

## Australian Bush Fire Impacts

A bushfire is a fire that occurs in the bush (woodland or grassland of Australia) and naturally caused by lightning strikes. However, the natural fire regime was altered by the arrival of humans in Australia. As a

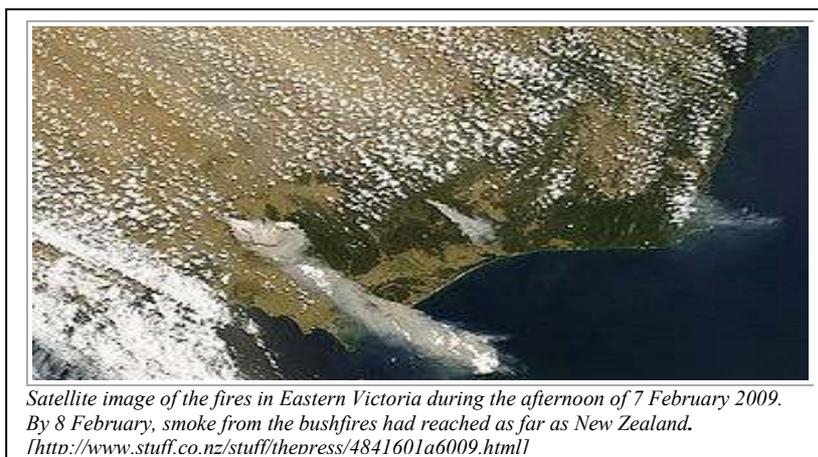


*If climate change leads to more frequent and intense hot and dry periods in Australia, fire hazards in Australia will almost inevitably increase*

consequence fires became more frequent, and fire-loving plant species such as eucalyptus greatly expanded their range in Australia. Bush fires have caused both property, stock and wildlife

loss. Human fatalities were high during the years 2009, 1983 and 1939 (Table 1). Historical records reveals that the state of Victoria (VIC) is more prone to bush fires (Table 1). During bushfire, the combustion process can release the most toxic chemicals such as PCDD/Fs (dioxins and furans), and cyanide into the environment.

Post bush fire rainfall events can easily wash the residues such as ash, charcoal, soil, nutrients and debris from burnt slopes into the nearby streams and rivers affecting the water quality, water chemistry and aquatic ecosystems.



*Satellite image of the fires in Eastern Victoria during the afternoon of 7 February 2009. By 8 February, smoke from the bushfires had reached as far as New Zealand. <http://www.stuff.co.nz/stuff/thebpress/4841601a6009.html>*



*Polychlorinated dibenzo-p-dioxin or dioxins (PCDDs) release during bush fires can persist in the environment upto 14 years. Dioxins also, bio-accumulate in the living organisms, and are highly toxic to humans and wildlife.*

**Table 1 : Historical records of bushfire events in Australia.**

| Year        | Date                      | Fire  | State    | Hectares burned      | Deaths      | Property & stock loss                |
|-------------|---------------------------|---|----------|----------------------|-------------|--------------------------------------|
| 2009        | 7 February 2009 – ongoing | 2009 Victorian bushfires<br>Black Saturday bushfire | VIC      | 450,000+ ha          | 201         | 1,831+ houses                        |
| 2007        | 6–14 December             | Kangaroo Island Bushfires                           | SA       | 95,000 ha            | 1           |                                      |
| 2006        | New Years Day             | 2006 Central Coast bushfire                         | NSW      |                      |             |                                      |
| 2006        | New Years Day             | Jail Break Inn Fire                                 | NSW      | 30,000               | 0           | 20,000 livestock                     |
| 2006        | Dec. 05 – Jan. 06         | Stawell New year fire                               | VIC      |                      |             |                                      |
| 2006        | 6 January                 | Grampians Bushfire                                  | VIC      |                      | 3           |                                      |
| 2006        | 6-February                | Pulletop bushfire                                   | NSW      | 9,000                | 0           | 2,500 sheep & 6 cattle               |
| 2005        | 2005                      | Eyre Peninsula bushfire                             | SA       | 145,000 ha           | 9           | 50 houses                            |
| 2001<br>–02 | 2001–02                   | Black Christmas (bushfires)                         | NSW      | 740,000 acres        | 2           | 180 houses                           |
| 2003        | 2003                      | 2003 Canberra bushfires                             | ACT      |                      | 4           | almost 500 homes                     |
| 2003        | 8 Jan. – 8 Mar.           | Eastern Victorian alpine bushfires                  | VIC      | >1.3 million ha      |             | 41 homes                             |
| 2003        | 3 December                | Tenterden   | WA       |                      | 2           |                                      |
| 1998        | 1998                      | Linton bushfire                                     | VIC      |                      | 5           |                                      |
| 1997        | 21-January                | Dandenong's bushfire                                | VIC      |                      | 3           | 33 homes                             |
| 1997        | 2-December                | Lithgow bushfire                                    | NSW      |                      | 2           |                                      |
| 1994        | 27 Dec. 93–16 Jan. 94     | 1994 Eastern seaboard fires                         | NSW      |                      | 4           | 225 homes                            |
| 1993        | 16 January 1994           | Eastern seaboard fires                              | NSW      |                      | 4           | 225 homes                            |
| 1983        | 16-February               | Ash Wednesday bushfires                             | SA & VIC | 418,000 ha           | 75          | 2,400 houses                         |
| 1979        | 1979                      | Northern Sydney bushfires                           | NSW      |                      |             |                                      |
| 1969        | 8-January                 | 1969 bushfires                                      | VIC      |                      | 23          | 230 houses[8]                        |
| 1967        | 1967                      | Tasmanian "Black Tuesday" bushfires                 | TAS      | Approx. 264,000 ha   | 62          | 1,293 homes                          |
| 1965        | 1965 : 5–14 March         | Southern Highlands bushfires                        | NSW      |                      | 3           | 59 homes                             |
| 1962        | 14–16 January             | 1962 bushfires                                      | VIC      |                      | 32          | 450 houses                           |
| 1961        | January–March 1           | 1961 Western Australian bushfires                   | WA       |                      | 0           |                                      |
| 1955        | 2-January                 | Black Sunday Bushfires                              | SA       |                      | 2           |                                      |
| 1952        | Summer 1951–52            | 1951-2 Bushfires                                    | VIC      |                      | at least 10 |                                      |
| 1944        | 14 Jan. – 14 Feb.         | 1944 Bushfires                                      | VIC      | 1 million ha         | 15–20       | > 500 houses                         |
| 1939        | 1938 Dec- Jan. 1939       | Black Friday bushfires                              | VIC      | 2,000,000            | 71          | 3,700                                |
| 1926        | February – March          | 1926 bushfires                                      | VIC      |                      | 60          |                                      |
| 1898        | 1 February                | Red Tuesday bushfires                               | VIC      | 260,000 ha           | 12          | 2,000 buildings                      |
| 1851        | 6 February                | Black Thursday bushfires                            | VIC      | Approx. 5 million ha | about 12    | 1 million sheep; thousands of cattle |

