

DustWatch Report

March 2018

| | |
|------------------------|---|
| Dust activity | Dust widespread in the south; increased from February |
| Wind strength | Average for this time of the year |
| Groundcover | Unchanged; low in the north west |
| Rainfall | Very little rainfall in inland NSW, eastern SA and Victoria |
| Land management | Paddock preparation for upcoming cropping has started |

Dust activity

There were several wide spread dust storms in southern NSW in March 2018. Most dust activity was around 21 to 22 March 2018 when strong easterly winds caused widespread dust. Further dust storms occurred on 18 and 25 March. On 18 March dust from further west was pushed through Canberra and then off the New South Wales coast. The great image on the right was taken on 18 March 2018 half way between Lake George and Canberra by Lee Tye (@leetye). The [Bureau of Meteorology](#) has posted a video of the dust plume leaving the coast on Instagram.



Photo 1 Lee Tye – Windmill near Lake George –18 March 2018.

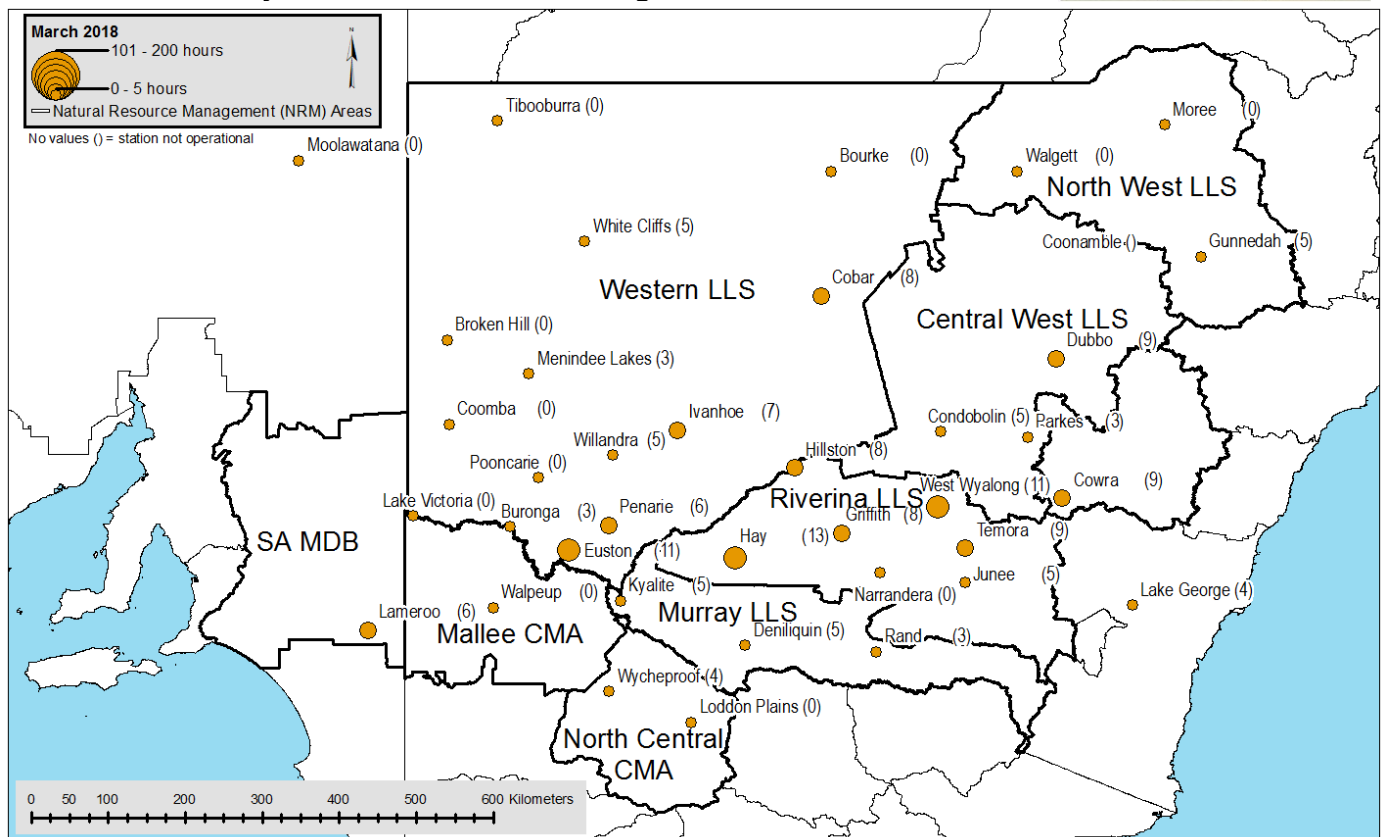


Figure 1 Hours of dust activity (number in brackets) at each DustWatch site in March 2018.

Groundcover

The area below 50% groundcover remains unchanged west of and along the Darling river (yellow and red colours in Figure 2). Other areas below 50% groundcover are around Willandra in the south of the Local Land Services Western region, near Moree and Walgett in the North West Local Land Services Western region and near Werrimull in the north west of the Mallee Catchment Management Area.

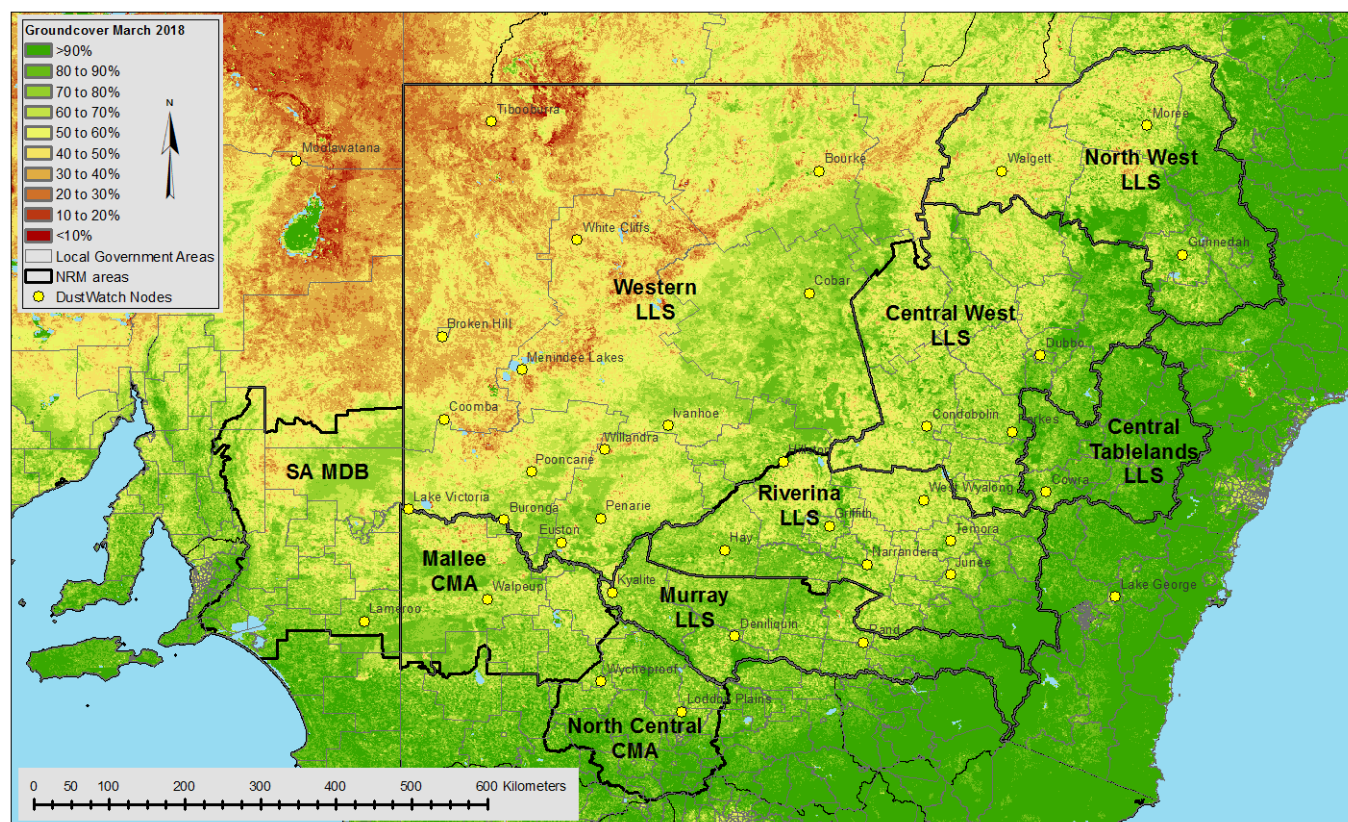


Figure 2 Groundcover for March 2018 as determined from MODIS by CSIRO.

Table 1 Percent NRM area with groundcover >50% for March 2017 to March 2018 as determined from MODIS.

| Date | Central West | Mallee | Murray | North Central | North West | Riverina | SA MDB | Western | Central Tablelands |
|----------|--------------|--------|--------|---------------|------------|----------|--------|---------|--------------------|
| 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 |
| Jun 2017 | 99 | 98 | 100 | 100 | 97 | 99 | 99 | 85 | 100 |
| Jul 2017 | 99 | 99 | 100 | 100 | 98 | 100 | 99 | 81 | 100 |
| Aug 2017 | 99 | 100 | 100 | 100 | 98 | 100 | 98 | 73 | 100 |
| Sep 2017 | 99 | 100 | 100 | 100 | 97 | 100 | 97 | 76 | 100 |
| Oct 2017 | 99 | 99 | 100 | 100 | 98 | 100 | 94 | 67 | 100 |
| Nov 2017 | 97 | 96 | 100 | 100 | 95 | 99 | 89 | 58 | 100 |
| Dec 2017 | 95 | 92 | 99 | 100 | 93 | 96 | 84 | 51 | 100 |
| Jan 2018 | 93 | 94 | 99 | 100 | 93 | 96 | 86 | 51 | 100 |
| Feb 2018 | 92 | 94 | 99 | 100 | 93 | 95 | 86 | 53 | 100 |
| Mar 2018 | 93 | 95 | 99 | 100 | 93 | 95 | 88 | 55 | 100 |

Groundcover change

Paddock preparation in the wheat/sheep belt of New South Wales has led to a reduction in groundcover, in particular around Griffith, Walgett and Moree (red colours in Figure 3). This reduction was counterbalanced by growth in the summer dryland cropping areas and irrigation areas (green colours in Figure 3)

There was an overall no change or a slight increase in the area above 50% groundcover across the Natural Resource Management areas covered in this report (Figure 4).

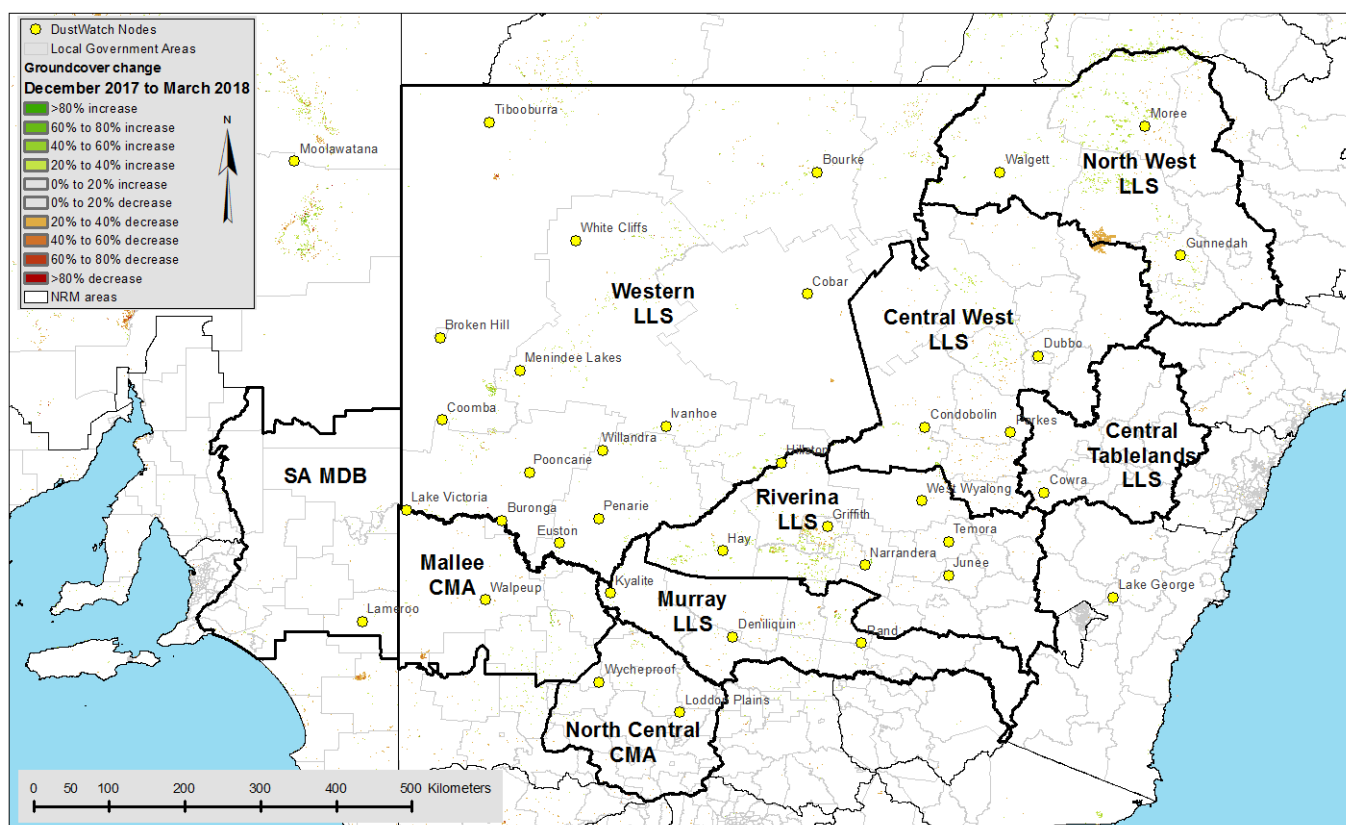


Figure 3 Groundcover change between December 2017 and March 2018 as determined from MODIS.

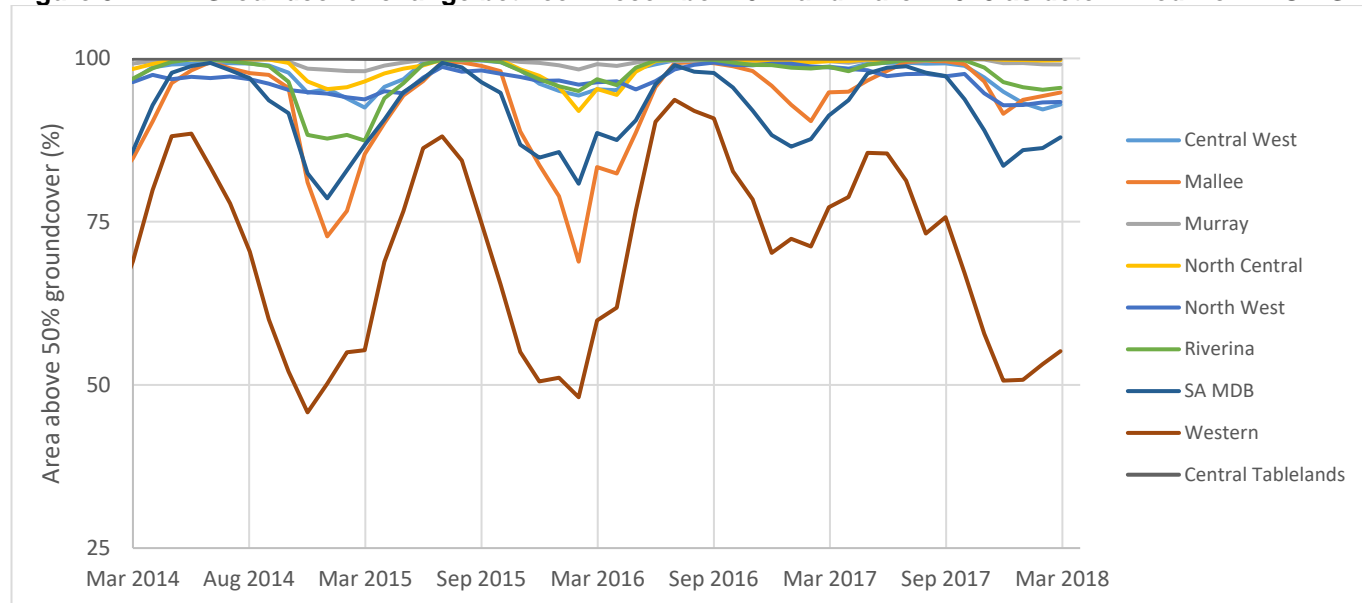


Figure 4 Area above 50% cover for selected NRM areas as determined from MODIS.

Rainfall

Rainfall in March 2018 (Figure 5) was predominantly below 25 millimetres for inland New South Wales and northern Victoria. Isolated better falls above 25 millimetres occurred east of White Cliffs and north east of Bourke.

In contrast, very heavy falls were recorded in the upper and lower Hunter region. Falls above 400 millimetres caused severe damage in these areas.

Apart from the better falls around Bourke and White Cliffs, rainfall in March 2018 was below average (red colours in Figure 6a). The low rainfall has pushed most of New South Wales, Victoria and eastern South Australia back into the below average category when looking at the last three months with large areas in the driest 10% of Bureau of Meteorology records (Figure 6b).

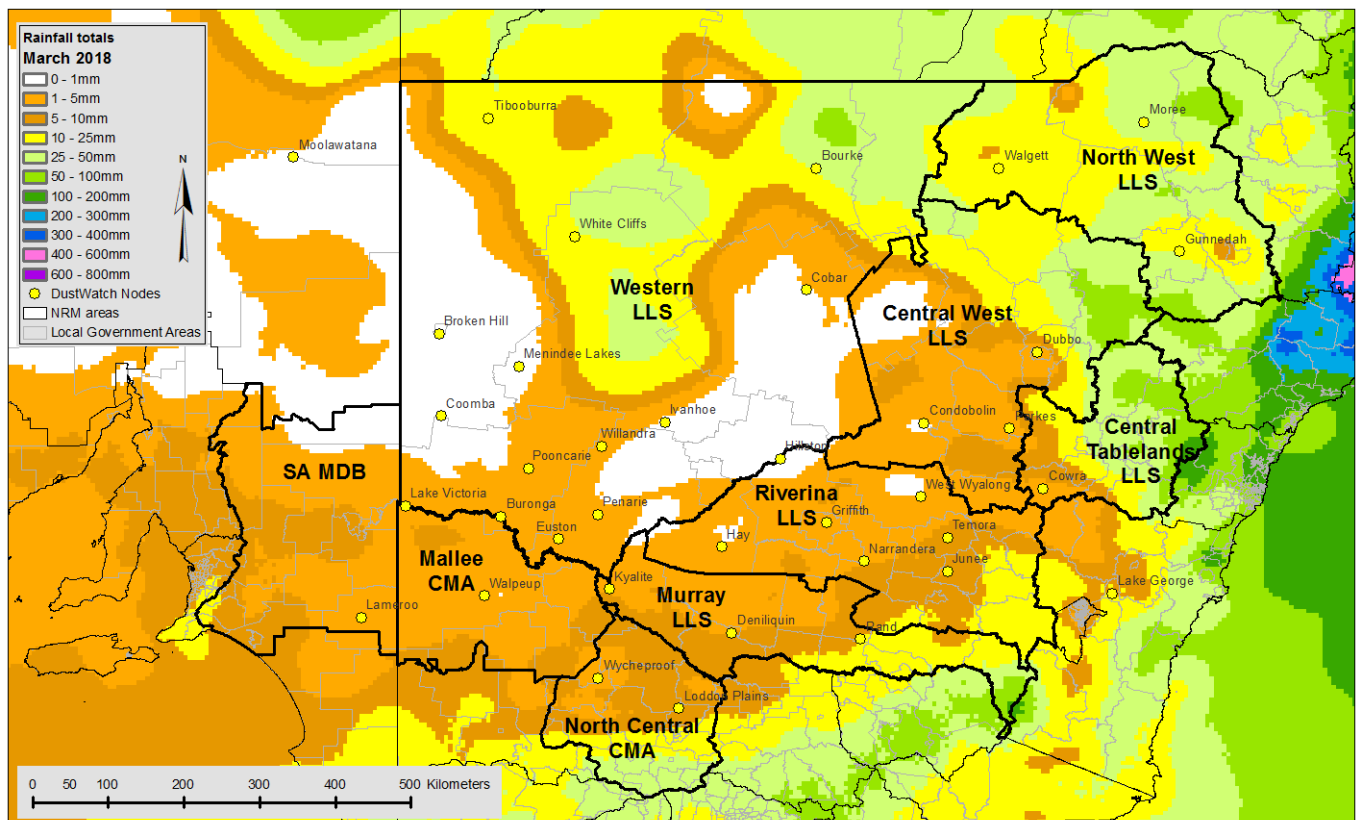


Figure 5 Rainfall totals for March 2018.

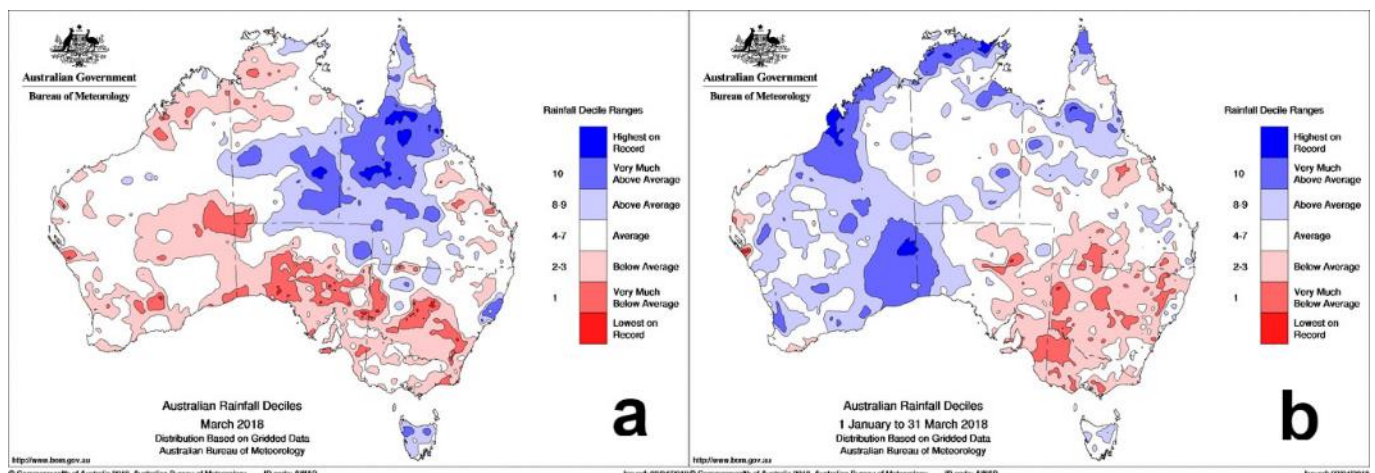


Figure 6 Rainfall deciles for March 2018 (a) and 1 January 2018 to 31 March 2018 (b).

VIIRS fires and MODIS satellite image

Fire number detected within the 375m pixels by the VIIRS satellite (Figure 7) in March 2018 have increased substantially from last month (Figure 8). This is typical for this time of year as paddock preparation commences for the upcoming winter cropping season. Fire numbers are similar to March last year except for the Local Land Services Central West region where less fires were detected this year.

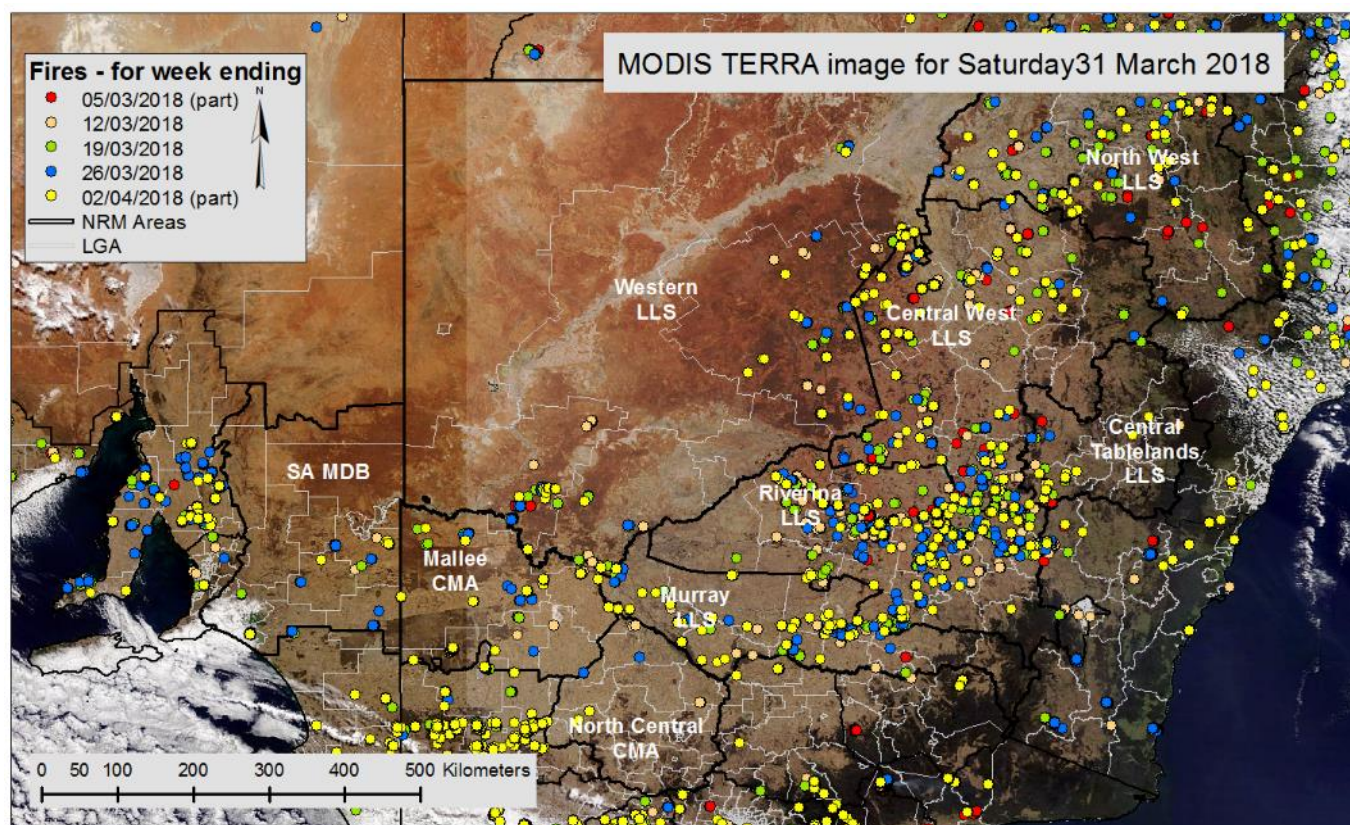


Figure 7 Pixels (375m) with active burning fires in March 2018 as determined from VIIRS satellite.

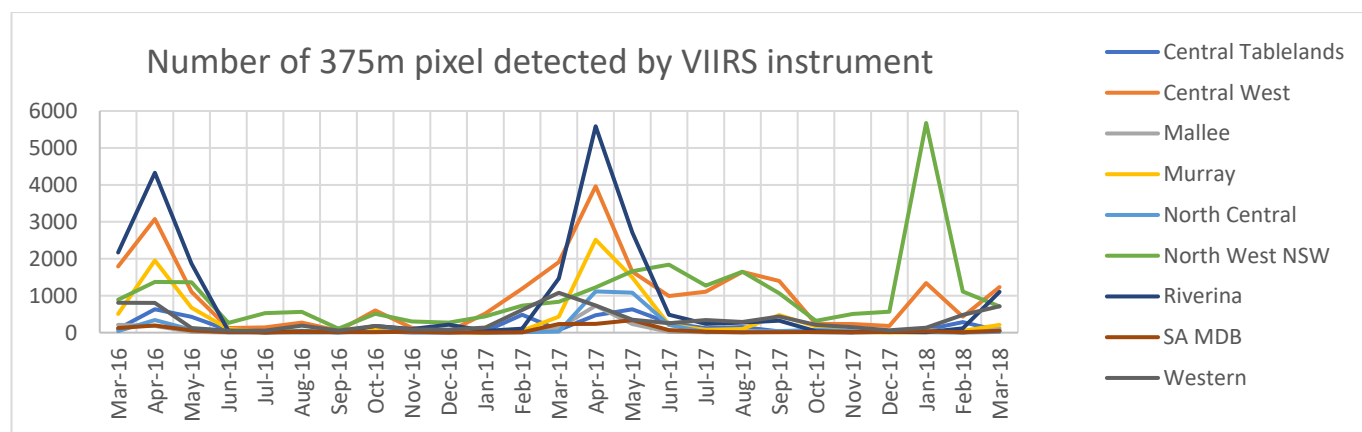


Figure 8 Number of 375 m pixels with active burning fires between March 2016 and March 2018.

The DustWatch team

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Dust data supplied by the Office of Environment and Heritage Rural Air Quality network. The MODIS image is courtesy of MODIS Rapid Response Project at NASA/GSFC; the VIIRS 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 Australia, 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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