

## History of early season bushfires in NSW and Queensland

By Lucinda Coates, Andrew Gissing & Paul Somerville

The ongoing fire emergencies in northeast New South Wales (NSW) and southeast Queensland (QLD) have attracted significant media attention and concern given the resulting damage early in the bushfire season. Nine homes in NSW and some 17 homes in QLD were destroyed last week. The NSW Rural Fire Service stated that fire dangers have not previously been recorded this high early in the fire season (Hannam, 2019a). The fires may reflect not only high temperatures and strong winds but also a rainfall deficiency. According to the Bureau of Meteorology, rainfall over much of the fire-hit regions has been the lowest on record for the 20 months starting January 2018, and the 32 months starting January 2017 (Figure 1).

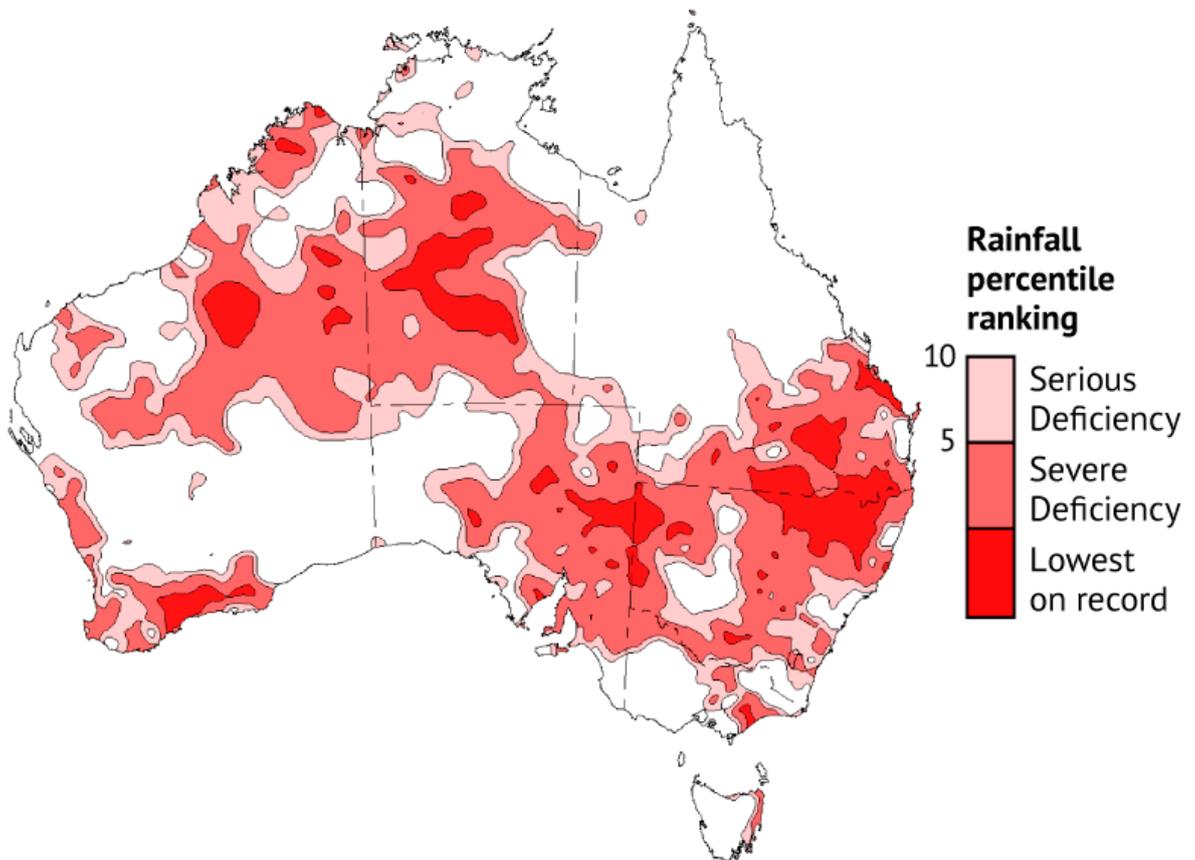


Figure 1. Rainfall deficiency across Australia over the past 17 months, April 1, 2018 - August 31, 2019. Source: BOM; Hannan (2019a).

The severity of the drought in the catchment of Burrendong dam, 40 km west of Mudgee in central NSW, is illustrated in Figure 2. None of four previous droughts dating back to 1906, including one as recent as 2012-2015, has been anywhere near as severe as the current one (Water NSW, Hannan, 2019b).

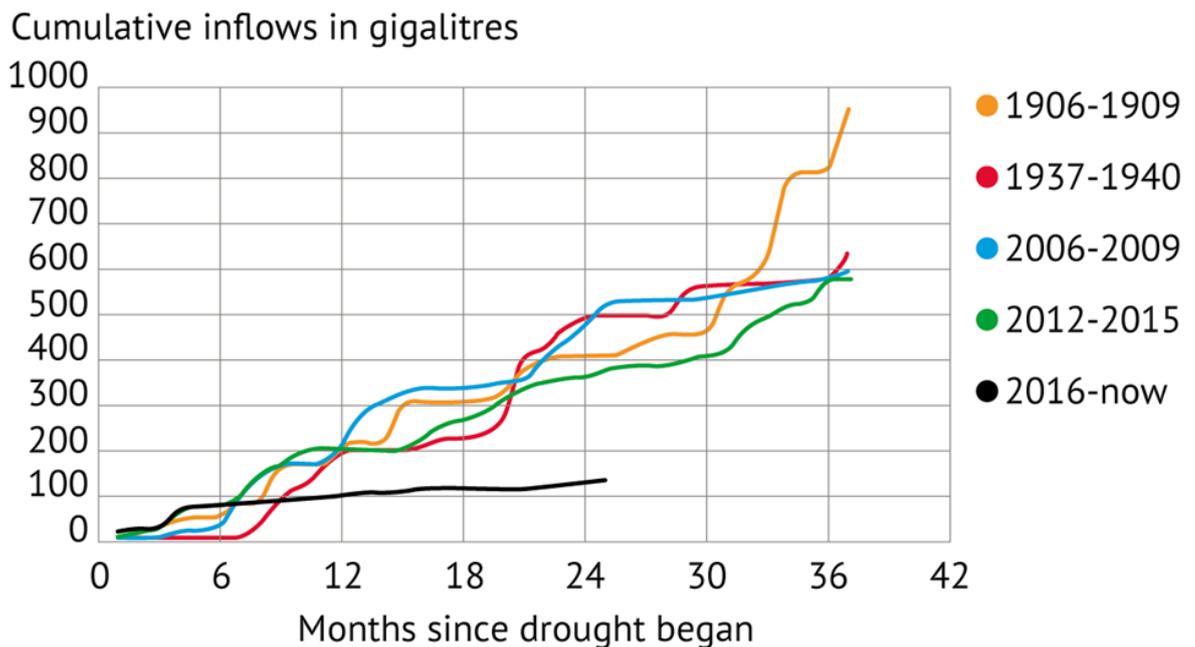


Figure 2. Cumulative inflows into Burrendong Dam, NSW during droughts. Source: Water NSW, Hannan (2019b).

A search of the Risk Frontiers' PerilAUS database provides further details about historical early season bushfires in NSW and QLD. Analysis of recorded events supports that the September 2019 bushfires may be the most damaging on record for bushfires occurring in August or September. The fires, however, have caused significantly less damage than those that have occurred later in the fire season.

QLD did, nevertheless, experience a large number of separate fires in its southeast/southern area in 2000 in the last ten days of August and in 2011 from August to October, and also in the Gulf Savannah in 2012 from July to September. NSW experienced several damaging fires on 10 September 2013 just before the devastating fires of late September/ October 2013. Details of previous bushfires that occurred during August and September are provided below.

## August

QLD – Mountain Creek bushfire, 15 August 2013. A bushfire caused the closure of the Sunshine Motorway, having started in bushland beside the east-west slip-lane to the motor way and the Sunshine Coast TAFE. No buildings were damaged, however the fire threatened to engulf the Maroochydore SES headquarters. 1000 people were evacuated from the TAFE campus.

NSW – Ettalong bushfire, 4 August 1936. Burning for 8 hours and accompanied by strong winds this bushfire destroyed houses, fencing and outhouses.

QLD – Toogoolawah bushfire, 25 August 1970. Horses and cattle were lost in the Toogoolawah bushfire, and one injury was sustained.

QLD – Mount Tambourine bushfire, 25 August 1991. One death occurred in the Mount Tambourine bushfire.

QLD – Palmerville bushfire, 25 August 1996. 110,000ha of pasture was destroyed in the Palmerville bushfire.

QLD – South East Qld bushfires, 29 August 2000. Queensland Fire Service had received more than 1,000 reports of fires in southern Queensland in the previous 10 days. Fires scorched hundreds of hectares of scrub and bushland at Deception Bay, Caboolture, Elimbah, Morayfield, Tarragindi, Wynnum, Mt Crosby, Bribie Island, Woodridge and Redbank. A house in Deception Bay was destroyed. A total fire ban was extended in the council regions of Ipswich, Boonah, Gatton, Laidley, Esk and Beaudesert.

NSW – Lake Macquarie bushfire, 30 August 1995. A granny flat and a caravan were destroyed in the Lake Macquarie bushfire.

QLD – Southern Queensland bushfire, August, 2011. From August to October 2011, approximately 345 fires occurred in Queensland over 42 local government areas. No homes were lost but there was significant loss of farm infrastructure such as fences, tanks and sheds.

## September

QLD – Gulf Savannah bushfires, September 2012. Many fires throughout the Queensland Gulf Savannah had been burning over a period of three months, affecting more than 20 cattle stations to varying degrees. The historic Croydon-Esmeralda Homestead, dating back to the late 1800s, was lost, along with 90% of the Abingdon Downs Station. More than 500,000ha were burned, leaving no food for more than 60,000 cattle. At least 1500 cattle were lost.

NSW – Marsden Park grassfire, 10 September 2013. A 120 ha grassfire caused the loss of a home and damaged cars and sheds. Winds gusting 70km/h fanned the flames, which were sparked by record temperatures of 32 degrees. The fire is suspected to have been started by arson.

NSW – Windsor grassfire, 10 September 2013. A severe bushfire sparked by powerlines falling on trees caused the evacuation of the University of Western Sydney campus. No property or homes were damaged.

NSW – Castlereagh grassfire, 10 September 2013. Bushfires burnt through more than 63ha of bushland, with more than 1000 firefighters needed across the region. Winds gusting 70km/h fanned the flames, which were sparked by record September temperatures. Only one shed was lost but homes and property were threatened, causing the evacuation of some areas.

NSW – Winmalee bushfire, 10 September 2013. 1370ha of bushland was burnt when hazard reduction burns jumped containment lines after a change in weather conditions. One house was destroyed as a result of the event as well as sheds, cars and caravans.

QLD – Pomona bushfire, 11 September 1970. Some pasture was destroyed (8ha of thickly timbered country was burnt) and one death occurred in the bushfire between Pomona and Cooran, Qld.

NSW – Morisset bushfire, 12 September 2013. A hazard reduction burn turned into a bushfire at Morisset, causing the closure of the F3 motorway (M1). A change in wind direction caused the controlled burn to jump and start a spot fire, causing the bushfire on the western side of the M1. The entire freeway was closed for an hour; a single lane was later opened. Motorists experienced significant delays.

QLD – Woodgate bushfire, 15 September 1969. Outhouses were destroyed and one death occurred in the Woodgate bushfire. More than 1,013ha were burnt in total. A huge "wallum" bushfire threatened to engulf 200 houses. Fires had been in the area for one week; no rain for a month: the bush "was like tinder".

NSW – Sydney outskirts bushfires, 24 September 2006. High temperatures and strong winds of 110km/h saw seven homes lost around south west and north western Sydney. 32 fires were battled across NSW with 2000 ha burning across the state.

NSW – Taree Bushfire, 26 September 2013. A bushfire to the south of Taree burnt over 100ha, threatened 20 homes and caused the closure of the Pacific Highway in both directions. Taree South service centre was also evacuated as a result of the fire.

NSW – Shallow Bay bushfire, 26 September 2013. 50 homes were threatened by an out-of-control bushfire at Shallow Bay. The fire destroyed several sheds and burnt through 70 hectares of bushland. Residents in Shallow Bay were advised to stay in their homes as, for many, it was too late to evacuate.

NSW – Yarrowitch bushfire, 26 September 2013. A bushfire burnt through 300ha and threatened 6 properties near Blomfields Rd and Kangaroo Flat Rd, Yarrowitch. One firefighter was injured after the NSW RFS truck he was driving crashed into a tree due to poor visibility.

NSW - Barrenjoey Headland bushfire, 28 September 2013. A blaze destroyed 60% of the headland surrounding the Barrenjoey lighthouse: the lighthouse was saved but the nearby lighthouse cottage sustained some roof damage. 80 firefighters and three aircraft were needed to contain the fire.

## About PerilAUS

Risk Frontiers has, since the early 1980s, built and maintained its PerilAUS database. PerilAUS holds records on natural hazard impacts in Australia from European settlement (1788), but with good confidence from 1900. It includes building damage and fatality information for bushfire, earthquake, flood, gust, hail, heatwave, landslide, lightning, rain, tornado, tropical cyclone and tsunami.

PerilAUS is unique in Australia and is distinguished from other hazard databases by the length of the period covered, the wealth of descriptive detail and the use of a “house equivalent” damage indicator (Blong, 2003; Blong, 2005). PerilAUS is comparable in some respects to well-known international disaster databases such as the Dartmouth Flood Observatory global flood database and the CRED/OFTA International Disaster Database, EM-DAT.

The database contains about 15,700 records from 1900 to 2015. Data has been sourced from news media, government reports, the Insurance Council of Australia (ICA) Disaster List and publicly available colonial records.

The database has been used as a key data source in numerous peer-reviewed research papers and major reports. Its completeness has in part been supported by the Bushfire and Natural Hazards Cooperative Research Centre.

For any further information about PerilAUS please contact Risk Frontiers at [info@riskfrontiers.com](mailto:info@riskfrontiers.com).

## Further information

For further information please contact Andrew Gissing at [andrew.gissing@riskfrontiers.com](mailto:andrew.gissing@riskfrontiers.com).

## References

Blong, R. J., 2003: A new damage index. *Natural Hazards* 30: 1-23.

Blong, R. J., 2005: *Natural hazards risk assessment: an Australian perspective*. Issues in Risk Science 4. Benfield Hazard Research Centre, London. 29 pp.

Hannam, P (2019a) An ill wind fans the flames. Sydney Morning Herald. [Available Online] <https://www.smh.com.au/environment/climate-change/an-ill-wind-fans-the-flames-20190912-p52qir.html>

Hannan, P. (2019b). 'We'll be bathing in salt water': At the epicentre of Australia's big drought. [Available Online]

<https://www.smh.com.au/environment/sustainability/we-ll-be-bathing-in-salt-water-at-the-epicentre-of-australia-s-big-drought-20190828-p52lsx.html>