

<b>Dust activity</b>	Below average for January; reduced from December
<b>Wind strength</b>	Average for this time of year; increased from December
<b>Groundcover</b>	Decreasing across the wheat / sheep belt
<b>Rainfall</b>	Below average in the east; above average in the west
<b>Land management</b>	Increased fallowing; summer crops growing

## Dust activity

The extreme heatwave that occurred in summer 2017 broke some long standing records that were set in January 1939 (BoM - special climate statement 61). Despite the very hot and dry conditions there was little dust activity in January 2017 with a total of 22h recorded across all sites. This is a very low number compared to January 2016 (121h) and January 2015 (207h). The low dust is explained by exceptionally good groundcover across eastern Australia, especially when considering the extremely hot and dry conditions over summer. Dust and groundcover conditions across eastern Australia in January 2017 were very similar to January 2011 and 2012.

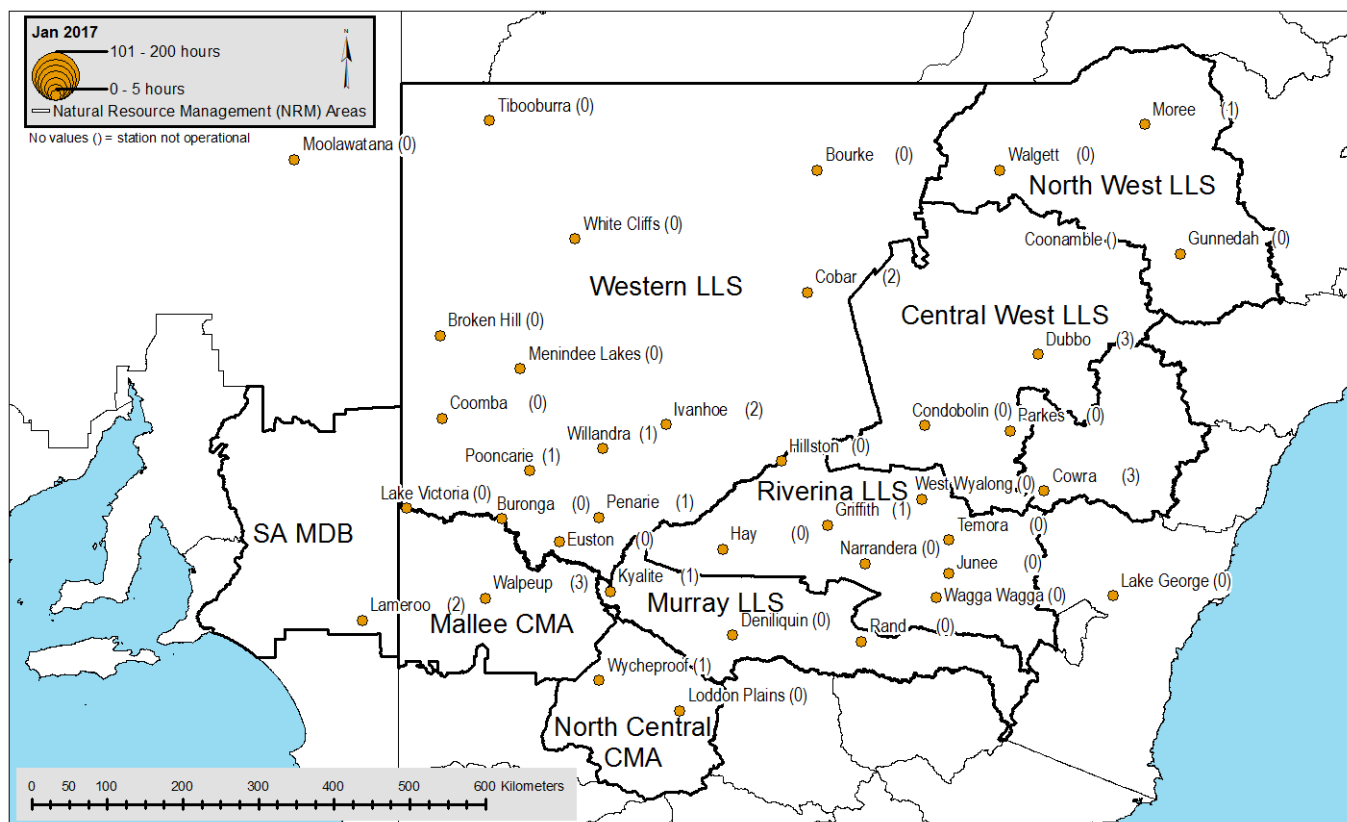


Figure 1: Hours of dust activity (number in brackets) at each DustWatch site in January 2017

## Groundcover

The area with more than 50% groundcover (green colours in Figure 2) has remained very high with most of New South Wales, Victoria and south eastern South Australia remaining above 50% groundcover.

On average 94% of the nine Natural Resource Management areas highlighted in Figure 2 and Table 1 below remained above 50% groundcover. This is a very good result and is much better than January 2016 (87%) or January 2015 (85%). It also explains the very low dust figures we measured in January 2017.

Groundcover in the New South Wales Local Land Services – Western region have increased from 74% of the area to 77% - a remarkable result for the end of summer when values generally drop (Table 1 and Figure 4).

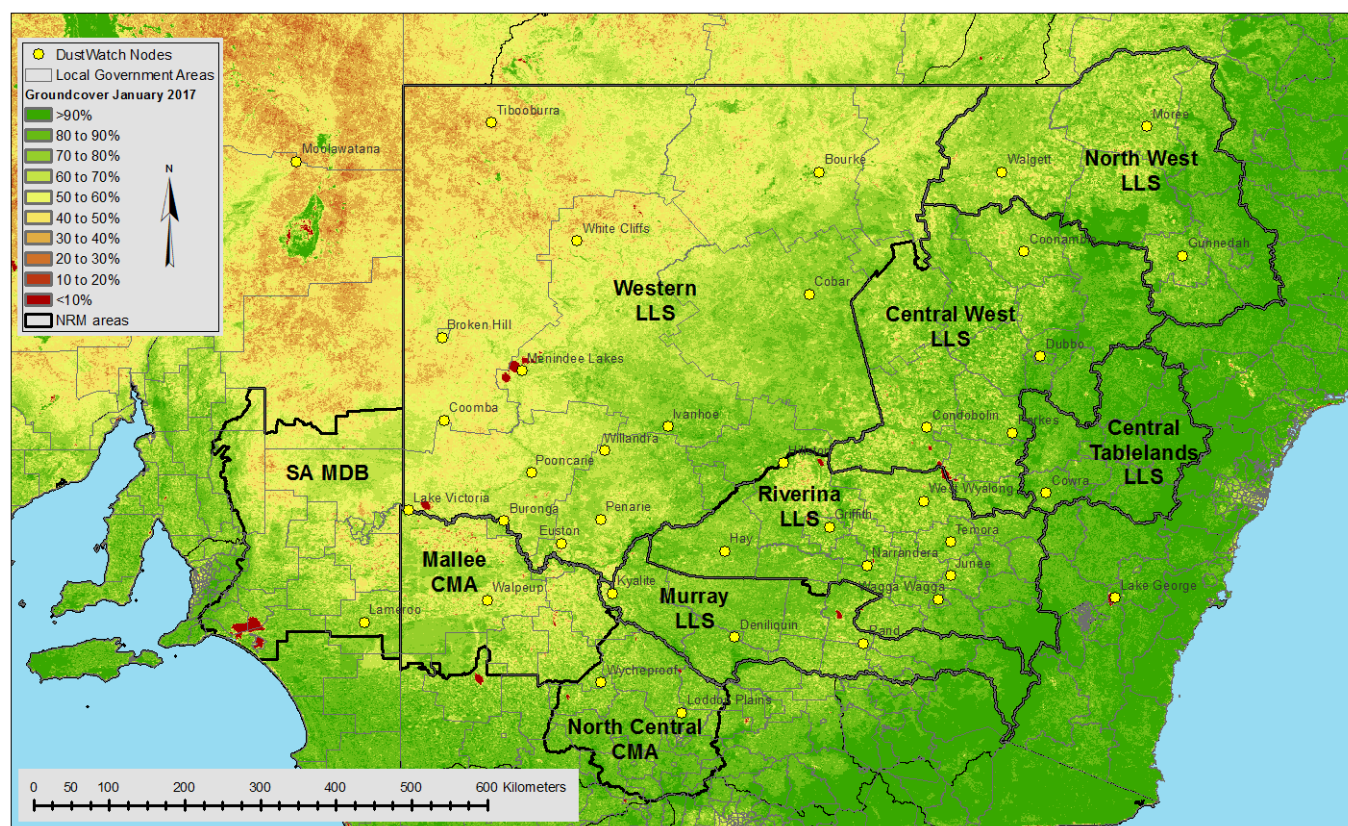


Figure 2: Groundcover for January 2017 as determined from MODIS.

Table 1: Percent NRM area with groundcover >50% for June 2016 to January 2017 as determined from MODIS.

Date	Central West	Mallee	Murray	North Central	North West	Riverina	SA MDB	Western	Central Tablelands
Jun 2016	100	99	100	100	98	100	98	96	100
Jul 2016	100	100	100	100	99	100	99	97	100
Aug 2016	100	100	100	100	99	100	98	94	100
Sep 2016	100	100	100	100	99	100	98	96	100
Oct 2016	100	99	100	100	99	100	96	88	100
Nov 2016	99	97	99	100	99	99	93	83	100
Dec 2016	99	95	100	100	99	99	89	74	100
Jan 2017	99	93	99	100	99	98	87	77	100

## Groundcover change

Over the last three months (September 2017 to January 2017) groundcover declined substantially across the wheat / sheep belt (red colours in Figure 3). Despite this, the area above 50% groundcover (i.e. not at risk of wind erosion) has remained close to 100% (Figures 2 and 4). The only exception is the Victorian Mallee CMA where groundcover values have slowly but steadily declined since October 2016 (Table 1 and Figure 4). This explains the low number of dust hours we have seen in this area (Figure 1).

Groundcover has increased in the far north western corner of New South Wales near Tibooburra. Good rainfall in the area explains this result. Around Bourke emerging crops have improved the overall groundcover in January 2017.

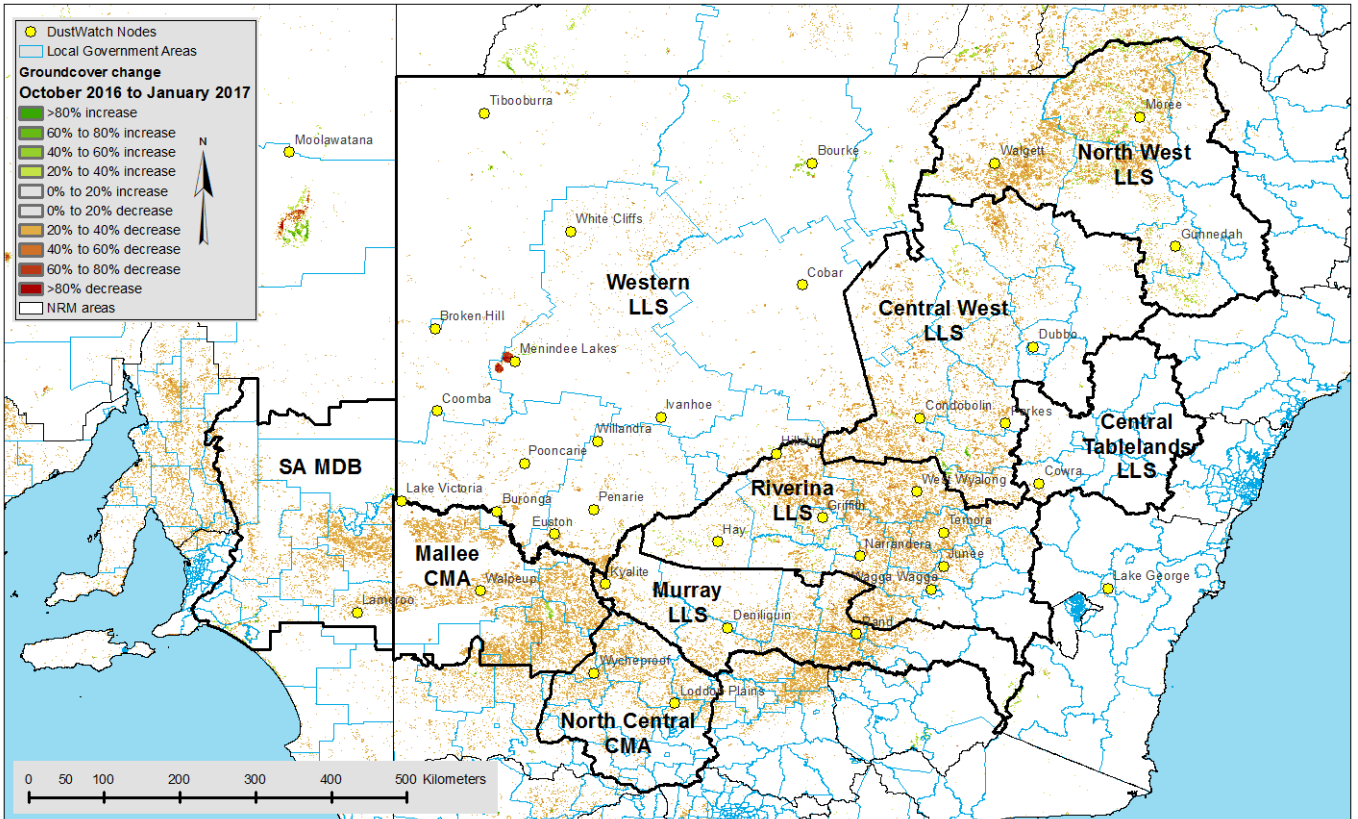


Figure 3: Groundcover change between October 2017 and January 2017 as determined from MODIS.

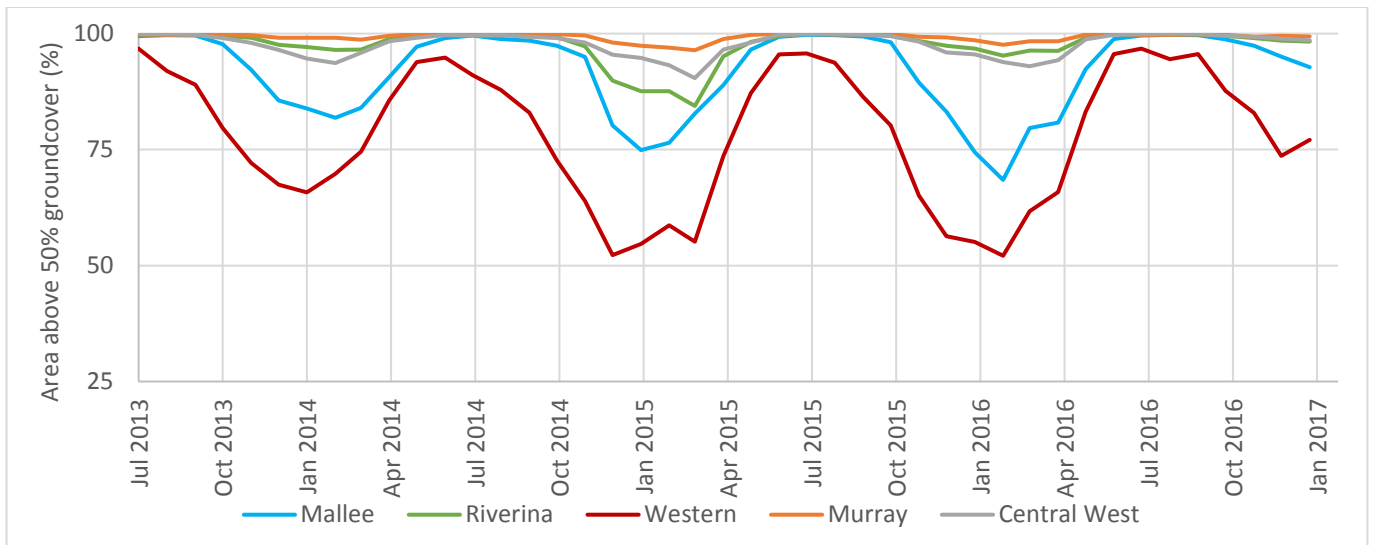


Figure 4: Area above 50% cover for selected NRM areas as determined from MODIS.



## Rainfall

Very little rain filled the gauges in January 2017 (Figure 5). Most of New South Wales received less than 25mm. The north and north-east of the state fared slightly better with falls between 25mm and 200mm recorded.

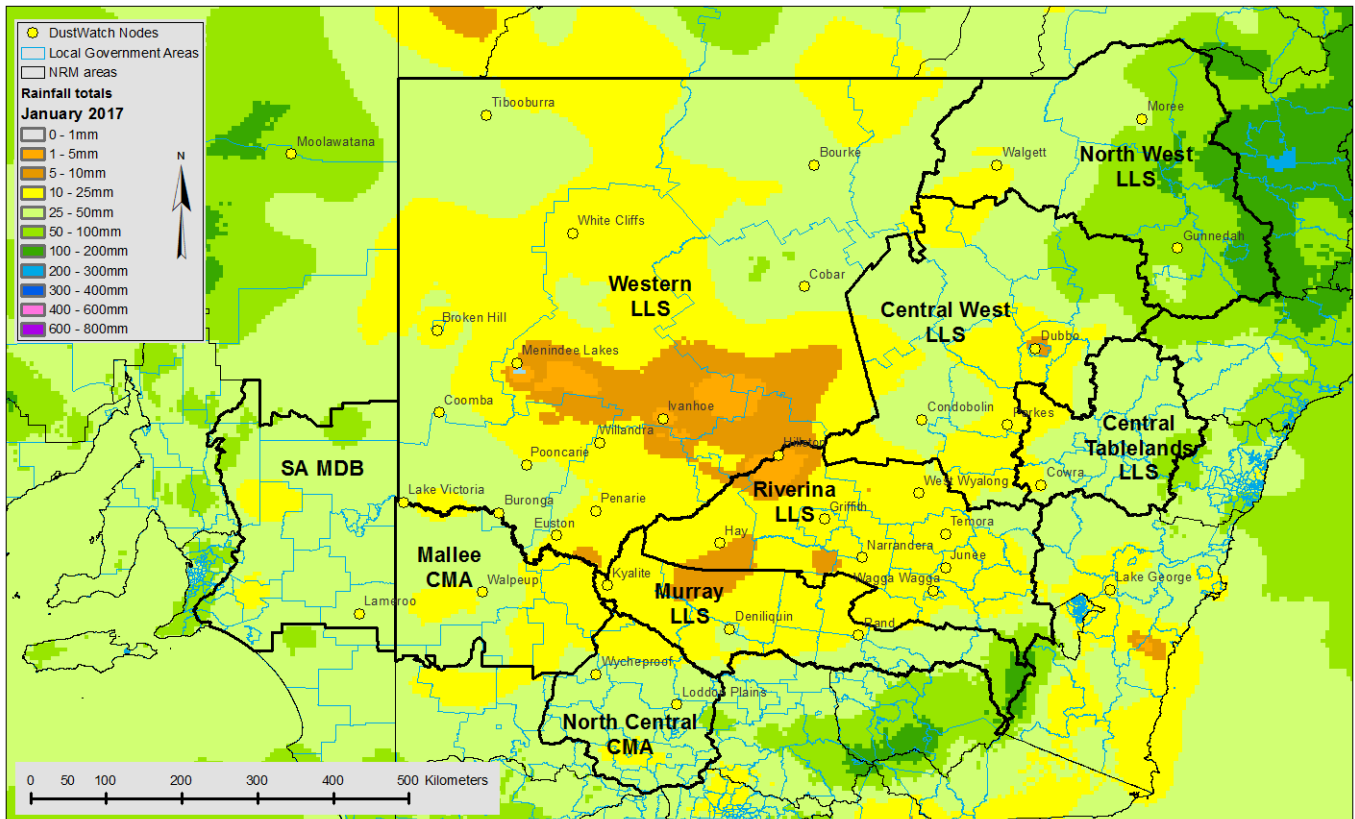


Figure 5: Rainfall totals for January 2017

Rainfall across New South Wales in January 2017 was predominantly average to below average (white and red areas in Figure 6a) except for the far west of the state that experienced above average rainfall. This trend is even more apparent when looking at the 3 monthly deciles map (Figure 6b). Most of South Australia is in the wettest 10% of records (dark blue in Figure 6a&b) for both January 2017 and November 2016 to January 2017. On the other hand eastern Australia is slipping back into severe rainfall deficiencies when looking at the 3 monthly deciles map (Figure 6b).

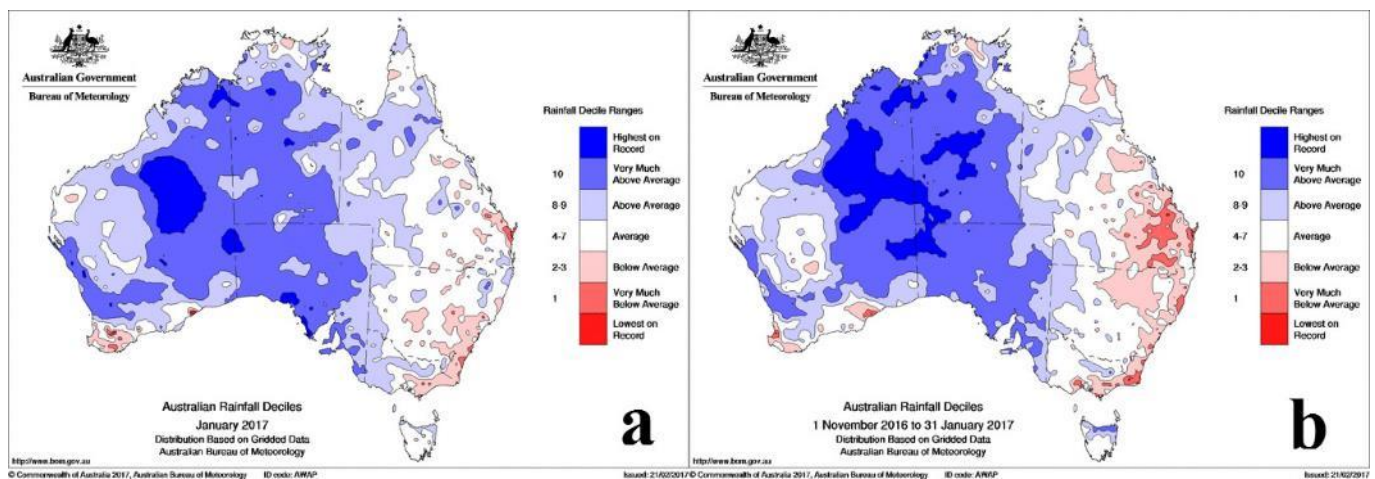


Figure 6: Rainfall deciles for January 2017 (a) and 1 November 2016 to 31 January 2017 (b)

## MODIS satellite

Fire numbers in January 2017 increased from December 2016. Several bands of thunderstorms late in the month caused fires in central and western New South Wales (red and pink dots). Fire numbers increased closer to the coast and towards the Queensland border.

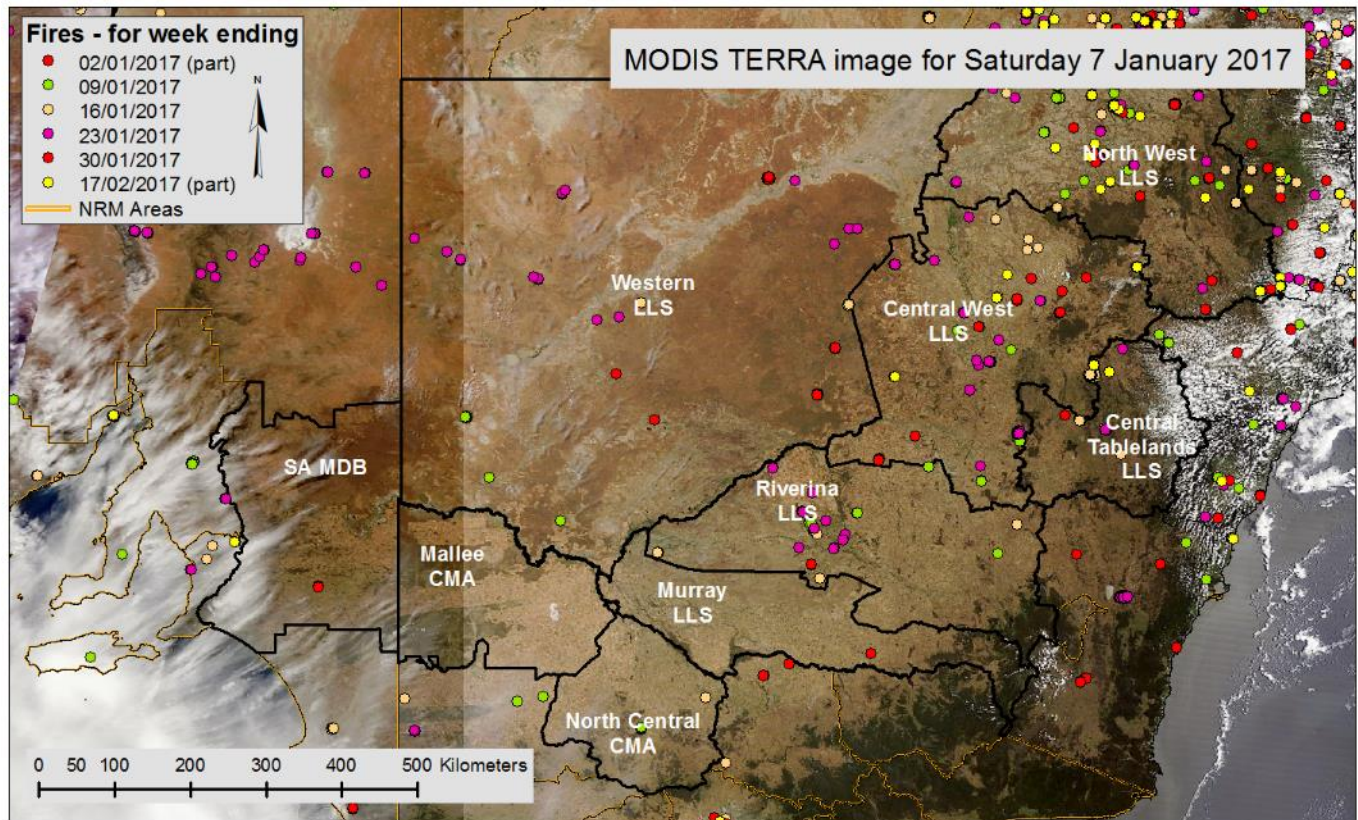


Figure 7: Active burning fires in January 2017 as determined from MODIS satellite.



## Social media

The image below was sent to us by Greg Summerell from Wagga Wagga where a dust haze reduced visibility on 30 January 2017.

There were reports of severe dust storms on the New England Highway near Allora in south-eastern Queensland in early January, with strong winds causing a local dust storm. We also found reports of dust storms between Forbes and Dubbo on 13 January 2017.



*Photo 1: Dust haze in Wagga Wagga 30 January 2017 (Greg Summerell - OEH).*

### The DustWatch team

Contact us at [dustwatch@environment.nsw.gov.au](mailto:dustwatch@environment.nsw.gov.au)

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