# Total vegetation cover soil protection Region:LGA South\_Burnett\_(R) QLD

# Date: May 2025

This report describes vegetation protecting the soil surface from erosion during a chosen month compared to previous years. This report has been generated using MODIS fractional vegetation cover information available in Rangelands and Pasture Productivity (RAPP) map tool https://map.geo-rapp.org/#australia. The report is based on 500 metre pixel data on monthly time steps. Land use forest cover:

Results can be shown for the whole region (polygon), and separated by land use and forest cover classes which are likely to show different cover patterns and targets. Land use is divided into four broad classes: Conservation and natural environments, Agriculture, production native forests and plantation forests (no report), and other (no report). Agriculture is divided into grazing, crops and horticulture which are sub-divided into non-irrigated and irrigated. If forest is present land use is further divided into: non-forest, woodland forest and non-woodland forest. The area of each land use and forest class are shown as a map and chart. The report content is repeated for each land use and forest covers at least 1% of the area of the chosen region. Total vegetation Cover:

The total vegetation cover indicates where soil is likely to be protected from wind and or water hillslope erosion. Total vegetation cover for this month is shown on a map and chart classified into 4 classes.

• 71-100% High cover - protected from wind and usually water erosion (high rainfall, steep slopes, and erodible soils may need greater than 80, 90, 95 and up to 100% cover)

- 51-70% Moderate cover protected from wind erosion
- 31-50% Low cover not protected
- 0-30% Very Low cover not protected

Erosion protection: Wind erosion 50% total vegetation cover

The vegetation cover threshold required to prevent soil erosion is usually 50% to reduce wind erosion, 70% or 80% to reduce water (hillslope) erosion depending on the steepness and rainfall. Areas protected from erosion for the month:

- Map: water erosion protection (>70% cover) percentage area and hectares.
- Map: wind erosion protection (>50% cover) percentage area and hectares. Comparison with previous years:
  - Map: anomaly comparing this month to the average cover from the same month in previous years.
  - Map: deciles rank of month against the same month in previous years.

Anomalies and deciles until September 2019 are calculated comparing to the same months 2001 to 2019. Extra monthly data will be used to calculate anomalies and deciles post September 2019 as they become available. Time series monthly from January 2001 to current:

#### **Erosion protection**

- Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month (orange lines). Horizontal lines are 10th (cover target) and 50th percentiles.
- Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month (blue line). Horizontal lines are 10th (cover target) and 50th percentiles.

#### Rainfall

• Millimetres rainfall each month (black line).

Each time series is also stacked by year. The black line shows the current year of data. Water erosion protection for higher rainfall and steeper slopes:

Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:

- the percentage area with pixels greater than 80% total cover.
- the percentage area with pixels greater than 90% total cover.
- the percentage area with pixels greater than 95% total cover.

## Acknowledgment of data:

- 1. http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification
- 2. http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018
- 3. https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover
- 4. MODIS Fractional cover algorithm:

https://doi.org/10.4225/08/5848a3f19a7b3



# **Vegetation Cover May 2025**

#### Land use and forest cover

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



12%-100%

52%70%

32%50%

0-30%

#### **Total Vegetation Cover [%]**



#### % Area protected from water erosion (>70%)





#### Proportion of vegetation cover class in area



#### % Area protected from wind erosion (>50%)



#### Proportion of each land class in area

Total Vegetation Cover Anomaly [%]





Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. **Total Vegetation Cover Decile [%]** 













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#### **Conservation and natural environments**

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) Land use and forest cover



**Total Vegetation Cover [%]** 









Proportion of each land class in area



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



**Total Vegetation Cover Anomaly [%]** 



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. **Total Vegetation Cover Decile [%]** 





Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.













#### **Conservation and natural environments Woodland forest**

Land use and forest cover



**Total Vegetation Cover [%]** 





% Area protected from water erosion (>70%)







% Area protected from wind erosion (>50%)



**Total Vegetation Cover Anomaly [%]** 



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Total Vegetation Cover Decile [%]





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Catchment Scale Land Use and Forests of Australia (2018)

Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Derived from

## **Conservation and natural environments Woodland forest timeseries**





Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

# Water erosion historical monthly area protected (Total Veg Cov>70%)





## **Conservation and natural environments Forest (non woodland)**

Land Use and Forests of Australia (2018) 1 Conservation and natural environments - Non-Catchment Scale Land woodland forest (2018) and Forests

12001000

52%70%

32%50%

0.30%

**Total Vegetation Cover [%]** 



% Area protected from water erosion (>70%)







% Area protected from wind erosion (>50%)



Land use and forest cover

Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

Catchment Scale

Derived from

Use of Australia

of Australia (2018)



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

**Total Vegetation Cover Decile [%]** 





# **Conservation and natural environments Forest (non woodland) timeseries**







Water erosion historical monthly area protected (Total Veg Cov>70%)





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## Agriculture

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

#### Land use and forest cover

Proportion of each land class in area



**Total Vegetation Cover [%]** 



% Area protected from water erosion (>70%)









Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



**Total Vegetation Cover Anomaly [%]** 



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

**Total Vegetation Cover Decile [%]** 





Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)





Wind erosion historical monthly area protected (Total Veg Cov >50%)

Water erosion historical monthly area protected (Total Veg Cov>70%)







#### Grazing

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



**Total Vegetation Cover [%]** 



% Area protected from water erosion (>70%)







Proportion of each land class in area



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

**Total Vegetation Cover Decile [%]** 





Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



Wind erosion historical monthly area protected (Total Veg Cov >50%)

Water erosion historical monthly area protected (Total Veg Cov>70%)







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## **Grazing non forest**

Land use and forest cover



**Total Vegetation Cover [%]** 



% Area protected from water erosion (>70%)



12% 10% · 52% 70° 320050 0.30%

Proportion of vegetation cover class in area 99.7%



% Area protected from wind erosion (>50%)



Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Total Vegetation Cover Anomaly [%]



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**Total Vegetation Cover Decile [%]** 





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Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%) Wind erosion historical monthly area protected (Total Veg Cov >50%) 100.00 100.0 99.95 99.90 ---- above\_50 **—** 10th **--** 50th 99.85 **——** 2025 May 99.80 99.75 4er Jan May JUI

Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



Water erosion historical monthly area protected (Total Veg Cov>70%)

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Way







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## **Grazing Woodland forest**

12%100%

52% 70%

32%50

0.30%

Land use and forest cover



**Total Vegetation Cover [%]** 







Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





Total Vegetation Cover Anomaly [%]



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.



**Total Vegetation Cover Decile [%]** 





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Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



Water erosion historical monthly area protected (Total Veg Cov>70%)







## Grazing - Forest (non woodland)

120001

52% 70%

32%50%

0.30%

Land use and forest cover



Total Vegetation Cover [%]











% Area protected from wind erosion (>50%)





Total Vegetation Cover Anomaly [%]



**Total Vegetation Cover Decile [%]** 





Deciles show where the

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Catchment Scale Land Use and Forests of Australia (2018) Derived from

Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)





Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



# Grazing - Forest (non woodland) timeseries

Water erosion historical monthly area protected (Total Veg Cov>70%)



Historical monthly area protected (Total Veg Cov>80%)



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Australian Government

## Cropping

Land use and forest cover



Total Vegetation Cover [%]





% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





Total Vegetation Cover Anomaly [%]



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

**Total Vegetation Cover Decile [%]** 





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100-

90-

80

70-

60

50-

40

30

Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)





# **Cropping timeseries**



Water erosion historical monthly area protected (Total Veg Cov>70%)



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## Irrigation

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Anomaly show how many percetage points each

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using baseline

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the mean. That



**Total Vegetation Cover [%]** 





% Area protected from water erosion (>70%)



90.5% 80 60 Area (%) 0 20 6.2% 3.3% 0 1.0 0.5 -0.5 0.0 1.5 2.0 2.5 Land use class

#### Proportion of each land class in area

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



**Total Vegetation Cover Anomaly [%]** 



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

**Total Vegetation Cover Decile [%]** 







Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



Wind erosion historical monthly area protected (Total Veg Cov >50%)



Water erosion historical monthly area protected (Total Veg Cov>70%)





## **Production native forests and plantation forests**

Land use and forest cover



**Total Vegetation Cover [%]** 













% Area protected from wind erosion (>50%)





Total Vegetation Cover Anomaly [%]



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. **Total Vegetation Cover Decile [%]** 





Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



## Production native forests and plantation forests timeseries



Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



Wind erosion historical monthly area protected (Total Veg Cov >50%)

Water erosion historical monthly area protected (Total Veg Cov>70%)





**4** 

# South\_Burnett\_(R) (837,175 ha and no data 1,149 ha) Percentage area and hectares protected with TVC threshold 30,50,70,80,90 and 95%

Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	837,175	100.0% 837,150	99.9% 836,500	99.0% 829,075	95.9% 802,450	75.3% 630,350	31.2% 261,175
Conservation and natural environments	24,275	99.9% 24,250	99.7% 24,200	99.6% 24,175	97.6% 23,700	71.0% 17,225	34.7% 8,425
Conservation and natural environments Woodland forest	9,950	100.0% 9,950	100.0% 9,950	100.0% 9,950	99.5% 9,900	82.7% 8,225	42.2% 4,200
Conservation and natural environments Forest (non woodland)	12,925	100.0% 12,925	100.0% 12,925	99.8% 12,900	98.5% 12,725	64.0% 8,275	31.7% 4,100
Agriculture	692,375	100.0% 692,375	99.9% 691,975	99.1% 686,050	95.7% 662,875	74.7% 517,175	31.0% 214,600
Grazing	607,675	100.0% 607,675	100.0% 607,525	99.8% 606,375	98.5% 598,275	80.3% 487,900	33.7% 205,000
Grazing non forest	483,050	100.0% 483,050	100.0% 482,925	99.7% 481,800	98.2% 474,125	78.0% 376,775	33.5% 161,775
Grazing Woodland forest	98,450	100.0% 98,450	100.0% 98,450	100.0% 98,450	99.7% 98,150	90.5% 89,100	33.4% 32,875
Grazing - Forest (non woodland)	26,175	100.0% 26,175	99.9% 26,150	99.8% 26,125	99.3% 26,000	84.1% 22,025	39.5% 10,350
Cropping	62,825	100.0% 62,825	99.8% 62,725	94.7% 59,525	77.6% 48,750	36.3% 22,825	12.2% 7,675
Irrigation	20,425	100.0% 20,425	99.3% 20,275	91.8% 18,750	71.7% 14,650	27.9% 5,700	8.0% 1,625
Production native forests and plantation forests	85,525	100.0% 85,525	100.0% 85,525	99.8% 85,325	98.7% 84,375	86.0% 73,525	36.7% 31,425

