

Groundcover

The area with greater than 50% groundcover (green and yellow colours in Figure 3) has remained almost unchanged from June 2023 (Table 1). The Local Land Services Western Region remains the area with the lowest groundcover. Saying that, 90% of the area remains above 50% cover and is therefore protected from wind erosion.

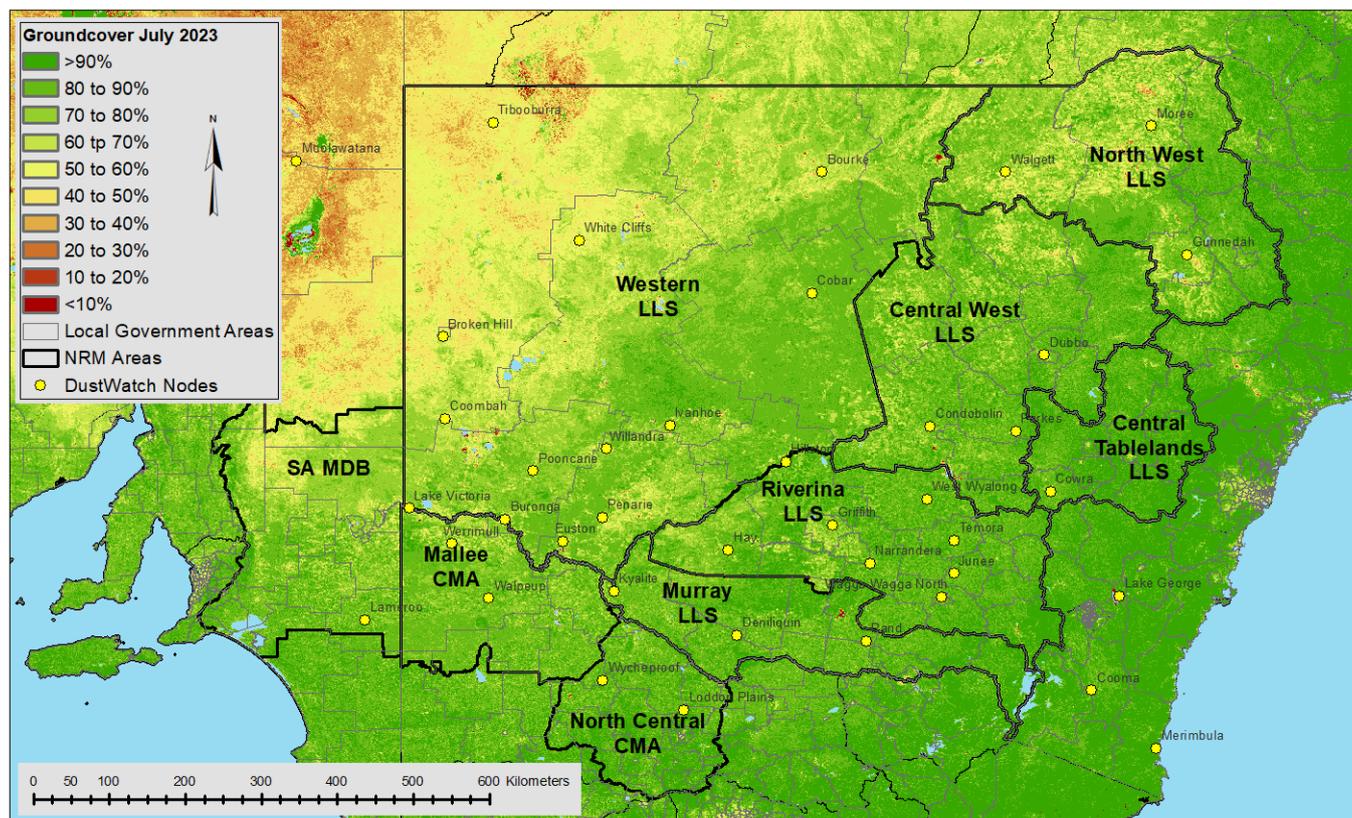


Figure 3 Groundcover for July 2023 as determined from MODIS by CSIRO

Table 1 Percentage of each NRM with cover >50% for July 2022 to July 2023

Date	Central West	Mallee	Murray	North Central	North West	Riverina	SA MDB	Western	Central Tablelands
Jul 2022	100	99	100	100	99	100	94	91	100
Aug 2022	100	100	100	100	99	100	92	89	100
Sep 2022	100	99	100	100	99	100	89	82	100
Oct 2022	100	98	100	100	99	100	91	83	100
Nov 2022	99	97	99	100	98	99	93	78	100
Dec 2022	100	97	99	100	98	99	91	73	100
Jan 2023	100	97	100	100	99	100	93	75	100
Feb 2023	99	95	100	100	98	99	91	74	100
Mar 2023	98	98	99	100	98	99	93	76	100
Apr 2023	98	97	100	100	97	100	95	83	100
May 2023	99	97	100	100	98	100	97	86	100
Jun 2023	100	99	100	100	99	100	98	90	100
Jul 2023	100	100	100	100	98	100	98	90	100

Groundcover change

Groundcover reached its winter peak in June 2023 and started declining in July 2023 in the Local Land Services North West region (Figure 5). If the below-average rainfall predicted by the Bureau of Meteorology for spring/summer 2023 eventuates (www.bom.gov.au/climate/ahead/outlooks), the area with groundcover above 50% could drop as low as 45% for the Local Land Services Western Region, similar values to 2017 (brown line in Figure 5).

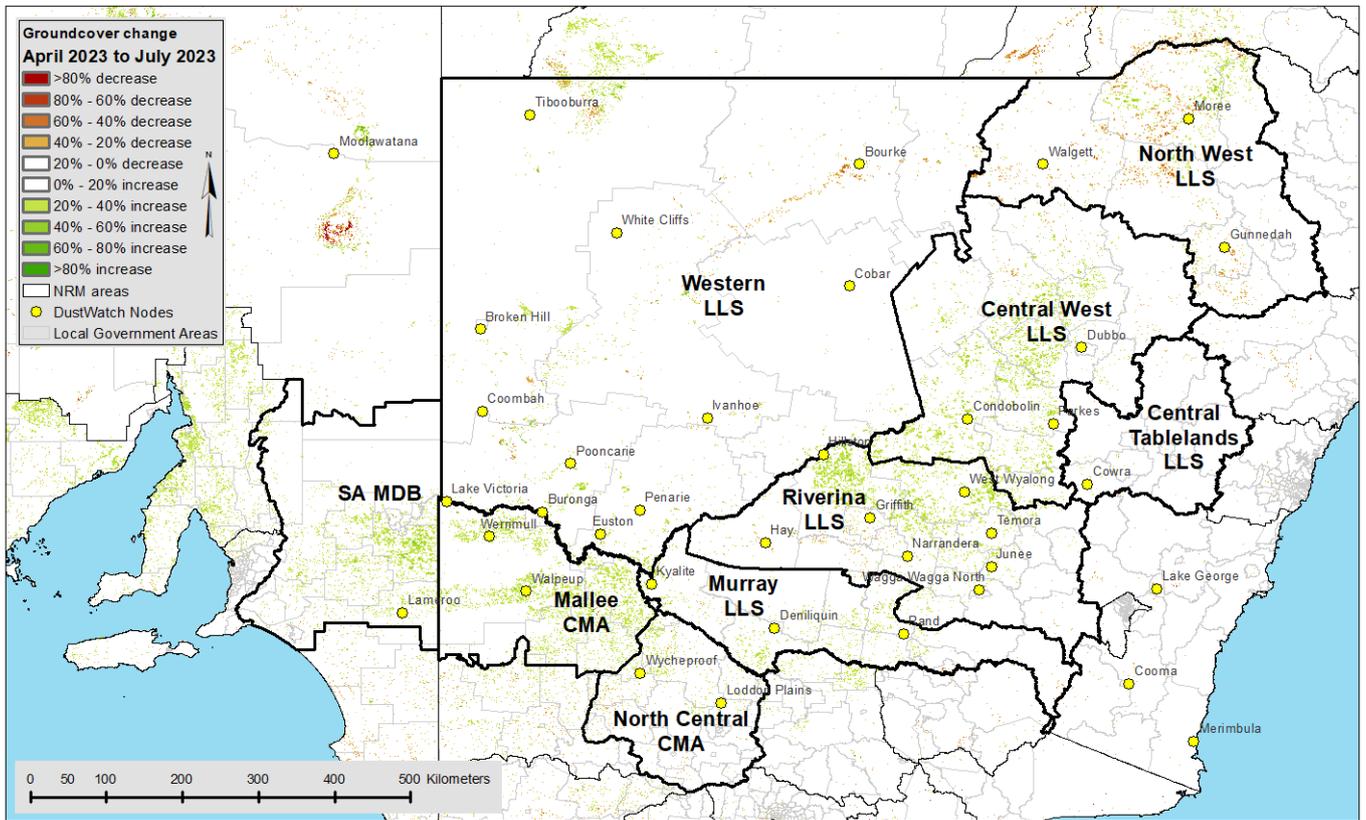


Figure 4 Groundcover difference between April 2023 and July 2023

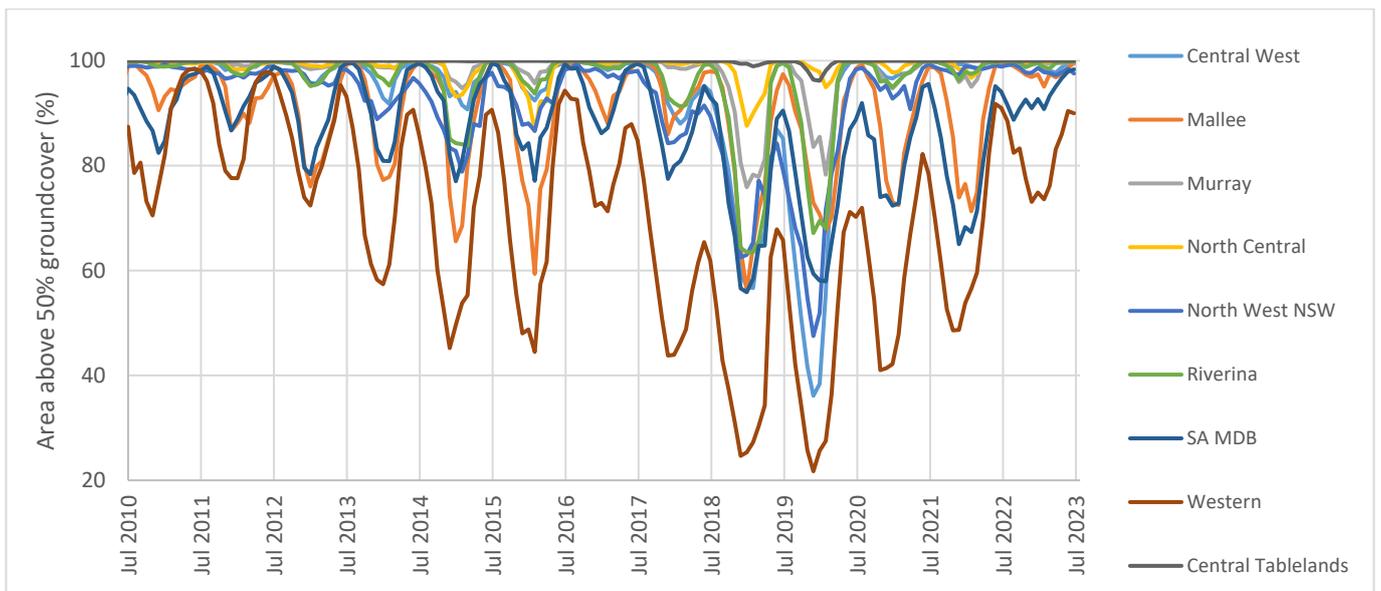


Figure 5 Area (%) of NRM with more than 50% cover since July 2010

Rainfall

Total rainfall in July 2023 was average to below average for most of New South Wales (Figure 7a). The only exception is the far west of the state, where welcome rain between 10 mm and 25 mm was recorded in the gauges (Figure 6). In contrast, the eastern half of the state is unusually dry, with close to no rainfall recorded in the south east.

The unusual picture of wetter than average in the west and dryer than average in the east continues and is reflected in the 3 monthly deciles map (Figure 7b).

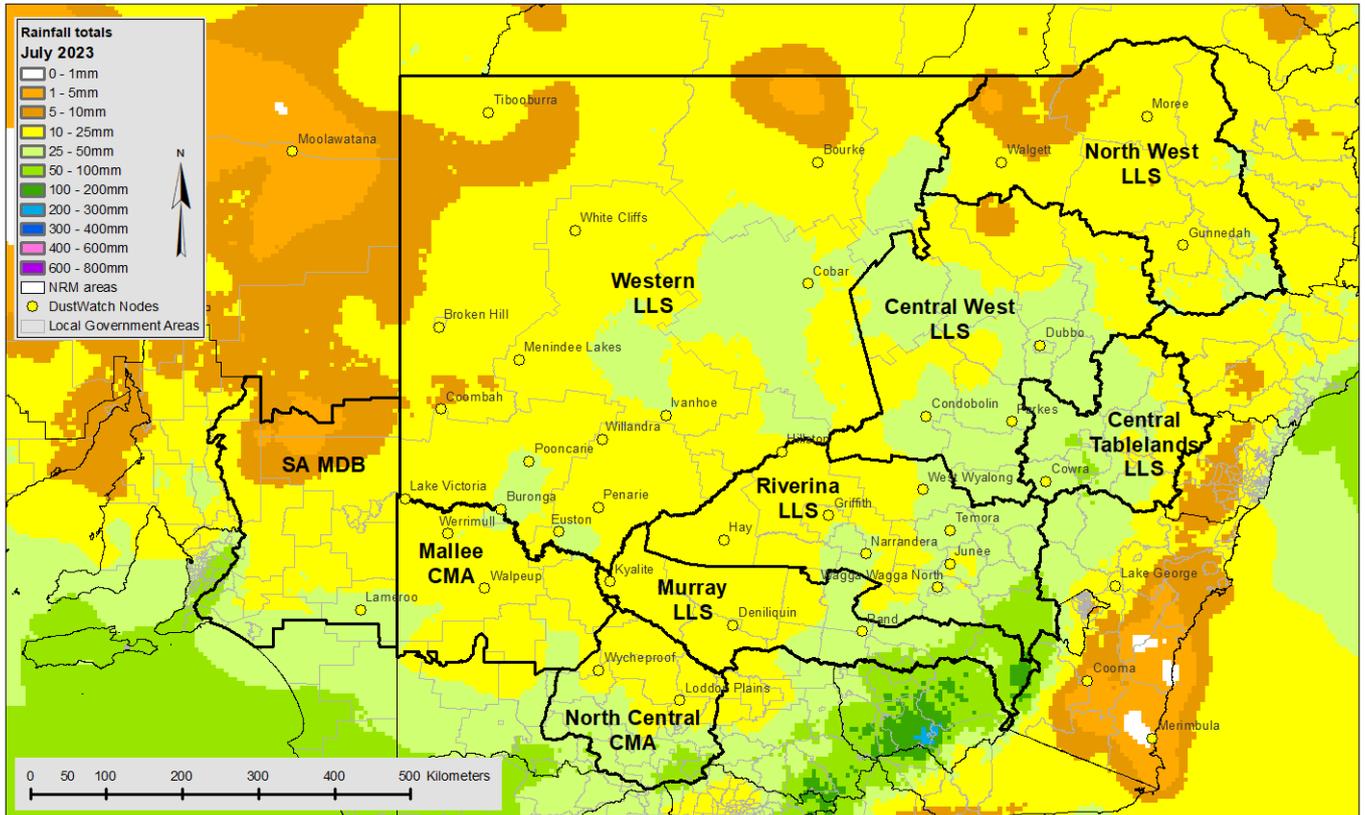


Figure 6 Rainfall totals for July 2023 (source: Bureau of Meteorology)

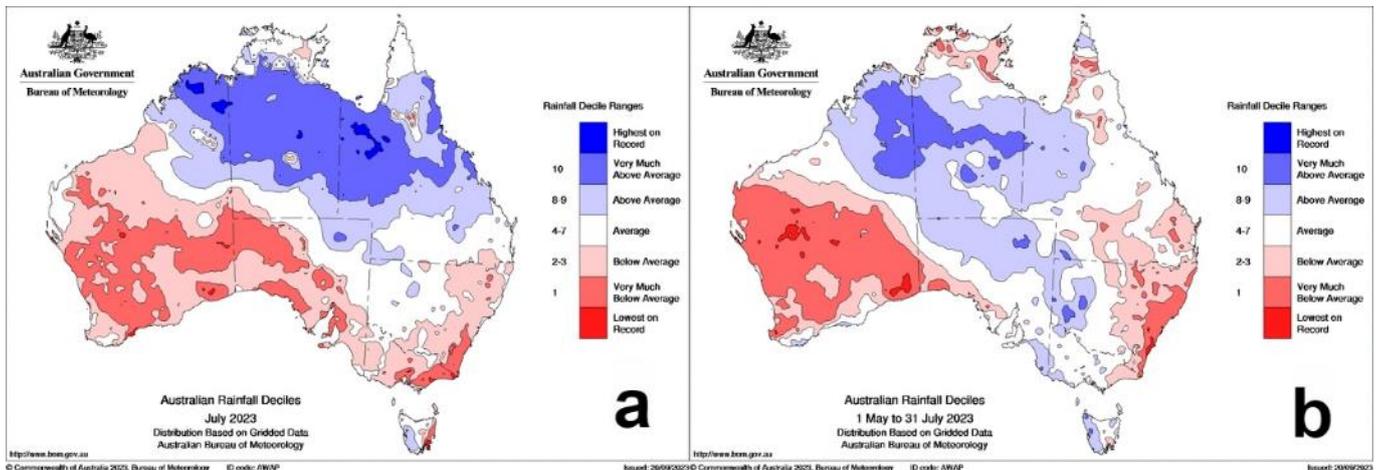


Figure 7 Rainfall deciles for July 2023 (a) and 1 May 2023 to 31 July 2023 (b)

VIIRS fires and satellite image

Haze from smoke and dust is difficult to separate. We use satellite imagery to manually classify every measurement into dust or smoke. The satellite detected 1830 hot spots (375m pixel with temperature anomalies) in July 2023 (Figures 8 and 9), very similar to the 1935 hot spots detected in June 2023. A mix of hazard reduction and stubble burning is the predominant cause of the fires.

Note: The number of hot spots is not equal to the number of fires. Large fires have multiple hot spots, thereby increasing the number of detections. Cloud or fog can obscure hot spots, thereby reducing the number of detections.

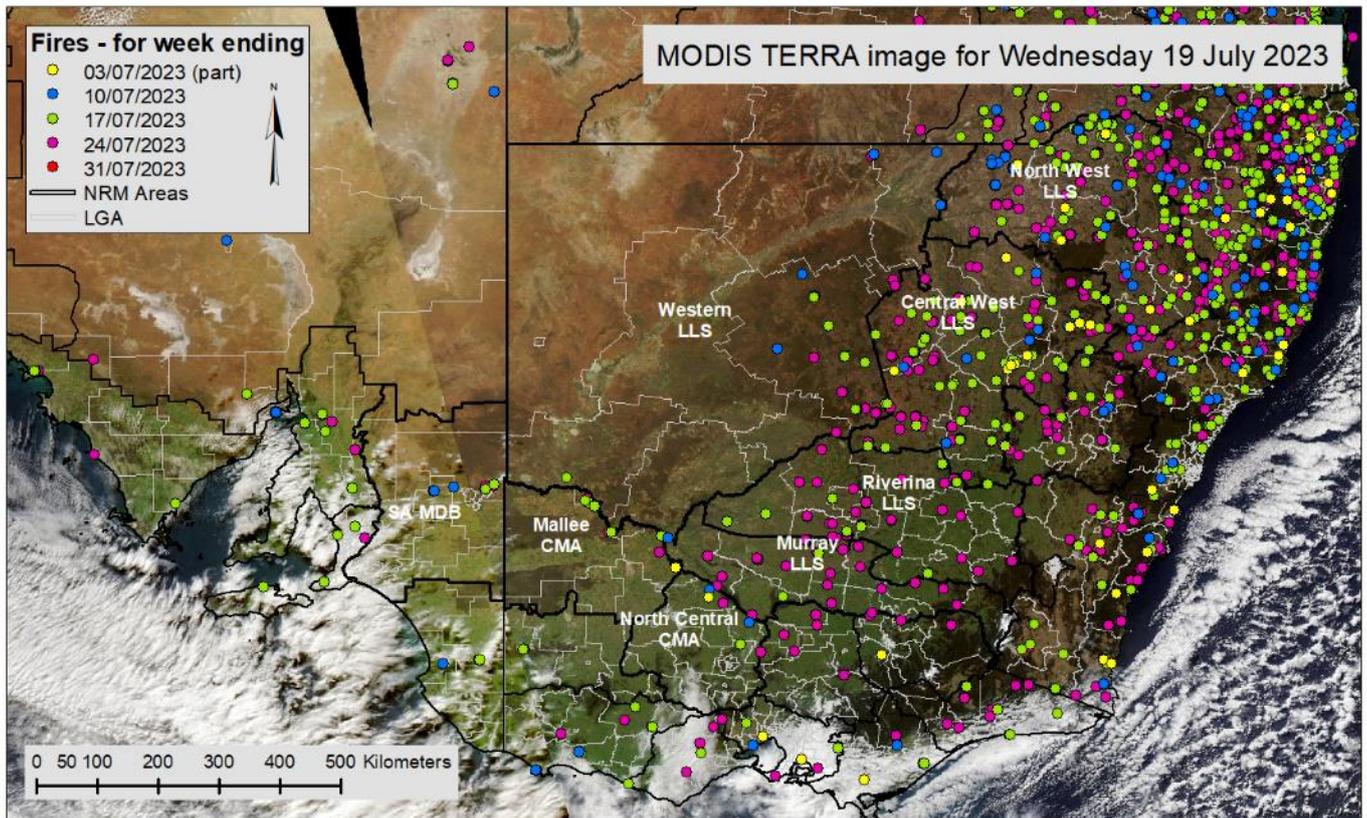


Figure 8 Pixels (375m) with active burning fires in July 2023 as determined from VIIRS satellite

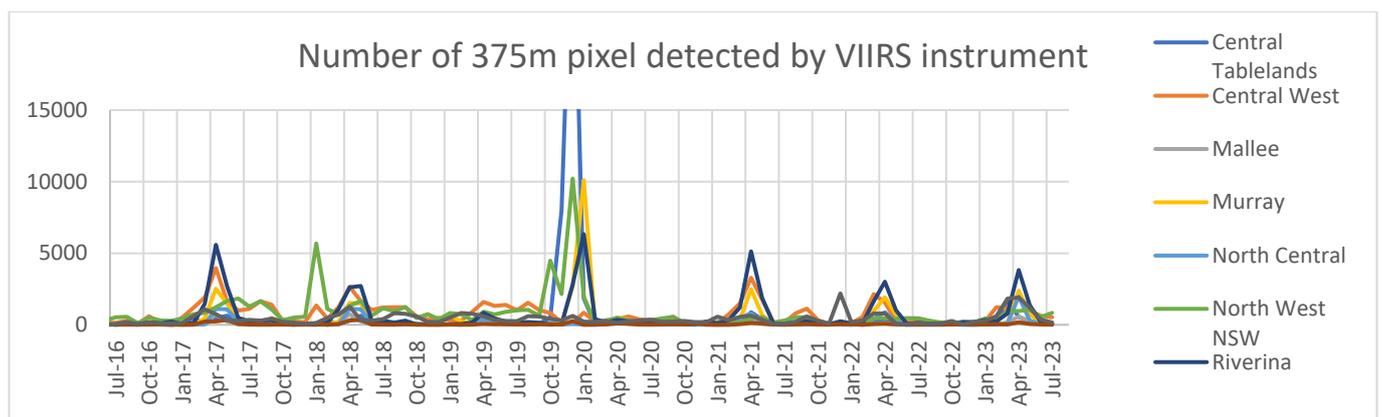


Figure 9 Monthly number of 375m pixels with active burning fires between July 2016 and July 2023

The DustWatch team

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Dust data is supplied by the Department of Planning and Environment Rural Air Quality Monitoring 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 or in-kind contributions from: Western and Murray Local Land Services (LLS) in NSW; the Mallee and North Central CMAs in Victoria and Murray Darling Basin NRM in South Australian, CSIRO and the Australian National University. We particularly thank our many DustWatch volunteers who provide observations and help maintain the instruments.