

# THE AUSTRALIAN EARLY WARNING NETWORK

Helping to save lives and protect property

Severe Weather

# New Risks

EVEN GREATER  
opportunity

“Severe weather is an extreme risk and potential liability to nearly all businesses. But with this risk comes a new opportunity”

EWN PARTNER



climate ready

CLIMATE CHANGE ADAPTION PROGRAM

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# Severe Weather



Severe weather is an extreme risk to all Australian communities. The consequences of these frequent events are often catastrophic involving fatalities, injuries and substantial financial losses

## SUMMARY

Federal, state and local governments have all recognised that severe weather is a risk and that climate change will only increase that severity. This recognition has an immediate implication in a duty of care by all sorts of organizations to warn and inform including your business. New technologies are available that make this obligation easy to discharge and easy to implement.

*“Severe weather is a recognised hazard and in the application of AS/NZS 4360:2004 is an extreme risk requiring a priority in treatment and the application of all reasonable and practicable measures to mitigate its affects.”*

A national early warning system has been developed that provides early warning of severe weather events specific to a location accurate to within meters. The system can warn one person or one million simultaneously over multiple channels.

The system and benefits are proven and operational nationwide. Any location can be registered and protected in less than sixty seconds. This capability delivers to business an extremely efficient treatment to mitigate potential damages and liabilities arising from events normally beyond their control.

## THE RISK IN LOST OPPORTUNITY

At any moment a severe weather event could be experienced with consequences that might have been avoided, councils risk losing the opportunity to minimize these. The positive consequence of treatment can help prevent death, personal injury, minimize disruption to operations and reduce financial losses. Participation also provides other benefits including a leadership in adapting to climate change.

According to the Australian Government climate change is already occurring and increasing the risk of severe weather. Climate change adaption is a framework developed to combat the consequences we might experience. Registering with EWN makes you a partner in becoming climate ready helping your community to become more resilient.

<sup>1</sup><http://www.climatechange.gov.au/impacts/index.html>

<sup>2</sup><http://www.climatechange.gov.au/impacts/publications/pubs/risk-management.pdf>

<sup>3</sup>Climate Change: risk and Vulnerability

<sup>4</sup>[www.coag.gov.au/coag\\_meeting\\_outcomes/2007-04-13/docs/national\\_climate\\_change\\_adaption\\_framework.pdf](http://www.coag.gov.au/coag_meeting_outcomes/2007-04-13/docs/national_climate_change_adaption_framework.pdf)

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## HAZARDS TO BE AVOIDED

Registering with EWN helps address many other issues. Under the Occupational Health and Safety Act, once a hazard is identified by any party, employers must take corrective action. This is reflected in numerous management tools available to local government. OH&S statutes, AS/NZS 4360:2004 and the Climate Change Adaptation Framework.

The Australian Government states that the early impacts of climate change have already appeared<sup>1</sup> and scientists believe that further impacts are inevitable, no matter what happens to future global greenhouse gas emissions. The Australian Government takes the challenge of climate change seriously. Their approach is to:

- reduce greenhouse pollution in Australia in the short and long term;
- work with the international community to develop a global response that is effective and fair; and
- prepare for the climate change that we cannot avoid.

An outcome of climate change identified by government is an increase in severe weather<sup>3</sup>, a significant phenomena and an extreme risk we already experience with often tragic consequence. Government advises that early planning for the impacts of climate change is likely to bring considerable advantages. Early planning for the impacts of climate change is likely to bring considerable advantages. A systematic approach to adaptation planning, such as risk management helps identify needs. To assist management the government has prepared a guide for business and government entitled Climate Change Impacts & Risk Management<sup>2</sup>.

EWN provides a unique opportunity to meet climate change challenges and reduce risk with potentially significant benefits. Attached to this document is a system brief which describes how the technology and service operates.

## THE RISKS

Since Adam was a cowboy the people involved in a business, its operations and assets have all been exposed to the consequences of severe weather. Mostly these were beyond our control. Times have changed and the capability to minimise consequences of severe events has become simpler. Today, situations at risk which can be treated would include:

1. Anyone working out doors, on the road or travelling in the course of their duties
2. Employees working in doors
3. Property exposed out doors
4. Visitors and customers to a business premises or work site
5. Employees commuting home from work, going to lunch or to breaks
6. An employee's property exposed to severe weather events

It should be noted that employees focused on their work will not be aware of potentially severe events developing outside their office, building or working environment. This may impact them personally as they leave they work place or drive home. Damages might also results to their property (i.e. car parked outside damaged by hail which might otherwise have been protected if they were aware of a risk and had the opportunity to do something about it.)

# THE AUSTRALIAN EARLY WARNING NETWORK

## **THE TREATMENT AND OPPORTUNITY**

A new treatment for an extreme risk to business is delivering new opportunities will help:

- Prevent disruption of operations
- Provide greater work place safety
- Provide greater personal security to those working inside and out
- Minimise financial losses due to downtime, property damage and
- Deliver greater certainty in planning day to day operations

A reasonable and practicable treatment to the threat of severe weather is available with the Australian Early Warning Network (EWN). EWN provides free emergency alerts covering everything from tsunamis through to severe weather. EWN monitors and tracks potentially dangerous weather systems and uses the network to alert people directly in the path of a events such as a thunderstorm with the potential for hail, flash flooding or damaging winds. This is a twenty four by seven national operation and is providing substantial protection to the community.

EWN's national operational early warning system sends thousands of alerts daily. The Australian Early Warning Network is Australia's only operational national early warning system (EWS). EWN is Australia's most experienced developer and operator of EWS and is Australia's foremost expert in such systems. EWN's operational capability is well proven (See Attachments D and E) and has been in continual operation since 2007.

## **REGISTERING TO THE SERVICE**

Registering to the service is simple and should take less than a minute. This is completed online or with the assistance of EWN's local Alerts Partner. All you need supply is the address of the site/location you are registering and contact details to which alerts will be sent to. When you register, your address is automatically geo-coded. You can include mobile numbers, landline, pager, email address and also opt to use desktopALERT to receive your alerts.

You will be issued a user name and pass word which you can use to log on and modify your alert profile at any time (Change numbers, locations etc).



# THE AUSTRALIAN EARLY WARNING NETWORK

## CALCULATE YOUR OWN RISK

Shown below is a qualitative risk analysis matrix to provide an indicative level of risk (adapted from AS/NZS 4360:2004 -Risk Management Standard under the overarching ISO31000 standard). Your risk can be calculated determining the consequence of identified risks combined with the likelihood.

What are the potential consequences of a severe weather event with damaging winds, flash flooding or hail? These events can affect your employees or other people associated with your business not just at the work place but also on the road, anywhere on work related tasks or leaving the enterprise to go home, on break etc. We know from recent and past experience that people die in these events and that significant financial losses are experienced. Using the table below the consequence of severe weather can be catastrophic.

We then calculate the likelihood of such an event, and again through recent and past history the possibility of a severe event occurring in the next few years is moderate, perhaps likely. Either way, the exercise clearly shows that the risk is EXTREME.

Qualitative measures of consequence:

- a) **Insignificant.** No injuries, low financial implications.
- b) **Minor.** Possible injury not more than first aid treatment, medium financial loss.
- c) **Moderate.** Possible injuries would require medical treatment, high financial loss.
- d) **Major.** Extensive injuries possible, major financial loss.
- e) **Catastrophic.** Death is clearly possible, huge financial implications.

LIKELIHOOD	CONSEQUENCE				
	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
Almost certain	H	H	E	E	E
Likely	M	H	H	E	E
Moderate	L	M	H	E	E
Unlikely	L	L	M	H	E
Rare	L	L	M	H	H

### Legend:

E – extreme risk (immediate action required, eg. do not proceed with activity until the level of risk is reduced)

H – high risk (senior management attention required)

M – moderate risk

L – low risk (manage by routine procedures)

# THE AUSTRALIAN EARLY WARNING NETWORK

## **Duty of Care – what is reasonably practicably required**

The primary objective of the nations various Occupational Safety and Health Acts are to promote and improve occupational safety and health standards. They all impose a general duty of care to protect persons at work from hazards and maintain safe and healthy workplaces. Some of these are to:

- promote and secure the safety and health of people at work;
- protect people at work from hazards;
- eliminate, reduce and control hazards; and
- ensure employees are aware of threats to their health and safety

For employers, there is emphasis on the increased level of care that would be considered reasonable by today's standards. In a High Court decision, the following comment was made regarding the employer's obligation:

***“...what reasonable care requires will vary with the advent of new methods and machines and with changing ideas of justice and increasing concern with safety in the community... What is considered to be reasonable in the circumstances of the case must be influenced by current community standards.”***

The employer's position is covered very well in the following summary:  
The overall test is the conduct of a reasonable and prudent employer taking positive thought for the safety of his workers in light of what he knows or ought to know; where there is a recognised and general practice which has been followed for a substantial period in similar circumstances without mishap, he is entitled to follow it unless in the light of common sense or newer knowledge it is clearly bad;

- where there is developing knowledge, he must reasonably keep abreast of it and not be too slow to apply it;
- where he has in fact greater than average knowledge of the risks, he may therefore be obliged to take more than the average or standard precautions.

## **The meaning of 'practicable'**

Some of the general duty provisions in the Act are qualified by the words 'so far as is practicable'. This applies to general duties for employers, self-employed people, people with control of workplaces, designers, manufacturers, importers, suppliers, erectors and installers. These people are expected to take measures that are practicable. 'Practicable' has a particular meaning in the Act. The definition can be found in section 3(1) (with other definitions). If something is practicable, it is 'reasonably practicable', taking into account:

- the severity of any injury or harm to health that may occur;
- the degree of risk (or likelihood) of that injury or harm occurring;
- how much is known about the risk of injury or harm, and the ways of reducing, eliminating or controlling the risk; and the availability, suitability and cost of the safeguards.

In other words, to be practicable, something must not only be capable of being done, it must also be reasonable in light of the factors mentioned above. The risk and severity of injury must be weighed up against the overall cost and feasibility of the safeguards needed to remove the risk. Only those factors listed above are relevant, and a factor cannot be ignored unless, after considering what a reasonable person at the time would have known, the factor is clearly irrelevant. Each factor is considered in light of what a reasonable person in the position of the person who owes the duty would have known.

# THE AUSTRALIAN EARLY WARNING NETWORK

## *Public Feed Back on EWN Services*

Note, these are just a handful

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Your warning SMS text gave me 45 minutes to secure the house, garden and pets, move cars under cover and even more importantly ring all my 4pm students and their parents to cancel lessons and and tell them to ride out the storm under cover till it passed. If I had not done this they would all have been caught out in the brunt of the 4.5cm hail which descended on us!

I have since sent invitations to at least 50 people to subscribe to your Early Warning Network including students and family and they have all been astounded to hear of such a wonderful free community service that you offer. I have to say ever since I signed up to your service I have had my property saved from damage twice. I have also been able to warn my friends and told them to join your network. Please keep up the good work. – Monique, Alstonville 16.3.09

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I have to say ever since I signed up to your service I have had my property saved from damage twice. I have also been able to warn my friends and told them to join your network. Please keep up the good work.

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About 2 weeks ago or so, i got Hail Alert from you guys, and it was about 25mins after that we got heavy hail. Because of the Alert, my Wife was able to secure undercover parking at Work, so i am grateful for your service. When i get an alert, i send a text ASAP to family and friends not on your service, who may be affected.

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Your early warning email did confirm my thoughts on the weather approaching Deception Bay and I did in fact take steps to prepare for it, including putting the car under cover, rolling up of the aluminium blinds and storing loose outside items. Next time I'll also have to put a lot of rags between the screen doors and the main doors to stop a lot of rain water being forced past the door seals by the gale-force winds. Other than that, I had no damage at all. Very lucky, compared to some!

At the very height of the storm, the car had to come out though to search (successfully) for a missing neighbours child and what a motoring event that was !! The neighbour obviously didn't have the benefit of your Alert !!.....or common-sense too, I fear. To sum up, I'm quite impressed both by your Alerts and the fact that you were concerned enough to write your email. Thank you for both. Please continue your great service to the community.

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Hi....You guys are doing an AWESOME job, because of your warnings on Sunday we came thru it without property damage as we had time to put out door furniture & cars away, we also turned off all our electricals so we weren't hit with power surges. other people around us lost fridges, TV's, fish tanks etc.

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I would like to thank you for your early storm warning for hail and damaging winds on 22nd October 2008. I was working in the rainforest at Byron Bay when I received the SMS alert. I was then able to

access the radar which confirmed that the storm was heading straight to my work place. I was lucky to be able to find shelter for my car but more importantly, to alert my fellow workers in the forest of the impending storm and we all were able to take shelter. Very fortunate given the size of the hail and the velocity of the winds and ensuing damage to the forest (fallen branches etc)!

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I received a text message on my mobile, alerting me of a Severe Weather Warning for my town, and surrounding districts. Another of the towns mentioned - Clermont, is where my Daughter, Dad, Sister, and Brother live. I immediately forwarded your text to all of them, then went online to check the BOM weather radar. I saw a large, severe system bearing down on them. My Sister's property, 40km north of Clermont was worst hit. Her husband reported lightning, hail, flash flooding, and extremely strong winds. There were farm buildings unroofed, and trees ripped out by the roots. A neighbour who has an amateur weather station recorded winds of 192km/hr. My 73 yr old Dad said it was the worst he'd ever seen in his life. We did get a storm here in Mackay a few hours later, with strong winds, lightning, and over 40mm of rain in around 1/2 hr, but nowhere near as severe as Clermont districts. Because of you wonderful people at EWN, I was able to forewarn my family, and prepare myself for the ensuing weather. Your service was invaluable, and family members are now subscribing. Most importantly everyone was safe, in what could potentially have been a life threatening event, so I would like to say a big Thank You from this grateful customer.

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Your service is very much appreciated. My Husband and I don't own a car that we would need to move under cover or anything like that, but we both have a vision impairment so getting the SMS is a good thing to ensure that we ourselves stay under cover! I have also recommended the EWN service for deaf people, since they wouldn't hear any warnings on radio or TV. I haven't heard anything from my deaf friends, but I'm sure it would help them!

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I must admit that we rely heavily on receiving the warnings that you send. On the Sunday of the fierce storm, we were able to get our car away before the force of the storm hit. Had the car been left where it was sitting, it would have been hit by large branches which were torn from a very large tree on our property.

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Thanks for these great alerts. I am the Deputy Local Controller of the State Emergency Service and find these alerts give me the opportunity to get teams together for any impending emergencies (storms). Please keep up the good work. First I would like to thank you and your staff for sending emails and sms,

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We certainly find the early warnings useful. We have one car parked outside but in severe conditions can get it into a neighbours garage. This we did on Sunday evening and I am sure this saved it. We also have two large outdoor decks and warnings give us time to remove all the furniture. Keep up the good work.

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I had 25 mins to park my Car and place out door furniture into garage. Approx 5:55pm Storm hit with very High winds, Heavy Rain, Lighting and Little hail, Debris and Branches fell from gum and Palm trees into the back and front yards blocking my drive way and to top it off a 4 hour Blackout. Thank you again, my vehicle would have been damage for sure if I had not received early warnings.

This is and excellent life and property saving service well worth Government funding ASAP. I recommend this service to every house hold in Australia.

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Not only do I find your service useful, but incredibly powerful as an enabler of better public safety outcomes. I work in the IT/Healthcare industry, so increased and timely awareness of hazardous

situations can only serve to reduce the impact on emergency services during and after an incident.

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I currently live on the south side of Brisbane, Queensland with 5 other individuals and I'd just like to say that in general, the service you provide for FREE is quite honestly, fantastic. Whilst we were not severely affected by the storms (thank goodness), the large amount of rain has caused some minor flooding to a work area underneath our residence but thankfully, has not entered any of the house. Without your EWN alert system, this flooding could have been major and caused significant damage to the project we are attempting to complete over the next couple of months. Again, we thank you for your timely, and to-the-point notifications to our computers, E-mail addresses and mobiles which undoubtedly saved ourselves, and many others, a lot of time and money.

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I would like to thank EWN for a job very well done! I am a State Emergency Service Operational Team Leader. The email you sent on Sunday was great! I had time to sort out my kit and get uniformed up! You guys knew before the SES did! I have asked that all my SES team subscribes to EWN so they know what the score is! Great by SMS aswell!!!

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On Sunday afternoon, I was at home when your alert arrived via a text message on my mobile phone warning of possible large hail. My wife was visiting her sister only 5 minutes away in the car. I knew the car would be parked in the street. I was able to warn her to get the car home and under cover.

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I was out visiting a friend in Ipswich when I received one of the alerts. I fled back to Brisbane immediately and got into the garage just as the storm hit. My friend in Ipswich received some storm damage. Thanks very much for your alerts. I also forward them to people who I know are in the danger zones.

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I have found your EWN alerts to be an invaluable tool particularly as I tend to live by the motto 'fore warned is fore armed'. The alerts allow me to make business decisions relating to the safety of my staff and make personal decisions about when to travel for example. I can and do easily forward your alerts to my husband so he is aware for his business of what is coming. This allows him to move personal and customer vehicles under cover or at the very least keep an eye on the sky. On Sunday the alerts allowed us to move my husband's new car under shelter, warn family in the area of The Gap and Arana Hills (even though we are in an area that didn't bear the brunt of the storm), and move a 5 year old birthday party inside sooner rather than later. I am a big fan of your service and have recommended it to my daughter's child care centre, friends, family and colleagues.

From your alerts I then know to use secondary resources such as Foxtel interactive weather channel or bom.gov.au to be informed about what is happening. Since I work in an office with no external windows your alerts are usually my first idea of bad weather approaching. Keep up the great work, it is greatly appreciated.

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Hi EWN. I'd like to thank you for your reports, they are invaluable to me and my drivers. We operate taxis and limos, and we have found your info very helpful. I would suggest getting the taxi companies on board for sponsoring your cause. Great job! p.s. if I can be of any assistance don't hesitate.

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I love the warnings sent by your service and always take actions once receiving your warnings. We have a dog that is terrified of storms and are able to ensure one of us is home once we receive your warnings. Thank you for your wonderful work.

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We find the EWN alerts very helpful as we were able to remove outdoor furniture and tie down what we can't. I phoned friends to make them aware and they did same. We are also able to move outdoor activities (BBQ) to indoors.

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Excellent warning. I was taking my dog out for a walk in the afternoon and got the SMS alert. The first was for the southern areas. I then looked up in the sky and it looked dark and wondered whether the northside would be hit. Sure enough the second SMS alert warned hail in Aspley. Although we didn't get hail we certainly got a lot of wind and had enough time to secure and put away items that potentially could have caused damage.

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I received your text warning while out at Venue on the Gold Coast with a few friends, the music was great, the food was fabulous so it was very hard to convince my friends it was time to head for cover because of the text storm warning I had received from EWN.

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.Alas I was unable to move my friends before the storm hit EWN had sent me a second warning, and we all had to spend the next hour or so waiting out the storm totally freaked out, concerned about our family, friends, homes and cars.

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My friends were very impressed and have asked me to text them whenever I receive a warning from EWN alert.

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We are extremely happy with the early warnings we have received and value them a great deal, we often pass on the warnings to neighbours and friends which in turn assist us and others in our preparation and precautions prior the storm etc heading our way - that is it allows us time to protect our properties as best we can by moving items to a safer area like cars etc and outdoor furniture.

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We had ample warning and sufficient information to make any choices as what to do if needed, the sms side of your service is a great idea, I have told friends and family about it and believe everybody should be linked into this service. This is something we really need and I don't know if you get any funding but the Government should be behind this service.

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Thanks to your alerts sent to my email I have found myself prepared on many occasions. For example I have the time to clean up my yard to make sure nothing is left for the wind to use as a missile. I've had a chance to get the washing in, my car in the garage and also to warn friends and family. So thank you for these warnings they have proven to be a tremendous help to both me and my family.

# Table of Notable Alerts NSW and QLD



## Table of Alerts and Events

**Note:** The EWN system retains reports for all these alerts. Number of SMS/email/desktopALERT alerts sent in each event range from a handful to several thousand. The system can send text to voice alerts to landline, a feature not used often by EWN and more appropriate to authorities. (example: Getting people out of bed at 2am for a flood alert, when their mobiles are off or on the charger)

Date	State	Alert type	
4/09/2008	NSW	Severe Weather: Flooding	
5/09/2008	NSW	Flooding	
6/09/2008	NSW	Severe Weather: Flooding	
8/09/2008	NSW	Flooding	
11/09/2008	VIC	Severe Thunderstorms	
12/09/2008	NSW	Severe Thunderstorms	Severe hailstorm Grafton to Maclean area
	QLD	Severe Thunderstorms	Severe storm west suburbs of Brisbane
	VIC	Severe Weather: Winds	
13/09/2008	NSW	Severe Weather: Winds	
	VIC	Severe Weather: Winds	
	NSW	Severe Thunderstorms	
14/09/2008	NSW	Severe Weather: Winds	
	VIC	Severe Weather: Winds	
	NSW	Severe Thunderstorms	
15/09/2008	SA	Severe Weather: Winds	
19/09/2008	NSW	Severe Weather: Winds	
	QLD	Severe Thunderstorms	Hailstorm NW of Brisbane
	NSW	Severe Thunderstorms	
20/09/2008	VIC	Severe Thunderstorms	
	QLD	Severe Thunderstorms	Hailstorms west suburbs and northwest of Brisbane
	NSW	Severe Thunderstorms	Large hail Kyogle area
21/09/2008	NSW	Severe Weather: Winds	
	VIC	Severe Weather: Winds	
	QLD	Severe Thunderstorms	Widpread severe storms and hail western suburbs of Brisbane and Downs
22/09/2008	NSW	Severe Thunderstorms	Hailstorms NW of Kyogle
	NSW	Severe Weather: Winds	
	VIC	Severe Weather: Winds	
26/09/2008	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Widespread damaging winds across NSW
	VIC	Severe Weather: Winds	
27/09/2008	NSW	Severe Weather: Winds	
1/10/2008	NSW	Severe Weather: Winds	
	SA	Severe Weather: Winds	
2/10/2008	NSW	Severe Weather: Winds	
3/10/2008	NSW	Severe Thunderstorms	

4/10/2008	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
5/10/2008	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
6/10/2008	NSW	Severe Weather: Winds	
10/10/2008	NSW	Severe Thunderstorms	
13/10/2008	NSW	Severe Weather: Winds	
	VIC	Severe Weather: Winds	
	NSW	Severe Thunderstorms	
	VIC	Severe Thunderstorms	
14/10/2008	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
15/10/2008	QLD	Severe Thunderstorms	Severe thunderstorms west and north suburbs of Brisbane and Sunshine Coast
	NSW	Severe Thunderstorms	
16/10/2008	QLD	Severe Thunderstorms	
19/10/2008	VIC	Severe Thunderstorms	
20/10/2008	NSW	Severe Thunderstorms	
21/10/2008	QLD	Severe Thunderstorms	Large hail and severe storms west and NW suburbs of Brisbane
	NSW	Severe Thunderstorms	Giant hailstones Coffs Coast area, hailstorms other parts of Northern Rivers
22/10/2008	QLD	Severe Thunderstorms	Hail Gold Coast area
	NSW	Severe Thunderstorms	Casino to Byron Bay severe hailstorm
25/10/2008	QLD	Severe Thunderstorms	Hailstorm Sunshine Coast hinterland
26/10/2008	NSW	Severe Weather: Winds	
	VIC	Severe Weather: Winds	
30/10/2008	VIC	Severe Weather: Winds	
	NSW	Severe Weather: Winds	
	NSW	Severe Thunderstorms	
	VIC	Severe Thunderstorms	
31/10/2008	NSW	Total Fire Ban	
	NSW	Severe Weather: Winds	
	NSW	Severe Thunderstorms	
2/11/2008	NSW	Severe Thunderstorms	
	VIC	Severe Thunderstorms	
3/11/2008	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Storms with damaging winds and some hail Northern Rivers
	VIC	Severe Thunderstorms	
4/11/2008	QLD	Severe Thunderstorms	Severe storms early AM north suburbs of Brisbane and Sunshine Coast
6/11/2008	NSW	Severe Thunderstorms	
	VIC	Severe Weather: Winds	
7/11/2008	QLD	Severe Thunderstorms	
	TAS	Severe Weather: Winds	
8/11/2008	QLD	Severe Thunderstorms	
12/11/2008	VIC	Severe Weather: Winds	
13/11/2008	VIC	Severe Weather: Winds	
	VIC	Severe Thunderstorms	
14/11/2008	NSW	Severe Thunderstorms	
15/11/2008	NSW	Severe Thunderstorms	Severe storms between Grafton and Casino
16/11/2008	QLD	Severe Thunderstorms	Destructive Wind and hail storms Brisbane and Gold Coast hinterland
	NSW	Severe Thunderstorms	Severe storms NW of Kyogle
17/11/2008	QLD	Severe Thunderstorms	
18/11/2008	QLD	Water Contamination	

	QLD	Severe Weather: Flooding	
	NSW	Flooding	
19/11/2008	QLD	Severe Thunderstorms	Ipswich flash flooding and other thunderstorms and heavy rain SE QLD
	NSW	Severe Thunderstorms	
	NSW	Flooding	
20/11/2008	QLD	Flooding	
	QLD	Severe Thunderstorms	Widespread severe thunderstorm winds and hail SE QLD, Blackwater giant hail
	NSW	Severe Thunderstorms	Widespread severe thunderstorm winds and hail NE NSW
21/11/2008	VIC	Severe Weather: Winds	
	QLD	Severe Thunderstorms	
22/11/2008	QLD	Severe Weather: Winds	
	NSW	Severe Weather: Winds	
	QLD	Severe Thunderstorms	
25/11/2008	SA	Severe Thunderstorms	
26/11/2008	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
27/11/2008	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Hailstorms Central Tablelands and Hunter Valley
	VIC	Severe Thunderstorms	Central VIC severe storms
	SA	Severe Thunderstorms	
28/11/2008	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Widespread severe storms NSW
	SA	Severe Thunderstorms	
29/11/2008	NSW	Flooding	Tamworth flooding
	QLD	Severe Thunderstorms	Severe squalls most of Brisbane and Gold Coast
2/12/2008	NSW	Severe Thunderstorms	Severe storms Mid North Coast
3/12/2008	QLD	Severe Thunderstorms	Widespread severe storms with hail Brisbane and Sunshine Coast
	NSW	Severe Thunderstorms	Widespread severe storms with hail NE NSW
4/12/2008	QLD	Severe Thunderstorms	Widespread severe storms SE QLD
	NSW	Severe Thunderstorms	
5/12/2008	VIC	Severe Weather: Winds	
	QLD	Severe Thunderstorms	Flash flooding storms
	SA	Severe Thunderstorms	
6/12/2008	QLD	Severe Thunderstorms	Widespread severe storms SE QLD
7/12/2008	QLD	Severe Thunderstorms	Widespread severe storms SE QLD
	NSW	Severe Thunderstorms	
8/12/2008	QLD	Severe Thunderstorms	Severe storms Darling Downs
	NSW	Severe Thunderstorms	Hailstorms Hunter Valley
	SA	Severe Thunderstorms	
9/12/2008	SA	Severe Thunderstorms	
10/12/2008	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Giant hail near Grafton and between Lismore and Casino
11/12/2008	QLD	Severe Thunderstorms	Widespread severe storms SE QLD
	NSW	Severe Thunderstorms	
	SA	Severe Thunderstorms	
12/12/2008	NSW	Severe Weather: Flooding	
	SA	Flooding	
	NSW	Severe Weather: Flooding	
	VIC	Severe Weather: Winds & Flooding	
	TAS	Severe Weather: Winds & Flooding	
	SA	Severe Weather: Flooding	

	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
13/12/2008	NSW	Severe Weather: Winds	
	QLD	Severe Thunderstorms	
14/12/2008	QLD	Severe Thunderstorms	
17/12/2008	NSW	Severe Thunderstorms	
	VIC	Severe Thunderstorms	
	SA	Severe Thunderstorms	
18/12/2008	QLD	Severe Thunderstorms	Severe storms parts of Brisbane region
	NSW	Severe Thunderstorms	Large hail and violent winds Kyogle district
	VIC	Severe Thunderstorms	
19/12/2008	QLD	Severe Thunderstorms	Severe storms Gympis to Gladstone
20/12/2008	QLD	Severe Thunderstorms	
21/12/2008	VIC	Severe Weather: Winds	
	QLD	Severe Thunderstorms	
22/12/2008	NSW	Total Fire Ban	
	SA	Total Fire Ban	
	TAS	Severe Weather: Winds	
	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
23/12/2008	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Severe storms SE NSW and ACT including tornado near Cooma
24/12/2008	QLD	Severe Thunderstorms	Widespread severe storms SE QLD
	NSW	Severe Thunderstorms	Destructive wind and hailstorm Kyogle district, and other severe storms Northern Rivers
25/12/2008	QLD	Severe Thunderstorms	Severe storms NW of Brisbane
	NSW	Severe Thunderstorms	
26/12/2008	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
27/12/2008	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
	VIC	Severe Thunderstorms	
28/12/2008	NSW	Flooding	
	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Flash flooding and hail Northern Rivers
29/12/2008	QLD	Severe Thunderstorms	Widespread severe storms SE QLD
	NSW	Severe Thunderstorms	Widespread severe storms NSW and destructive wind and hail storm Casino to Kyogle area
30/12/2008	NSW	Total Fire Ban	
	QLD	Severe Thunderstorms	Severe storms coastal areas of SE QLD
	NSW	Severe Thunderstorms	Giant hailstones eastern parts of Lismore to north of Byron Bay
31/12/2008	QLD	Severe Thunderstorms	
1/01/2009	QLD	Severe Thunderstorms	Widespread destructive thunderstorm winds SE QLD
	NSW	Severe Thunderstorms	Widespread destructive thunderstorm winds northern half of Northern Rivers
4/01/2009	NSW	Total Fire Ban	
	SA	Total Fire Ban	
5/01/2009	NSW	Total Fire Ban	
	SA	Total Fire Ban	
6/01/2009	NSW	Total Fire Ban	
8/01/2009	NSW	Severe Thunderstorms	
9/01/2009	QLD	Tropical Cyclone Watch	
10/01/2009	QLD	Severe Weather: Winds	
	QLD	Tropical Cyclone Watch	

	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
	VIC	Severe Thunderstorms	
11/01/2009	QLD	Tropical Cyclone Warning	TC Charlotte
	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Severe storms SE NSW
	VIC	Severe Thunderstorms	
	SA	Severe Thunderstorms	
12/01/2009	QLD	Severe Weather: Winds & Flooding	
	QLD	Flooding	Tropical North QLD
	NSW	Total Fire Ban	
	VIC	Total Fire Ban	
13/01/2009	QLD	Severe Weather: Winds	
	QLD	Severe Weather: Winds & Flooding	
	NSW	Total Fire Ban	
	VIC	Total Fire Ban	
	SA	Total Fire Ban	
14/01/2009	QLD	Flooding	Tropical North QLD
	NSW	Total Fire Ban	
15/01/2009	NSW	Total Fire Ban	
	NSW	Bushfires	
16/01/2009	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Severe storms Mid North Coast and Grafton area
17/01/2009	QLD	Severe Thunderstorms	Severe storms Gympie to Gladstone
18/01/2009	SA	Total Fire Ban	
19/01/2009	QLD	Severe Thunderstorms	
	NSW	Total Fire Ban	
	VIC	Total Fire Ban	
	SA	Total Fire Ban	
	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
20/01/2009	NSW	Total Fire Ban	
	NSW	Severe Thunderstorms	Severe storms SE NSW
	VIC	Severe Thunderstorms	
21/01/2009	NSW	Total Fire Ban	
	VIC	Total Fire Ban	
	SA	Total Fire Ban	
	VIC	Severe Weather: Winds	
	TAS	Severe Weather: Winds	
	NSW	Severe Thunderstorms	Severe storms including hail Sydney and Hunter Valley
22/01/2009	SA	Total Fire Ban	
	NSW	Severe Thunderstorms	Severe storms SE NSW / ACT
	VIC	Severe Thunderstorms	Destructive winds from storms Melbourne and east
23/01/2009	SA	Flooding	
	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Severe storms Hunter Valley
24/01/2009	NSW	Total Fire Ban	
	QLD	Severe Thunderstorms	Severe thunderstorms eastern Darling Downs/ Granite Belt
	NSW	Severe Thunderstorms	Severe thunderstorms eastern Northern Tablelands
25/01/2009	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Isolated flash flooding Northern Rivers
26/01/2009	WA	Tropical Cyclone Warning	TC Dominic
	SA	Total Fire Ban	
	QLD	Severe Thunderstorms	

	NSW	Severe Thunderstorms	
27/01/2009	SA	Flooding	
	VIC	Total Fire Ban	Heatwave starts
	SA	Total Fire Ban	
28/01/2009	QLD	Severe Weather: Heavy Rain	
	NSW	Total Fire Ban	
	VIC	Total Fire Ban	
	SA	Total Fire Ban	
	TAS	Total Fire Ban	
	SA	Severe Thunderstorms	
29/01/2009	VIC	Bushfires	
	NSW	Total Fire Ban	
	VIC	Total Fire Ban	
	SA	Total Fire Ban	
30/01/2009	QLD	Flooding	Flooding starts in N QLD
	VIC	Bushfires	
	NSW	Total Fire Ban	
	VIC	Total Fire Ban	
	SA	Total Fire Ban	
31/01/2009	QLD	Severe Weather: Winds	
	QLD	Severe Weather: Flooding	
	NSW	Total Fire Ban	
	VIC	Total Fire Ban	
	SA	Total Fire Ban	
	VIC	Severe Thunderstorms	
1/02/2009	QLD	Tropical Cyclone Warning	TC Ellie
	QLD	Flooding	N QLD flooding
	NSW	Total Fire Ban	
	VIC	Total Fire Ban	
	SA	Total Fire Ban	
	NSW	Severe Thunderstorms	
	VIC	Severe Thunderstorms	
	SA	Severe Thunderstorms	
2/02/2009	QLD	Flooding	N QLD flooding
	SA	Total Fire Ban	
	SA	Severe Weather: Winds	
	NSW	Severe Thunderstorms	
3/02/2009	QLD	Severe Weather: Flooding	
	WA	Tropical Cyclone Watch	
	SA	Total Fire Ban	
	NSW	Severe Thunderstorms	
4/02/2009	VIC	Total Fire Ban	
	NSW	Severe Thunderstorms	
5/02/2009	NSW	Total Fire Ban	
	VIC	Total Fire Ban	
	SA	Total Fire Ban	
6/02/2009	VIC	Severe Weather: Winds	
	NSW	Total Fire Ban	
	ACT	Total Fire Ban	
	VIC	Total Fire Ban	
	SA	Total Fire Ban	
	TAS	Total Fire Ban	
	QLD	Severe Thunderstorms	

7/02/2009	QLD	Severe Weather: Flooding	Bushfire disaster, N QLD flooding
	QLD	Severe Weather: Tides	
	VIC	Severe Weather: Winds	
	SA	Severe Weather: Winds	
	NSW	Bushfires	
	VIC	Bushfires	Black Saturday
	SA	Bushfires	
	NSW	Total Fire Ban	
8/02/2009	QLD	Severe Weather: Flooding	
	VIC	Bushfires	
	NSW	Total Fire Ban	
9/02/2009	VIC	Bushfires	
	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
10/02/2009	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Hailstorm Central Coast
11/02/2009	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
12/02/2009	VIC	Severe Weather: Flooding	
	VIC	Severe Thunderstorms	
13/02/2009	VIC	Bushfires	NSW floods start
	QLD	Severe Weather: Flooding	
	NSW	Severe Weather: Flooding	
	NSW	Flood Watch	
	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
14/02/2009	NSW	Flooding	
	QLD	Severe Thunderstorms	
15/02/2009	NSW	Flooding	
	NSW	Severe Weather: Winds	
16/02/2009	NSW	Flood Watch	
	WA	Severe Weather: Winds & Flooding	
	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
17/02/2009	NSW	Flooding	Major flooding NSW
	NSW	Severe Weather: Flooding	
	SA	Total Fire Ban	
	QLD	Severe Thunderstorms	
18/02/2009	SA	Total Fire Ban	
	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
19/02/2009	QLD	Severe Thunderstorms	Widespread severe storms NE NSW / SE QLD
	NSW	Severe Thunderstorms	
20/02/2009	QLD	Severe Thunderstorms	Widespread severe storms NE NSW / SE QLD incl Brisbane
	NSW	Severe Thunderstorms	
21/02/2009	QLD	Severe Thunderstorms	Hailstorms Sydney / Hunter
	NSW	Severe Thunderstorms	
22/02/2009	VIC	Total Fire Ban	
	SA	Total Fire Ban	
	QLD	Severe Thunderstorms	
23/02/2009	VIC	Bushfires	More bushfires in VIC
	NSW	Total Fire Ban	
	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	Hailstorms lower Blue Mountains

	TAS	Severe Thunderstorms	First Tasmanian STW
24/02/2009	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
	SA	Total Fire Ban	
25/02/2009	QLD	Severe Thunderstorms	
	NSW	Severe Thunderstorms	
	SA	Total Fire Ban	
26/02/2009	VIC	Total Fire Ban	
	SA	Total Fire Ban	
	WA	Tropical Cyclone Watch	
27/02/2009	NSW	Total Fire Ban	
	WA	Flood Watch	
28/02/2009	NSW	Total Fire Ban	
1/03/2009	VIC	Severe Weather: Winds	
	VIC	Total Fire Ban	
	SA	Total Fire Ban	
2/03/2009	QLD	Severe Thunderstorms	
2/03/2009	NSW	Severe Weather: Winds	
	VIC	Severe Weather: Winds	
	NSW	Total Fire Ban	
	VIC	Total Fire Ban	
	SA	Total Fire Ban	
	WA	Tropical Cyclone Warning	TC Gabrielle
3/03/2009	VIC	Severe Weather: Winds	Bushfire threat hype
	TAS	Severe Weather: Winds	
	SA	Severe Weather: Winds	
	VIC	Bushfire	
	NSW	Total Fire Ban	
4/03/2009	NSW	Severe Thunderstorms	
	VIC	Severe Weather: Winds	
5/03/2009	QLD	Tropical Cyclone Watch	
6/03/2009	QLD	Tropical Cyclone Warning	Severe TC Hamish
	QLD	Tropical Cyclone Watch	
	QLD	Flooding	
7/03/2009	SA	Severe Thunderstorms	
	QLD	Tropical Cyclone Warning	Severe TC Hamish
	QLD	Tropical Cyclone Watch	
	QLD	Flooding	
8/03/2009	QLD	Tropical Cyclone Warning	Severe TC Hamish
	QLD	Tropical Cyclone Watch	
	QLD	Flooding	
9/03/2009	QLD	Tropical Cyclone Warning	Severe TC Hamish
	QLD	Severe Weather: Tides/Surf	
10/03/2009	QLD	Severe Thunderstorms	
	VIC	Severe Thunderstorms	
	QLD	Tropical Cyclone Warning	Severe TC Hamish
	QLD	Severe Weather: Tides/Surf	
11/03/2009	SA	Severe Thunderstorms	Eyre Peninsula tornado
	QLD	Severe Weather: Tides/Surf	
	NSW	Severe Weather: Tides/Surf	
12/03/2009	NSW	Severe Thunderstorms	
	VIC	Severe Thunderstorms	
	SA	Severe Thunderstorms	

13/03/2009	NSW	Severe Thunderstorms	
	VIC	Severe Thunderstorms	
	NT	Severe Thunderstorms	
14/03/2009	NSW	Severe Thunderstorms	
	VIC	Severe Thunderstorms	Widespread storms VIC
	TAS	Flood Watch	
15/03/2009	NSW	Severe Thunderstorms	Hunter Valley hailstorms
	VIC	Severe Weather: Winds & Flooding	
16/03/2009	QLD	Severe Thunderstorms	Widespread severe storms SE QLD/NE NSW
	NSW	Severe Thunderstorms	Alstonville hailstorm
	VIC	Severe Weather: Winds	
17/03/2009	QLD	Severe Thunderstorms	
18/03/2009	QLD	Severe Thunderstorms	
20/03/2009	SA	Total Fire Ban	
21/03/2009	VIC	Severe Thunderstorms	
	VIC	Fire Weather Warning	
22/03/2009	NSW	Severe Thunderstorms	
	VIC	Severe Thunderstorms	
23/03/2009	NT	Severe Thunderstorms	
24/03/2009	NT	Severe Thunderstorms	