Total vegetation cover soil protection Region:LGA Wentworth_(A) NSW

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:

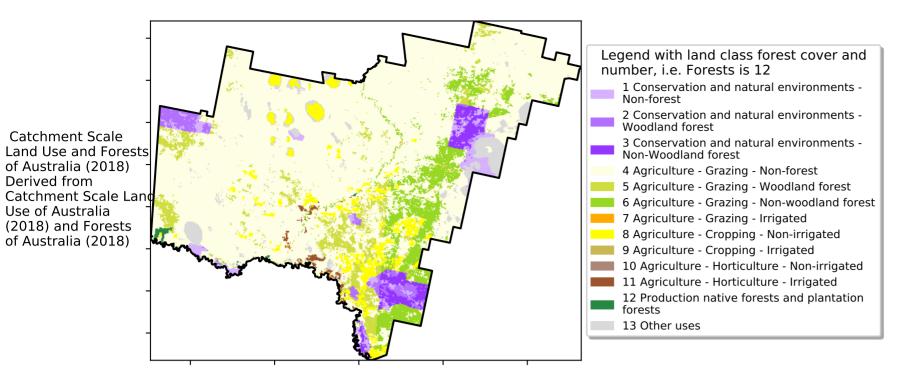
https://doi.org/10.4225/08/5848a3f19a7b3



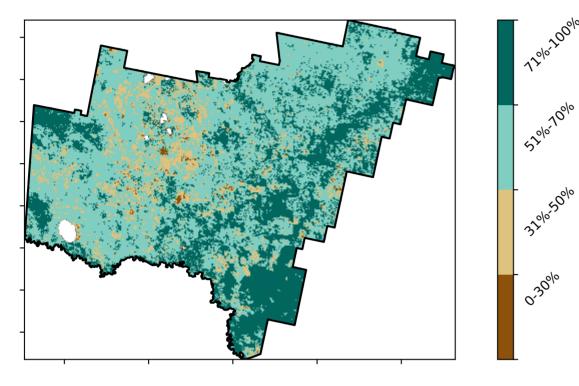
Vegetation Cover May 2025

Land use and forest cover

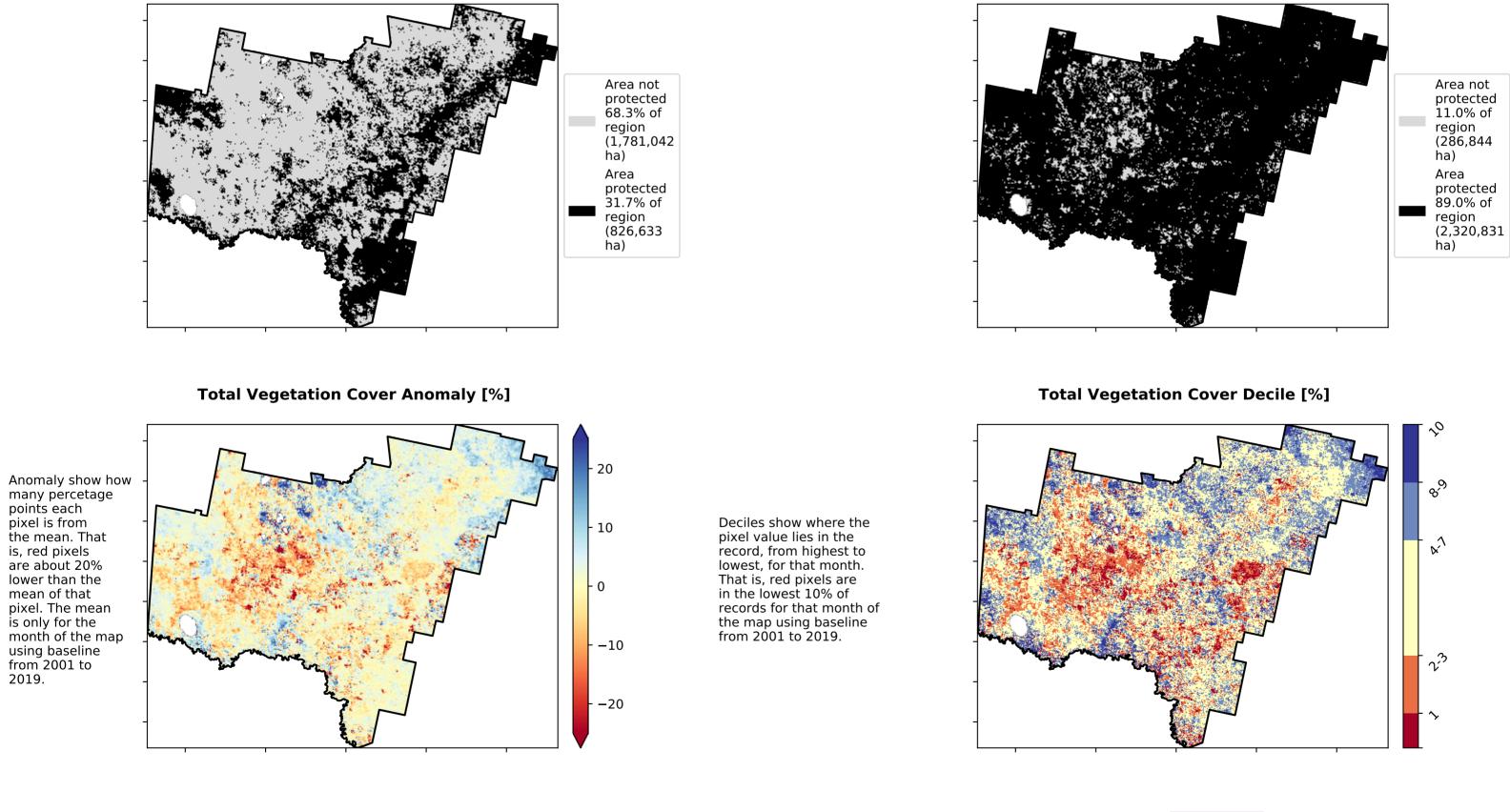


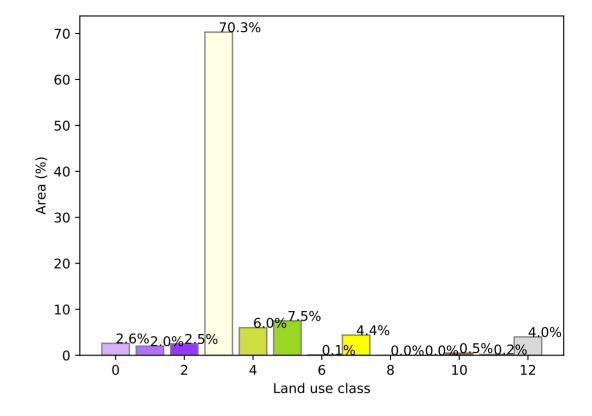


Total Vegetation Cover [%]

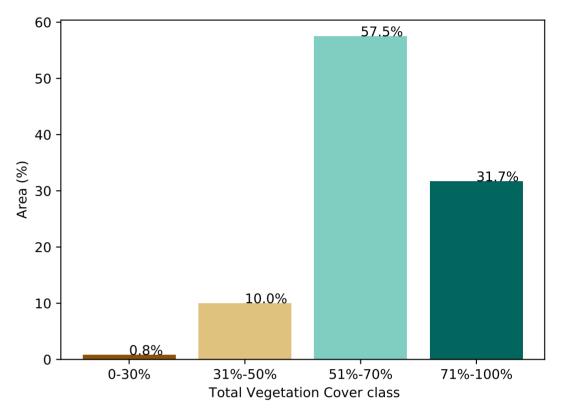


% Area protected from water erosion (>70%)

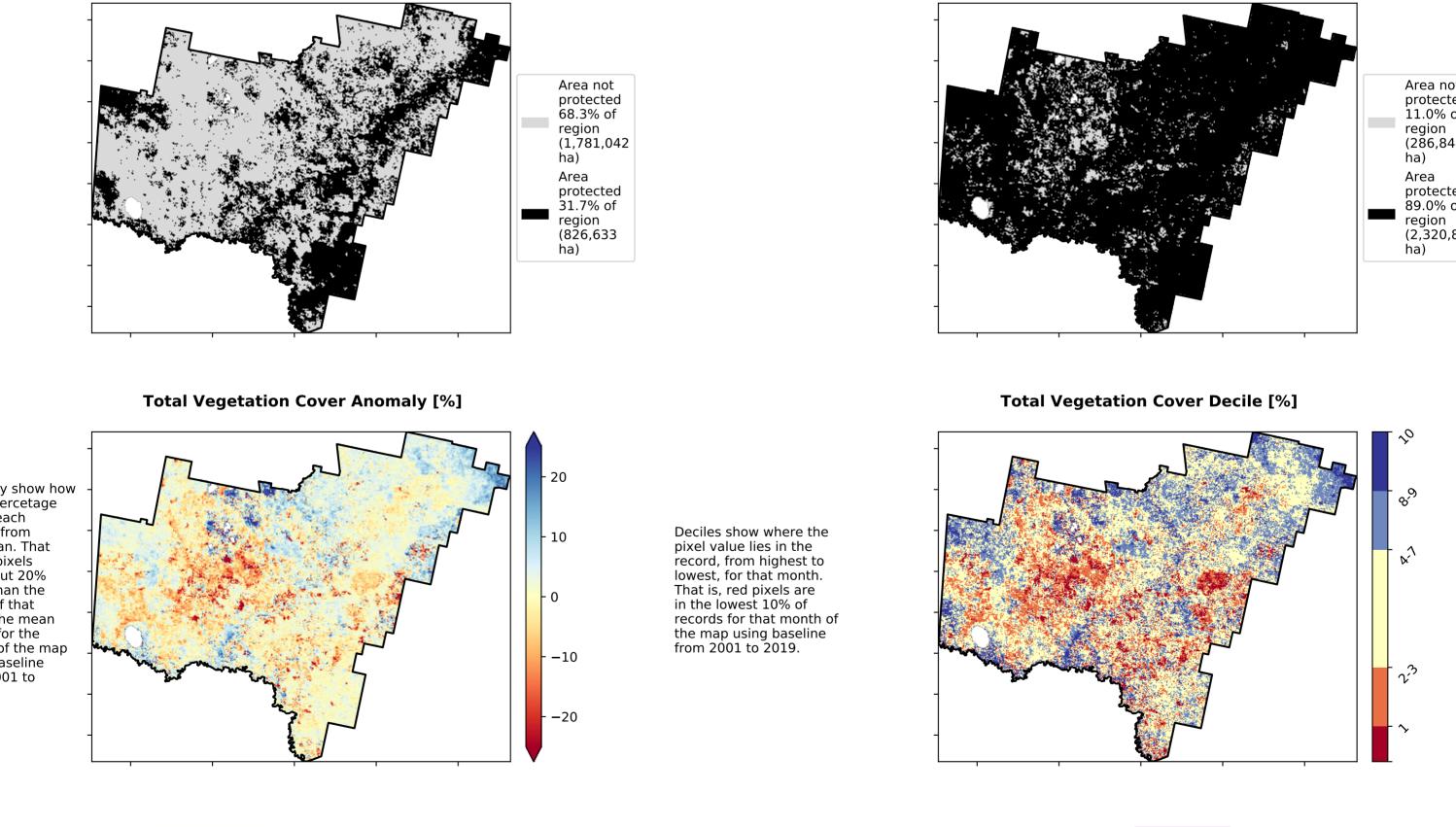




Proportion of vegetation cover class in area

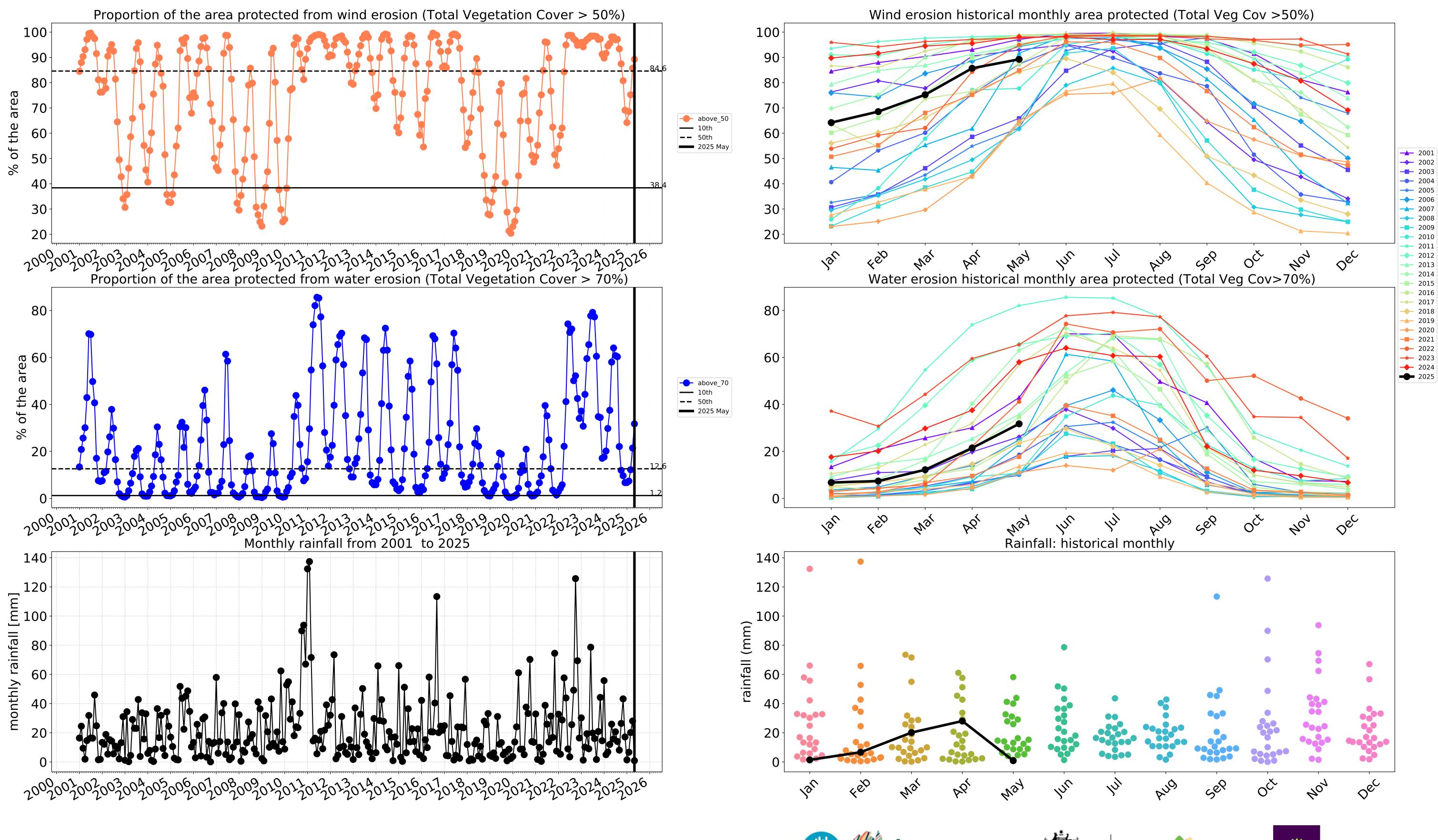


% Area protected from wind erosion (>50%)









Ecosystem Research Infrastructure Australian Government





Conservation and natural environments

12%200%

· 52% 70%

32°10'50°10

0.30%

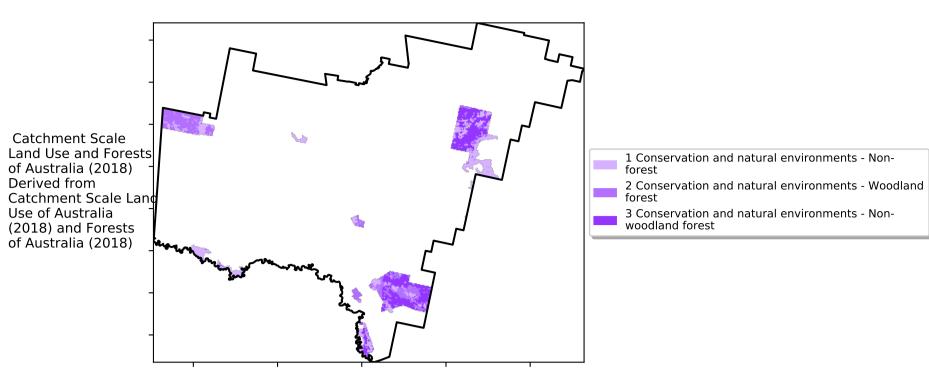
- 20

- 10

- 0

- -10

-20



Land use and forest cover

Proportion of each land class in area

28.5%

35.6%

36.0%

35

30

25

Area (%) 12

10

5 ·

0 -

-0.5

Proportion of vegetation cover class in area

1.0

Land use class

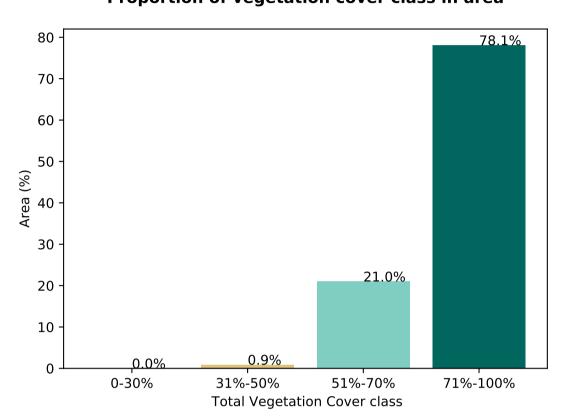
1.5

2.0

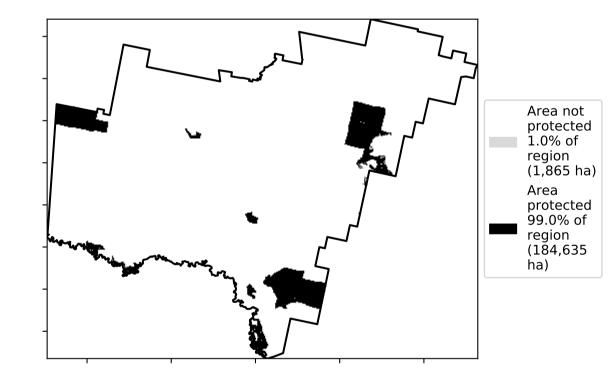
2.5

0.5

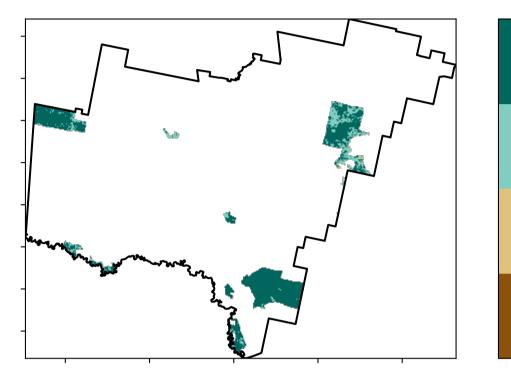
0.0



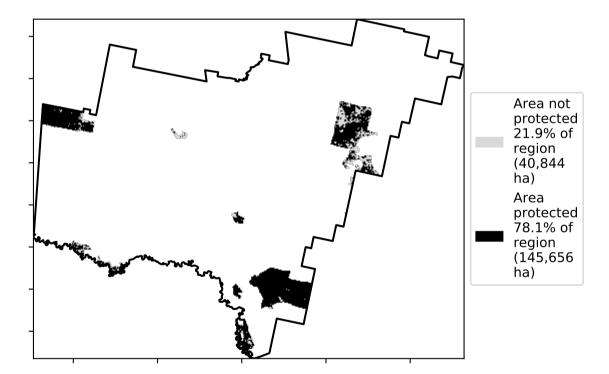
% Area protected from wind erosion (>50%)



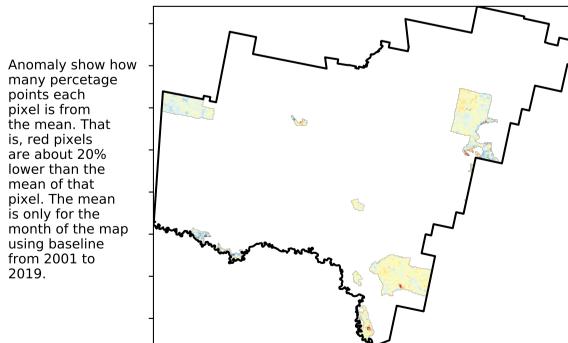
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

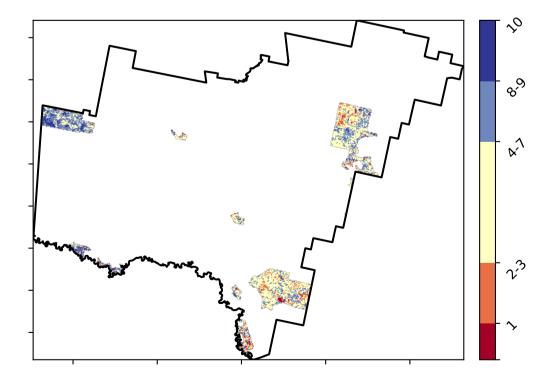


Total Vegetation Cover Anomaly [%]



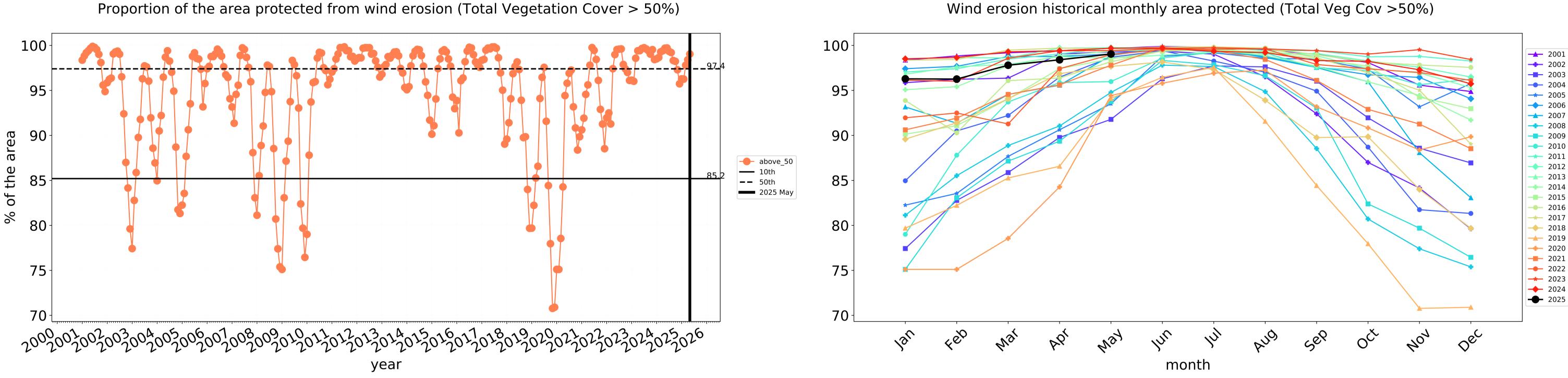
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]



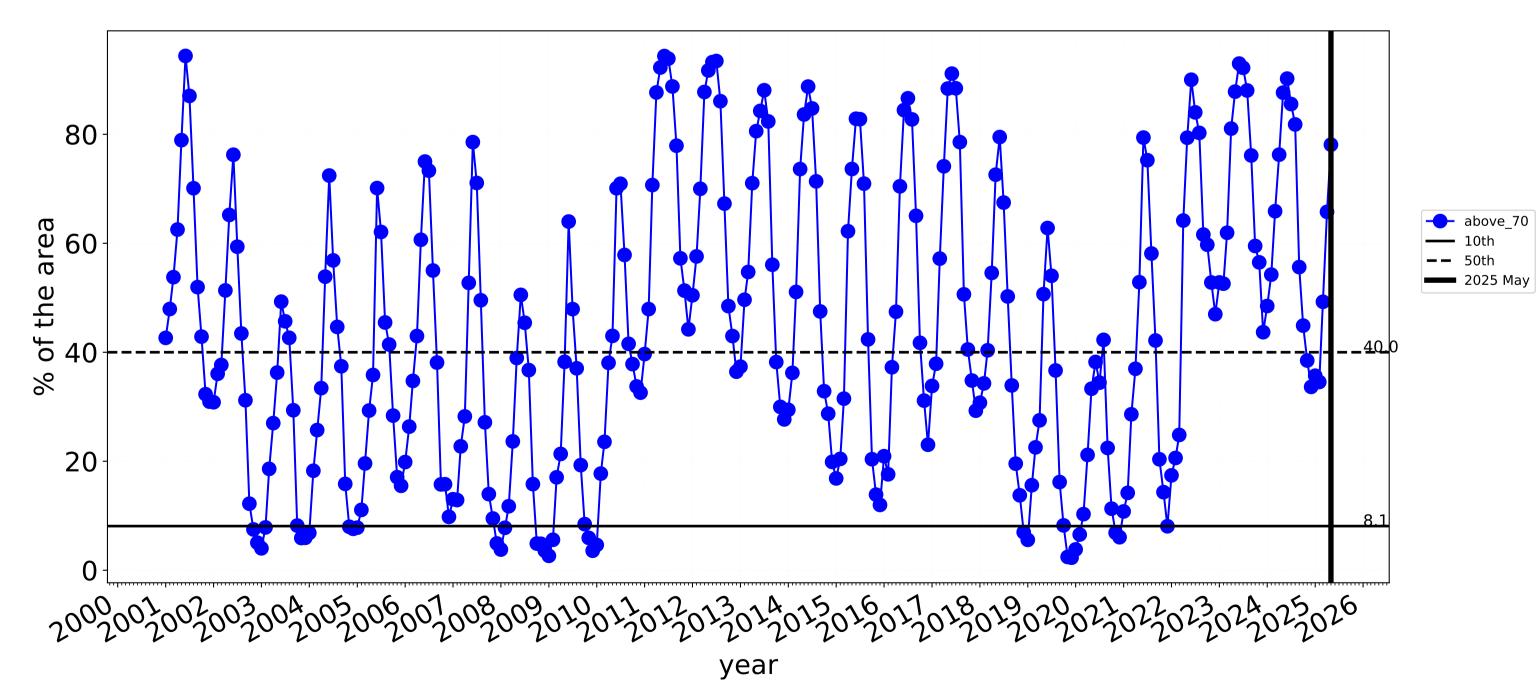


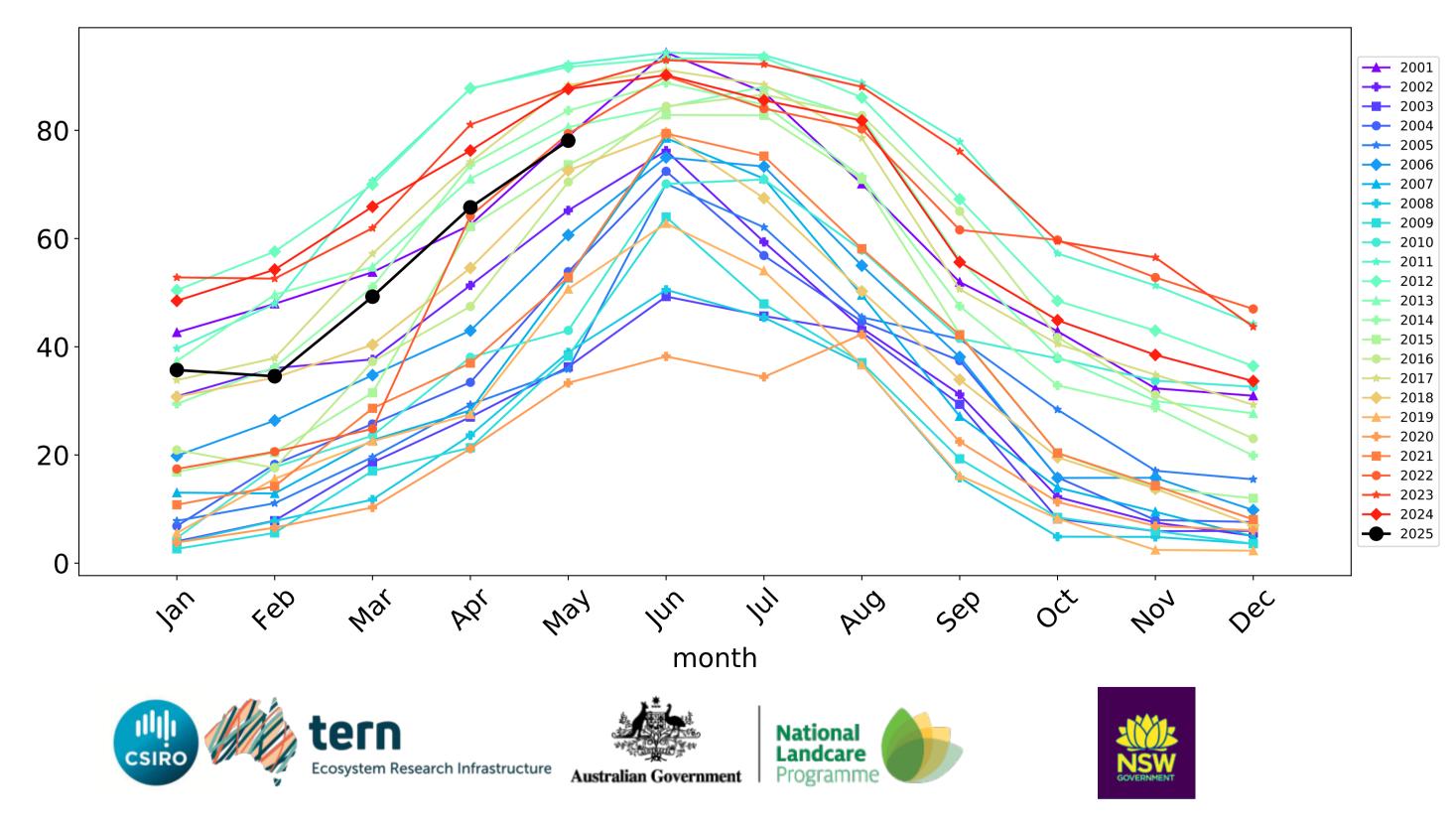
pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



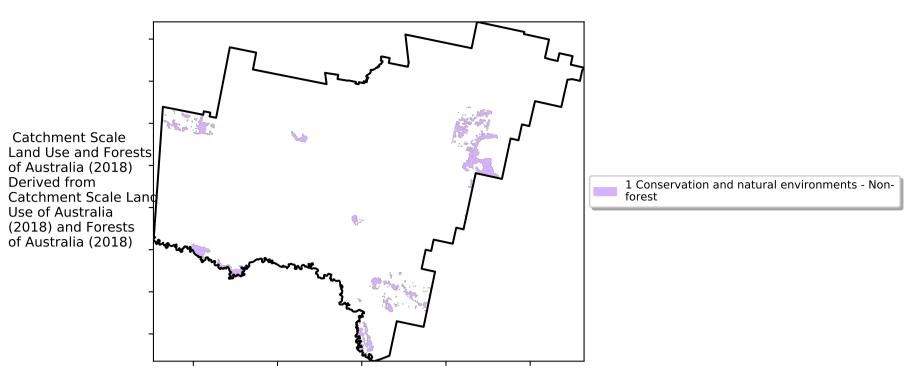
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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





Conservation and natural environments non forest



12%200%

· 52°10 TO°10

3291050010

0.30%

- 20

- 10

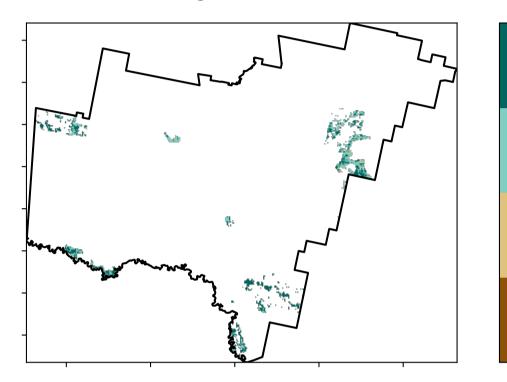
- 0

- -10

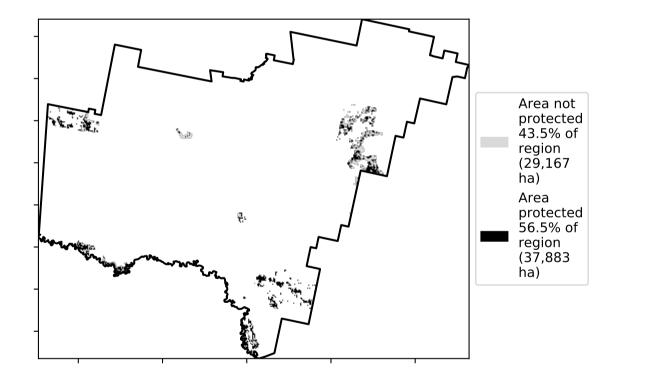
-20

Land use and forest cover

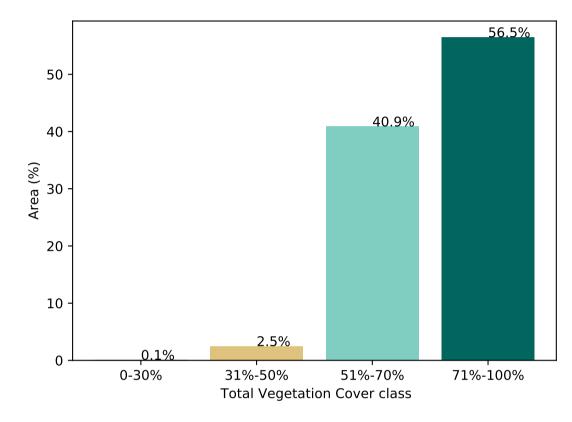
Total Vegetation Cover [%]



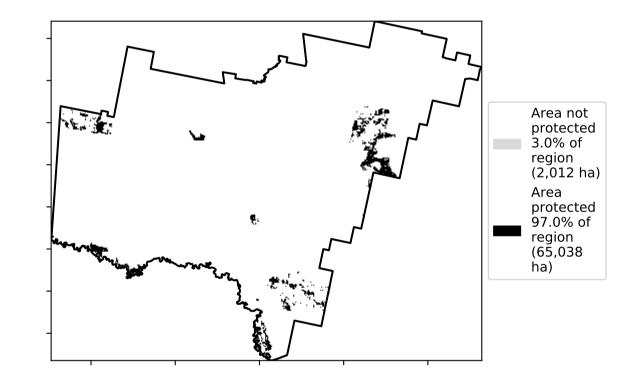
% Area protected from water erosion (>70%)



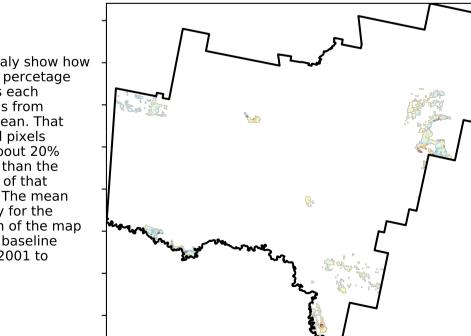
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

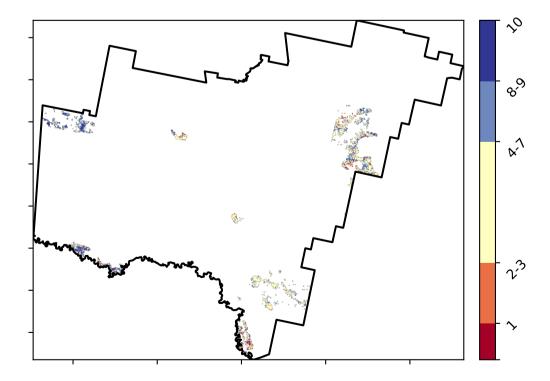


Total Vegetation Cover Anomaly [%]



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 [%]

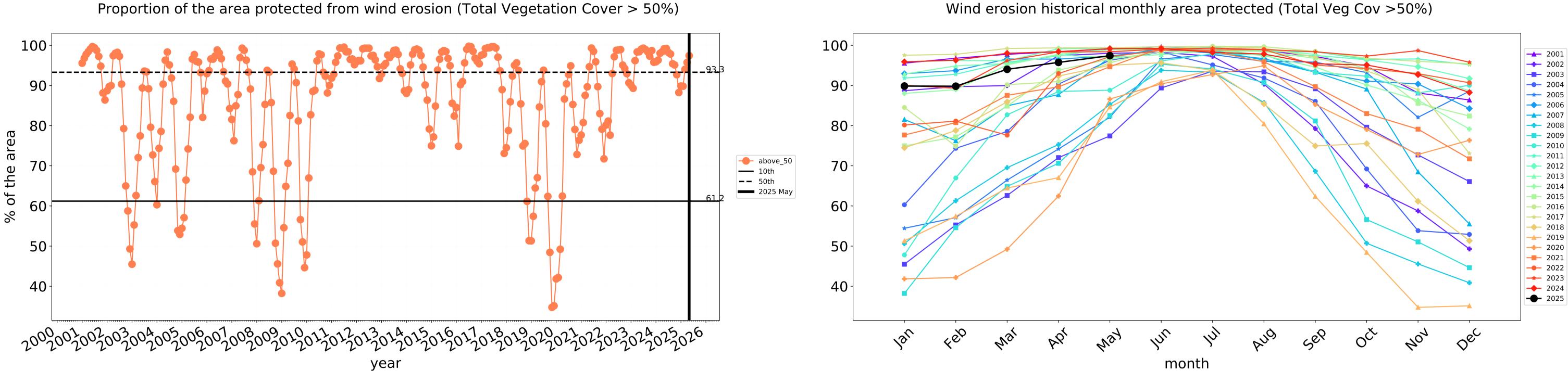




Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

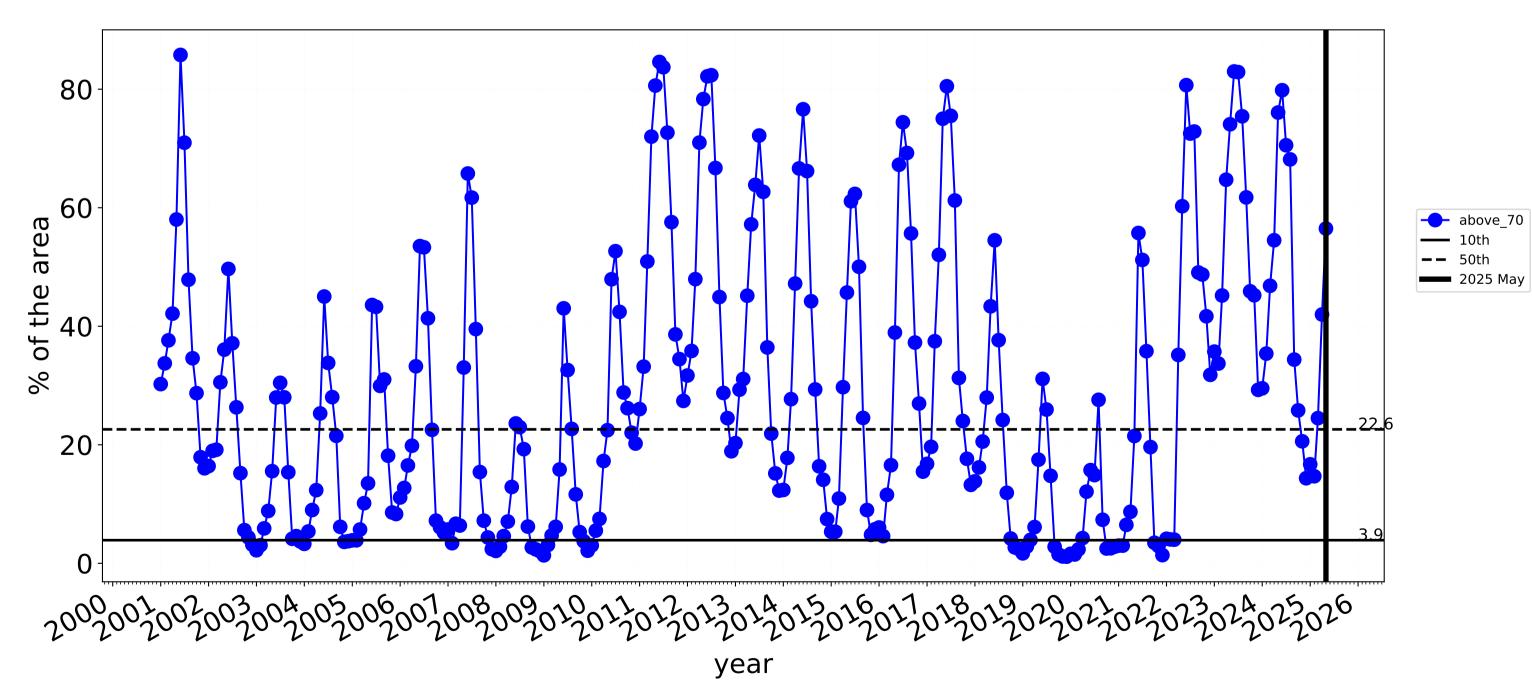


Conservation and natural environments non forest timeseries

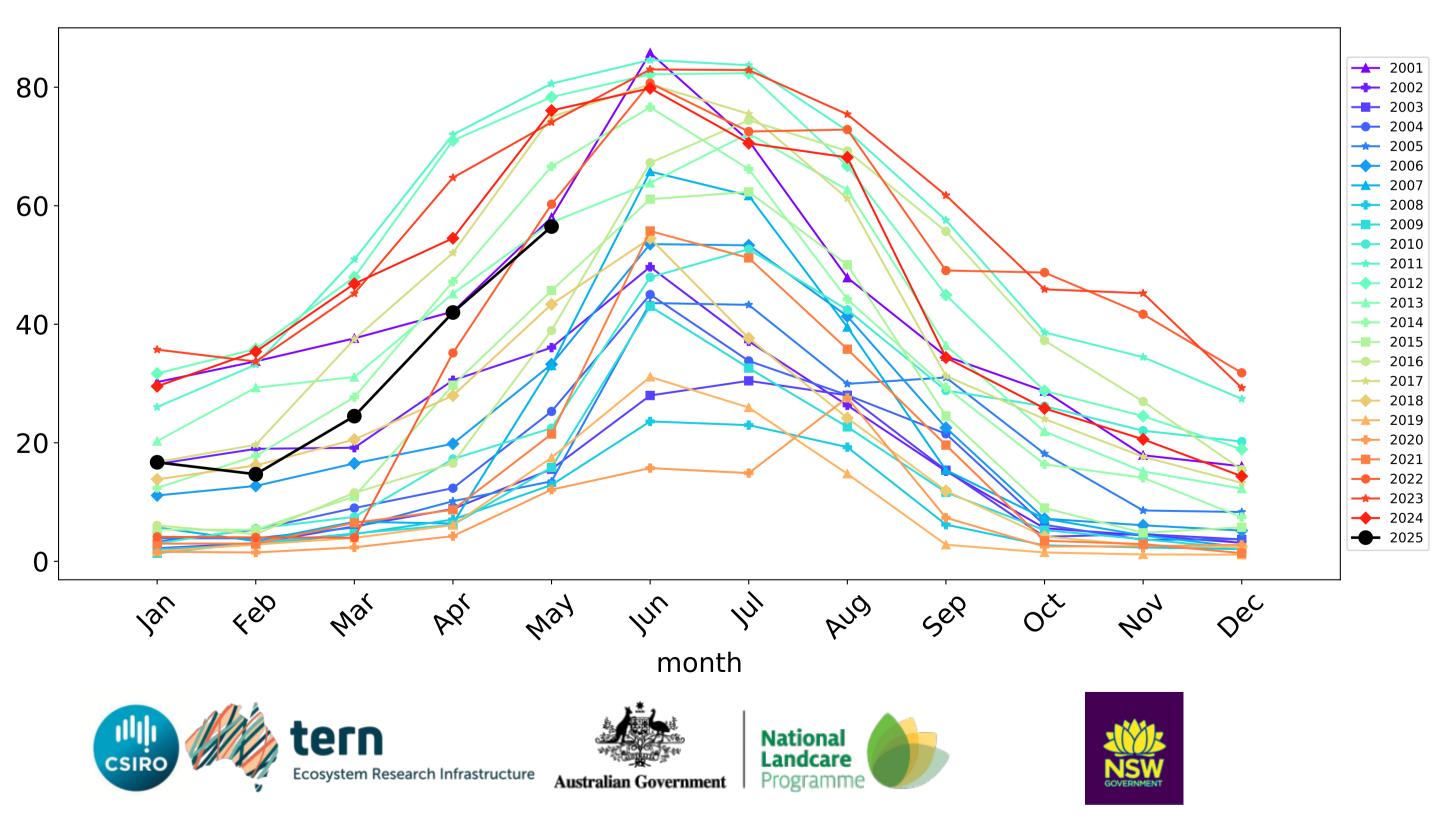


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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



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



Conservation and natural environments Woodland forest

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

12°10,100°10

· 52% 70%

3201050010

0.30%

- 20

- 10

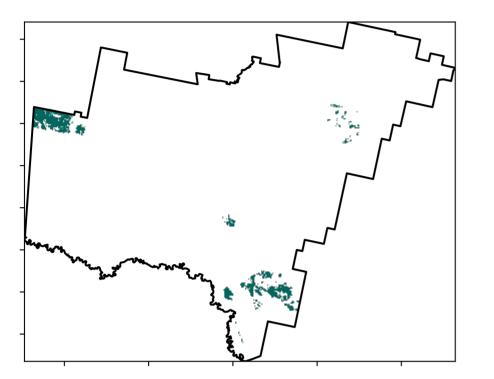
· 0

-10

-20

Total Vegetation Cover [%]

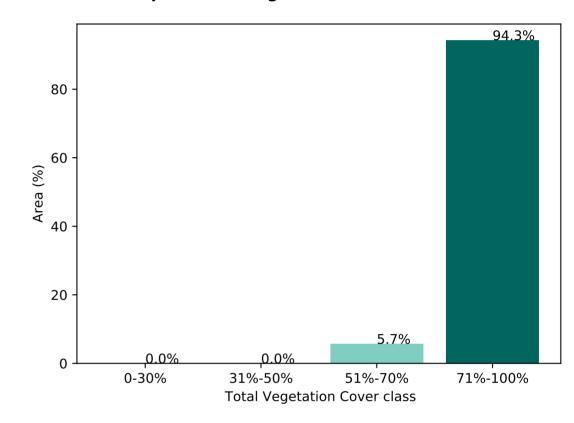
Land use and forest cover



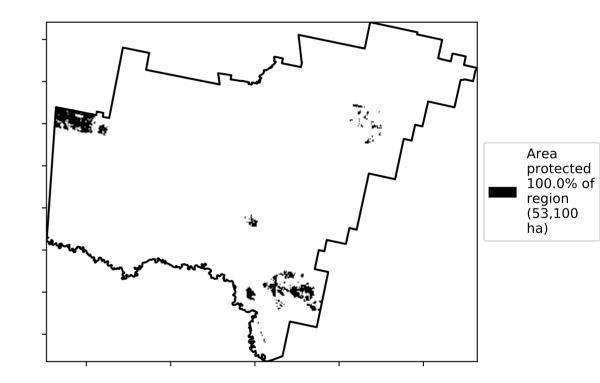
% Area protected from water erosion (>70%)

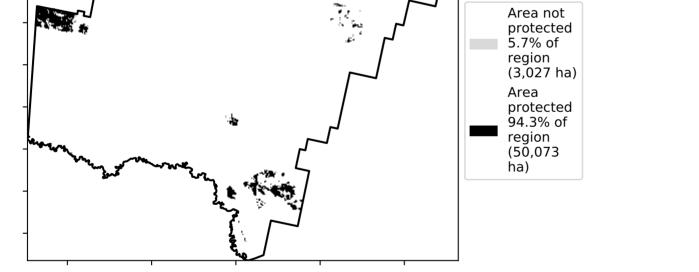


Proportion of vegetation cover class in area

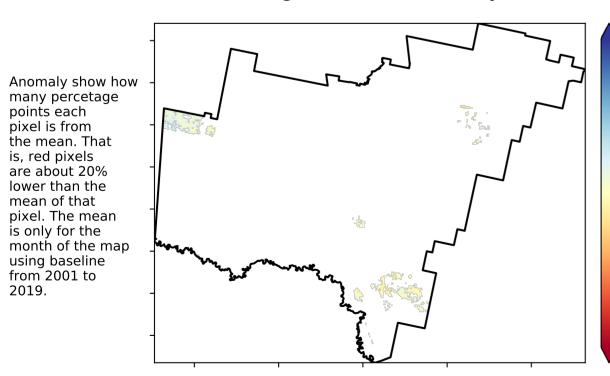


% Area protected from wind erosion (>50%)

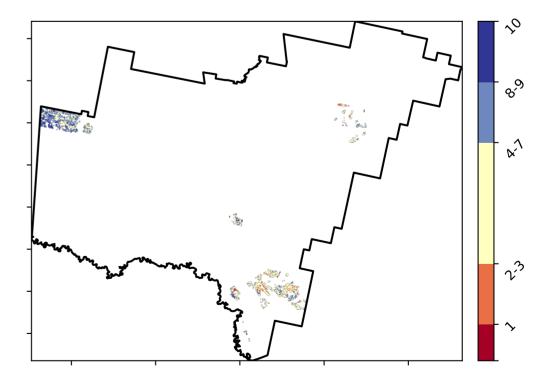




Total Vegetation Cover Anomaly [%]

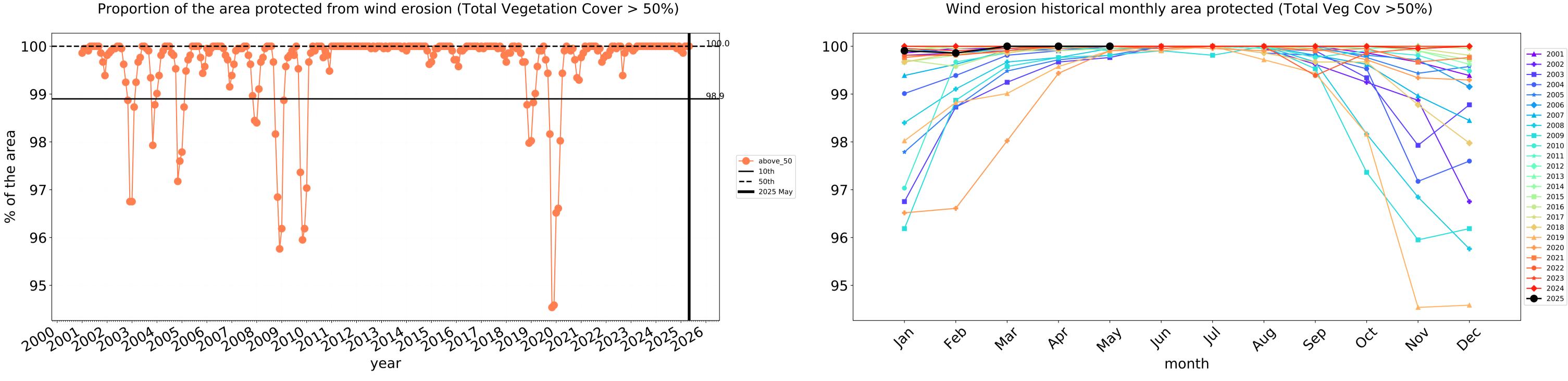


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. **Total Vegetation Cover Decile [%]**



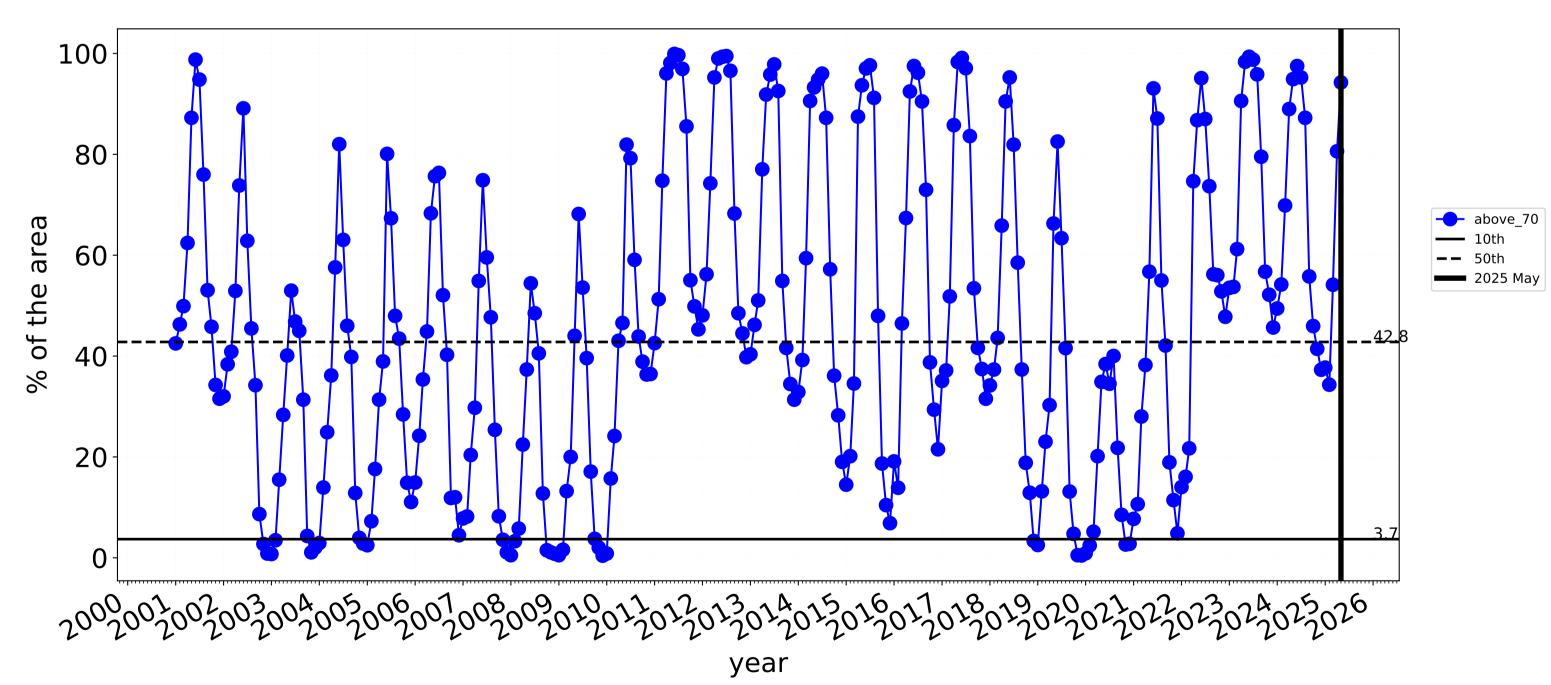


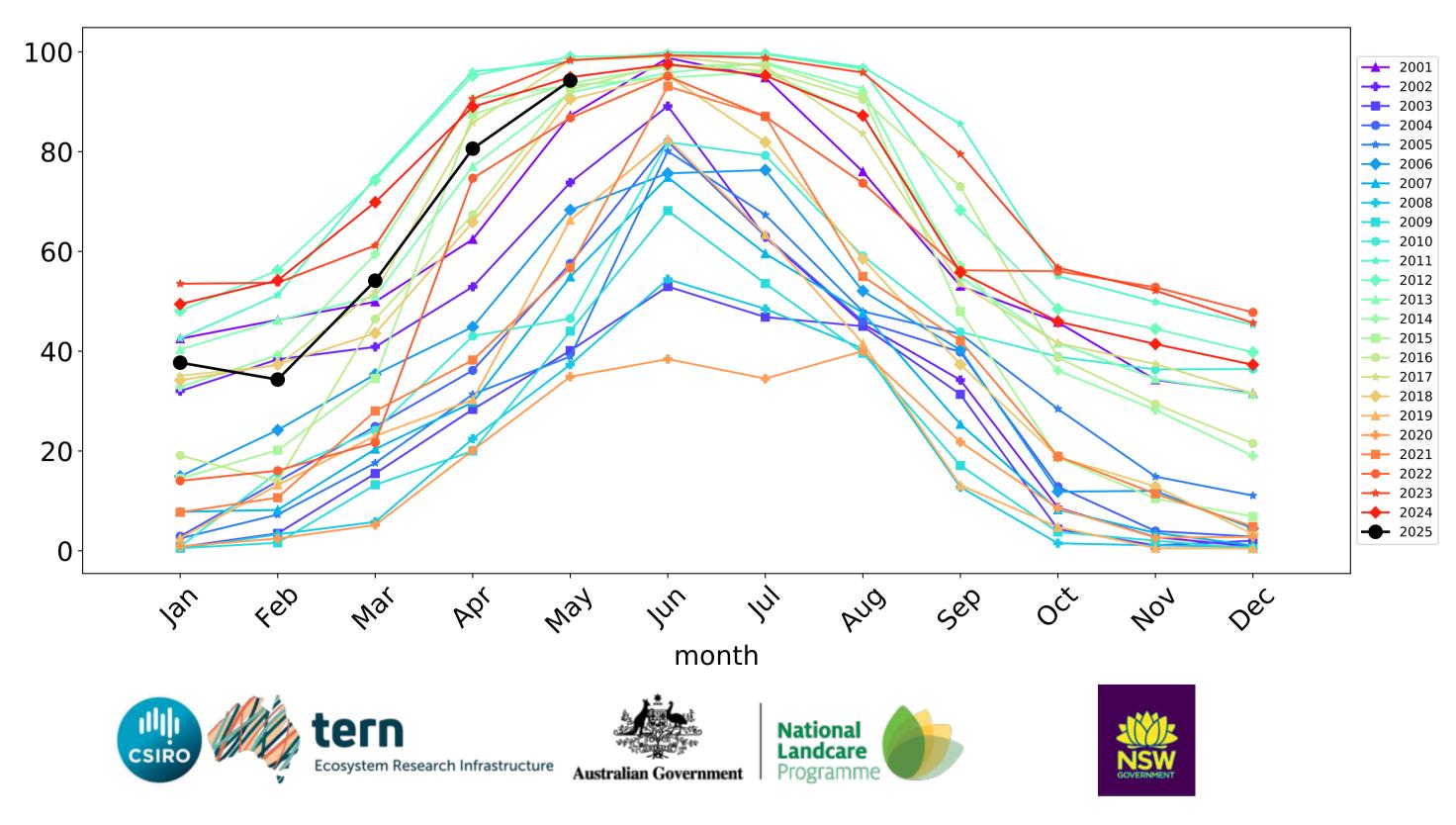
8



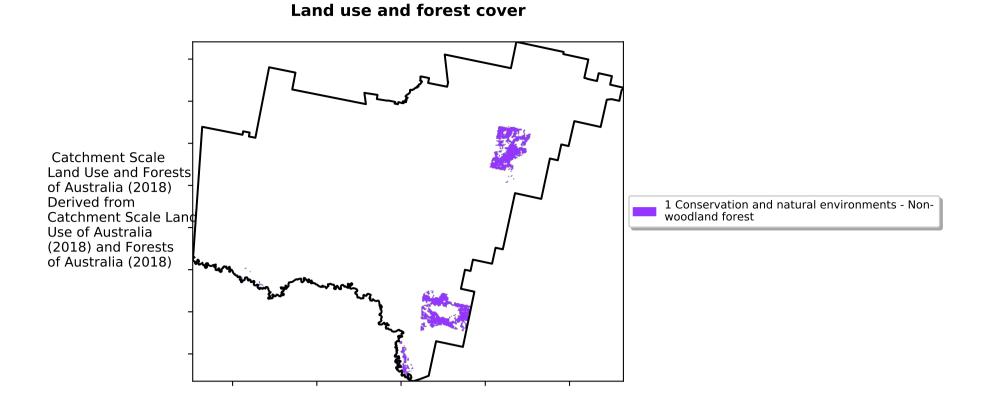
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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





Conservation and natural environments Forest (non woodland)



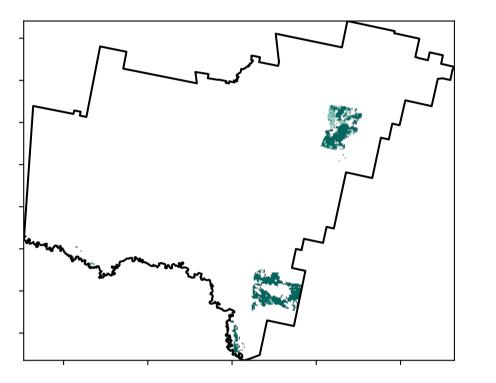
12º10-200910

· 52% 70%

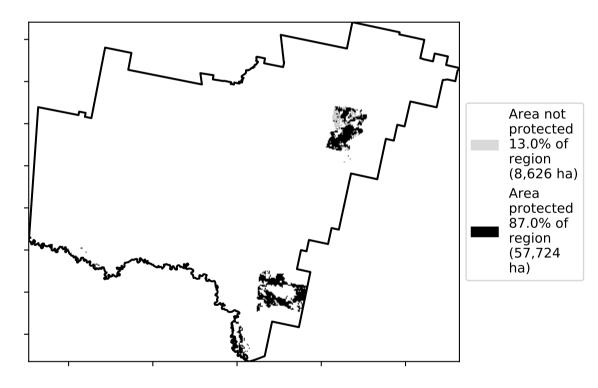
3201050010

0.30%

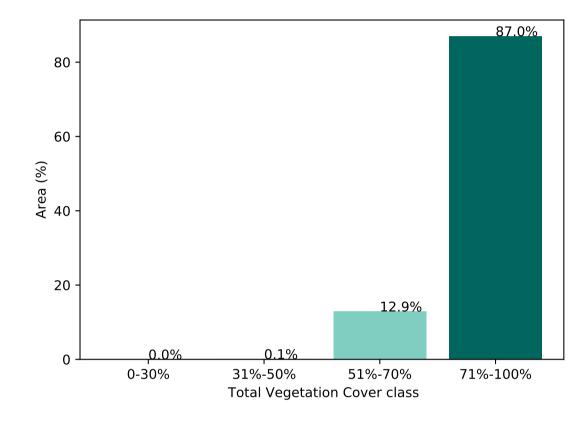
Total Vegetation Cover [%]



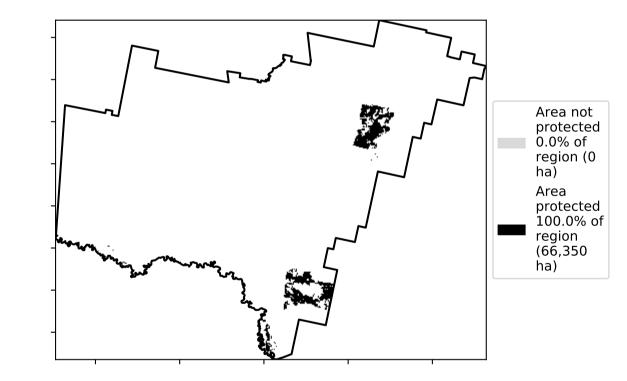
% Area protected from water erosion (>70%)



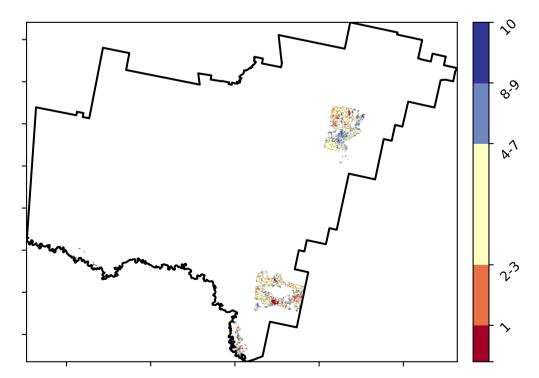
Proportion of vegetation cover class in area



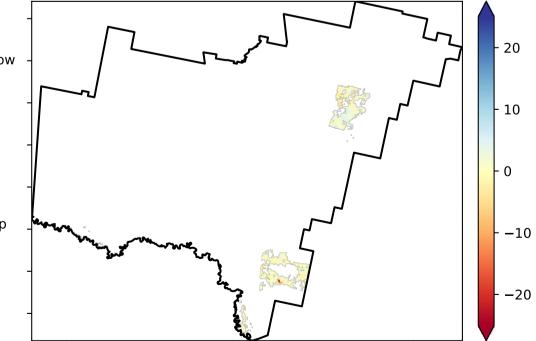
% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



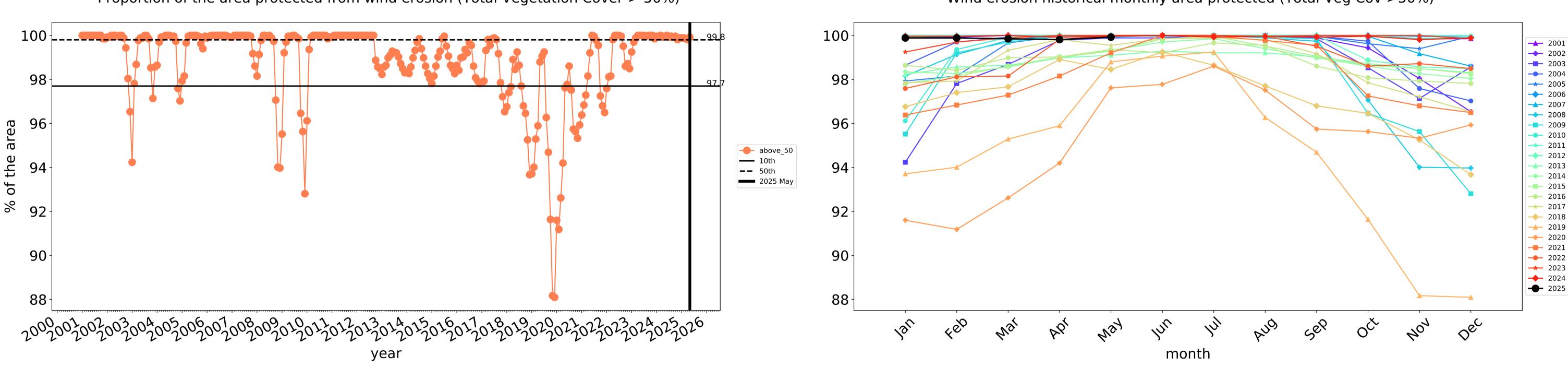
Total Vegetation Cover Anomaly [%]



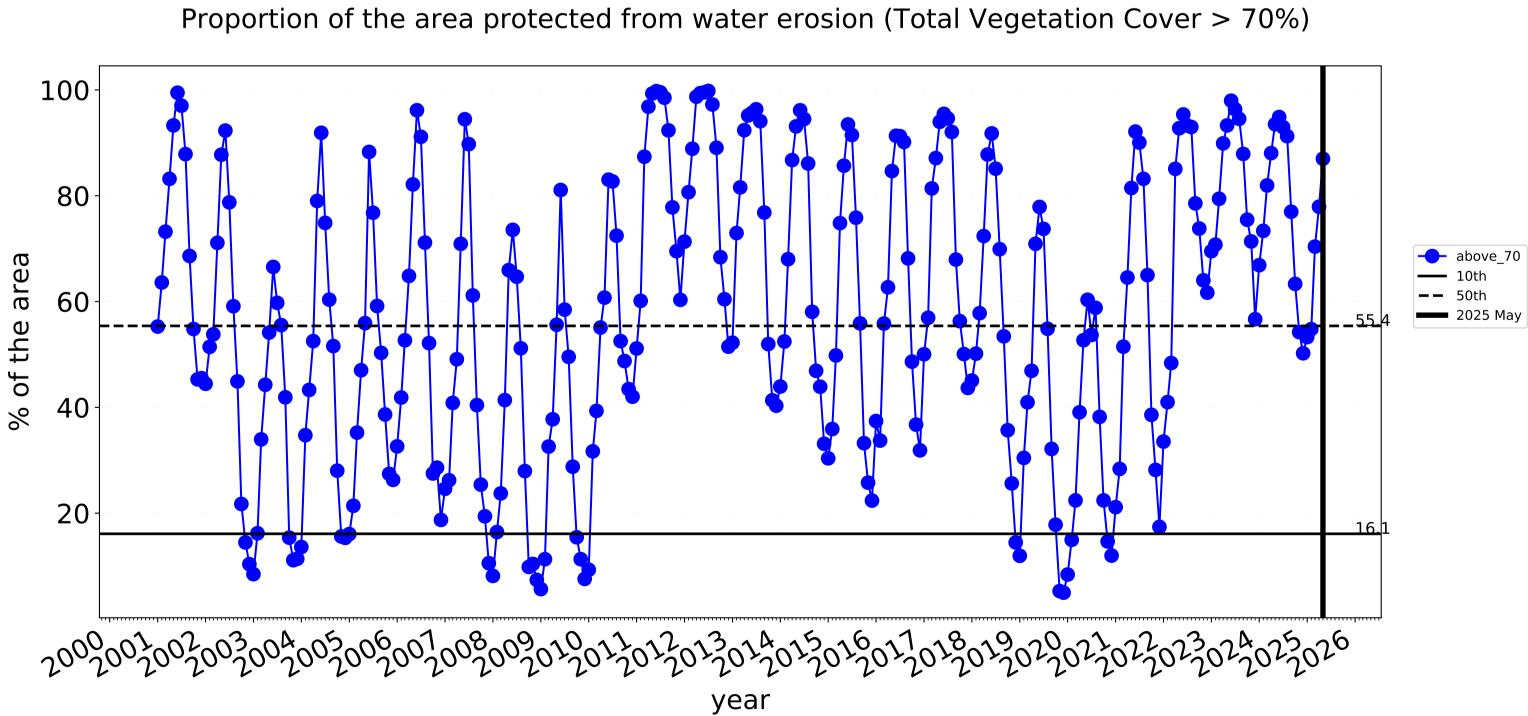
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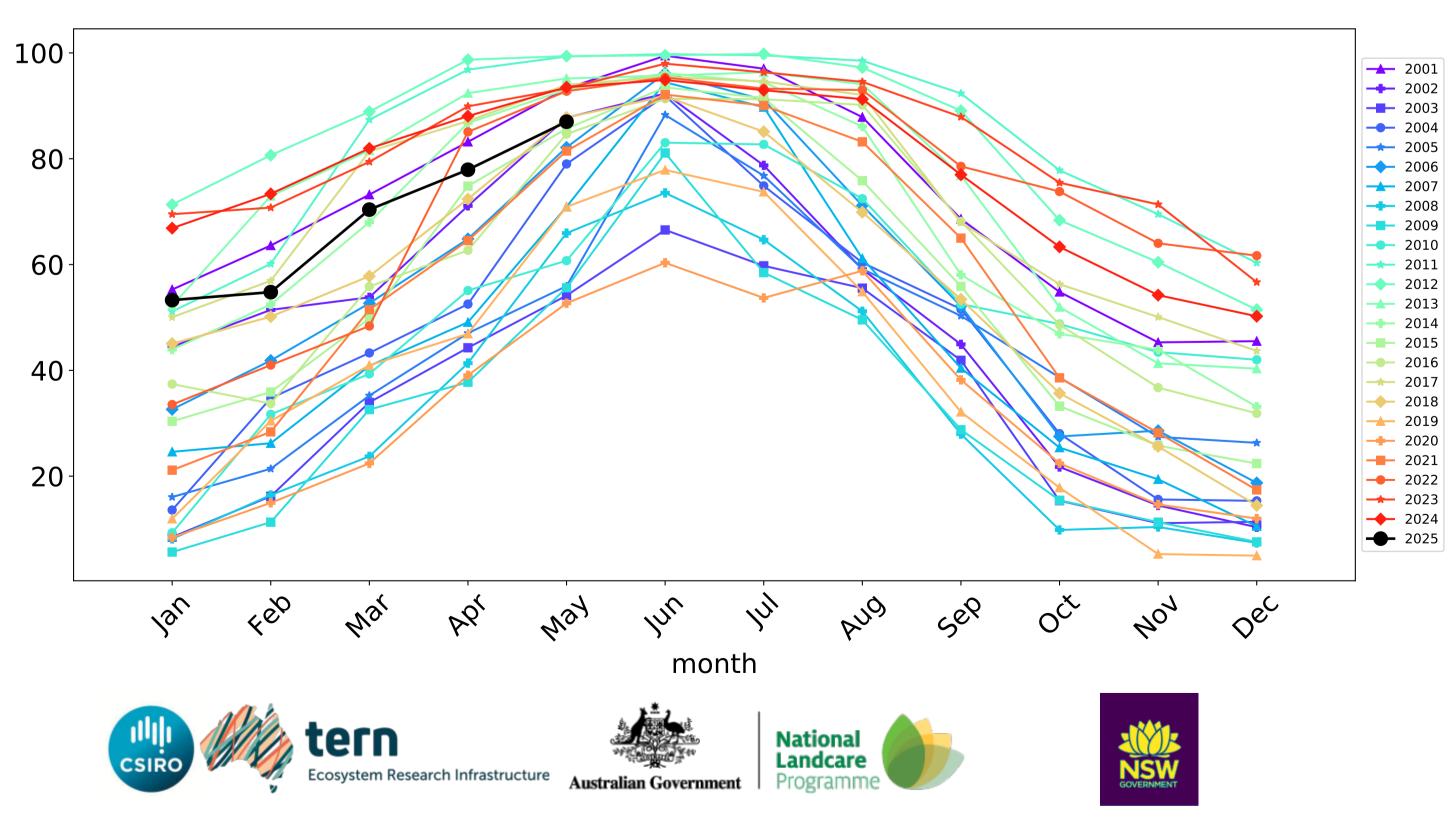
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



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



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

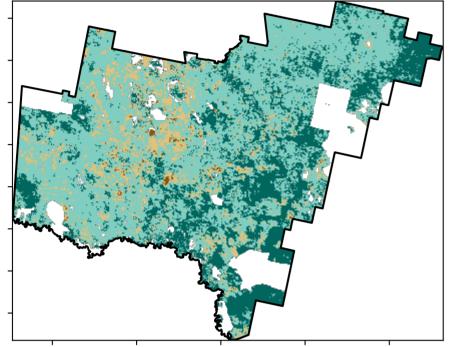


Agriculture

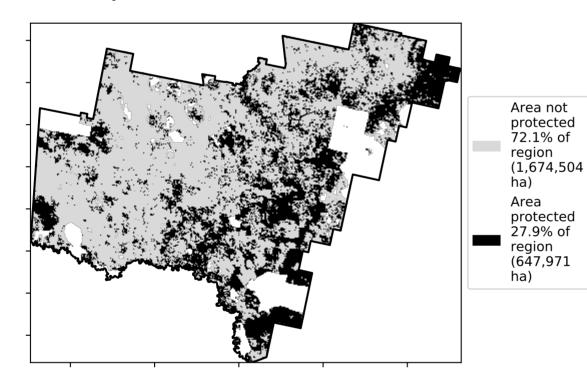
Catchment Scale Land Use and Forests of Australia (2018) 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest Derived from Catchment Scale Lang 4 Agriculture - Grazing - Irrigated 5 Agriculture - Cropping - Non-irrigated Use of Australia 6 Agriculture - Cropping - Irrigated (2018) and Forests 7 Agriculture - Horticulture - Irrigated of Australia (2018)

Total Vegetation Cover [%]

Land use and forest cover

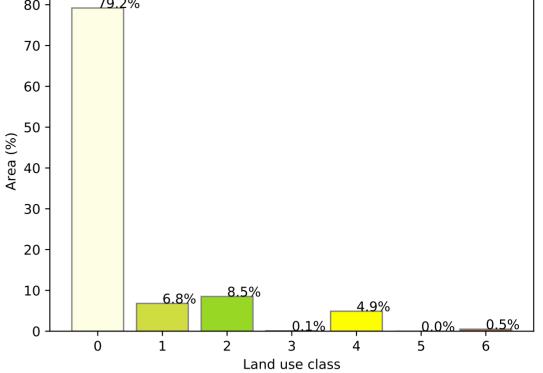


% Area protected from water erosion (>70%)

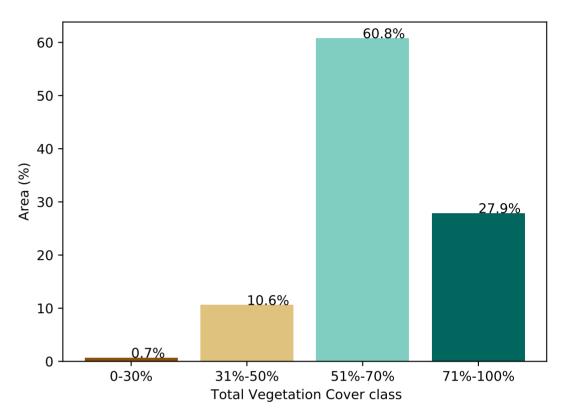


12º10010 · 52°10010 50% 32010 0.30%

Proportion of each land class in area <u>79.2</u>% 80



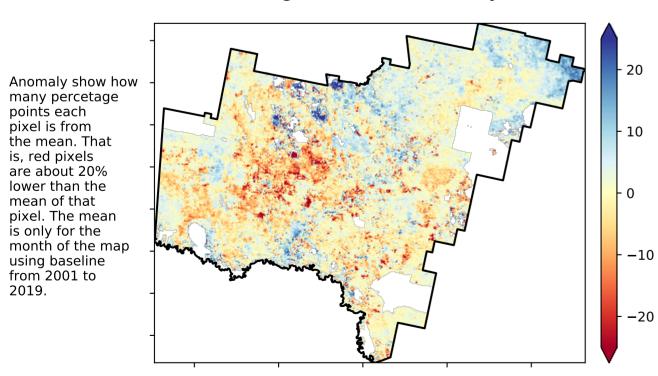
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

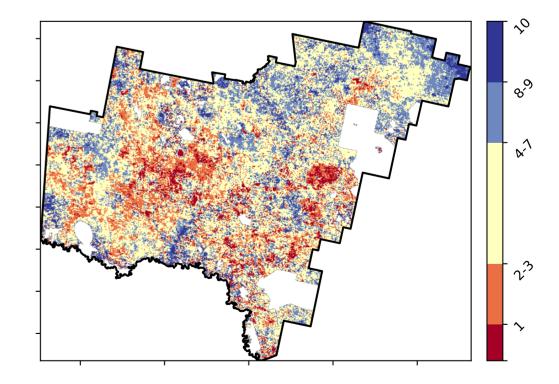


is, red pixels are about 20%

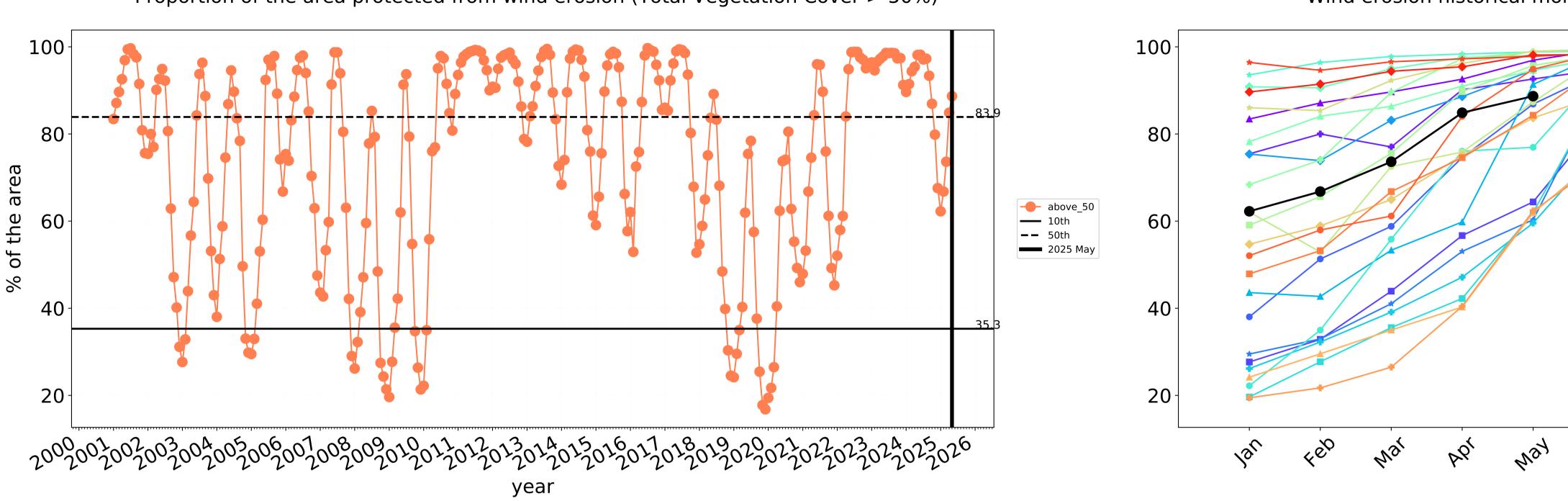
lower than the mean of that

pixel. The mean

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.

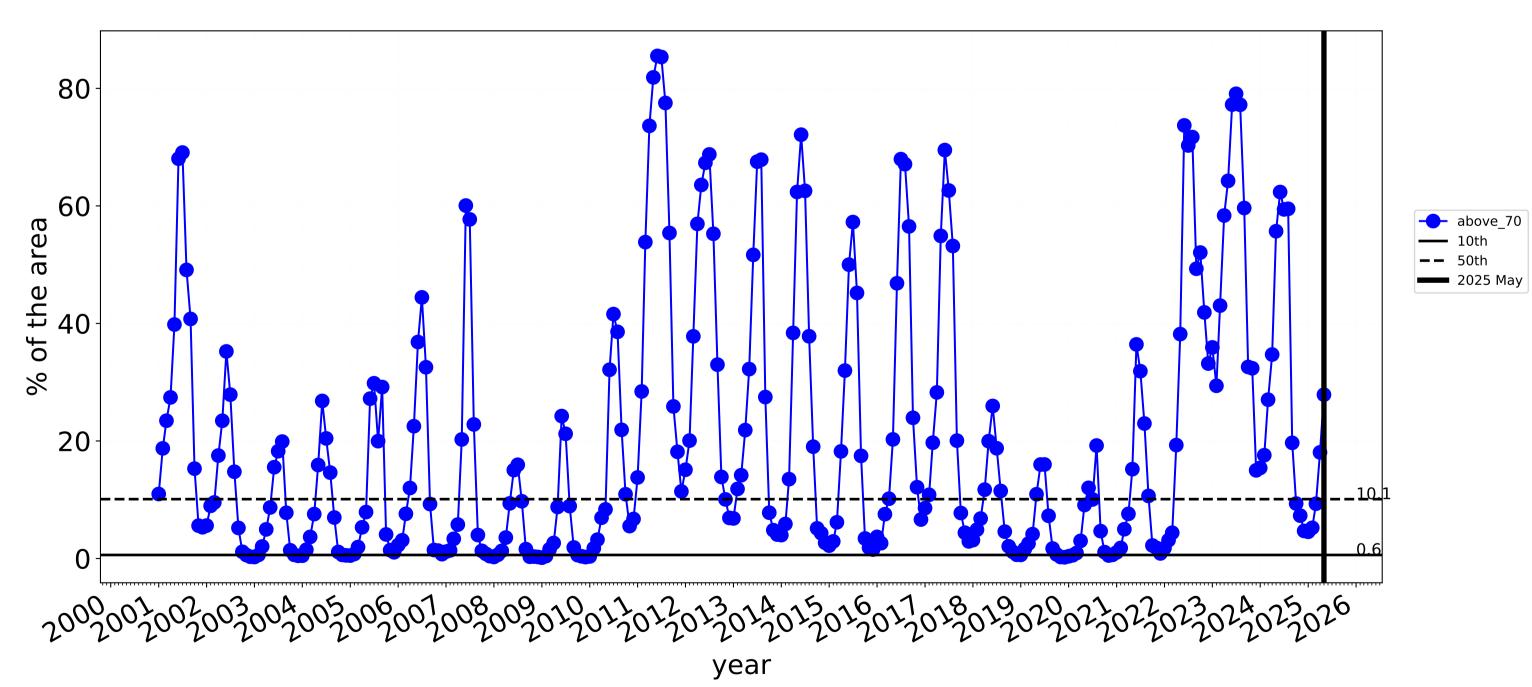






Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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



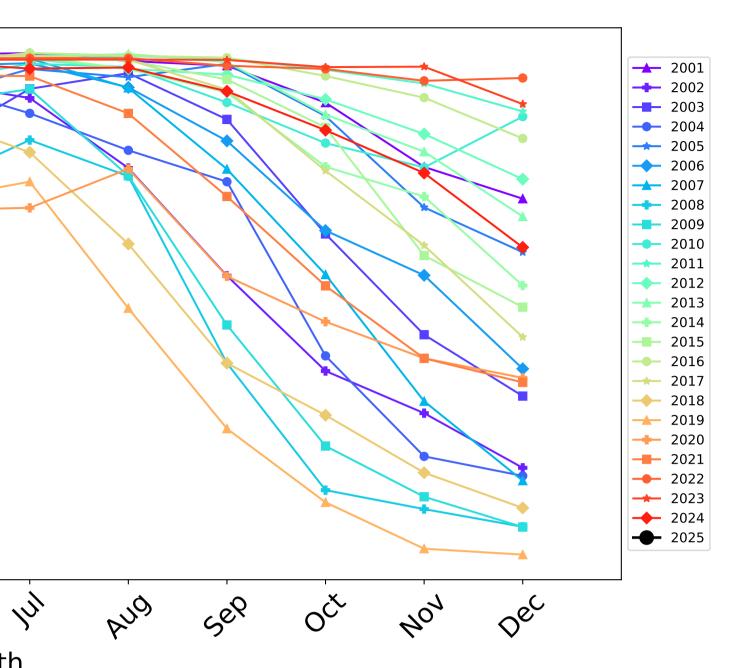
Agriculture timeseries

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

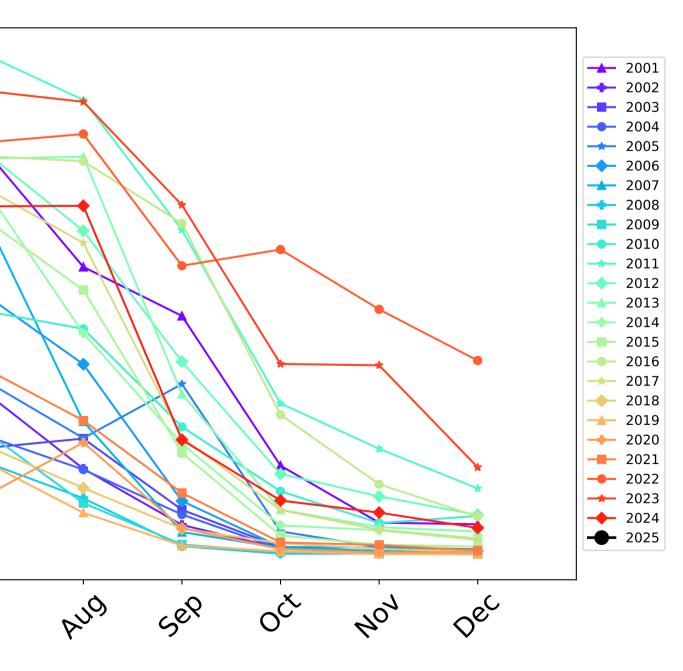
In

month

80-60-40-20-0 -4er way In Jan 121 Wa, *b*6, month tern Ecosystem Research Infrastructure Australian Government



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







Grazing

12º10-200%

52°10010010

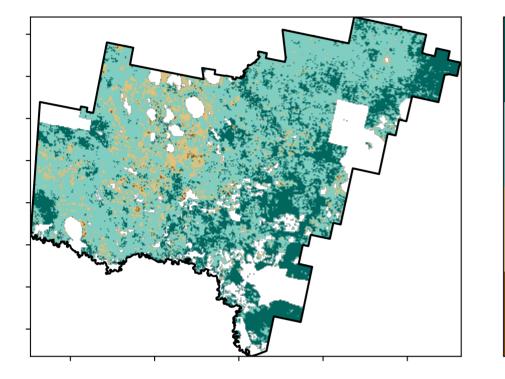
320050010

0.30%

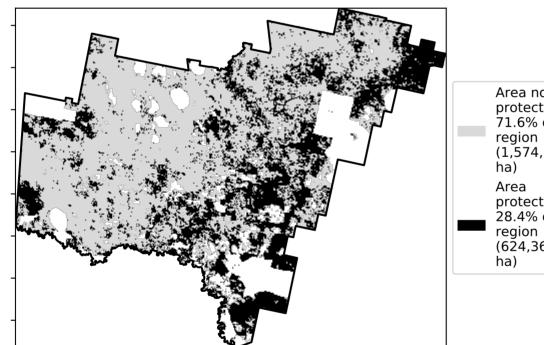
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest of Australia (2018)

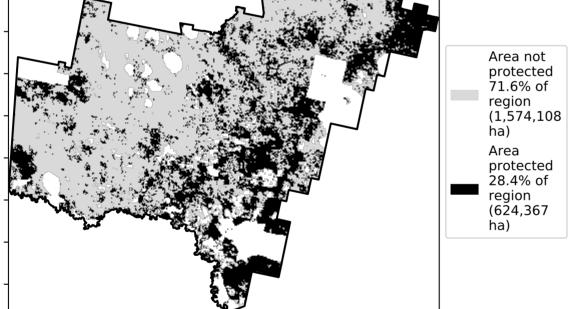
Land use and forest cover

Total Vegetation Cover [%]

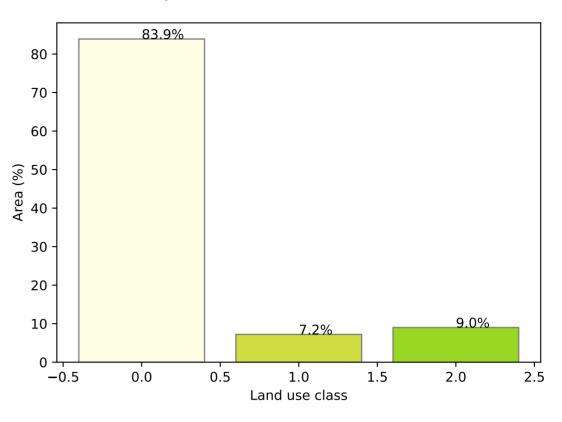


% Area protected from water erosion (>70%)

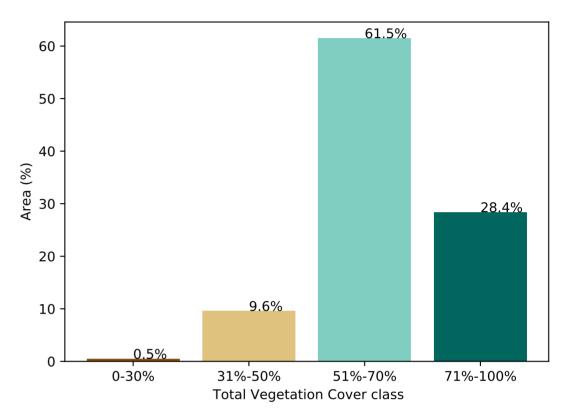








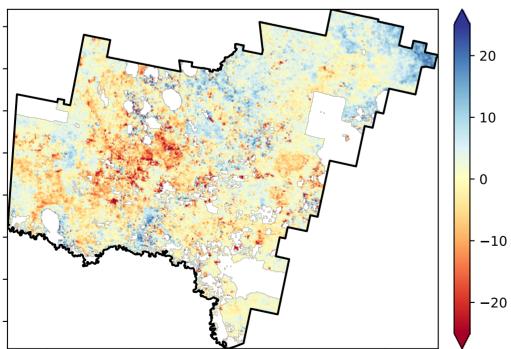
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

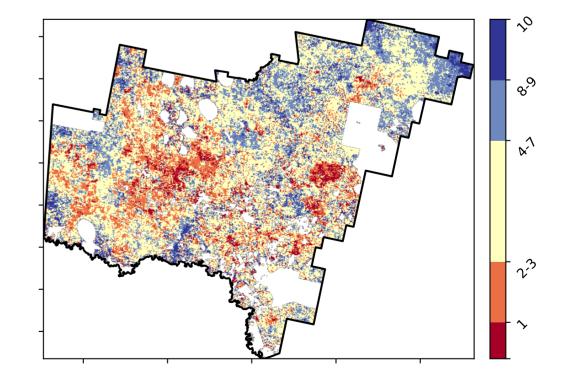


Total Vegetation Cover Anomaly [%]



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.

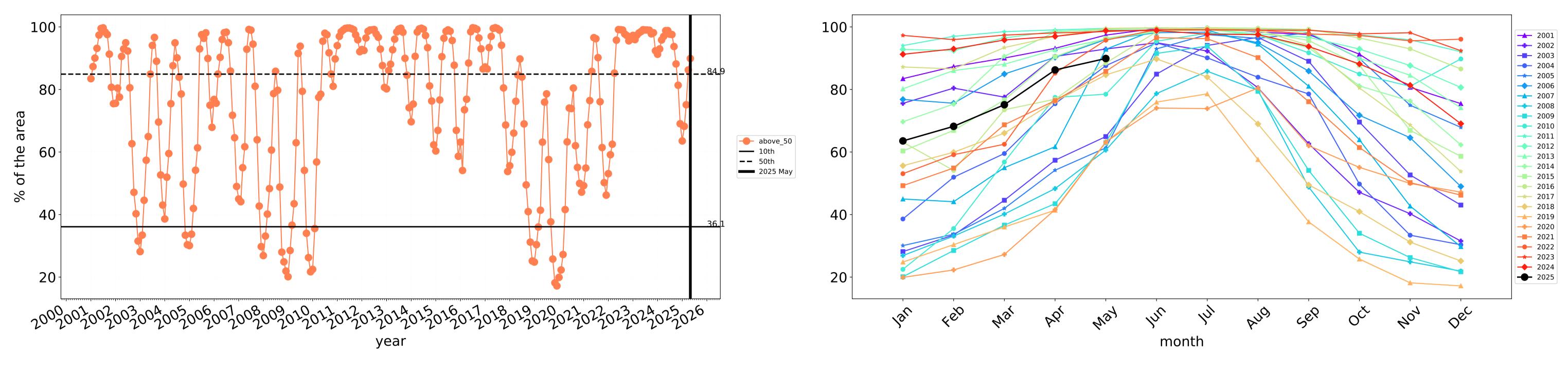
Total Vegetation Cover Decile [%]





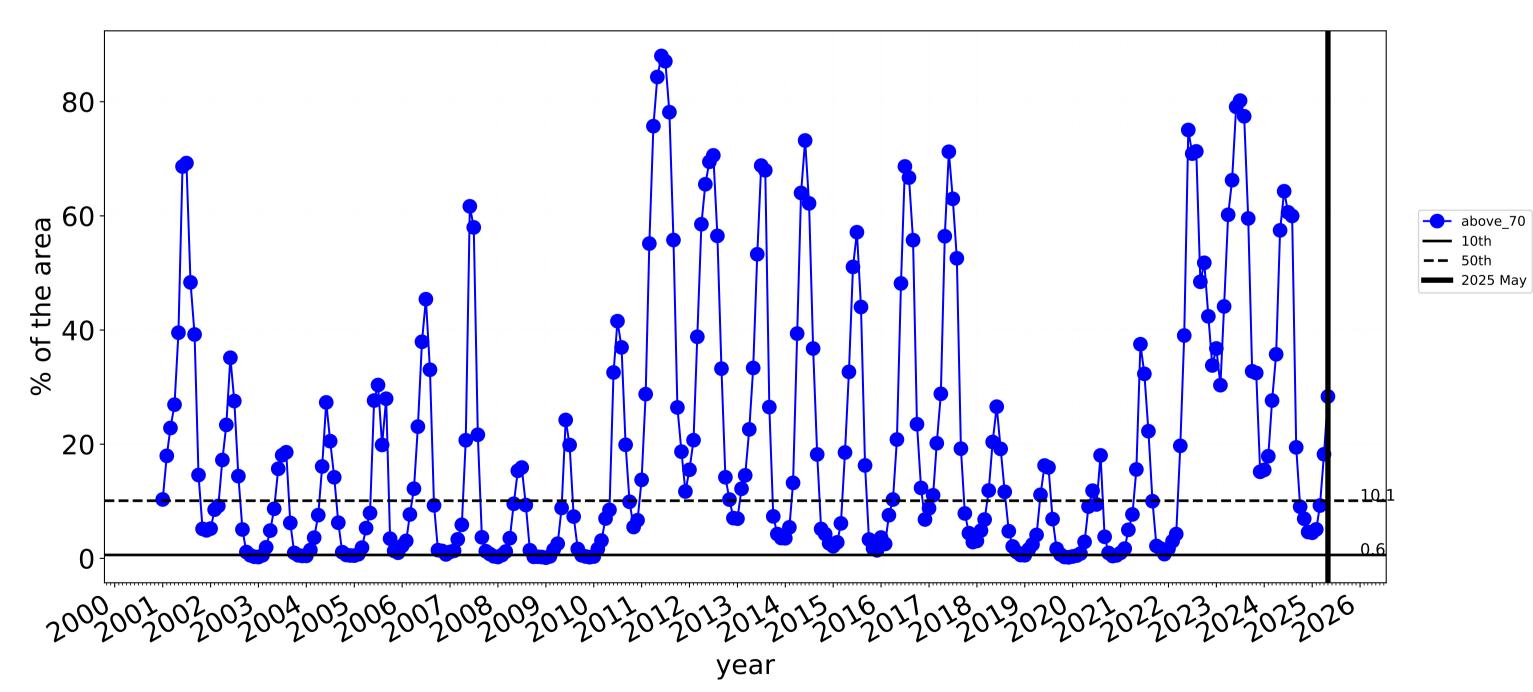
124

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%)

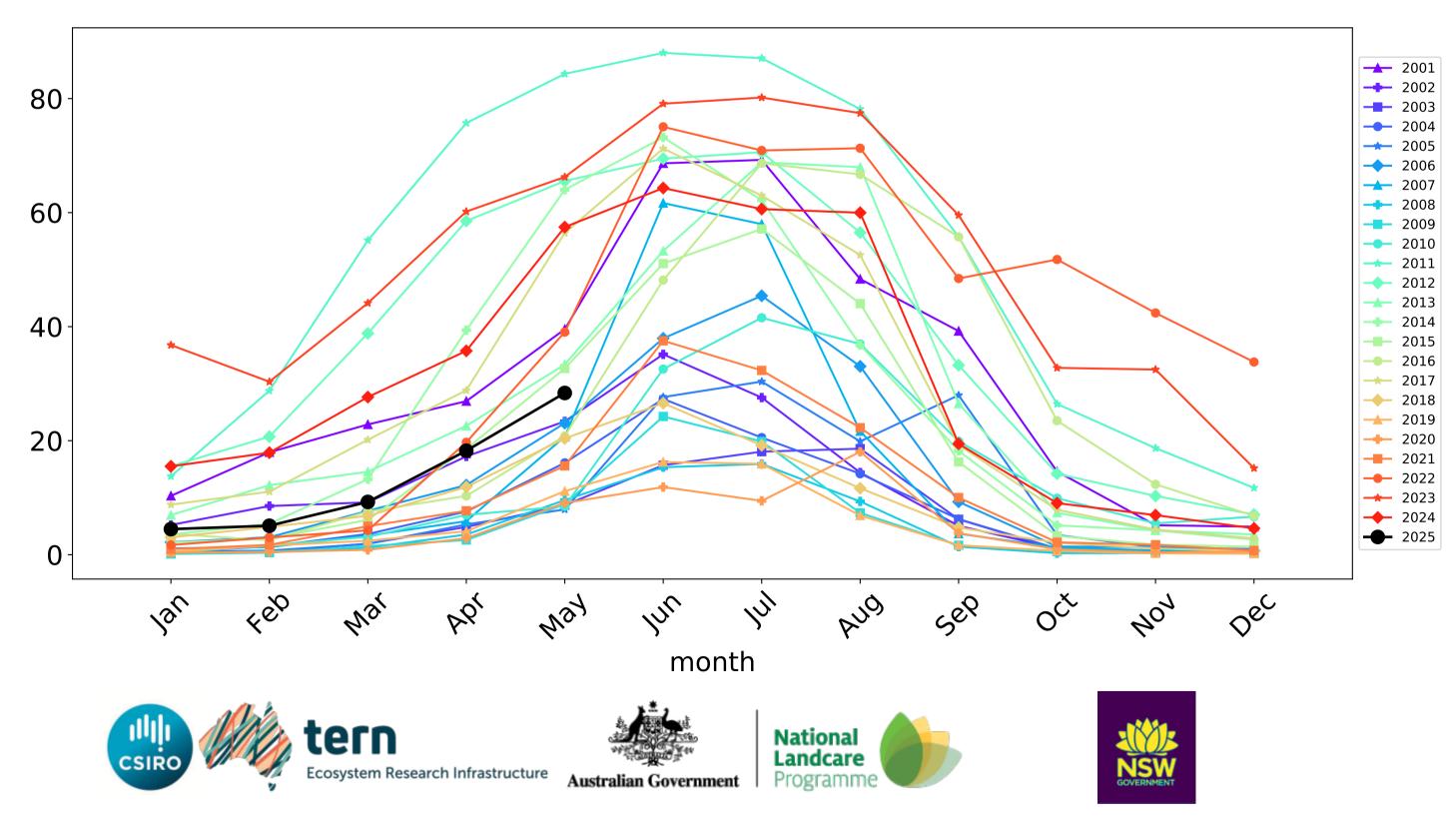
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



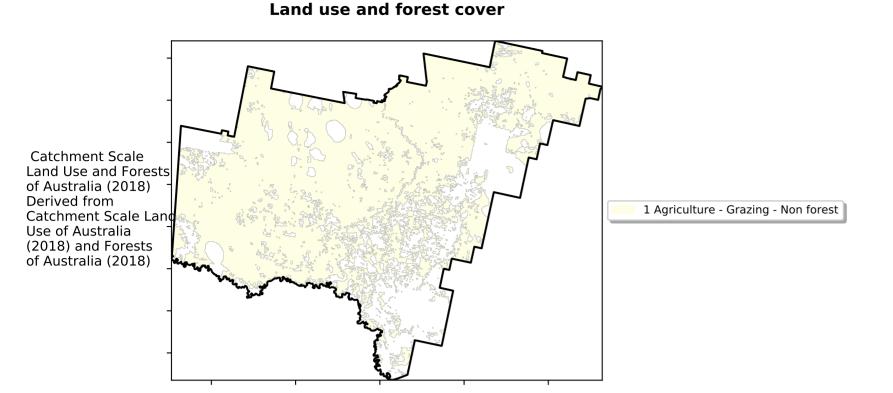
Grazing timeseries



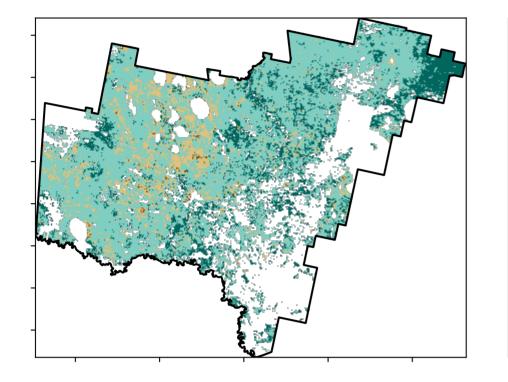
Wind erosion historical monthly area protected (Total Veg Cov >50%)



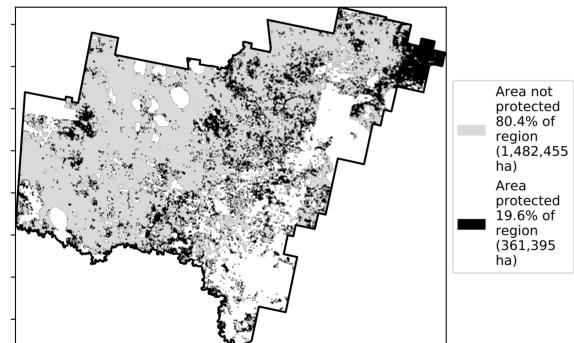
Grazing non forest



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



Area not

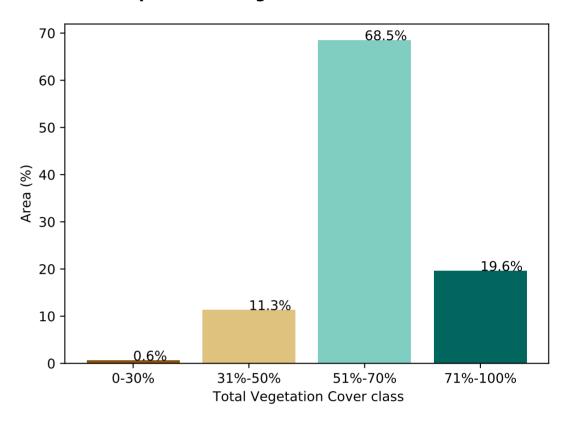
12º10010

52°1070010

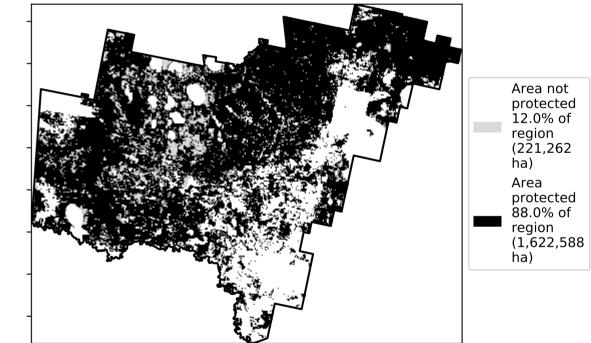
320050010

0.30%

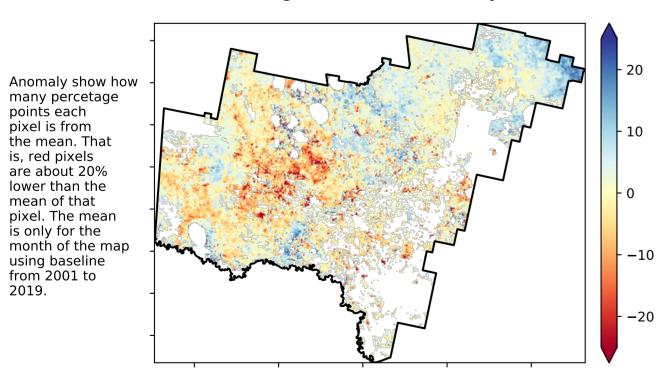




% Area protected from wind erosion (>50%)



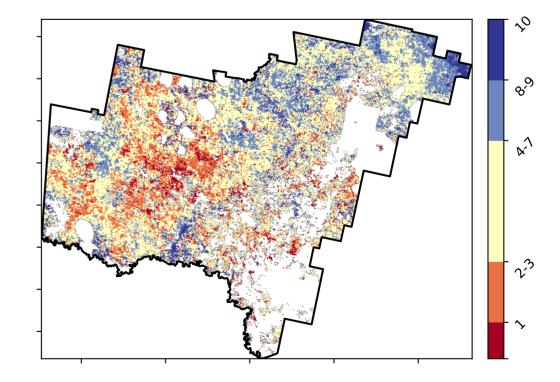
Total Vegetation Cover Anomaly [%]



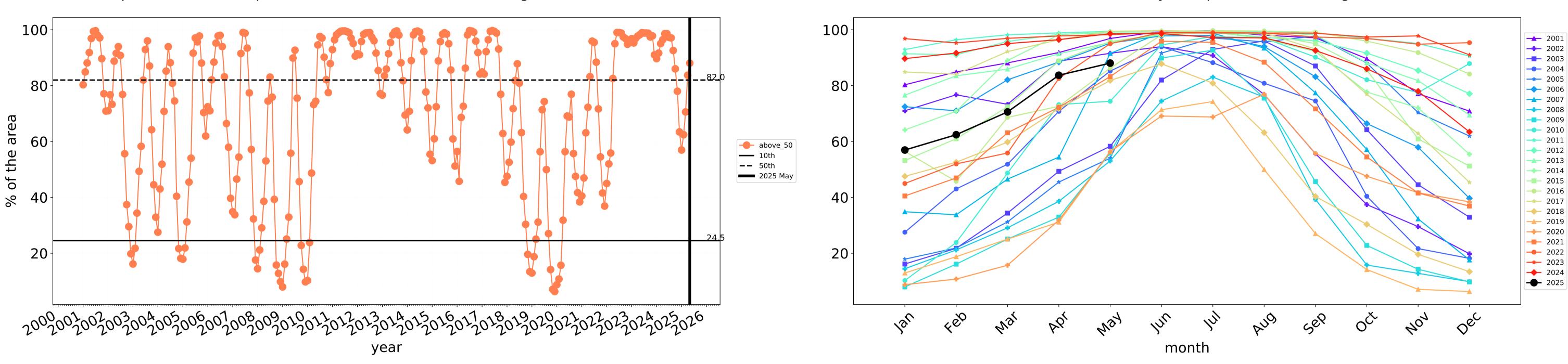
is, red pixels are about 20%

lower than the mean of that

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 the map using baseline from 2001 to 2019.

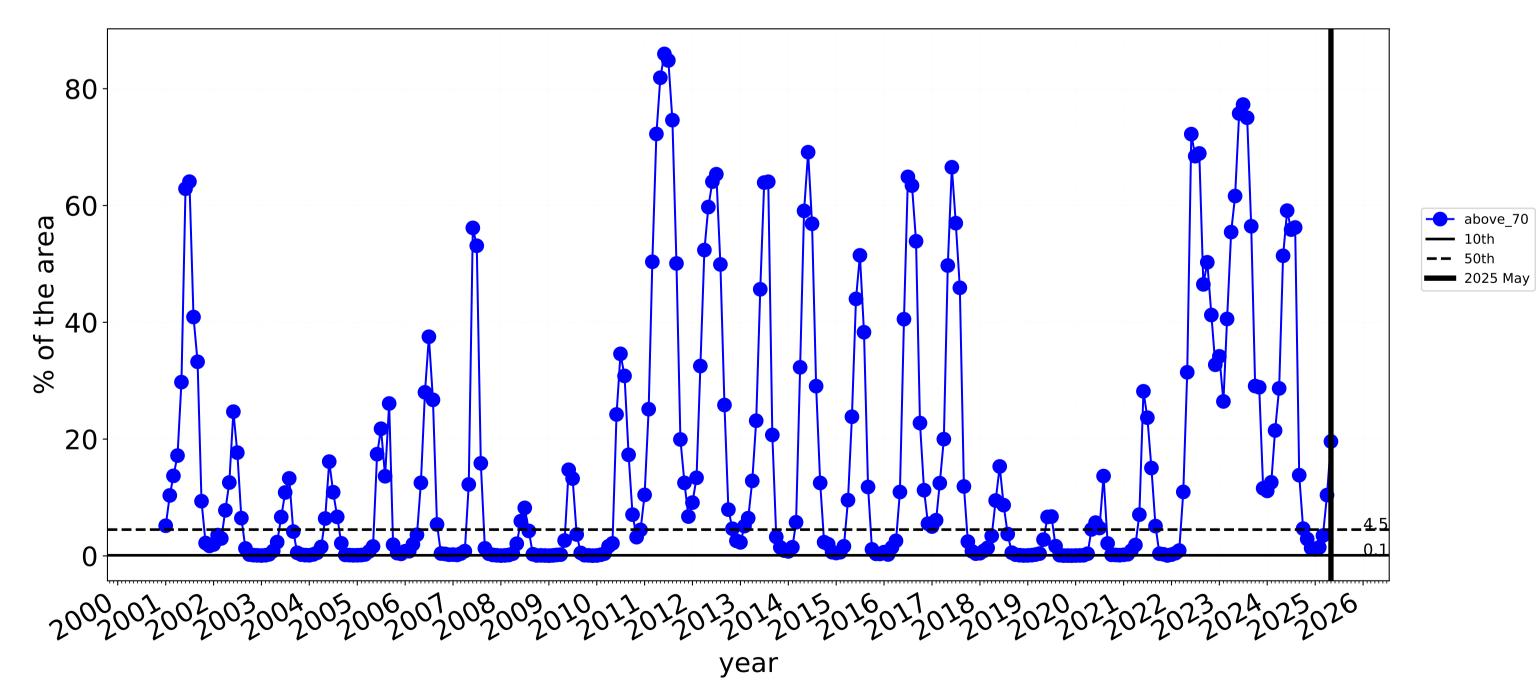






Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

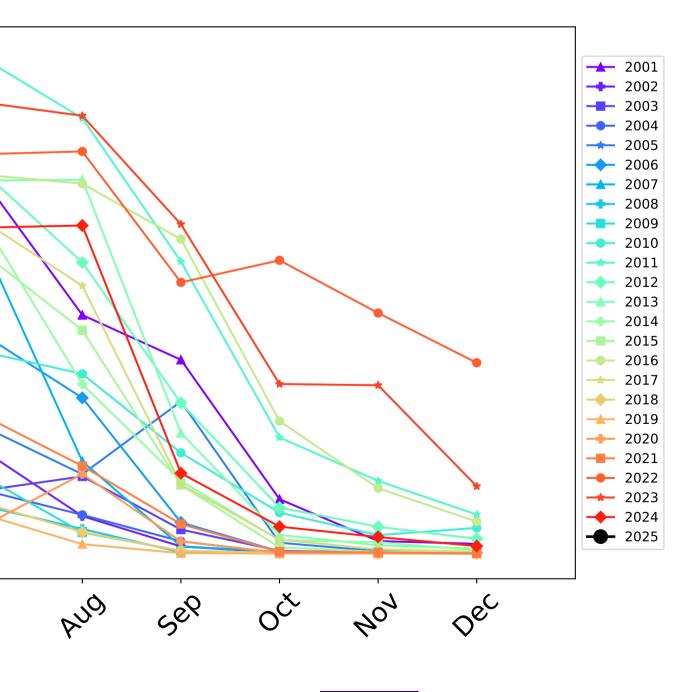
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



Grazing non forest timeseries

80-60-40-20-0-4eb lar In way 1 m Mai 26, month tern Ecosystem Research Infrastructure Australian Government

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







Grazing Woodland forest

12% 200%

52% TO%

3291050010

0.30%

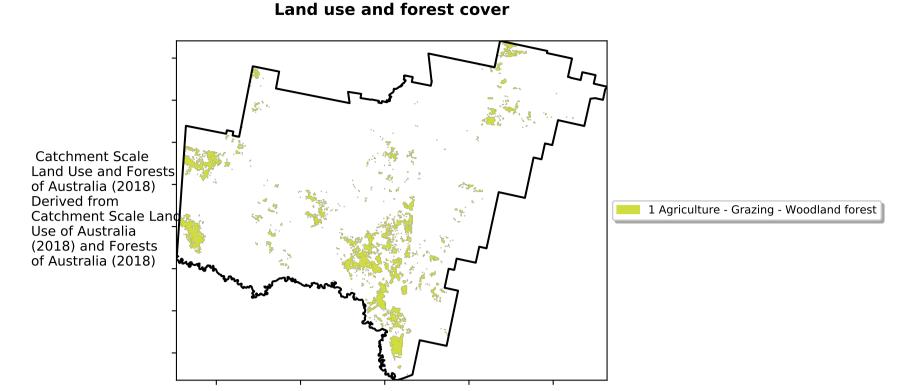
- 20

- 10

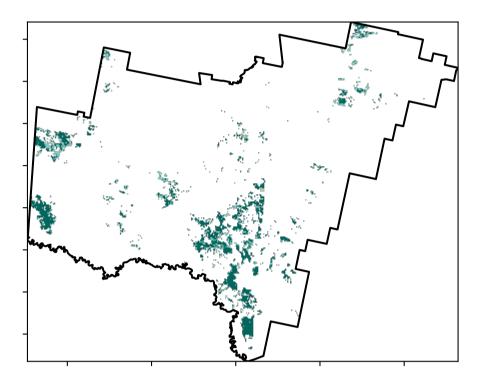
- 0

- -10

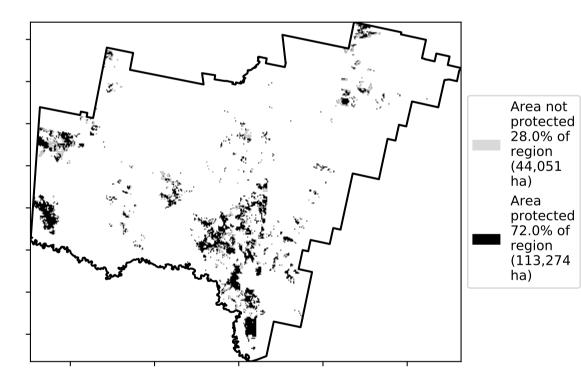
-20



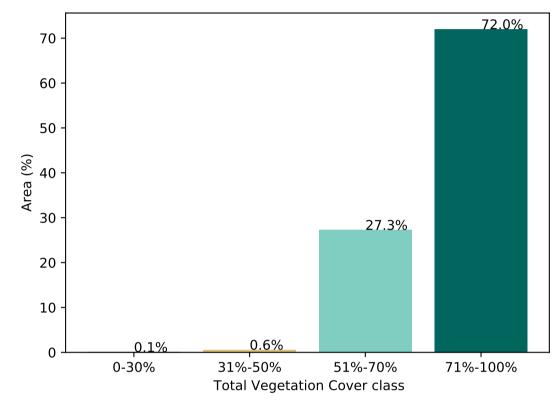
Total Vegetation Cover [%]



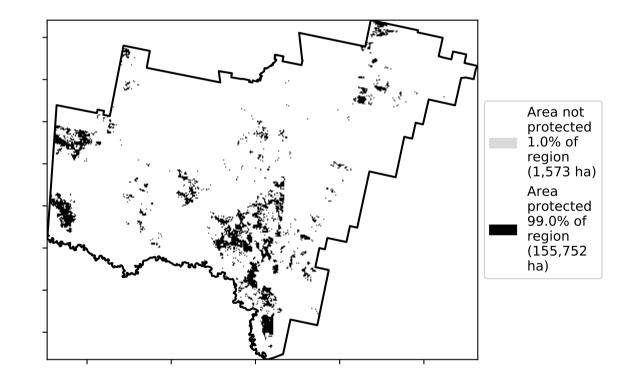
% Area protected from water erosion (>70%)



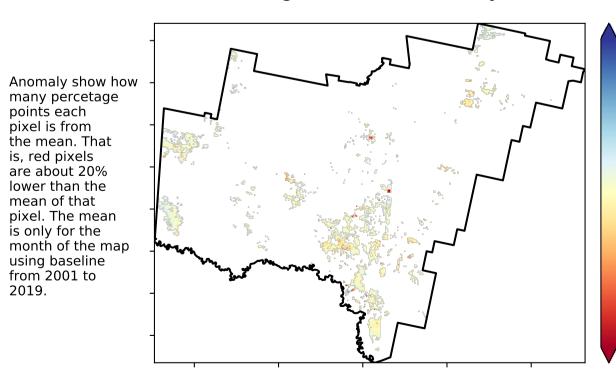
Proportion of vegetation cover class in area



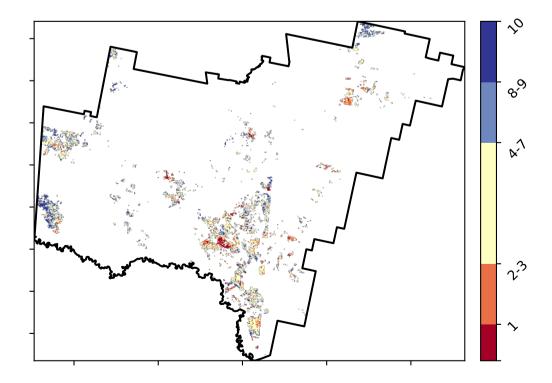
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

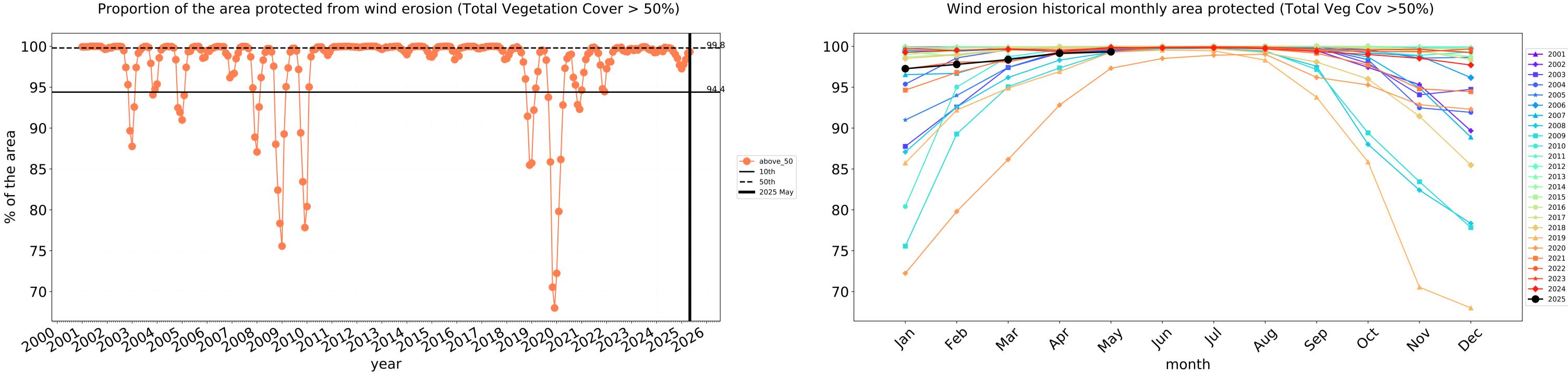


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.



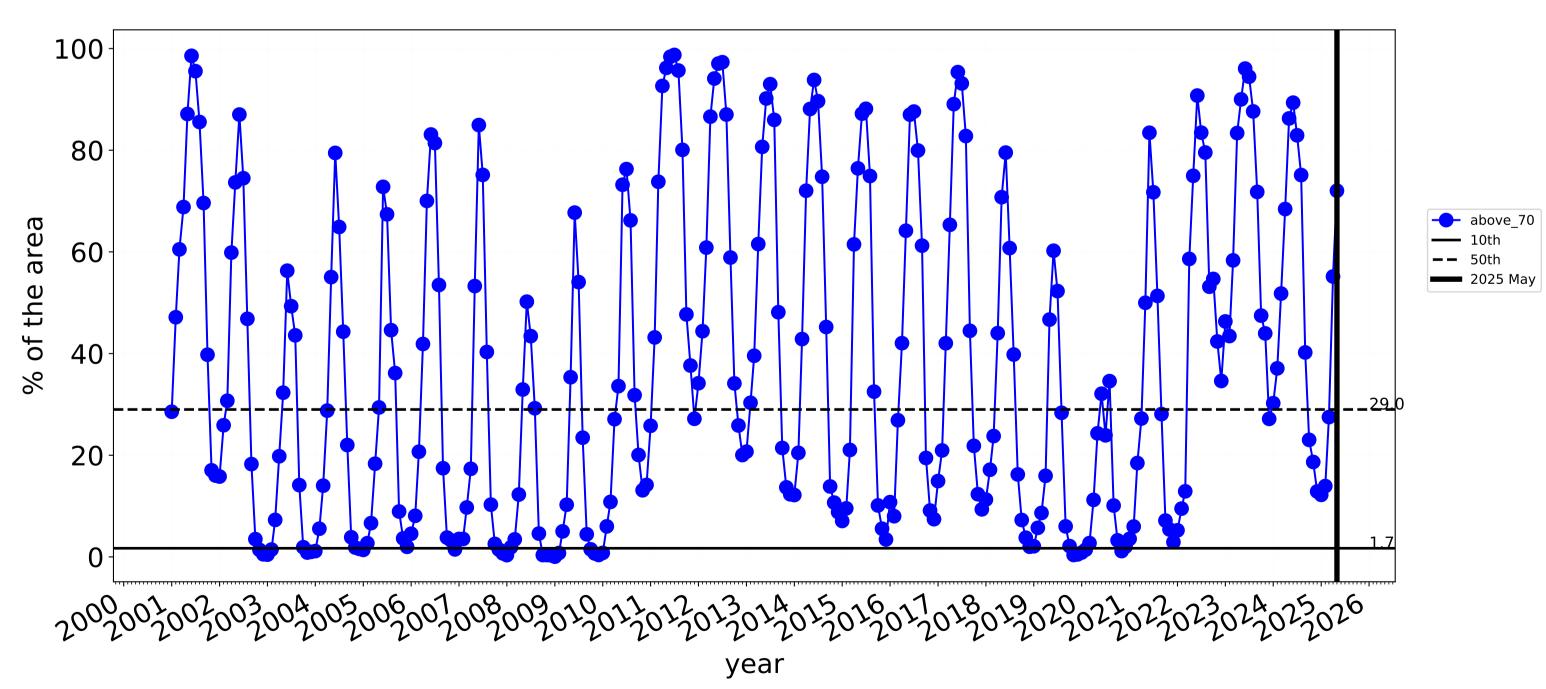


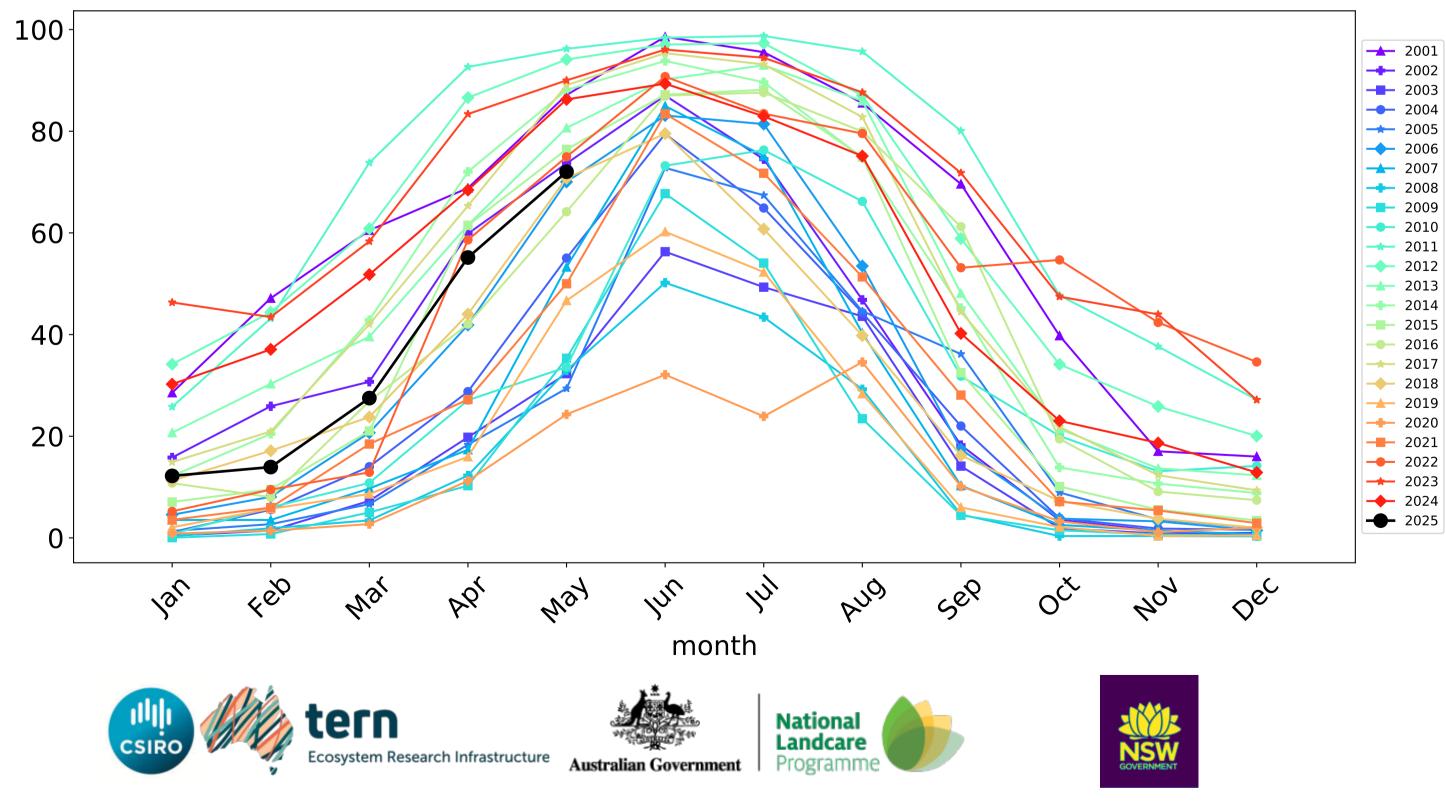
Grazing Woodland forest timeseries



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







Grazing - Forest (non woodland)

12%100%

· 52% 70%

3201050010

0-30%

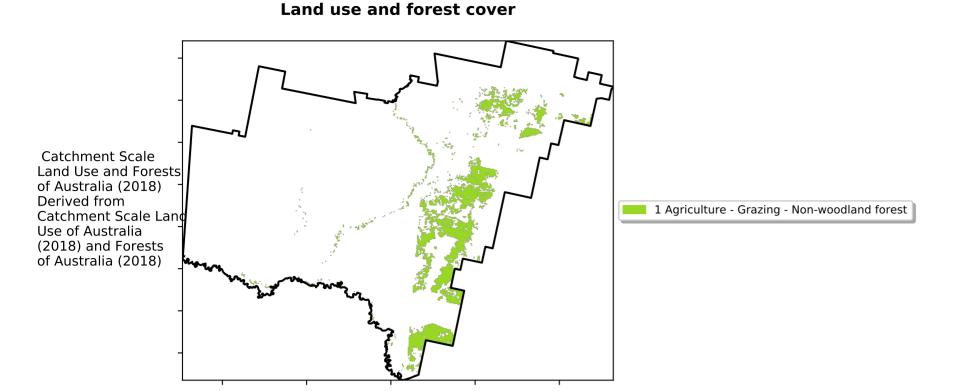
- 20

- 10

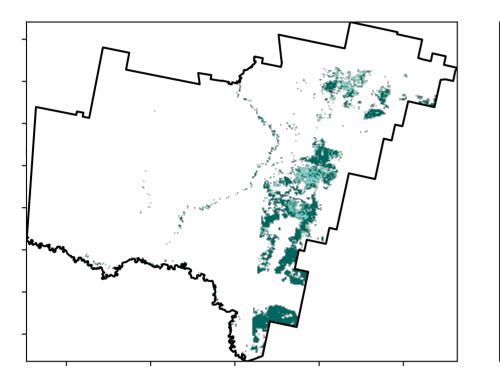
· 0

-10

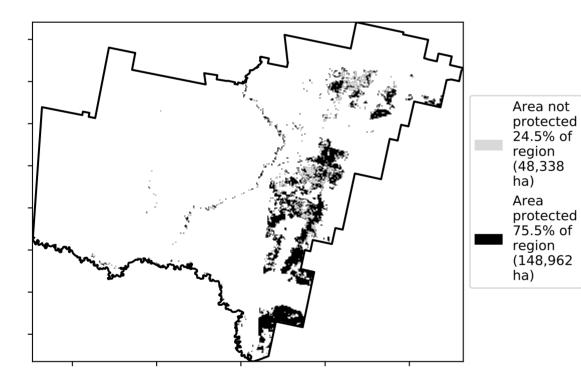
-20



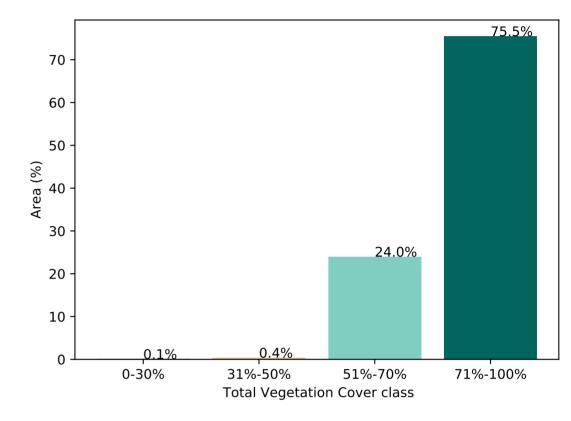
Total Vegetation Cover [%]



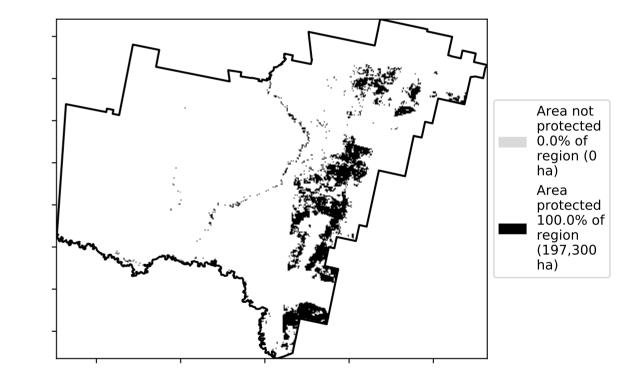
% Area protected from water erosion (>70%)



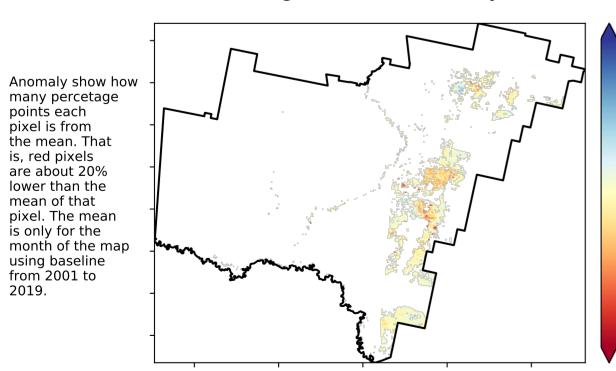
Proportion of vegetation cover class in area



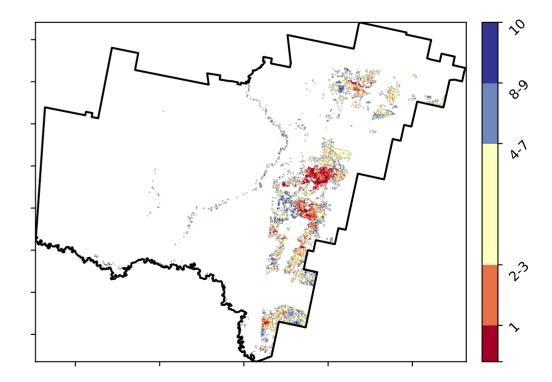
% Area protected from wind erosion (>50%)



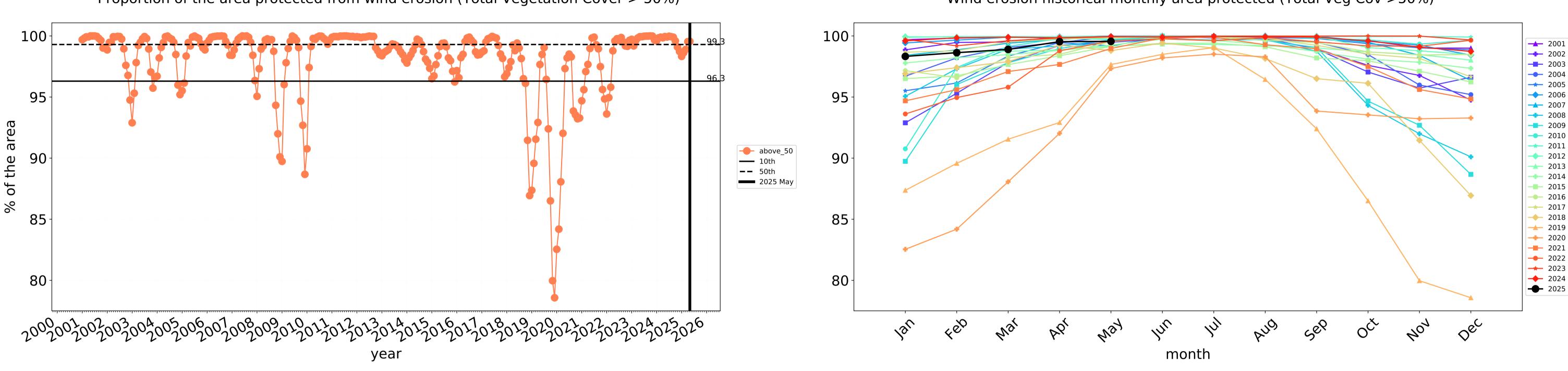
Total Vegetation Cover Anomaly [%]



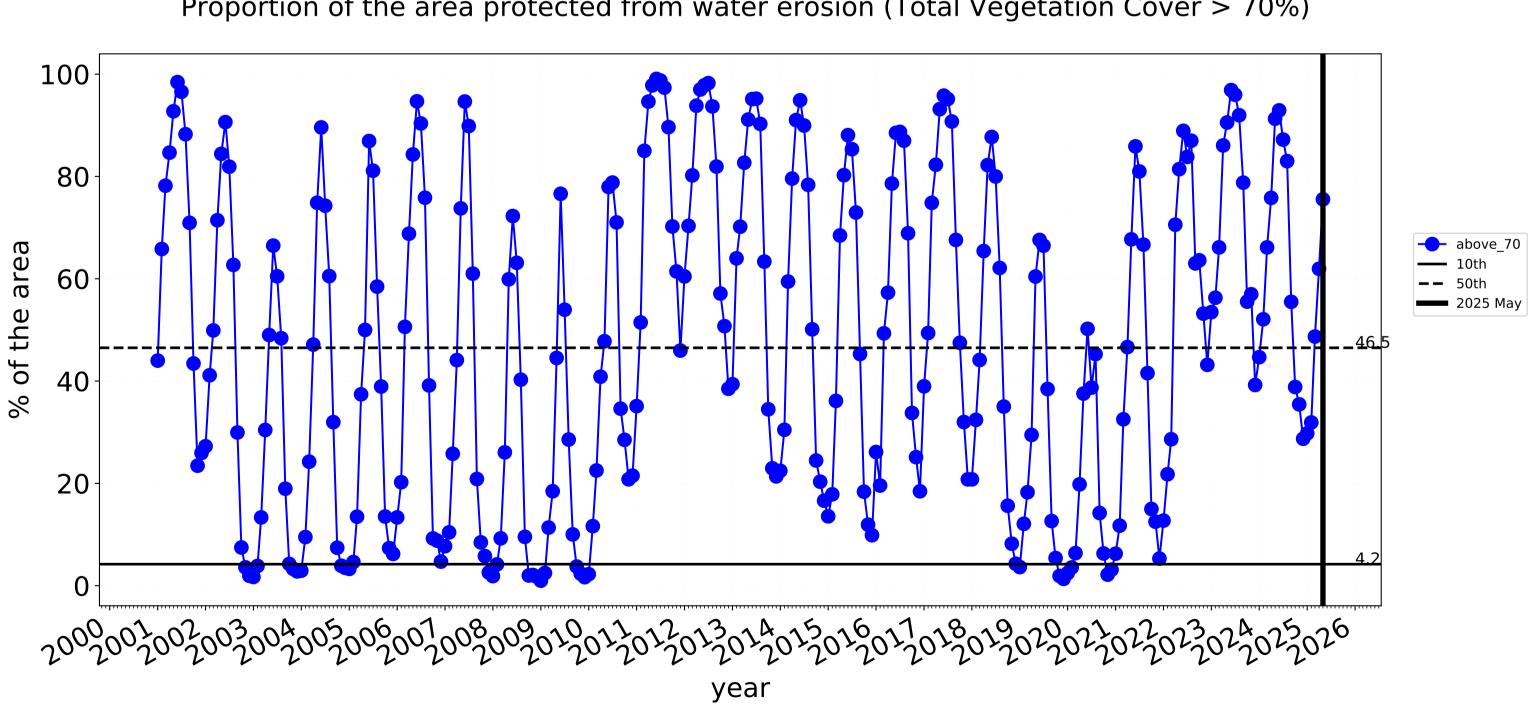
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.







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

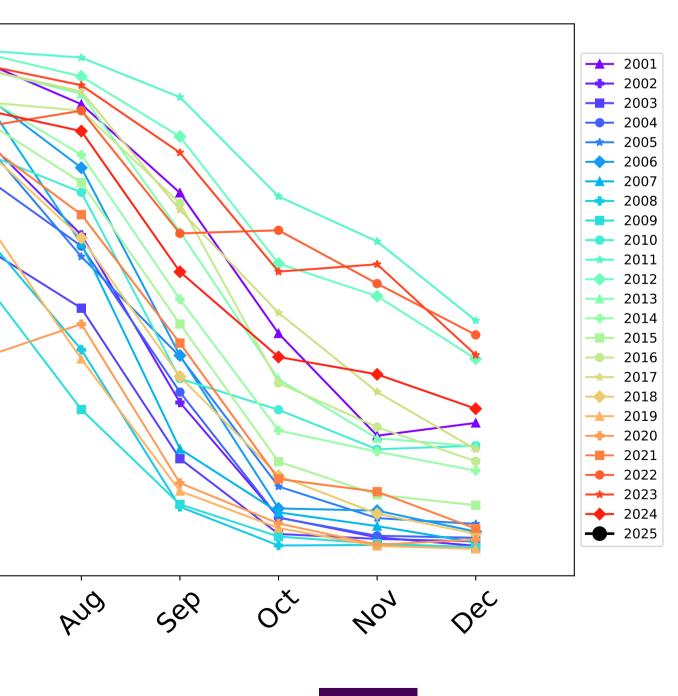


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



100-80-60-40 20-0 -4er lar May In (J) Ma, 26, month tern Ecosystem Research Infrastructure Australian Government

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







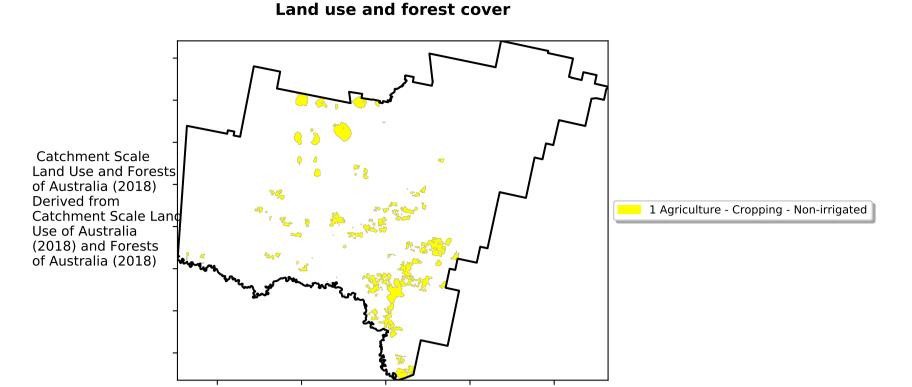
Cropping

1 12% 100%

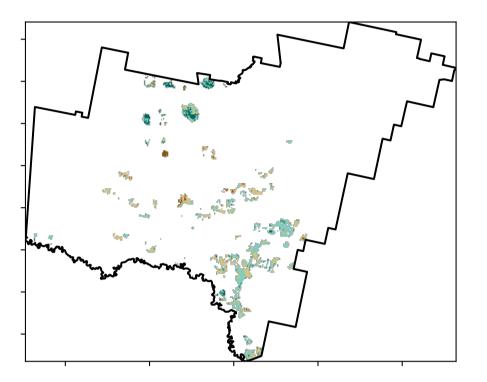
1 52°10 TO010

329050010

· 0.30%



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



50 -40 -32.7% 30 -20 -20 -

31%-50%

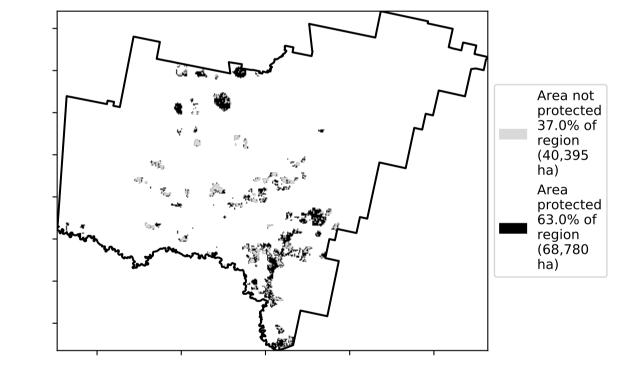
10 ·

0 ·

4.4%

0-30%

Proportion of vegetation cover class in area

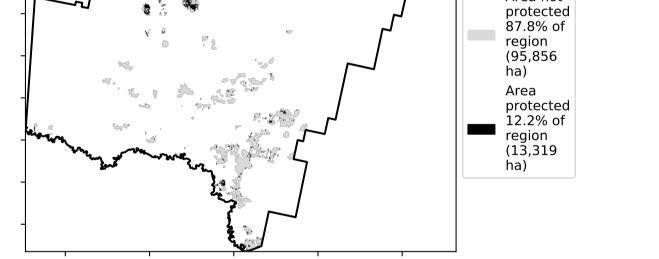


51%-70%

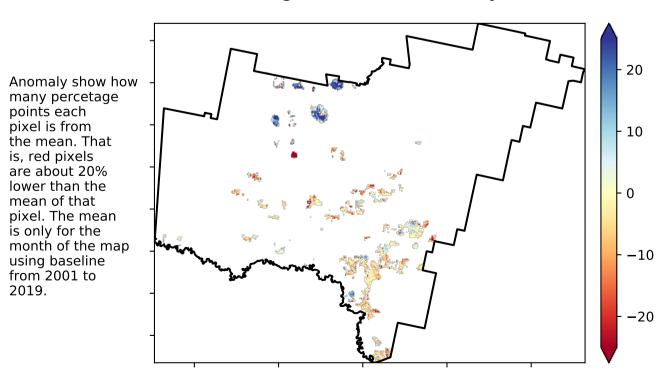
Total Vegetation Cover class

% Area protected from wind erosion (>50%)

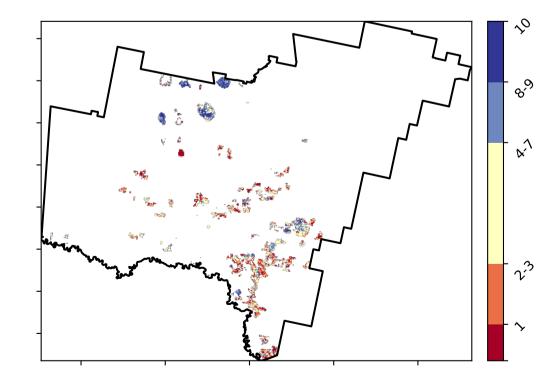
71%-100%



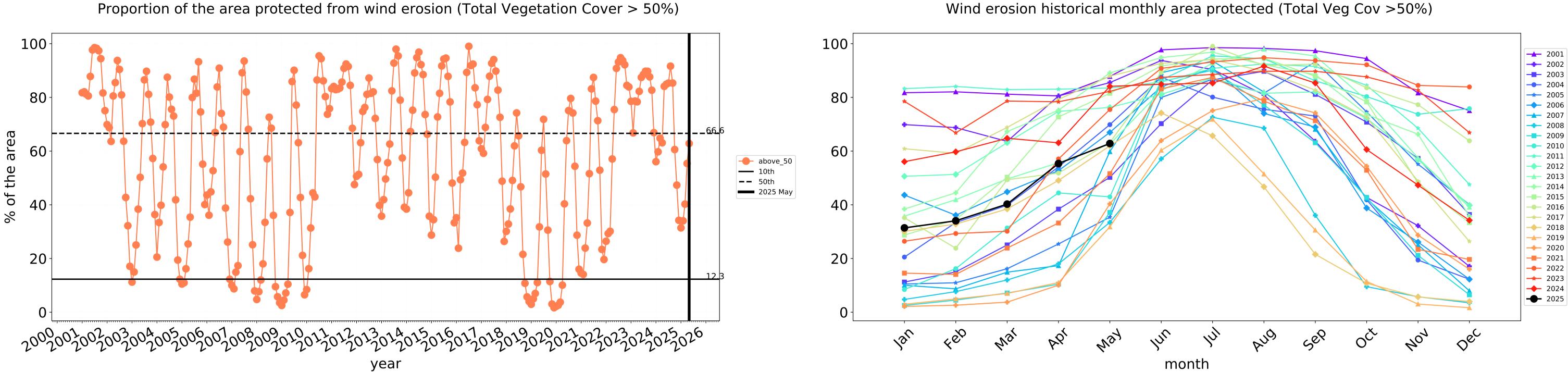
Total Vegetation Cover Anomaly [%]



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.







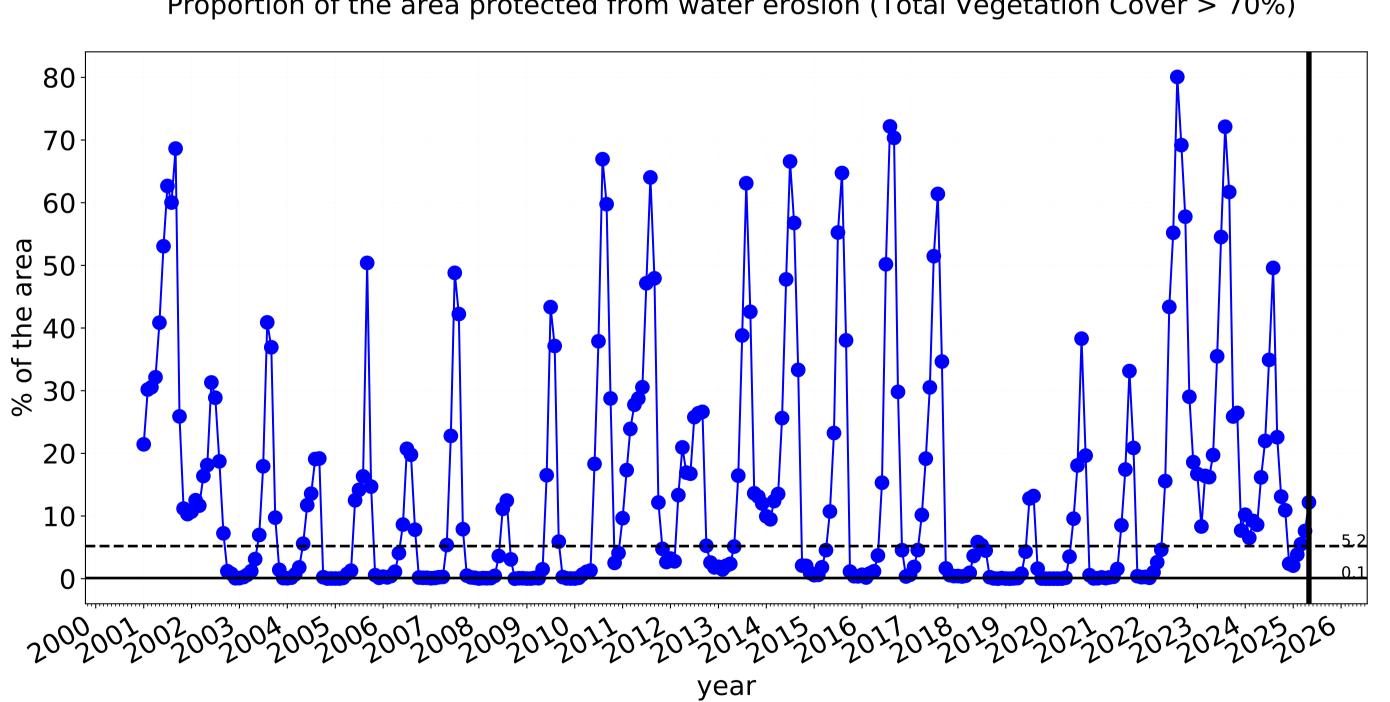
---- above_70

----- 2025 May

—— 10th

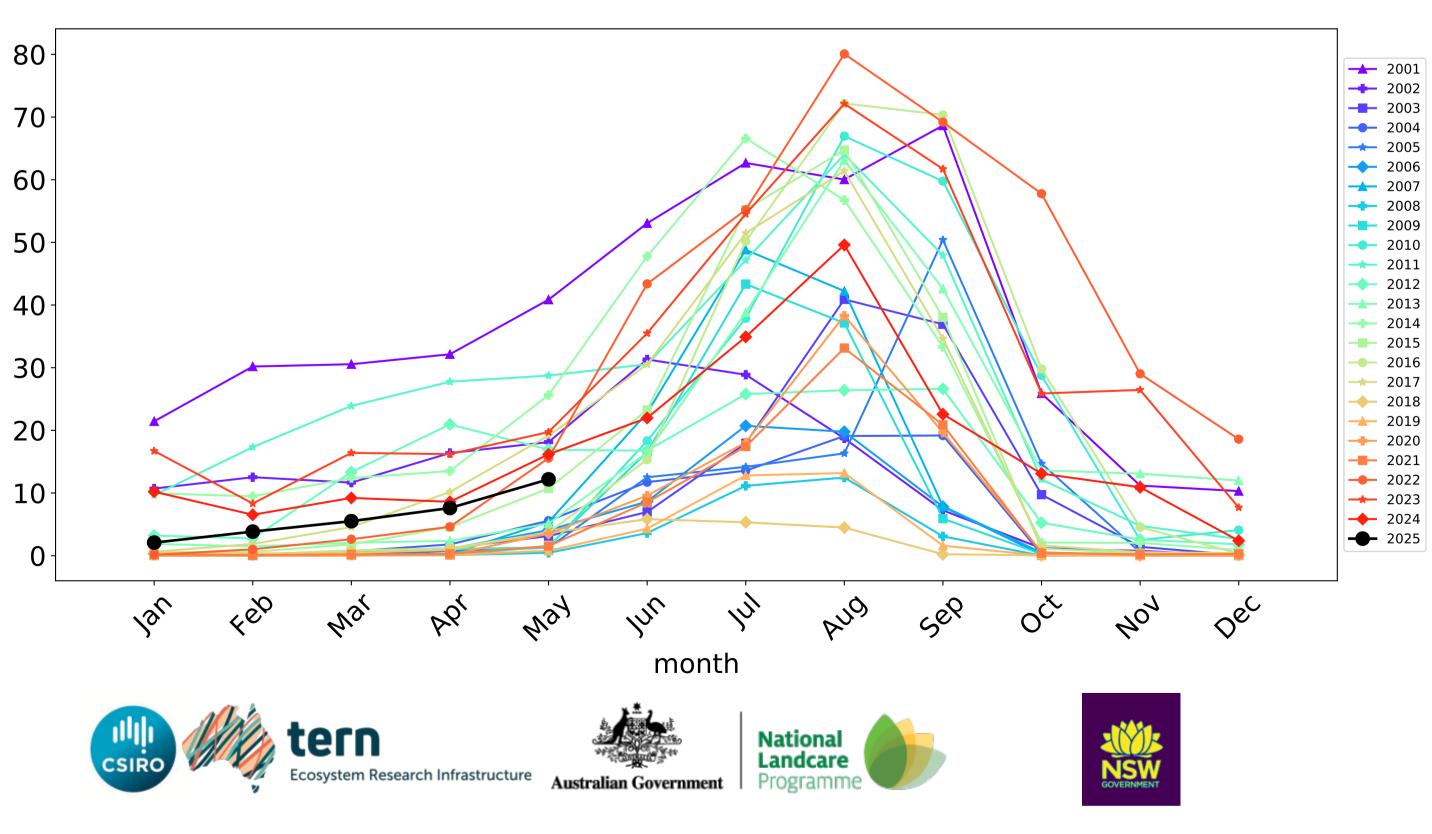
—— 50th

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



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

Cropping timeseries



Wentworth_(A) (2,607,675 ha and no data 17,615 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	2,607,675	99.3% 2,588,925	89.2% 2,327,200	31.7% 827,600	4.8% 126,275	0.3% 7,625	0.1% 3,025
Conservation and natural environments	186,500	100.0% 186,425	99.0% 184,725	78.1% 145,650	18.4% 34,225	0.8% 1,550	0.3% 575
Conservation and natural environments non forest	67,050	99.9% 66,975	97.4% 65,325	56.5% 37,875	6.4% 4,275	0.6% 425	0.2% 125
Conservation and natural environments Woodland forest	53,100	100.0% 53,100	100.0% 53,100	94.3% 50,050	18.0% 9,575	0.3% 150	0.1% 75
Conservation and natural environments Forest (non woodland)	66,350	100.0% 66,350	99.9% 66,300	87.0% 57,725	30.7% 20,375	1.5% 975	0.6% 375
Agriculture	2,322,475	99.3% 2,306,550	88.7% 2,059,550	27.9% 647,475	3.6% 83,700	0.2% 3,950	0.1% 1,350
Grazing	2,198,475	99.5% 2,187,500	89.9% 1,976,450	28.4% 623,650	3.4% 75,625	0.1% 2,325	0.0% 600
Grazing non forest	1,843,850	99.4% 1,832,975	88.1% 1,623,750	19.6% 361,300	1.5% 27,550	0.1% 1,650	0.0% 400
Grazing Woodland forest	157,325	100.0% 157,250	99.3% 156,275	72.0% 113,325	8.2% 12,975	0.0% 75	0.0%
Grazing - Forest (non woodland)	197,300	100.0% 197,275	99.6% 196,425	75.5% 149,025	17.8% 35,100	0.3% 600	0.1% 200
Cropping	109,175	95.5% 104,275	62.8% 68,600	12.2% 13,300	4.1% 4,475	1.4% 1,525	0.7% 750

