaster on (03) 9669 4979 or (03) 9663 2059 to

2 metre wind (km/h)	6	10	15	20	25	30	40	50	60
10 metre wind (km/h)	6	17	25	33	42	50	67	83	100
*use 10m wind for calculation of FFDI and GFDI									
Beaufort Number	2	3	4	5	6	7	8	9	10

Spot fire forecast will now include 3 hourly forecast values for 24 hours.

Forest fire danger and grassland fire danger values will now be included on the forecast. However these values should only be used as a guide as the actual drought factor and/or curing may differ from that used for the calculation.

Fire fighters are still encouraged to fill in the on-site observation section and fax the form back to the forecaster. This information provides forecasters with fire ground intelligence and assists with verification.

Spot fire forecast example for season 2008-09

Spot Fire Request Form

A new form has been prepared for requesting Spot Fire Forecasts. The form can now be filled out electronically and sent via facsimile or via email to vic_spotfire@bom.gov.au (for CFA requests) and ecc.management.support@dse.vic.gov.au (for DSE requests).

FURTHER INFORMATION

www.bom.gov.au/nextgen

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WIT.013.001.0081

Appendix 2 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

- > BUREAU OF METEOROLOGY
- > WEATHER SERVICES
- > DISASTER MITIGATION
- > PRODUCT INFORMATION



Fire Forecast Service Changes for Victoria Fire Weather Estimates

The operational upgrade to the forecasting systems in the Victorian Regional Forecast Centre will enable the Bureau to provide more meaningful and detailed forecast services to assist fire management agencies.

The routine issue times will be 0600 and 1645.

The level of detail (i.e. number of forecast locations) will be the same for all days.

Fire weather estimates for 4 days will be issued, with each day a separate product.

Forecast variables will continue to be for the time of maximum temperature.

Australian Government Bureau of Meteorology
IDV115500
Australian Government Bureau of Meteorology
Victoria

Fire Weather Forecast for Wednesday 8 October 2008

Issued at 6:00 am EDT on Wednesday 8 October 2008.
FORECAST ARE ISSUED REGULARLY: PLEASE ENSURE YOU HAVE THE LATEST VERSION

Location	MaxT (C)	DewPt (C)	RH (%)	Wind (kph)			DF	CUR (%)	FFDI	GFDI	Wind Change
				DIR	SPD	GUST					
Walpeup	16	3	35					10	5		
Swan Hill Airport	19	1	30					12	7		
Mallee	LAL: 0	RAIN: NO						MIX (M): None			
	Wind (1000): SW 20							FDI above 36: None			
Am Airport	17	4	42	WSW	5	10	6	100	4	4	
	16	3	42	W	5	10	6	100	4	3	
Wimmera	LAL: 0	RAIN: NO						MIX (M): None			
	Wind (1000): WSW 20							FDI above 36: None			
Ballarat Airport	13	2	47	WSW	5	10	6	100	3	3	
Portland Airport	14	6	55	W	10	15	5	100	2	4	
Hamilton Airport	14	4	51	W	5	10	6	100	3	3	
Mortlake	15	4	50	WSW	5	10	4	100	2	3	
Western	LAL: 0	RAIN: NO						MIX (M): None			
	Wind (1000): W 20							FDI above 36: None			
Bendigo Airport	17	2	36	WSW	5	10	6	100	5	4	
Shepparton Airport	16	1	31	WSW	5	10	8	100	8	5	
Northern Country	LAL: 0	RAIN: NO						MIX (M): None			
	Wind (1000): SW 20							FDI above 36: None			
Mangalore Airport	17	1	35	WSW	5	10	6	100	5	3	
North Central	LAL: 0	RAIN: NO						MIX (M): None			
	Wind (1000): SW 25							FDI above 36: None			
Geelong Airport	16	4	44	WSW	5	10	6	100	4	3	
Coldstream	16	2	40	SW	5	10	4	100	3	3	
Tullamarine	17	2	38	SSW	5	10	6	100	5	3	
Dunns Hill	12	3	54	WSW	5	10	4	100	2	2	
Wonthaggi	15	5	51	WSW	10	20	5	100	3	7	
Central	LAL: 0	RAIN: NO						MIX (M): None			

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Fire weather estimates example for season 2008-09

FURTHER INFORMATION
www.bom.gov.au/nextgen
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Appendix 3
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Appendix 3: Spot Weather Forecast Request form



AUSTRALIAN BUREAU OF METEOROLOGY
VICTORIAN REGIONAL OFFICE
SPOT WEATHER FORECAST REQUEST

This form should be completed by the person in charge of the incident. Complete and accurate information is required to assist in preparing this special forecast. A request for an update can be made once conditions have changed from that forecast. This form can be filled out on the computer by clicking on the boxes and using the 'Tab' key to move between fields, or printed out and hand-written - please use a black pen where possible.

Incident details

Incident Name: _____ Current date/time: __/__/____ (24hr)
Request Number: ____ (for this location)
Type: [] wildfire [] prescribed burn [] structural [] Hazmat
Damage Potential: [] low [] moderate [] high
Forecast required for: [] Now or future date/time: __/__/____ (24hr)
Fuel Type (for wildfire/prescribed burns): [] grass [] forest [] scrub [] other
Estimated size (hectares): [] 0-10 [] 10-100 [] >100

Incident location

Approximate distance and direction from nearest town:
____ km ____ of _____ (town name)
[] Melways [] Vicroads [] VicMap Book Map number: _____ Map grid ref (e.g. H4): ____
Edition: ____ Edition: ____ VicMap Book Name: ____
[] Other map (name/type/number/locality): _____

Complete one or more of the following (lat/long preferred option):

Latitude/Longitude from GPS (decimal degrees): _____/_____
13 figure grid reference from GPS (in MGA):
Zone: ____ Eastings (6 fig.): _____ Northings (7 fig.): _____
6 figure grid reference from map (in MGA): Zone (54 or 55): ____ 6 figure map ref: _____
Elevation (above sea level): _____ metres Terrain: [] flat [] undulating [] steep
Aspect: facing [] N [] NW [] W [] SW [] S [] SE [] E [] NE

Current weather conditions at or near incident

Table with 6 columns: Dry bulb temp (degC)1, Wet bulb temp (degC)1, R.H (%)1, Wind direction from2, Mean wind speed (km/h)2, Wind gusts to (km/h)2

1Temp/RH measured by: _____ 2Wind measured by: _____
Measurement time: _____ (24hr) 2Height: ____
Weather: [] fine [] rain in area [] lightning or thunder
Cloud: [] clear [] overcast [] convective cloud [] stratiform cloud

Contact details

Contact person: _____ at [] CFA [] DSE [] Other: _____
Phone: _____ Fax No.: _____
Email: _____ Additional Comments: _____

CFA personnel: Email the completed request to _spoffire@bom.gov.au and follow up with a phone call to _____ (or _____). Alternatively, fax the completed request to _____ (or _____), and follow up with a phone call.
DSE personnel: Email the completed request to _ManagementSupport@dse.vic.gov.au. Alternatively fax all DSE requests to the DSE ECC Fire Fax:



WIT.013.001.0083

Appendix 4
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Appendix 4: Selected records for the greatest number of days with temperatures at or above set thresholds

Station number	Location	Threshold	No of days	Dates in 2009	Previous record	Years of data
Maximum temperature						
76031	Mildura	40	12	27/1-7/2	9 (6-14/1/1939, 7-15/2/1939)	102
78015/78031	Nhill	40	6	27/1-1/2	4 (several)	102
		44	4	28-31/1	2 (17-18/1/1959, 31/1-1/2/1968)	
80023	Kerang	44	4	28-31/1	2 (24-25/2/1968)	101
81123/81003	Bendigo	40	5	28/1-1/2	3 (17-19/1/1959, 4-6/1/1999)	101
		42	4	28-31/1	2 (14-15/2/2004)	
82039	Rutherglen	40	5 (=)	28/1-1/2	5 (11-15/1/1939)	98
85072	Sale	40	3	28-30/1	2 (17-18/1/1959)	64
86071	Melbourne	43	3	28-30/1	2 (20-21/1/1875)	154
87031	Laverton	43	3	28-30/1	1 (several)	65
89002	Ballarat	40	3 (=)	28-30/1	3 (17-19/1/1959)	102
		39	4	28-31/1	3 (17-19/1/1959)	
Minimum temperature						
76031/76077	Mildura	24	7	28/1-3/2	5 (10-14/1/1939, 27-31/1/1943)	103
86071	Melbourne	20	6 (=)	29/1-3/2	6 (16-21/1/1908)	154

Table 1: Selected records for the greatest number of days with temperatures at or above set thresholds. Stations which commenced recording data by 1939 have station numbers shown in bold.

Appendix 5
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Appendix 5: Australian Mean Sea Level pressure charts, analysis time 11am, 1 February - 6 February 2009

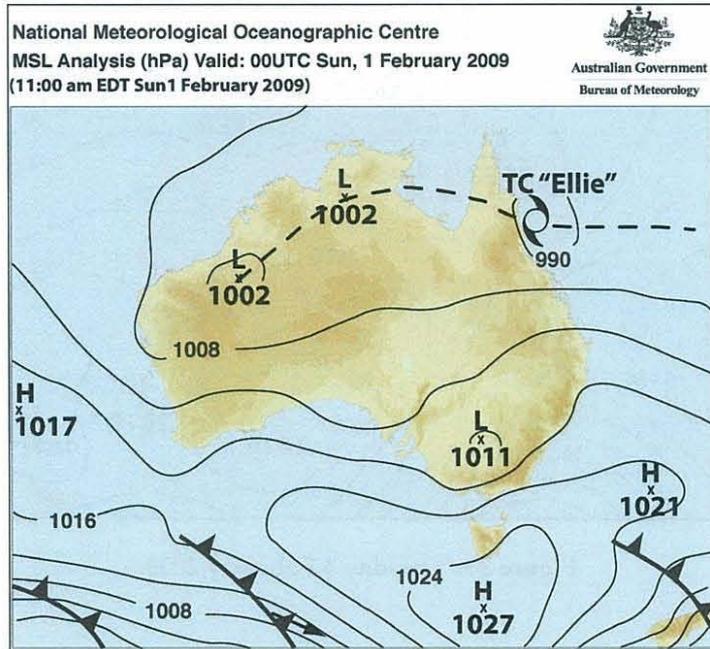


Figure 35: Sunday 1 February 2009.

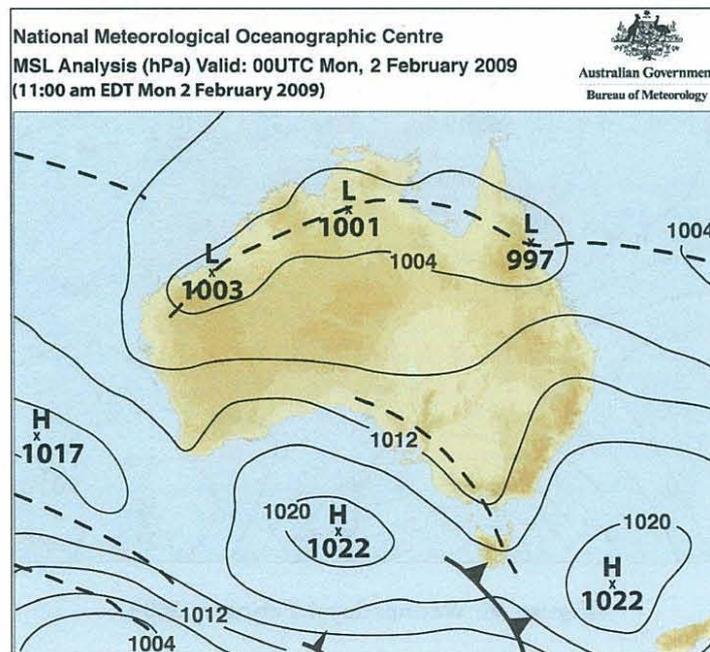


Figure 36: Monday 2 February 2009.



WIT.013.001.0085

Appendix 5

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

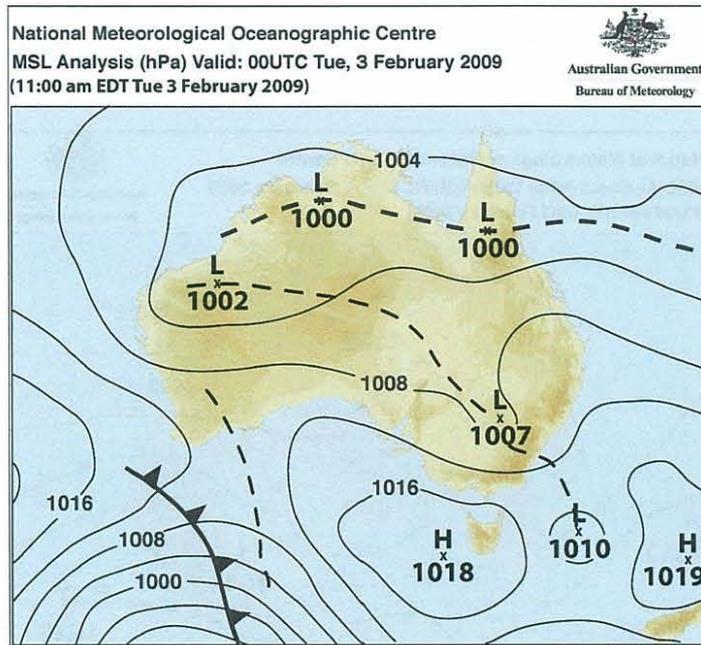


Figure 37: Tuesday 3 February 2009.

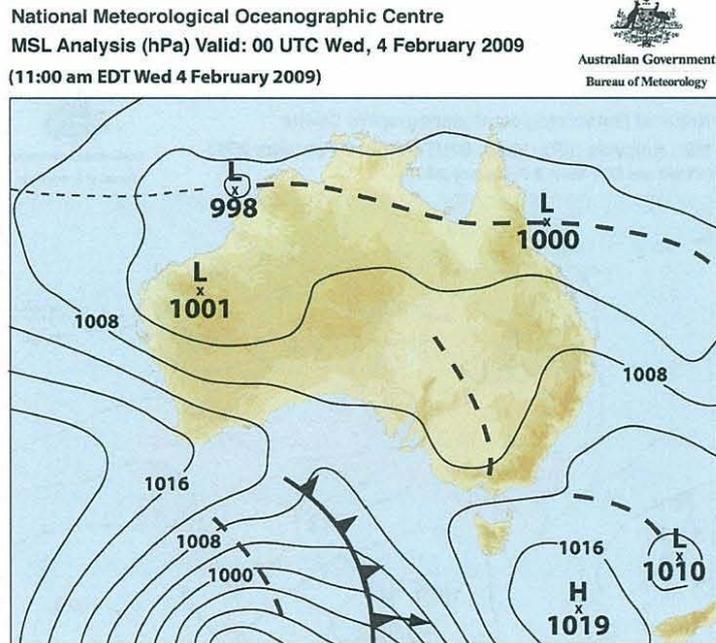


Figure 38: Wednesday 4 February 2009.

Appendix 5
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

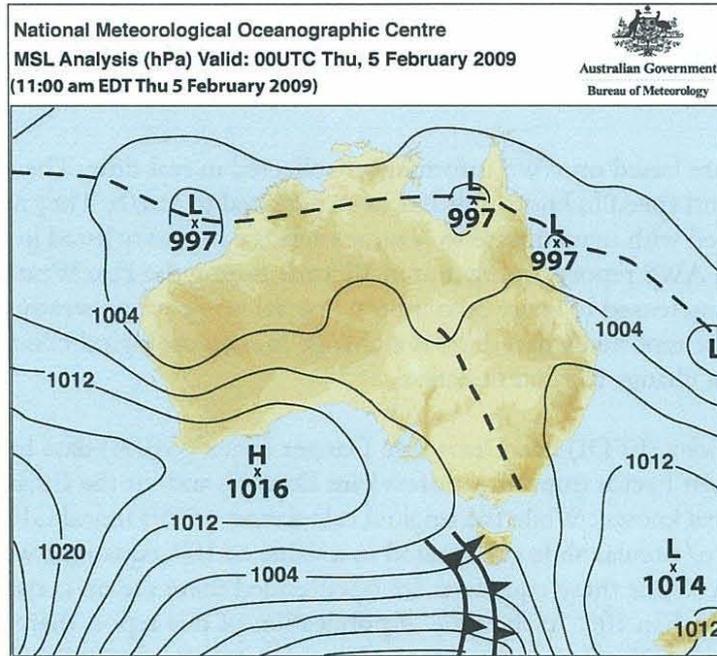


Figure 39: Thursday 5 February 2009.

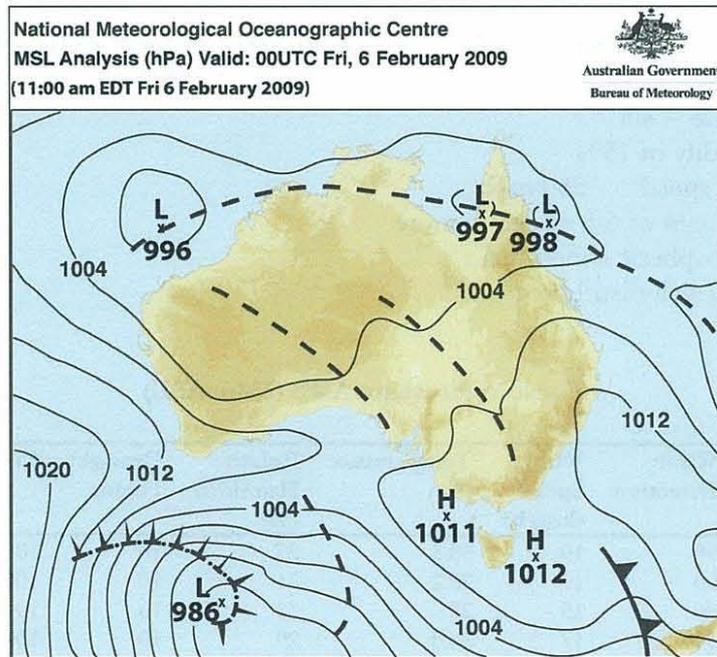


Figure 40: Friday 6 February 2009.

Appendix 6
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Appendix 6: Automatic Weather Station data for the period 11pm Friday 6 February to 5am Sunday 8 February

Note: These tables are based on AWS information collected in real time. The original AWS data records 10 minute wind speed in knots, this has been adjusted to km/h. They also report dew point, this has been combined with temperature to produce relative humidity listed in these tables. During most of the year each AWS reports hourly but in Victoria during the Fire Weather Season the AWS reporting schedule is increased to every 30 minutes. Special non-routine weather observations (known as SPECIS) are reported when there is a change in meteorological conditions above a certain threshold, including a change in wind direction.

Forest Fire Danger Index (FFDI) and Grass Fire Danger Index (GFDI) data has been calculated for sites where the Drought Factor (input for Forest Fire Danger) and/or the Curing value (input for Grass Fire Danger) was known. While the original calculation of FFDI and GFDI was via a mechanical nomogram/circular slide rule limited to a value of 100, equations were developed to match the nomogram. While these equations are open-ended there are no constraints for values of these equations greater than 100. At the time of publication of this report there is no quantitative comparison of FFDI/GFDI values greater than 100 with measures fire behaviour.

In the original text book (Luke R.H. and McArthur A.G. 'Bushfires in Australia' [Australian Government Publishing Service, 1978], page 114) fire researchers Luke and McArthur say

100 represents '...the near worst possible fire conditions that are likely to be experienced in Australia. These are defined as follows:

- *air temperature = 40C
- *relative humidity of 15%
- *average wind speed 55 km/h
- *extended drought of 6-8 weeks or more
- *unstable atmospheric conditions
- *abundant and well-distributed fuel'

Table 2: Horsham AWS (134m ASL)

Date	Time (EDT)	Wind Direction	Wind Speed (km/h)	Temperature (°C)	Relative Humidity (%)	Drought Factor	Curing	Forest FDI	Grass FDI
6/02/2009	22:59	90	19	30.5	27	10	100	21	12
6/02/2009	23:59	90	19	28.2	31	10	100	17	10
7/02/2009	00:29	80	15	27	33	10	100	14	7
7/02/2009	00:59	50	17	28.8	29	10	100	18	9
7/02/2009	01:29	40	11	27	30	10	100	14	5
7/02/2009	01:59	0	0	25.5	32	10	100	10	1
7/02/2009	02:29	0	0	25.8	31	10	100	10	1
7/02/2009	02:59	230	26	26.8	30	10	100	20	17
7/02/2009	03:03	200	37	28	29	10	100	28	34
7/02/2009	03:09	200	31	33	23	10	100	36	32
7/02/2009	03:29	10	17	31.6	23	10	100	24	12
7/02/2009	03:59	50	7	30.1	24	10	100	18	5
7/02/2009	04:29	190	9	28.8	27	10	100	16	5



Appendix 6

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

7/02/2009	04:59	360	15	29.6	25	10	100	20	9
7/02/2009	05:29	30	13	26.2	30	10	100	14	6
7/02/2009	05:59	50	19	24.9	32	10	100	15	9
7/02/2009	06:29	50	17	24.7	33	10	100	13	8
7/02/2009	06:59	20	19	24.7	33	10	100	14	9
7/02/2009	07:29	360	22	28.6	27	10	100	22	15
7/02/2009	07:59	360	30	30.2	24	10	100	30	26
7/02/2009	08:29	360	31	32.2	22	10	100	36	32
7/02/2009	08:49	360	41	33.4	20	10	100	50	58
7/02/2009	08:59	350	43	34.1	19	10	100	55	66
7/02/2009	09:29	350	48	36.2	17	10	100	72	96
7/02/2009	09:35	350	50	36.4	16	10	100	78	108
7/02/2009	09:59	350	44	38.5	15	10	100	77	91
7/02/2009	10:29	360	50	40.1	12	10	100	102	135
7/02/2009	10:30	350	50	39.8	12	10	100	101	134
7/02/2009	10:59	350	52	40.7	10	10	100	116	159
7/02/2009	11:10	340	52	41.3	10	10	100	119	162
7/02/2009	11:29	340	52	41.8	9	10	100	125	170
7/02/2009	11:36	340	54	42.9	9	10	100	136	191
7/02/2009	11:59	330	56	43.2	9	10	100	143	208
7/02/2009	12:24	320	54	44.3	9	10	100	142	198
7/02/2009	12:29	320	56	44.1	9	10	100	148	213
7/02/2009	12:35	320	57	44.4	9	10	100	156	233
7/02/2009	12:59	320	63	45.1	8	10	100	188	311
7/02/2009	13:20	310	61	45.4	8	10	100	182	290
7/02/2009	13:29	320	61	45.4	9	10	100	176	280
7/02/2009	13:59	310	61	45.7	8	10	100	184	292
7/02/2009	14:29	310	57	45.7	8	10	100	168	251
7/02/2009	14:59	320	57	45.6	8	10	100	168	250
7/02/2009	15:16	290	54	44.1	10	10	100	137	190
7/02/2009	15:29	270	48	45.5	9	10	100	130	159
7/02/2009	15:59	260	46	43.9	13	10	100	103	122
7/02/2009	16:28	230	61	39.2	19	10	100	101	175
7/02/2009	16:29	230	61	39.2	20	10	100	98	170
7/02/2009	16:50	250	39	37	23	10	100	49	54
7/02/2009	16:52	240	43	36.6	23	10	100	52	64
7/02/2009	16:59	230	46	36.3	23	10	100	56	76
7/02/2009	17:18	240	43	36.8	22	10	100	54	66
7/02/2009	17:29	240	46	36.6	23	10	100	57	77
7/02/2009	17:49	210	46	35.5	25	10	100	51	71
7/02/2009	17:59	210	46	35.3	27	10	100	47	68
7/02/2009	18:29	210	41	34.6	28	10	100	39	50
7/02/2009	18:59	220	43	33.4	30	10	100	37	51
7/02/2009	19:29	230	35	33	31	10	100	30	34
7/02/2009	19:59	220	24	32.8	31	10	100	23	17
7/02/2009	20:29	230	17	32.1	31	10	100	18	10
7/02/2009	20:59	240	17	30.9	33	10	100	17	9
7/02/2009	21:28	230	30	30.3	34	10	100	21	21
7/02/2009	21:29	230	30	30.2	34	10	100	21	21
7/02/2009	21:59	220	35	27.3	40	10	100	18	24
7/02/2009	22:29	210	28	26.1	44	10	100	13	14
7/02/2009	22:59	210	31	24.7	50	10	100	11	16
7/02/2009	23:29	210	30	22.9	54	10	100	8	13
7/02/2009	23:59	200	26	22.1	55	10	100	7	10
8/02/2009	00:29	190	22	21.4	55	10	100	6	7
8/02/2009	00:59	200	22	20.7	56	10	100	6	7
8/02/2009	01:29	200	24	20	57	10	100	6	8
8/02/2009	01:59	210	22	19.6	59	10	100	5	7



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8/02/2009	02:29	220	24	19	60	10	100	5	7
8/02/2009	02:59	220	22	18.6	62	10	100	5	6
8/02/2009	03:29	210	24	18.2	65	10	100	4	7
8/02/2009	03:59	210	24	17.9	67	10	100	4	6
8/02/2009	04:29	210	26	17.6	69	10	100	4	7
8/02/2009	04:59	210	24	17.3	68	10	100	4	6

Table 3: Bendigo AWS (209m ASL)

Date	Time (EDT)	Wind Direction	Wind Speed (km/h)	Temperature (°C)	Relative Humidity (%)	Drought Factor	Curing	Forest FDI	Grass FDI
6/02/2009	23:01	140	15	28.7	35	10	100	14	7
7/02/2009	00:01	150	13	27.2	38	10	100	11	6
7/02/2009	00:31	140	11	26.7	39	10	100	10	5
7/02/2009	01:01	150	13	26.4	39	10	100	10	5
7/02/2009	01:31	130	11	26.4	40	10	100	10	4
7/02/2009	02:01	130	7	25.1	45	10	100	7	3
7/02/2009	02:31	140	11	25.6	42	10	100	9	4
7/02/2009	03:01	150	7	23.5	48	10	100	6	2
7/02/2009	03:31	160	9	23.1	49	10	100	6	3
7/02/2009	04:01	150	7	23.3	48	10	100	6	2
7/02/2009	04:31	150	7	22.9	49	10	100	6	2
7/02/2009	05:01	160	11	22.8	49	10	100	6	3
7/02/2009	05:31	160	9	22.1	52	10	100	5	3
7/02/2009	06:03	160	7	21.7	53	10	100	5	2
7/02/2009	06:31	130	7	21.5	53	10	100	5	2
7/02/2009	07:01	140	7	21.2	56	10	100	4	2
7/02/2009	07:31	100	2	23.6	48	10	100	5	1
7/02/2009	08:01	70	9	27	36	10	100	11	4
7/02/2009	08:31	50	7	27.6	34	10	100	12	3
7/02/2009	09:03	30	6	30.2	30	10	100	14	3
7/02/2009	09:31	20	24	34.4	18	10	100	38	24
7/02/2009	10:01	10	28	36.4	15	10	100	48	35
7/02/2009	10:29	360	33	38	13	10	100	61	53
7/02/2009	10:31	360	35	38.1	13	10	100	65	60
7/02/2009	11:01	10	41	39.8	10	10	100	87	91
7/02/2009	11:31	360	39	40.7	8	10	100	91	91
7/02/2009	12:01	350	35	42	9	10	100	87	77
7/02/2009	12:31	350	43	42.2	8	10	100	107	117
7/02/2009	13:01	350	39	43.3	7	10	100	104	103
7/02/2009	13:15	320	31	44.6	7	10	100	91	71
7/02/2009	13:16	310	35	44.1	6	10	100	101	90
7/02/2009	13:31	330	43	43.7	6	10	100	118	129
7/02/2009	14:01	330	39	44	7	10	100	107	106
7/02/2009	14:31	330	35	44.5	7	10	100	99	87
7/02/2009	15:06	330	37	44.4	6	10	100	107	101
7/02/2009	15:31	330	37	44.9	6	10	100	108	102
7/02/2009	15:32	330	37	45	7	10	100	107	100
7/02/2009	16:01	330	41	44.9	7	10	100	114	118
7/02/2009	16:31	330	37	44.5	7	10	100	104	97
7/02/2009	17:01	320	41	43.8	7	10	100	109	114
7/02/2009	17:31	320	35	44.3	8	10	100	96	84
7/02/2009	18:01	330	37	44.3	8	10	100	101	94
7/02/2009	18:05	320	37	44	8	10	100	100	94
7/02/2009	18:31	320	31	43.5	8	10	100	85	67

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7/02/2009	18:45	220	35	38	18	10	100	54	51
7/02/2009	18:54	220	33	35.5	24	10	100	40	38
7/02/2009	19:01	220	41	34.4	25	10	100	43	52
7/02/2009	19:31	210	24	33.7	26	10	100	27	20
7/02/2009	20:01	200	20	32.6	28	10	100	23	14
7/02/2009	20:31	200	13	32.2	29	10	100	19	8
7/02/2009	21:01	200	15	31.6	30	10	100	18	9
7/02/2009	21:31	160	9	30.3	33	10	100	14	5
7/02/2009	22:01	200	9	30.4	33	10	100	14	5
7/02/2009	22:31	160	6	29.6	36	10	100	11	3
7/02/2009	23:01	170	9	29.9	35	10	100	13	4
7/02/2009	23:31	210	9	29.7	36	10	100	12	4
8/02/2009	00:01	190	11	29.5	36	10	100	13	5
8/02/2009	00:31	200	13	29.3	36	10	100	13	6
8/02/2009	01:01	190	15	28.5	39	10	100	12	7
8/02/2009	01:31	200	13	26.6	48	10	100	8	5
8/02/2009	02:01	210	17	25.9	48	10	100	8	6
8/02/2009	02:31	140	11	25.4	51	10	100	7	4
8/02/2009	03:01	150	11	25.1	50	10	100	7	4
8/02/2009	03:31	110	9	24.4	53	10	100	6	3
8/02/2009	04:01	230	2	24	55	10	100	4	1
8/02/2009	04:31	160	6	22.9	58	10	100	4	2
8/02/2009	05:01	230	4	23.2	59	10	100	4	1

Table 4: Melbourne Airport AWS (53m ASL)

Date	Time (EDT)	Wind Direction	Wind Speed (km/h)	Temperature (°C)	Relative Humidity (%)	Drought Factor	Curing	Forest FDI	Grass FDI
6/02/2009	23:00	360	13	22.9	50	10	90	7	3
7/02/2009	00:01	360	19	23.3	50	10	90	7	5
7/02/2009	00:30	360	19	23.1	51	10	90	7	5
7/02/2009	01:01	360	15	22.8	50	10	90	7	3
7/02/2009	01:30	360	17	23.7	44	10	90	9	4
7/02/2009	02:00	360	17	23.8	44	10	90	9	5
7/02/2009	02:31	360	22	27.2	34	10	90	16	9
7/02/2009	03:01	350	31	28.5	31	10	90	23	17
7/02/2009	03:31	350	33	28.7	31	10	90	25	20
7/02/2009	04:00	350	33	29.2	29	10	90	26	20
7/02/2009	04:30	350	37	29.5	28	10	90	30	26
7/02/2009	04:53	270	17	29.4	30	10	90	17	7
7/02/2009	05:00	210	20	26.9	38	10	90	14	7
7/02/2009	05:30	170	13	24.4	47	10	90	8	3
7/02/2009	06:01	190	7	23.7	56	10	90	5	2
7/02/2009	06:31	240	9	22.5	59	10	90	4	2
7/02/2009	07:01	270	2	22.5	59	10	90	4	1
7/02/2009	07:31	10	19	24.8	47	10	90	9	5
7/02/2009	07:48	360	33	29.8	27	10	90	29	22
7/02/2009	08:01	360	35	31.3	23	10	90	36	27
7/02/2009	08:29	10	46	32.6	21	10	90	53	52
7/02/2009	08:30	10	46	32.6	21	10	90	53	52
7/02/2009	08:42	360	43	33	21	10	90	50	44
7/02/2009	08:43	360	43	33	21	10	90	50	44
7/02/2009	08:56	360	48	33.2	20	10	90	58	59
7/02/2009	09:02	10	54	32.7	21	10	90	64	73
7/02/2009	09:30	360	52	33.7	19	10	90	67	73



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7/02/2009	10:01	360	54	35.6	18	10	90	78	86
7/02/2009	10:31	10	50	37.2	16	10	90	81	81
7/02/2009	10:41	360	48	37.5	15	10	90	82	77
7/02/2009	11:02	360	48	39	13	10	90	91	85
7/02/2009	11:31	350	48	40.4	10	10	90	106	97
7/02/2009	12:01	360	54	42	9	10	90	132	135
7/02/2009	12:02	360	54	41.9	9	10	90	132	135
7/02/2009	12:33	350	48	42.8	8	10	90	123	111
7/02/2009	13:01	350	48	44.1	7	10	90	132	119
7/02/2009	13:31	340	46	44.8	7	10	90	130	112
7/02/2009	14:01	330	43	44.7	8	10	90	116	91
7/02/2009	14:03	300	50	45.2	8	10	90	140	130
7/02/2009	14:07	340	37	45.1	8	10	90	103	69
7/02/2009	14:31	330	46	45	8	10	90	126	107
7/02/2009	15:03	320	39	46.1	10	10	90	105	73
7/02/2009	15:14	330	44	46.4	12	10	90	112	91
7/02/2009	15:36	330	48	45.6	18	10	90	96	88
7/02/2009	16:02	320	46	45.9	21	10	90	84	76
7/02/2009	16:33	330	43	45.8	30	10	90	57	52
7/02/2009	16:47	300	46	45.8	4	10	90	148	131
7/02/2009	17:01	320	41	44.7	7	10	90	115	86
7/02/2009	17:20	310	52	44.8	4	10	90	162	163
7/02/2009	17:23	240	52	38.4	15	10	90	89	91
7/02/2009	17:30	270	50	35.8	20	10	90	66	69
7/02/2009	17:31	230	50	34.9	22	10	90	61	65
7/02/2009	17:38	230	68	34.1	23	10	90	88	134
7/02/2009	17:58	230	50	33.2	24	10	90	53	58
7/02/2009	18:04	230	43	33	25	10	90	43	40
7/02/2009	18:16	230	35	32.7	26	10	90	34	27
7/02/2009	18:21	260	50	31.7	29	10	90	43	51
7/02/2009	18:26	230	31	31.7	28	10	90	29	20
7/02/2009	18:34	230	33	32	27	10	90	32	23
7/02/2009	19:02	230	41	32.1	26	10	90	38	35
7/02/2009	19:32	230	33	31.6	29	10	90	29	22
7/02/2009	20:01	200	17	30.6	32	10	90	17	7
7/02/2009	20:30	170	11	30	35	10	90	13	4
7/02/2009	21:01	130	15	29.5	38	10	90	13	5
7/02/2009	21:30	80	15	28.5	41	10	90	11	5
7/02/2009	22:00	80	15	27.8	43	10	90	10	4
7/02/2009	22:30	130	15	26.8	44	10	90	10	4
7/02/2009	22:44	180	28	22	71	10	90	4	6
7/02/2009	23:00	170	31	20.1	82	10	90	3	6
7/02/2009	23:31	200	20	19.7	83	10	90	2	3
8/02/2009	00:02	180	17	19.7	83	10	90	2	2
8/02/2009	00:14	240	15	19.9	82	10	90	2	2
8/02/2009	00:17	240	13	19.8	81	10	90	2	2
8/02/2009	00:26	260	17	19.8	81	10	90	2	2
8/02/2009	00:31	250	13	19.7	83	10	90	2	2
8/02/2009	01:02	190	20	19.7	78	10	90	3	3
8/02/2009	01:17	250	17	19.8	76	10	90	3	3
8/02/2009	01:22	190	20	19.1	82	10	90	2	3
8/02/2009	01:30	180	19	19	84	10	90	2	3
8/02/2009	02:01	180	13	19.1	79	10	90	2	2
8/02/2009	02:32	170	15	18.8	81	10	90	2	2
8/02/2009	03:03	160	13	18.4	83	10	90	2	2
8/02/2009	03:32	190	7	18.7	81	10	90	2	1
8/02/2009	04:01	190	11	18.6	83	10	90	2	1
8/02/2009	04:32	180	9	18.6	83	10	90	2	1



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8/02/2009	05:02	190	11	18.6	82	10	90	2	1
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Table 5: Mt Dandenong AWS (561m ASL)

Date	Time (EDT)	Wind Direction	Wind Speed (km/h)	Temperature (°C)	Relative Humidity (%)	Drought Factor	Curing	Forest FDI	Grass FDI
6/02/2009	22:58	110	24	25.1	37	10	90	14	9
6/02/2009	23:28	90	26	25.2	39	10	90	14	10
6/02/2009	23:58	80	26	25.6	37	10	90	15	10
7/02/2009	00:28	40	20	26.3	36	10	90	14	7
7/02/2009	00:58	20	22	28.2	34	10	90	17	9
7/02/2009	01:28	10	26	29	32	10	90	20	12
7/02/2009	01:58	10	30	29.3	31	10	90	23	16
7/02/2009	02:28	10	31	29.9	30	10	90	25	18
7/02/2009	02:58	10	31	30	29	10	90	26	19
7/02/2009	03:28	10	26	30.1	29	10	90	23	14
7/02/2009	03:33	10	28	30.4	28	10	90	25	16
7/02/2009	03:58	360	31	30.5	27	10	90	29	20
7/02/2009	04:28	360	30	30.4	27	10	90	27	18
7/02/2009	04:29	360	30	30.5	27	10	90	27	18
7/02/2009	04:58	230	11	27.5	36	10	90	12	4
7/02/2009	05:28	350	20	28	34	10	90	16	8
7/02/2009	05:58	360	24	27.7	35	10	90	17	10
7/02/2009	06:28	360	24	28	33	10	90	18	11
7/02/2009	06:51	360	28	28.6	32	10	90	21	14
7/02/2009	06:58	360	30	28.6	32	10	90	22	15
7/02/2009	07:02	360	28	28.4	32	10	90	21	14
7/02/2009	07:28	360	30	28.6	32	10	90	22	15
7/02/2009	07:58	360	30	29.1	30	10	90	23	16
7/02/2009	07:59	360	30	29.2	29	10	90	24	17
7/02/2009	08:28	360	37	30.4	27	10	90	32	27
7/02/2009	08:58	360	39	31	27	10	90	35	30
7/02/2009	09:28	360	41	31	27	10	90	36	33
7/02/2009	09:58	360	43	31.4	27	10	90	38	37
7/02/2009	10:28	360	37	32.3	26	10	90	36	29
7/02/2009	10:58	10	39	33.3	25	10	90	40	34
7/02/2009	11:28	360	44	34.6	23	10	90	51	48
7/02/2009	11:58	350	46	36.1	18	10	90	67	62
7/02/2009	12:28	350	43	37.2	17	10	90	65	55
7/02/2009	12:58	360	43	38.7	15	10	90	74	61
7/02/2009	13:28	350	46	39.1	14	10	90	85	75
7/02/2009	13:58	350	41	40	14	10	90	77	59
7/02/2009	14:28	330	39	40.6	12	10	90	80	58
7/02/2009	14:50	340	59	40.8	12	10	90	130	149
7/02/2009	14:58	340	52	40.9	13	10	90	106	105
7/02/2009	15:28	340	48	41.4	12	10	90	102	93
7/02/2009	15:58	340	39	41.4	11	10	90	85	61
7/02/2009	16:28	330	39	41.1	12	10	90	82	59
7/02/2009	16:58	330	44	41.1	12	10	90	93	78
7/02/2009	17:28	320	33	40.6	13	10	90	68	42
7/02/2009	17:34	250	30	35.5	26	10	90	33	21
7/02/2009	17:40	210	24	30.5	33	10	90	20	11
7/02/2009	17:58	210	22	27.5	42	10	90	12	8
7/02/2009	18:26	200	28	24.8	50	10	90	10	9
7/02/2009	18:28	200	28	24.6	50	10	90	10	9

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7/02/2009	18:58	190	26	24.2	51	10	90	9	8
7/02/2009	18:59	190	28	24.2	51	10	90	9	9
7/02/2009	19:28	170	9	24.6	50	10	90	6	2
7/02/2009	19:58	160	19	24.5	50	10	90	8	5
7/02/2009	20:28	170	11	24.2	51	10	90	6	3
7/02/2009	20:58	110	13	23.9	52	10	90	6	3
7/02/2009	21:28	90	9	24.2	51	10	90	6	2
7/02/2009	21:58	180	9	24.5	49	10	90	6	2
7/02/2009	22:28	230	9	24.2	50	10	90	6	2
7/02/2009	22:58	230	17	22.3	63	10	90	4	3
7/02/2009	23:28	190	28	19.2	77	10	90	3	5
7/02/2009	23:58	170	22	18.1	82	10	90	2	3
8/02/2009	00:28	170	19	17.1	84	10	90	2	2
8/02/2009	00:58	180	26	17.4	84	10	90	2	4
8/02/2009	01:28	180	26	15.4	92	10	90	2	4
8/02/2009	01:58	200	7	15.4	90	10	90	1	1
8/02/2009	02:28	190	11	15.5	86	10	90	1	1
8/02/2009	02:58	210	13	15.3	86	10	90	1	1
8/02/2009	03:28	180	13	15.3	86	10	90	1	1
8/02/2009	03:58	190	13	15.2	86	10	90	1	1
8/02/2009	04:28	290	4	15.2	83	10	90	1	1
8/02/2009	04:58	290	4	15	83	10	90	1	1

Table 6: Coldstream AWS (84m ASL)

Date	Time (EDT)	Wind Direction	Wind Speed (km/h)	Temperature (°C)	Relative Humidity (%)	Drought Factor	Curing	Forest FDI	Grass FDI
6/02/2009	23:01	140	13	23.5	38	10	100	10	5
7/02/2009	00:00	0	0	22.4	46	10	100	5	0
7/02/2009	00:30	0	0	20.2	55	10	100	4	0
7/02/2009	01:00	130	6	20.2	57	10	100	4	2
7/02/2009	01:31	150	2	19.9	59	10	100	3	1
7/02/2009	02:00	340	4	18.9	63	10	100	3	1
7/02/2009	02:31	290	2	18.6	64	10	100	3	1
7/02/2009	03:00	150	6	18.8	66	10	100	3	1
7/02/2009	03:31	0	0	18.6	68	10	100	2	0
7/02/2009	04:00	0	0	18.7	69	10	100	2	0
7/02/2009	04:30	190	4	18.7	70	10	100	2	1
7/02/2009	05:00	0	0	18.6	71	10	100	2	0
7/02/2009	05:30	200	7	18.7	71	10	100	2	2
7/02/2009	06:00	130	7	20.7	65	10	100	3	2
7/02/2009	06:31	290	2	21.1	63	10	100	3	1
7/02/2009	07:00	130	4	21.7	61	10	100	3	1
7/02/2009	07:30	160	6	23.6	55	10	100	5	2
7/02/2009	08:00	0	0	26.5	48	10	100	6	0
7/02/2009	08:30	290	2	30.4	33	10	100	12	2
7/02/2009	08:49	10	28	35	22	10	100	36	28
7/02/2009	09:00	20	30	35.2	22	10	100	38	32
7/02/2009	09:30	20	31	35.9	21	10	100	42	37
7/02/2009	10:00	30	35	36.8	20	10	100	49	47
7/02/2009	10:31	10	35	37.7	19	10	100	52	50
7/02/2009	11:00	360	41	38.6	18	10	100	63	70
7/02/2009	11:30	10	41	40.1	16	10	100	72	77
7/02/2009	11:34	10	37	40.3	16	10	100	66	64
7/02/2009	12:01	360	39	41.9	13	10	100	81	81

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7/02/2009	12:30	10	43	42.3	11	10	100	96	104
7/02/2009	13:00	20	46	42.9	10	10	100	110	131
7/02/2009	13:16	340	37	43.4	10	10	100	90	84
7/02/2009	13:30	350	35	43.9	9	10	100	91	80
7/02/2009	14:00	360	37	43.8	9	10	100	95	88
7/02/2009	14:22	330	24	44.5	9	10	100	72	42
7/02/2009	14:31	330	31	44.5	9	10	100	85	66
7/02/2009	15:01	360	37	44.4	9	10	100	97	89
7/02/2009	15:10	320	26	44.1	9	10	100	74	47
7/02/2009	15:30	340	33	43.3	9	10	100	85	71
7/02/2009	16:00	350	30	43.2	8	10	100	81	59
7/02/2009	16:30	340	28	43	9	10	100	74	51
7/02/2009	17:00	350	28	43	9	10	100	74	51
7/02/2009	17:28	350	28	44.3	8	10	100	80	55
7/02/2009	17:34	320	28	44.6	8	10	100	81	55
7/02/2009	17:48	250	52	41.1	18	10	100	89	127
7/02/2009	17:51	250	57	35.5	25	10	100	66	117
7/02/2009	18:01	230	46	32.8	30	10	100	39	59
7/02/2009	18:30	230	37	30.5	35	10	100	25	32
7/02/2009	18:40	240	31	30.1	36	10	100	21	23
7/02/2009	19:00	110	20	30	35	10	100	16	11
7/02/2009	19:30	120	7	30.6	33	10	100	13	4
7/02/2009	20:00	130	15	30.4	34	10	100	15	8
7/02/2009	20:31	180	17	29.4	37	10	100	14	8
7/02/2009	21:00	200	7	28.2	41	10	100	9	3
7/02/2009	21:30	170	2	25.8	48	10	100	6	1
7/02/2009	22:00	190	9	26.3	47	10	100	7	3
7/02/2009	22:30	170	9	26.8	46	10	100	8	3
7/02/2009	23:00	180	9	26.8	46	10	100	8	3
7/02/2009	23:16	250	30	26	51	10	100	10	14
7/02/2009	23:30	260	20	24	62	10	100	5	6
8/02/2009	00:00	320	7	22.8	67	10	100	3	2
8/02/2009	00:30	160	9	22.5	67	10	100	3	2
8/02/2009	01:00	200	15	21.5	71	10	100	3	3
8/02/2009	01:14	110	15	20.6	77	10	100	2	3
8/02/2009	01:24	170	11	20	80	10	100	2	2
8/02/2009	01:38	140	13	19.6	83	10	100	2	2
8/02/2009	01:54	120	13	19.6	82	10	100	2	2
8/02/2009	02:30	190	7	19	82	10	100	2	1
8/02/2009	03:01	180	9	18.8	82	10	100	2	2
8/02/2009	03:30	60	7	18.6	83	10	100	2	1
8/02/2009	04:00	160	2	18.5	82	10	100	1	1
8/02/2009	04:30	170	7	18.4	83	10	100	2	1
8/02/2009	05:00	150	6	18.3	83	10	100	1	1

Table 7: Kilmore Gap AWS (528m ASL)

Date	Time (EDT)	Wind Direction	Wind Speed (km/h)	Temperature (°C)	Relative Humidity (%)	Drought Factor	Curing	Forest FDI	Grass FDI
6/02/2009	23:00	160	13	23	41		90		3
7/02/2009	00:00	70	17	25.6	33		90		6
7/02/2009	00:30	30	22	25.9	35		90		8
7/02/2009	01:00	20	26	24.9	39		90		10
7/02/2009	01:30	10	30	24.9	42		90		12
7/02/2009	02:00	20	30	25.6	41		90		12



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7/02/2009	02:30	20	30	26	39	90	13
7/02/2009	03:00	30	28	25.9	39	90	11
7/02/2009	03:30	20	28	26.1	38	90	11
7/02/2009	04:00	20	30	26.1	37	90	13
7/02/2009	04:30	20	31	25.6	38	90	14
7/02/2009	05:00	20	31	25.7	38	90	14
7/02/2009	05:30	20	31	24.9	40	90	13
7/02/2009	06:00	30	30	25.2	39	90	12
7/02/2009	06:30	20	30	25.1	39	90	12
7/02/2009	07:00	10	30	25.2	39	90	12
7/02/2009	07:30	10	33	25.7	36	90	16
7/02/2009	08:00	10	39	26.3	35	90	23
7/02/2009	08:30	10	43	27.7	32	90	30
7/02/2009	09:00	10	43	28.5	31	90	31
7/02/2009	09:12	10	43	28.7	30	90	32
7/02/2009	09:30	10	46	29.2	30	90	39
7/02/2009	10:00	10	46	30.8	28	90	42
7/02/2009	10:11	10	44	31.6	27	90	41
7/02/2009	10:30	10	52	32.8	23	90	65
7/02/2009	10:40	10	44	34.2	22	90	49
7/02/2009	11:00	360	56	34.1	20	90	85
7/02/2009	11:08	360	61	34.2	20	90	107
7/02/2009	11:30	360	52	35.8	17	90	81
7/02/2009	11:34	360	50	36.1	17	90	76
7/02/2009	12:00	360	56	36.6	15	90	103
7/02/2009	12:09	360	54	37.7	14	90	101
7/02/2009	12:30	350	48	39.4	12	90	88
7/02/2009	13:00	350	68	39.6	11	90	216
7/02/2009	13:04	350	63	40.3	11	90	177
7/02/2009	13:30	330	57	40.1	10	90	144
7/02/2009	14:00	330	46	42	10	90	93
7/02/2009	14:13	350	72	41	10	90	267
7/02/2009	14:30	340	61	41.1	10	90	173
7/02/2009	14:41	340	41	42.5	10	90	72
7/02/2009	14:42	340	43	42.5	9	90	81
7/02/2009	14:45	340	65	41.7	9	90	212
7/02/2009	14:46	330	65	41.5	9	90	211
7/02/2009	15:00	330	63	41.4	10	90	188
7/02/2009	15:30	330	57	41.8	10	90	151
7/02/2009	16:00	320	54	41.6	9	90	133
7/02/2009	16:30	310	54	40.5	9	90	129
7/02/2009	17:00	320	44	40.6	10	90	82
7/02/2009	17:30	320	46	40.5	10	90	89
7/02/2009	18:00	310	37	40.1	10	90	55
7/02/2009	18:10	270	17	39.9	10	90	15
7/02/2009	18:13	220	26	33.1	24	90	16
7/02/2009	18:19	210	31	30.3	30	90	19
7/02/2009	18:30	210	31	28.8	34	90	17
7/02/2009	19:00	200	26	27.9	38	90	11
7/02/2009	19:30	190	28	28.1	35	90	13
7/02/2009	20:00	200	31	27.7	36	90	15
7/02/2009	20:30	180	31	26.7	40	90	14
7/02/2009	21:00	170	24	25.8	44	90	8
7/02/2009	21:30	160	19	24.7	51	90	5
7/02/2009	22:00	170	20	24	52	90	5
7/02/2009	22:30	160	20	24.3	50	90	6
7/02/2009	23:00	160	22	24.5	48	90	6
7/02/2009	23:30	180	26	22.1	64	90	6

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7/02/2009	23:33	180	28	20	75	90	6
7/02/2009	23:51	190	24	17.6	90	90	3
8/02/2009	00:00	190	22	17.3	92	90	3
8/02/2009	00:19	210	28	17.3	91	90	4
8/02/2009	00:30	170	28	17.2	92	90	4
8/02/2009	00:37	130	41	17	92	90	9
8/02/2009	00:40	130	41	16.9	93	90	8
8/02/2009	00:45	170	20	17	94	90	3
8/02/2009	00:54	180	26	16.9	94	90	4
8/02/2009	01:00	170	30	16.8	94	90	5
8/02/2009	01:30	180	22	16.6	96	90	3
8/02/2009	02:00	160	20	16.4	96	90	2
8/02/2009	02:30	170	20	16	97	90	2
8/02/2009	02:52	170	19	15.9	97	90	2
8/02/2009	03:00	140	20	15.8	97	90	2
8/02/2009	03:02	150	20	15.9	97	90	2
8/02/2009	03:30	170	22	15.7	98	90	3
8/02/2009	03:43	170	15	15.7	98	90	2
8/02/2009	04:00	180	17	15.5	98	90	2
8/02/2009	04:30	170	19	15.4	98	90	2
8/02/2009	04:43	180	17	15.3	98	90	2
8/02/2009	05:00	170	17	15.2	98	90	0

Table 8: Eildon AWS (635m ASL)

Date	Time (EDT)	Wind Direction	Wind Speed (km/h)	Temperature (°C)	Relative Humidity (%)	Drought Factor	Curing	Forest FDI	Grass FDI
6/02/2009	23:00	100	22	27	35	10	95	12	11
7/02/2009	00:00	90	20	26.7	36	10	95	11	9
7/02/2009	00:30	90	22	26.3	39	10	95	10	10
7/02/2009	01:00	80	24	26	40	10	95	10	11
7/02/2009	01:30	70	20	25.5	42	10	95	9	8
7/02/2009	02:00	50	15	24.6	46	10	95	7	5
7/02/2009	02:30	40	13	25	44	10	95	7	4
7/02/2009	03:00	70	15	25.5	43	10	95	8	5
7/02/2009	03:30	70	20	25.3	43	10	95	9	8
7/02/2009	04:00	70	20	25.2	44	10	95	8	8
7/02/2009	04:30	50	19	23.7	50	10	95	6	6
7/02/2009	05:00	60	20	23.6	50	10	95	6	7
7/02/2009	05:30	60	20	23.8	48	10	95	7	7
7/02/2009	06:00	60	22	23.7	48	10	95	7	8
7/02/2009	06:30	60	24	24.9	40	10	95	10	11
7/02/2009	07:00	50	24	27	31	10	95	14	13
7/02/2009	07:30	40	24	27.2	32	10	95	14	13
7/02/2009	08:00	20	24	27.1	32	10	95	14	13
7/02/2009	08:30	20	22	27.5	32	10	95	14	12
7/02/2009	09:00	30	24	28.5	33	10	95	14	13
7/02/2009	09:30	30	24	29.9	29	10	95	17	15
7/02/2009	10:00	30	22	32.1	25	10	95	20	15
7/02/2009	10:30	30	24	33.7	24	10	95	23	18
7/02/2009	11:00	40	22	36.1	19	10	95	29	20
7/02/2009	11:30	40	24	36.9	16	10	95	34	24
7/02/2009	11:39	10	43	36.2	15	10	95	43	70
7/02/2009	12:00	20	31	36.8	15	10	95	38	39
7/02/2009	12:30	20	28	37.8	15	10	95	38	33



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7/02/2009	12:59	30	30	38	14	10	95	40	38
7/02/2009	13:01	20	31	38.5	13	10	95	43	44
7/02/2009	13:30	360	35	39.2	11	10	95	50	58
7/02/2009	13:41	320	39	39.1	11	10	95	52	71
7/02/2009	13:59	360	39	39.4	11	10	95	52	72
7/02/2009	14:01	360	41	39.4	11	10	95	54	79
7/02/2009	14:09	310	26	40.4	11	10	95	46	35
7/02/2009	14:13	330	28	40.2	11	10	95	47	39
7/02/2009	14:30	340	39	39.4	11	10	95	52	72
7/02/2009	14:44	310	46	40.4	10	10	95	62	110
7/02/2009	15:00	320	35	40.6	10	10	95	54	63
7/02/2009	15:22	360	35	40.6	9	10	95	56	65
7/02/2009	15:26	320	30	41	9	10	95	53	48
7/02/2009	15:31	300	33	41.4	9	10	95	56	60
7/02/2009	15:40	350	44	40.3	10	10	95	60	100
7/02/2009	15:54	320	31	40.8	10	10	95	52	52
7/02/2009	16:01	310	35	40.6	10	10	95	54	63
7/02/2009	16:30	320	44	40.3	10	10	95	60	100
7/02/2009	16:43	340	33	41.1	10	10	95	54	58
7/02/2009	16:59	300	43	40.8	10	10	95	60	93
7/02/2009	17:01	300	43	40.5	10	10	95	59	92
7/02/2009	17:14	340	37	40.2	10	10	95	54	69
7/02/2009	17:22	300	30	40.5	10	10	95	50	46
7/02/2009	17:31	340	43	40	10	10	95	58	91
7/02/2009	17:33	330	41	40	10	10	95	57	83
7/02/2009	18:00	320	33	39.6	10	10	95	51	55
7/02/2009	18:13	350	30	39.6	11	10	95	47	43
7/02/2009	18:30	310	22	39.5	11	10	95	43	27
7/02/2009	18:35	320	28	39.4	11	10	95	46	39
7/02/2009	19:00	320	28	38.9	11	10	95	45	38
7/02/2009	19:30	340	30	38.5	12	10	95	44	41
7/02/2009	20:00	340	33	38.2	12	10	95	45	50
7/02/2009	20:30	250	35	34.5	19	10	95	32	41
7/02/2009	21:00	270	30	33	22	10	95	26	27
7/02/2009	21:30	270	19	32.2	24	10	95	20	12
7/02/2009	22:00	200	7	31.2	25	10	95	17	4
7/02/2009	22:30	110	9	30.5	26	10	95	16	5
7/02/2009	23:00	70	9	30.1	27	10	95	15	5
7/02/2009	23:30	320	7	30.5	27	10	95	15	4
8/02/2009	00:00	60	7	29.1	30	10	95	13	3
8/02/2009	00:30	140	7	29.2	30	10	95	13	4
8/02/2009	01:00	270	9	28.4	36	10	95	10	4
8/02/2009	01:30	280	13	27.1	40	10	95	9	5
8/02/2009	02:00	260	4	26.9	39	10	95	8	2
8/02/2009	02:30	270	20	25.8	43	10	95	9	8
8/02/2009	03:00	120	9	25.6	44	10	95	7	3
8/02/2009	03:30	260	19	24.5	48	10	95	7	6
8/02/2009	04:00	260	15	24	50	10	95	6	4
8/02/2009	04:30	270	11	24.2	50	10	95	6	3
8/02/2009	05:00	260	13	23.2	54	10	95	5	3

Table 9: LaTrobe Valley Airport AWS (56m ASL)

Date	Time (EDT)	Wind Direction	Wind Speed (km/h)	Temperature (°C)	Relative Humidity (%)	Drought Factor	Curing	Forest FDI	Grass FDI
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6/02/2009	22:02	80	13	20	74	10	100	3	3
7/02/2009	00:02	80	13	19.2	75	10	100	2	3
7/02/2009	00:32	90	11	19.2	75	10	100	2	2
7/02/2009	01:02	80	13	19.4	75	10	100	2	3
7/02/2009	01:32	70	13	19.1	76	10	100	2	3
7/02/2009	02:02	70	11	18.8	77	10	100	2	2
7/02/2009	02:32	40	9	17.1	80	10	100	2	2
7/02/2009	03:02	50	9	17.1	84	10	100	2	2
7/02/2009	03:32	50	7	17.3	82	10	100	2	1
7/02/2009	04:02	10	11	16.9	85	10	100	2	2
7/02/2009	04:32	20	11	16.6	86	10	100	1	2
7/02/2009	05:02	30	9	16.6	87	10	100	1	1
7/02/2009	05:32	40	11	16.8	87	10	100	1	2
7/02/2009	06:06	40	13	16.7	87	10	100	1	2
7/02/2009	06:32	90	6	17	85	10	100	1	1
7/02/2009	07:02	0	0	16.9	86	10	100	1	0
7/02/2009	07:32	160	6	18.7	81	10	100	2	1
7/02/2009	08:02	0	0	19.6	75	10	100	2	0
7/02/2009	08:32	50	6	22.3	65	10	100	3	1
7/02/2009	09:07	90	2	25.7	54	10	100	5	1
7/02/2009	09:32	30	7	27.8	47	10	100	7	3
7/02/2009	10:02	100	6	30.4	39	10	100	10	3
7/02/2009	10:32	190	7	33.2	33	10	100	14	4
7/02/2009	11:02	220	9	35.8	27	10	100	20	6
7/02/2009	11:32	230	9	39.7	21	10	100	28	8
7/02/2009	12:05	310	28	42.6	11	10	100	68	47
7/02/2009	12:18	340	39	42.6	10	10	100	92	90
7/02/2009	12:25	310	43	42.9	10	10	100	101	110
7/02/2009	12:32	330	39	43.6	10	10	100	95	93
7/02/2009	12:55	300	39	43.8	10	10	100	96	93
7/02/2009	13:02	310	39	43.7	10	10	100	95	93
7/02/2009	13:12	320	35	43.9	10	10	100	88	77
7/02/2009	13:32	320	43	44	10	10	100	105	113
7/02/2009	13:33	320	43	43.8	10	10	100	104	113
7/02/2009	13:40	350	39	44	9	10	100	100	97
7/02/2009	13:43	310	31	44.4	9	10	100	85	66
7/02/2009	14:02	320	41	43.8	9	10	100	103	106
7/02/2009	14:18	320	31	44.2	9	10	100	84	66
7/02/2009	14:32	310	43	44.7	9	10	100	111	120
7/02/2009	14:36	310	43	44.2	9	10	100	110	118
7/02/2009	15:02	330	43	44.5	10	10	100	107	115
7/02/2009	15:14	320	39	44.7	9	10	100	102	99
7/02/2009	15:32	310	41	45.3	9	10	100	109	111
7/02/2009	15:39	330	39	45.1	9	10	100	103	100
7/02/2009	15:43	300	44	45.4	8	10	100	123	139
7/02/2009	16:02	310	28	46.1	9	10	100	83	56
7/02/2009	16:05	310	30	45.8	9	10	100	85	62
7/02/2009	16:32	320	35	44.1	9	10	100	92	80
7/02/2009	17:02	310	41	43.2	9	10	100	101	105
7/02/2009	17:32	320	26	42.3	9	10	100	70	45
7/02/2009	17:54	340	28	42	10	10	100	69	48
7/02/2009	18:02	330	37	42	10	10	100	86	81
7/02/2009	18:17	340	37	40.7	12	10	100	77	73
7/02/2009	18:18	260	44	37.4	15	10	100	74	88
7/02/2009	18:20	230	46	35.3	19	10	100	62	82
7/02/2009	18:24	200	43	34.6	21	10	100	52	64
7/02/2009	18:30	230	28	34	23	10	100	34	27
7/02/2009	18:32	230	30	33.7	23	10	100	35	30

Appendix 6
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

7/02/2009	19:02	210	26	31.3	29	10	100	24	19
7/02/2009	19:32	240	33	28.8	38	10	100	19	24
7/02/2009	20:02	260	11	28.4	42	10	100	10	5
7/02/2009	20:32	240	7	28.5	40	10	100	10	3
7/02/2009	21:02	0	0	28	43	10	100	7	1
7/02/2009	21:32	330	13	27.3	47	10	100	8	5
7/02/2009	22:02	270	7	26.1	54	10	100	5	2
7/02/2009	22:32	210	11	26.3	51	10	100	7	4
7/02/2009	23:02	240	19	26	51	10	100	8	7
7/02/2009	23:32	260	15	26.1	48	10	100	8	5
8/02/2009	00:02	220	28	24.5	53	10	100	9	12
8/02/2009	00:32	230	31	21.1	73	10	100	4	10
8/02/2009	00:46	240	31	20.6	73	10	100	4	10
8/02/2009	01:02	250	33	20.3	75	10	100	4	11
8/02/2009	01:32	250	30	20.1	74	10	100	4	9
8/02/2009	02:02	250	19	19.8	71	10	100	3	4
8/02/2009	02:09	270	33	20	71	10	100	5	11
8/02/2009	02:21	250	22	19.9	69	10	100	4	6
8/02/2009	02:32	250	22	19.7	70	10	100	4	6
8/02/2009	03:02	250	26	19.5	68	10	100	4	7
8/02/2009	03:32	260	24	19.1	76	10	100	3	6
8/02/2009	04:02	270	19	19.1	73	10	100	3	4
8/02/2009	04:32	270	17	19	73	10	100	3	4
8/02/2009	05:02	260	19	18.8	70	10	100	3	4

Table 10: Mt Buller AWS (1707m ASL)

Date	Time (EDT)	Wind Direction	Wind Speed (km/h)	Temperature (°C)	Relative Humidity (%)	Drought Factor	Curing	Forest FDI	Grass FDI
6/02/2009	22:58	360	20	21.1	38	9	100	10	9
6/02/2009	23:28	10	20	21.3	37	9	100	10	9
6/02/2009	23:58	360	19	21.3	38	9	100	10	7
7/02/2009	00:28	10	20	21.3	38	9	100	10	9
7/02/2009	00:58	360	24	21.1	38	9	100	11	11
7/02/2009	01:28	10	24	21.3	38	9	100	11	11
7/02/2009	01:58	10	20	20.7	39	9	100	9	8
7/02/2009	02:28	360	26	21.6	36	9	100	12	13
7/02/2009	02:58	10	22	21.2	37	9	100	11	10
7/02/2009	03:28	360	19	20.9	37	9	100	10	8
7/02/2009	03:58	350	19	20.9	36	9	100	10	8
7/02/2009	04:28	350	22	21.4	36	9	100	11	10
7/02/2009	04:58	340	28	21.5	35	9	100	13	15
7/02/2009	05:28	340	28	21.6	34	9	100	14	15
7/02/2009	05:58	350	24	21.1	35	9	100	12	12
7/02/2009	06:28	350	20	21.1	36	9	100	11	9
7/02/2009	06:58	350	20	21.1	36	9	100	11	9
7/02/2009	07:28	350	26	21.7	35	9	100	13	13
7/02/2009	07:58	360	26	21.6	36	9	100	12	13
7/02/2009	08:28	10	30	22.1	36	9	100	14	17
7/02/2009	08:37	10	31	22.3	35	9	100	15	19
7/02/2009	08:58	360	37	22.9	34	9	100	18	26
7/02/2009	09:11	360	37	23.1	35	9	100	17	26
7/02/2009	09:28	10	33	23.5	33	9	100	17	22
7/02/2009	09:33	10	35	23.2	33	9	100	18	25
7/02/2009	09:58	360	39	24	29	9	100	23	33



WIT.013.001.0100

Appendix 6

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

7/02/2009	10:28	360	48	24.3	29	9	100	29	53
7/02/2009	10:42	360	46	24.7	30	9	100	27	48
7/02/2009	10:58	360	46	24.7	31	9	100	26	47
7/02/2009	11:07	360	50	24.6	30	9	100	29	56
7/02/2009	11:28	360	52	25.1	28	9	100	33	65
7/02/2009	11:30	360	50	25.2	30	9	100	30	57
7/02/2009	11:58	360	50	25.5	29	9	100	31	59
7/02/2009	12:28	360	50	26.5	29	9	100	32	61
7/02/2009	12:58	10	39	27.2	30	9	100	25	36
7/02/2009	13:10	360	41	26.9	28	9	100	27	40
7/02/2009	13:28	360	46	27.9	28	9	100	32	54
7/02/2009	13:58	350	48	28.5	28	9	100	34	60
7/02/2009	14:28	360	52	28.6	20	9	100	49	85
7/02/2009	14:43	360	50	27.8	21	9	100	44	75
7/02/2009	14:58	350	52	29.6	19	9	100	53	90
7/02/2009	15:28	340	59	29.6	19	9	100	63	124
7/02/2009	15:33	340	61	29.3	18	9	100	67	136
7/02/2009	15:59	350	54	29.5	18	9	100	57	100
7/02/2009	16:28	340	61	29.5	17	9	100	70	141
7/02/2009	16:58	340	63	29.3	16	9	100	75	155
7/02/2009	17:00	360	44	29.3	16	9	100	49	69
7/02/2009	17:10	340	65	28.3	19	9	100	69	150
7/02/2009	17:28	340	56	29.1	19	9	100	57	105
7/02/2009	17:58	340	59	28.7	18	9	100	63	124
7/02/2009	18:28	340	52	28.5	20	9	100	49	85
7/02/2009	18:58	340	54	28	22	9	100	47	87
7/02/2009	19:28	340	54	27.6	23	9	100	45	84
7/02/2009	19:58	340	50	26.9	25	9	100	38	67
7/02/2009	20:28	350	46	26.7	26	9	100	33	55
7/02/2009	20:58	350	54	26.5	26	9	100	39	76
7/02/2009	21:28	350	52	26.5	26	9	100	37	70
7/02/2009	21:55	320	28	25.5	30	9	100	18	18
7/02/2009	21:58	260	19	24.7	32	9	100	13	9
7/02/2009	22:08	340	30	22.3	44	9	100	10	14
7/02/2009	22:28	330	31	23.1	39	9	100	13	18
7/02/2009	22:55	350	28	23.1	37	9	100	13	15
7/02/2009	22:58	350	28	23.2	37	9	100	13	15
7/02/2009	23:28	340	15	22.9	37	9	100	10	6
7/02/2009	23:58	330	20	23.2	36	9	100	11	9
8/02/2009	00:28	320	19	23.1	37	9	100	10	8
8/02/2009	00:58	340	11	22.3	39	9	100	8	4
8/02/2009	01:28	310	19	22.7	39	9	100	10	8
8/02/2009	01:58	320	20	22.3	39	9	100	10	9
8/02/2009	02:28	310	28	22.9	38	9	100	13	15
8/02/2009	02:58	310	20	22.3	40	9	100	10	8
8/02/2009	03:28	310	22	21.6	41	9	100	9	9
8/02/2009	03:58	320	17	22.3	39	9	100	9	7
8/02/2009	04:04	320	35	22.7	38	9	100	15	22
8/02/2009	04:28	330	24	21.9	40	9	100	10	11
8/02/2009	04:58	320	20	21.9	42	9	100	9	8

Appendix 7
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Appendix 7: Selected records for highest daily maximum temperature set on 7th of February 2009.

Station number	Location	Value	Date in 2009	Previous record	Date	Years of data
76047	Ouyen	46.8	7/2	46.7	14/2/2004	53
76064	Walpeup	48.1	7/2	46.6	31/1/1968	45
77094/77042	Swan Hill	46.9	7/2	46.7	10/1/1939	101
78031	Nhill	47.1	7/2	45.9	13/1/1939	102
78077	Warracknabeal	46.8	7/2	46.0	24/1/1982	40
79023	Horsham	47.6	7/2	45.7	31/1/1968	53
79028	Longerenong	47.6	7/2	46.4	31/1/1968	45
80015	Echuca	46.8	7/2	45.3	3/1/1990	53
80023	Kerang	46.9	7/2	46.1	10/1/1939	102
80091	Kyabram	46.6	7/2	44.7	24/1/1982	45
81123/81003	Bendigo	45.4	7/2	44.3	10/1/1939	101
81049	Tatura	44.8*	7/2	43.3	24/1/1982	44
82042	Strathbogie	42.0	7/2	41.5	24/1/1982	36
85096	Wilsons Promontory	42.0*	7/2	41.1	18/1/1959	101
86038	Essendon	47.3	7/2	45.8	31/1/1968	40
86071	Melbourne	46.4	7/2	45.6	13/1/1939	154
86077	Moorabbin	46.7*	7/2	44.3	25/1/2003	38
86104	Scoresby	46.1*	7/2	42.8	25/1/2003	42
86127	Wonthaggi	45.0*	7/2	43.0	24/1/1982	41
86282	Melbourne Airport	46.8	7/2	44.6	25/1/2003	39
87031	Laverton	47.5	7/2	45.0	25/1/2003	66
87163/87117 /87025	Geelong	47.4*	7/2	44.8	25/1/2003	102
88023	Lake Eildon	45.4*	7/2	42.3	24/1/1982	39
88110	Castlemaine	43.9	7/2	43.7	31/1/1968	43
89002	Ballarat	44.1	7/2	42.5	13/1/1939	102
89085	Ararat	44.7	7/2	42.9	25/1/2003	40
90186/90172 /90082	Warrnambool	44.8	7/2	44.4	13/1/1939, 17/1/1959	102

Table 11: Selected records (stations with 35 years of data or more) for highest daily maximum temperature set on 7 February 2009. Where an asterisk is shown, the record breaks one which was set earlier in the 2009 heatwave. Previous records shown are for the period prior to 2009.

Note: Many other Victorian stations with less than 35 years of data also set their highest daily maximum temperature on 7 February 2009 including Hopetoun (48.8°C) which is now the all-time Victorian state record.



Appendix 8
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Appendix 8: Forecasts issued specifically for Saturday 7 February and fire weather warnings issued during the period 4 to 7 February

Products displayed with an IDV code have an associated date and time (displayed in 24 hour time) listed above this code. These products were issued by the Bureau's Victorian RFC despatch system and this date and time is the commencement of distribution for the product.

Note: The operational phone and fax numbers listed in Spot Fire Forecasts have been replaced by XXXX-XXXX.

Sunday 1 February

2009-02-01 05:11

IDV10450
Australian Government Bureau of Meteorology
Victoria

Melbourne Forecast
Issued at 5:00 am EDT on Sunday 1 February 2009
for the period until midnight EDT Saturday 7 February 2009.

Warning Summary at issue time
Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Sunday
Partly cloudy. Areas of smoke haze this morning. Isolated showers and the chance of thunderstorms this afternoon and evening. Winds south to southeasterly averaging up to 30 km/h.

City Shower or two developing. Max 31

Around Melbourne

Frankston	Max 27	Geelong	Max 29
Tullamarine	Max 35	Laverton	Max 30
Yarra Glen	Max 35	Scoresby	Max 32
Mount Dandenong	Max 29	Watsonia	Max 33

Maximum Fire Danger: Very High
UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Monday
Partly cloudy. Isolated thunderstorms in the afternoon and evening in the east.
Isolated showers late in the evening. Winds south to southeasterly averaging up to 25 km/h tending southerly up to 35 km/h during the afternoon.

City Partly cloudy. Min 21 Max 34

Forecast for Tuesday
Morning cloud. Patchy drizzle during the morning. Winds south to southeasterly averaging up to 30 km/h.



WIT.013.001.0103

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City	A little drizzle clearing.	Min 21	Max 29
Forecast for Wednesday Morning cloud. Winds south to southeasterly averaging up to 30 km/h.			
City	Morning cloud.	Min 20	Max 31
Forecast for Thursday Mostly sunny. Winds northwest to southwesterly averaging up to 25 km/h tending southerly during the evening.			
City	Sunny day.	Min 18	Max 31
Forecast for Friday Morning cloud. Winds southeasterly averaging up to 25 km/h.			
City	Morning cloud.	Min 19	Max 27
Forecast for Saturday Partly cloudy. Isolated showers. Light winds tending westerly up to 30 km/h during the afternoon.			
City	Shower or two.	Min 19	Max 26
The next routine forecast will be issued at 4:20 pm EDT Sunday.			

2009-02-01 05:33

IDV10706
Australian Government Bureau of Meteorology
Victoria

Bendigo Forecast

Issued at 5:30 am EDT on Sunday 1 February 2009
for the period until midnight EDT Saturday 7 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the North Western Total Fire Ban District for Sunday 01 February.

Fire weather warning for the Northern Country forecast district.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Sunday

Becoming cloudy. A shower or two and the chance of thunderstorms this afternoon and evening. Winds south to southeasterly averaging 25 to 30 km/h.

Precis: Late shower or two. Max 39

Maximum Fire Danger: Extreme

UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Monday

Partly cloudy. Winds southeasterly averaging up to 30 km/h.

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 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission



EXTENDED OUTLOOK WEATHER PRODUCT

THURSDAY 5 FEB 2009

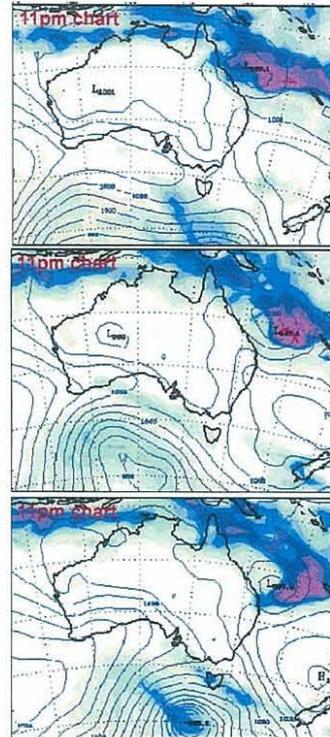
Airflow to tend more southerly from the west as a trough pushes eastwards across Victoria in response to a cold front passing to the south. Hot at first, especially in the north but the cooler southerlies becoming dominant in the south. Thunderstorm activity still possible in the northeast and isolated showers developing in the south.

FRIDAY 6 FEB 2009

Ridge pushing across Bass strait from the west. Mild to warm conditions across southern Victoria in a southerly airflow that weakens until seabreezes take over. Very warm to hot in the north and drying in the afternoon with relatively light winds.

SATURDAY 7 FEB 2009

A trough should deepen over NSW and central Victoria ahead of a relatively strong cold front approaching from the west. This day is tricky as we could get very hot northwesterlies back ahead of the trough and then local thunderstorms developing with and behind the trough along with cooler freshening southwest to southerlies. This day has the potential to be a problem day for fire weather.



Information provided for internal briefing purposes within the Integrated Emergency Coordination Centre and not to be used for any other purpose or distributed without permission.



2009-02-01 16:20

IDV10450
 Australian Government Bureau of Meteorology
 Victoria

Melbourne Forecast

Issued at 4:20 pm EDT on Sunday 1 February 2009
 for the period until midnight EDT Sunday 8 February 2009.

Warning Summary at issue time

Strong wind warning for Port Phillip.

Strong wind warning for Western Port.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Sunday

Partly cloudy. Isolated showers and thunderstorms. Winds south to southeasterly averaging up to 30 km/h.

Forecast for Monday

Partly cloudy. Isolated showers. Isolated thunderstorms from midday. Winds south to southeasterly averaging up to 25 km/h tending southerly up to 35 km/h during the afternoon.

City	Shower or two then storms.	Min 21	Max 29
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WIT.013.001.0107

Appendix 8

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Around Melbourne

Frankston	Min 20	Max 28	Geelong	Min 17	Max 28
Tullamarine	Min 19	Max 32	Laverton	Min 18	Max 28
Yarra Glen	Min 16	Max 34	Scoresby	Min 19	Max 33
Mount Dandenong	Min 17	Max 30	Watsonia	Min 19	Max 34

Maximum Fire Danger: High

UV Alert from 9:50 am to 5:10 pm, UV Index predicted to reach 9 [Very High]

Forecast for Tuesday

Morning cloud. Patchy drizzle during the morning. Winds south to southeasterly averaging up to 30 km/h.

City A little drizzle clearing. Min 21 Max 29

Forecast for Wednesday

Morning cloud. Winds south to southeasterly averaging up to 30 km/h.

City Morning cloud. Min 20 Max 31

Forecast for Thursday

Mostly sunny. Winds mainly northeast to northwesterly averaging up to 20 km/h tending southwesterly up to 30 km/h around midday.

City Mostly sunny. Min 18 Max 32

Forecast for Friday

Morning cloud. Winds south to southeasterly averaging up to 25 km/h.

City Morning cloud. Min 19 Max 30

Forecast for Saturday

Partly cloudy. Isolated showers later in the day. Winds northwest to southwesterly averaging up to 25 km/h tending south to southwesterly during the evening.

City Shower or two developing. Min 21 Max 32

Forecast for Sunday

Partly cloudy. Isolated showers. Winds south to southwesterly averaging up to 35 km/h.

City Shower or two. Min 18 Max 21

The next routine forecast will be issued at 5:00 am EDT Monday.

2009-02-01 16:37

IDV10706

Australian Government Bureau of Meteorology
Victoria

Bendigo Forecast

Issued at 4:30 pm EDT on Sunday 1 February 2009
for the period until midnight EDT Sunday 8 February 2009.

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the North Western Total Fire Ban District for Sunday 01 February.

Fire weather warning for the Northern Country forecast district.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Sunday

Partly cloudy. A shower or two and the chance of thunderstorms. Winds southerly averaging 25 to 30 km/h.

Forecast for Monday

Partly cloudy. A shower or two, clearing around dawn, then a shower or two in the late afternoon. The chance of thunderstorms in the late afternoon. Winds southeasterly averaging up to 30 km/h.

Precis: Shower or two then storms. Min 21 Max 37

Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 9 [Very High]

Forecast for Tuesday

Sunny. Winds southerly averaging 20 to 30 km/h.

Precis: Sunny. Min 18 Max 35

Forecast for Wednesday

Sunny. Winds south to southeasterly averaging up to 25 km/h.

Precis: Sunny. Min 17 Max 36

Forecast for Thursday

Sunny. Light winds tending southwesterly up to 25 km/h during the morning.

Precis: Sunny. Min 16 Max 37

Forecast for Friday

Sunny. Winds southerly averaging 10 to 20 km/h tending northwest to southwesterly during the afternoon.

Precis: Sunny. Min 16 Max 38

Forecast for Saturday

Becoming cloudy. A shower or two later in the day. Winds northwest to southwesterly averaging 25 to 35 km/h.

Precis: Late shower or two. Min 20 Max 38

Forecast for Sunday

Partly cloudy. A shower or two. Winds south to southwesterly averaging 20 to 35 km/h.

Precis: Shower or two. Min 14 Max 24

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The next routine forecast will be issued at 5:30 am EDT Monday.

2009-02-01 16:39

IDV10712
Australian Government Bureau of Meteorology
Victoria

Latrobe Valley Forecast
Issued at 4:30 pm EDT on Sunday 1 February 2009
for the period until midnight EDT Sunday 8 February 2009.

Warning Summary at issue time
Nil.
Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Sunday
Partly cloudy. A shower or two and the chance of thunderstorms. Winds easterly averaging 15 to 20 km/h.

Forecast for Monday
Partly cloudy. A shower or two, clearing around dawn, then a shower or two during the afternoon. The chance of thunderstorms in the early afternoon.
Winds southeasterly averaging 10 to 20 km/h.

Precis: Shower or two then storms. Min 17 Max 33

Maximum Fire Danger: High
UV Alert from 9:50 am to 5:10 pm, UV Index predicted to reach 8 [Very High]

Forecast for Tuesday
Partly cloudy. Light winds tending east to southeasterly 20 to 35 km/h around midday.

Precis: Partly cloudy. Min 17 Max 28

Forecast for Wednesday
Cloudy. A little drizzle during the morning. Winds easterly averaging 20 to 35 km/h.

Precis: A little drizzle clearing. Min 17 Max 29

Forecast for Thursday
Sunny. Winds northeasterly averaging 15 to 20 km/h tending southwesterly 20 to 25 km/h during the afternoon.

Precis: Sunny. Min 15 Max 34

Forecast for Friday
Morning cloud. Light winds tending northeast to southeasterly up to 20 km/h during the afternoon.

Precis: Morning cloud. Min 14 Max 32

Forecast for Saturday



WIT.013.001.0110

Appendix 8

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Becoming cloudy. A shower or two later in the day. Light winds tending south to southwesterly up to 20 km/h during the afternoon.

Precis: Late shower or two. Min 16 Max 37

Forecast for Sunday

Partly cloudy. A shower or two. Winds west to southwesterly averaging 25 to 35 km/h becoming southwesterly up to 30 km/h during the evening.

Precis: Shower or two. Min 13 Max 23

The next routine forecast will be issued at 5:30 am EDT Monday.



WIT.013.001.0111

Appendix 8
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Monday 2 February

2009-02-02 05:10

IDV10450
Australian Government Bureau of Meteorology
Victoria

Melbourne Forecast

Issued at 5:00 am EDT on Monday 2 February 2009
for the period until midnight EDT Sunday 8 February 2009.

Warning Summary at issue time

Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Monday

Humid and partly cloudy. Isolated showers and thunderstorms, mainly in the afternoon and evening. Winds southerly averaging up to 25 km/h increasing to up to 35 km/h during the afternoon.

City Sultry and unsettled. Max 31

Around Melbourne

Frankston	Max 28	Geelong	Max 28
Tullamarine	Max 32	Laverton	Max 28
Yarra Glen	Max 34	Scoresby	Max 33
Mount Dandenong	Max 30	Watsonia	Max 34

Maximum Fire Danger: High

UV Alert from 9:50 am to 5:10 pm, UV Index predicted to reach 9 [Very High]

Forecast for Tuesday

Morning cloud. Patchy drizzle during the morning. Winds south to southeasterly averaging up to 30 km/h.

City A little drizzle clearing. Min 21 Max 29

Forecast for Wednesday

Morning cloud. Winds south to southeasterly averaging up to 30 km/h.

City Morning cloud. Min 20 Max 31

Forecast for Thursday

Mostly sunny. Winds mainly northeast to northwesterly averaging up to 20 km/h tending southwesterly up to 30 km/h around midday.

City Mostly sunny. Min 18 Max 32

Forecast for Friday

Morning cloud. Winds south to southeasterly averaging up to 25 km/h.

City Morning cloud. Min 19 Max 30

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Forecast for Saturday

Partly cloudy. Isolated showers later in the day. Winds northwest to southwesterly averaging up to 25 km/h tending south to southwesterly during the evening.

City Shower or two developing. Min 21 Max 32

Forecast for Sunday

Partly cloudy. Isolated showers. Winds south to southwesterly averaging up to 35 km/h.

City Cooler. Shower or two. Min 18 Max 21

The next routine forecast will be issued at 4:20 pm EDT Monday.

2009-02-02 05:33

IDV10706

Australian Government Bureau of Meteorology
Victoria

Bendigo Forecast

Issued at 5:30 am EDT on Monday 2 February 2009
for the period until midnight EDT Sunday 8 February 2009.

Warning Summary at issue time

Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Monday

Partly cloudy. A shower or two and the chance of thunderstorms in the late afternoon. Winds east to southeasterly averaging 10 to 20 km/h tending south to southeasterly 20 to 30 km/h during the afternoon.

Precis: Storms and shower or two. Max 37

Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 9 [Very High]

Forecast for Tuesday

Sunny. Winds southerly averaging 20 to 30 km/h.

Precis: Sunny. Min 18 Max 35

Forecast for Wednesday

Sunny. Winds south to southeasterly averaging up to 25 km/h.

Precis: Sunny. Min 17 Max 36

Forecast for Thursday

Sunny. Light winds tending southwesterly up to 25 km/h during the morning.

Precis: Sunny. Min 16 Max 37



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Forecast for Thursday

Sunny. Winds northeasterly averaging 15 to 20 km/h tending southwesterly 20 to 25 km/h during the afternoon.

Precis: Sunny.

Min 15

Max 34

Forecast for Friday

Morning cloud. Light winds tending northeast to southeasterly up to 20 km/h during the afternoon.

Precis: Morning cloud.

Min 14

Max 32

Forecast for Saturday

Becoming cloudy. A shower or two later in the day. Light winds tending south to southwesterly up to 20 km/h during the afternoon.

Precis: Late shower or two.

Min 16

Max 37

Forecast for Sunday

Partly cloudy. A shower or two. Winds west to southwesterly averaging 25 to 35 km/h becoming southwesterly up to 30 km/h during the evening.

Precis: Shower or two.

Min 13

Max 23

The next routine forecast will be issued at 4:30 pm EDT Monday.

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission



EXTENDED OUTLOOK WEATHER PRODUCT

FRIDAY 6 FEB 2009

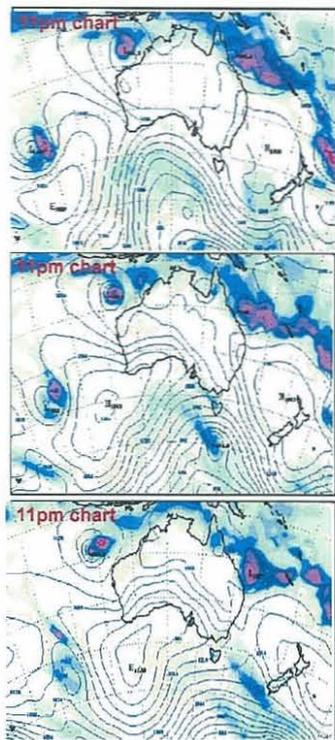
High pressure system moves into the Tasman sea as a developing frontal passage moves into the Southern Ocean. Winds will start to shift around to the northwest. The drier continental air will continue to migrate into northern Victoria resulting in very warm to hot in the north temperatures and drying in the afternoon. Winds in the upper levels will freshen with central and elevated areas in the west seeing fresh northerly winds in the morning around 30-40km/hr, easing to average 25km/hr by afternoon. Areas north of the Dividing range should see lighter winds. A weak prefrontal trough will develop along the coast again and in the far west before stalling overnight.

SATURDAY 7 FEB 2009

The cold front developing in the Southern Ocean will catch up will impact on the western half the state during the afternoon. Ahead of the frontal passage strong hot dry northwesterly winds will impact on the state, including the east, with central and elevated areas seeing winds above 40km/hr - possibly up to 60-80km/hr, in the morning to early afternoon, before cooler fresh to strong southwesterly winds push through, with scattered showers and thunderstorms behind. Fire danger will be extreme in both forest and grass due to the stong winds, low RH and temps again in the 40s. Timing of the change may vary, so areas impacted the most may differ depending on the change timing.

SUNDAY 8 FEB 2009

The cold front has alot of depth to it and should have pushed across most of Victoria early in the day with much cooler conditions extending throughout along with relatively fresh southerly winds. Scattered showers expected, mainly on and south of the dividing range.



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Department of Sustainability and Environment




2009-02-02 16:21

IDV10450
Australian Government Bureau of Meteorology
Victoria

Melbourne Forecast

Issued at 4:20 pm EDT on Monday 2 February 2009
for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time
Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Monday

Becoming cloudy tonight. Winds southerly averaging up to 35 km/h.

Forecast for Tuesday

Patchy drizzle during the morning. A mainly sunny afternoon. Winds south to southeasterly averaging up to 30 km/h.

City	Drizzle clearing.	Min 21	Max 29
Around Melbourne			
Frankston	Min 18 Max 29	Geelong	Min 16 Max 26
Tullamarine	Min 19 Max 30	Laverton	Min 18 Max 27



WIT.013.001.0116

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Yarra Glen	Min 16	Max 31	Scoresby	Min 18	Max 30
Mount Dandenong	Min 17	Max 26	Watsonia	Min 19	Max 30

Maximum Fire Danger: Very High

UV Alert from 10:00 am to 5:10 pm, UV Index predicted to reach 8 [Very High]

Forecast for Wednesday

Morning cloud. Winds south to southeasterly averaging up to 30 km/h.

City	Morning cloud.	Min 20	Max 31
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Forecast for Thursday

Mostly sunny. Winds northwest to southwesterly averaging up to 25 km/h tending south to southwesterly up to 30 km/h during the afternoon.

City	Mostly sunny.	Min 18	Max 32
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Forecast for Friday

Morning cloud. Isolated showers in the morning. Winds southwesterly averaging up to 25 km/h tending north to northwesterly up to 20 km/h later in the evening.

City	Morning cloud.	Min 19	Max 30
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Forecast for Saturday

Isolated showers later in the day. Winds northwest averaging up to 45 km/h shifting cooler south to southwesterly up to 35 km/h during the evening.

City	Windy. Late cool change.	Min 21	Max 37
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Forecast for Sunday

Partly cloudy. Isolated showers. Winds south to southwesterly averaging up to 35 km/h.

City	Shower or two.	Min 18	Max 24
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Forecast for Monday

Partly cloudy. Isolated showers. Winds south to southwesterly averaging 15 to 25 km/h.

City	Shower or two.	Min 13	Max 22
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The next routine forecast will be issued at 5:00 am EDT Tuesday.

2009-02-02 16:45

IDV10706
 Australian Government Bureau of Meteorology
 Victoria

Bendigo Forecast

Issued at 4:30 pm EDT on Monday 2 February 2009
 for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time

Fire weather warning for the Northern Country forecast district.
 Details of warnings are available on the Bureau's website www.bom.gov.au, by

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-02 16:47

IDV10712
Australian Government Bureau of Meteorology
Victoria

Latrobe Valley Forecast
Issued at 4:30 pm EDT on Monday 2 February 2009
for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time
Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Monday
Cloudy. Winds southeasterly averaging 10 to 20 km/h.

Forecast for Tuesday
Cloudy. A little drizzle during the morning. Winds southeasterly averaging up to 30 km/h tending east to southeasterly 30 to 45 km/h by early evening.

Precis: A little drizzle then windy. Min 17 Max 28

Maximum Fire Danger: High
UV Alert from 9:50 am to 5:10 pm, UV Index predicted to reach 8 [Very High]

Forecast for Wednesday
Cloudy. A little drizzle during the morning. Winds east to northeasterly averaging 20 to 35 km/h.

Precis: A little drizzle clearing. Min 17 Max 31

Forecast for Thursday
Sunny. Winds northeast to northwesterly averaging 15 to 25 km/h tending west to southwesterly 20 to 35 km/h during the afternoon.

Precis: Sunny. Min 15 Max 35

Forecast for Friday
Partly cloudy. A shower or two until afternoon. Winds southeast to southwesterly averaging up to 20 km/h tending cooler northeast to southeasterly by early evening.

Precis: Shower or two. Min 14 Max 32

Forecast for Saturday
Becoming cloudy. A shower or two later in the day. Light winds tending northwest to southwesterly up to 30 km/h during the morning.

Precis: Shower or two developing. Min 16 Max 40

Forecast for Sunday
Partly cloudy. A shower or two. Winds west to southwesterly averaging 25 to 35 km/h becoming colder southwesterly up to 30 km/h during the evening.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Tuesday 3 February

2009-02-03 05:00

IDV10450
Australian Government Bureau of Meteorology
Victoria

Melbourne Forecast

Issued at 5:00 am EDT on Tuesday 3 February 2009
for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time

Strong wind warning for Port Phillip.
Strong wind warning for Western Port.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Tuesday

Cloud clearing to a mostly sunny afternoon. Patchy light drizzle clearing this morning. Winds south to southeasterly averaging up to 30 km/h.

City A little morning drizzle. Max 29

Around Melbourne

Frankston	Max 29	Geelong	Max 26
Tullamarine	Max 30	Laverton	Max 27
Yarra Glen	Max 31	Scoresby	Max 30
Mount Dandenong	Max 26	Watsonia	Max 30

Maximum Fire Danger: Very High

UV Alert from 10:00 am to 5:10 pm, UV Index predicted to reach 8 [Very High]

Forecast for Wednesday

Morning cloud clearing to a sunny afternoon. Winds south to southeasterly averaging up to 30 km/h.

City Becoming sunny. Min 20 Max 31

Forecast for Thursday

Mostly sunny. Winds northwest to southwesterly averaging up to 25 km/h tending south to southwesterly up to 30 km/h during the afternoon.

City Mostly sunny. Min 18 Max 32

Forecast for Friday

Morning cloud. Isolated showers in the morning. Winds southwesterly averaging up to 25 km/h tending north to northwesterly up to 20 km/h later in the evening.

City Morning cloud. Min 19 Max 30

Forecast for Saturday

Partly cloudy. Isolated showers later in the day. Winds northwest averaging up to 45 km/h shifting cooler south to southwesterly up to 35 km/h during the evening.



WIT.013.001.0121

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

City	Windy. Late cool change.	Min 21	Max 37
Forecast for Sunday Partly cloudy. Isolated showers. Winds south to southwesterly averaging up to 35 km/h.			
City	Shower or two.	Min 18	Max 24
Forecast for Monday Partly cloudy. Isolated showers. Winds south to southwesterly averaging 15 to 25 km/h.			
City	Shower or two.	Min 13	Max 22
The next routine forecast will be issued at 4:20 pm EDT Tuesday.			

2009-02-03 05:33

IDV10706
Australian Government Bureau of Meteorology
Victoria

Bendigo Forecast
Issued at 5:30 am EDT on Tuesday 3 February 2009
for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time
Fire weather warning for the Northern Country forecast district.
Details of warnings are available on the Bureau's website www.bom.gov.au, by
telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Tuesday
Sunny. Winds southerly averaging 20 to 35 km/h.

Precis: Sunny. Max 35

Maximum Fire Danger: Extreme
UV Alert from 10:00 am to 5:10 pm, UV Index predicted to reach 9 [Very High]

Forecast for Wednesday
Sunny. Winds south to southeasterly averaging up to 25 km/h.

Precis: Sunny. Min 17 Max 37

Forecast for Thursday
Sunny. Light winds tending south to southwesterly up to 25 km/h during the
morning.

Precis: Sunny. Min 16 Max 37

Forecast for Friday
Sunny. Winds southeast to southwesterly averaging 10 to 20 km/h tending west
to
northwesterly during the afternoon.

Precis: Sunny. Min 16 Max 38

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Forecast for Saturday

Becoming cloudy. A shower or two later in the day. Winds north to northwesterly averaging 15 to 20 km/h becoming northwesterly up to 40 km/h during the morning.

Precis: Windy and shower or two. Min 20 Max 40

Forecast for Sunday

Partly cloudy. A shower or two. Winds south to southwesterly averaging 20 to 30 km/h.

Precis: Shower or two. Min 14 Max 27

Forecast for Monday

Sunny. Winds south to southwesterly averaging 20 to 30 km/h.

Precis: Sunny. Min 9 Max 25

The next routine forecast will be issued at 4:30 pm EDT Tuesday.

2009-02-03 05:34

IDV10712
Australian Government Bureau of Meteorology
Victoria

Latrobe Valley Forecast

Issued at 5:30 am EDT on Tuesday 3 February 2009
for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time

Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Tuesday

Cloudy. A little drizzle, mainly in the morning. Winds east to southeasterly averaging 20 to 30 km/h increasing to 30 to 45 km/h by early evening.

Precis: A little drizzle then windy. Max 28

Maximum Fire Danger: High

UV Alert from 9:50 am to 5:10 pm, UV Index predicted to reach 8 [Very High]

Forecast for Wednesday

Cloudy. A little drizzle during the morning. Winds east to northeasterly averaging 20 to 35 km/h.

Precis: A little drizzle clearing. Min 17 Max 31

Forecast for Thursday

Sunny. Winds northeast to northwesterly averaging 15 to 25 km/h tending west to southwesterly 20 to 35 km/h during the afternoon.



WIT.013.001.0123

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Precis: Sunny. Min 15 Max 35

Forecast for Friday

Partly cloudy. A shower or two until afternoon. Winds southeast to southwesterly averaging up to 20 km/h tending cooler northeast to southeasterly by early evening.

Precis: Shower or two. Min 14 Max 32

Forecast for Saturday

Becoming cloudy. A shower or two later in the day. Light winds tending northwest to southwesterly up to 30 km/h during the morning.

Precis: Shower or two developing. Min 16 Max 40

Forecast for Sunday

Partly cloudy. A shower or two. Winds west to southwesterly averaging 25 to 35 km/h becoming colder southwesterly up to 30 km/h during the evening.

Precis: Shower or two. Min 13 Max 25

Forecast for Monday

Partly cloudy. A shower or two. Winds west to southwesterly averaging 10 to 20 km/h.

Precis: Shower or two. Min 8 Max 23

The next routine forecast will be issued at 4:30 pm EDT Tuesday.



WIT.013.001.0124

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission



EXTENDED OUTLOOK WEATHER PRODUCT

SATURDAY 7 FEB 2009

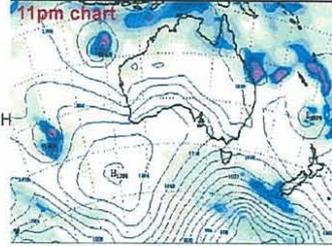
The cold front developing in the Southern Ocean will catch up will impact on the western half the state during the afternoon. Ahead of the frontal passage strong hot dry northwesterly winds will impact on the state, including the east, with central and elevated areas seeing winds above 40km/hr - possibly up to 60-80km/hr, in the morning to early afternoon, before cooler fresh to strong southwesterly winds push through, with scattered showers and thunderstorms behind. Fire danger will be extreme in both forest and grass due to the strong winds, low RH and temps again in the 40s. Timing of the change may vary, so areas impacted the most may differ depending on the change timing.

SUNDAY 8 FEB 2009

The cold front has alot of depth to it and should have pushed across most of Victoria early in the day with much cooler conditions extending throughout along with relatively fresh southerly winds. TMaximum temperatures will be 10-15 degrees less than the previous day, and therefore Relative humidity will be higher as well. Scattered showers expected, mainly on and south of the dividing range.

MONDAY 9 FEB 2009

The next high develops in the Southern Ocean and extends a ridge of high pressure across the state. As a result a subsidence inversion will develop, capping mixing depths to 2000m and some cloud (stratacumulus - shallow cloud) in the south. Light rain/drizzle areas will persist about the coast and ranges. The cooler airmass will keep temperatures generally in the 20s throughout the state, with fresh southerly winds. The airmass will be drier in the north. Forest fire dangers will be moderate to high/very high in north, and GFDI may be in the high range due to wind.



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Department of Sustainability and Environment



Bureau of Meteorology



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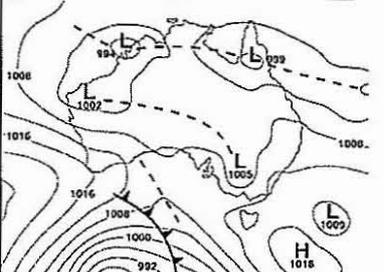
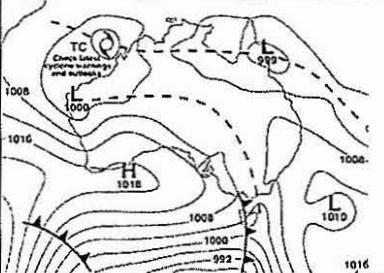
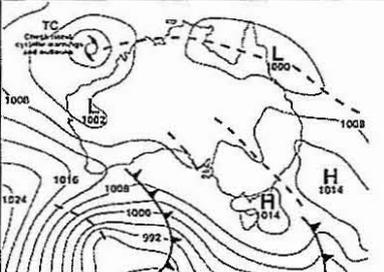
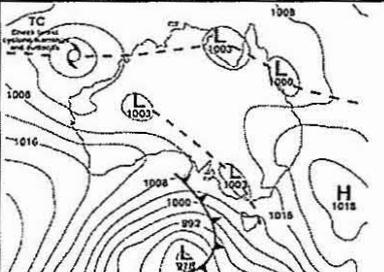
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-03 15:53

IDV18540
Australian Government Bureau of Meteorology
Victoria

Fire Weather Outlook for Victoria

Issued at 4:00 pm EDT on Tuesday 3 February 2009.

<p>Forecast chart for 11 hours</p> 	<p>Wednesday 4 February 2009</p> <p>A broad trough will remain over the state. Slight warming and slight drying expected. Winds will freshen across the south and across the central districts. Thunderstorms are likely across the northeast third while there is a chance as far west as from Sheparton down to Yarra Glen. Fire danger nears extreme across portions of the Mallee.</p>
<p>Forecast chart for 11 hours</p> 	<p>Thursday 5 February 2009</p> <p>A trough, attached to a cold front crossing the Bass Strait will affect Victoria on Thursday. The change is expected to be quicker so a southwesterly flow will affect most of the state during the majority of the day period. Due to the increased southwesterly flow and marginally dry conditions fire danger ratings will trend up on this day.</p>
<p>Forecast chart for 11 hours</p> 	<p>Friday 6 February 2009</p> <p>A vigorous cold front will approach the state from the west. Winds will become northwesterly and strengthen during the peak heating period across the western half of the state. This will be a drier and warmer northwesterly flow so look for fire danger ratings to jump up for a few hours with extremes expected northern and western areas.</p>
<p>Forecast chart for 11 hours</p> 	<p>Saturday 7 February 2009</p> <p>Significant change expected with the initial pre-frontal trough and then subsequent cold frontal passage. Strong north to northwest winds will develop ahead of this change and look for gusty west and southwest winds behind the change. Fire danger will become extreme for a large portion of the state during some part of the day. The combination of dry, hot, and strong winds ahead of the change makes this a potential critical fire weather day.</p>

Fire Weather Estimates are the primary source of detailed and up to date forecasts.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-03 16:29

IDV17102
Australian Government Bureau of Meteorology
Victoria

Central District Forecast

Issued at 4:15 pm EDT on Tuesday 3 February 2009
for the period until midnight EDT Saturday 7 February 2009.

Warning Summary at issue time

Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A high pressure system is passing south of Tasmania and will reach the south Tasman Sea on Wednesday. A low pressure trough extends from inland Australia to

Victoria. The trough will remain in the vicinity for the next couple of days.

A

cold front will pass through Bass Strait on Thursday then a high pressure system will form over the Tasman Sea later Friday. A cold front will cross the State on Saturday.

Forecast for the rest of Tuesday

Clear. Winds southeasterly averaging 25 to 35 km/h.

Forecast for Wednesday

Patchy mist and cloud in the morning. Winds northeasterly averaging 15 to 20 km/h, reaching 35 km/h at times, tending southeast to southwesterly up to 30 km/h by early evening. Overnight temperatures falling to around 16 with daytime temperatures reaching 29 to 35.

Frankston	Windy.	Min 17	Max 31
Wonthaggi	Windy and chance of mist.	Min 16	Max 29
Yarra Glen	Chance of mist clearing.	Min 14	Max 35
Geelong	Wind easing.	Min 15	Max 30
Scoresby	Chance of mist clearing.	Min 16	Max 34

Maximum Fire Danger: High

UV Alert from 9:50 am to 5:10 pm, UV Index predicted to reach 9 [Very High]

Forecast for Thursday

Mostly sunny. Winds northwest to southwesterly averaging 20 to 30 km/h tending south to southwesterly up to 35 km/h during the afternoon. Overnight temperatures falling to around 17 with daytime temperatures reaching 28 to 34.

Frankston	Becoming windy.	Min 19	Max 29
Wonthaggi	Sunny day.	Min 16	Max 27
Yarra Glen	Mostly sunny.	Min 15	Max 35
Geelong	Becoming windy.	Min 16	Max 30
Scoresby	Sunny day.	Min 18	Max 33

Forecast for Friday

Morning cloud. Patchy drizzle in the morning. Winds southeast to southwesterly



WIT.013.001.0127

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

averaging 10 to 20 km/h tending northwest to southwesterly up to 35 km/h during the afternoon. Overnight temperatures falling to around 13 with daytime temperatures reaching 27 to 33.

Frankston	Morning cloud.	Min 15	Max 28
Wonthaggi	A little drizzle clearing.	Min 13	Max 26
Yarra Glen	Morning cloud.	Min 11	Max 34
Geelong	A little early drizzle.	Min 12	Max 27
Scoresby	Morning cloud.	Min 14	Max 32

Forecast for Saturday

Partly cloudy. Isolated showers from midday. Winds north to northwesterly averaging 35 to 45 km/h, reaching 50 km/h at times, shifting southwesterly up to 45 km/h during the afternoon. Overnight temperatures falling to around 19 with daytime temperatures reaching 32 to 38.

Frankston	Windy and shower or two.	Min 20	Max 33
Wonthaggi	Shower or two developing.	Min 17	Max 31
Yarra Glen	Windy. Cool change developing.	Min 17	Max 38
Geelong	Cool change developing.	Min 17	Max 35
Scoresby	Windy and shower or two.	Min 20	Max 38

The next routine forecast will be issued at 5:40 am EDT Wednesday.

2009-02-04 16:30

IDV10310
Australian Government Bureau of Meteorology
Victoria

Victoria State Forecast

Issued at 4:30 pm EDT on Wednesday 4 February 2009
for the period until midnight EDT Sunday 8 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the North Eastern and North Western Total Fire Ban Districts for Thursday 05 February.
Fire weather warning for Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts.

Strong wind warning for Victorian waters between Point Lonsdale and Wilsons Promontory.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A high pressure system is over the Tasman Sea and a low pressure trough extends from inland Australia to Victoria. A cold front will pass through Bass Strait on Thursday then a high pressure system will form south of Adelaide and drift across Bass Strait on Friday. A stronger cold front will cross the State on Saturday and then through the northeast on Sunday.

Forecast for the rest of Wednesday

Fine apart from the chance of isolated thunderstorms developing about the northeast and eastern ranges this evening. Hot to very hot in the north with generally light winds. Warm in the south with light to moderate east to



WIT.013.001.0128

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

southeast winds, fresh near the coast .

Forecast for Thursday

Fine apart from isolated afternoon and evening thunderstorms possible about the eastern ranges and isolated drizzle about the west coast at night. Hot to very hot in the north and warm to hot in the south. Northerly winds at first in the east, with fresh southwest winds extending throughout.

Maximum Fire Danger: Very high to extreme.

Forecast for Friday

Isolated early morning drizzle in Gippsland and about the southwest coast. Very hot in the north with generally light to moderate northwesterly winds. Warm to hot in the south with milder coastal seabreezes.

Forecast for Saturday

Very hot with fresh to strong north to northwesterly winds ahead of a gusty southwesterly change. Isolated showers mainly on and south of the ranges following the change and becoming milder in the south. Areas of raised dust.

Forecast for Sunday

Isolated showers mainly on and south of the ranges. Moderate to fresh southwesterly winds extending throughout.

The next routine forecast will be issued at 5:00 am EDT Thursday.

2009-02-03 16:34

IDV10450
Australian Government Bureau of Meteorology
Victoria

Melbourne Forecast

Issued at 4:20 pm EDT on Tuesday 3 February 2009
for the period until midnight EDT Tuesday 10 February 2009.

Warning Summary at issue time

Strong wind warning for Port Phillip.
Strong wind warning for Western Port.
Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Tuesday

Clear. Winds south to southeasterly averaging up to 40 km/h.

Forecast for Wednesday

Early cloud or mist patches then sunny. Winds northeasterly averaging up to 25 km/h tending south to southeasterly and freshening to 35km/h late afternoon or evening.

City	Becoming sunny	Min 19	Max 33
Around Melbourne			
Frankston	Min 17 Max 31	Geelong	Min 15 Max 30



WIT.013.001.0129

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Tullamarine	Min 16	Max 34	Laverton	Min 16	Max 31
Yarra Glen	Min 14	Max 35	Scoresby	Min 16	Max 34
Mount Dandenong	Min 15	Max 30	Watsonia	Min 16	Max 34
Maximum Fire Danger: High					
UV Alert from 9:50 am to 5:10 pm, UV Index predicted to reach 9 [Very High]					
Forecast for Thursday					
Mostly sunny. Winds southwesterly averaging up to 30 km/h tending southerly up to 35 km/h during the afternoon.					
City	Sunny day.		Min 20	Max 32	
Forecast for Friday					
Becoming sunny. Winds southeast to southwesterly averaging 10 to 20 km/h tending northwest to southwesterly up to 35 km/h during the afternoon.					
City	Becoming sunny.		Min 17	Max 30	
Forecast for Saturday					
Partly cloudy. Isolated showers later in the day. Winds northwest averaging up to 50 km/h shifting cooler south to southwesterly up to 45 km/h late in the day.					
City	Windy. Late cool change.		Min 22	Max 37	
Forecast for Sunday					
Partly cloudy. Isolated showers. Winds south to southwesterly averaging 15 to 20 km/h tending west to southwesterly up to 35 km/h during the afternoon.					
City	Shower or two.		Min 20	Max 24	
Forecast for Monday					
Partly cloudy. Isolated showers. Winds south to southwesterly averaging 15 to 25 km/h.					
City	Shower or two.		Min 14	Max 22	
Forecast for Tuesday					
Partly cloudy. Isolated showers. Winds south to southwesterly averaging up to 30 km/h.					
City	Shower or two.		Min 13	Max 19	
The next routine forecast will be issued at 5:00 am EDT Wednesday.					

2009-02-03 16:47

IDV10706
Australian Government Bureau of Meteorology
Victoria

Bendigo Forecast

Issued at 4:30 pm EDT on Tuesday 3 February 2009
for the period until midnight EDT Tuesday 10 February 2009.

Warning Summary at issue time

Fire weather warning for the Northern Country forecast district.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Tuesday
Clear. Winds southerly averaging 20 to 35 km/h.

Forecast for Wednesday
Sunny. Winds southeasterly averaging up to 20 km/h.

Precis: Sunny. Min 17 Max 38

Maximum Fire Danger: Very High
UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 9 [Very High]

Forecast for Thursday
Sunny. Light winds tending south to southwesterly 20 to 30 km/h around midday.

Precis: Sunny. Min 19 Max 38

Forecast for Friday
Sunny. Winds south to southwesterly averaging 10 to 20 km/h tending westerly up to 35 km/h during the afternoon.

Precis: Sunny. Min 15 Max 38

Forecast for Saturday
Partly cloudy. A shower or two in the afternoon and evening. Winds northwesterly averaging 15 to 20 km/h tending west to southwesterly 25 to 35 km/h during the afternoon.

Precis: Windy and shower or two. Min 21 Max 40

Forecast for Sunday
Partly cloudy. A shower or two. Winds west to southwesterly averaging 20 to 30 km/h.

Precis: Shower or two. Min 18 Max 27

Forecast for Monday
Sunny. Winds south to southwesterly averaging 20 to 30 km/h.

Precis: Sunny. Min 10 Max 25

Forecast for Tuesday
Becoming cloudy. Winds southerly averaging 20 to 30 km/h.

Precis: Sunny day. Min 9 Max 21

The next routine forecast will be issued at 5:30 am EDT Wednesday.



WIT.013.001.0131

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-03 16:49

IDV10712
Australian Government Bureau of Meteorology
Victoria

Latrobe Valley Forecast
Issued at 4:30 pm EDT on Tuesday 3 February 2009
for the period until midnight EDT Tuesday 10 February 2009.

Warning Summary at issue time
Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Tuesday
Partly cloudy. Winds easterly averaging 30 to 45 km/h.

Forecast for Wednesday
Partly cloudy. A little drizzle during the morning. Winds east to northeasterly averaging up to 35 km/h.

Precis: A little drizzle clearing. Min 15 Max 31

Maximum Fire Danger: High
UV Alert from 9:50 am to 5:00 pm, UV Index predicted to reach 8 [Very High]

Forecast for Thursday
Sunny. Light winds tending west to southwesterly up to 30 km/h around midday.

Precis: Sunny. Min 16 Max 35

Forecast for Friday
Morning cloud. A little drizzle during the morning. Winds southeast to southwesterly averaging up to 20 km/h tending cooler northeast to southeasterly by early evening.

Precis: A little drizzle clearing. Min 12 Max 32

Forecast for Saturday
Becoming cloudy. A shower or two from midday. Light winds tending west to southwesterly up to 25 km/h around midday.

Precis: Shower or two developing. Min 16 Max 40

Forecast for Sunday
Partly cloudy. A shower or two. Winds westerly averaging 25 to 35 km/h decreasing below 30 km/h during the evening.

Precis: Shower or two. Min 15 Max 25

Forecast for Monday
Partly cloudy. A shower or two. Winds west to southwesterly averaging 10 to 20 km/h.

Precis: Shower or two. Min 9 Max 23



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Forecast for Tuesday

Partly cloudy. A shower or two. Winds west to southwesterly averaging 10 to 20 km/h.

Precis: Shower or two.

Min 9

Max 21

The next routine forecast will be issued at 5:30 am EDT Wednesday.

2009-02-03 16:53

IDV18531

Australian Government Bureau of Meteorology
Victoria

Fire Weather Forecast

for Saturday 7 February 2009

Issued at 4:45 pm EDT on Tuesday 3 February 2009.

FORECASTS ARE ISSUED REGULARLY: PLEASE ENSURE YOU HAVE THE LATEST VERSION

Location	MaxT (C)	DewP (C)	RH (%)	Wind (kph) DIR SPD GUST	DF	CUR (%)	FFDI	GFDI	Wind Change
Walpeup	43	-1	7	WNW 35	55	10	100	94	84 W 35 14-18
Swan Hill Airport	43	-5	5	NNW 45	70	10	100	100	100 WNW 40 15-19
Mallee	LAL: 0		RAIN: NO		MIX (M): 4200				WIND (1000): NW 55 FDI above 35: Late AM
Horsham Airport	39	8	15	WNW 30	50	10	100	56	44 W 30 12-16
Stawell	38	7	16	WNW 30	50	10	100	51	40 W 25 12-16
Wimmera	LAL: 0		RAIN: NO		MIX (M): 3500				WIND (1500): NW 65 FDI above 35: Late AM
Ballarat Airport	36	5	15	WNW 30	50	10	100	50	40 W 25 14-18
Portland Airport	24	13	48	W 35	55	7	90	8	14
Hamilton Airport	32	11	27	WSW 30	45	10	100	27	24
Mortlake	32	12	29	WSW 25	35	9	95	22	15
Western	LAL: 0		RAIN: NO		MIX (M): 2800				WIND (1000): NW 60 FDI above 35: NA
Bendigo Airport	41	-3	7	NW 40	65	10	100	100	100 WNW 40 14-18
Shepparton Airport	42	-6	5	NNW 45	75	10	100	100	100 W 35 16-20
Northern Country	LAL: 0		RAIN: NO		MIX (M): 4200				WIND (1000): NW 60 FDI above 35: Late AM
Mangalore Airport	42	-2	7	NW 45	75	10	100	100	100 W 40 15-19
North Central	LAL: 0		RAIN: NO		MIX (M): 4100				WIND (1500): NW 65 FDI above 35: Late AM
Geelong Airport	33	13	29	WNW 35	45	10	100	30	34 W 40 13-17
Coldstream	39	6	13	WNW 40	55	10	100	74	77 W 30 15-19
Tullamarine	37	5	14	WNW 50	75	10	90	83	77 W 30 15-19
Dunns Hill	33	7	19	WNW 35	45	10	90	43	30 WSW 25 15-19
Wonthaggi	31	12	31	W 35	45	10	100	27	31
Central	LAL: 0		RAIN: NO		MIX (M): 3400				WIND (1000): NW 70 FDI above 35: Late AM



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Albury-Wodonga	43	-6	5	NW	45	70	10	100	100	100		
Wangaratta Airport	44	-7	4	NNW	45	70	10	100	100	100	SW 25	19-23
Hunters Hill	36	-4	8	NW	45	70	10	100	90	100		
Northeast	LAL: 0			RAIN: NO		MIX (M): 4400						
	WIND (1500):			NW	50	FDI above 35:					Late AM	
Latrobe Valley	40	10	16	W	35	40	10	100	61	56	WSW 35	15-19
East Sale Airport	38	10	19	SW	20	35	10	100	36	21	SSE 25	13-17
Mount Moornapa	39	4	12	WNW	35	55	10	100	66	61	W 30	15-19
W & S Gippsland	LAL: 0			RAIN: NO		MIX (M): 4300						
	WIND (1000):			NW	65	FDI above 35:					Late AM	
Orbost	38	9	18	W	30	50	10	80	50	16	SSW 30	15-19
Gelantipy	36	3	13	NNW	35	55	8	100	51	57	WNW 15	20-00
East Gippsland	LAL: 0			RAIN: NO		MIX (M): 4100						
	WIND (1500):			NW	45	FDI above 35:					Late AM	
Falls Creek	28	-5	11	N	50	80	8	100	55	98	NW 30	20-00
Alpine Areas	LAL: 0			RAIN: NO		MIX (M): 4300						
	WIND (2000):			NNW	50	FDI above 35:					Late AM	

Interstate:

Note:

MaxT = Maximum Temperature

RH = Relative Humidity

Dew Pt = Dew Point Temperature

DF = Drought Factor

CUR = Curing

FFDI is the Forest Fire Danger Index

GFDI is the Grassland Fire Danger Index

LAL = Lightning Activity Level: (0) = nil thunderstorms, (1) = isolated thunderstorms, (2) = scattered thunderstorms, (3) = widespread thunderstorms

RAIN: NO = less than 5mm, YES = greater than 5mm over district for day.

MIX (above sea level) = Mixing Depth

WIND (above sea level) = Upper Wind

FDI above 35 = time when FDI is above 35 when at least 4 hours before or after MaxT time

Saturday: Significant change expected with the initial pre-frontal trough and then subsequent cold frontal passage. Strong north to northwest winds will develop ahead of this change and look for gusty west and southwest winds behind the change. Fire danger will become extreme for a large portion of the state during some part of the day. The combination of dry, hot, and strong winds ahead of the change makes this a potential critical fire weather day. The start of the day will be warm with generally poor humidity recovery. Some breeziness also expected right away in the morning favoring the Dividing Range and western and central districts. It should be pointed out that the highest fire danger ratings may not coincide with max temperature on this day due to the change.



WIT.013.001.0134

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Wednesday 4 February

2009-02-04 04:41

IDV22000
Australian Government Bureau of Meteorology
Victoria

Fire Weather Warning
for the Mallee forecast district.

Issued at 04:41 am EDT on Wednesday 04 February 2009.

A fire weather warning for Wednesday is current in parts of the Mallee forecast district. Temperatures up to 40 degrees, relative humidity down to 8% and winds to 25 km/h will cause extreme fire danger.

The fire weather warning for parts of the Northern Country forecast district has been cancelled.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The next warning will be issued by 11:00 am EDT Wednesday.

2009-02-04 04:47

IDV22000
Australian Government Bureau of Meteorology
Victoria

Fire Weather Warning
for the Mallee forecast district.

Issued at 04:47 am EDT on Wednesday 04 February 2009.

A fire weather warning for Wednesday is current in parts of the Mallee forecast district. Temperatures up to 40 degrees, relative humidity down to 8% and winds to 25 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The next warning will be issued by 11:00 am EDT Wednesday.



WIT.013.001.0135

Appendix 8
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-05 05:00

IDV10310
Australian Government Bureau of Meteorology
Victoria

Victoria State Forecast

Issued at 5:00 am EDT on Thursday 5 February 2009
for the period until midnight EDT Sunday 8 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the North Eastern and North Western Total Fire Ban Districts for Thursday 05 February.
Fire weather warning for Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts.

Strong wind warning for Victorian waters between Wilsons Promontory and 60nm east of Gabo Island.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A high pressure system is over the Tasman Sea and a low pressure trough extends from inland Australia to Victoria. A weak cold front will pass through Bass Strait during today and a high pressure system will form south of Adelaide before drifting across Bass Strait on Friday. A stronger cold front will cross most of the State on Saturday and then through the northeast on Sunday.

Forecast for the rest of Thursday

Fine apart from isolated drizzle about the west coast at night. Hot to very hot in the north and warm to hot in the south. Northerly winds at first in the east but fresh and southwest winds gradually extending throughout from the west.

Maximum Fire Danger: Very high to extreme.

Forecast for Friday

Isolated early morning drizzle in Gippsland and about the southwest coast. Very hot in the north with generally light to moderate northwesterly winds. Warm to hot in the south with milder coastal seabreezes.

Forecast for Saturday

Very hot with fresh to strong north to northwesterly winds ahead of a gusty southwesterly change. Isolated showers mainly on and south of the ranges following the change and becoming milder in the south. Areas of raised dust.

Forecast for Sunday

Isolated showers mainly on and south of the ranges. Moderate to fresh southwesterly winds extending throughout. Very warm at first in the northeast, otherwise cool to mild in the south and mild to warm in the north.

The next routine forecast will be issued at 4:30 pm EDT Thursday.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-04 05:17

IDV10450
Australian Government Bureau of Meteorology
Victoria

Melbourne Forecast

Issued at 5:00 am EDT on Wednesday 4 February 2009
for the period until midnight EDT Tuesday 10 February 2009.

Warning Summary at issue time
Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by
telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Wednesday

Morning cloud clearing to a sunny afternoon. Light winds tending southerly in
the afternoon and increasing to 20 to 30 km/h.

City Mostly sunny. Max 33

Around Melbourne

Frankston	Max 31	Geelong	Max 30
Tullamarine	Max 34	Laverton	Max 31
Yarra Glen	Max 35	Scoresby	Max 34
Mount Dandenong	Max 30	Watsonia	Max 34

Maximum Fire Danger: High

UV Alert from 9:50 am to 5:10 pm, UV Index predicted to reach 9 [Very High]

Forecast for Thursday

Mostly sunny. Winds southwesterly averaging up to 30 km/h tending southerly up
to 35 km/h during the afternoon.

City Sunny day. Min 20 Max 32

Forecast for Friday

Morning cloud. Winds southeast to southwesterly averaging 10 to 20 km/h
tending
northwest to southwesterly up to 25 km/h during the afternoon.

City Becoming sunny. Min 17 Max 32

Forecast for Saturday

Partly cloudy. Isolated showers later in the day. Winds north to northwesterly
averaging up to 50 km/h shifting cooler southwesterly up to 35 km/h in the
afternoon.

City Windy . Late cool change. Min 22 Max 37

Forecast for Sunday

Partly cloudy. Isolated showers. Winds south to southwesterly averaging 15 to
20 km/h tending west to southwesterly up to 35 km/h during the afternoon.

City Shower or two. Min 20 Max 24

Forecast for Monday

Partly cloudy. Isolated showers. Winds south to southwesterly averaging 15 to



WIT.013.001.0137

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

25 km/h.

City Shower or two. Min 14 Max 22

Forecast for Tuesday

Partly cloudy. Isolated showers. Winds south to southwesterly averaging up to 30 km/h.

City Shower or two. Min 13 Max 19

The next routine forecast will be issued at 4:20 pm EDT Wednesday.

2009-02-04 05:39

IDV10706

Australian Government Bureau of Meteorology
Victoria

Bendigo Forecast

Issued at 5:30 am EDT on Wednesday 4 February 2009
for the period until midnight EDT Tuesday 10 February 2009.

Warning Summary at issue time

Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Wednesday

Sunny. Light winds.

Precis: Sunny. Max 38

Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 9 [Very High]

Forecast for Thursday

Sunny. Light winds tending south to southwesterly 20 to 30 km/h around midday.

Precis: Sunny. Min 19 Max 38

Forecast for Friday

Sunny. Winds southwesterly averaging 10 to 20 km/h.

Precis: Sunny. Min 15 Max 38

Forecast for Saturday

Partly cloudy. A shower or two in the afternoon and evening. Winds northwesterly averaging 15 to 20 km/h tending cooler southwesterly 25 to 30 km/h by early evening.

Precis: Windy and shower or two. Min 21 Max 40

Forecast for Sunday

Partly cloudy. A shower or two. Winds west to southwesterly averaging 20 to 30 km/h.

Precis: Shower or two. Min 18 Max 27

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Mostly sunny. Winds northwest to southwesterly averaging 20 to 30 km/h tending south to southwesterly up to 35 km/h during the afternoon. Overnight temperatures falling to around 18 with daytime temperatures reaching 28 to 34.

Frankston	Becoming windy.	Min 19	Max 29
Wonthaggi	Sunny day.	Min 17	Max 27
Yarra Glen	Mostly sunny.	Min 15	Max 35
Geelong	Becoming windy.	Min 16	Max 30
Scoresby	Sunny day.	Min 18	Max 33

Forecast for Friday

Morning cloud. Patchy drizzle in the morning. Winds mainly southwesterly averaging 15 to 20 km/h, reaching 25 km/h at times. Overnight temperatures falling to around 13 with daytime temperatures reaching 28 to 33.

Frankston	Morning cloud.	Min 15	Max 29
Wonthaggi	A little drizzle clearing.	Min 13	Max 28
Yarra Glen	Morning cloud.	Min 11	Max 34
Geelong	A little early drizzle.	Min 12	Max 29
Scoresby	Morning cloud.	Min 14	Max 33

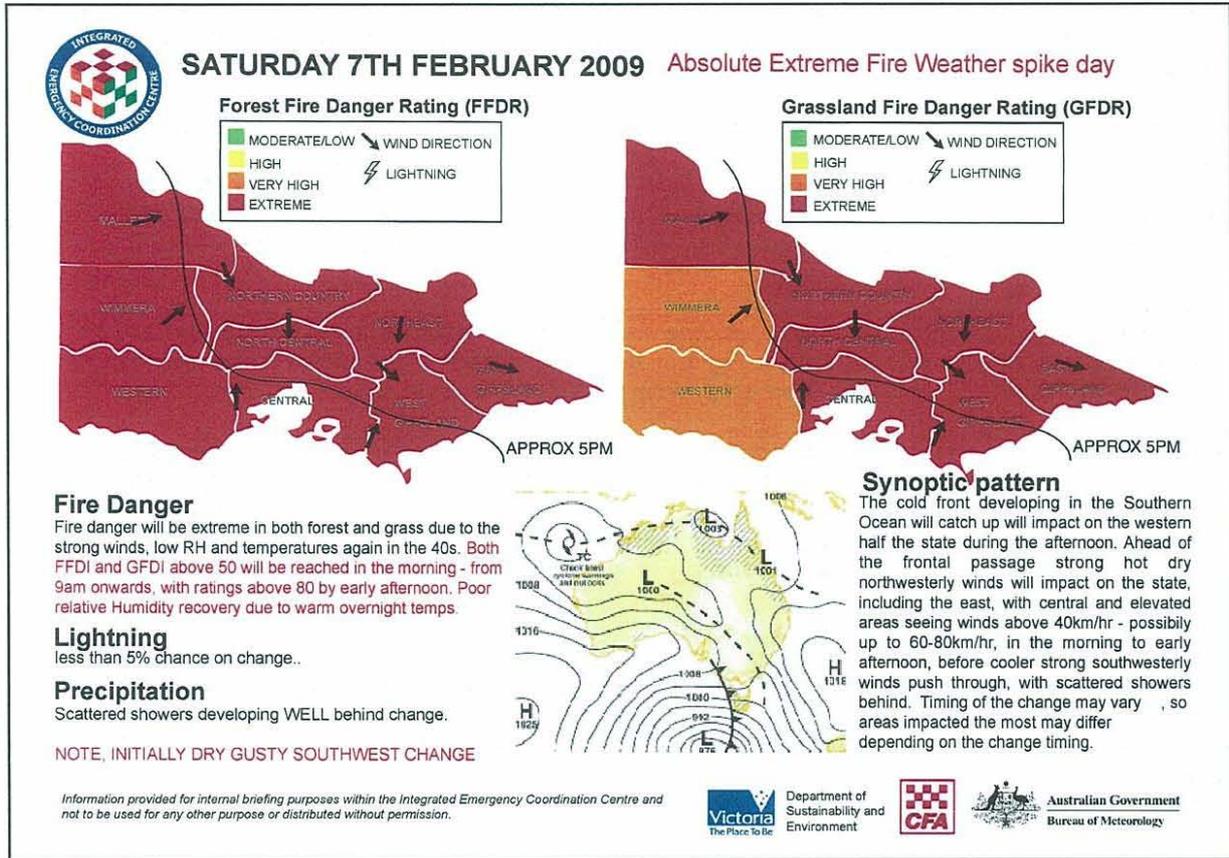
Forecast for Saturday

Partly cloudy. Isolated showers from midday. Winds north to northwesterly averaging 35 to 45 km/h, reaching 50 km/h at times, tending southwesterly up to 45 km/h around midday. Overnight temperatures falling to around 19 with daytime temperatures reaching 32 to 38.

Frankston	Windy and shower or two.	Min 20	Max 33
Wonthaggi	Shower or two developing.	Min 17	Max 31
Yarra Glen	Windy and shower or two.	Min 17	Max 38
Geelong	Shower or two developing.	Min 17	Max 35
Scoresby	Windy and shower or two.	Min 20	Max 38

The next routine forecast will be issued at 4:15 pm EDT Wednesday.

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission



2009-02-04 15:56

IDV22200
Australian Government Bureau of Meteorology
Victoria

Fire Ban Advice for Victoria.

Issued at 03:55 pm EDT on Wednesday 04 February 2009.

The Country Fire Authority has declared a Total Fire Ban for Thursday 05 February in the North Eastern and North Western Total Fire Ban Districts.

For further information regarding Fire Bans and other Fire Restrictions contact

The Country Fire Authority on 1800 240 667 or visit <http://www.cfa.vic.gov.au/>
CFA advises people living in areas at risk of fire to activate their bush fire plan.

2009-02-04 16:03

IDV22000
Australian Government Bureau of Meteorology
Victoria

Fire Weather Warning



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

for the Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts.

Issued at 04:00 pm EDT on Wednesday 04 February 2009.

A fire weather warning for Wednesday continues for the Mallee forecast district

the rest of today. Fire weather warning has been issued for Thursday for the Mallee, Wimmera, Northern Country, North Central and Northeast forecast districts. Temperatures up to 40 degrees, relative humidity down to 9% and winds between 30 to 40 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The next warning will be issued by 11:00 pm EDT Wednesday.

2009-02-04 16:17

IDV17102
Australian Government Bureau of Meteorology
Victoria

Central District Forecast

Issued at 4:15 pm EDT on Wednesday 4 February 2009
for the period until midnight EDT Sunday 8 February 2009.

Warning Summary at issue time

Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A high pressure system is over the Tasman Sea and a low pressure trough extends from inland Australia to Victoria. A cold front will pass through Bass Strait on Thursday then a high pressure system will form south of Adelaide and drift across Bass Strait on Friday. A stronger cold front will cross the State on Saturday and then through the northeast on Sunday.

Forecast for the rest of Wednesday

Clear. Winds southeast to southwesterly averaging 15 to 25 km/h, reaching 30 km/h at times, tending south to southeasterly up to 25 km/h later in the evening.

Forecast for Thursday

Mostly sunny. Winds northwest to southwesterly averaging 20 to 30 km/h tending south to southwesterly up to 35 km/h during the afternoon. Overnight temperatures falling to around 18 with daytime temperatures reaching 28 to 33.

Frankston	Becoming windy.	Min 19	Max 29
Wonthaggi	Sunny day.	Min 17	Max 27
Yarra Glen	Mostly sunny.	Min 15	Max 33
Geelong	Becoming windy.	Min 16	Max 30
Scoresby	Sunny day.	Min 18	Max 33



WIT.013.001.0143

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Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Friday

Morning cloud. Patchy drizzle in the morning. Winds south to southeasterly averaging 10 to 20 km/h tending mainly northwest to southwesterly up to 35 km/h

during the afternoon. Overnight temperatures falling to around 13 with daytime temperatures reaching 29 to 34.

Frankston	Morning cloud.	Min 15	Max 30
Wonthaggi	A little drizzle clearing.	Min 13	Max 28
Yarra Glen	Morning cloud.	Min 11	Max 34
Geelong	A little early drizzle.	Min 12	Max 32
Scoresby	Morning cloud.	Min 14	Max 33

Forecast for Saturday

Becoming cloudy. Isolated showers in the afternoon and evening. Winds north to northwesterly averaging 40 to 50 km/h, shifting cooler southwesterly up to 50 km/h during the afternoon. Overnight temperatures falling to around 19 with daytime temperatures reaching the lower 40s.

Frankston	Windy and shower or two.	Min 20	Max 41
Wonthaggi	Windy and shower or two.	Min 17	Max 39
Yarra Glen	Windy and shower or two.	Min 18	Max 44
Geelong	Windy and shower or two.	Min 19	Max 41
Scoresby	Windy and shower or two.	Min 20	Max 43

Forecast for Sunday

Partly cloudy. Isolated showers until evening. Winds west to southwesterly averaging 20 to 30 km/h, reaching 35 km/h at times. Overnight temperatures falling to around 16 with daytime temperatures reaching the mid 20s.

Frankston	Shower or two.	Min 19	Max 22
Wonthaggi	Shower or two.	Min 16	Max 22
Yarra Glen	Shower or two.	Min 14	Max 26
Geelong	Shower or two.	Min 15	Max 24
Scoresby	Shower or two.	Min 17	Max 25

The next routine forecast will be issued at 5:40 am EDT Thursday.



Appendix 8

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-04 16:18

IDV18540
Australian Government Bureau of Meteorology
Victoria

Fire Weather Outlook for Victoria

Issued at 4:00 pm EDT on Wednesday 4 February 2009.

<p>Forecast chart for 11 hours</p>	<p>Thursday 5 February 2009</p> <p>A trough, attached to a cold front crossing the Bass Strait will affect Victoria on Thursday. Winds will freshen behind the trough out of the south/southwest. Strongest winds will be found along the coast and across the central districts, especially areas north of the Dividing Range. Fire Danger ratings respond with extreme values across the north.</p>
<p>Forecast chart for 11 hours</p>	<p>Friday 6 February 2009</p> <p>A strong dry slot aloft will follow the trough passage Thursday night and affect the state on Friday. At the same time a vigorous cold front will approach the state from the west. Winds will become northwesterly and strengthen during the peak heating period across the western half of the state. Drier air associated with the dry slot will mix to the surface and promote extreme ratings across the northern and western half of the state.</p>
<p>Forecast chart for 11 hours</p>	<p>Saturday 7 February 2009</p> <p>Critical fire weather day on tap with a combination of strong north/northwesterly winds ahead of a pre frontal trough passage Saturday and Saturday night. Air ahead of the change will become very dry with a well mixed atmosphere. Temperatures will be hot to very hot with poor humidity recovery and warm temperatures leading into the day. Gusty west/southwest winds behind the change. Extreme ratings every estimate site during some portion of the day.</p>
<p>Forecast chart for 11 hours</p>	<p>Sunday 8 February 2009</p> <p>A more significant cold push associated with the main cold front is expected to affect most of the state on Sunday. Winds will be gusty at times but cooler temperatures and higher humidity will moderate fire danger ratings. With that being said very high ratings will be found across the north.</p>

Fire Weather Estimates are the primary source of detailed and up to date forecasts.



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 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-04 16:20

IDV10450
 Australian Government Bureau of Meteorology
 Victoria

Melbourne Forecast

Issued at 4:20 pm EDT on Wednesday 4 February 2009
 for the period until midnight EDT Wednesday 11 February 2009.

Warning Summary at issue time

Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Wednesday

Clear. Winds south to southeasterly averaging up to 30 km/h.

Forecast for Thursday

Mostly sunny. Winds southwesterly averaging up to 30 km/h tending southerly up to 35 km/h during the afternoon.

City	Sunny day.	Min 20	Max 30
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Around Melbourne

Frankston	Min 19	Max 29	Geelong	Min 16	Max 30
Tullamarine	Min 18	Max 32	Laverton	Min 17	Max 31
Yarra Glen	Min 15	Max 33	Scoresby	Min 18	Max 33
Mount Dandenong	Min 17	Max 29	Watsonia	Min 18	Max 33

Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Friday

Morning cloud. Winds mainly northwest to southwesterly averaging up to 30 km/h.

City	Morning cloud.	Min 17	Max 32
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Forecast for Saturday

Becoming cloudy. Isolated showers during the evening. Winds north to northeasterly averaging up to 35 km/h tending northwest to southwesterly up to 45 km/h during the morning.

City	Windy and shower or two.	Min 24	Max 43
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Forecast for Sunday

Partly cloudy. Isolated showers until evening. Winds west to southwesterly averaging up to 35 km/h.

City	Shower or two.	Min 20	Max 25
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Forecast for Monday

Partly cloudy. Isolated showers. Winds south to southwesterly averaging 15 to 25 km/h.

City	Shower or two.	Min 14	Max 22
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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Forecast for Tuesday

Partly cloudy. Isolated showers. Winds south to southwesterly averaging up to 30 km/h.

City	Shower or two.	Min 13	Max 19
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Forecast for Wednesday

Partly cloudy. Isolated showers. Winds southerly averaging up to 30 km/h.

City	Shower or two.	Min 13	Max 20
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The next routine forecast will be issued at 5:00 am EDT Thursday.

2009-02-05 16:30

IDV10310

Australian Government Bureau of Meteorology
Victoria

Victoria State Forecast

Issued at 4:30 pm EDT on Thursday 5 February 2009
for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the North Eastern and North Western Total Fire Ban Districts for Thursday 05 February and Friday 06 February.

The CFA has declared a day of Total Fire Ban for the Eastern, Central and South

Western Total Fire Ban Districts for Friday 06 February.

Fire weather warning for Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts.

Strong wind warning for Victorian waters between Wilsons Promontory and 60nm east of Gabo Island.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A low pressure trough extends from inland Australia to eastern Victoria. A high

pressure system south of Adelaide will drift across Bass Strait on Friday. A strong cold front will cross most of the State on Saturday and then through the

northeast Sunday morning, before a ridge of high pressure pushes into the Bass Strait during Sunday and Monday.

Forecast for the rest of Thursday

Fine. Warm to hot with moderate southwest winds, fresh about the coast.

Forecast for Friday

Fine apart from the chance of early morning drizzle in Gippsland. Very hot in the north with generally light to moderate northeast to northwest winds. Warm to hot in the south with milder coastal seabreezes.

Maximum Fire Danger: Very high in the south, grading to extreme in the north.

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 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Forecast for Saturday
 Becoming cloudy. A shower or two during the evening. Winds north to northeasterly averaging up to 30 km/h tending cooler westerly later in the evening.

Precis: Windy and shower or two. Min 16 Max 43

Forecast for Sunday
 Partly cloudy. A shower or two until evening. Winds westerly averaging 20 to 35 km/h becoming colder and light later in the evening.

Precis: Shower or two. Min 15 Max 27

Forecast for Monday
 Partly cloudy. A shower or two. Winds west to southwesterly averaging 10 to 20 km/h.

Precis: Shower or two. Min 9 Max 23

Forecast for Tuesday
 Partly cloudy. A shower or two. Winds west to southwesterly averaging 10 to 20 km/h.

Precis: Shower or two. Min 9 Max 21

Forecast for Wednesday
 Partly cloudy. A shower or two. Winds south to southwesterly averaging 10 to 20 km/h.

Precis: Shower or two. Min 7 Max 22

The next routine forecast will be issued at 5:30 am EDT Thursday.

2009-02-04 16:45

IDV18530
 Australian Government Bureau of Meteorology
 Victoria

Fire Weather Forecast
 for Saturday 7 February 2009
 Issued at 4:45 pm EDT on Wednesday 4 February 2009.

FORECASTS ARE ISSUED REGULARLY: PLEASE ENSURE YOU HAVE THE LATEST VERSION

Location	MaxT (C)	DewP (C)	RH (%)	Wind (kph) DIR SPD GUST	DF	CUR (%)	FFDI	GFDI	Wind Change
Walpeup	46	-3	6	WNW 45	70	10	100	100	100 W 40 15-19
Swan Hill Airport	46	-5	5	NW 40	65	10	100	100	100 SW 35 18-22
Mallee	LAL: 0		RAIN: NO		MIX (M): 3700		WIND (1000): NW 60 FDI above 35: Late AM		
Horsham Airport	44	-1	8	WNW 45	75	10	100	100	100 WSW 45 14-18
Stawell	41	-5	7	WNW 50	75	10	100	100	100 W 45 14-18

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Wimmera	LAL: 0	RAIN: NO	MIX (M): 3300
	WIND (1500): NW	70	FDI above 35: Late AM
Ballarat Airport	41	-7 6 WNW	50 80 10 100 100 100 W 40 15-19
Portland Airport	30	8 34 WNW	40 60 8 90 17 22 W 45 9-13
Hamilton Airport	40	0 13 WNW	45 70 10 100 61 73 W 40 11-15
Mortlake	39	0 13 W	40 65 9 95 55 58 WSW 35 13-17
Western	LAL: 0	RAIN: NO	MIX (M): 1800
	WIND (1000): NW	85	FDI above 35: Late AM
Bendigo Airport	44	-6 5 NW	45 75 10 100 100 100 WSW 35 17-21
Shepparton Airport	42	-7 4 NW	45 75 10 100 100 100 SSW 30 20-00
Northern Country	LAL: 0	RAIN: NO	MIX (M): 3700
	WIND (1000): NW	65	FDI above 35: Late AM
Mangalore Airport	43	-5 5 NW	45 70 10 100 100 100 S 30 19-23
North Central	LAL: 0	RAIN: NO	MIX (M): 3600
	WIND (1500): NW	70	FDI above 35: Late AM
Geelong Airport	39	-1 11 WNW	50 80 10 100 82 100 WSW 45 14-18
Coldstream	44	-6 6 NNW	45 70 10 100 100 100 SSW 30 18-22
Tullamarine	44	-5 7 NNW	55 85 10 90 100 100 W 35 16-20
Dunns Hill	39	-7 7 NW	55 85 10 90 100 100 W 35 17-21
Wonthaggi	39	0 14 WNW	45 70 10 100 63 80 WSW 45 15-19
Central	LAL: 0	RAIN: NO	MIX (M): 3000
	WIND (1000): NW	80	FDI above 35: Late AM
Albury-Wodonga	44	-3 6 NW	45 70 10 100 100 100 NW 20 21-01
Wangaratta Airport	44	-7 4 NW	45 70 10 100 100 100 W 20 21-01
Hunters Hill	37	-3 8 NW	45 70 10 100 84 100 NW 30 21-01
Northeast	LAL: 0	RAIN: NO	MIX (M): 4000
	WIND (1500): NW	55	FDI above 35: Late AM
Latrobe Valley	43	-1 8 WNW	35 60 10 100 85 81 W 30 19-23
East Sale Airport	41	5 14 NW	30 50 10 100 57 48 WSW 35 20-00
Mount Moornapa	40	2 10 NW	45 75 10 100 91 100 WSW 20 20-00
W & S Gippsland	LAL: 0	RAIN: NO	MIX (M): 3800
	WIND (1000): NW	75	FDI above 35: Late AM
Orbost	40	6 14 NNW	25 40 10 80 49 12 SSW 35 20-00
Gelantipy	38	-1 10 NW	40 65 8 100 61 76 WNW 25 21-01
East Gippsland	LAL: 0	RAIN: NO	MIX (M): 3800
	WIND (1500): NW	55	FDI above 35: Late AM
Falls Creek	29	-5 11 NW	55 95 8 100 66 100 NW 45 21-01
Alpine Areas	LAL: 0	RAIN: NO	MIX (M): 4000
	WIND (2000): NW	55	FDI above 35: Late AM
Interstate:			
Note:			
MaxT = Maximum Temperature			
RH = Relative Humidity			
Dew Pt = Dew Point Temperature			
DF = Drought Factor			
CUR = Curing			
FFDI is the Forest Fire Danger Index			



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

GFDI is the Grassland Fire Danger Index
 LAL = Lightning Activity Level: (0) = nil thunderstorms, (1) = isolated thunderstorms, (2) = scattered thunderstorms, (3) = widespread thunderstorms
 RAIN: NO = less than 5mm, YES = greater than 5mm over district for day.
 MIX (above sea level) = Mixing Depth
 WIND (above sea level) = Upper Wind
 FDI above 35 = time when FDI is above 35 when at least 4 hours before or after MaxT time

Saturday: Critical fire weather day on tap with a combination of strong north/northwesterly winds ahead of a pre frontal trough passage Saturday and Saturday night. Air ahead of the change will become very dry with a well mixed atmosphere. Temperatures will be hot to very hot with poor humidity recovery and warm temperatures leading into the day. Gusty west/southwest winds behind the change. Extreme ratings every estimate site during some portion of the day.

2009-02-04 17:25

IDV10450
 Australian Government Bureau of Meteorology
 Victoria

Updated Melbourne Forecast
 Issued at 5:25 pm EDT on Wednesday 4 February 2009
 for the period until midnight EDT Wednesday 11 February 2009.

Warning Summary at issue time
 Nil.
 Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Wednesday
 Clear. Winds south to southeasterly averaging up to 30 km/h.

Forecast for Thursday
 Mostly sunny. Winds southwesterly averaging up to 30 km/h tending southerly up to 35 km/h during the afternoon.

City	Sunny day.		Min 20	Max 30
Around Melbourne				
Frankston	Min 19	Max 29	Geelong	Min 16 Max 30
Tullamarine	Min 18	Max 32	Laverton	Min 17 Max 31
Yarra Glen	Min 15	Max 33	Scoresby	Min 18 Max 33
Mount Dandenong	Min 17	Max 29	Watsonia	Min 18 Max 33

Maximum Fire Danger: Very High
 UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Friday
 Morning cloud. Winds mainly northwest to southwesterly averaging up to 30 km/h.

City	Morning cloud.	Min 17	Max 32
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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Forecast for Saturday
Becoming cloudy. Isolated showers during the evening. Winds north to northwesterly averaging up to 40 km/h shifting gusty southwesterly up to 45 km/h during the afternoon.

City Windy and shower or two. Min 24 Max 43

Forecast for Sunday
Partly cloudy. Isolated showers until evening. Winds west to southwesterly averaging up to 35 km/h.

City Shower or two. Min 20 Max 25

Forecast for Monday
Partly cloudy. Isolated showers. Winds south to southwesterly averaging 15 to 25 km/h.

City Shower or two. Min 14 Max 22

Forecast for Tuesday
Partly cloudy. Isolated showers. Winds south to southwesterly averaging up to 30 km/h.

City Shower or two. Min 13 Max 19

Forecast for Wednesday
Partly cloudy. Isolated showers. Winds southerly averaging up to 30 km/h.

City Shower or two. Min 13 Max 20

The next routine forecast will be issued at 5:00 am EDT Thursday.

2009-02-04 22:37

IDV22200
Australian Government Bureau of Meteorology
Victoria

Fire Ban Advice for Victoria.

Issued at 10:36 pm EDT on Wednesday 04 February 2009.

The Country Fire Authority has declared a Total Fire Ban for Thursday 05 February in the North Eastern and North Western Total Fire Ban Districts.

For further information regarding Fire Bans and other Fire Restrictions contact

The Country Fire Authority on 1800 240 667 or visit <http://www.cfa.vic.gov.au/>
CFA advises people living in areas at risk of fire to activate their bush fire plan.

2009-02-04 22:39

IDV22000
Australian Government Bureau of Meteorology
Victoria



WIT.013.001.0153

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Fire Weather Warning

for the Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts.

Issued at 10:38 pm EDT on Wednesday 04 February 2009.

A fire weather warning for Thursday is current in the Northern Country and Mallee forecast districts and parts of the Wimmera, North Central and Northeast

forecast districts. Temperatures up to 40 degrees, relative humidity down to 10% and winds to 30 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The next warning will be issued by 05:00 am EDT Thursday.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Thursday 5 February

2009-02-05 04:38

IDV22000
Australian Government Bureau of Meteorology
Victoria

Fire Weather Warning
for the Northern Country, Wimmera, Mallee, North Central and Northeast
forecast
districts.

Issued at 04:35 am EDT on Thursday 05 February 2009.

A fire weather warning for Thursday is current in the Northern Country and
Mallee forecast districts and parts of the Wimmera, North Central and
Northeast
forecast districts. Temperatures up to 40 degrees, relative humidity down to
10% and winds to 30 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire
plan.

The next warning will be issued by 11:00 am EDT Thursday.

2009-02-05 04:40

IDV22200
Australian Government Bureau of Meteorology
Victoria

Fire Ban Advice for Victoria.

Issued at 04:38 am EDT on Thursday 05 February 2009.

The Country Fire Authority has declared a Total Fire Ban for Thursday 05
February in the North Eastern and North Western Total Fire Ban Districts.

For further information regarding Fire Bans and other Fire Restrictions
contact

The Country Fire Authority on 1800 240 667 or visit <http://www.cfa.vic.gov.au/>
CFA advises people living in areas at risk of fire to activate their bush fire
plan.

2009-02-05 05:00

IDV10310
Australian Government Bureau of Meteorology
Victoria

Victoria State Forecast

Issued at 5:00 am EDT on Thursday 5 February 2009
for the period until midnight EDT Sunday 8 February 2009.



WIT.013.001.0155

Appendix 8

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the North Eastern and North Western Total Fire Ban Districts for Thursday 05 February.

Fire weather warning for Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts.

Strong wind warning for Victorian waters between Wilsons Promontory and 60nm east of Gabo Island.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A high pressure system is over the Tasman Sea and a low pressure trough extends

from inland Australia to Victoria. A weak cold front will pass through Bass Strait during today and a high pressure system will form south of Adelaide before drifting across Bass Strait on Friday. A stronger cold front will cross most of the State on Saturday and then through the northeast on Sunday.

Forecast for the rest of Thursday

Fine apart from isolated drizzle about the west coast at night. Hot to very hot

in the north and warm to hot in the south. Northerly winds at first in the east

but fresh and southwest winds gradually extending throughout from the west.

Maximum Fire Danger: Very high to extreme.

Forecast for Friday

Isolated early morning drizzle in Gippsland and about the southwest coast.

Very

hot in the north with generally light to moderate northwesterly winds. Warm to hot in the south with milder coastal seabreezes.

Forecast for Saturday

Very hot with fresh to strong north to northwesterly winds ahead of a gusty southwesterly change.

Isolated showers mainly on and south of the ranges following the change and becoming milder in the south. Areas of raised dust.

Forecast for Sunday

Isolated showers mainly on and south of the ranges. Moderate to fresh southwesterly winds extending throughout. Very warm at first in the northeast, otherwise cool to mild in the south and mild to warm in the north.

The next routine forecast will be issued at 4:30 pm EDT Thursday.

2009-02-05 05:00

IDV10450

Australian Government Bureau of Meteorology
Victoria

Melbourne Forecast

Issued at 5:00 am EDT on Thursday 5 February 2009
for the period until midnight EDT Wednesday 11 February 2009.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Warning Summary at issue time

Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Thursday

Mostly sunny. Winds west to northwest averaging up to 20 km/h tending south to southwesterly up to 35 km/h around midday.

City	Sunny day.		Max 30
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Around Melbourne

Frankston	Max 29	Geelong	Max 30
Tullamarine	Max 32	Laverton	Max 31
Yarra Glen	Max 33	Scoresby	Max 33
Mount Dandenong	Max 29	Watsonia	Max 33

Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Friday

Morning cloud. Winds mainly northwest to southwesterly averaging up to 30 km/h.

City	Morning cloud.	Min 17	Max 32
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Forecast for Saturday

Becoming cloudy. Isolated showers during the evening. Winds northerly averaging up to 40 km/h tending gusty southwesterly up to 45 km/h during the afternoon.

City	Windy and shower or two.	Min 24	Max 43
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Forecast for Sunday

Partly cloudy. Isolated showers until evening. Winds west to southwesterly averaging up to 35 km/h.

City	Shower or two.	Min 20	Max 25
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Forecast for Monday

Partly cloudy. Isolated showers. Winds south to southwesterly averaging 15 to 25 km/h.

City	Shower or two.	Min 14	Max 22
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Forecast for Tuesday

Partly cloudy. Isolated showers. Winds south to southwesterly averaging up to 30 km/h.

City	Shower or two.	Min 13	Max 19
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Forecast for Wednesday

Partly cloudy. Isolated showers. Winds southerly averaging up to 30 km/h.

City	Shower or two.	Min 13	Max 20
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The next routine forecast will be issued at 4:20 pm EDT Thursday.



WIT.013.001.0157

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-05 05:40

IDV10706

Australian Government Bureau of Meteorology
Victoria

Bendigo Forecast

Issued at 5:30 am EDT on Thursday 5 February 2009
for the period until midnight EDT Wednesday 11 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the North Western Total Fire Ban District for Thursday 05 February.

Fire weather warning for the Northern Country forecast district.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Thursday

Sunny. Winds south to southwesterly averaging 15 to 25 km/h, reaching 30 km/h at times.

Precis: Sunny. Max 38

Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Friday

Sunny. Winds southwesterly averaging 10 to 20 km/h becoming cooler and light later in the evening.

Precis: Sunny. Min 15 Max 38

Forecast for Saturday

Sunny day. Winds north to northeasterly averaging up to 35 km/h tending cooler west to southwesterly by early evening.

Precis: Windy. Min 21 Max 44

Forecast for Sunday

Partly cloudy. A shower or two until afternoon. Winds west to southwesterly averaging 20 to 30 km/h.

Precis: Shower or two. Min 18 Max 29

Forecast for Monday

Sunny. Winds south to southwesterly averaging 20 to 30 km/h.

Precis: Sunny. Min 10 Max 25

Forecast for Tuesday

Becoming cloudy. Winds southerly averaging 20 to 30 km/h.

Precis: Sunny day. Min 9 Max 21

Forecast for Wednesday

Mostly sunny. Winds southerly averaging 20 to 30 km/h.

Precis: Becoming cloudy. Min 8 Max 23



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

The next routine forecast will be issued at 4:30 pm EDT Thursday.

2009-02-05 05:41

IDV10712
Australian Government Bureau of Meteorology
Victoria

Latrobe Valley Forecast

Issued at 5:30 am EDT on Thursday 5 February 2009
for the period until midnight EDT Wednesday 11 February 2009.

Warning Summary at issue time

Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Thursday

Cloud clearing. Winds west to northwesterly averaging 20 to 30 km/h tending west to southwesterly during the afternoon.

Precis: Cloud clearing. Max 35

Maximum Fire Danger: Very High

UV Alert from 9:40 am to 5:10 pm, UV Index predicted to reach 10 [Very High]

Forecast for Friday

Morning cloud. A little drizzle during the morning. Winds southeast to southwesterly averaging up to 20 km/h tending cooler northeast to southeasterly by early evening.

Precis: A little drizzle clearing. Min 12 Max 33

Forecast for Saturday

Becoming cloudy. A shower or two during the evening. Winds north to northeasterly averaging up to 30 km/h tending cooler westerly later in the evening.

Precis: Windy and shower or two. Min 16 Max 43

Forecast for Sunday

Partly cloudy. A shower or two until evening. Winds westerly averaging 20 to 35 km/h becoming colder and light later in the evening.

Precis: Shower or two. Min 15 Max 27

Forecast for Monday

Partly cloudy. A shower or two. Winds west to southwesterly averaging 10 to 20 km/h.

Precis: Shower or two. Min 9 Max 23

Forecast for Tuesday

Partly cloudy. A shower or two. Winds west to southwesterly averaging 10 to 20

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 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Frankston	Morning cloud.	Min 15	Max 30
Wonthaggi	A little drizzle clearing.	Min 13	Max 28
Yarra Glen	Morning cloud.	Min 11	Max 34
Geelong	A little early drizzle.	Min 12	Max 32
Scoresby	Morning cloud.	Min 14	Max 33

Forecast for Saturday

Becoming cloudy. Isolated showers during the evening. Winds north to northwesterly averaging 35 to 45 km/h tending northwest to southwesterly up to 50 km/h during the afternoon. Overnight temperatures falling to around 19 with daytime temperatures reaching the lower 40s.

Frankston	Windy and shower or two.	Min 20	Max 41
Wonthaggi	Windy and shower or two.	Min 17	Max 39
Yarra Glen	Windy and shower or two.	Min 18	Max 44
Geelong	Windy and shower or two.	Min 19	Max 41
Scoresby	Windy and shower or two.	Min 20	Max 43

Forecast for Sunday

Partly cloudy. Isolated showers until evening. Winds west to southwesterly averaging 20 to 30 km/h, reaching 35 km/h at times. Overnight temperatures falling to around 16 with daytime temperatures reaching the mid 20s.

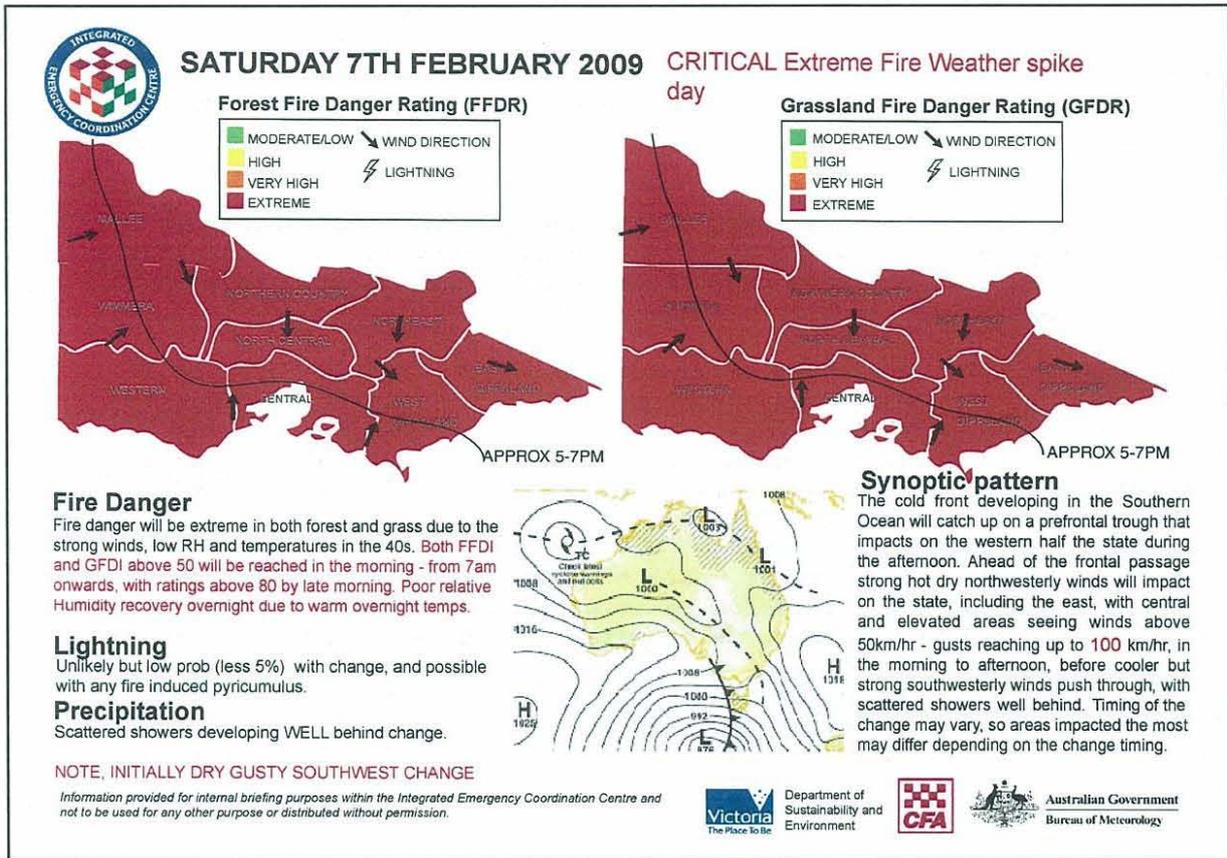
Frankston	Shower or two.	Min 19	Max 22
Wonthaggi	Shower or two.	Min 16	Max 22
Yarra Glen	Shower or two.	Min 14	Max 26
Geelong	Shower or two.	Min 15	Max 24
Scoresby	Shower or two.	Min 17	Max 25

The next routine forecast will be issued at 4:15 pm EDT Thursday.



WIT.013.001.0161

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission



2009-02-05 16:11

IDV22000
Australian Government Bureau of Meteorology
Victoria

Fire Weather Warning
for the Northern Country, Wimmera, Mallee, North Central and Northeast
forecast
districts.

Issued at 04:05 pm EDT on Thursday 05 February 2009.

A fire weather warning for Friday is current in the Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts. Temperatures up to 41 degrees, relative humidity down to 9% and winds to 25 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The next warning will be issued by 11:00 pm EDT Thursday.

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2009-02-05 16:18

IDV17102
Australian Government Bureau of Meteorology
Victoria

Central District Forecast

Issued at 4:15 pm EDT on Thursday 5 February 2009
for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time

Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A low pressure trough extends from inland Australia to eastern Victoria. A high pressure system south of Adelaide will drift across Bass Strait on Friday. A strong cold front will cross most of the State on Saturday and then through the northeast Sunday morning, before a ridge of high pressure pushes into the Bass Strait during Sunday and Monday.

Forecast for the rest of Thursday

Partly cloudy. Winds south to southwesterly averaging 20 to 35 km/h tending southerly up to 25 km/h later in the evening.

Forecast for Friday

Morning cloud. Winds southwesterly averaging 10 to 20 km/h tending southeasterly by early evening. Overnight temperatures falling to around 13 with daytime temperatures reaching 29 to 34.

Frankston	Morning cloud.	Min 15	Max 30
Wonthaggi	Morning cloud.	Min 13	Max 28
Yarra Glen	Morning cloud.	Min 11	Max 34
Geelong	Morning cloud.	Min 12	Max 32
Scoresby	Morning cloud.	Min 14	Max 33

Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:10 pm, UV Index predicted to reach 9 [Very High]

Forecast for Saturday

Sunny day. Isolated light showers late in the evening. Winds northerly averaging 30 to 40 km/h, reaching 45 km/h at times, tending northwesterly up to 55 km/h during the morning. Winds shifting cooler southwesterly and easing to 30 to 40 km/h during the evening. Overnight temperatures falling to around 19 with daytime temperatures reaching 39 to 44.

Frankston	Windy and shower or two.	Min 20	Max 41
Wonthaggi	Windy and shower or two.	Min 17	Max 39
Yarra Glen	Windy and shower or two.	Min 18	Max 44
Geelong	Windy and shower or two.	Min 19	Max 44
Scoresby	Windy and shower or two.	Min 20	Max 43

Forecast for Sunday

Partly cloudy. Isolated light showers until evening. Winds west to

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 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

southwesterly averaging 30 to 40 km/h decreasing below 35 km/h during the morning. Overnight temperatures falling to around 16 with daytime temperatures reaching the lower 20s.

Frankston	Windy then shower or two.	Min 19	Max 21
Wonthaggi	Windy and shower or two.	Min 16	Max 21
Yarra Glen	Light shower or two.	Min 14	Max 24
Geelong	Windy then shower or two.	Min 15	Max 22
Scoresby	Light shower or two.	Min 17	Max 23

Forecast for Monday

Partly cloudy. Isolated light showers. Winds south to southwesterly averaging 15 to 25 km/h, reaching 30 km/h at times. Overnight temperatures falling to around 10 with daytime temperatures reaching the lower 20s.

Frankston	Light shower or two.	Min 14	Max 20
Wonthaggi	Light shower or two.	Min 12	Max 20
Yarra Glen	Light shower or two.	Min 7	Max 23
Geelong	Light shower or two.	Min 9	Max 21
Scoresby	Light shower or two.	Min 11	Max 22

The next routine forecast will be issued at 5:40 am EDT Friday.

2009-02-05 16:20

IDV10450
 Australian Government Bureau of Meteorology
 Victoria

Melbourne Forecast

Issued at 4:20 pm EDT on Thursday 5 February 2009
 for the period until midnight EDT Thursday 12 February 2009.

Warning Summary at issue time

Nil.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Thursday

Partly cloudy. Winds southerly averaging 20 to 35 km/h decreasing below 30 km/h later in the evening.

Forecast for Friday

Morning cloud. Winds southwesterly averaging up to 25 km/h becoming light by early evening.

City	Morning cloud.	Min 17	Max 32
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Around Melbourne

Frankston	Min 15	Max 30	Geelong	Min 12	Max 32
Tullamarine	Min 14	Max 34	Laverton	Min 13	Max 32
Yarra Glen	Min 11	Max 34	Scoresby	Min 14	Max 33
Mount Dandenong	Min 13	Max 29	Watsonia	Min 15	Max 34

Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:10 pm, UV Index predicted to reach 9 [Very High]

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Forecast for Saturday

Sunny day. Isolated light showers late in the evening. Winds north to northeasterly averaging up to 40 km/h tending northwesterly 35 to 50 km/h during the morning. Winds shifting cooler, gusty southwesterly 35 to 45 km/h during the evening.

City Windy and shower or two. Min 24 Max 43

Forecast for Sunday

Partly cloudy. Isolated light showers until evening. Winds southwesterly averaging up to 40 km/h tending west to southwesterly up to 35 km/h around midday.

City Windy then shower or two. Min 20 Max 23

Forecast for Monday

Partly cloudy. Isolated light showers. Winds south to southwesterly averaging up to 30 km/h.

City Light shower or two. Min 14 Max 22

Forecast for Tuesday

Partly cloudy. Isolated light showers. Winds south to southwesterly averaging up to 25 km/h.

City Light shower or two. Min 13 Max 20

Forecast for Wednesday

Partly cloudy. Isolated light showers. Winds south to southeasterly averaging up to 25 km/h.

City Light shower or two. Min 13 Max 21

Forecast for Thursday

Mostly sunny. Winds southeasterly averaging up to 25 km/h.

City Morning cloud. Min 13 Max 25

The next routine forecast will be issued at 5:00 am EDT Friday.

2009-02-05 16:22

IDV22200
Australian Government Bureau of Meteorology
Victoria

Fire Ban Advice for Victoria.

Issued at 04:20 pm EDT on Thursday 05 February 2009.

The Country Fire Authority has declared a Total Fire Ban for Thursday 05 February and Friday 06 February in the North Eastern and North Western Total Fire Ban Districts.

The Country Fire Authority has declared a Total Fire Ban for Friday 06 February



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

in the Eastern, Central and South Western Total Fire Ban Districts.

For further information regarding Fire Bans and other Fire Restrictions contact

The Country Fire Authority on 1800 240 667 or visit <http://www.cfa.vic.gov.au/> CFA advises people living in areas at risk of fire to activate their bush fire plan.

2009-02-05 16:30

IDV10310

Australian Government Bureau of Meteorology
Victoria

Victoria State Forecast

Issued at 4:30 pm EDT on Thursday 5 February 2009
for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the North Eastern and North Western Total Fire Ban Districts for Thursday 05 February and Friday 06 February.

The CFA has declared a day of Total Fire Ban for the Eastern, Central and South

Western Total Fire Ban Districts for Friday 06 February.

Fire weather warning for Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts.

Strong wind warning for Victorian waters between Wilsons Promontory and 60nm east of Gabo Island.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A low pressure trough extends from inland Australia to eastern Victoria. A high

pressure system south of Adelaide will drift across Bass Strait on Friday. A strong cold front will cross most of the State on Saturday and then through the

northeast Sunday morning, before a ridge of high pressure pushes into the Bass Strait during Sunday and Monday.

Forecast for the rest of Thursday

Fine. Warm to hot with moderate southwest winds, fresh about the coast.

Forecast for Friday

Fine apart from the chance of early morning drizzle in Gippsland. Very hot in the north with generally light to moderate northeast to northwest winds. Warm to hot in the south with milder coastal seabreezes.

Maximum Fire Danger: Very high in the south, grading to extreme in the north.

Forecast for Saturday

Very hot with fresh to strong north to northwesterly winds ahead of a gusty southwesterly change.

Isolated showers mainly on and south of the ranges following the change and becoming milder in the south. Areas of raised dust.



Appendix 8

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Forecast for Monday

Partly cloudy. A light shower or two until evening. Winds west to southwesterly averaging 10 to 20 km/h tending south to southwesterly during the afternoon.

Precis: Light shower or two. Min 9 Max 22

Forecast for Tuesday

Partly cloudy. A light shower or two. Winds south to southwesterly averaging 10 to 20 km/h.

Precis: Light shower or two. Min 9 Max 21

Forecast for Wednesday

Partly cloudy. A light shower or two. Winds southeasterly and light.

Precis: Light shower or two. Min 7 Max 20

Forecast for Thursday

Partly cloudy. A light shower or two. Winds east to northeasterly averaging 10 to 20 km/h.

Precis: Light shower or two. Min 9 Max 24

The next routine forecast will be issued at 5:30 am EDT Friday.

2009-02-05 16:46

IDV18520

Australian Government Bureau of Meteorology
Victoria

Fire Weather Forecast

for Saturday 7 February 2009

Issued at 4:45 pm EDT on Thursday 5 February 2009.

FORECASTS ARE ISSUED REGULARLY: PLEASE ENSURE YOU HAVE THE LATEST VERSION

Location	MaxT (C)	DewP (C)	RH (%)	Wind (kph) DIR SPD GUST	DF	CUR	FFDI	GFDI	Wind Change
Walpeup	46	3	7	NNW 45 70	10	100	129	147	WSW 45 15-19
Swan Hill Airport	46	-2	5	N 40 65	10	100	124	127	WSW 45 17-21
Mallee	LAL: 0		RAIN: NO		MIX (M): 4600		WIND (1000): NW 65 FDI above 35: Late AM		
Horsham Airport	44	4	8	NW 50 80	10	100	129	167	WSW 50 14-18
Stawell	41	2	9	NW 55 85	10	100	131	191	WSW 50 14-18
Wimmera	LAL: 0		RAIN: NO		MIX (M): 4500		WIND (1500): NW 75 FDI above 35: Late AM		
Ballarat Airport	41	1	8	NNW 65 100	10	100	169	296	WSW 55 15-19
Portland Airport	34	9	21	NNW 40 65	7	90	33	39	WSW 45 09-13
Hamilton Airport	41	4	10	WNW 55 90	10	100	124	182	WSW 60 11-15
Mortlake	41	3	9	WNW 50 80	9	95	102	133	WSW 55 12-16



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Western	LAL: 0	RAIN: NO	MIX (M): 4200
	WIND (1000):	NW 90	FDI above 35: Late AM
Bendigo Airport	44	0 6 NNW 50	80 10 100 139 182 WSW 50 18-22
Shepparton Airport	42	1 8 N 40	65 10 100 98 101 WSW 40 20-00
Northern Country	LAL: 0	RAIN: NO	MIX (M): 4600
	WIND (1000):	NW 65	FDI above 35: Late AM
Mangalore Airport	43	1 7 N 45	70 10 100 116 135 WSW 40 20-00
North Central	LAL: 0	RAIN: NO	MIX (M): 4500
	WIND (1500):	NW 70	FDI above 35: Late AM
Geelong Airport	44	3 8 NW 45	75 10 100 117 135 WSW 45 14-18
Coldstream	44	0 6 N 45	70 10 100 124 144 W 40 19-23
Tullamarine	44	-2 5 NNW 55	90 10 90 162 171 WSW 45 17-21
Dunns Hill	39	1 9 NNW 65	105 10 90 153 195 WSW 55 18-22
Wonthaggi	39	5 12 NW 45	70 10 100 86 102 WSW 45 16-20
Central	LAL: 0	RAIN: NO	MIX (M): 4500
	WIND (1000):	NW 80	FDI above 35: Late AM
Albury-Wodonga	44	3 8 N 35	55 10 100 93 81
Wangaratta Airport	44	0 6 N 35	60 10 100 98 87
Hunters Hill	37	3 12 NW 45	70 10 100 81 98
Northeast	LAL: 0	RAIN: NO	MIX (M): 4700
	WIND (1500):	NW 55	FDI above 35: Late AM
Latrobe Valley	43	1 7 NNW 50	80 10 100 131 171 W 35 19-23
East Sale Airport	42	3 9 NNW 35	60 10 100 84 74 SW 35 20-00
Mount Moornapa	41	5 11 NNW 55	85 10 100 121 177 WSW 35 21-01
W & S Gippsland	LAL: 0	RAIN: NO	MIX (M): 4500
	WIND (1000):	NW 75	FDI above 35: Late AM
Orbost	40	9 15 NNW 25	45 10 80 50 12 SW 35 21-01
Gelantipy	38	4 12 NNW 55	85 8 100 85 157
East Gippsland	LAL: 0	RAIN: NO	MIX (M): 4700
	WIND (1500):	NW 55	FDI above 35: Late AM
Falls Creek	29	2 17 NNW 55	90 8 100 52 105
Alpine Areas	LAL: 0	RAIN: NO	MIX (M): 4800
	WIND (2000):	NW 60	FDI above 35: Late AM

Interstate:

Note:

MaxT = Maximum Temperature

RH = Relative Humidity

Dew Pt = Dew Point Temperature

DF = Drought Factor

CUR = Curing

FFDI is the Forest Fire Danger Index

GFDI is the Grassland Fire Danger Index

LAL = Lightning Activity Level: (0) = nil thunderstorms, (1) = isolated thunderstorms, (2) = scattered thunderstorms, (3) = widespread thunderstorms

RAIN: NO = less than 5mm, YES = greater than 5mm over district for day.

MIX (above sea level) = Mixing Depth

WIND (above sea level) = Upper Wind

FDI above 35 = time when FDI is above 35 when at least 4 hours before or after



WIT.013.001.0170

Appendix 8

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

MaxT time

Saturday: Very severe fire weather day. Prognoses are very consistent so it is unlikely that these numbers will be moderated closer to the day. Some ratings would exceed 200 points but the GFE system truncates them at 100 at present. Cloud is unlikely to be a factor reducing temperatures. There is some possibility that thunderstorms could occur after the wind change.



WIT.013.001.0171

Appendix 8

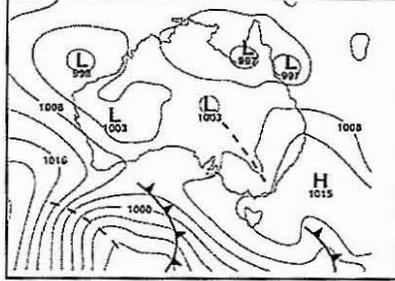
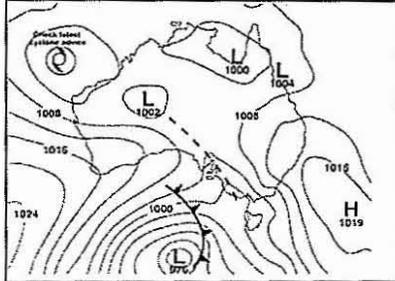
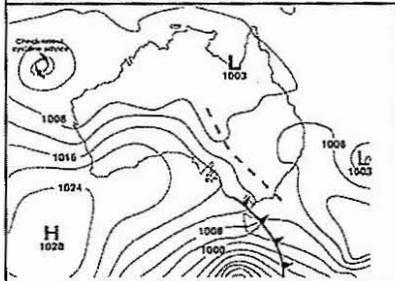
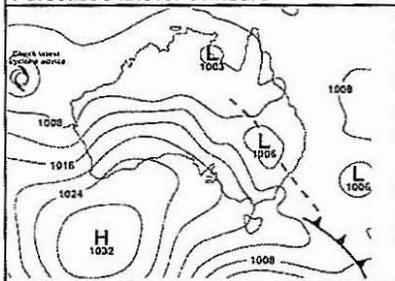
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-05 17:19

IDV18540
Australian Government Bureau of Meteorology
Victoria

Fire Weather Outlook for Victoria

Issued at 4:00 pm EDT on Thursday 5 February 2009.

<p>Forecast chart for 11 hours</p> 	<p>Friday 6 February 2009</p> <p>A high pressure cell will pass south of Victoria so this day looks like relatively light winds inland and seabreezes. Northwest winds aloft will mix down in the afternoon but should not be as strong as first thought. The airmass is not expected to be as dry as first thought either. Nonetheless the high temperatures in the north push the fire danger to extreme.</p>
<p>Forecast chart for 11 hours</p> 	<p>Saturday 7 February 2009</p> <p>Critical fire weather day with a combination of strong north/northwesterly winds ahead of a pre frontal trough passage Saturday afternoon and night. Air ahead of the change will become dry with a well mixed atmosphere. Temperatures will be very hot, perhaps breaking some February records. Gusty west/southwest winds behind the change make this an extremely dangerous day. Extreme ratings every district and many ratings exceeding 100. Some chance of lightning following change and widespread dust expected with it.</p>
<p>Forecast chart for 11 hours</p> 	<p>Sunday 8 February 2009</p> <p>A more significant cold push associated with the main cold front is expected to affect most of the state on Sunday. Winds will be gusty at times but cooler temperatures and higher humidity will moderate fire danger ratings. With that being said very high ratings will be found across the north.</p>
<p>Forecast chart for 11 hours</p> 	<p>Monday 9 February 2009</p> <p>Cool to mild spell continues with light showers in the south. Ratings only high to very high.</p>

Fire Weather Estimates are the primary source of detailed and up to date forecasts.



WIT.013.001.0172

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-05 18:24

IDV22200

Australian Government Bureau of Meteorology
Victoria

Fire Ban Advice for Victoria.

Issued at 06:07 pm EDT on Thursday 05 February 2009.

The Country Fire Authority has declared a Total Fire Ban for Thursday 05 February in the North Eastern and North Western Total Fire Ban Districts.

The Country Fire Authority has declared a Total Fire Ban for Friday 06 February for all of Victoria.

For further information regarding Fire Bans and other Fire Restrictions contact

The Country Fire Authority on 1800 240 667 or visit <http://www.cfa.vic.gov.au/> CFA advises people living in areas at risk of fire to activate their bush fire plan.

2009-02-05 18:40

IDV10310

Australian Government Bureau of Meteorology
Victoria

Updated Victoria State Forecast

Issued at 6:40 pm EDT on Thursday 5 February 2009
for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the North Eastern and North Western Total Fire Ban Districts for Thursday 05 February.

The CFA has declared a day of Total Fire Ban for all of Victoria for Friday 06 February.

Fire weather warning for Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts.

Strong wind warning for Victorian waters between Wilsons Promontory and 60nm east of Gabo Island.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A low pressure trough extends from inland Australia to eastern Victoria. A high

pressure system south of Adelaide will drift across Bass Strait on Friday. A strong cold front will cross most of the State on Saturday and then through the

northeast Sunday morning, before a ridge of high pressure pushes into the Bass Strait during Sunday and Monday.

Forecast for the rest of Thursday

Fine. Warm to hot with moderate southwest winds, fresh about the coast.

Forecast for Friday



WIT.013.001.0173

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Fine apart from the chance of early morning drizzle in Gippsland. Very hot in the north with generally light to moderate northeast to northwest winds. Warm to hot in the south with milder coastal seabreezes.

Maximum Fire Danger: Very high in the south, grading to extreme in the north.

Forecast for Saturday

Very hot with fresh to strong north to northwesterly winds ahead of a gusty southwesterly change.

Isolated showers mainly on and south of the ranges following the change and becoming milder in the south. Areas of raised dust.

Forecast for Sunday

Isolated showers mainly on and south of the ranges. Moderate to fresh southwesterly winds extending throughout. Very warm at first in the northeast, otherwise cool to mild in the south and mild to warm in the north.

Forecast for Monday

Isolated light showers on and south of the ranges. Cool to mild with moderate southwest to southerly winds, fresh about the coast.

The next routine forecast will be issued at 5:00 am EDT Friday.

2009-02-05 22:54

IDV22000

Australian Government Bureau of Meteorology
Victoria

Fire Weather Warning

for the Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts.

Issued at 10:53 pm EDT on Thursday 05 February 2009.

A fire weather warning for Friday is current in the Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts. Temperatures up to 41 degrees, relative humidity down to 9% and winds to 25 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The next warning will be issued by 05:00 am EDT Friday.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Friday 6 February

2009-02-06 04:20

IDV22200
Australian Government Bureau of Meteorology
Victoria

Fire Ban Advice for Victoria.

Issued at 04:18 am EDT on Friday 06 February 2009.

The Country Fire Authority has declared a Total Fire Ban for Friday 06 February in the Eastern, North Eastern, Central, North Western and South Western Total Fire Ban Districts.

For further information regarding Fire Bans and other Fire Restrictions contact

The Country Fire Authority on 1800 240 667 or visit <http://www.cfa.vic.gov.au/> CFA advises people living in areas at risk of fire to activate their bush fire plan.

2009-02-06 04:20

IDV22000
Australian Government Bureau of Meteorology
Victoria

Fire Weather Warning
for the Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts.

Issued at 04:20 am EDT on Friday 06 February 2009.

A fire weather warning for Friday is current in the Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts. Temperatures up to 44 degrees, relative humidity down to 9% and winds to 20 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The next warning will be issued by 11:00 am EDT Friday.

2009-02-06 05:13

IDV10310
Australian Government Bureau of Meteorology
Victoria

Victoria State Forecast

Issued at 5:00 am EDT on Friday 6 February 2009

Appendix 8
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for all of Victoria for Friday 06 February.

Fire weather warning for Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A high pressure system south of Adelaide will drift across Tasmania this morning before reaching the Tasman Sea later. A cold front will cross most of the State on Saturday and then through the northeast Sunday morning. A ridge of

high pressure will develop over southern Victoria during Sunday and Monday as cold fronts move across Tasmania.

Forecast for the rest of Friday

Fine apart from the chance of isolated thunderstorms in the far west later today. Very hot in the north with generally light winds tending northwest in the west later. Warm to hot in the south with milder afternoon coastal seabreezes.

Maximum Fire Danger: Very high in the south, grading to extreme in the north.

Forecast for Saturday

Very hot with fresh to strong north to northwesterly winds ahead of a cooler and gusty southwesterly change reaching the southwest during the early afternoon before extending eastwards. Isolated showers on and south of the ranges following the change. Areas of raised dust.

Forecast for Sunday

Isolated showers mainly on and south of the ranges. Moderate to fresh southwesterly winds extending throughout. Very warm at first in the northeast, otherwise cool to mild in the south and mild to warm in the north.

Forecast for Monday

Isolated light showers on and south of the ranges. Cool to mild with moderate southwest to southerly winds, fresh about the coast.

The next routine forecast will be issued at 4:30 pm EDT Friday.

2009-02-06 05:28

IDV10450

Australian Government Bureau of Meteorology
Victoria

Melbourne Forecast

Issued at 5:00 am EDT on Friday 6 February 2009
for the period until midnight EDT Thursday 12 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Central Total Fire Ban District for Friday 06 February.

Details of warnings are available on the Bureau's website www.bom.gov.au, by

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-06 05:41

IDV10706
Australian Government Bureau of Meteorology
Victoria

Bendigo Forecast

Issued at 5:30 am EDT on Friday 6 February 2009
for the period until midnight EDT Thursday 12 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the North Western Total Fire Ban District for Friday 06 February.

Fire weather warning for the Northern Country forecast district.
Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Friday

Sunny. Winds southeasterly averaging 10 to 20 km/h becoming light around midday.

Precis: Sunny. Max 41

Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Saturday

Sunny day. Winds north to northeasterly averaging up to 35 km/h tending cooler west to southwesterly 40 to 50 km/h by early evening.

Precis: Windy. Min 21 Max 44

Forecast for Sunday

Morning cloud. Winds west to southwesterly averaging up to 40 km/h.

Precis: Morning cloud. Min 18 Max 29

Forecast for Monday

Sunny. Winds south to southwesterly averaging 20 to 30 km/h.

Precis: Sunny. Min 10 Max 25

Forecast for Tuesday

Mostly sunny. Winds southerly averaging 20 to 30 km/h.

Precis: Mostly sunny. Min 9 Max 22

Forecast for Wednesday

Mostly sunny. Winds south to southeasterly averaging 20 to 30 km/h.

Precis: Sunny. Min 8 Max 24

Forecast for Thursday

Sunny. Winds southeasterly averaging 15 to 20 km/h.

Precis: Sunny. Min 9 Max 27

The next routine forecast will be issued at 4:30 pm EDT Friday.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-06 05:43

IDV10712

Australian Government Bureau of Meteorology
Victoria

Latrobe Valley Forecast

Issued at 5:30 am EDT on Friday 6 February 2009
for the period until midnight EDT Thursday 12 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Eastern Total Fire Ban District for Friday 06 February.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Friday

Cloud clearing. Light winds tending cooler easterly up to 20 km/h by early evening.

Precis: Cloud clearing. Max 36

Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:00 pm, UV Index predicted to reach 8 [Very High]

Forecast for Saturday

Sunny day. A light shower or two late in the evening. Winds north to northeasterly averaging up to 30 km/h tending cooler southwesterly about 35 km/h later in the evening.

Precis: Windy and shower or two. Min 16 Max 43

Forecast for Sunday

Partly cloudy. A light shower or two until evening. Winds west to southwesterly averaging 20 to 35 km/h becoming colder and light later in the evening.

Precis: Light shower or two. Min 16 Max 26

Forecast for Monday

Partly cloudy. A light shower or two until evening. Winds west to southwesterly averaging 10 to 20 km/h tending south to southwesterly during the afternoon.

Precis: Light shower or two. Min 9 Max 22

Forecast for Tuesday

Partly cloudy. A light shower or two. Winds south to southwesterly averaging 10 to 20 km/h.

Precis: Light shower or two. Min 9 Max 21

Forecast for Wednesday

Partly cloudy. A light shower or two. Winds southeasterly and light.



WIT.013.001.0179

Appendix 8
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Precis: Light shower or two.	Min 7	Max 20
Forecast for Thursday		
Partly cloudy. A light shower or two. Winds east to northeasterly averaging 10 to 20 km/h.		
Precis: Light shower or two.	Min 9	Max 24
The next routine forecast will be issued at 4:30 pm EDT Friday.		

2009-02-06 05:49

IDV17102
Australian Government Bureau of Meteorology
Victoria

Central District Forecast

Issued at 5:40 am EDT on Friday 6 February 2009
for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Central Total Fire Ban District for Friday 06 February.
Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A high pressure system south of Adelaide will drift across Tasmania this morning before reaching the Tasman Sea later. A cold front will cross most of the State on Saturday and then through the northeast Sunday morning. A ridge of high pressure will develop over southern Victoria during Sunday and Monday as cold fronts move across Tasmania.

Forecast for the rest of Friday

Cloud clearing. Winds southwesterly averaging 10 to 20 km/h tending northeast to southeasterly by early evening. Temperatures 29 to 34 during the day.

Frankston	Mostly sunny.	Max 30
Wonthaggi	Cloud clearing.	Max 28
Yarra Glen	Mostly sunny.	Max 34
Geelong	Mostly sunny.	Max 32
Scoresby	Cloud clearing.	Max 33

Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:10 pm, UV Index predicted to reach 9 [Very High]

Forecast for Saturday

Sunny day. Isolated light showers late in the evening. Winds northerly averaging 30 to 40 km/h, reaching 45 km/h at times, tending northwesterly up to 55 km/h during the morning. Winds shifting cooler southwesterly and easing to 30 to 40 km/h during the evening. Overnight temperatures falling to around 19 with daytime temperatures reaching 39 to 44.

Frankston	Windy and shower or two.	Min 20	Max 41
Wonthaggi	Windy and shower or two.	Min 17	Max 39

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Yarra Glen	Windy and shower or two.	Min 18	Max 44
Geelong	Windy and shower or two.	Min 19	Max 44
Scoresby	Windy and shower or two.	Min 20	Max 43

Forecast for Sunday

Partly cloudy. Isolated light showers until evening. Winds west to southwesterly averaging 30 to 40 km/h decreasing below 35 km/h during the morning. Overnight temperatures falling to around 16 with daytime temperatures reaching the lower 20s.

Frankston	Windy then shower or two.	Min 19	Max 21
Wonthaggi	Windy and shower or two.	Min 16	Max 21
Yarra Glen	Light shower or two.	Min 14	Max 24
Geelong	Windy then shower or two.	Min 15	Max 22
Scoresby	Light shower or two.	Min 17	Max 23

Forecast for Monday

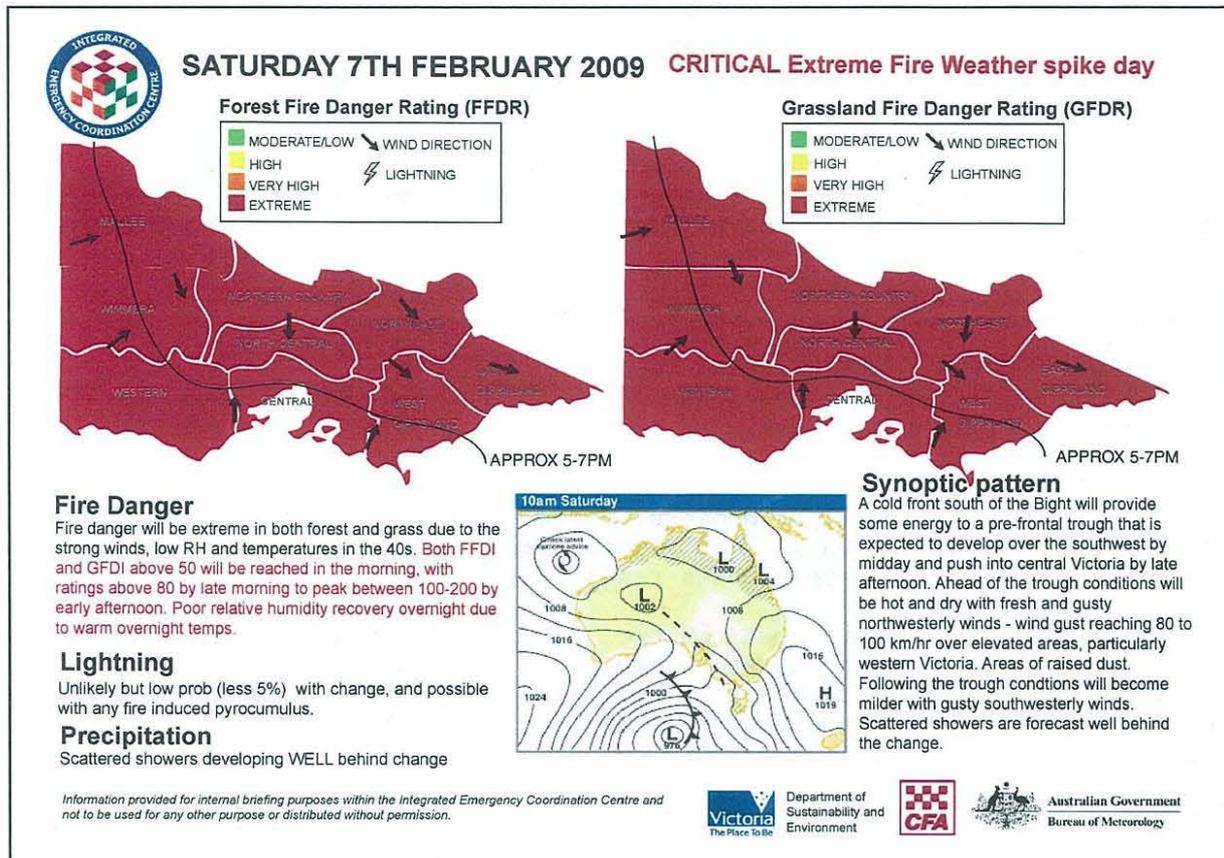
Partly cloudy. Isolated light showers. Winds south to southwesterly averaging 15 to 25 km/h, reaching 30 km/h at times. Overnight temperatures falling to around 10 with daytime temperatures reaching the lower 20s.

Frankston	Light shower or two.	Min 14	Max 20
Wonthaggi	Light shower or two.	Min 12	Max 20
Yarra Glen	Light shower or two.	Min 7	Max 23
Geelong	Light shower or two.	Min 9	Max 21
Scoresby	Light shower or two.	Min 11	Max 22

The next routine forecast will be issued at 4:15 pm EDT Friday.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission



2009-02-06 11:30

IDV28000
Australian Government Bureau of Meteorology
Victoria

Severe Weather Warning
for damaging winds
for people in the Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

Issued at 11:22 am EDT on Friday 06 February 2009.

Weather Situation
A strong cold front will reach the far southwest of the state around midday, then gradually move eastwards across Victoria, clearing the northeast early Sunday morning.

Damaging winds are forecast for parts of the Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland, East Gippsland and Northeast forecast districts. North to northwesterly winds averaging 50 km/hr with wind gusts to 90 km/hr will shift southwesterly at a similar strength behind the front.

The State Emergency Service advises that people should:
- Move vehicles under cover or away from trees.
- Secure or put away loose items around your house, yard and balcony.

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

- For emergency help in floods and storms, ring your local SES Unit on 132 500.

The next warning will be issued by 05:00 pm EDT Friday.

This warning is also available through TV and Radio broadcasts; the Bureau's website at www.bom.gov.au or call 1300-659-217*.

The Bureau and State Emergency Service would appreciate this warning being broadcast regularly.

2009-02-06 11:57

IDV28000
Australian Government Bureau of Meteorology
Victoria

Severe Weather Warning
for damaging winds
for people in the Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

Issued at 11:22 am EDT on Friday 06 February 2009.

Weather Situation

A strong cold front will reach the far southwest of the state around midday Saturday, then gradually move eastwards across Victoria, clearing the northeast early Sunday morning.

Damaging winds are forecast for Saturday across parts of the Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland, East Gippsland and Northeast forecast districts. North to northwesterly winds averaging 50 km/hr with wind gusts to 90 km/hr will shift southwesterly at a similar strength behind the front.

The State Emergency Service advises that people should:

- Move vehicles under cover or away from trees.
- Secure or put away loose items around your house, yard and balcony.
- For emergency help in floods and storms, ring your local SES Unit on 132 500.

The next warning will be issued by 05:00 pm EDT Friday.

This warning is also available through TV and Radio broadcasts; the Bureau's website at www.bom.gov.au or call 1300-659-217*.

The Bureau and State Emergency Service would appreciate this warning being broadcast regularly.

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-06 12:38

IDV22200

Australian Government Bureau of Meteorology
Victoria

Fire Ban Advice for Victoria.

Issued at 12:35 pm EDT on Friday 06 February 2009.

The Country Fire Authority has declared a Total Fire Ban for Friday 06 February and Saturday 07 February in all Victorian Total Fire Ban Districts.

For further information regarding Fire Bans and other Fire Restrictions contact The Country Fire Authority on 1800 240 667 or visit <http://www.cfa.vic.gov.au/>
CFA advises people living in areas at risk of fire to activate their bush fire plan.

2009-02-06 14:55

IDV10310

Australian Government Bureau of Meteorology
Victoria

Updated Victoria State Forecast

Issued at 2:55 pm EDT on Friday 6 February 2009
for the period until midnight EDT Monday 9 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for Friday 06 February and Saturday 07 February in all Victorian Total Fire Ban Districts. Fire weather warning for Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts. Severe weather warning for Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland, East Gippsland, Northeast forecast districts.

Strong wind warning for Victorian waters between SA-VIC Border and Cape Otway. Strong wind warning for Victorian waters between Wilsons Promontory and 60nm east of Gabo Island.

Gale warning for Victorian waters between Cape Otway and Wilsons Promontory. Gale warning is current for Western Port.

Gale warning is current for Port Phillip.

Strong wind warning is current for Gippsland Lakes.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A high pressure system south of Adelaide will drift across Tasmania this morning before reaching the Tasman Sea later. A cold front will cross most of the State on Saturday and then through the northeast Sunday morning. A ridge of high pressure will develop over southern Victoria during Sunday and Monday as cold fronts move across Tasmania.

Forecast for the rest of Friday

Fine apart from isolated showers about the southwest, with possible thunderstorms. Very hot in the north with generally light winds tending northwest in the west later. Warm to hot in the south with milder afternoon coastal seabreezes.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Maximum Fire Danger: Very high in the south, grading to extreme in the north.

Forecast for Saturday

Very hot with fresh to strong north to northwesterly winds ahead of a cooler and gusty southwesterly change reaching the southwest late in the morning before extending eastwards. Isolated showers on and south of the ranges following the change. Areas of raised dust.

Forecast for Sunday

Isolated showers mainly on and south of the ranges. Moderate to fresh southwesterly winds extending throughout. Very warm at first in the northeast, otherwise cool to mild in the south and mild to warm in the north.

Forecast for Monday

Isolated light showers on and south of the ranges. Cool to mild with moderate southwest to southerly winds, fresh about the coast.

The next routine forecast will be issued at 4:30 pm EDT Friday.

* Calls to 1300 numbers cost around 27.5c incl. GST, higher from mobiles or public phones.

2009-02-06 15:25

IDV18520
Australian Government Bureau of Meteorology
Victoria

Updated Fire Weather Forecast
for Saturday 7 February 2009
Issued at 3:25 pm EDT on Friday 6 February 2009.

FORECASTS ARE ISSUED REGULARLY: PLEASE ENSURE YOU HAVE THE LATEST VERSION

Location	MaxT (C)	DewP (C)	RH (%)	Wind (kph) DIR SPD GUST	DF	CUR	FFDI	GFDI	Wind Change
Walpeup	46	2	6	NNW 50 80	10	100	148	190	SW 50 15-19
Swan Hill Airport	46	-3	4	N 50 80	10	100	159	210	SW 45 18-22
Mallee	LAL: 0		RAIN: NO		MIX (M): 4900		WIND (1000): NW 60 FDI above 35: Late AM		
Horsham Airport	44	1	7	NNW 50 80	10	100	137	178	SW 50 14-18
Stawell	41	1	8	NNW 55 85	10	100	133	195	WSW 50 15-19
Wimmera	LAL: 0		RAIN: NO		MIX (M): 5000		WIND (1500): NW 75 FDI above 35: Late AM		
Ballarat Airport	41	-4	5	NNW 65 100	10	100	185	330	WSW 60 15-19
Portland Airport	34	9	21	NNW 45 70	7	90	37	50	WSW 50 09-13
Hamilton Airport	41	3	9	NNW 55 90	10	100	128	186	WSW 55 12-16
Mortlake	41	3	9	NNW 50 80	9	95	102	133	SW 50 13-17
Western	LAL: 0		RAIN: NO		MIX (M): 4500		WIND (1000): NW 90 FDI above 35: Late AM		
Bendigo Airport	44	-1	6	NNW 50 80	10	100	142	186	WSW 50 17-21
Shepparton Airport	42	0	7	N 50 80	10	100	127	167	WSW 45 20-00

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2009-02-06 16:12

IDV22000
Australian Government Bureau of Meteorology
Victoria

Fire Weather Warning
for the Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

Issued at 04:11 pm EDT on Friday 06 February 2009.

A fire weather warning for Friday and Saturday is current in the Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts. Temperatures up to 45 degrees, relative humidity down to 6% and winds to around 50 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The next warning will be issued by 11:00 pm EDT Friday.

2009-02-06 16:17

IDV17102
Australian Government Bureau of Meteorology
Victoria

Central District Forecast

Issued at 4:15 pm EDT on Friday 6 February 2009
for the period until midnight EDT Tuesday 10 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Central Total Fire Ban District for Friday 06 February and Saturday 07 February.

Fire weather warning within this area.

Severe weather warning within this area.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A high pressure system is over the Tasman Sea. A strong cold front will cross most of the State on Saturday and then through the northeast Sunday morning. A ridge of high pressure will develop over southern Victoria during Sunday and slowly strengthen during Monday and Tuesday as weak cold fronts move across Tasmania.

Forecast for the rest of Friday

Isolated light showers and the chance of thunderstorms about the far south. Winds southeasterly averaging 10 to 20 km/h.

Forecast for Saturday

Becoming cloudy. Areas of raised dust in the afternoon and evening. Isolated light showers late in the evening. Winds north to northeasterly averaging 30



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to 40 km/h, reaching 45 km/h at times, tending northwesterly up to 55 km/h during the morning ahead of a cooler, gusty southwest change during the early evening. Overnight temperatures falling to in the lower 20s with daytime temperatures reaching 39 to 44.

Frankston	Windy. Late cool change.	Min 20	Max 41
Wonthaggi	Windy and shower or two.	Min 16	Max 40
Yarra Glen	Windy. Late cool change.	Min 18	Max 44
Geelong	Windy. Late cool change.	Min 19	Max 44
Scoresby	Windy. Late cool change.	Min 20	Max 44

Maximum Fire Danger: Extreme

UV Alert from 9:40 am to 5:20 pm, UV Index predicted to reach 10 [Very High]



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2009-02-06 16:18

IDV18540
Australian Government Bureau of Meteorology
Victoria

Fire Weather Outlook for Victoria

Issued at 4:00 pm EDT on Friday 6 February 2009.

<p>Forecast chart for 11 hours</p>	<p>Saturday 7 February 2009</p> <p>Critical fire weather day with a combination of strong and gusty north/northwesterly winds ahead of a pre frontal trough passage Saturday afternoon and night. Air ahead of the change will become dry with a well mixed atmosphere. Temperatures will be very hot, perhaps breaking some February records. Gusty west/southwest winds behind the change make this an extremely dangerous day. Extreme ratings every district and many ratings exceeding 100. Slight chance of lightning following change and widespread dust expected near it.</p>
<p>Forecast chart for 11 hours</p>	<p>Sunday 8 February 2009</p> <p>A more significant cold push associated with the main cold front is expected to affect most of the state on Sunday. Winds will be gusty at times but cooler temperatures and higher humidity will moderate fire danger ratings. With that being said very high ratings will be found across the north, possibly reaching extreme in the far northwest.</p>
<p>Forecast chart for 11 hours</p>	<p>Monday 9 February 2009</p> <p>Cool to mild spell continues with light showers in the south. Ratings only high to very high.</p>
<p>Forecast chart for 11 hours</p>	<p>Tuesday 10 February 2009</p> <p>Cool conditions continue with isolated showers in the south. Moderate southerly winds and fire ratings peaking at high to very high in the north.</p>

Fire Weather Estimates are the primary source of detailed and up to date forecasts.



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2009-02-06 16:20

IDV10450

Australian Government Bureau of Meteorology
Victoria

Melbourne Forecast

Issued at 4:20 pm EDT on Friday 6 February 2009
for the period until midnight EDT Friday 13 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Central Total Fire Ban District for Friday 06 February and Saturday 07 February.

Fire weather warning for the Central forecast district.

Severe weather warning for the Central forecast district.

Gale warning for Port Phillip.

Gale warning for Western Port.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Friday

Mostly clear. Winds south to southeasterly averaging up to 25 km/h becoming light later in the evening.

Forecast for Saturday

A windy day with a late cool change. Becoming cloudy. Areas of raised dust in the afternoon and evening. Isolated light showers after the change. Winds north

to northeasterly averaging up to 40 km/h tending northwesterly 35 to 50 km/h during the morning.

City	Windy. Late cool change.		Min 24	Max 44
Around Melbourne				
Frankston	Min 20	Max 41	Geelong	Min 19 Max 44
Tullamarine	Min 24	Max 44	Laverton	Min 20 Max 44
Yarra Glen	Min 18	Max 44	Scoresby	Min 20 Max 44
Mount Dandenong	Min 19	Max 40	Watsonia	Min 21 Max 44

Maximum Fire Danger: Extreme

UV Alert from 9:40 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Sunday

Partly cloudy. Isolated light showers until evening. Winds southwesterly averaging up to 40 km/h decreasing below 30 km/h during the morning.

City	Windy then shower or two.		Min 20	Max 23
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Forecast for Monday

Partly cloudy. Isolated light showers. Winds southerly averaging up to 30 km/h.

City	Light shower or two.		Min 14	Max 21
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Forecast for Tuesday

Partly cloudy. Isolated light showers. Winds south to southwesterly averaging up to 25 km/h.

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City	Light shower or two.	Min 13	Max 20
Forecast for Wednesday Partly cloudy. Isolated light showers during the morning. Winds southerly averaging up to 30 km/h.			
City	Light shower or two clearing.	Min 13	Max 20
Forecast for Thursday Morning cloud. Winds south to southeasterly averaging up to 30 km/h.			
City	Morning cloud.	Min 13	Max 25
Forecast for Friday Sunny. Winds east to southeasterly averaging up to 20 km/h becoming light during the afternoon.			
City	Sunny.	Min 14	Max 28
The next routine forecast will be issued at 5:00 am EDT Saturday.			

2009-02-06 16:34

IDV10706
Australian Government Bureau of Meteorology
Victoria

Bendigo Forecast

Issued at 4:30 pm EDT on Friday 6 February 2009
for the period until midnight EDT Friday 13 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the North Western Total Fire Ban District for Friday 06 February and Saturday 07 February.
Fire weather warning for the Northern Country forecast district.
Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Friday
Clear. Winds northerly and light.

Forecast for Saturday

A sunny day. Raised dust during the evening. Winds north to northeasterly averaging up to 35 km/h tending cooler west to southwesterly 40 to 50 km/h by early evening.

Precis: Windy and dust. Min 25 Max 44

Maximum Fire Danger: Extreme

UV Alert from 9:40 am to 5:30 pm, UV Index predicted to reach 11 [Extreme]

Forecast for Sunday

Morning cloud. Winds west to southwesterly averaging up to 40 km/h tending south to southwesterly about 25 km/h by early evening.

Precis: Morning cloud. Min 18 Max 29



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Forecast for Monday

Sunny. Winds southerly averaging 20 to 25 km/h.

Precis: Sunny. Min 10 Max 24

Forecast for Tuesday

Sunny. Winds southerly averaging 15 to 25 km/h.

Precis: Sunny. Min 9 Max 22

Forecast for Wednesday

Sunny. Winds southerly averaging 20 to 30 km/h.

Precis: Sunny. Min 8 Max 23

Forecast for Thursday

Sunny. Winds south to southeasterly averaging 20 to 30 km/h.

Precis: Sunny. Min 9 Max 26

Forecast for Friday

Sunny. Winds east to southeasterly averaging 10 to 15 km/h, reaching 20 km/h at times.

Precis: Sunny. Min 10 Max 30

The next routine forecast will be issued at 5:30 am EDT Saturday.

2009-02-06 16:38

IDV10712

Australian Government Bureau of Meteorology
Victoria

Latrobe Valley Forecast

Issued at 4:30 pm EDT on Friday 6 February 2009
for the period until midnight EDT Friday 13 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Eastern Total Fire Ban District for Friday 06 February and Saturday 07 February.
Fire weather warning for the West and South Gippsland forecast district.
Severe weather warning for the West and South Gippsland forecast district.
Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Friday

A light shower or two. Winds northeasterly averaging 15 to 20 km/h.

Forecast for Saturday

Sunny day. Raised dust during the evening. A light shower or two late in the evening. Winds north to northeasterly averaging up to 30 km/h tending cooler west to southwesterly 35 to 45 km/h later in the evening.

Precis: Windy, shower or two. Min 18 Max 43

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Maximum Fire Danger: Extreme
UV Alert from 9:40 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Sunday

Partly cloudy. A light shower or two until evening. Winds west to southwesterly averaging 20 to 35 km/h becoming colder and light later in the evening.

Precis: Light shower or two. Min 16 Max 26

Forecast for Monday

Partly cloudy. A light shower or two until evening. Winds southwesterly averaging up to 20 km/h.

Precis: Light shower or two. Min 10 Max 22

Forecast for Tuesday

Partly cloudy. A light shower or two. Winds southwesterly and light.

Precis: Light shower or two. Min 8 Max 21

Forecast for Wednesday

Partly cloudy. A light shower or two. Light winds tending south to southwesterly up to 20 km/h during the afternoon.

Precis: Light shower or two. Min 7 Max 20

Forecast for Thursday

Partly cloudy. Winds south to southeasterly averaging about 20 km/h tending east to southeasterly during the evening.

Precis: Partly cloudy. Min 9 Max 24

Forecast for Friday

Sunny. Winds easterly and light.

Precis: Sunny. Min 10 Max 27

The next routine forecast will be issued at 5:30 am EDT Saturday.

2009-02-06 16:43

IDV10310
Australian Government Bureau of Meteorology
Victoria

Victoria State Forecast

Issued at 4:30 pm EDT on Friday 6 February 2009
for the period until midnight EDT Tuesday 10 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for Friday 06 February and Saturday 07 February in all Victorian Total Fire Ban Districts.
Fire weather warning for Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.



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Severe weather warning for Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland, East Gippsland, Northeast forecast districts.

Strong wind warning for Victorian waters between SA-VIC Border and Portland.

Strong wind warning for Victorian waters between Port Fairy and Warrnambool.

Strong wind warning for Victorian waters between Wilsons Promontory and Mallacoota.

Gale warning for Victorian waters between Portland and Port Fairy.

Gale warning for Victorian waters between Warrnambool and Wilsons Promontory.

Gale warning for Victorian waters between Mallacoota and 60nm east of Gabo Island.

Gale warning is current for Western Port.

Gale warning is current for Port Phillip.

Strong wind warning is current for Gippsland Lakes.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A high pressure system is over the Tasman Sea. A strong cold front will cross most of the State on Saturday and then through the northeast Sunday morning. A ridge of high pressure will develop over southern Victoria during Sunday and slowly strengthen during Monday and Tuesday as weak cold fronts move across Tasmania.

Forecast for the rest of Friday

Fine apart from isolated showers about the south, with the chance of a thunderstorm. Warm to hot with light to moderate northwest winds and milder coastal seabreezes.

Forecast for Saturday

Very hot with strengthening north to northwesterly winds ahead of a cooler gusty southwesterly change reaching the far southwest late in the morning before extending eastwards to reach the northeast at night. Isolated light showers on and south of the ranges following the change. Areas of raised dust near the change.

Maximum Fire Danger: Extreme

Forecast for Sunday

Isolated light showers mainly on and south of the ranges. Moderate to fresh southwesterly winds extending throughout. Hot at first in the northeast, otherwise cool to mild in the south and mild to warm in the north.

Forecast for Monday

Isolated light showers on and south of the ranges. Cool to mild with moderate southwest to southerly winds, fresh about the coast.

Forecast for Tuesday

Isolated light showers on and south of the ranges. Cool to mild with light to moderate southerly winds.

The next routine forecast will be issued at 5:00 am EDT Saturday.

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2009-02-06 16:52

IDV18500
Australian Government Bureau of Meteorology
Victoria

Fire Weather Forecast
for Saturday 7 February 2009
Issued at 4:45 pm EDT on Friday 6 February 2009.

FORECASTS ARE ISSUED REGULARLY: PLEASE ENSURE YOU HAVE THE LATEST VERSION

Location	MaxT (C)	DewP (C)	RH (%)	Wind (kph) DIR SPD GUST	DF	CUR (%)	FFDI	GFDI	Wind Change
Walpeup	46	2	6	NNW 50	80	10	100	148	190 SW 50 15-19
Swan Hill Airport	46	-3	4	N 50	80	10	100	159	210 SW 45 18-22
Mallee	LAL: 0		RAIN: NO		MIX (M): 4400		WIND (1000): NW 60 FDI above 35: Late AM		
Horsham Airport	44	1	7	NNW 50	80	10	100	137	178 SW 50 14-18
Stawell	41	1	8	NNW 55	85	10	100	133	195 WSW 50 15-19
Wimmera	LAL: 0		RAIN: NO		MIX (M): 4400		WIND (1500): NW 75 FDI above 35: Late AM		
Ballarat Airport	41	-4	5	NNW 65	100	10	100	185	330 WSW 60 15-19
Portland Airport	34	9	21	NNW 45	70	7	90	37	50 WSW 50 09-13
Hamilton Airport	41	3	9	NNW 55	90	10	100	128	186 WSW 55 12-16
Mortlake	41	3	9	NNW 50	80	9	95	102	133 SW 50 13-17
Western	LAL: 0		RAIN: NO		MIX (M): 4100		WIND (1000): NW 90 FDI above 35: Late AM		
Bendigo Airport	44	-1	6	NNW 50	80	10	100	142	186 WSW 50 17-21
Shepparton Airport	42	0	7	N 50	80	10	100	127	167 WSW 45 20-00
Northern Country	LAL: 0		RAIN: NO		MIX (M): 4400		WIND (1000): NW 55 FDI above 35: Late AM		
Mangalore Airport	43	1	7	N 50	75	10	100	131	171 WSW 45 19-23
North Central	LAL: 0		RAIN: NO		MIX (M): 4400		WIND (1500): NW 65 FDI above 35: Late AM		
Geelong Airport	44	4	8	NNW 50	75	10	100	129	167 WSW 50 14-18
Coldstream	44	-1	6	NNW 50	80	10	100	142	186 WSW 45 18-22
Tullamarine	44	-3	5	NNW 55	85	10	90	164	175 WSW 50 16-20
Dunns Hill	39	1	9	NNW 60	95	10	90	136	159 WSW 50 17-21
Wonthaggi	40	12	19	NNW 50	80	10	100	79	110 WSW 50 15-19
Central	LAL: 0		RAIN: NO		MIX (M): 4200		WIND (1000): NW 70 FDI above 35: Late AM		
Albury-Wodonga	44	5	9	NNW 35	55	10	100	89	77
Wangaratta Airport	44	2	7	NNW 35	60	10	100	95	83
Hunters Hill	38	3	11	NW 45	70	10	100	86	102
Northeast	LAL: 0		RAIN: NO		MIX (M): 4400		WIND (1500): NW 50 FDI above 35: Late AM		
Latrobe Valley	43	0	7	NNW 50	80	10	100	133	175 WSW 45 18-22
East Sale Airport	43	3	8	NNW 45	65	10	100	112	129 WSW 45 19-23
Mount Moornapa	42	1	8	NW 50	80	10	100	125	163 WSW 35 20-00



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W & S Gippsland	LAL: 0	RAIN: NO	MIX (M): 4400							
	WIND (1000): NW 65		FDI above 35: Late AM							
Orbost	43	5	10 NNW	35	55	10	80	84	29	SW 45 20-00
Gelantipy	40	4	11 NNW	55	85	8	100	95	173	
East Gippsland	LAL: 0	RAIN: NO	MIX (M): 4300							
	WIND (1500): NW 45		FDI above 35: Late AM							
Falls Creek	29	3	18 NW	60	100	8	100	56	126	
Alpine Areas	LAL: 0	RAIN: NO	MIX (M): 4400							
	WIND (2000): NW 50		FDI above 35: Late AM							
Interstate:										
Mount Gambier	35	5	15 NW	45						W 50 09-12
Naracoorte	41	2	9 NW	50						SW 50 10-14
Renmark	48	0	5 NW	40						SW 50 16-20
Tumbarumba	40	5	11 NW	45	60					
Deniliquin	45	3	7 NW	45	60					SW 50 19-23
Bombala	38	5	13 NW	45	60					

Note:

MaxT = Maximum Temperature

RH = Relative Humidity

Dew Pt = Dew Point Temperature

DF = Drought Factor

CUR = Curing

FFDI is the Forest Fire Danger Index

GFDI is the Grassland Fire Danger Index

LAL = Lightning Activity Level: (0) = nil thunderstorms, (1) = isolated thunderstorms, (2) = scattered thunderstorms, (3) = widespread thunderstorms

RAIN: NO = less than 5mm, YES = greater than 5mm over district for day.

MIX (above sea level) = Mixing Depth

WIND (above sea level) = Upper Wind

FDI above 35 = time when FDI is above 35 when at least 4 hours before or after MaxT time

Saturday: A very severe fire weather day with a combination of strong and gusty north/northwesterly winds ahead of a pre frontal trough passage Saturday afternoon and night. Air ahead of the change will become dry with a well mixed atmosphere. Temperatures will be very hot, perhaps breaking some February records. Gusty west/southwest winds behind the change make this an extremely dangerous day. Extreme ratings expected in every district and many ratings exceeding 100. Isolated showers are expected near and following the change, with the slight chance of lightning. Areas of raised dust are likely during the day, particularly near the change.

2009-02-06 17:07

IDV22000
 Australian Government Bureau of Meteorology
 Victoria

Fire Weather Warning
 for the Northern Country, Wimmera, Mallee, North Central and Northeast
 forecast



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districts.

Issued at 05:06 pm EDT on Friday 06 February 2009.

A fire weather warning for Friday is current in the Northern Country, Wimmera, Mallee, North Central and Northeast forecast districts. Temperatures up to 44 degrees, relative humidity down to 9% and winds to 20 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The next warning will be issued by 11:00 pm EDT Friday.

2009-02-06 17:08

IDV22001

Australian Government Bureau of Meteorology
Victoria

Fire Weather Warning

for the Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

Issued at 05:06 pm EDT on Friday 06 February 2009.

A fire weather warning for Saturday is current in the Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts. Temperatures up to 45 degrees, relative humidity down to 6% and winds to around 50 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The next warning will be issued by 11:00 pm EDT Friday.

2009-02-06 18:00

IDV28000

Australian Government Bureau of Meteorology
Victoria

Severe Weather Warning

for damaging winds

for people in the Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

Issued at 05:59 pm EDT on Friday 06 February 2009.

Weather Situation

A strong cold front will reach the far southwest of the state around midday Saturday, then gradually move eastwards across Victoria, clearing the northeast

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early Sunday morning.

Damaging winds averaging 50 km/h with peak gusts around 100 km/h are forecast for parts of the Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland, East Gippsland and Northeast forecast districts on Saturday.

The State Emergency Service advises that people should:

- Move vehicles under cover or away from trees.
- Secure or put away loose items around your house, yard and balcony.
- For emergency help in floods and storms, ring your local SES Unit on 132 500.

The next warning will be issued by 11:00 pm EDT Friday.

This warning is also available through TV and Radio broadcasts; the Bureau's website at www.bom.gov.au or call 1300-659-217*.

The Bureau and State Emergency Service would appreciate this warning being broadcast regularly.

2009-02-06 22:49

IDV28000
Australian Government Bureau of Meteorology
Victoria

Severe Weather Warning
for damaging winds

for people in the Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

Issued at 10:47 pm EDT on Friday 06 February 2009.

Weather Situation

A strong cold front will reach the far southwest of the state around midday Saturday, then gradually move eastwards across Victoria, clearing the northeast Sunday morning.

Damaging winds averaging 60 to 70 km/h with peak gusts around 100 km/h are forecast for parts of the Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

The State Emergency Service advises that people should:

- Move vehicles under cover or away from trees.
- Secure or put away loose items around your house, yard and balcony.
- For emergency help in floods and storms, ring your local SES Unit on 132 500.

The next warning will be issued by 05:00 am EDT Saturday.

This warning is also available through TV and Radio broadcasts; the Bureau's website at www.bom.gov.au or call 1300-659-217*.



WIT.013.001.0198

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The Bureau and State Emergency Service would appreciate this warning being broadcast regularly.

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Saturday 7 February

2009-02-07 03:29

IDV22200
Australian Government Bureau of Meteorology
Victoria

Fire Ban Advice for Victoria.

Issued at 03:24 am EDT on Saturday 07 February 2009.

The Country Fire Authority has declared a Total Fire Ban for Saturday 07 February in the Eastern, North Eastern, Central, North Western and South Western Total Fire Ban Districts.

For further information regarding Fire Bans and other Fire Restrictions contact

The Country Fire Authority on 1800 240 667 or visit <http://www.cfa.vic.gov.au/>
CFA advises people living in areas at risk of fire to activate their bush fire plan.

2009-02-07 03:40

IDV22001
Australian Government Bureau of Meteorology
Victoria

Fire Weather Warning
for the Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

Issued at 03:39 am EDT on Saturday 07 February 2009.

A fire weather warning for Saturday is current in the Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts. Temperatures up to 45 degrees, relative humidity down to 6% and winds to 50 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The next warning will be issued by 11:00 am EDT Saturday.

2009-02-07 03:55

IDV28000
Australian Government Bureau of Meteorology
Victoria

Severe Weather Warning
for damaging winds



Appendix 8

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

for people in the Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland and East Gippsland forecast districts.

Issued at 03:54 am EDT on Saturday 07 February 2009.

Weather Situation

A strong cold front will reach the far southwest of the state around midday Saturday, then gradually move eastwards across Victoria, clearing the northeast Sunday morning.

Damaging winds averaging 60 to 80 km/h with peak gusts around 100 km/h are forecast for parts of the Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland and East Gippsland forecast districts.

The severe weather warning for parts of the Northeast forecast district has been cancelled.

The State Emergency Service advises that people should:

- Move vehicles under cover or away from trees.
- Secure or put away loose items around your house, yard and balcony.
- Keep clear of fallen power lines.
- Don't drive, ride or walk through flood water.
- Keep clear of creeks and storm drains.
- Beware of fallen trees or debris on the road.
- For emergency help in floods and storms, ring your local SES Unit on 132 500.

The next warning will be issued by 11:00 am EDT Saturday.

This warning is also available through TV and Radio broadcasts; the Bureau's website at www.bom.gov.au or call 1300-659-217*.

The Bureau and State Emergency Service would appreciate this warning being broadcast regularly.

2009-02-07 04:28

IDV31770

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 4:28 am EDT on Saturday 7 February 2009.

Forecast No: 010

Name of Fire: Bunyip Complex

Map Reference: 5 km NNE of Tonimbuk

Elevation (ASL): 300 metres

Fuel Type: wild

Ignition / Request Time: 0500

Organisation: DSE

Fax Number: 59454780

Contact Name: Adam Whitchurch

Contact Phone: 59454742



WIT.013.001.0201

Appendix 8
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Weather overview

Dry. Brief southerly change early this morning (around 0500) to weaken then north to northwesterly increasing during the morning ahead of a squally southwest change expected around 1900hrs. Very strong gusts possible right on and immediately following the change. Mixing depth increasing to 3500 to 4500 metres by midday Saturday.

Assumptions and uncertainties associated with the forecast

With weak trough early this morning, northerly may take a little longer to pick up - may be light winds at 0600. Northerly wind gusts could reach 90-100 km/hr by midday Saturday at a worst cast scenario. Timing of southwesterly change could differ by a couple of hours from the forecast.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
- * Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
0600	25	34	N 30g45	NW 65	18	19
0900	30	22	NNW 45g70	NNW 70	46	62
1200	37	13	NNW 55g90	NNW 75	100	150
1500	41	9	NNW 55g90	NNW 70	131	191
1800	38	10	NNW 50g80	NW 70	102	137
2100	22	46	SW 50g75	SW 60	17	39
0000	20	64	SW 20g30	SW 40	4	5
0300	18	67	WSW 15g25	W 35	3	3
0600	17	67	W 15g20	WNW 40	3	3

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 04:30

IDV31770

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 4:30 am EDT on Saturday 7 February 2009.

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Forecast No: 010
 Name of Fire: Bunyip Complex
 Map Reference: 5 km NNE of Tonimbuk
 Elevation (ASL): 300 metres
 Fuel Type: wild
 Ignition / Request Time: 0500
 Organisation: DSE
 Fax Number: 59454780
 Contact Name: Adam Whitchurch
 Contact Phone: 59454742

Weather overview

Dry. Brief southerly change early this morning (around 0500) to weaken then north to northwesterly increasing during the morning ahead of a squally southwest change expected around 1900hrs. Very strong gusts possible right on and immediately following the change. Mixing depth increasing to 3500 to 4500 metres by midday Saturday.

Assumptions and uncertainties associated with the forecast

With weak trough early this morning, northerly may take a little longer to pick up - may be light winds at 0600. Northerly wind gusts could reach 90-100 km/hr by midday Saturday at a worst cast scenario. Timing of southwesterly change could differ by a couple of hours from the forecast.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
- * Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
0600	25	34	N 30g45	NW 65	18	19
0900	30	22	NNW 45g70	NNW 70	46	62
1200	37	13	NNW 55g90	NNW 75	100	150
1500	41	9	NNW 55g90	NNW 70	131	191
1800	38	10	NNW 50g80	NW 70	102	137
2100	22	46	SW 50g75	SW 60	17	39
0000	20	64	SW 20g30	SW 40	4	5
0300	18	67	WSW 15g25	W 35	3	3
0600	17	67	W 15g20	WNW 40	3	3

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

Appendix 8
 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-07 04:44

IDV31780

Australian Government Bureau of Meteorology
 Victoria

Spot Fire Weather Forecast

Issued at 4:44 am EDT on Saturday 7 February 2009.

Forecast No: 011

Name of Fire: Nariel - Ski Hut

Map Reference: 30 km SSW of Corryong

Elevation (ASL): 1250 metres

Fuel Type: wild

Ignition / Request Time: 0500

Organisation: DSE

Fax Number: 02 60761348

Contact Name: Jeff Carboon

Contact Phone: 02 60763110

Weather overview

Fine. Mostly clear skies. Generally light winds turning northwesterly and increasing during the morning and further increasing in the afternoon. Mixing depth increasing to around 4500 metres by Saturday afternoon.

Assumptions and uncertainties associated with the forecast

The timing of the strengthening winds tomorrow is difficult. The main core of wind will be to the south of the fire. The wind change is likely to be after this forecast period. and most likely 0900-1200 Sunday morning.

24 Hour FORECAST

* Max Drought factor at location during forecast period: 9.0

* Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFPI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
0600	20	30	ENE 15g25	NNW 25	10	6
0900	26	24	NNW 30g50	NNW 35	23	23
1200	35	17	NNW 45g60	NNW 55	59	81
1500	37	13	NNW 45g65	NNW 55	69	92
1800	37	12	NW 45g65	NW 55	73	98
2100	33	16	NW 35g50	NW 50	44	46
0000	28	17	NW 30g45	NW 45	31	29
0300	25	31	NNW 30g45	NW 45	17	19
0600	23	44	NNW 30g40	NW 40	11	15

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 05:00

IDV10310

Australian Government Bureau of Meteorology
Victoria

Victoria State Forecast

Issued at 5:00 am EDT on Saturday 7 February 2009
for the period until midnight EDT Tuesday 10 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Eastern, North Eastern, Central, North Western and South Western Total Fire Ban Districts for Saturday 07 February.

Fire weather warning for Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

Severe weather warning for Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland, East Gippsland forecast districts. Strong wind warning for Victorian waters between SA-VIC Border and Cape Otway. Strong wind warning for Victorian waters between Wilsons Promontory and Mallacoota.

Gale warning for Victorian waters between Cape Otway and Wilsons Promontory. Gale warning for Victorian waters between Mallacoota and 60nm east of Gabo Island.

Gale warning is current for Western Port.

Gale warning is current for Port Phillip.

Strong wind warning is current for Gippsland Lakes.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A strong cold front will cross most of the State today, but will not clear the far northeast until Sunday morning. A cooler southwesterly airflow will develop in the wake of the front. The southwest to southerly airflow will persist for several days as a large high pressure system south of Western Australia drifts slowly east and a series of weak cold fronts cross Tasmania.

Forecast for the rest of Saturday

Very hot with strong and gusty north to northwesterly winds ahead of a cooler, squally southwesterly change extending from the southwest - but failing to reach the far northeast until Sunday. Areas of raised dust. Isolated light showers over the southwest and near the coast during the morning and also in the south near the change.

Maximum Fire Danger: Extreme

Forecast for Sunday



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Isolated light showers mainly on and south of the ranges. Moderate to fresh southwesterly winds extending throughout. Hot at first in the northeast, otherwise cool to mild in the south and mild to warm in the north.

Forecast for Monday

Isolated light showers on and south of the ranges. Cool to mild with moderate to fresh southwest to southerly winds.

Forecast for Tuesday

Isolated light showers on and south of the ranges. Cool to mild with moderate to fresh southerly winds.

The next routine forecast will be issued at 4:30 pm EDT Saturday.

2009-02-07 05:00

IDV10450

Australian Government Bureau of Meteorology
Victoria

Melbourne Forecast

Issued at 5:00 am EDT on Saturday 7 February 2009
for the period until midnight EDT Friday 13 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Central Total Fire Ban District for Saturday 07 February.

Fire weather warning for the Central forecast district.

Severe weather warning for the Central forecast district.

Gale warning for Port Phillip.

Gale warning for Western Port.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Saturday

Dry and mostly sunny with areas of raised dust. Winds tending north to northwesterly and increasing to average 35 to 55 km/h during the morning. A cooler, squally southwest to southerly change late afternoon.

City Late cool change. Windy. Max 44

Around Melbourne

Frankston	Max 41	Geelong	Max 44
Tullamarine	Max 44	Laverton	Max 44
Yarra Glen	Max 44	Scoresby	Max 44
Mount Dandenong	Max 40	Watsonia	Max 44

Maximum Fire Danger: Extreme

UV Alert from 9:40 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Sunday

Partly cloudy. Isolated light showers until evening. Winds southwesterly averaging up to 40 km/h decreasing below 30 km/h during the morning.

City Windy then shower or two. Min 20 Max 23

Forecast for Monday



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Partly cloudy. Isolated light showers. Winds southerly averaging up to 30 km/h.

City Light shower or two. Min 14 Max 21

Forecast for Tuesday

Partly cloudy. Isolated light showers. Winds south to southwesterly averaging up to 25 km/h.

City Light shower or two. Min 13 Max 20

Forecast for Wednesday

Partly cloudy. Isolated light showers during the morning. Winds southerly averaging up to 30 km/h.

City Light shower or two clearing. Min 13 Max 20

Forecast for Thursday

Morning cloud. Winds south to southeasterly averaging up to 30 km/h.

City Morning cloud. Min 13 Max 25

Forecast for Friday

Sunny. Winds east to southeasterly averaging up to 20 km/h becoming light during the afternoon.

City Sunny. Min 14 Max 28

The next routine forecast will be issued at 4:20 pm EDT Saturday.

2009-02-07 05:41

IDV10706
Australian Government Bureau of Meteorology
Victoria

Bendigo Forecast

Issued at 5:30 am EDT on Saturday 7 February 2009
for the period until midnight EDT Friday 13 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the North Western Total Fire Ban District for Saturday 07 February.

Fire weather warning for the Northern Country forecast district.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Saturday

Sunny day. Raised dust at times. Winds northerly averaging 20 to 30 km/h, reaching 40 km/h at times, shifting cooler southwesterly 40 to 50 km/h this evening.

Precis: Windy. Late cooler change. Max 44

Maximum Fire Danger: Extreme

UV Alert from 9:40 am to 5:30 pm, UV Index predicted to reach 11 [Extreme]

Appendix 8
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Precis: Late cool change. Windy. Max 43

Maximum Fire Danger: Extreme

UV Alert from 9:40 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Sunday

Partly cloudy. A light shower or two until evening. Winds west to southwesterly averaging 20 to 35 km/h becoming colder and light later in the evening.

Precis: Light shower or two. Min 16 Max 26

Forecast for Monday

Partly cloudy. A light shower or two until evening. Winds southwesterly averaging up to 20 km/h.

Precis: Light shower or two. Min 10 Max 22

Forecast for Tuesday

Partly cloudy. A light shower or two. Winds southwesterly and light.

Precis: Light shower or two. Min 8 Max 21

Forecast for Wednesday

Partly cloudy. A light shower or two. Light winds tending south to southwesterly up to 20 km/h during the afternoon.

Precis: Light shower or two. Min 7 Max 20

Forecast for Thursday

Partly cloudy. Winds south to southeasterly averaging about 20 km/h tending east to southeasterly during the evening.

Precis: Partly cloudy. Min 9 Max 24

Forecast for Friday

Sunny. Winds easterly and light.

Precis: Sunny. Min 10 Max 27

The next routine forecast will be issued at 4:30 pm EDT Saturday.

2009-02-07 05:48

IDV17102

Australian Government Bureau of Meteorology
Victoria

Central District Forecast

Issued at 5:40 am EDT on Saturday 7 February 2009
for the period until midnight EDT Tuesday 10 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Central Total Fire Ban District for Saturday 07 February.

Fire weather warning within this area.

Severe weather warning within this area.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A strong cold front will cross most of the State today, but will not clear the far northeast until Sunday morning. A cooler southwesterly airflow will develop in the wake of the front. The southwest to southerly airflow will persist for several days as a large high pressure system south of Western Australia drifts slowly east and a series of weak cold fronts cross Tasmania.

Forecast for the rest of Saturday

Partly cloudy. Areas of raised dust. Isolated showers, mainly near the coast. Winds tending north to northwesterly 30 to 40 km/h, increasing to 40 to 60 km/h during the morning, stronger about elevated areas. A cooler, squally southwest change 40 to 60km/h extending from the west this afternoon and evening. Temperatures 39 to 44 during the day.

Frankston	Late cool change. Windy.	Max 41
Wonthaggi	Late cool change. Windy.	Max 40
Yarra Glen	Late cool change. Windy.	Max 44
Geelong	Afternoon cool change.	Max 44
Scoresby	Late cool change.	Max 44

Maximum Fire Danger: Extreme

UV Alert from 9:40 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Sunday

Partly cloudy. Isolated light showers until evening. Winds west to southwesterly averaging 30 to 40 km/h becoming southwesterly up to 30 km/h around dawn. Overnight temperatures falling to around 16 with daytime temperatures reaching the lower 20s.

Frankston	Windy then shower or two.	Min 19	Max 21
Wonthaggi	Windy then shower or two.	Min 16	Max 21
Yarra Glen	Light shower or two.	Min 14	Max 24
Geelong	Windy then shower or two.	Min 15	Max 22
Scoresby	Light shower or two.	Min 17	Max 23

Forecast for Monday

Partly cloudy. Isolated light showers. Winds south to southwesterly averaging 15 to 25 km/h, reaching 30 km/h at times. Overnight temperatures falling to around 11 with daytime temperatures reaching the lower 20s.

Frankston	Light shower or two.	Min 14	Max 19
Wonthaggi	Light shower or two.	Min 11	Max 20
Yarra Glen	Light shower or two.	Min 7	Max 22
Geelong	Light shower or two.	Min 10	Max 20
Scoresby	Light shower or two.	Min 11	Max 21

Forecast for Tuesday

Partly cloudy. Isolated light showers. Winds south to southwesterly averaging 15 to 25 km/h. Overnight temperatures falling to around 9 with daytime temperatures reaching around 19.

Frankston	Light shower or two.	Min 12	Max 18
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Wonthaggi	Light shower or two.	Min 10	Max 19
Yarra Glen	Light shower or two.	Min 6	Max 20
Geelong	Light shower or two.	Min 9	Max 20
Scoresby	Light shower or two.	Min 10	Max 20

The next routine forecast will be issued at 4:15 pm EDT Saturday.

2009-02-07 06:30

IDV18500
Australian Government Bureau of Meteorology
Victoria

Fire Weather Forecast
for Saturday 7 February 2009
Issued at 6:30 am EDT on Saturday 7 February 2009.

FORECASTS ARE ISSUED REGULARLY: PLEASE ENSURE YOU HAVE THE LATEST VERSION

Location	MaxT (C)	DewP (C)	RH (%)	Wind (kph) DIR SPD GUST	DF	CUR	FFDI	GFDI	Wind Change
Walpeup	46	2	6	NNW 50	70	10	100	148	190 SW 50 15-19
Swan Hill Airport	46	-3	4	N 50	70	10	100	159	210 SW 45 18-22
Mallee	LAL: 0		RAIN: NO		MIX (M): 4400				
	WIND (1000):		NW	60	FDI above 35: Late AM				
Horsham Airport	44	1	7	NNW 50	75	10	100	137	178 SW 50 14-18
Stawell	41	1	8	NNW 55	75	10	100	133	195 SW 50 15-19
Wimmera	LAL: 0		RAIN: NO		MIX (M): 4400				
	WIND (1500):		NW	75	FDI above 35: Late AM				
Ballarat Airport	41	-4	5	NNW 65	85	10	100	185	330 SW 60 15-19
Portland Airport	34	9	21	NNW 45	60	7	90	37	50 WSW 50 09-13
Hamilton Airport	41	3	9	NNW 55	75	10	100	128	186 WSW 55 12-16
Mortlake	41	3	9	NNW 50	80	9	95	102	133 SW 50 13-17
Western	LAL: 0		RAIN: NO		MIX (M): 4100				
	WIND (1000):		NW	90	FDI above 35: Late AM				
Bendigo Airport	44	-1	6	NNW 50	70	10	100	142	186 SW 50 17-21
Shepparton Airport	42	0	7	N 50	70	10	100	127	167 SW 45 20-00
Northern Country	LAL: 0		RAIN: NO		MIX (M): 4400				
	WIND (1000):		NW	55	FDI above 35: Late AM				
Mangalore Airport	43	1	7	N 50	70	10	100	131	171 SW 45 19-23
North Central	LAL: 0		RAIN: NO		MIX (M): 4400				
	WIND (1500):		NW	65	FDI above 35: Late AM				
Geelong Airport	44	4	8	NNW 50	70	10	100	129	167 SW 50 14-18
Coldstream	44	-1	6	NNW 50	70	10	100	142	186 SW 45 18-22
Tullamarine	44	-3	5	NNW 55	75	10	90	164	175 SW 50 16-20
Dunns Hill	39	1	9	NNW 60	95	10	90	136	159 SW 50 17-21
Wonthaggi	40	12	19	NNW 50	75	10	100	79	110 SW 50 15-19
Central	LAL: 0		RAIN: NO		MIX (M): 4200				
	WIND (1000):		NW	70	FDI above 35: Late AM				
Albury-Wodonga	44	5	9	NNW 35	55	10	100	89	77



WIT.013.001.0211

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Wangaratta Airport	45	2	7	NNW	35	60	10	100	99	87
Hunters Hill	38	3	11	NW	45	70	10	100	86	102
Northeast	LAL: 0	RAIN: NO		MIX (M): 4400		WIND (1500): NW 50 FDI above 35: Late AM				
Latrobe Valley	43	0	7	NNW	50	70	10	100	133	175 WSW 45 18-22
East Sale Airport	43	3	8	NNW	45	65	10	100	112	129 WSW 45 19-23
Mount Moornapa	42	1	8	NW	50	75	10	100	125	163 WSW 35 20-00
W & S Gippsland	LAL: 0	RAIN: NO		MIX (M): 4400		WIND (1000): NW 65 FDI above 35: Late AM				
Orbost	43	5	10	NNW	35	50	10	80	84	29 SW 45 20-00
Gelantipy	40	4	11	NNW	55	75	8	100	95	173
East Gippsland	LAL: 0	RAIN: NO		MIX (M): 4300		WIND (1500): NW 45 FDI above 35: Late AM				
Falls Creek	29	3	18	NW	60	100	8	100	56	126
Alpine Areas	LAL: 0	RAIN: NO		MIX (M): 4400		WIND (2000): NW 50 FDI above 35: Late AM				

Interstate:

Note:

MaxT = Maximum Temperature

RH = Relative Humidity

Dew Pt = Dew Point Temperature

DF = Drought Factor

CUR = Curing

FFDI is the Forest Fire Danger Index

GFDI is the Grassland Fire Danger Index

LAL = Lightning Activity Level: (0) = nil thunderstorms, (1) = isolated thunderstorms, (2) = scattered thunderstorms, (3) = widespread thunderstorms

RAIN: NO = less than 5mm, YES = greater than 5mm over district for day.

MIX (above sea level) = Mixing Depth

WIND (above sea level) = Upper Wind

FDI above 35 = time when FDI is above 35 when at least 4 hours before or after MaxT time

Saturday: Very hot with strong and gusty north to northwesterly winds ahead of a cooler, squally southwesterly change extending from the southwest - but failing to reach the far northeast until Sunday. Areas of raised dust. Isolated light showers over the southwest and near the coast during the morning and also in the south near the change.

2009-02-07 09:02

IDV31150

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 9:00 am EDT on Saturday 7 February 2009.

Forecast No: 002

Name of Fire: Delburn Complex



Appendix 8

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Map Reference: 3 km Northeast of Mirboo North
 Elevation (ASL): 200 metres
 Fuel Type: wild
 Ignition / Request Time: 0900
 Organisation: CFA
 Fax Number: 51722100
 Contact Name: John Henshaw
 Contact Phone: 51722541

Weather overview

Pre frontal trough or in most regards a cold frontal change is expected to sweep across the fire area during the very early evening hours. Generally looking for a 1800 to 2000 change at this time. However based on the expected strength of the frontal change, it is conceivable it could go through 1 hour or so quicker. Gusty winds will develop ahead of the change and also continue even after the change. Temperatures will drop significantly behind the change with increasing humidity. Fairly decent humidity recovery expected overnight with abundant cloud cover.

Assumptions and uncertainties associated with the forecast

The fire is located in a valley where northwesterlies would have a harder time mixing down to the surface. However, strong northwest winds sit just off the surface and mixing depths are expected to exceed 3000 metres during the peak heating period. Thus, still expecting northwesterlies to affect the fire site. After the change goes through, channeling of southwesterly winds should occur and have gone with a predominate southwest wind directio. Dewpoints could fall lower just ahead of the change since the change coincides with the peak heating period.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
- * Max Curing value (%) at location during forecast period: 98

Time Local	Temp (C)	RH (%)	10m Wind (km/h) Dir/Spd Gust	1000m AGL Wind (km/h) Dir/Spd	FFDI*	GFDI*
1000	31	27	NNE 20g30	NW 75	21	13
1300	38	15	NNW 30g45	NW 75	53	40
1600	40	8	NNW 50g80	NW 70	113	145
1900	31	19	WSW 50g80	WNW 65	58	83
2200	19	68	SW 40g60	W 60	6	16
0100	18	68	SW 35g55	WNW 55	5	12
0400	15	77	WSW 35g50	WNW 50	3	10
0700	14	72	WSW 25g40	WNW 45	3	6
1000	16	63	WSW 30g45	WNW 45	5	9

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.



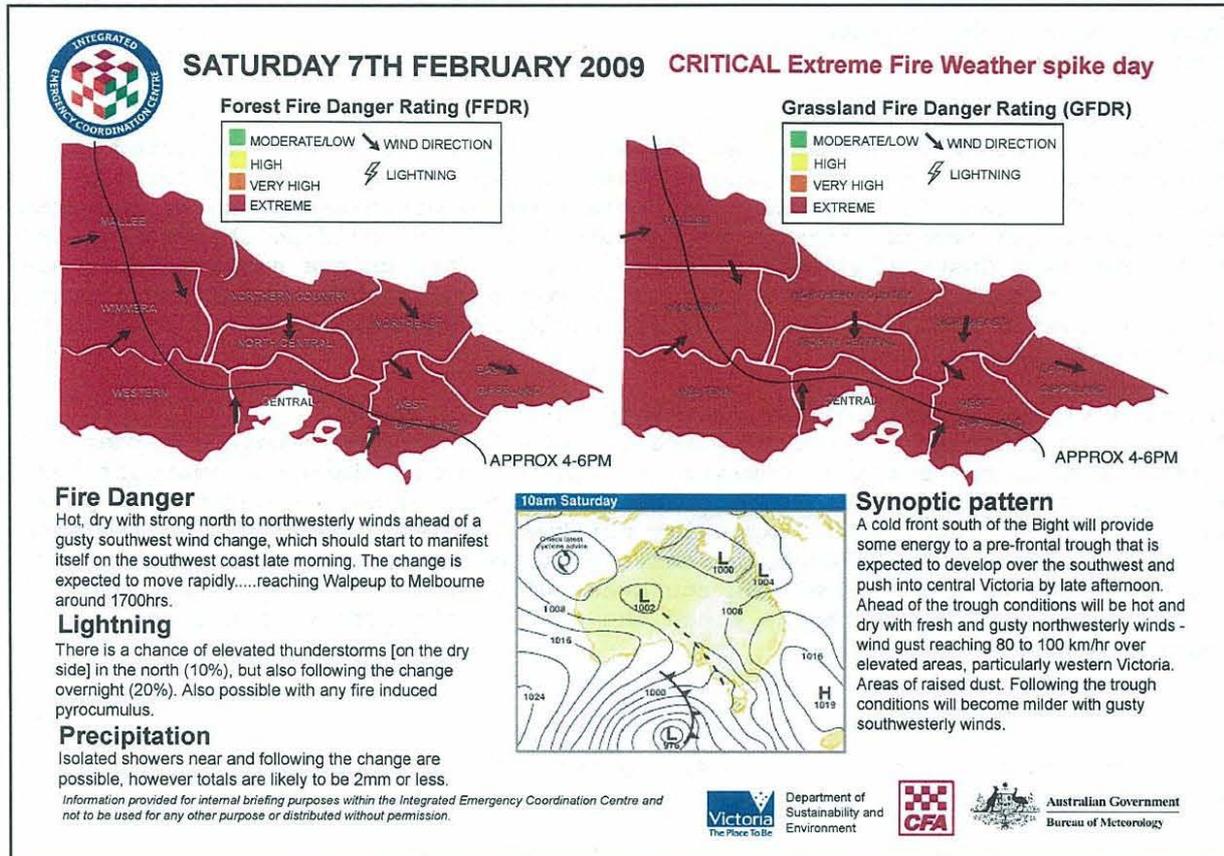
WIT.013.001.0213

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2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h) *	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDR and GFDR



2009-02-07 10:47

IDV18600
Australian Government Bureau of Meteorology
Victoria

Fire Weather Briefing for Victoria
Issued at 10:45 am EDT on Saturday 7 February 2009.

Estimates Today:

The estimates look to be on track for today. There was an initial southerly wind shift across the far southwest but that was associated with elevated showers and was short in duration. Winds have since turned back to the north. The change reflected in the estimates still looks good. Dewpoints should spike down just ahead of the change and would be coincident with max temperature in many locations but the current forecast looks reasonable and jives with the current Melbourne sounding. The latest Melbourne balloon sounding suggests the mixed layer could be as high as 5000 metres today. Thus the mixing height found in the estimates will be under done suggesting peak wind speeds could be 5 to 10 km/hr higher in some exposed locations. A shallow inversion is located at 1000 metres but will mix out quickly. Thunderstorm chances are minimal but if a strike or two were to occur the northeast third of the state looks to be



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

the most likely. Weather models are also hinting at the southwest third behind the change. Again chances are minimal however.

Observational Network Status:

All AWS appear to be working.

Two portable weather stations have been set up to assist with the Delburn fire complex:

- VICD is at a location 2 km west of Mirboo North
- VICJ is located just north of Mirboo East

Two portable weather stations have been set up to assist with the Bunyip fire complex.

- VICH is at a location very near to Gembrook
- VICF is at a location near the Egg Rock fire tower near Beenak.

Weather Situation:

A strong cold front will cross most of the State today, but will not clear the far northeast until Sunday morning. A cooler southwesterly airflow will develop in the wake of the front. The southwest to southerly airflow will persist for several days as a large high pressure system south of Western Australia drifts slowly east and a series of weak cold fronts cross Tasmania.

24 Hour Rainfall to 9am:

Lightning affected western portions of the state early this morning but measurable rain did not fall at any of the observation sites. Since the storms were elevated rainfall would have been very light.

Weather Today:

Very hot with strong and gusty north to northwesterly winds ahead of a cooler, squally southwesterly change extending from the southwest - but failing to reach the far northeast until Sunday. Areas of raised dust. Isolated light showers over the southwest and near the coast during the morning and also in the south near the change.

2009-02-07 10:55

IDV28000

Australian Government Bureau of Meteorology
Victoria

Severe Weather Warning
for damaging winds

for people in the Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland and East Gippsland forecast districts.

Issued at 10:50 am EDT on Saturday 07 February 2009.

Weather Situation

A strong cold front will reach the far southwest of the state around midday Saturday, then gradually move eastwards across Victoria, clearing the northeast Sunday morning.

Damaging winds averaging 60 km/h with peak gusts around 100 km/h are forecast for parts of the Alpine Areas, Western, North Central, Wimmera, Central, West and South Gippsland and East Gippsland forecast districts.

The severe weather warning for parts of the Northeast forecast district has

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

been cancelled.

The State Emergency Service advises that people should:

- Move vehicles under cover or away from trees.
- Secure or put away loose items around your house, yard and balcony.
- Keep clear of fallen power lines.
- Don't drive, ride or walk through flood water.
- Keep clear of creeks and storm drains.
- Beware of fallen trees or debris on the road.
- For emergency help in floods and storms, ring your local SES Unit on 132

500.

The next warning will be issued by 05:00 pm EDT Saturday.

This warning is also available through TV and Radio broadcasts; the Bureau's website at www.bom.gov.au or call 1300-659-217*.

The Bureau and State Emergency Service would appreciate this warning being broadcast regularly.

2009-02-07 11:12

IDV31450

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 11:11 am EDT on Saturday 7 February 2009.

Forecast No: 005

Name of Fire: Bunyip SP Complex

Map Reference: 5 km north/northeast of Tonimbuk

Elevation (ASL): 300 metres

Fuel Type: wild

Ignition / Request Time: 1100

Organisation: CFA

Fax Number: 59454780

Contact Name: Catherine Clancy

Contact Phone: 59454742

Weather overview

Change is still on track with the expected change to occur very late afternoon or early evening. Basically between 1700 to 1900. Expect north/northwest winds to start the day...then tending northwesterly, then westerly as the change begins to occur and ultimately west/southwest as the change becomes deeper during the mid to late evening hours. Based on the latest Melbourne balloon sounding, mixed layer could be up to 5000 metres during the peak heating period.

Assumptions and uncertainties associated with the forecast

Still fairly confident about the timing of the change but during these dynamic frontal situations the change could occur a hour or so earlier than anticipated. Due to the very large mixed layer it is possible that peak wind speeds could be 5 to 10 km/hr higher than forecasted in the below 3 hourly forecast. Have slightly lowered dewpoint from the previous forecast.

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

24 Hour FORECAST

* Max Drought factor at location during forecast period: 10.0
* Max Curing value (%) at location during forecast period: 100

Time Local	Temp (C)	RH (%)	10m Wind (km/h) Dir/Spd Gust	1000m AGL Wind(km/h) Dir/Spd	FFDI*	GFDI*
1200	38	13	NNW 45g75	NNW 75	81	97
1500	42	8	NNW 55g85	NNW 75	137	200
1800	39	8	NW 55g90	NW 80	123	183
2100	21	49	W 50g75	W 65	14	36
0000	21	64	WSW 35g60	W 45	6	14
0300	19	64	WSW 30g45	W 40	5	10
0600	17	68	WSW 20g25	WNW 40	3	5
0900	18	59	WSW 20g30	W 40	5	5
1200	21	46	SW 25g35	W 40	9	10

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 11:28

IDV22001
Australian Government Bureau of Meteorology
Victoria

Fire Weather Warning
for the Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

Issued at 11:18 am EDT on Saturday 07 February 2009.

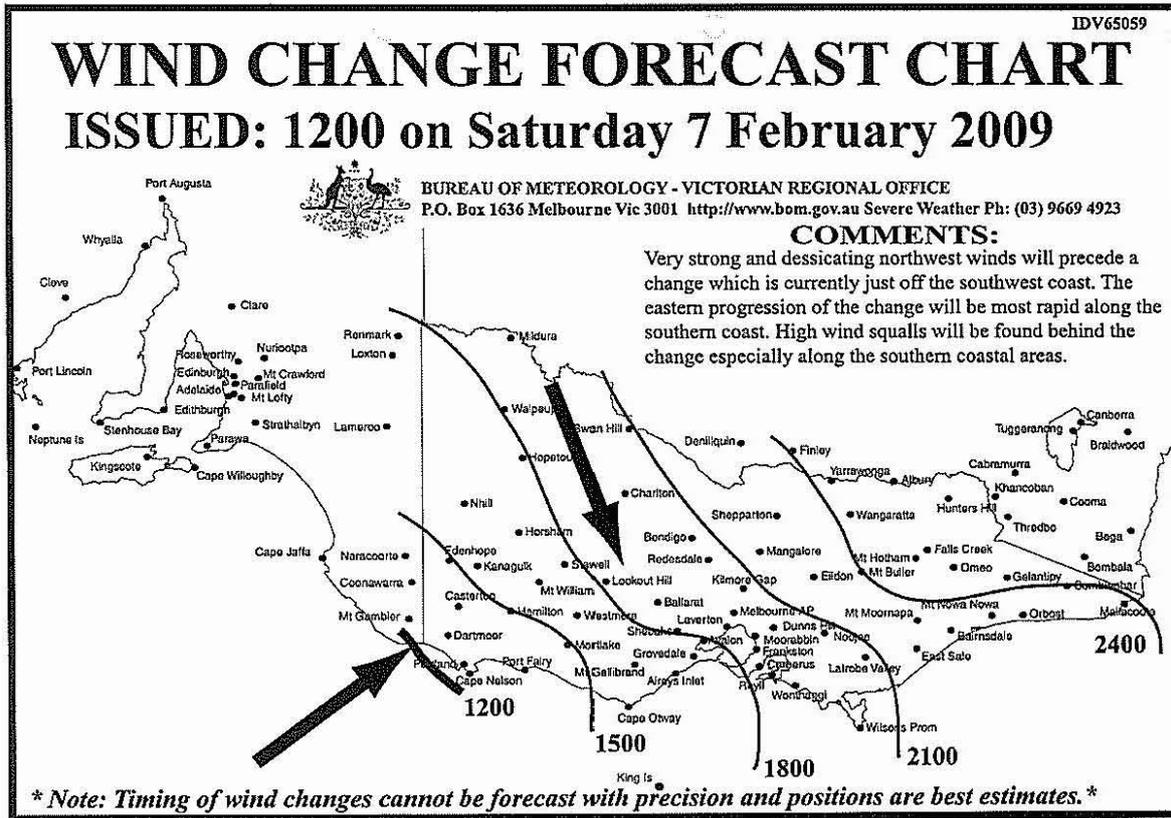
A fire weather warning for Saturday is current in the Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts. Temperatures up to 45 degrees, relative humidity down to 6% and winds to 50 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

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 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

The next warning will be issued by 05:00 pm EDT Saturday.

2009-02-07 12:14¹



2009-02-07 12:35

IDV31350

Australian Government Bureau of Meteorology
 Victoria

Spot Fire Weather Forecast
 Issued at 12:34 pm EDT on Saturday 7 February 2009.

Forecast No: 004
 Name of Fire: Dargo -White Timber
 Map Reference: 35km NNW of Dargo
 Elevation (ASL): 1180 metres
 Fuel Type: wild
 Ignition / Request Time: 1200
 Organisation: DSE
 Fax Number: 51397733
 Contact Name: Richard Laurier

¹ The Issued label on Wind Change Forecast Chart refers to the preparation time by the meteorologist ready for transmission. The time above the chart is the start of transmission time. Further Wind Change Forecast Charts in this Appendix follow the same procedure.

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 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Contact Phone: 51397726

Weather overview

Fine apart from the slight chance of a high based thunderstorm (with little or no rain) from late today onwards. Gusty northwesterly wind is likely to reach gale force today and tonight. A cooler south to southwesterly wind change is expected near midday Sunday. Mixing level to at least 5000 metres this afternoon, slowly decreasing overnight.

Assumptions and uncertainties associated with the forecast

High wind squalls are likely near any thunderstorms that develop. There is uncertainty about the timing of the change tomorrow as it will be fairly shallow at first, and may take some time to reach higher elevations while moving faster along river valleys.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 8.0
- * Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
1300	32	18	NNW 60g95	NNW 70	63	139
1600	34	14	NW 60g95	NW 70	78	164
1900	33	15	NW 60g95	NW 80	73	156
2200	30	21	NW 60g90	WNW 80	55	125
0100	25	28	NW 50g75	WNW 80	29	60
0400	21	40	NW 50g75	WNW 80	16	42
0700	17	59	WNW 30g55	WNW 60	4	10
1000	22	46	WNW 30g55	WNW 50	8	14
1300	25	41	SSW 25g40	W 40	10	12

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 13:39

IDV31550

Australian Government Bureau of Meteorology
 Victoria

Spot Fire Weather Forecast

Issued at 1:37 pm EDT on Saturday 7 February 2009.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Forecast No: 006
 Name of Fire: Saunders Road
 Map Reference: 6km east of Kilmore
 Elevation (ASL): 290 metres
 Fuel Type: grass
 Ignition / Request Time: 1300
 Organisation: CFA
 Fax Number: 5792 3266
 Contact Name: P Sharman
 Contact Phone: 5799 1517

Weather overview

Strong and squally north to northwesterly wind will shift cooler south to southwesterly this evening near 9pm. High wind squalls are likely near the change with the wind easing thereafter. There is a slight risk of a high based (probably dry) thunderstorm late today onwards. Mixing depth will be at least 5000 metres this afternoon and will slowly decrease this evening until the change arrives, whereupon it will decrease to just a few hundred metres.

Assumptions and uncertainties associated with the forecast

The timing of the change may be slightly earlier than described here, and this will be closely monitored by this office. Wind change charts will be issued throughout the afternoon containing the latest guidance on the progress of the change.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
- * Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
1400	42	9	NNW 65g90	NNW 65	170	295
1700	43	7	NNW 60g85	NW 65	165	264
2000	38	11	NW 55g80	NW 55	109	162
2300	25	53	SSW 40g60	W 40	11	23
0200	22	60	SW 30g50	W 35	6	11
0500	19	63	SSW 20g35	W 35	4	5
0800	18	63	SSW 20g35	W 40	4	5
1100	22	46	SSW 25g40	W 40	9	10
1400	25	33	SSW 30g40	W 40	18	19

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

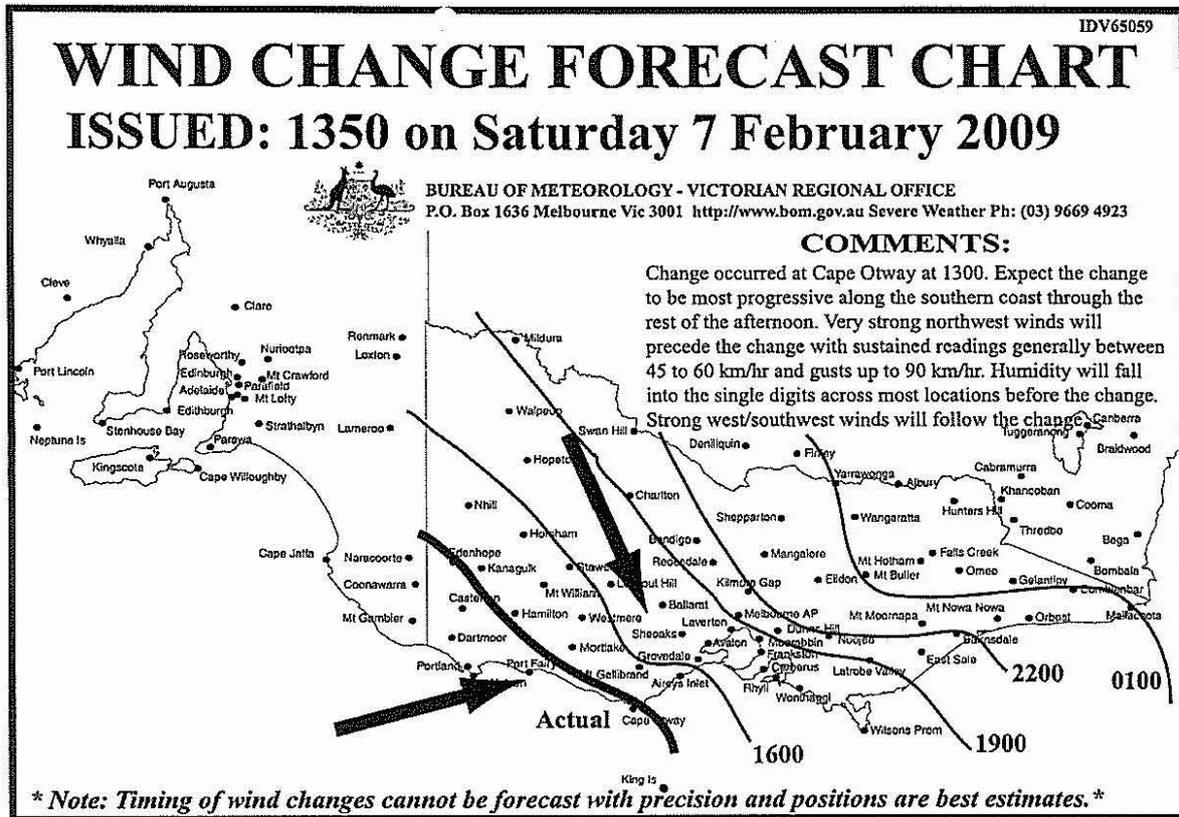
- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

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use 10m wind for calculation of FFDI and GFDI

2009-02-07 13:51



2009-02-07 14:04

IDV31450

Australian Government Bureau of Meteorology
 Victoria

Spot Fire Weather Forecast
 Issued at 2:04 pm EDT on Saturday 7 February 2009.

Forecast No: 005
 Name of Fire: Bunyip SP Complex
 Map Reference: 5 km north/northeast of Tonimbuk
 Elevation (ASL): 300 metres
 Fuel Type: wild
 Ignition / Request Time: 1300
 Organisation: CFA
 Fax Number: 59454780
 Contact Name: Catherine Clancy
 Contact Phone: 59454742

Weather overview



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Change currently pushing across the Western District. Based on current observations and the latest meso model it appears that the change will move through the fire area between 1700 to 1800. Based on the topography of the fire area winds should go from northwest to west/southwest and then southwest fairly quickly behind the change. Winds will range between 55 to 65 km/hr just ahead of the change with humidity in the single digits. Very unstable conditions with a mixed layer up to at least 5000 metres.

Assumptions and uncertainties associated with the forecast
Still trying to gauge the actual speed of the change along the southern coast where the change is moving quicker than further inland. The fire area could be caught in this more progressive portion of the change so have it going through the area 1 to 2 hours earlier than in the previous forecast. Humidity will go up and temperatures down behind the change. Strong southwest winds will eventually follow the change but it could be a half to 1 hour delay after the initial wind shift.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
- * Max Curing value (%) at location during forecast period: 100

Time Local	Temp (C)	RH (%)	10m Wind (km/h) Dir/Spd Gust	1000m AGL Wind(km/h) Dir/Spd	FFDI*	GFDI*
1400	41	11	NNW 50g80	NNW 80	108	142
1700	43	7	NNW 55g85	NW 80	150	218
2000	26	30	SW 45g75	NW 70	31	47
2300	19	73	SW 40g65	W 50	5	15
0200	21	60	SW 30g50	WNW 40	6	11
0500	18	68	SW 20g30	WNW 40	3	5
0800	17	63	SW 20g25	W 40	4	5
1100	21	46	SW 25g35	W 40	9	10
1400	23	38	SW 30g35	W 40	15	17

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

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 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

2009-02-07 14:13

IDV31650

Australian Government Bureau of Meteorology
 Victoria

Spot Fire Weather Forecast

Issued at 2:12 pm EDT on Saturday 7 February 2009.

Forecast No: 007

Name of Fire: Rudolph Road

Map Reference: 2km west of Horsham

Elevation (ASL): 125 metres

Fuel Type: grass

Ignition / Request Time: 1400

Organisation: DSE

Fax Number: 1300 134488

Contact Name: Jill Read

Contact Phone: 5362 0720

Weather overview

Strong and hot northwest wind will shift milder west to southwesterly between 3 and 4pm this afternoon. Wind will tend more southwesterly and gradually ease following the change. High squalls are expected around the change. There is a slight risk of a high based thunderstorm (probably dry) from late afternoon onwards. Mixing depth should be around 5000m now, decreasing to 1000 metres behind the change and decreasing further overnight. Raised dust is likely until a couple of hours following the change.

Assumptions and uncertainties associated with the forecast

The change timing is looking good with fairly steady movement so far. Wind change charts are being issued from this office this afternoon and can be consulted for the latest information on the progress of the change.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
- * Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
1500	46	7	NNW 55g90	NW 70	163	233
1800	31	31	WSW 50g80	WNW 70	39	66
2100	26	41	SW 40g70	W 65	18	29
0000	21	52	SW 35g60	W 60	9	16
0300	18	63	SW 35g55	W 50	5	12
0600	14	76	SW 30g50	W 45	2	7
0900	17	55	SW 30g50	W 45	6	10
1200	23	33	SSW 30g50	W 45	17	18
1500	26	24	SSW 35g50	WSW 35	29	32

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.



WIT.013.001.0223

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 14:47

IDV31770

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 2:46 pm EDT on Saturday 7 February 2009.

Forecast No: 010

Name of Fire: Coleraine - Glenelg Highway

Map Reference: 1km west of Coleraine

Elevation (ASL): 100 metres

Fuel Type: grass

Ignition / Request Time: 1400

Organisation: DSE

Fax Number: 03 5527 1809

Contact Name: Steve Clark

Contact Phone: 0429 960 632

Weather overview

A west to southwesterly change has already reached the fire ground. Wind will continue in the southwesterly quarter this afternoon and evening and will be quite strong and gusty at first today, before easing during the evening. Temperatures will gradually fall this afternoon as cooler, moister air off the ocean arrives. The mixing depth should be around 2000m this afternoon, decreasing to a few hundred metres overnight. There is a slight risk of a dry, high based thunderstorm later this afternoon and tonight, however this activity (should it occur) will clear in the morning.

Assumptions and uncertainties associated with the forecast

The west to southwest wind will gradually tend more southwesterly this afternoon and evening.

24 Hour FORECAST

* Max Drought factor at location during forecast period: 10.0

* Max Curing value (%) at location during forecast period: 97

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
1500	38	18	WSW 50g75	NW 85	75	100
1800	32	33	WSW 40g65	W 70	29	38
2100	25	47	WSW 35g60	W 65	12	19
0000	20	59	WSW 35g55	W 60	6	13

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0300	16	68	WSW 35g50	W 50	5	11
0600	14	72	WSW 30g45	W 45	3	7
0900	16	59	SW 30g45	W 40	6	9
1200	21	40	SW 30g50	WSW 40	13	14
1500	23	33	SSW 30g50	WSW 35	17	17

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 14:55

IDV31790

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 2:54 pm EDT on Saturday 7 February 2009.

Forecast No: 012

Name of Fire: Camperdown-Danedite

Map Reference: 7 km east of Camperdown

Elevation (ASL): 170 metres

Fuel Type: grass

Ignition / Request Time: 1400

Organisation: DSE

Fax Number: 52335553

Contact Name: Liz Hamilton

Contact Phone: 0400780680

Weather overview

The initial change should have already moved through the fire area with southwesterly winds found at the Mort Lake AWS site. Mt Gellibrand AWS was still out of the northwest. Regardless, wind change is either imminent or already moving through the fire area. Temperatures will drop several degrees within a hour after the change and humidity should come up to 30 pct within a hour after the change. Abundant cloud cover developing behind the change with a slight chance of thunderstorms.

Assumptions and uncertainties associated with the forecast

Assuming that change will have already gone through the fire site by 1500.

24 Hour FORECAST

* Max Drought factor at location during forecast period: 10.0



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

* Max Curing value (%) at location during forecast period: 96

Time Local	Temp (C)	RH (%)	10m Wind (km/h) Dir/Spd Gust	1000m AGL Wind (km/h) Dir/Spd	FFDI*	GFDI*
1500	37	15	W 45g65	NW 80	71	80
1800	29	39	SW 40g65	WNW 75	21	30
2100	21	56	SW 40g60	W 70	9	19
0000	18	67	WSW 35g55	W 65	4	11
0300	17	67	WSW 30g45	W 50	4	8
0600	14	77	WSW 30g40	W 45	3	7
0900	17	59	WSW 30g45	W 45	6	9
1200	21	40	SW 30g45	W 40	12	14
1500	23	31	SW 35g50	W 40	20	23

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 15:53

IDV31250

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 3:53 pm EDT on Saturday 7 February 2009.

Forecast No: 003

Name of Fire: Labertouche

Map Reference: Near Labertouche

Elevation (ASL): 100 metres

Fuel Type: forest

Ignition / Request Time: 1500

Organisation: CFA

Fax Number: 5623 1005

Contact Name: Caleb

Contact Phone: 0439 341 013

Weather overview

Hot and squally northwest wind is forecast to shift very squally southwesterly around 5 to 6pm this afternoon. Wind will moderate a couple of hours after the change and become less gusty. There is a small risk of thunderstorms developing following the change, however these will produce little if any

Appendix 8

Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

rain. The mixing layer is currently over 5000m, but will decrease this evening behind the change to a few hundred metres.

Assumptions and uncertainties associated with the forecast

There could be slight variation in the timing of the wind change. Gusts in the vicinity of the change may approach 120 km/hr. There is a chance of significant reductions in visibility due to dust when the change arrives.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
- * Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
1600	45	7	NNW 65g90	NW 80	201	345
1900	28	42	WSW 60g90	WNW 80	30	76
2200	21	60	SW 45g70	W 60	9	24
0100	19	68	SW 35g55	WNW 50	5	12
0400	18	72	SW 25g40	WNW 50	3	6
0700	17	72	SW 20g35	WNW 45	2	4
1000	20	60	SW 25g40	WNW 45	6	8
1300	24	44	SW 30g45	W 40	12	15
1600	24	41	SW 30g50	W 30	14	16

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification..

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 15:53

IDV28000
 Australian Government Bureau of Meteorology
 Victoria

Severe Weather Warning
 for damaging winds
 for people in the Alpine Areas, Western, North Central, Northern Country,
 Wimmera, Central, West and South Gippsland and East Gippsland forecast
 districts.

Issued at 03:50 pm EDT on Saturday 07 February 2009.

Weather Situation

A strong cold front in the southwest will move across southern and central



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areas this evening and through the northeast of the State Sunday morning. A cooler southwesterly airflow will develop in the wake of the front.

Damaging winds averaging 60 to 80 km/h with peak gusts around 110 km/h are forecast for parts of the Alpine Areas, Western, North Central, Northern Country, Wimmera, Central, West and South Gippsland and East Gippsland forecast districts. Areas of gales contracting east overnight.

The State Emergency Service advises that people should:

- Move vehicles under cover or away from trees.
- Secure or put away loose items around your house, yard and balcony.
- For emergency help in floods and storms, ring your local SES Unit on 132 500.

The next warning will be issued by 11:00 pm EDT Saturday.

This warning is also available through TV and Radio broadcasts; the Bureau's website at www.bom.gov.au or call 1300-659-217*.

The Bureau and State Emergency Service would appreciate this warning being broadcast regularly.

2009-02-07 15:59

IDV31050

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 3:59 pm EDT on Saturday 7 February 2009.

Forecast No: 001

Name of Fire: Churchhill Glendonald

Map Reference: 10 km SE Churchill

Elevation (ASL): 500 metres

Fuel Type: forest

Ignition / Request Time: 1500

Organisation: CFA

Fax Number: 51722100

Contact Name: John Henshaw

Contact Phone: 51722541

Weather overview

Change has moved through Mount Gellibrand well to the west at this time. Looking at the wind change to affect the fire area between 1730 to 1900. Gusty southwest winds will follow the wind change with increasing humidity and lowering temperatures. Out ahead of the change will be very gusty winds, mixing depth to at least 5000 metres and upper single digit to around 10 pct humidity. Slight change of a thunderstorm developing after the change but is less than 10 pct chance.

Assumptions and uncertainties associated with the forecast

Assuming that the wind change will occur at the time listed above. Winds could peak a little higher than the three hourly forecast listed below.

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 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

24 Hour FORECAST

* Max Drought factor at location during forecast period: 10.0
 * Max Curing value (%) at location during forecast period: 98

Time Local	Temp (C)	RH (%)	10m Wind (km/h) Dir/Spd Gust	1000m AGL Wind(km/h) Dir/Spd	FFDI*	GFDI*
1600	42	11	NNW 50g80	NW 75	103	133
1900	32	15	SW 45g70	WNW 70	60	74
2200	21	56	SW 40g65	W 65	9	19
0100	18	72	SW 30g55	WNW 65	3	8
0400	16	82	WSW 25g45	WNW 55	2	5
0700	15	82	WSW 25g45	WNW 50	2	5
1000	18	64	WSW 30g45	WNW 50	5	9
1300	22	46	WSW 30g50	WNW 50	11	14
1600	23	41	WSW 35g55	WNW 45	15	20

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 16:08

IDV22001
 Australian Government Bureau of Meteorology
 Victoria

Fire Weather Warning
 for the Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

Issued at 04:01 pm EDT on Saturday 07 February 2009.

A fire weather warning for Saturday is current in the Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts. Temperatures up to 45 degrees, relative humidity down to 6% and winds to 50 km/h will cause extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.



WIT.013.001.0229

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The next warning will be issued by 11:00 pm EDT Saturday.

2009-02-07 16:23

IDV31750

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 4:23 pm EDT on Saturday 7 February 2009.

Forecast No: 008

Name of Fire: Redesdale - Coliban Pk Road

Map Reference: 10km Southwest of Redesdale

Elevation (ASL): 340 metres

Fuel Type: grass

Ignition / Request Time: 1600

Organisation: CFA

Fax Number: 5430 4677

Contact Name: Andrew Howlett

Contact Phone: 5430 4673

Weather overview

Strong and squally northwest wind will shift west to southwesterly between 8 and 9pm this evening. Particularly high wind squalls are likely in the vicinity of the change. Wind will tend more southwesterly during the evening and overnight and moderate. There is a chance of high based thunderstorms (which will probably have little or no rain) near the change and following it. The mixing layer depth is currently in excess of 5000m but will come down to a few hundred metres following the wind change.

Assumptions and uncertainties associated with the forecast

The timing of the change may be slightly at variance with the current forecast, and wind change charts will be issued from this office during the remainder of today. Raised dust may be experienced ahead of and just behind the wind change, significantly reducing visibility.

24 Hour FORECAST

* Max Drought factor at location during forecast period: 10.0

* Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
1700	44	6	NNW 50g85	NW 70	139	182
2000	39	9	NW 55g90	WNW 60	121	178
2300	26	44	WSW 45g80	W 50	18	35
0200	22	53	SW 30g50	WNW 45	8	13
0500	20	56	SW 25g40	WNW 45	6	8
0800	19	52	SW 25g35	WNW 40	6	8
1100	24	35	SW 25g40	WNW 40	14	13
1400	27	28	SSW 30g45	W 30	24	23
1700	27	28	SSW 30g45	W 25	24	23

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

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- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.
- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 16:27

IDV22001
Australian Government Bureau of Meteorology
Victoria

Fire Weather Warning
for the Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

Issued at 04:24 pm EDT on Saturday 07 February 2009.

A fire weather warning continues for Saturday is current in the Alpine Areas, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts and parts of the Western forecast district. Temperatures up to 45 degrees, relative humidity down to 6% and winds to 50 km/h will cause extreme fire danger. A fire weather warning for Sunday has been issued for the Northeast district for extreme fire danger.

CFA advises people living in areas at risk of fire to activate their bush fire plan.

The next warning will be issued by 11:00 pm EDT Saturday.

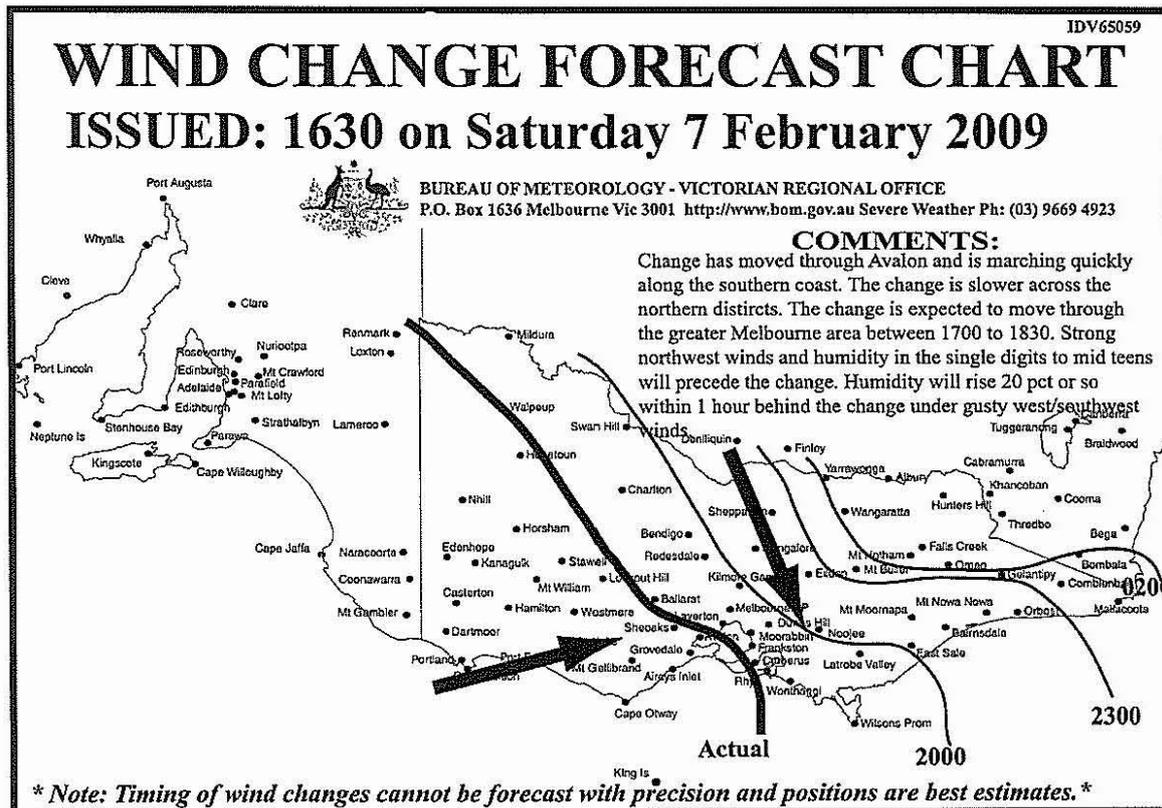


WIT.013.001.0231

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2009-02-07 16:50



2009-02-07 16:36

IDV10310
Australian Government Bureau of Meteorology
Victoria

Victoria State Forecast

Issued at 4:30 pm EDT on Saturday 7 February 2009
for the period until midnight EDT Wednesday 11 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Eastern, North Eastern, Central, North Western and South Western Total Fire Ban Districts for Saturday 07 February.

Fire weather warning for Alpine Areas, Western, North Central, Northern Country, Wimmera, Mallee, Central, West and South Gippsland, East Gippsland and Northeast forecast districts.

Severe weather warning for Alpine Areas, Western, North Central, Northern Country, Wimmera, Central, West and South Gippsland, East Gippsland forecast districts.

Strong wind warning for Victorian waters between SA-VIC Border and Cape Otway.
Strong wind warning for Victorian waters between Lakes Entrance and Mallacoota.

Gale warning for Victorian waters between Cape Otway and Lakes Entrance.

Gale warning for Victorian waters between Mallacoota and 60nm east of Gabo Island.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Gale warning is current for Western Port.
Gale warning is current for Port Phillip.
Strong wind warning is current for Gippsland Lakes.
Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A strong cold front in the southwest will move across southern and central areas this evening and through the northeast of the State Sunday morning. A cooler southwesterly airflow will develop in the wake of the front. The southwest to southerly airflow will persist for several days as a large high pressure system south of Western Australia drifts slowly east and a series of weak cold fronts cross Tasmania.

Forecast for the rest of Saturday

Very hot with strong and gusty north to northwesterly winds ahead of a cooler, squally southwesterly change in the southwest, extending through central and southern areas this evening but failing to reach the far northeast until Sunday. Areas of raised dust. Isolated showers and thunderstorms, mainly in the west and northeast.

Forecast for Sunday

Isolated showers and thunderstorms contracting to the east and northeast but mostly dry. Moderate to fresh southwesterly winds extending throughout. Hot at first in the northeast, otherwise cool to mild in the south and mild to warm in the north.

Maximum Fire Danger: Very high in the north, reaching extreme at first in the northeast

Forecast for Monday

Isolated light showers on and south of the ranges. Cool to mild with moderate to fresh southwest to southerly winds.

Forecast for Tuesday

Isolated light showers on and south of the ranges. Cool to mild with moderate to fresh southwest to southerly winds.

Forecast for Wednesday

Isolated showers in the south. Cool to mild with moderate to fresh southwest to southerly winds.

The next routine forecast will be issued at 5:00 am EDT Sunday.

2009-02-07 16:42

IDV10450
Australian Government Bureau of Meteorology
Victoria

Melbourne Forecast

Issued at 4:20 pm EDT on Saturday 7 February 2009
for the period until midnight EDT Saturday 14 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Central Total Fire Ban District for Saturday 07 February.



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Fire weather warning for the Central forecast district.
 Severe weather warning for the Central forecast district.
 Gale warning for Port Phillip.
 Gale warning for Western Port.
 Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Saturday

Partly cloudy. Areas of raised dust. Chance of a shower. Winds west to northwesterly averaging 40 to 60 km/h. A cooler, squally southwest to southerly change around 7pm.

Forecast for Sunday

Partly cloudy. Isolated showers and the chance of a thunderstorms. Winds south to southwesterly averaging up to 40 km/h.

City Shower or two, chance of a thunderstor Shower or two. Min 20
 Max 24

Around Melbourne

Frankston	Min 19	Max 22	Geelong	Min 15	Max 23
Tullamarine	Min 18	Max 23	Laverton	Min 17	Max 23
Yarra Glen	Min 14	Max 26	Scoresby	Min 18	Max 24
Mount Dandenong	Min 17	Max 21	Watsonia	Min 18	Max 24

Maximum Fire Danger: High

UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Monday

Partly cloudy. Isolated showers. Winds southerly averaging 25 to 35 km/h.

City Shower or two. Min 15 Max 21

Forecast for Tuesday

Partly cloudy. Isolated showers. Winds south to southwesterly averaging up to 35 km/h increasing to up to 45 km/h around midday.

City Shower or two then windy. Min 13 Max 20

Forecast for Wednesday

Partly cloudy. Isolated showers until afternoon. Winds southerly averaging up to 35 km/h.

City Shower or two clearing. Min 13 Max 20

Forecast for Thursday

Morning cloud. Winds south to southeasterly averaging up to 30 km/h.

City Morning cloud. Min 13 Max 25

Forecast for Friday

Sunny. Light winds tending southeasterly up to 20 km/h during the afternoon.

City Sunny. Min 14 Max 28

Forecast for Saturday

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Mostly sunny. Winds northeast to southeasterly averaging up to 20 km/h.

City Mostly sunny. Min 15 Max 31

The next routine forecast will be issued at 5:00 am EDT Sunday.

2009-02-07 16:57

IDV31450

Australian Government Bureau of Meteorology
 Victoria

Spot Fire Weather Forecast

Issued at 4:56 pm EDT on Saturday 7 February 2009.

Forecast No: 005

Name of Fire: Bunyip SP Complex

Map Reference: 5 km north/northeast of Tonimbuk

Elevation (ASL): 300 metres

Fuel Type: wild

Ignition / Request Time: 1600

Organisation: CFA

Fax Number: 59454780

Contact Name: Catherine Clancy

Contact Phone: 59454742

Weather overview

Change is pretty much on track although in the past 30 minutes has accelerated slightly and has moved through Ballarat and Avalon and is pushing across the Port Phillip Bay and has moved into the Frankston area. Thus, expect the change to move through the fire area between 1700 to 1800. Gusty southwest winds will follow the change. Temperatures will lower and humidity will rise 20 pct within a hour of the change.

Assumptions and uncertainties associated with the forecast
 Still looking at the 1700 to 1800 wind change.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
- * Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
1700	42	9	NNW 55g80	NW 75	134	195
2000	26	39	SW 45g70	WNW 65	22	39
2300	20	68	SW 35g60	W 55	5	12
0200	21	64	SW 30g50	WNW 50	6	11
0500	18	77	SW 20g35	WNW 45	3	4
0800	17	77	SW 20g35	WNW 45	2	4
1100	22	50	SW 25g40	WNW 40	8	10
1400	24	41	SW 30g45	W 35	14	16
1700	24	38	SSW 30g50	W 30	15	17

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 17:05

IDV17102

Australian Government Bureau of Meteorology
Victoria

Central District Forecast

Issued at 4:15 pm EDT on Saturday 7 February 2009
for the period until midnight EDT Wednesday 11 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Central Total Fire Ban District for Saturday 07 February.

Fire weather warning within this area.

Severe weather warning within this area.

Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Weather Situation

A strong cold front in the southwest will move across southern and central areas this evening and through the northeast of the State Sunday morning. A cooler southwesterly airflow will develop in the wake of the front. The southwest to southerly airflow will persist for several days as a large high pressure system south of Western Australia drifts slowly east and a series of weak cold fronts cross Tasmania.

Forecast for the rest of Saturday

Partly cloudy. Areas of raised dust. Isolated showers and the chance of thunderstorms. Winds west to northwesterly averaging 45 to 65 km/h. A cooler, squally southwest change 40 to 60km/h extending through by this evening.

Forecast for Sunday

Partly cloudy. Isolated showers and the chance of a thunderstorms. Winds west to southwesterly averaging 25 to 35 km/h, reaching 40 km/h at times, tending south to southwesterly 25 to 35 km/h around midday. Overnight temperatures falling to around 17 with daytime temperatures reaching the lower 20s.

Frankston	Shower or two.	Min 19	Max 22
Wonthaggi	Shower or two.	Min 16	Max 21
Yarra Glen	Storms and shower or two.	Min 14	Max 26
Geelong	Shower or two.	Min 15	Max 23
Scoresby	Shower or two.	Min 18	Max 24

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Maximum Fire Danger: Very High
UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Monday
Partly cloudy. Isolated showers. Winds southerly averaging 20 to 35 km/h.
Overnight temperatures falling to around 11 with daytime temperatures reaching the lower 20s.

Frankston	Shower or two.	Min 14	Max 19
Wonthaggi	Shower or two.	Min 12	Max 19
Yarra Glen	Shower or two.	Min 8	Max 22
Geelong	Shower or two.	Min 11	Max 20
Scoresby	Shower or two.	Min 12	Max 21

Forecast for Tuesday
Partly cloudy. Isolated showers. Winds south to southwesterly averaging 30 to 40 km/h increasing to up to 45 km/h during the afternoon. Overnight temperatures falling to around 9 with daytime temperatures reaching around 19.

Frankston	Shower or two then windy.	Min 13	Max 18
Wonthaggi	Windy and shower or two.	Min 11	Max 19
Yarra Glen	Shower or two then windy.	Min 6	Max 20
Geelong	Shower or two then windy.	Min 10	Max 20
Scoresby	Shower or two	Min 10	Max 20

Forecast for Wednesday
Partly cloudy. Isolated showers. Winds southerly averaging 20 to 30 km/h, reaching 35 km/h at times. Overnight temperatures falling to around 9 with daytime temperatures reaching around 19.

Frankston	Shower or two.	Min 12	Max 18
Wonthaggi	Shower or two.	Min 10	Max 19
Yarra Glen	Partly cloudy.	Min 5	Max 20
Geelong	Shower or two.	Min 10	Max 20
Scoresby	Shower or two.	Min 9	Max 20

The next routine forecast will be issued at 5:40 am EDT Sunday.

2009-02-07 17:21

IDV10706
Australian Government Bureau of Meteorology
Victoria

Bendigo Forecast
Issued at 4:30 pm EDT on Saturday 7 February 2009
for the period until midnight EDT Saturday 14 February 2009.

Warning Summary at issue time
The CFA has declared a day of Total Fire Ban for the North Western Total Fire Ban District for Saturday 07 February.
Fire weather warning for the Northern Country forecast district.
Severe weather warning for the Northern Country forecast district.
Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Saturday
Partly cloudy. Raised dust. A possible thundery shower. Winds northwesterly



WIT.013.001.0237

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averaging 50 to 55 km/h shifting westerly 45 to 50 km/h later in the evening.

Forecast for Sunday

Partly cloudy. Raised dust early in the morning. A possible thundery shower. Winds south to southwesterly averaging 25 to 40 km/h.

Precis: Chance of a shower or thunderstorm Min 19 Max 30

Maximum Fire Danger: Very High

UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Monday

Sunny. Winds southerly averaging about 35 km/h.

Precis: Sunny. Min 11 Max 24

Forecast for Tuesday

Sunny. Winds southerly averaging up to 40 km/h.

Precis: Mostly sunny Min 9 Max 22

Forecast for Wednesday

Sunny. Winds south to southeasterly averaging up to 35 km/h.

Precis: Sunny. Min 8 Max 23

Forecast for Thursday

Sunny. Winds southeasterly averaging 20 to 30 km/h.

Precis: Sunny. Min 9 Max 26

Forecast for Friday

Sunny. Winds northeast to southeasterly averaging 10 to 20 km/h becoming light during the afternoon.

Precis: Sunny. Min 10 Max 30

Forecast for Saturday

Mostly sunny. Winds easterly and light.

Precis: Mostly sunny. Min 13 Max 33

The next routine forecast will be issued at 5:30 am EDT Sunday.

2009-02-07 17:22

IDV10712

Australian Government Bureau of Meteorology
Victoria

Latrobe Valley Forecast

Issued at 4:30 pm EDT on Saturday 7 February 2009
for the period until midnight EDT Saturday 14 February 2009.

Warning Summary at issue time

The CFA has declared a day of Total Fire Ban for the Eastern Total Fire Ban District for Saturday 07 February.



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Fire weather warning for the West and South Gippsland forecast district.
Severe weather warning for the West and South Gippsland forecast district.
Details of warnings are available on the Bureau's website www.bom.gov.au, by telephone 1300-659-217* or through some TV and radio broadcasts.

Forecast for the rest of Saturday

Partly cloudy. Raised dust. A shower or two and the chance of thunderstorms.
Winds northwesterly averaging 40 to 50 km/h tending cooler westerly 40 to 45 km/h later in the evening.

Forecast for Sunday

Partly cloudy. A shower or two and the chance of thunderstorms. Winds west to southwesterly averaging 20 to 35 km/h.

Precis: Storms and shower or two. Min 17 Max 26

Maximum Fire Danger: Very High

UV Alert from 9:40 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Monday

Partly cloudy. A shower or two until evening. Winds south to southwesterly averaging 20 to 25 km/h.

Precis: Shower or two. Min 10 Max 22

Forecast for Tuesday

Partly cloudy. A shower or two. Winds west to southwesterly averaging up to 30 km/h.

Precis: Shower or two. Min 8 Max 21

Forecast for Wednesday

Partly cloudy. A shower or two. Winds southwesterly averaging up to 25 km/h.

Precis: Shower or two. Min 7 Max 20

Forecast for Thursday

Partly cloudy. A shower or two. Light winds tending east to southeasterly up to 20 km/h during the afternoon.

Precis: Shower or two. Min 9 Max 24

Forecast for Friday

Morning cloud. Winds easterly averaging 10 to 20 km/h.

Precis: Morning cloud. Min 10 Max 27

Forecast for Saturday

Mostly sunny. Winds easterly and light.

Precis: Mostly sunny. Min 11 Max 31

The next routine forecast will be issued at 5:30 am EDT Sunday.



WIT.013.001.0239

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2009-02-07 17:32

IDV31750

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 5:32 pm EDT on Saturday 7 February 2009.

Forecast No: 008

Name of Fire: Redesdale - Coliban Pk Road

Map Reference: 10km Southwest of Redesdale

Elevation (ASL): 340 metres

Fuel Type: grass

Ignition / Request Time: 1700

Organisation: CFA

Fax Number: 5430 4677

Contact Name: Andrew Howlett

Contact Phone: 5430 4673

Weather overview

The wind change is now expected to move through 1 to 2 hours earlier than anticipated. Since the change has already gone through Ballarat look for the change to go through between 1830 to 1900. Gusty west/southwest winds will be found behind the change with lowering temperatures and rising humidity.

Assumptions and uncertainties associated with the forecast

Based on latest projections change is expected to go through earlier than anticipated but there is always some uncertainty when dealing with areas along and north of Divide.

24 Hour FORECAST

* Max Drought factor at location during forecast period: 10.0

* Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
1800	43	7	NNW 50g80	NW 70	131	171
2100	29	32	WSW 50g85	WNW 55	34	60
0000	24	47	WSW 40g60	W 45	14	25
0300	21	56	SW 30g50	WNW 45	7	12
0600	18	59	SW 25g35	WNW 45	5	8
0900	20	46	SW 25g35	WNW 40	9	10
1200	25	30	SSW 25g40	WNW 40	19	15
1500	27	28	SSW 30g45	W 25	24	23
1800	25	34	S 30g50	SSW 20	18	19

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 17:37

IDV31550

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 5:37 pm EDT on Saturday 7 February 2009.

Forecast No: 006

Name of Fire: Saunders Road

Map Reference: 6km east of Kilmore

Elevation (ASL): 290 metres

Fuel Type: wild

Ignition / Request Time: 1700

Organisation: CFA

Fax Number: 5792 3266

Contact Name: S Kreltszheim

Contact Phone: 5799 1517

Weather overview

Strong and squally north to northwesterly wind will shift cooler south to southwesterly this evening between 6.30 and 7pm. High wind squalls are likely near the change with the wind easing thereafter. High based (probably dry) thunderstorms or light showers should accompany the change and follow it. Mixing depth is more than 5000 metres and will decrease this evening following the change to just a few hundred metres.

Assumptions and uncertainties associated with the forecast

The change has accelerated into central Victoria driven in part by convection near the developing frontal boundary.

24 Hour FORECAST

* Max Drought factor at location during forecast period: 10.0

* Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
1800	42	8	NNW 60g90	NW 70	154	247
2100	28	30	SW 50g75	WNW 55	36	62
0000	24	50	WSW 35g60	W 45	11	19
0300	21	60	SW 25g45	WNW 45	6	8
0600	19	64	SSW 20g35	WNW 40	4	5
0900	20	53	SSW 25g35	WNW 40	7	9
1200	24	38	SSW 30g45	WNW 40	15	17

Appendix 8
Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

UV Alert from 9:50 am to 5:20 pm, UV Index predicted to reach 10 [Very High]

Forecast for Monday
Partly cloudy. Isolated showers. Winds southerly averaging 25 to 35 km/h.

City Shower or two. Min 15 Max 21

Forecast for Tuesday
Partly cloudy. Isolated showers. Winds south to southwesterly averaging up to 35 km/h increasing to up to 45 km/h around midday.

City Shower or two then windy. Min 13 Max 20

Forecast for Wednesday
Partly cloudy. Isolated showers until afternoon. Winds southerly averaging up to 35 km/h.

City Shower or two clearing. Min 13 Max 20

Forecast for Thursday
Morning cloud. Winds south to southeasterly averaging up to 30 km/h.

City Morning cloud. Min 13 Max 25

Forecast for Friday
Sunny. Light winds tending southeasterly up to 20 km/h during the afternoon.

City Sunny. Min 14 Max 28

Forecast for Saturday
Mostly sunny. Winds northeast to southeasterly averaging up to 20 km/h.

City Mostly sunny. Min 15 Max 31

The next routine forecast will be issued at 5:00 am EDT Sunday.

2009-02-07 18:09

IDV31350

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast
Issued at 6:09 pm EDT on Saturday 7 February 2009.

Forecast No: 004
Name of Fire: Dargo -White Timber
Map Reference: 35km NNW of Dargo
Elevation (ASL): 1180 metres
Fuel Type: wild
Ignition / Request Time: 0500
Organisation: DSE
Fax Number: 51397733
Contact Name: Richard Laurier
Contact Phone: 51397726



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Weather overview

Wind change will progress across the southern coastal areas through the rest of today but due to the depth of the change it appears that much higher humidity wont occur until between 0300 to 0600. It should also be pointed out that there is a slight chance of a thunderstorm. A resurgence of moisture from the south will occur during the afternoon but humidity would be high during this period.

Assumptions and uncertainties associated with the forecast

It is assumed that the initial change will have already affected the fire area before 0600 on Sunday. The main moisture surge is expected to progress during the day period.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 8.0
- * Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
0600	18	59	SSW 30g50	NW 40	5	10
0900	20	68	WSW 30g45	NW 35	3	9
1200	26	41	WSW 25g45	NW 30	10	12
1500	25	41	SSW 25g40	W 20	10	12
1800	21	53	SSW 20g35	SW 20	5	7
2100	15	72	S 15g25	SW 10	2	3
0000	11	87	SSE 15g20	SW 5	1	2
0300	10	76	SSE 15g25	S 5	1	2
0600	10	76	SSE 20g30	SSE 10	2	3

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

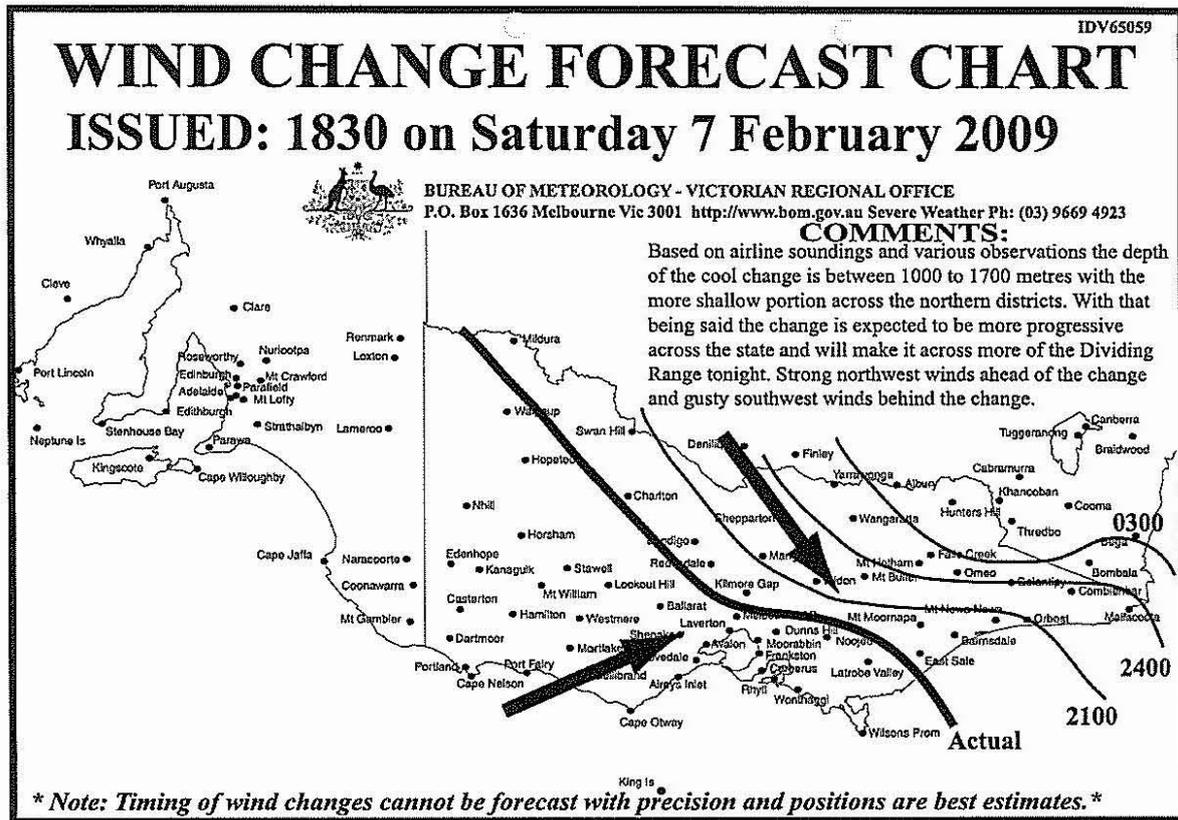
- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

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2009-02-07 18:53



2009-02-07 19:24

IDV31760

Australian Government Bureau of Meteorology
 Victoria

Spot Fire Weather Forecast
 Issued at 7:22 pm EDT on Saturday 7 February 2009.

Forecast No: 009
 Name of Fire: Crawley Road
 Map Reference: Narre Warren North/ Harkaway
 Elevation (ASL): 200 metres
 Fuel Type: grass
 Ignition / Request Time: 1900
 Organisation: CFA
 Fax Number: 0
 Contact Name: Eric Collier
 Contact Phone: 5978 8084

Weather overview

Cooler, more moist southwesterly flow is now established across the fire ground. The wind will slowly moderate this evening. Brief showers and thunderstorms are possible through until Sunday afternoon. Mixing depth is

Appendix 8
 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

probably around 2000 metres but will steadily drop overnight to be just a few hundred metres by midnight.

Assumptions and uncertainties associated with the forecast
 Wind may tend more southerly for a period tonight, before tending more westerly again in the morning.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
- * Max Curing value (%) at location during forecast period: 98

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
2000	24	53	SW 40g65	WNW 65	11	22
2300	21	64	SW 35g55	W 55	6	13
0200	20	72	SW 30g50	WNW 50	3	8
0500	18	77	WSW 20g35	WNW 50	3	4
0800	17	77	SW 25g40	WNW 45	3	6
1100	20	60	SW 25g45	WNW 40	6	8
1400	23	44	SSW 30g50	W 35	12	15
1700	22	43	SSW 35g50	WSW 30	13	19
2000	20	49	SSW 30g50	WSW 25	9	12

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 20:34

IDV31770

Australian Government Bureau of Meteorology
 Victoria

Spot Fire Weather Forecast
 Issued at 8:33 pm EDT on Saturday 7 February 2009.

Forecast No: 010
 Name of Fire: South Marang Plenty Gorge
 Map Reference: Melways 183 H8
 Elevation (ASL): 158 metres
 Fuel Type: grass
 Ignition / Request Time: 2000
 Organisation: DSE

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Fax Number: 54283545
Contact Name: Karen Doyle
Contact Phone: 0428992889

Weather overview

Southwesterly winds moderating and tending more southerly overnight. A brief shower is possible tonight and tomorrow. There is also a risk of a thunderstorm tonight and tomorrow. The south to southwest change is around 1500m deep so mixing will be limited to about this height. The southerly is also quite moist at this stage but will dry out tomorrow morning.

Assumptions and uncertainties associated with the forecast

Thunderstorm development from other fire activity in the vicinity may result in wind outflows. If outflows occur the most likely direction will be from the east or northeast. These outflows may come through around 30G60km/h but will likely ease quickly if they occur. A recent outflow may have moved through the fire ground but at this stage it seems that it is from the east to northeast around 15km/h.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
- * Max Curing value (%) at location during forecast period: 91

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
2100	27	44	SSW 25g35	WSW 35	11	9
0000	23	56	SSW 20g30	WSW 35	6	4
0300	20	68	S 15g25	WSW 30	3	2
0600	18	72	S 15g25	W 35	2	2
0900	19	63	SSW 20g30	WSW 35	4	3
1200	22	46	SSW 25g35	SW 30	9	7
1500	24	35	S 25g35	SW 25	14	9
1800	22	40	S 25g25	SSW 25	11	8
2100	19	48	S 20g30	SSW 30	6	4

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI



WIT.013.001.0247

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2009-02-07 20:36

IDV31790

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 8:36 pm EDT on Saturday 7 February 2009.

Forecast No: 012

Name of Fire: Buckland Gap

Map Reference: 8km south of Beechworth

Elevation (ASL): 600 metres

Fuel Type: forest

Ignition / Request Time: 2000

Organisation: CFA

Fax Number: 02 6024 7821

Contact Name: Paul King

Contact Phone: 02 6056 3022

Weather overview

Northwesterly winds are easing somewhat this evening with the loss of day time heating. A southwesterly change is approaching and is likely to reach the fire ground between 11 and 12 tonight. Conditions could be quite gusty for a period around the change, but the wind will settle into the southwest and gradually ease during the early hours of the morning, with some increase again during the day. Isolated showers and thunderstorms are possible near and following the change.

Assumptions and uncertainties associated with the forecast

Changes moving northeastward into northeastern Victoria into the overnight hours are notoriously difficult to time. At this stage the feeling is the change will push through tonight supported by outflows from storms and showers behind the wind change and the very hot air ahead of the wind shift. An alternate scenario would see the wind change slow to a crawl somewhere near the fire ground and winds become quite light especially in valley areas.

24 Hour FORECAST

* Max Drought factor at location during forecast period: 10.0

* Max Curing value (%) at location during forecast period: 99

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
2100	38	13	NW 35g50	NW 55	64	58
0000	29	28	SW 45g65	NW 55	35	51
0300	24	43	SW 25g40	NW 60	10	11
0600	22	49	WSW 20g35	WNW 50	7	6
0900	27	36	WSW 25g40	WNW 45	15	13
1200	33	24	W 30g50	WNW 40	32	28
1500	35	20	W 35g50	W 35	45	43
1800	33	24	WSW 30g50	W 30	32	28
2100	29	32	SW 20g35	WSW 20	17	11

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 20:44

IDV31770

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast
Issued at 8:44 pm EDT on Saturday 7 February 2009.

Forecast No: 010
Name of Fire: South Marang Plenty Gorge
Map Reference: Melways 183 H8
Elevation (ASL): 158 metres
Fuel Type: grass
Ignition / Request Time: 2000
Organisation: DSE
Fax Number: 54283545
Contact Name: Karen Doyle
Contact Phone: 0428992889

Weather overview
Southwesterly winds moderating and tending more southerly overnight. A brief shower is possible tonight and tomorrow. There is also a risk of a thunderstorm tonight and tomorrow. The south to southwest change is around 1500m deep so mixing will be limited to about this height. The southerly is also quite moist at this stage but will dry out tomorrow morning.

Assumptions and uncertainties associated with the forecast
Thunderstorm development from other fire activity in the vicinity may result in wind outflows. If outflows occur the most likely direction will be from the east or northeast. These outflows may come through around 30G60km/h but will likely ease quickly if they occur. A recent outflow may have moved through the fire ground but at this stage it seems that it is from the east to northeast around 15km/h.

24 Hour FORECAST

* Max Drought factor at location during forecast period: 10.0
* Max Curing value (%) at location during forecast period: 91

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		

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2100	27	44	SSW 25g35	WSW 35	11	9
0000	23	56	SSW 20g30	WSW 35	6	4
0300	20	68	S 15g25	WSW 30	3	2
0600	18	72	S 15g25	W 35	2	2
0900	19	63	SSW 20g30	WSW 35	4	3
1200	22	46	SSW 25g35	SW 30	9	7
1500	24	35	S 25g35	SW 25	14	9
1800	22	40	S 25g25	SSW 25	11	8
2100	19	48	S 20g30	SSW 30	6	4

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 22:04

IDV31150

Australian Government Bureau of Meteorology
 Victoria

Spot Fire Weather Forecast

Issued at 10:04 pm EDT on Saturday 7 February 2009.

Forecast No: 002

Name of Fire: Bracewell St

Map Reference: 1 km west of Bendigo

Elevation (ASL): 230 metres

Fuel Type: forest

Ignition / Request Time: 2100

Organisation: DSE

Fax Number: 55555555

Contact Name: Sharon

Contact Phone: 0427300946

Weather overview

Southerly winds should ease slightly overnight before freshening again tomorrow. There is a chance of a shower or thunderstorm tomorrow. Mixing depth limited to around 1000 - 1300m overnight, increasing to around 2000m tomorrow.

Assumptions and uncertainties associated with the forecast

Winds may be lighter than forecast overnight tonight but could reach up to 30-40km/h tomorrow afternoon. If thunderstorms occur in the vicinity, gusty erratic winds are likely.

24 Hour FORECAST

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* Max Drought factor at location during forecast period: 10.0
* Max Curing value (%) at location during forecast period: 98

Time Local	Temp (C)	RH (%)	10m Wind (km/h) Dir/Spd Gust	1000m AGL Wind(km/h) Dir/Spd	FFDI*	GFDI*
2200	30	33	SSW 20g30	W 40	17	11
0100	26	44	SSW 20g30	W 40	10	8
0400	23	53	SSW 15g25	WNW 40	6	4
0700	20	56	SSW 20g30	WNW 40	5	5
1000	24	38	SSW 30g45	WSW 40	14	16
1300	28	26	SW 30g45	SW 35	25	23
1600	30	23	SSW 30g45	SW 30	30	26
1900	27	28	S 30g40	SW 30	24	22
2200	22	38	SSE 30g40	SW 35	14	16

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 22:36

IDV31790

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 10:35 pm EDT on Saturday 7 February 2009.

Forecast No: 012

Name of Fire: Buckland Gap

Map Reference: 8km south of Beechworth

Elevation (ASL): 600 metres

Fuel Type: forest

Ignition / Request Time: 2200

Organisation: CFA

Fax Number: 02 6024 7821

Contact Name: Paul King

Contact Phone: 02 6056 3022

Weather overview

A southwesterly change is approaching has moved through Shepparton but is now slowing down. It is now more likely that the change will not reach the Beechworth area although it will reach the lower ground to the west. There is



WIT.013.001.0251

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still a chance it will reach the fire area. More likely the wind will stay northwesterly before gradually tending more westerly tomorrow then southwesterly tomorrow afternoon. Isolated showers and thunderstorms are possible overnight and tomorrow.

Assumptions and uncertainties associated with the forecast

If the south to southwest change arrives tonight it should reach the area between about midnight and 1am and the speed should be 30 to 40 km/hr.

24 Hour FORECAST

* Max Drought factor at location during forecast period: 10.0

* Max Curing value (%) at location during forecast period: 99

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
2300	31	22	NNW 30g50	NW 50	33	28
0200	26	34	NW 25g45	NW 40	16	14
0500	22	46	NW 20g35	NW 40	8	7
0800	24	44	WNW 20g35	NW 35	10	8
1100	31	29	W 20g35	WN 30	21	13
1400	34	25	W 25g40	WNW 30	30	21
1700	34	23	WSW 25g45	SW 30	32	22
2000	29	33	SW 20g35	SSW 30	17	11
2300	23	50	SSW 20g30	S 30	8	7

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-07 22:40

IDV28000
Australian Government Bureau of Meteorology
Victoria

Cancellation of
Severe Weather Warning
for people in the Alpine Areas, Western, North Central, Northern Country, Wimmera, Central, West and South Gippsland and East Gippsland forecast districts.

Issued at 10:35 pm EDT on Saturday 07 February 2009.

Weather Situation

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A cold front over eastern Victoria will clear the State Sunday morning.

The severe weather warning for parts of the Alpine Areas, Western, North Central, Northern Country, Wimmera, Central, West and South Gippsland and East Gippsland forecast districts has been cancelled.

The State Emergency Service advises that people should:

- Keep clear of fallen power lines.
- Don't drive, ride or walk through flood water.
- Keep clear of creeks and storm drains.
- Beware of fallen trees or debris on the road.
- For emergency help in floods and storms, ring your local SES Unit on 132

500.

No further warnings will be issued for this event.

This warning is also available through TV and Radio broadcasts; the Bureau's website at www.bom.gov.au or call 1300-659-217*.

The Bureau and State Emergency Service would appreciate this warning being broadcast regularly.

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 Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

Sunday 8 February

2009-02-08 00:13

IDV31550

Australian Government Bureau of Meteorology
 Victoria

Spot Fire Weather Forecast
 Issued at 0:12 am EDT on Sunday 8 February 2009.

Forecast No: 006
 Name of Fire: Saunders Road
 Map Reference: 6km east of Kilmore
 Elevation (ASL): 290 metres
 Fuel Type: wild
 Ignition / Request Time: 2300
 Organisation: CFA
 Fax Number: 5792 3266
 Contact Name: S Kreltszheim
 Contact Phone: 5799 1517

Weather overview

High based (probably dry) thunderstorms or light showers in the area tonight and tomorrow. Mixing depth is around 800 - 1200 metres and may decrease overnight before increasing as high as 2000metres Sunday afternoon. Fresh southerly winds easing early Sunday morning before freshening Sunday afternoon.

Assumptions and uncertainties associated with the forecast

Gusty erratic winds are likely with shower or thunderstorm activity in the area. Winds may be a little stronger than forecast tomorrow night.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
- * Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
0000	23	60	S 30g40	WSW 35	6	11
0300	21	68	SSW 25g35	WSW 30	4	7
0600	18	72	SSW 20g30	WSW 25	2	4
0900	20	52	SSW 20g30	WSW 25	6	6
1200	24	38	SSW 30g40	SW 30	14	17
1500	26	31	S 35g45	SW 30	22	26
1800	23	38	S 30g40	SW 30	14	16
2100	17	55	S 30g45	S 35	7	11
0000	14	63	S 30g50	SSE 40	5	9

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.



WIT.013.001.0254

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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-08 00:19

IDV31750

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast
Issued at 0:19 am EDT on Sunday 8 February 2009.

Forecast No: 008
 Name of Fire: Redesdale - Coliban Pk Road
 Map Reference: 10km Southwest of Redesdale
 Elevation (ASL): 340 metres
 Fuel Type: grass
 Ignition / Request Time: 2300
 Organisation: CFA
 Fax Number: 5430 4677
 Contact Name: Andrew Howlett
 Contact Phone: 5430 4673

Weather overview
 South to southwest winds will tend southerly tomorrow afternoon and freshen. An inversion around 1000 metres will rise to 1500 metres tomorrow. Isolated showers and thunderstorms are still possible overnight and tomorrow but should clear later in the day.

Assumptions and uncertainties associated with the forecast
##

24 Hour FORECAST

* Max Drought factor at location during forecast period: 10.0
 * Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
0000	24	47	SSW 20g20	SW 30	9	8
0300	21	56	SW 20g15	SW 25	6	6
0600	18	59	SW 20g15	SW 25	5	5
0900	20	46	SW 20g25	SW 30	8	7
1200	25	30	SW 25g35	SW 30	19	15
1500	27	28	S 30g45	SSW 30	23	22
1800	24	33	S 30g45	S 40	17	18
2100	18	49	S 30g45	S 40	9	12
0000	14	63	S 30g45	SSE 40	5	9

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AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-08 02:43

IDV31050

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast

Issued at 2:41 am EDT on Sunday 8 February 2009.

Forecast No: 001

Name of Fire: Churchill Jeeralang

Map Reference: 10 km SE Churchill & 5km NNW of Yarram

Elevation (ASL): 500 metres

Fuel Type: wild

Ignition / Request Time: 0300

Organisation: CFA

Fax Number: 51722100

Contact Name: Peter Merritt

Contact Phone: 51722541

Weather overview

Isolated showers and thunderstorms are possible in the region. Mixing depth increasing to around 2000m in the afternoon. West to southwesterly winds through the Latrobe Valley and south of the Strezleckis will be considerably fresher during the morning and afternoon.

The location of 5km NNW of Yarram may have west to southwesterly winds as strong as 30G45 km/h at first. These winds should ease during the morning but expect them to freshen by late morning to similar strengths and increase in the afternoon to reach 35-45km/h with gusts to 60km/h possible before gradually easing through the evening to southwesterly 20G30km/h. Temperature at this location will likely get a degree or two warmer with the rel hum falling slightly further to around 35% in the afternoon.

Assumptions and uncertainties associated with the forecast

Gusty erratic winds can be expected with shower or thunderstorm activity in the area. It is assumed that the elevated location will be protected somewhat from the stronger winds funnelling through the Latrobe Valley. Winds at both the Elevated area and north of Yarram may go light and variable overnight.

24 Hour FORECAST

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* Max Drought factor at location during forecast period: 10.0
 * Max Curing value (%) at location during forecast period: 98

Time Local	Temp (C)	RH (%)	10m Wind (km/h) Dir/Spd Gust	1000m AGL Wind(km/h) Dir/Spd	FFDI*	GFDI*
0400	15	87	WSW 15g20	W 40	1	2
0700	15	87	WSW 15g25	W 45	1	2
1000	18	64	WSW 20g35	W 35	4	5
1300	22	46	WSW 30g45	W 35	11	14
1600	22	43	WSW 30g45	WSW 35	11	14
1900	19	49	WSW 25g35	SW 40	8	9
2200	13	72	SW 15g25	SW 40	2	3
0100	11	81	SW 15g25	SW 30	1	2
0400	10	87	SSW 15g25	SW 25	1	2

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-08 03:37

IDV31780

Australian Government Bureau of Meteorology
 Victoria

Spot Fire Weather Forecast

Issued at 3:36 am EDT on Sunday 8 February 2009.

Forecast No: 011

Name of Fire: Murrindindi

Map Reference: 10 km S of Alexandra

Elevation (ASL): 300 metres

Fuel Type: forest

Ignition / Request Time: 0200

Organisation: DSE

Fax Number: 55555555

Contact Name: John Steer

Contact Phone: 57720242

Weather overview

Southerly winds will freshen in the afternoon and likely remain fresh into the evening before easing overnight. Isolated showers and thunderstorms in the vicinity may affect the fire grounds. Gusty erratic winds likely with

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thunderstorms. Mixing depth increasing to 1200-1500metres in the afternoon, decreasing to 400-600 metres overnight.

Assumptions and uncertainties associated with the forecast
 Southerly winds may not be as strong as forecast initially but may remain fresh for longer than forecast into the evening. As there is an inversion currently at about 500-700metres above sea level, temperatures at elevations higher than this level may have temperatures into the mid 20's this morning (Eildon was 25.6 degrees at 3am at elevation 637m) and relative humidities as low as 40-45%.

24 Hour FORECAST

* Max Drought factor at location during forecast period: 10.0
 * Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
0300	18	77	SSW 15g20	W 25	2	2
0600	16	87	SSW 15g20	W 30	1	2
0900	21	60	SSW 20g30	W 30	5	5
1200	23	49	SSW 25g35	WSW 30	8	10
1500	25	38	SSW 25g35	WSW 25	13	12
1800	23	40	SSW 30g45	SW 25	13	15
2100	18	51	SSW 30g45	SW 30	7	11
0000	14	62	S 30g40	SSW 35	4	8
0300	12	71	S 20g30	S 35	2	3

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI

2009-02-08 05:03

IDV31780

Australian Government Bureau of Meteorology
 Victoria

Spot Fire Weather Forecast
 Issued at 3:36 am EDT on Sunday 8 February 2009.

Forecast No: 011
 Name of Fire: Murrindindi
 Map Reference: 10 km S of Alexandra



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Elevation (ASL): 300 metres
Fuel Type: forest
Ignition / Request Time: 0200
Organisation: DSE
Fax Number: 55555555
Contact Name: John Steer
Contact Phone: 57720242

Weather overview

Southerly winds will freshen in the afternoon and likely remain fresh into the evening before easing overnight. Isolated showers and thunderstorms in the vicinity may affect the fire grounds. Gusty erratic winds likely with thunderstorms. Mixing depth increasing to 1200-1500metres in the afternoon, decreasing to 400-600 metres overnight.

Assumptions and uncertainties associated with the forecast

Southerly winds may not be as strong as forecast initially but may remain fresh for longer than forecast into the evening. As there is an inversion currently at about 500-700metres above sea level, temperatures at elevations higher than this level may have temperatures into the mid 20's this morning (Eildon was 25.6 degrees at 3am at elevation 637m) and relative humidities as low as 40-45%.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
* Max Curing value (%) at location during forecast period: 100

Table with 7 columns: Time, Temp (C), RH (%), 10m Wind (km/h), 1000m AGL Wind (km/h), FFDI*, GFDI*. Rows include times from 0300 to 0300 with corresponding weather data.

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h) 5 10 15 20 25 30 40 50 60
10 metre wind (km/h)* 8 17 25 33 42 50 67 83 100
Beaufort Number 2 3 4 5 6 7 8 9 10

use 10m wind for calculation of FFDI and GFDI



WIT.013.001.0259

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2009-02-08 05:04

IDV31450

Australian Government Bureau of Meteorology
Victoria

Spot Fire Weather Forecast
Issued at 4:23 am EDT on Sunday 8 February 2009.

Forecast No: 005
Name of Fire: Bunyip SP Complex
Map Reference: 4 km N of Warragul
Elevation (ASL): 300 metres
Fuel Type: wild
Ignition / Request Time: 0300
Organisation: CFA
Fax Number: 59454780
Contact Name: Adam Whitchurch
Contact Phone: 0458 338 935

Weather overview

Isolated showers and thunderstorms in the vicinity have the potential to produce gusty erratic winds today. Southwesterly winds will freshen late morning but ease into the evening. Mixing depth increasing to around 2000m in the afternoon.

Assumptions and uncertainties associated with the forecast

It is assumed that as the fire location is at the entrance of Latrobe Valley for westerly direction winds that the fire location will be spared the funnelling that occurs through Latrobe Valley with such winds. Wind direction may tend southeasterly early tomorrow morning or simply become light and variable.

24 Hour FORECAST

- * Max Drought factor at location during forecast period: 10.0
- * Max Curing value (%) at location during forecast period: 100

Time	Temp	RH	10m Wind	1000m AGL	FFDI*	GFDI*
Local	(C)	(%)	(km/h)	Wind(km/h)		
			Dir/Spd Gust	Dir/Spd		
0400	18	82	SW 5g15	WSW 30	1	0
0700	17	82	SSW 5g15	W 35	1	0
1000	20	64	SSW 20g25	WNW 35	4	5
1300	23	47	SW 25g35	W 30	10	11
1600	24	41	SW 30g45	WSW 30	13	16
1900	20	45	SW 25g35	WSW 35	8	9
2200	15	62	SSW 20g30	SW 30	3	4
0100	13	76	S 15g20	SW 25	1	2
0400	12	81	S 15g20	SSW 25	1	2

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Spd - Speed

- If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on (03) XXXX-XXXX or (03) XXXX-XXXX.



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Bureau of Meteorology report for the 2009 Victorian Bushfires Royal Commission

- For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on (03) XXXX-XXXX or (03) XXXX-XXXX to assist in forecast verification.

2 metre wind (km/h)	5	10	15	20	25	30	40	50	60
10 metre wind (km/h)*	8	17	25	33	42	50	67	83	100
Beaufort Number	2	3	4	5	6	7	8	9	10

use 10m wind for calculation of FFDI and GFDI