

Community-based wind erosion monitoring across Australia

Dust activity	Stable dust hours; below average for July
Wind strength	Decrease from June, average for July
Groundcover	Slight increases or stable in all regions
Rainfall	Average to above average for most of the state

Dust activity

Dust activity at long-term DustWatch sites remained stable during July 2024, averaging 0.4 hours of dust for the second consecutive month. This is below average for July, and is also the lowest average number of dust hours recorded for this time of the year since July 2017. Deniliquin recorded 6 hours of dust activity during July – the highest number of dust hours recorded across the network. There was generally average to above average rainfall across much of the state (Figure 7a), promoting continued groundcover improvements or soil stabilisation across all regions (Table 1). Aided by below-average wind speeds for July (Figure 1), these factors likely contributed to the low dust activity during July 2024.

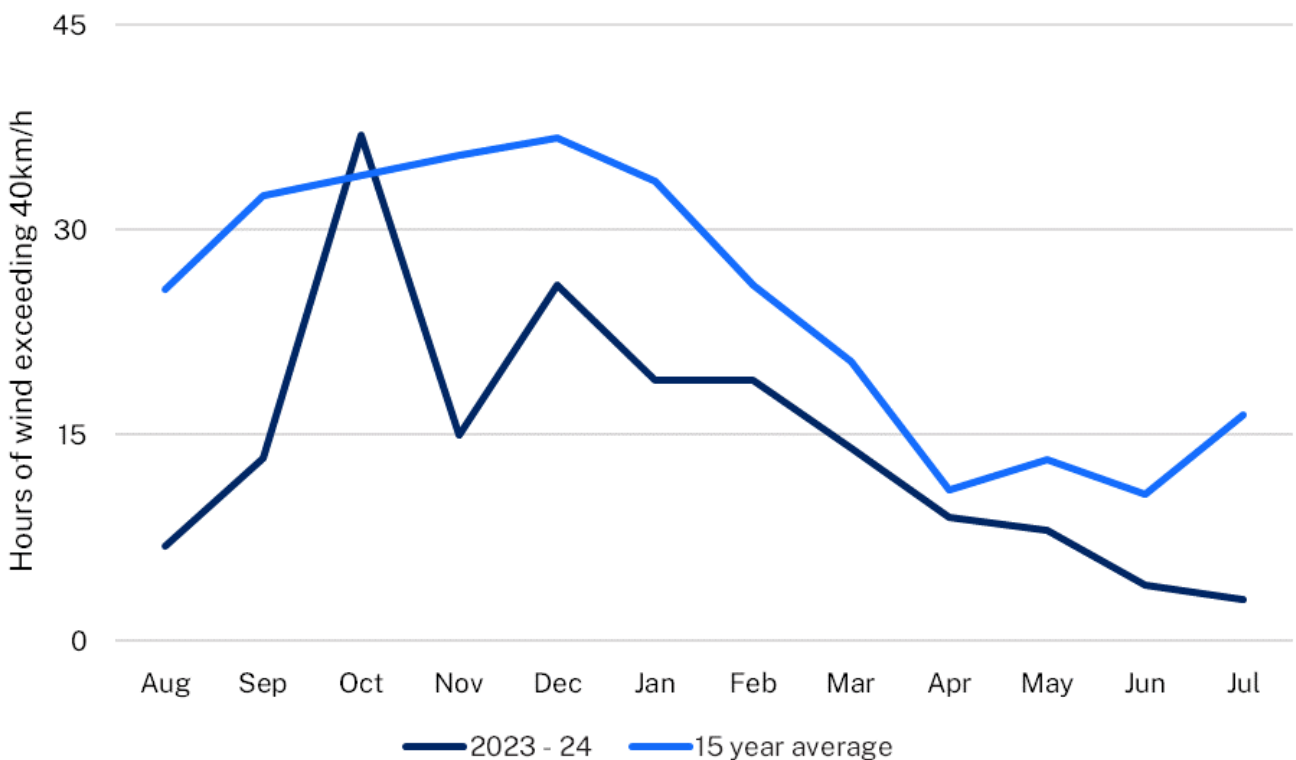


Figure 1 Hours of wind exceeding 40km/h - average across all sites

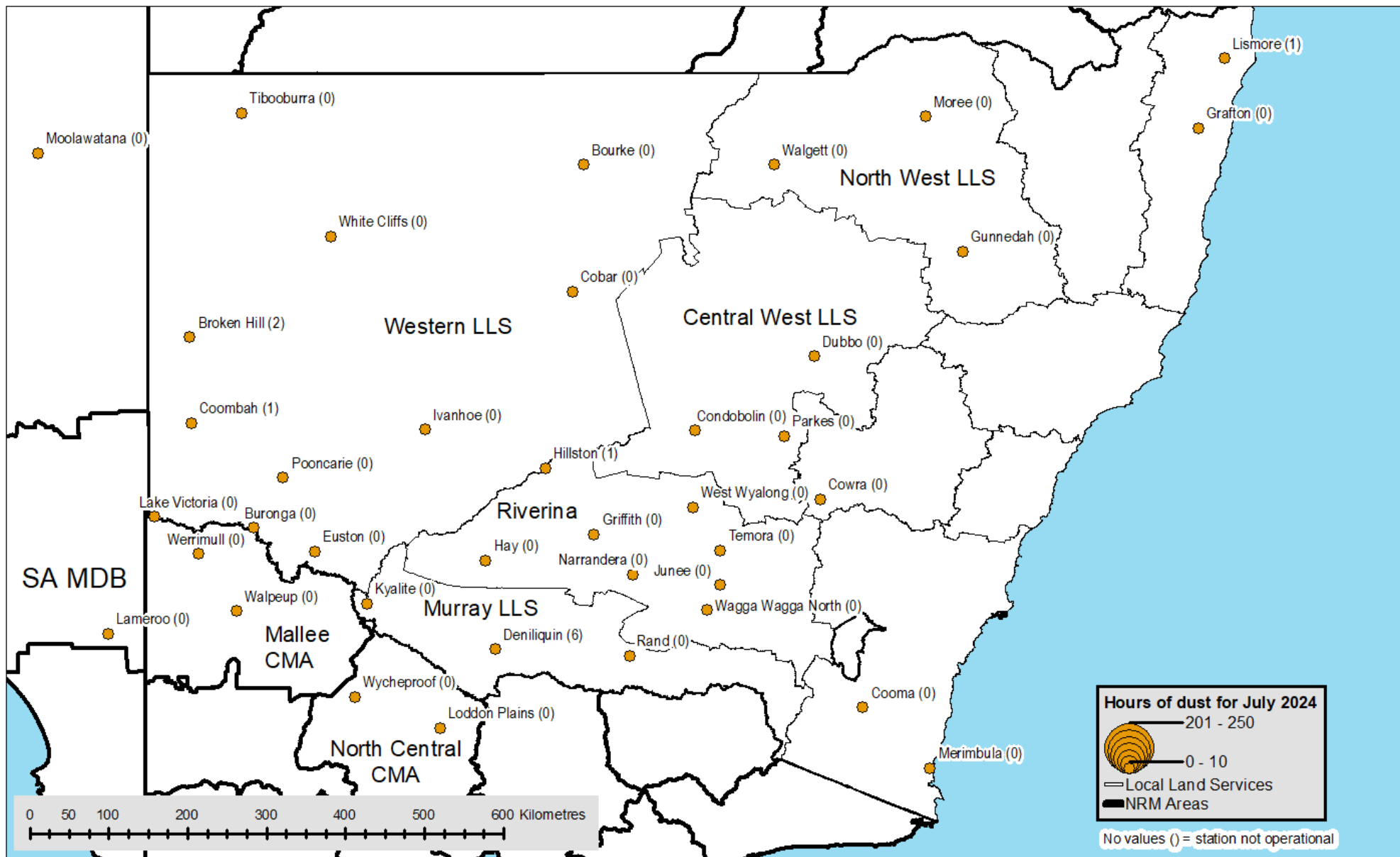


Figure 2 Hours of dust activity (number in brackets) at each DustWatch site in July 2024

Groundcover

The area with greater than 50% groundcover (green and yellow colours in Figure 3) has continued to improve through the Channel Country, Darling River Corridor and north of Ivanhoe in the Western Local Land Services region. Improvement is also evident across the wheat/sheep belt, particularly in the North West Local Land Services and the South Australian Murray–Darling Basin districts. Areas of low groundcover are shown in Figure 3 in orange and red.

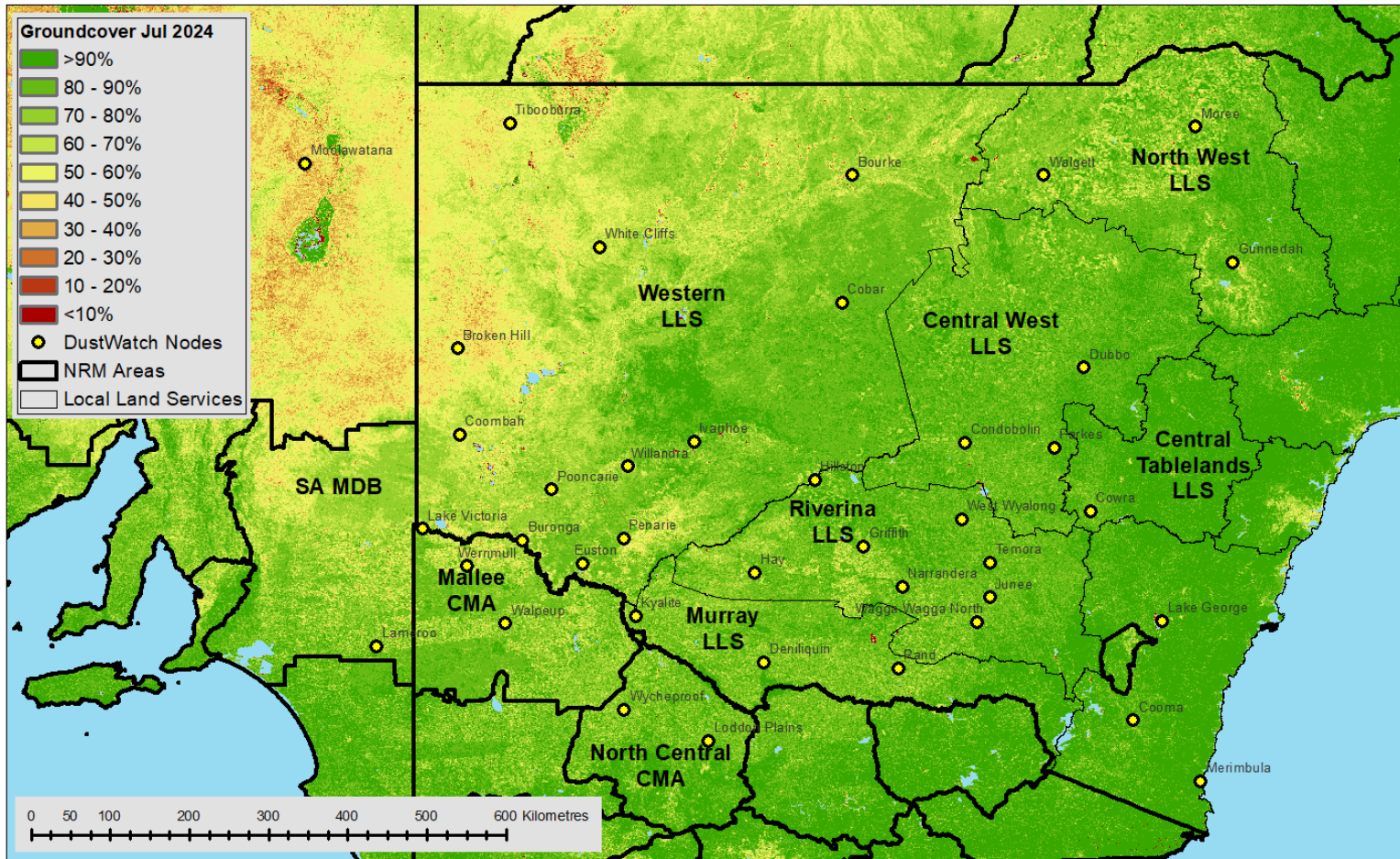


Figure 3 Groundcover for July 2024 as determined from MODIS by CSIRO

Table 1 Percentage of each NRM with cover >50% for August 2023 to July 2024

Date	Central West	Mallee	Murray	North Central	North West	Riverina	SA MDB	Western	Central Tablelands
Aug 2023	99	100	100	100	97	100	97	87	100
Sep 2023	99	100	100	100	96	100	95	78	100
Oct 2023	98	99	100	100	95	100	92	71	100
Nov 2023	98	99	100	100	96	100	92	71	100
Dec 2023	96	95	100	100	94	99	81	64	100
Jan 2024	97	90	99	100	93	99	81	66	100
Feb 2024	96	92	99	100	93	98	81	73	100
Mar 2024	95	94	99	100	93	97	87	77	100
Apr 2024	96	94	98	100	95	98	89	78	100
May 2024	99	97	99	100	97	100	93	88	100
Jun 2024	100	98	100	100	98	100	95	91	100
Jul 2024	100	98	100	100	99	100	96	93	100

Groundcover change

Significant groundcover improvements (green colours in Figure 4) are visible across the Channel Country in South Australia, Queensland and New South Wales. Groundcover has improved along the Darling River Corridor, particularly around Bourke, as well as areas between Ivanhoe and Tibooburra in the Western Local Land Services region. Broad areas of improvement are also evident throughout the wheat/sheep belt, including northern Victoria and South Australia. From the coast to southwestern Queensland, there was average to above-average rainfall over the 3 months leading up to the end of July 2024. This rainfall has helped keep the pastoral and cropping areas green throughout the state (Figure 7b).

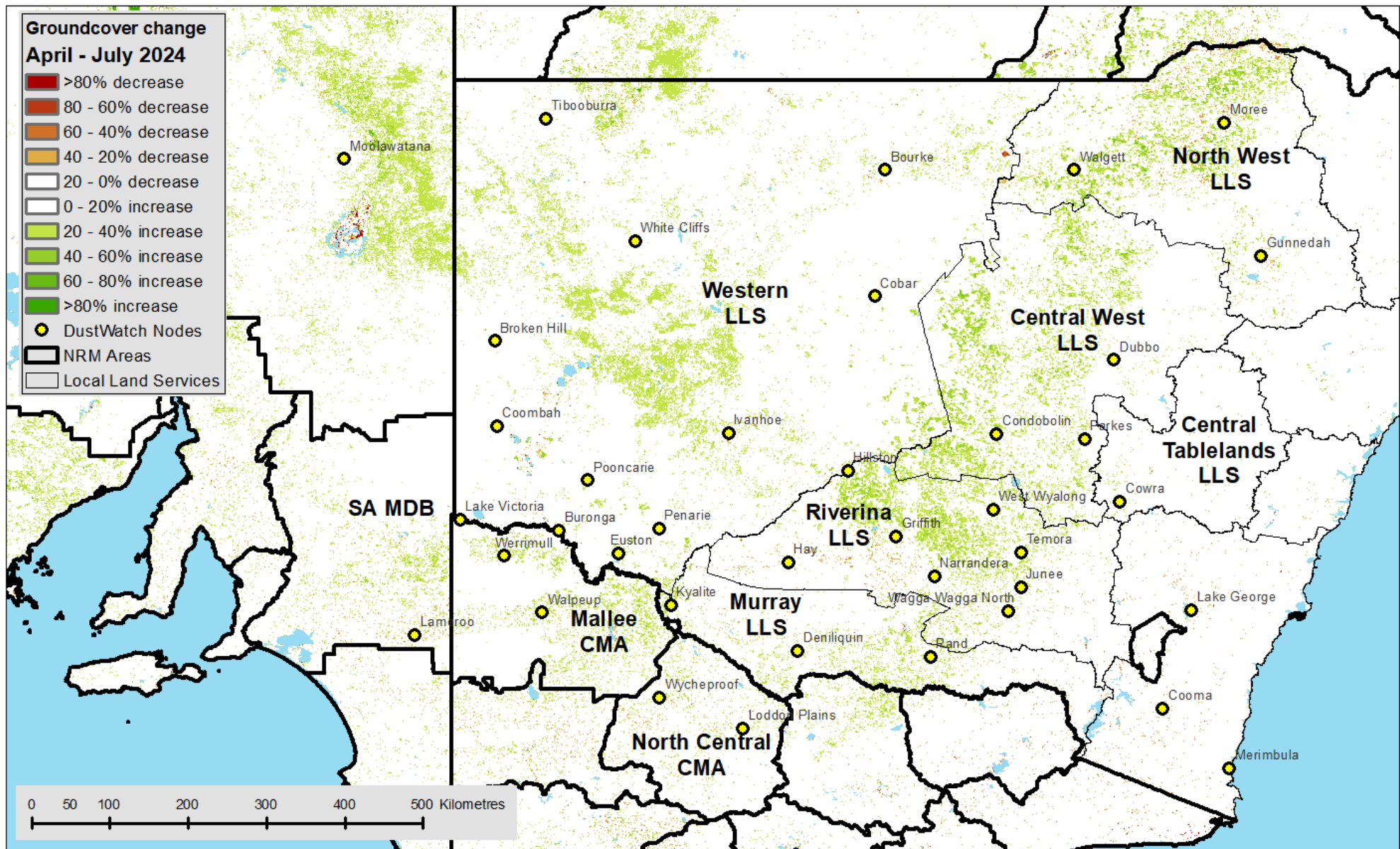


Figure 4 Groundcover difference between April 2024 and July 2024

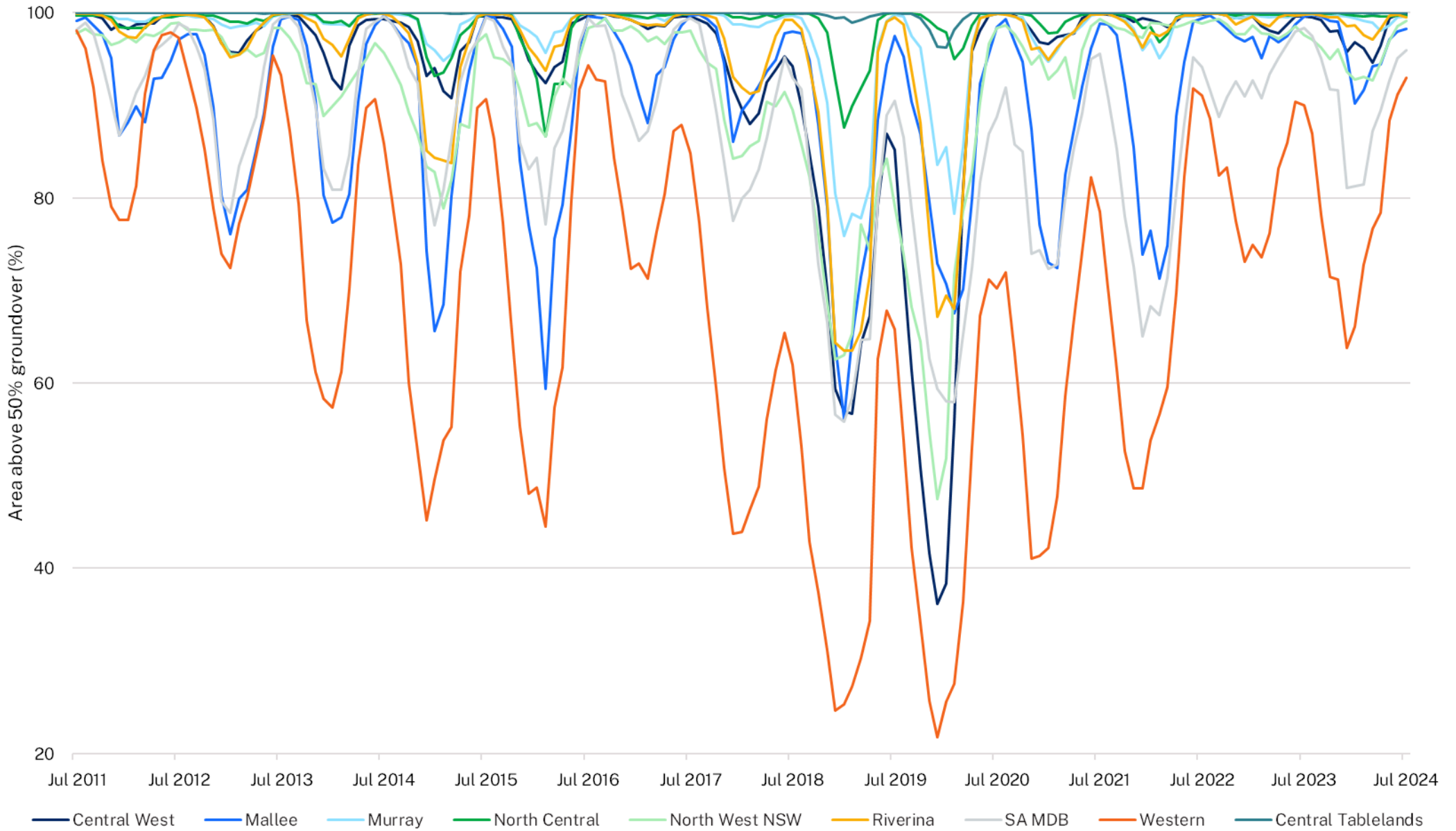


Figure 5 Area (%) of NRM with more than 50% cover since July 2011

Rainfall

Rainfall totals in July 2024 ranged from 5 to 200 mm across the state (Figure 6). Rainfall was more evenly spread across the state compared to previous months. Most areas received average to above-average rainfall, while very high rainfall was limited to parts of the Western Local Land Services region. Patchy areas of below-average rainfall occurred in southern areas of the state during July 2024 (Figure 7a).

During the 3 months leading up to the end of July 2024, most of the state experienced above-average rainfall. The Western Local Land Services region had particularly high rainfall, which matched well with areas of groundcover improvement in the Riverina, Western Local Land Services regions (Figure 7b), and nearby Channel Country in Figure 4.

Areas of average rainfall were recorded in the north east and south, with below average rainfall observed in the south east in the 3 months to the end of July 2024 (Figure 7b).

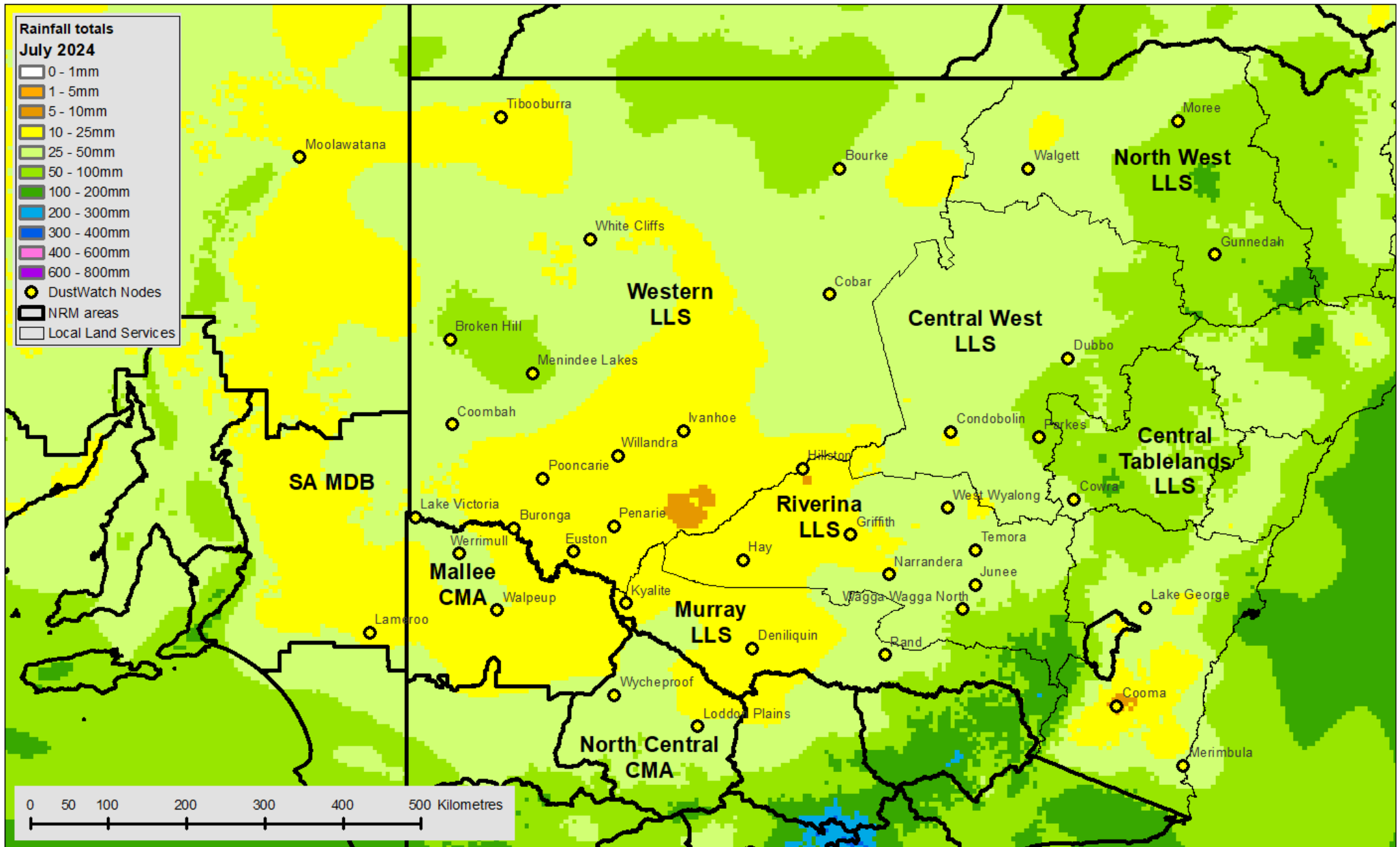


Figure 6 Rainfall totals for July 2024 (source: Bureau of Meteorology)

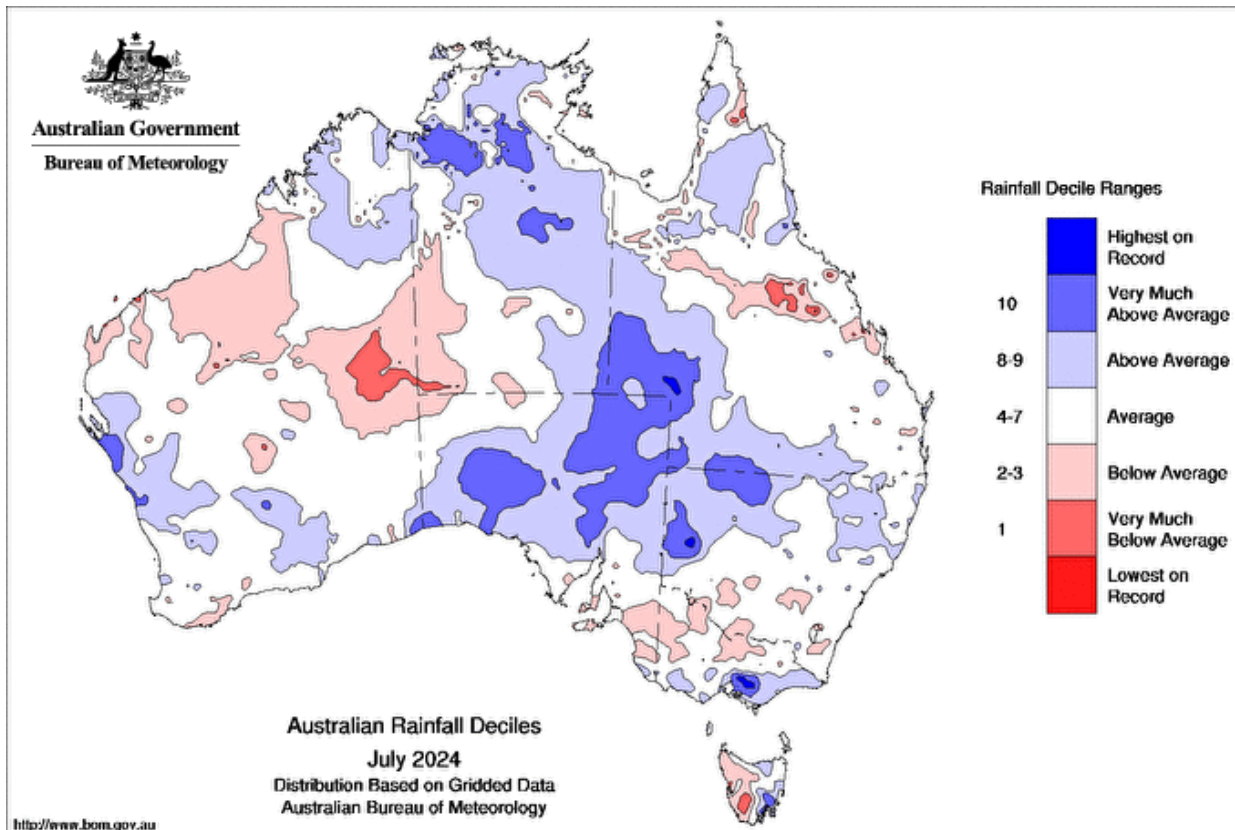


Figure 7(a) Rainfall deciles for July 2024

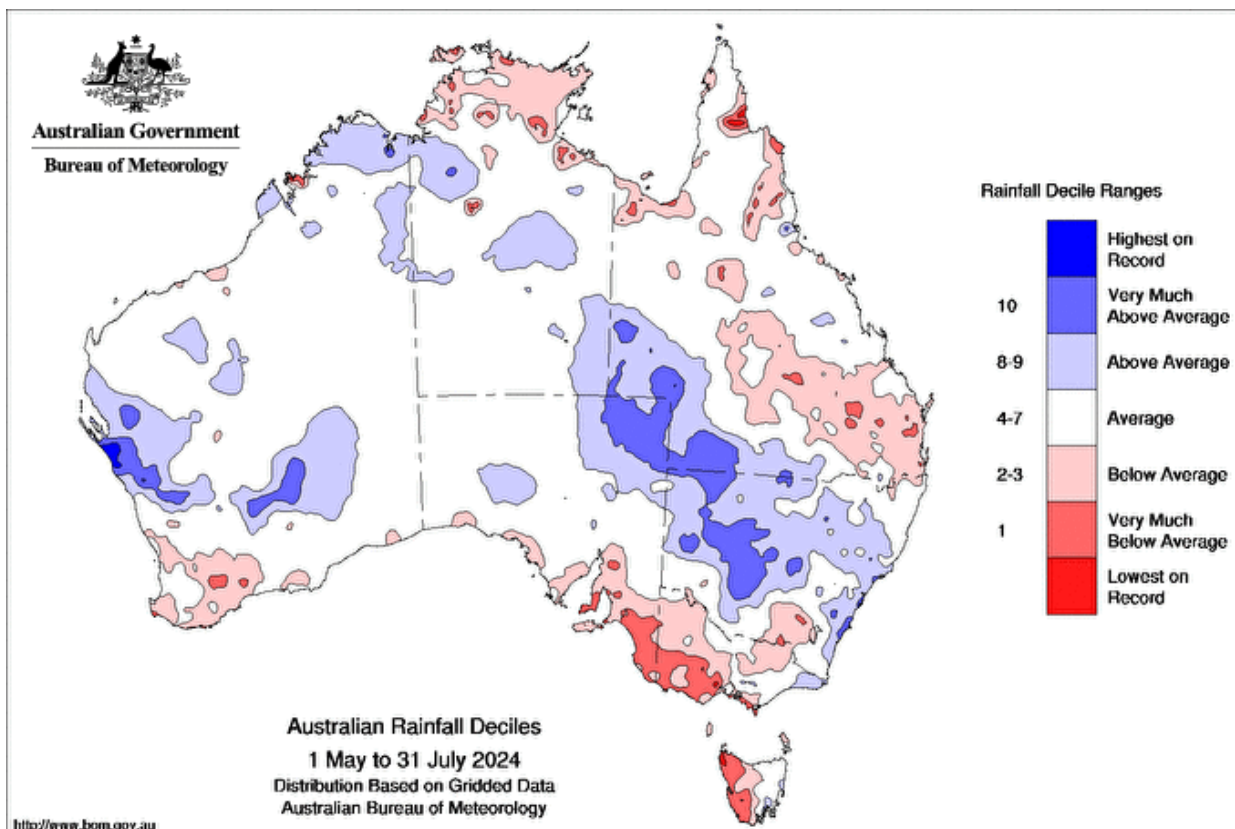


Figure 7(b) Rainfall deciles for 1 May 2024 to 31 July 2024

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 1,012 hot spots (375 m pixel with temperature anomalies) in July 2024 (Figures 8 and 9), a 25% reduction from the 1,346 hot spots detected in June 2024.

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. Clouds or fog can obscure hot spots, thereby reducing the number of detections.

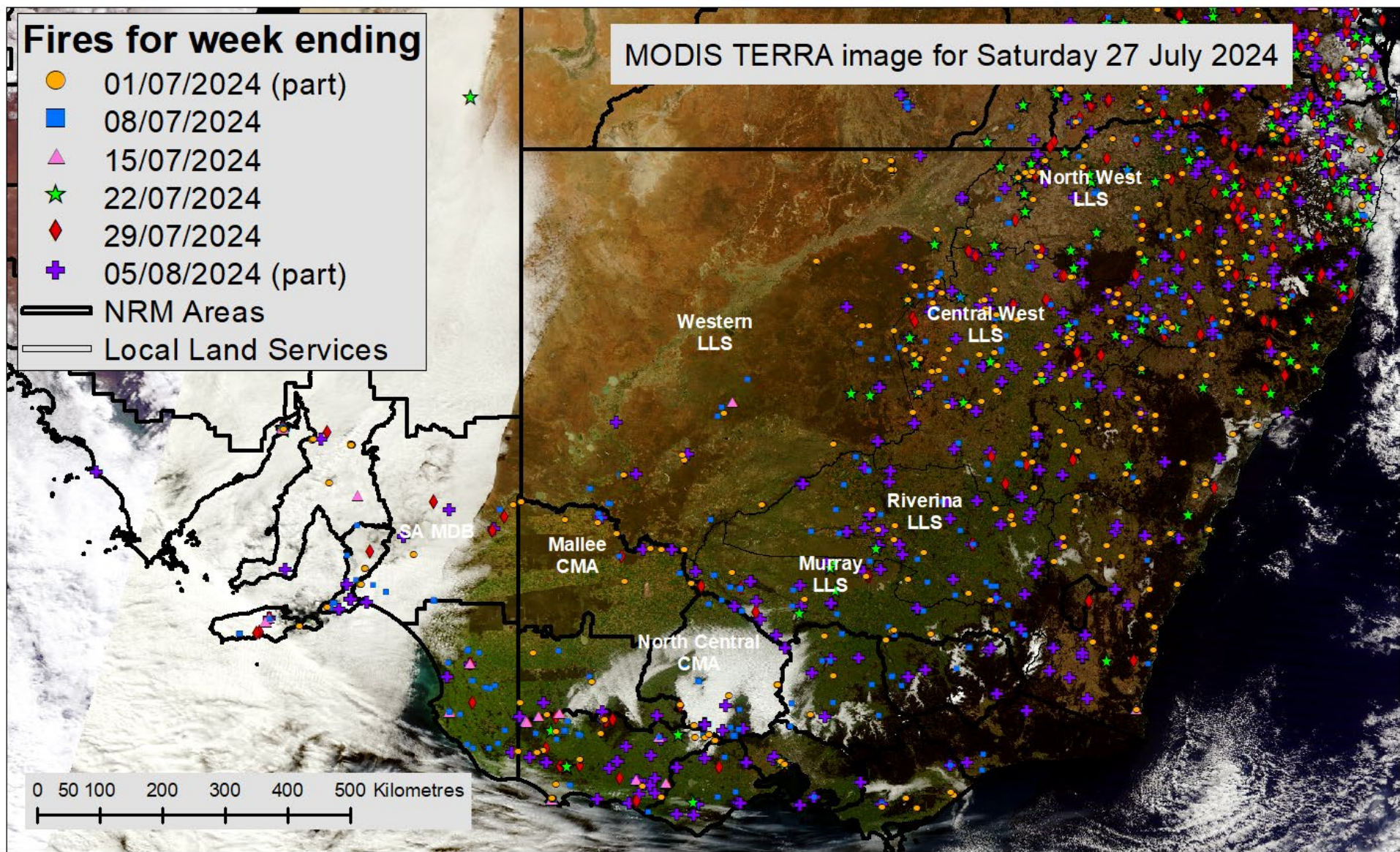


Figure 8 Pixels (375 m) with active burning fires in July 2024 as determined from VIIRS satellite

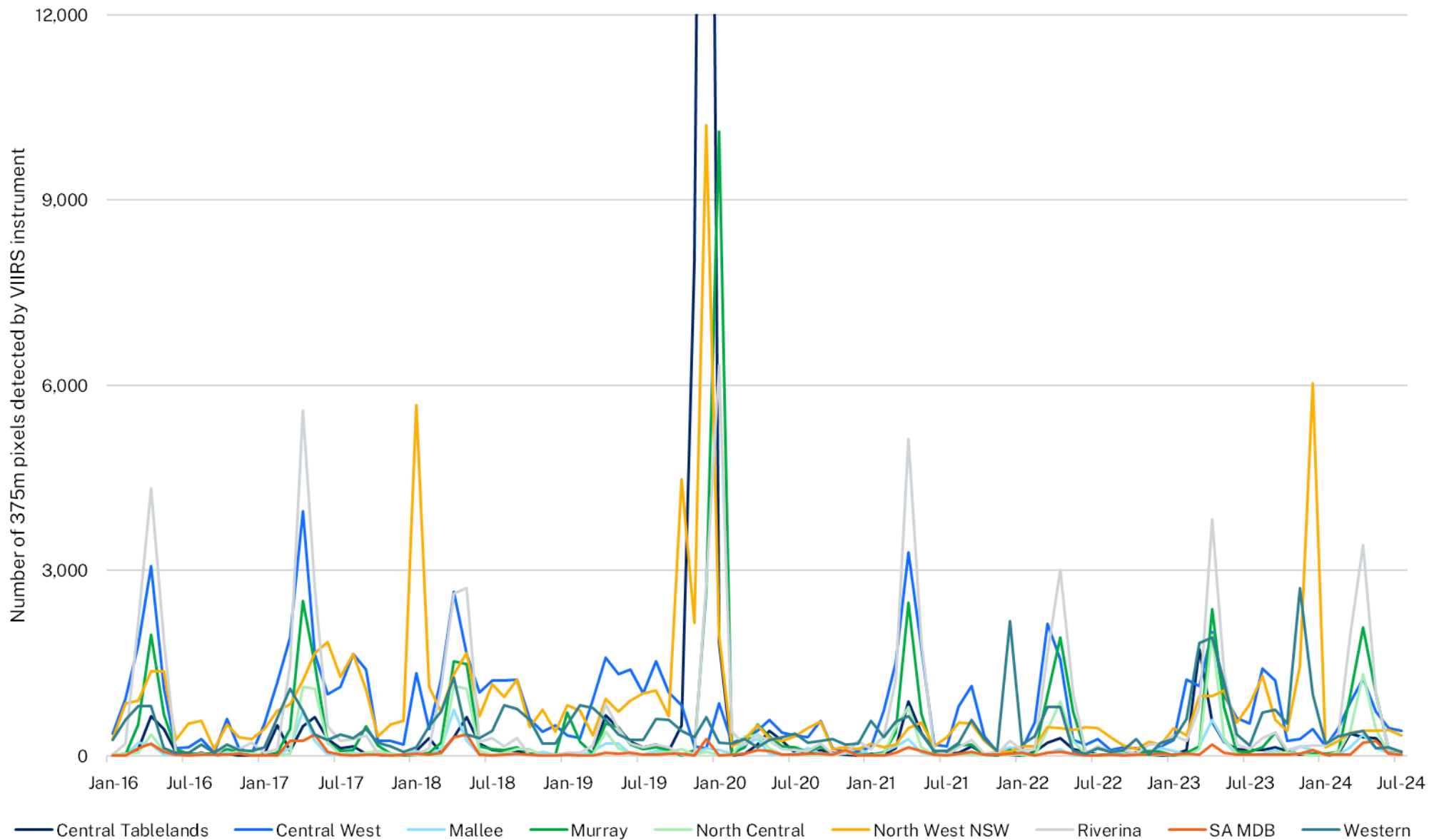


Figure 9 Number of 375 m pixels with active burning fires between January 2016 and July 2024

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Dust data is supplied by the Department of Climate Change, Energy, the Environment and Water's 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 Catchment Management Authorities in Victoria and Murray–Darling Basin NRM in South Australia, CSIRO and the Australian National University. We particularly thank our many DustWatch volunteers who provide observations and help maintain the instruments.

ISSN 2206-3161 EH 2024/0007 January 2025