
Meteorology and natural disaster websites

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This article discusses websites about meteorology and natural disasters, starting with definitions and general information sites, then examining sites that provide weather forecasts and widgets to put on your own website. Two specialised services that monitor risk from tsunamis and volcanic ash, and some of the many excellent educational resources for children are discussed. Finally, the article looks at websites that provide information to the community after a disaster, especially regarding financial support and insurance.

INTRODUCTION

This article discusses websites about meteorology and natural disasters. It is an update of an earlier *Online Currents* article.¹

DEFINITIONS

The Glossary from the American Meteorological Society (<http://www.amsglossary.allenpress.com/glossary>) contains 12,000 terms and is an excellent starting point for research into meteorology. It defines meteorology as “the study of the physics, chemistry, and dynamics of the earth’s atmosphere”, including the related effects at the air-earth boundary over both land and the oceans’ or, in popular usage, as “the underlying science of weather and weather forecasting”.

“Weather” refers to the state of the atmosphere, mainly with respect to its effects upon life and human activities. Weather consists of short-term (minutes to days) variations in the atmosphere, while climate is “the slowly varying aspects of the atmosphere-hydrosphere-land surface system”.

The Australian Bureau of Meteorology (BOM) Learn About Meteorology webpage (<http://www.bom.gov.au/lam>) starts with simple analogies: “Climate is what you expect; weather is what you get” and “If weather is the watch then climate is the calendar.”

Dictionary.com defines natural disaster as “any event or force of nature that has catastrophic consequences”. Wikipedia also includes the issue of vulnerability of humans to the hazard in its definition of natural disaster.

GENERAL INFORMATION WEBSITES

The Yahoo! directory section on Meteorology (http://www.au.dir.yahoo.com/Science/Earth_Sciences/Atmospheric_Sciences/Meteorology) is divided into 26 categories, including aviation weather, biometeorology, climatology, oceanography and storm chasing.

The DMOZ directory category Earth Sciences (http://www.dmoz.org/Science/Earth_Sciences) has a number of relevant sections including atmospheric sciences, natural disasters and hazards, oceanography, and paleogeography and paleoclimatology. The Google directory (<http://www.directory.google.com>) is no longer available.

The BOM website (<http://www.bom.gov.au>) is the best general source of information about Australia’s weather. The site includes the broad categories: weather and warnings, climate information and water information. Specific information is provided about:

- tropical cyclones;
- tsunami warnings;

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All websites and webpages referred to in this article were viewed August 2011.

¹ Browne G, “Meteorology and Natural Disaster Websites” (2005) 20(3) OLC 11, see <http://www.tinyurl.com/MetNatDis>.

- UV and sun protection;
- marine and ocean;
- water and the land;
- national weather services;
- aviation weather services (now at <http://www.bom.gov.au/aviation>);
- defence services (password required);
- registered user services;
- commercial weather services.

The BOM Learn About Meteorology webpage (<http://www.bom.gov.au/lam>) includes a topic index as well as links for specific audiences, such as:

- students and teachers;
- agriculture;
- aviation;
- marine;
- tourists;
- urban designers.

BOM also provides RSS feeds of Bureau of Meteorology updates (<http://www.bom.gov.au/rss/rss-guide.shtml>).

Geosciences Australia (<http://www.ga.gov.au>) has as its tag line: “Applying geoscience to Australia’s most important challenges.” The homepage links to popular pages (on the right-hand side) including recent earthquakes, Sentinel – bushfire mapping, phases of the moon, and Australian Flood Studies Database search. The *AusGeo News* online magazine is available at <http://www.ga.gov.au/ausgeonews/ausgeonews201106>. Some of the articles are relevant to weather and disasters. For example, the June 2011 issue (No 102) includes the article “Satellite Imagery Assists Flood Emergency Response and Recovery”.

Geosciences Australia has a structured Product Search page (<http://www.ga.gov.au/oracle/agsocat/textonly.jsp>) that allows searches to be limited to product types such as “educational product”, “database” and “PowerPoint”, and to themes such as “climate”, “coasts” and “culture”. My test search (“software” and “climate”) retrieved no hits, so I tried a search using only one field and browsed the results.

For natural disaster information, the Geosciences Australia Hazards page (<http://www.ga.gov.au/hazards.html>) has information in the following categories:

- bushfire;
- cyclone;
- earthquake;
- flood;
- landslide;
- nuclear monitoring;
- severe weather;
- tsunami;
- volcano;
- emergency management;
- risk and impact analysis.

The information on these hazards starts with Basics and Capabilities, along with varied content including reports, monitoring, modeling and mapping, depending on the specific hazard. The website states that: “Unless otherwise noted, all Geoscience Australia material on this website is licensed under the Creative Commons Attribution 3.0 Australia Licence.”

The “Australian Story” on “Natural disasters in Australia” (<http://www.tinyurl.com/AustStoryNatDis>) provides brief information about major Australian disasters including the

“Federation Drought” (1895-1902), the Canberra bushfires (2003) and Cyclone Tracy (1974). The site was last updated 2008, so doesn’t include the Black Saturday fires in Victoria and other recent disasters.

The State Library of New South Wales website shows a scan of a handwritten copy of Dorothea Mackellar’s verse *Core of My Heart* – better known by the first line of its second paragraph – “I love a sunburnt country” and its depiction of “droughts and flooding rains” (<http://www.tinyurl.com/CoreHeart>). On YouTube you can hear readings of the poem (eg <http://www.youtube.com/watch?v=86TKK81EwJ4&feature=related>).

The second Wednesday in October is International Day for Disaster Education (<http://www.un.org/en/events/disasterreductionday>). The United Nations website notes that the World Disaster Reduction Campaign 2010-2011 – Making Cities Resilient – “aims at getting Mayors, local governments and national authorities to take action towards making cities resilient as part of sustainable urbanization”.

The Long Paddock (<http://www.longpaddock.qld.gov.au>) is a Queensland government website aimed at the agricultural industry. Sections include:

- seasonal climate outlook;
- rainfall and pasture growth (includes maps for all states);
- drought;
- coastal impacts;
- products (including posters, publications, maps, databases, calculators).

Content is focused on, but not limited to, Queensland.

The ABC Weather webpage in its Environment section (<http://www.abc.net.au/environment/topic.html?t=weather>) provides timely news feeds as well as features and audio segments on a range of Australian weather events. Topic groupings include climate change, the Murray Darling Basin, oceans and reefs, and water.

Government information about emergency management, including reports and meetings, is provided by the Attorney-General’s Department at <http://www.ema.gov.au>.

There are good collections of general links at:

- CSIRO weather weblinks, <http://www.csiro.au/resources/Weather-weblinks.html>;
- Climate Kelpie (for Australian farmers), <http://www.climatekelpie.com.au>;
- Susan Carn’s favourite weather sites, <http://www.tinyurl.com/ClimateKelpie>;
- Queensland Government Primary Industries and Fisheries, http://www.dpi.qld.gov.au/4789_12964.htm;
- National Geographic (images, videos, information), <http://www.environment.nationalgeographic.com/environment/natural-disasters>.

WEATHER AND DISASTER INFORMATION WEBSITES

You can find weather forecasts for specific places at <http://www.au.weather.yahoo.com>. MetService (<http://www.metservice.co.nz/default/index.php>) provides weather maps and warnings for New Zealand, while Antarctic Connection provides information about the weather in Antarctica (<http://www.antarcticconnection.com/antarctic/weather/index.shtml>). You can watch a webcam view of Scott Base in Antarctica at <http://www.antarcticanz.govt.nz>.

Aus-e-maps (http://www.aus-emaps.com/web_widgets.html) provides free web widgets and tools for embedding into websites. These include Weather Lookup v3 (current temperature and weather forecasts) and Natural Hazards Monitor (links to four maps with information on recent earthquakes and bushfire hotspots).

Weatherzone, which is part-owned by Fairfax Digital, (<http://www.weatherzone.com.au/about/freeweather.jsp>) provides free weather products including local weather for incorporation on websites, and also lets you check the weather in Australian States, New Zealand and other countries. Other categories include radar and maps, marine, agriculture, surf and snow, and climate. Weatherzone offers a paid service with more information (<http://www.weatherzone.com.au/about/whatweoffer.jsp>).

The Australian Council of State and Territory Emergency Services (<http://www.ses.org.au>) is the peak body for Australian State and Territory Emergency Services. It provides links to information on volunteering, training and donating. The State Emergency Service (SES) provides a web-based toolkit made up of a series of self-guided steps that help businesses plan for floods (<http://www.floodsafe.ses.org.au> – requires popups). The New South Wales SES website also provides links to SES newsletters, research papers and images (<http://www.ses.nsw.gov.au/resources>) and a checklist of items to add to a home emergency kit (<http://www.ses.nsw.gov.au/community-safety/emergency-kit>). SES Stormsafe (<http://www.ses.nsw.gov.au/community-safety/stormsafe>) provides advice on preparing for and coping with storms. Stormsafe brochures are available in the community languages of Vietnamese, Italian, Chinese, Arabic, Greek and Korean.

Geosciences Australia and the Bureau of Meteorology are partners in the Joint Australian Tsunami Warning Centre, which monitors potential tsunami impacts (<http://www.bom.gov.au/tsunami>; <http://www.ga.gov.au/hazards/our-capabilities/monitoring/tsunami-warning.html>). It aims to provide emergency managers with at least 90 minutes warning of a potential tsunami on the Australian coastline. Recent announcements of the Centre have included the advice that there was no threat to Australia from the Japanese earthquake, despite more cautious notification from the Pacific Tsunami Warning Center that Australia was at risk (<http://www.tinyurl.com/JATWCNews>).

Another important warning service is the Darwin Volcanic Ash Advisory Centre (<http://www.reg.bom.gov.au/info/vaac>). It uses satellite information, reports from pilots and vulcanological agencies and numerical models to forecast airborne ash movements so that aircraft can fly around the ash safely. They also describe the effect of ash on aircraft, including two planes which had to make emergency landings in 1982 due to engine damage.

EDUCATIONAL WEBSITES

The Australian Bureau of Meteorology (http://www.bom.gov.au/lam/Students_Teachers/learnact.htm) has a webpage of information for teachers, including details on the “Scientists in Schools” program and ideas for school visits to scientific organisations, including regional offices of BOM. BOM also provides information on experiments for school year levels two to 10, including teaching plans and printable worksheets. Experiments include making a cloud in a bottle and investigating humidity in the classroom.

At the BOM Australian Climate Influences map (<http://www.tinyurl.com/BOMClimateInfluences>), students can click on names of climate influences (eg “cut-off lows”) to find a description of those influences.

Oxfam Education (<http://www.oxfam.org.uk/education/?coolplanet/teachers/disaster/index.htm>) offers ideas and resources to support “education that helps pupils understand their world and make a positive difference in it”. The site is kept up-to-date, with resources for a school assembly about the 2011 East Africa Food Crisis available in July 2011, not long after the crisis was mentioned in the mainstream news (http://www.oxfam.org.uk/education/resources/dealing_disasters/?48). The resource includes PDF files and PowerPoint slides.

The EdNA webpage on Natural Disaster Management (<http://www.globaleducation.edna.edu.au/globaled/go/pid/308>) provides:

- facts about natural disasters;
- background information (emergency responses, disaster recovery, development, international responses, ethics of aid and individual responses);
- Australia’s response (disaster preparedness and partnerships);
- a global agenda (International Strategy for Disaster Reduction, ProVention Consortium, Sphere Project).

The Climate Dogs: The Four Drivers That Influence Victoria’s Climate is a series of videos from the Victorian Department of Primary Industries. Four animated dogs – ENSO, INDY, RIDGY and SAM – (representing four global climate processes) show how they herd rain to or from Victoria (<http://www.tinyurl.com/ClimateDogs>). The site also addresses questions such as “Why was 2010 wet?”

The *Triple Zero Kid's Challenge* game (<http://www.kids.triplezero.gov.au/game.php?lang=en>) teaches children how to call triple zero in an emergency. Because mobile phones combine letters and numbers on the same keys, we need to move from saying "triple oh" to "triple zero" so there is no confusion. The website has a closed caption, text-based, option.

The SES Natural Hazards Children's Awareness and Education Program was launched in November 2010. It comprises 10 short safety stories. These were shown on television during the school holidays, and also made available as a school resources kit (<http://www.ema.gov.au>).

DISASTER ASSISTANCE AND INSURANCE

After a disaster, people need emotional support, practical support and financial support, much of which is provided by the government.

The Australian Government Disaster Assist website includes general advice on coping after a disaster, including managing financial distress, looking after yourself, supporting people affected by disaster, and dealing with insurance (<http://www.tinyurl.com/DisasterAssist>). Disaster assistance that is currently available includes floods in New South Wales, Queensland, South Australia, Tasmania and Victoria. Western Australia disasters include a thunderstorm, monsoonal trough, flood and bushfire while the Northern Territory has had a monsoonal trough and tropical cyclone.

Disaster Assist also provides a link to the Financial Ombudsman Service (http://www.fos.org.au/centric/home_page.jsp) for people having difficulty with insurance claims.

Centrelink (<http://www.tinyurl.com/CentrelinkPayments>) also provides information about disaster recovery payments.

To help fund the disaster recovery, the Commonwealth government has introduced a flood levy for all taxpayers with income over \$50,000 for the 2011-2012 tax year (<http://www.treasury.gov.au/contentitem.asp?NavId=022&ContentID=1949>).

Many flood victims have discovered they do not have adequate flood insurance either because flood damage was not covered in their policies or because their experience was not defined as flooding (<http://www.tinyurl.com/FloodsDefined>). *Choice* magazine has reviewed home and contents insurance in light of the Queensland flood disaster (pay per view at <http://www.tinyurl.com/ChoiceInsurance>). ABC Breakfast Radio interviewed Lance Dixon from the New Zealand Earthquake Commission about the New Zealand insurance model (<http://www.abc.net.au/rn/breakfast/stories/2011/3116087.htm>). Statistics about natural disaster financial losses are available at the Insurance Council of Australia website (<http://www.insurancecouncil.com.au/Default.aspx?tabid=1572>).

CONCLUSION

From the general to the specific, the web provides excellent information and resources on meteorology and natural disasters in the Australian and New Zealand region.