

Dust activity	Fourth lowest dust activity for May on entire record
Wind strength	Much less than last month; slightly below May average
Groundcover	Increasing and excellent for May
Rainfall	Mixed through NSW; dry in the west
Land management	Sowing has started; large number of stubble fires

Dust activity

There were only two hours of dust recorded across the network in May 2017. Deniliquin and Wycheproof each recorded one hour of dust. This is the fourth best result in the entire record, only surpassed by no dust at all in May 2011, 2012 and 2014. Isolated bare paddocks are the likely cause of the small amount of dust recorded during May 2017.

Bare paddocks prepared for summer cropping by either burning or ploughing did not create any dust due to either enough soil moisture (Figure 5) or not enough wind (40% less than last month).

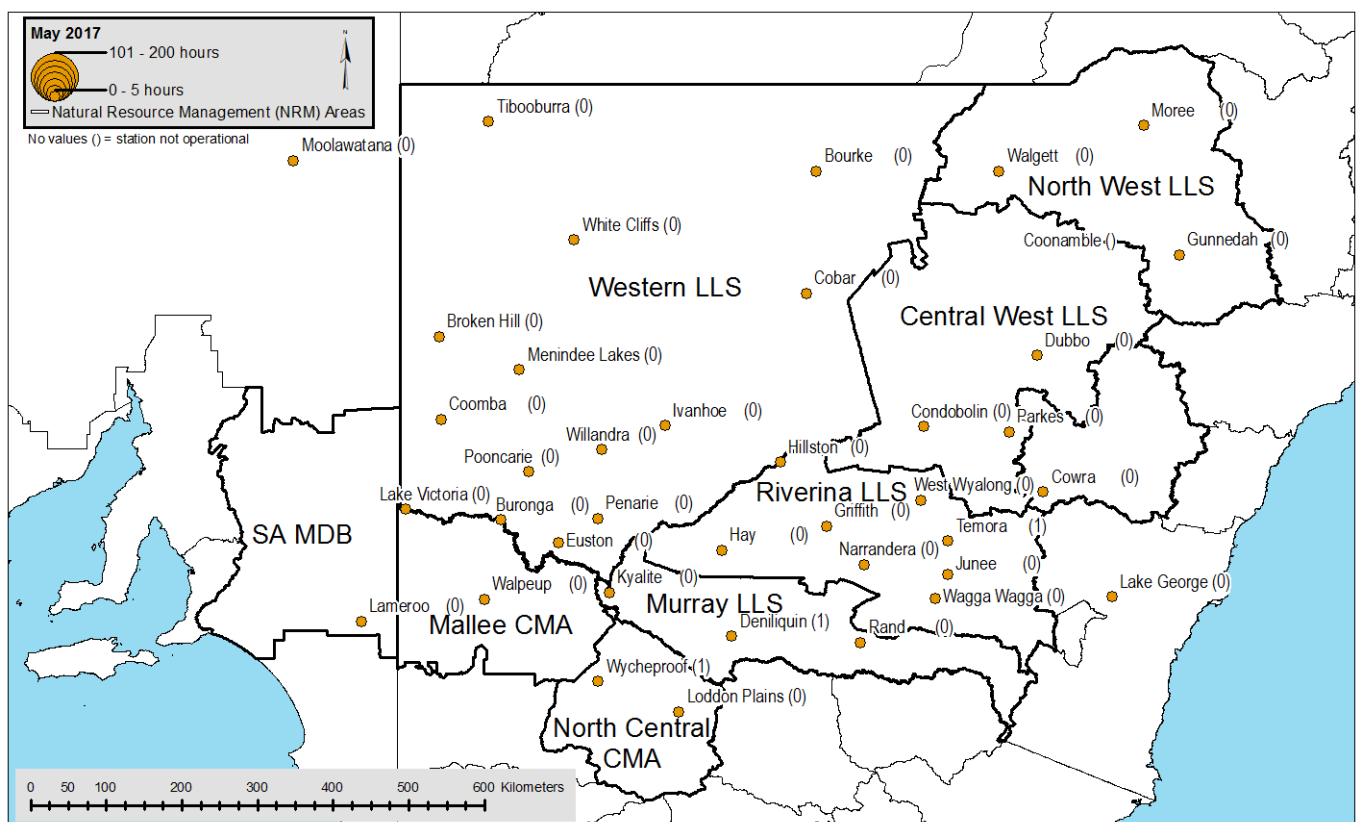


Figure 1: Hours of dust activity (number in brackets) at each DustWatch site in May 2017

Groundcover

The area protected from wind erosion in May 2017 has improved from April 2017 (groundcover above 50% - yellow and green colours in Figure 2). It is on par or better than May 2016 (e.g. SA MDB). These very good values will provide a great starting point for maintaining groundcover into spring and summer 2017. The Local Land Services - Western Area, for example, has currently 86% of its area protected from wind erosion. In comparison, last May, the same area was down to 77%.

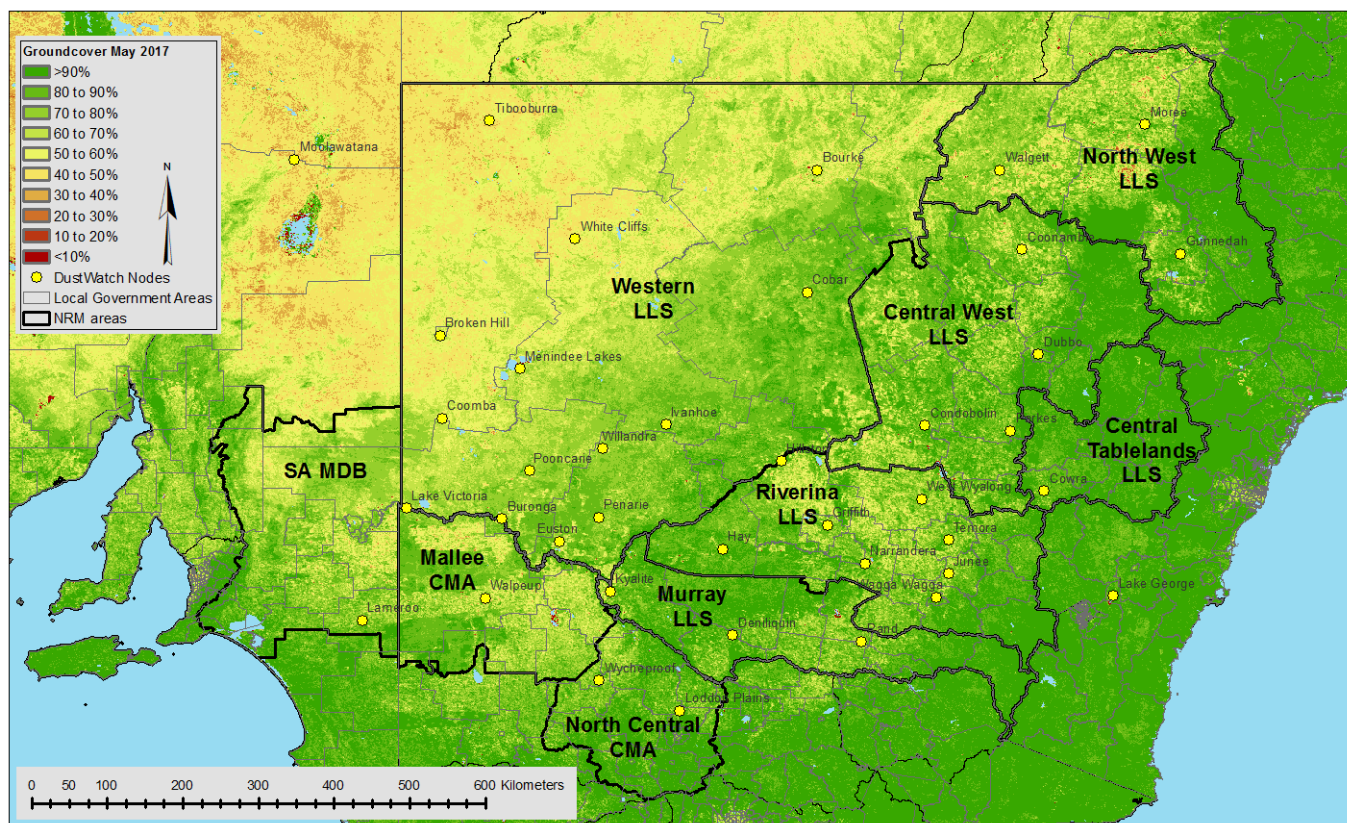


Figure 2: Groundcover for May 2017 as determined from MODIS by CSIRO

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

Date	Central West	Mallee	Murray	North Central	North West	Riverina	SA MDB	Western	Central Tablelands
May 2016	98	89	99	98	95	99	91	77	100
Jun 2016	99	96	100	100	97	100	96	90	100
Jul 2016	100	99	100	100	98	100	99	94	100
Aug 2016	100	99	100	100	99	100	98	92	100
Sep 2016	100	99	100	100	99	100	98	91	100
Oct 2016	99	99	100	100	99	99	96	83	100
Nov 2016	99	98	99	100	99	99	92	78	100
Dec 2016	99	96	100	100	99	99	88	70	100
Jan 2017	99	93	100	100	99	99	86	72	100
Feb 2017	99	90	100	99	99	98	88	71	100
Mar 2017	99	95	100	100	99	99	91	77	100
Apr 2017	98	95	99	100	98	98	94	79	100
May 2017	99	97	100	100	98	99	98	86	100

Groundcover change

There is a distinct pattern in the groundcover change between February 2017 and May 2017. The cropping areas are showing a scatter of paddocks that decreased substantially in groundcover across the entire wheat/sheep belt (> 20% - orange and red colours in Figure 3). This is in line with the preparation of paddocks for the upcoming winter cropping season by either fire or ploughing. There were over 17,000 fires recorded in May (Figure 7), down from nearly 29,000 in April 2017.

In contrast, some of the grazing country further west is showing a substantial increase in groundcover (> 20% - green colours in figure 3) following some good rainfall in the past three months (Figure 6b).

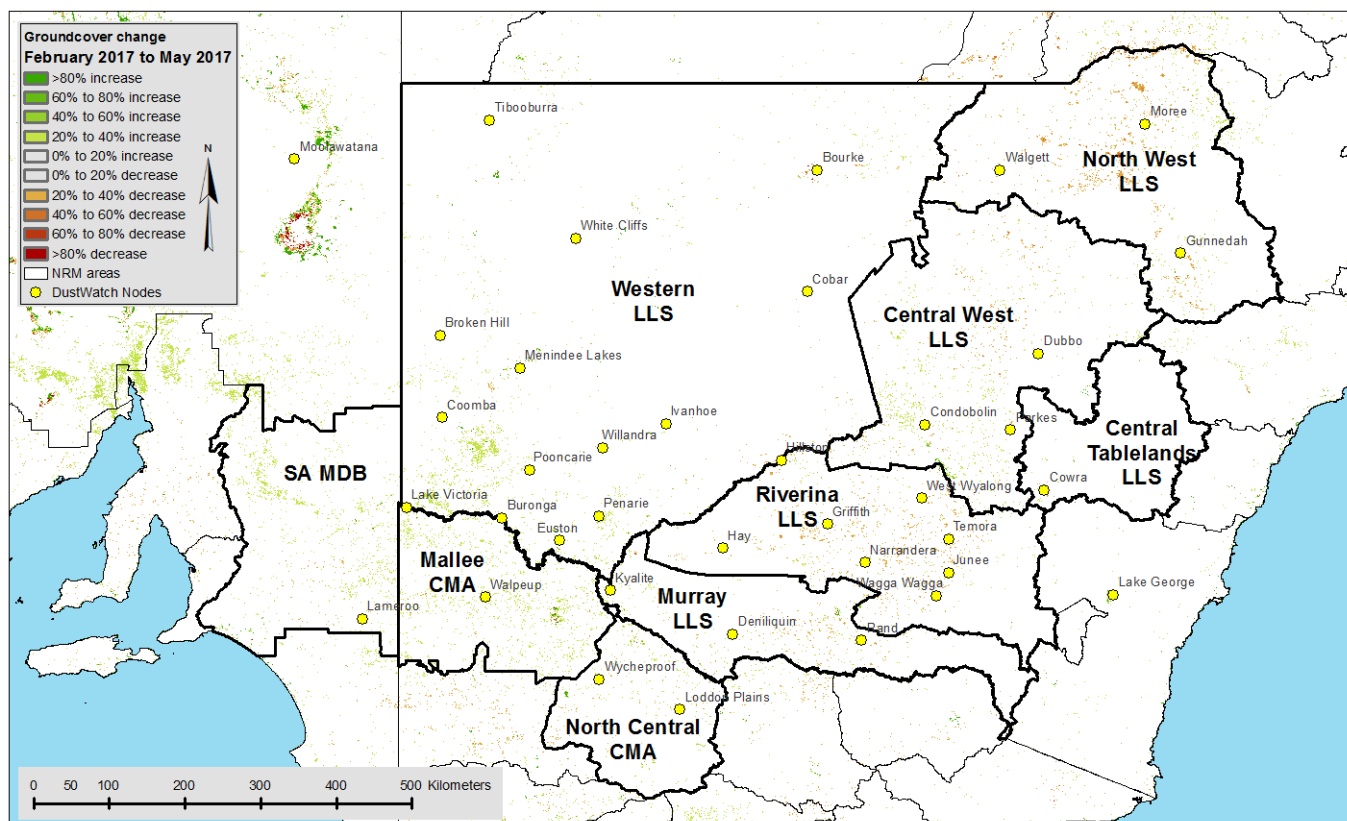


Figure 3: Groundcover change between February 2017 and May 2017 as determined from MODIS

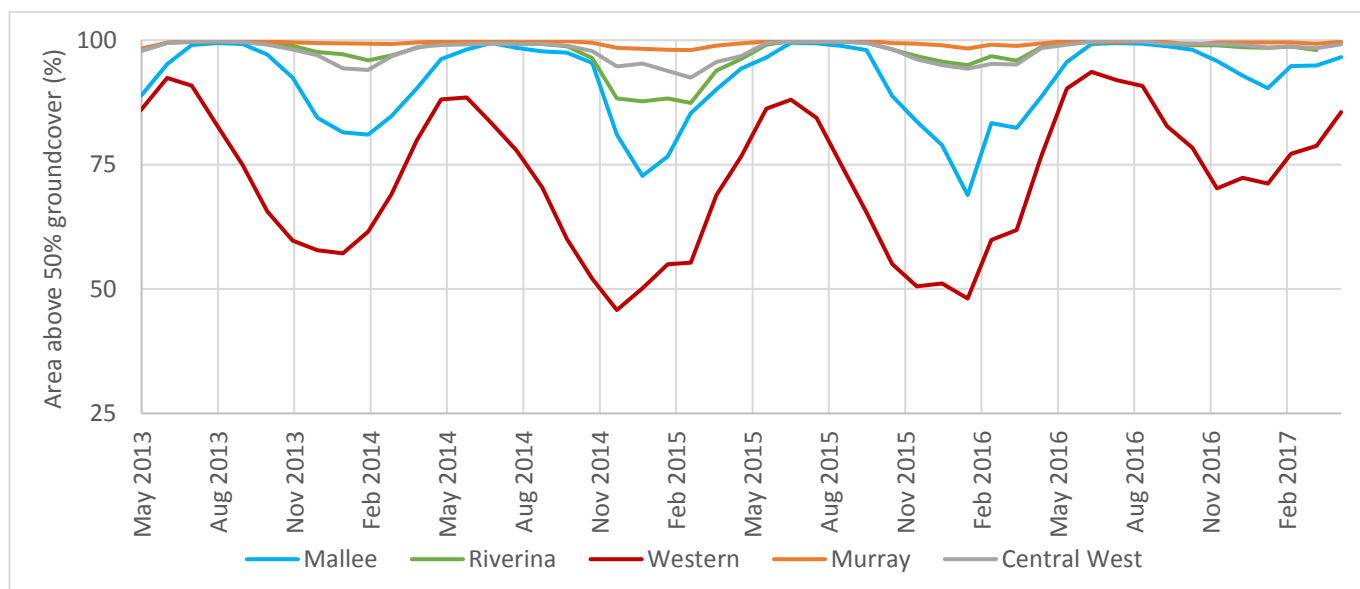


Figure 4: Area above 50% cover for selected NRM areas as determined from MODIS

Rainfall

Very little rain filled the gauges in far western New South Wales and across the border into South Australia (Figure 5). Across the rest of the state rain fell patchy with some areas, like the Hay district, recording well above average falls of up to 100mm and others such as the area east of Bourke recording well below average falls of less than 5mm (Figure 5 and 6a).

Victoria had a similar mix of above and below average rainfall. In contrast, South Australia had below average rainfall for most of the state, particularly in the southern and western part of the state.

The three-monthly decile map (Figure 6b) still shows most of the south east of Australia in the average to above average rainfall amount (white and blue colours in Figure 6b).

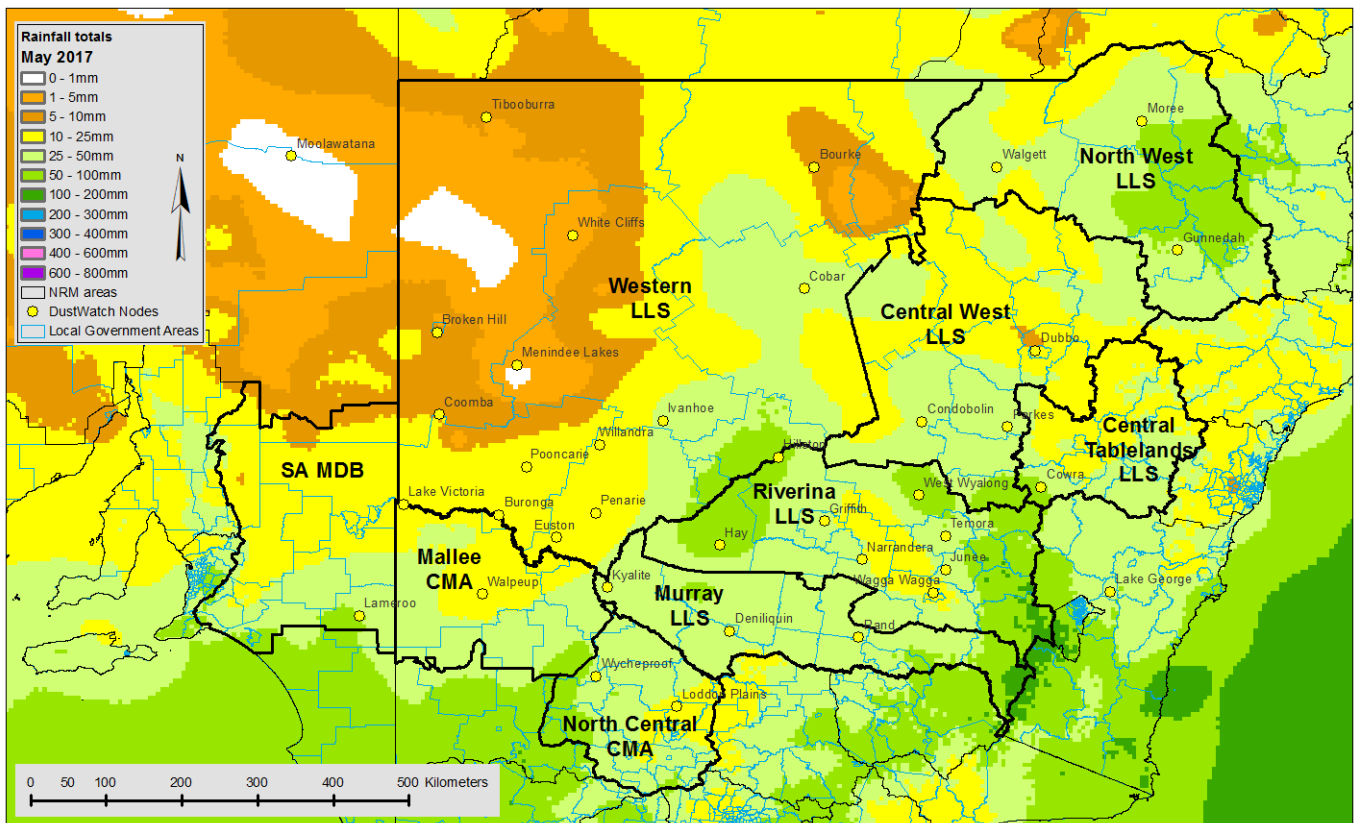


Figure 5: Rainfall totals for May 2017

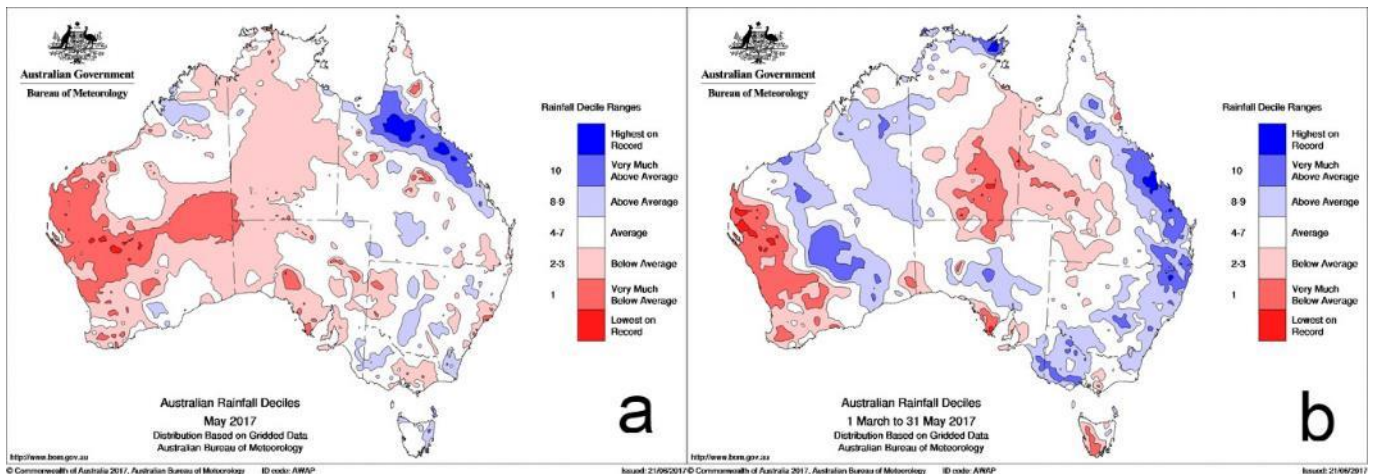


Figure 6: Rainfall deciles for May 2017 (a) and 1 March 2017 to 31 May 2017 (b)

MODIS satellite map with VIIRS fire data

In NSW fire numbers during May 2017 (10,224) were higher than May 2016 (9531). Victoria saw a massive increase in fires in 2017 (10,247) compared to 2016 (1,801). South Australian fire numbers increased from 1045 in 2016 to 3341 in 2017. Stubble burning continued well into May this year.

As anticipated there were very few fires in the grazing areas; for example, only a handful of fires detected in the Local Land Services - Western Area.

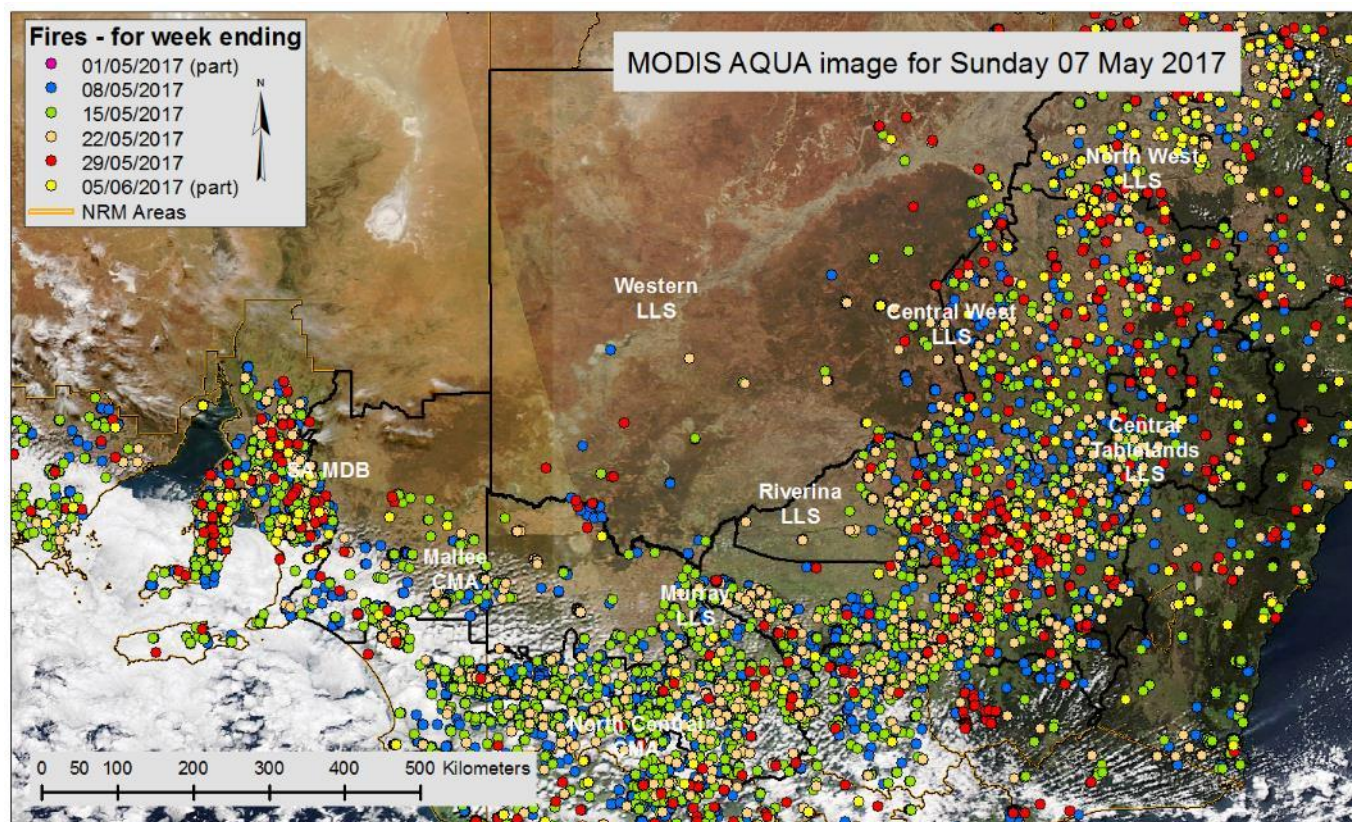


Figure 7: Active burning fires in May 2017 as determined from VIIRS satellite

The DustWatch team

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The VIIRS image is courtesy of MODIS Rapid Response Project at NASA/GSFC; the fire data is courtesy of the Fire Information for Resource Management System (FIRMS) and the rainfall maps are from the Australian Bureau of Meteorology. This project would not be possible without funding from: the National Landcare Programme, Riverina, Western, Central West, Central Tablelands and Murray Local Land Services (LLS) in NSW; the NSW EPA, the Mallee and North Central CMAs in Victoria and Murray Darling Basin NRM in South Australian and in-kind contributions from Griffith University in Queensland, CSIRO, TERN and the Australian National University. We particularly thank our many DustWatch volunteers who provide observations and help maintain the instruments.

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