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

## **Date: December 2024**

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:

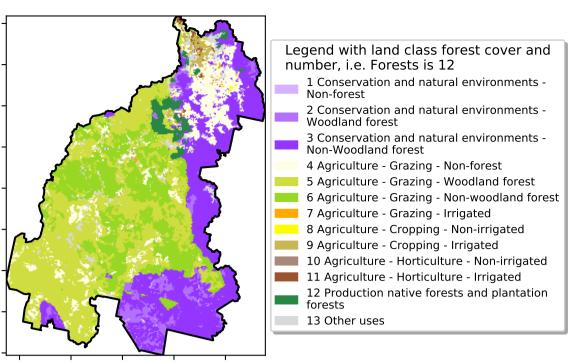
- 1. http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification
- 2. http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018
- 3. https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover
- 4. MODIS Fractional cover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

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

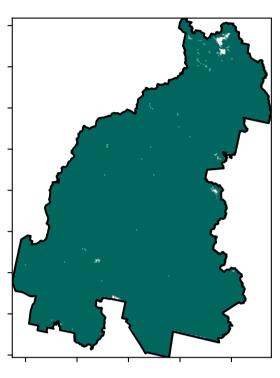


# **Vegetation Cover Dec 2024**

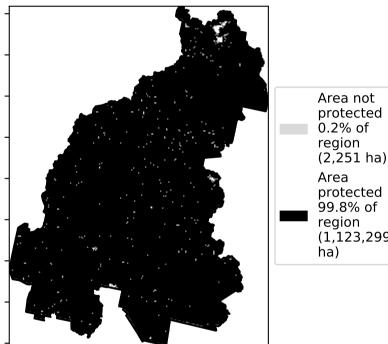
#### Land use and forest cover

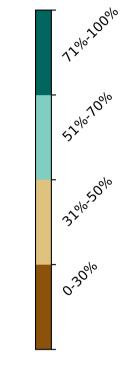


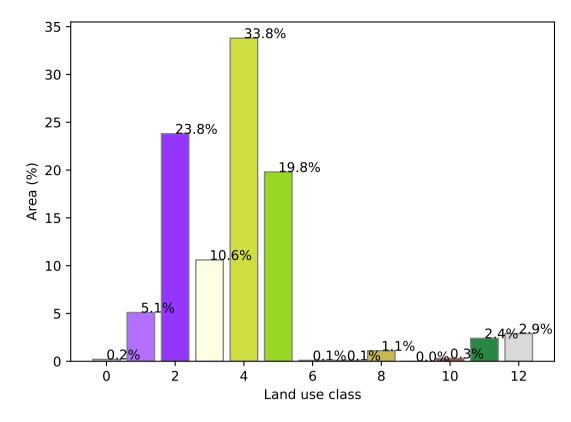
### **Total Vegetation Cover [%]**



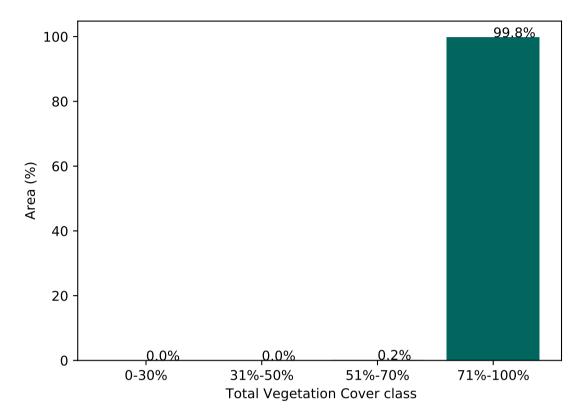
% Area protected from water erosion (>70%)



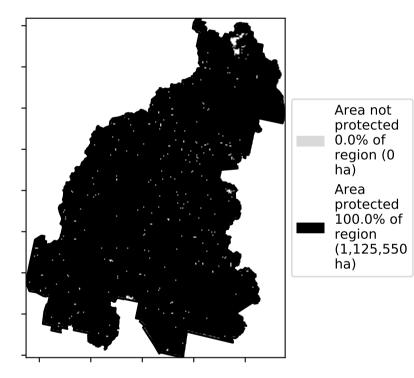




### Proportion of vegetation cover class in area



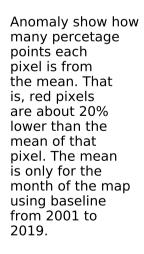
#### % Area protected from wind erosion (>50%)



#### Proportion of each land class in area

(1,123,299

**Total Vegetation Cover Anomaly [%]** 



Catchment Scale

of Australia (2018)

(2018) and Forests

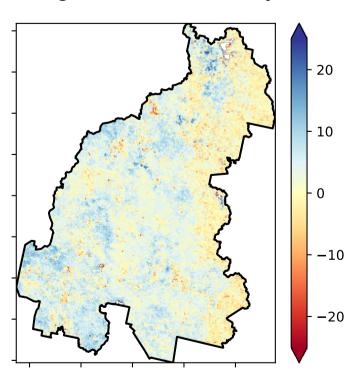
of Australia (2018)

Derived from

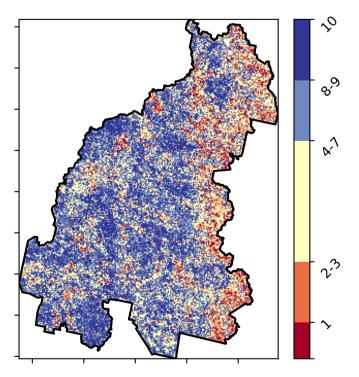
Use of Australia

Land Use and Forests

Catchment Scale Land

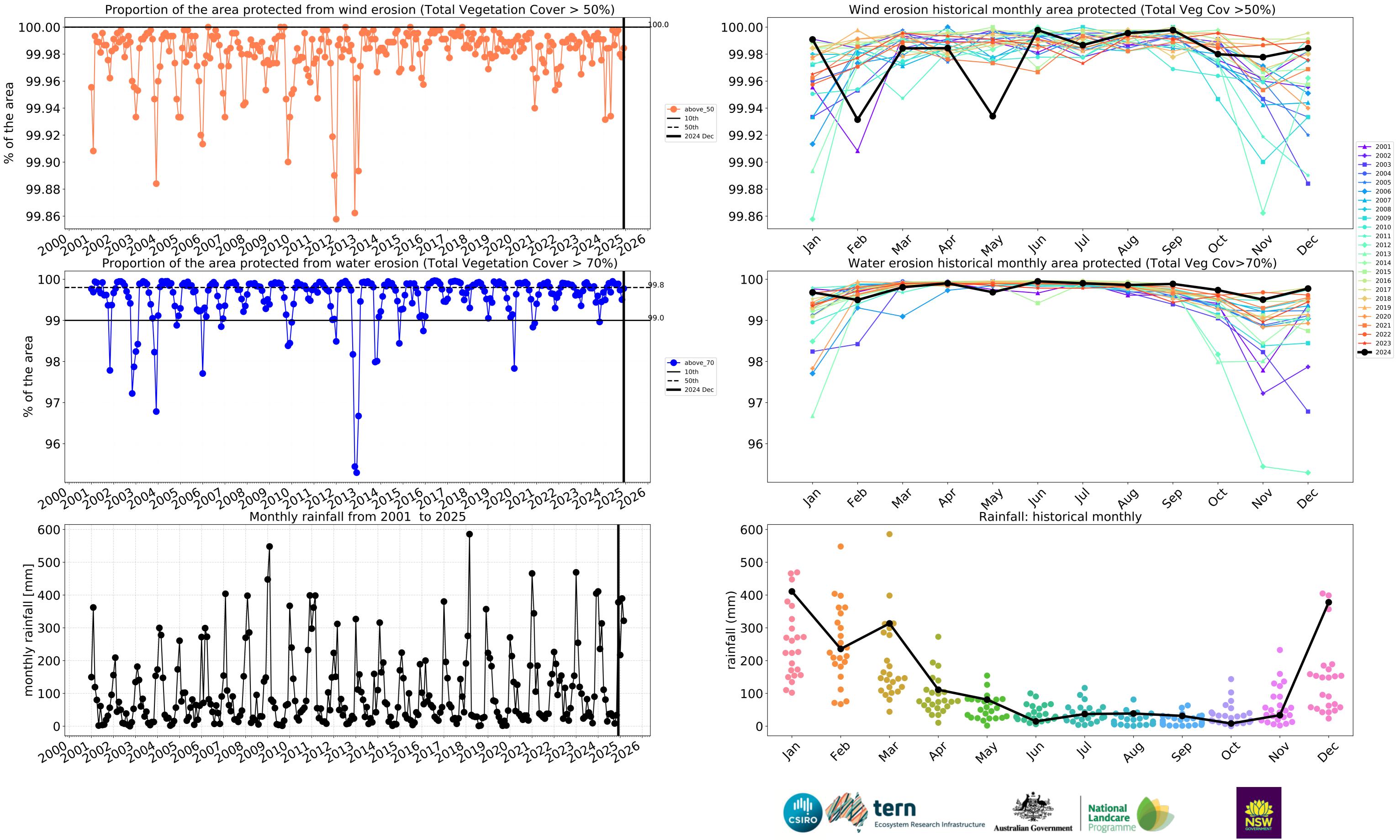


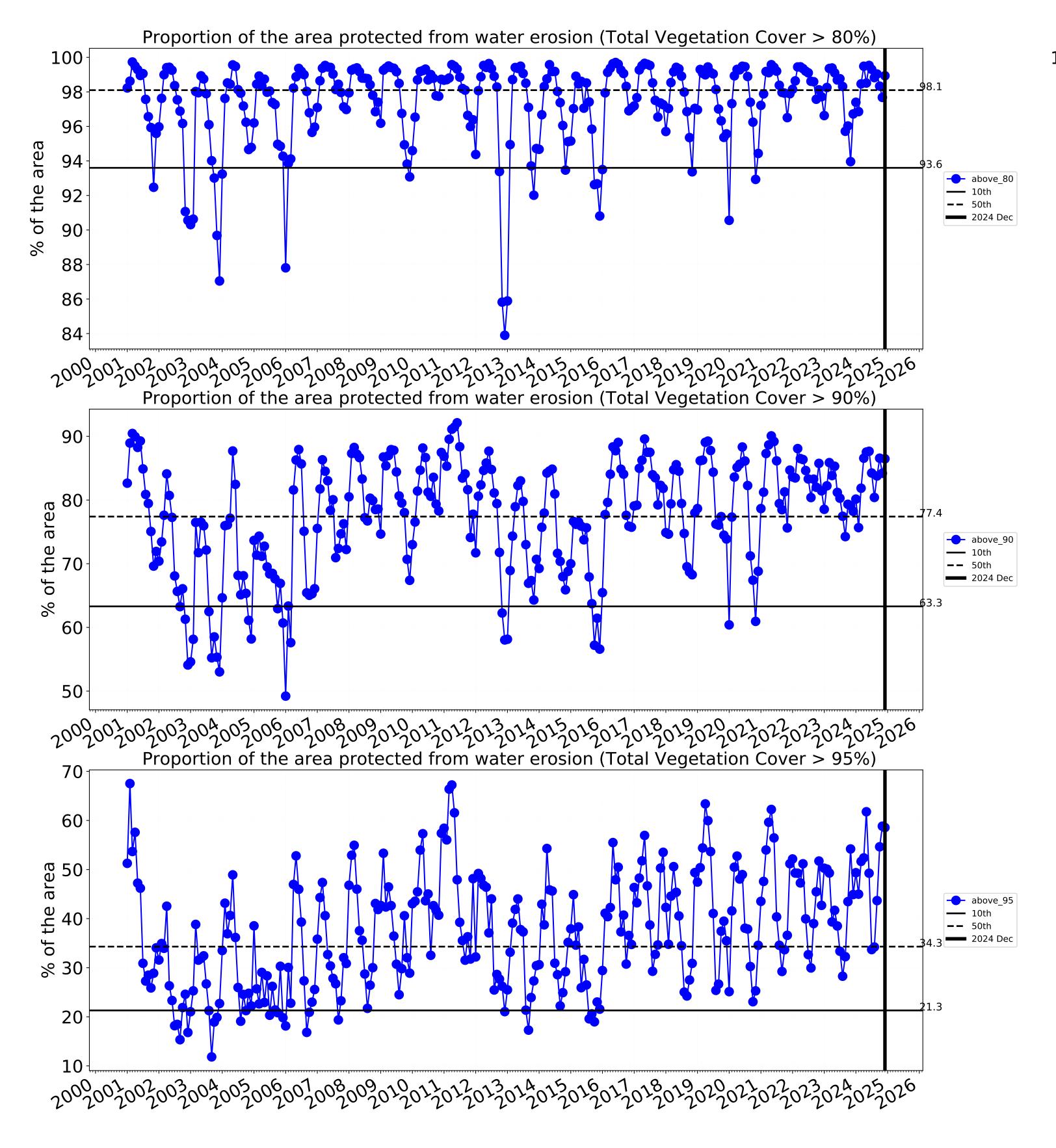
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

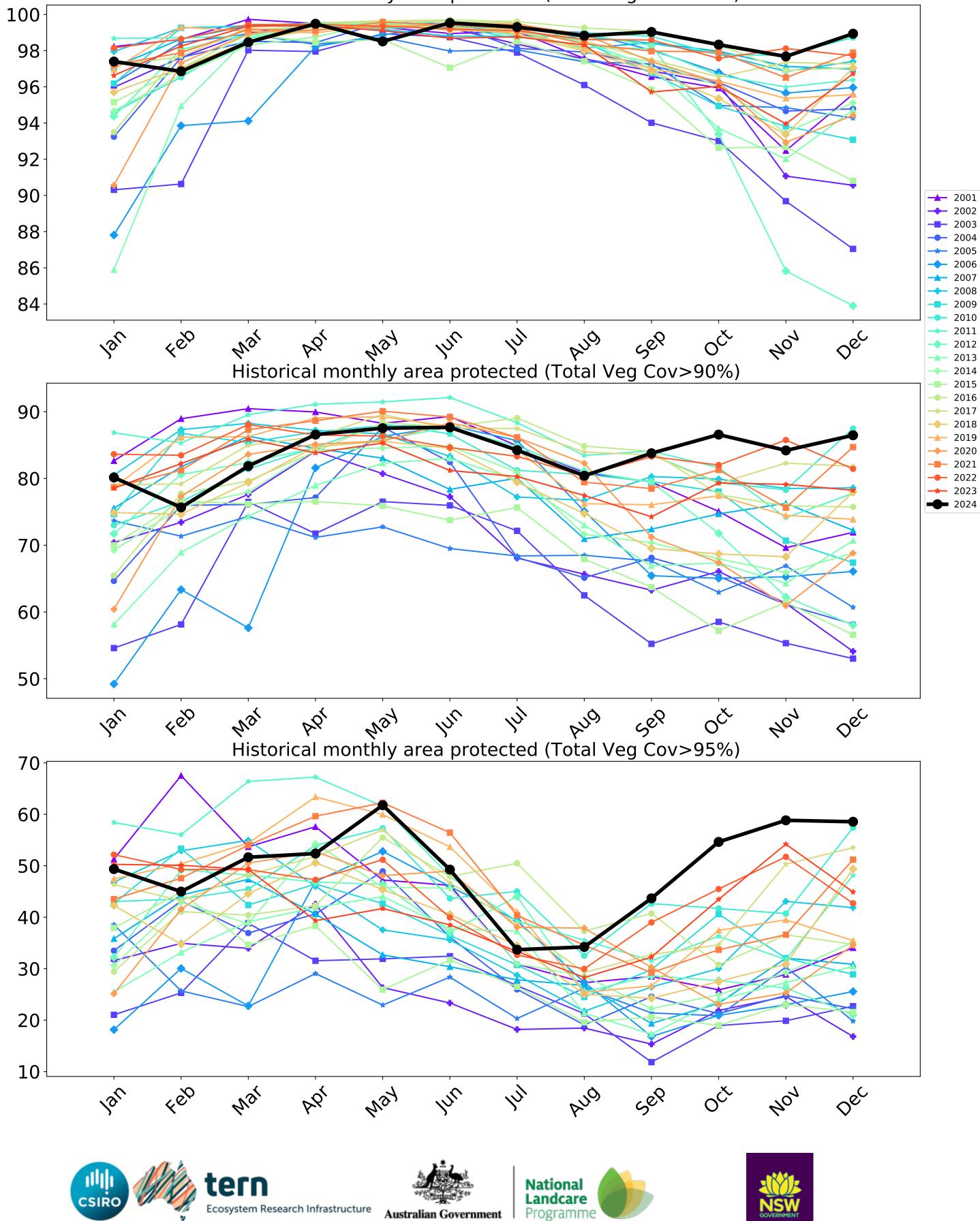














### **Conservation and natural environments**

forest

Catchment Scale Land Use and Forests

of Australia (2018) Derived from

(2018) and Forests of Australia (2018)

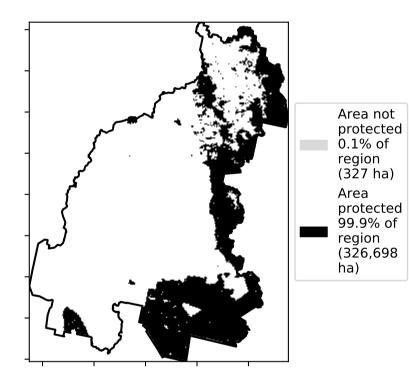
Use of Australia

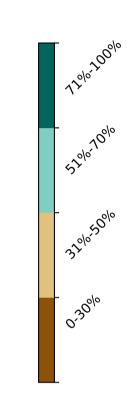
Catchment Scale Land

**Total Vegetation Cover [%]** 

Land use and forest cover

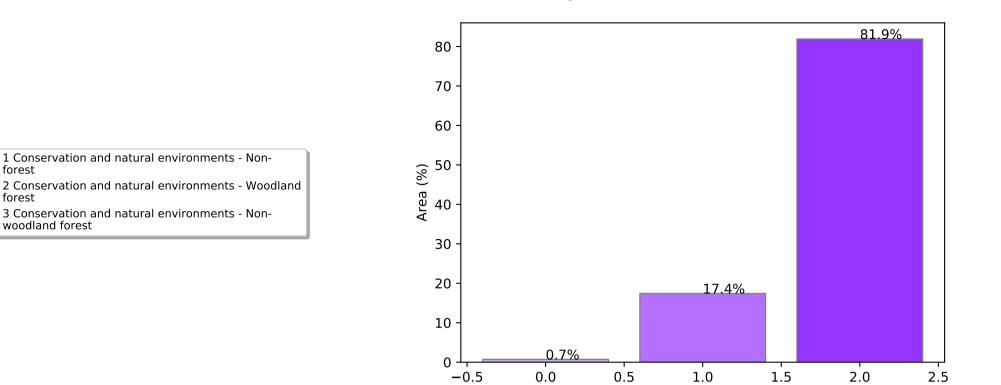
% Area protected from water erosion (>70%)





1 Conservation and natural environments - Non-forest

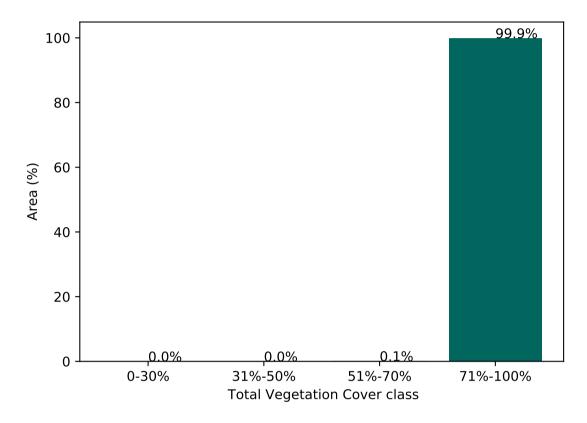
3 Conservation and natural environments - Non-woodland forest



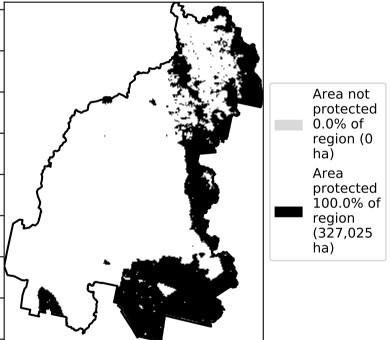
#### Proportion of each land class in area

Proportion of vegetation cover class in area

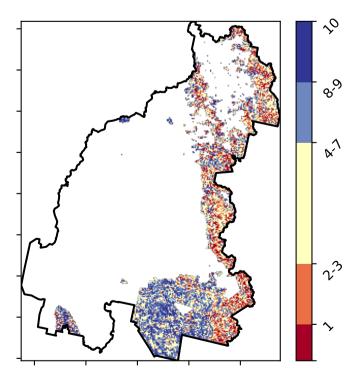
Land use class



% Area protected from wind erosion (>50%)

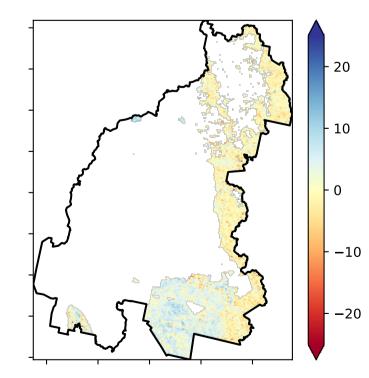


**Total Vegetation Cover Decile [%]** 



**Total Vegetation Cover Anomaly [%]** 

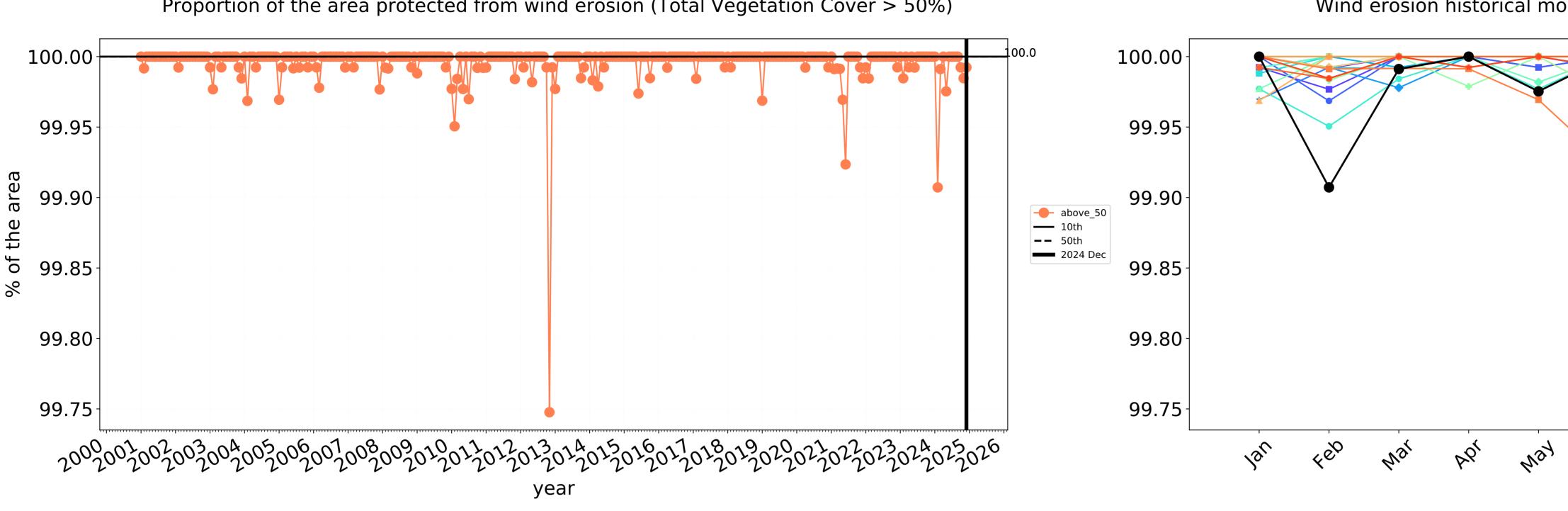
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



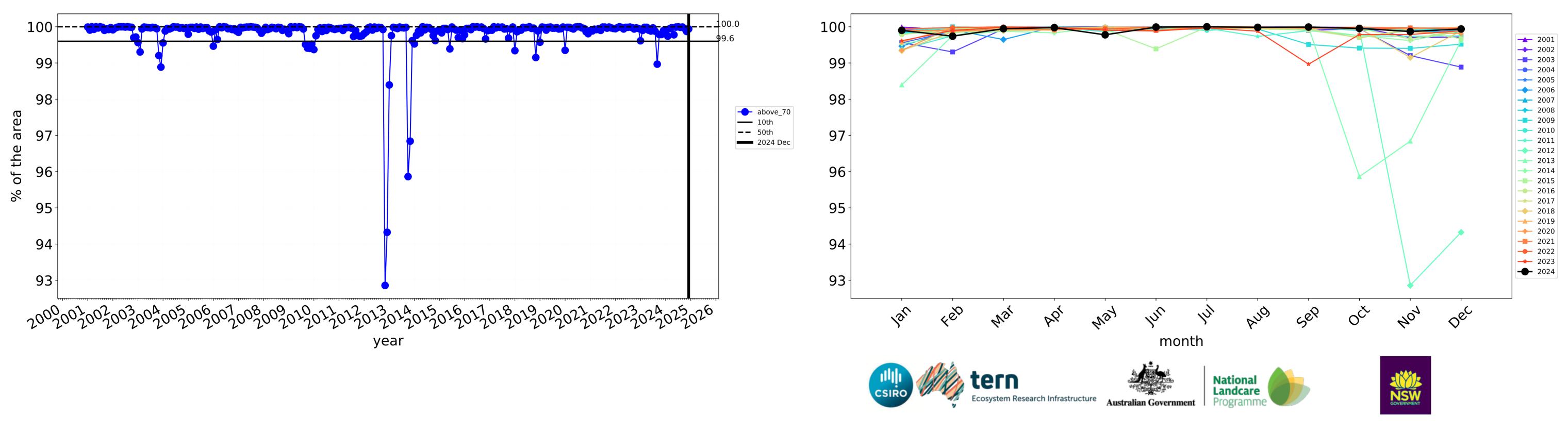
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.



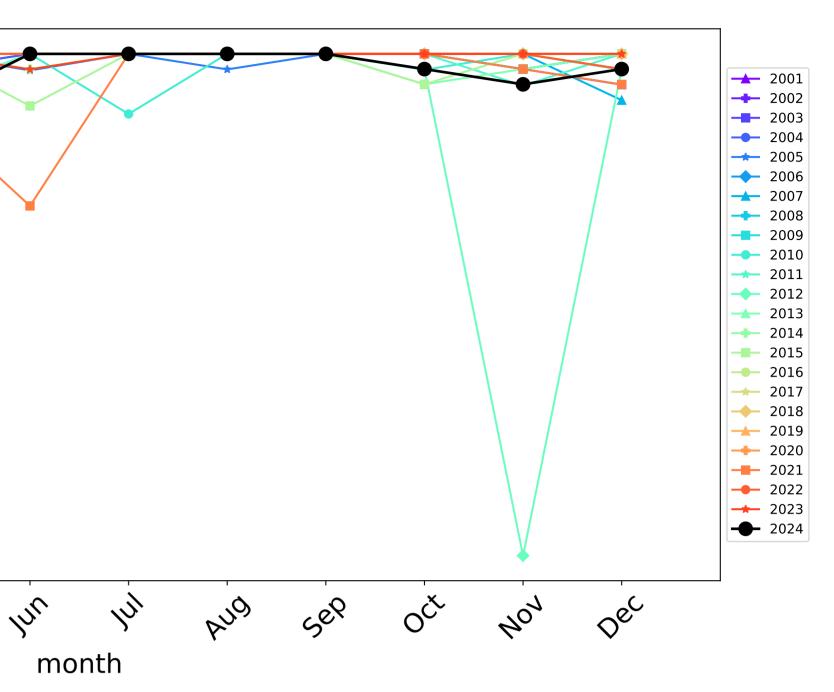




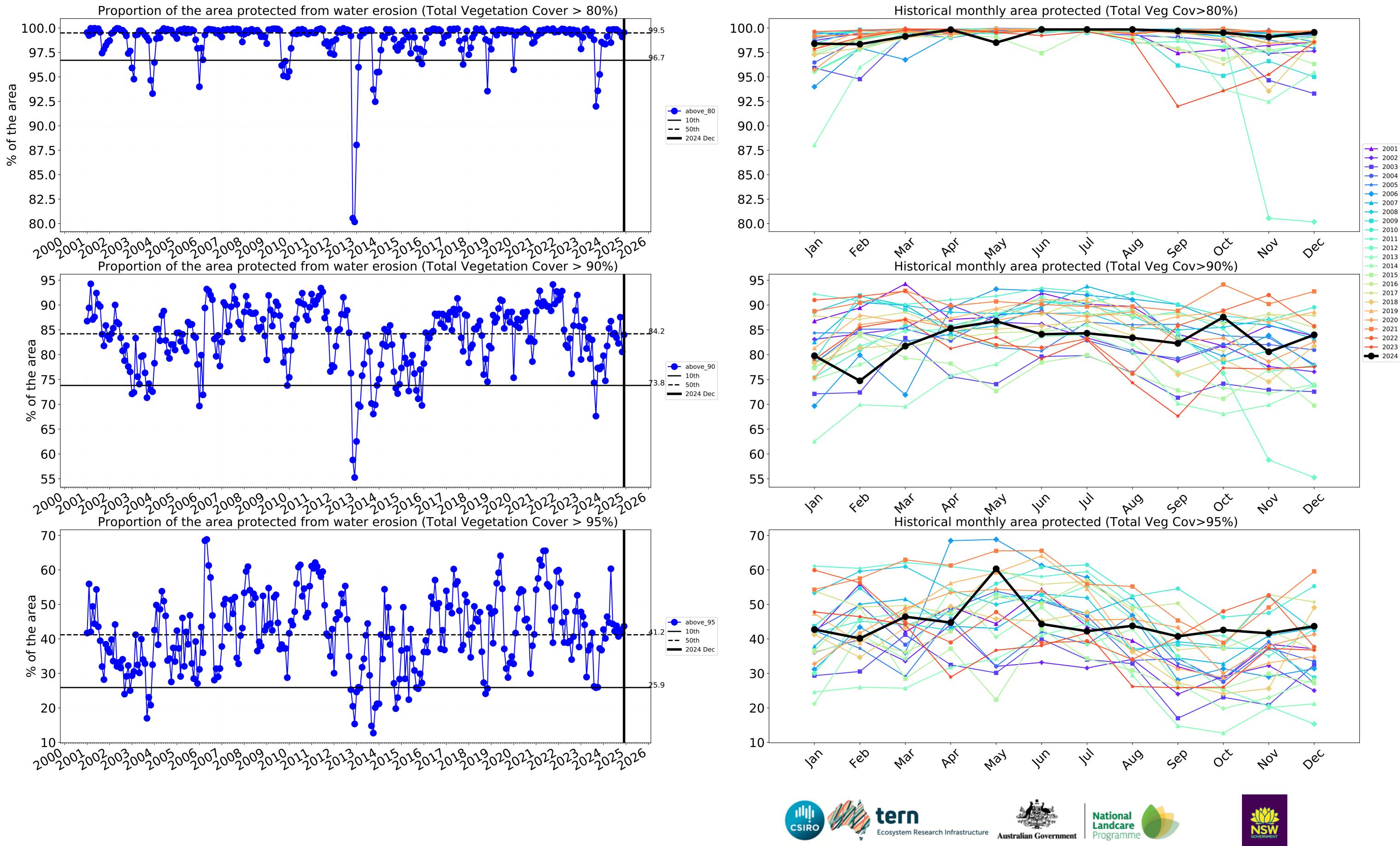
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



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

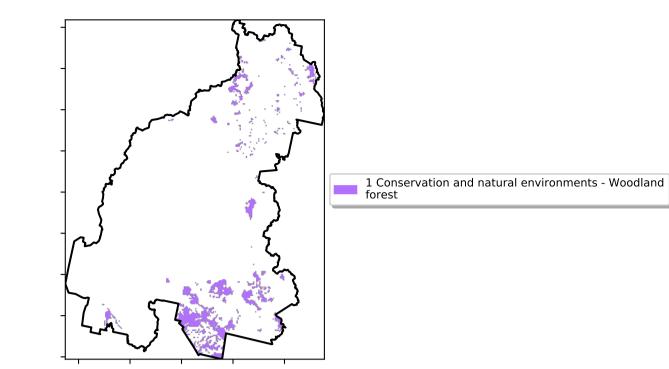


Water erosion historical monthly area protected (Total Veg Cov>70%)

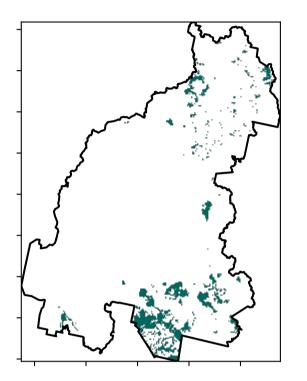


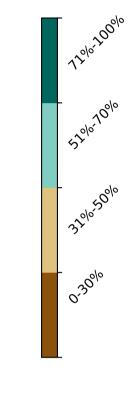
### **Conservation and natural environments Woodland forest**

Land use and forest cover



**Total Vegetation Cover [%]** 





region (0

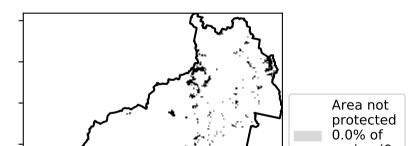
protected 100.0% of

region (57,075 ha)

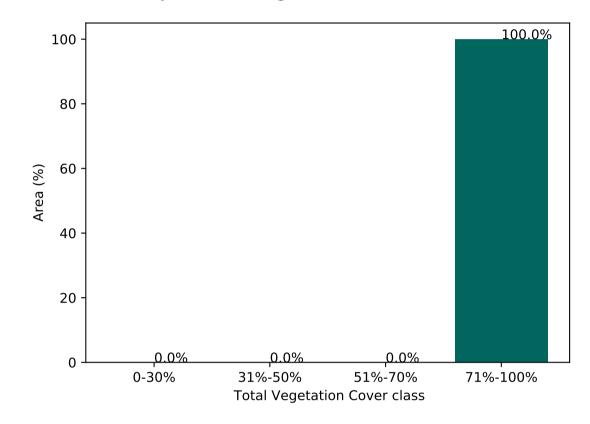
ha)

Area

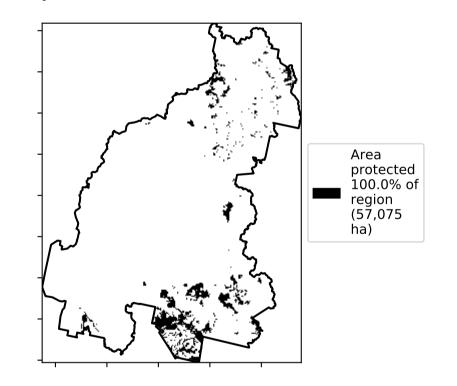
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

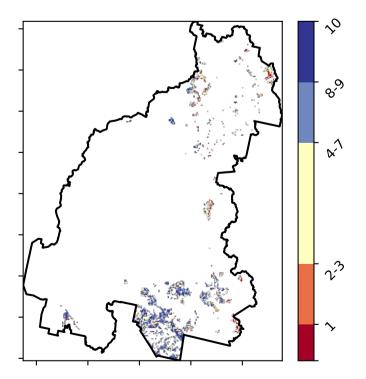


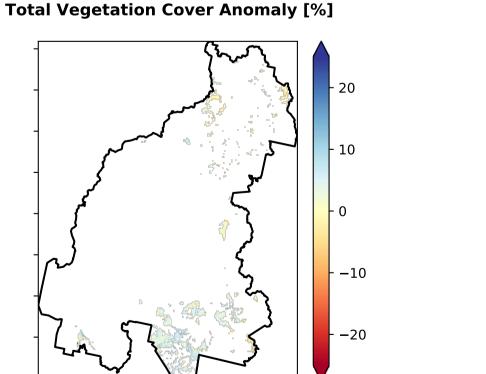
% Area protected from wind erosion (>50%)



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 Decile [%]** 



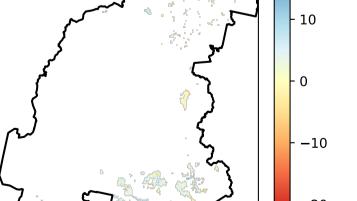


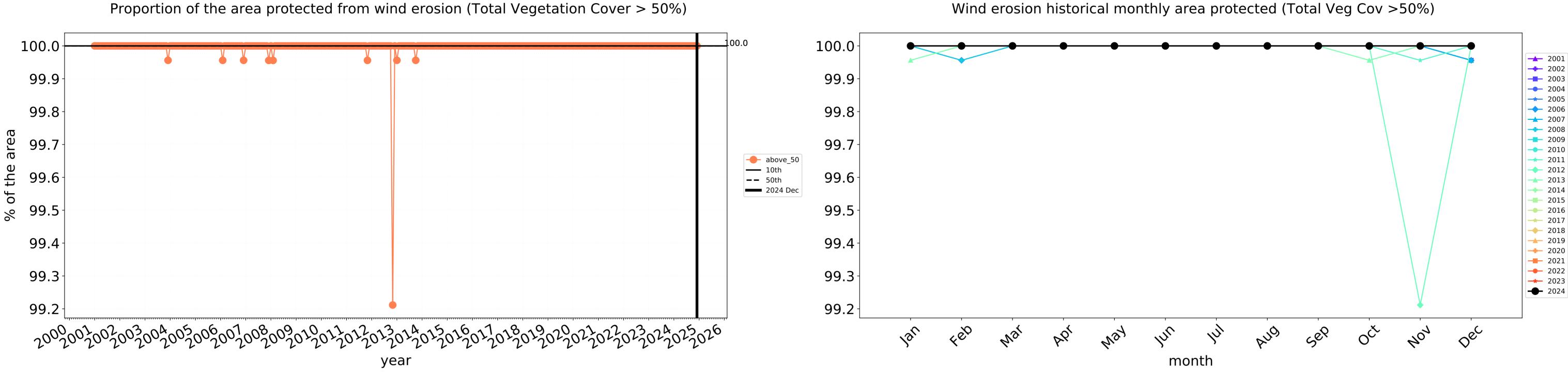
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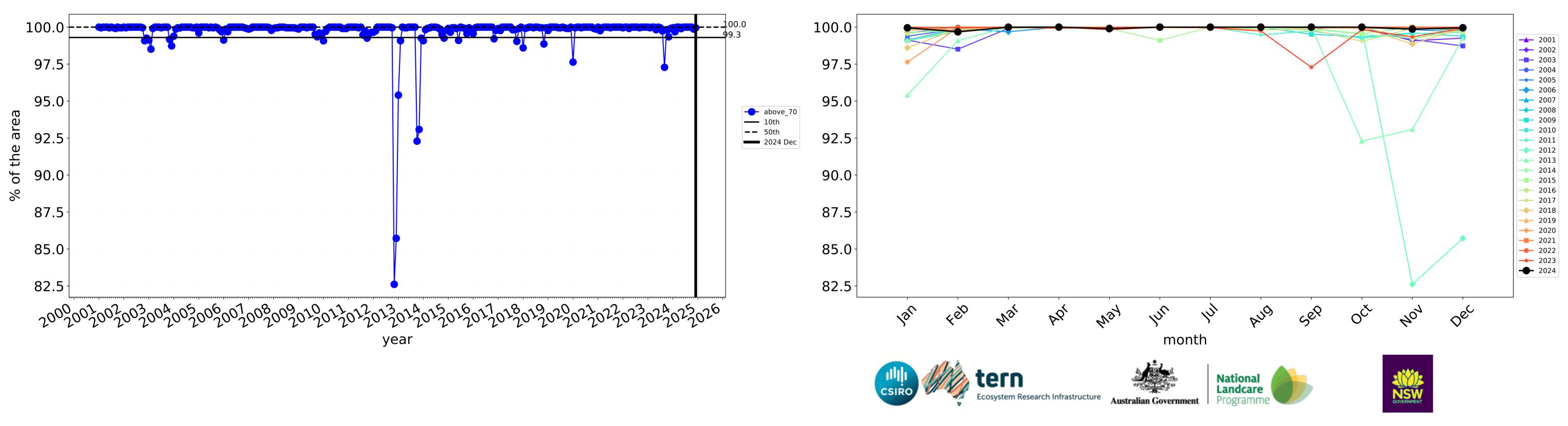




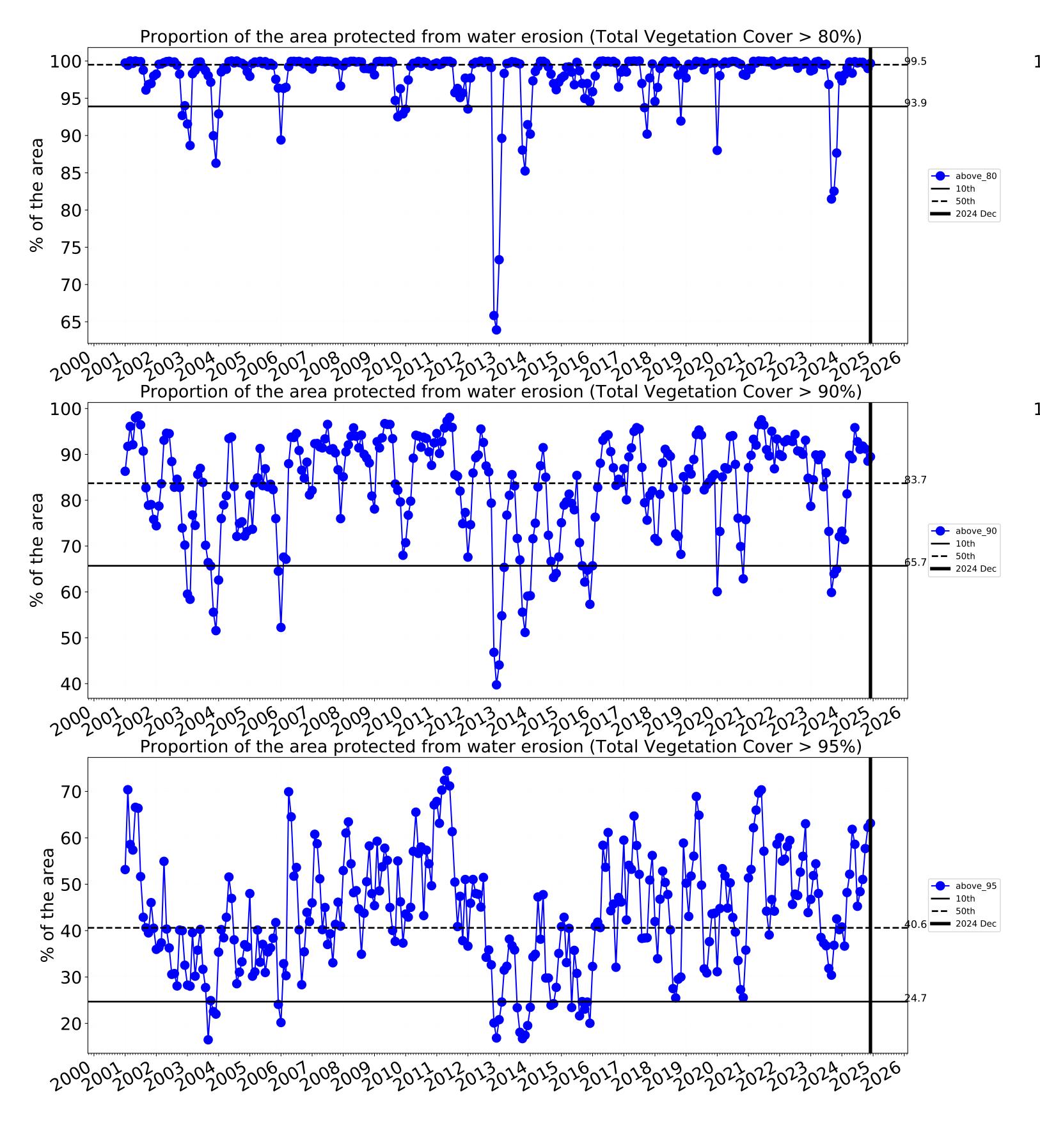
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

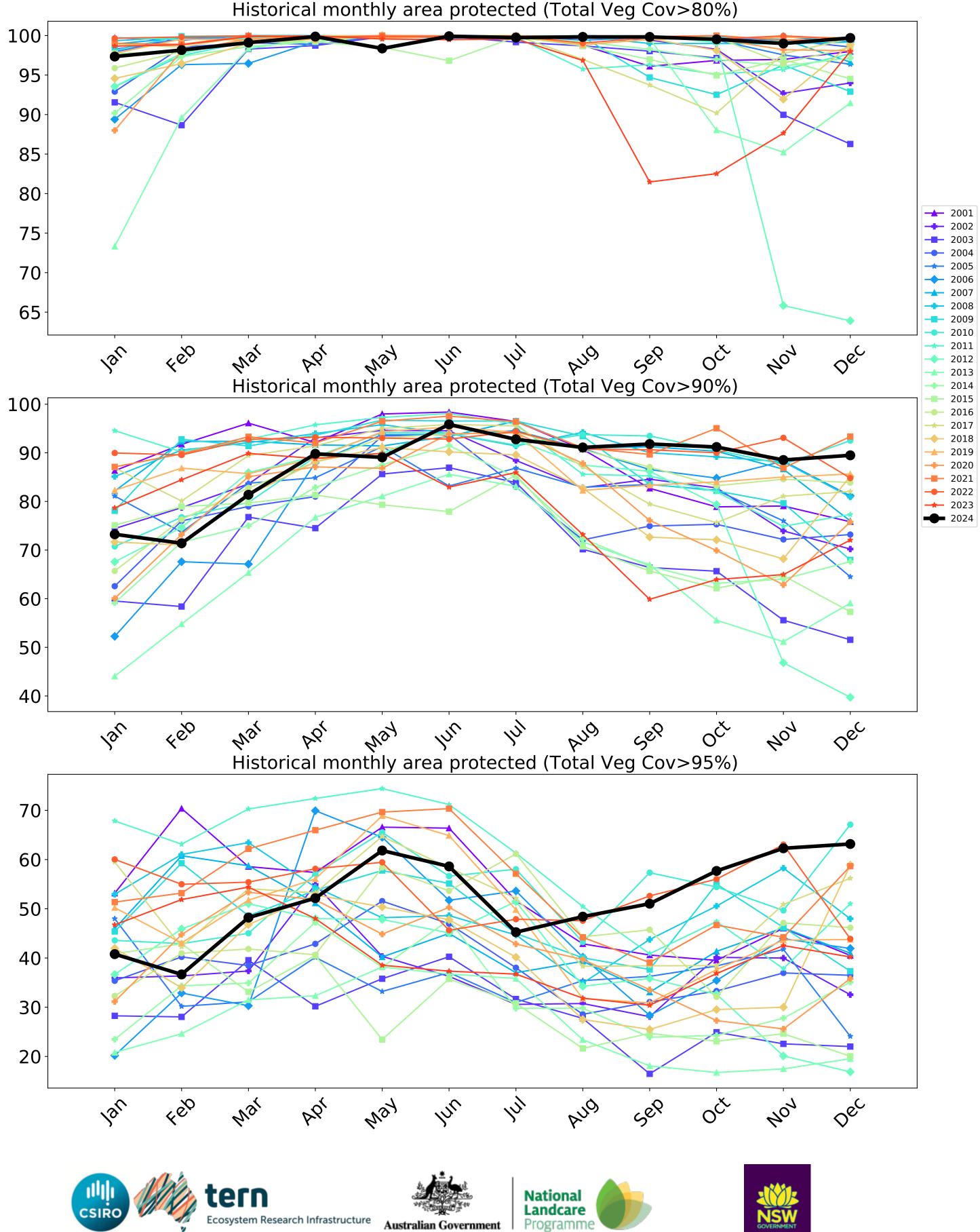






Water erosion historical monthly area protected (Total Veg Cov>70%)



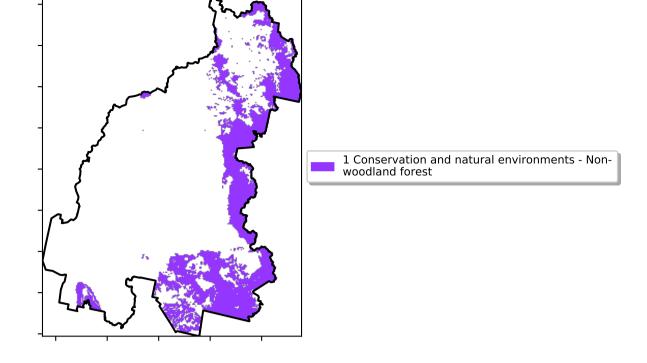




### **Conservation and natural environments Forest (non woodland)**

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)

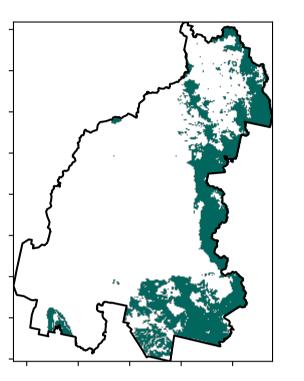


52%70%

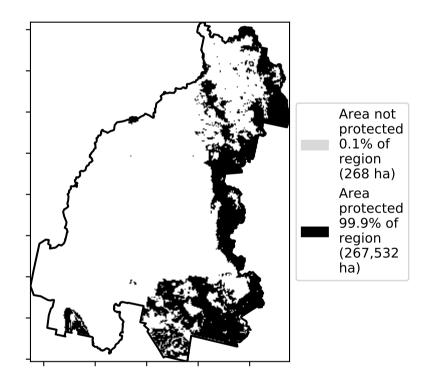
32010

0.30%

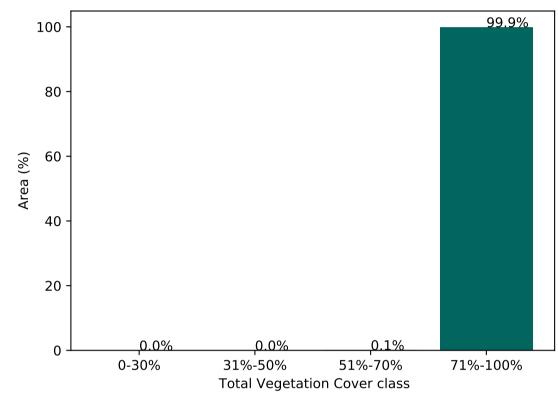
**Total Vegetation Cover [%]** 



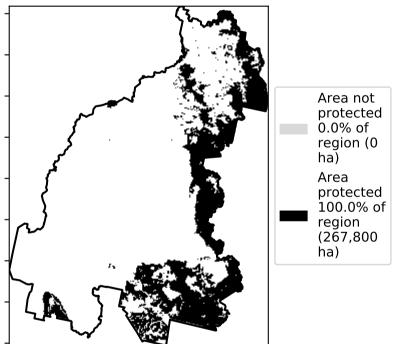
% Area protected from water erosion (>70%)



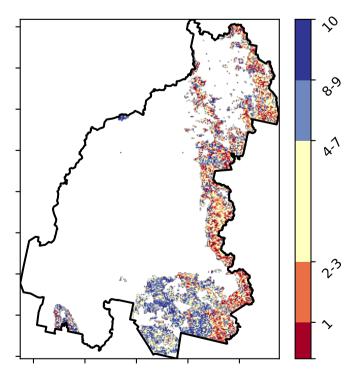




% Area protected from wind erosion (>50%)

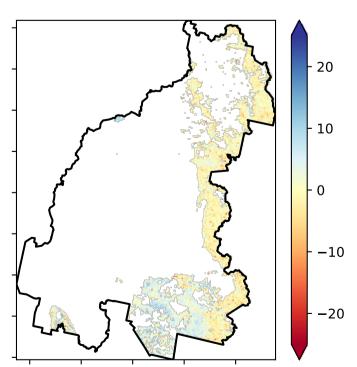


**Total Vegetation Cover Decile [%]** 



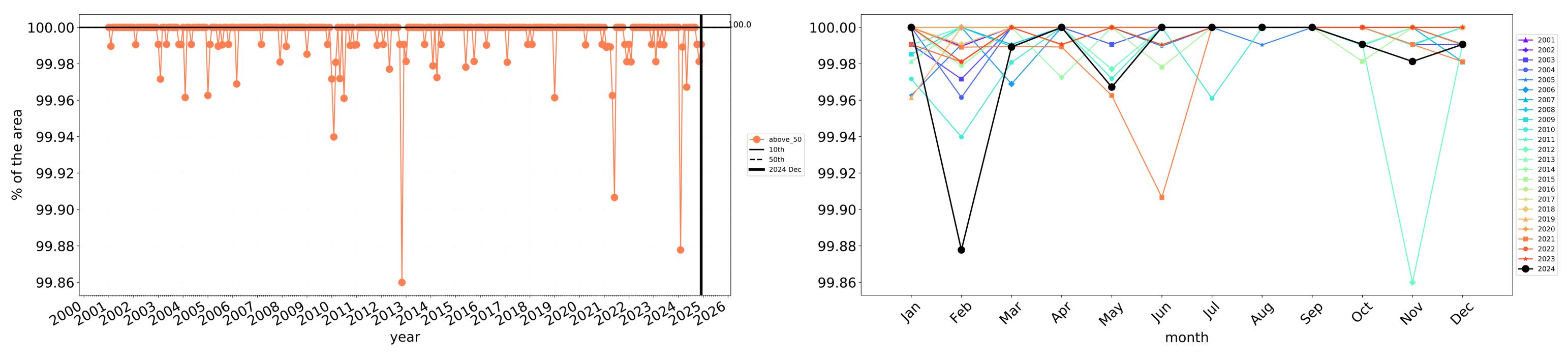
**Total Vegetation Cover Anomaly [%]** 

Anomaly show how many percetage points each pixel is from the mean That 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.

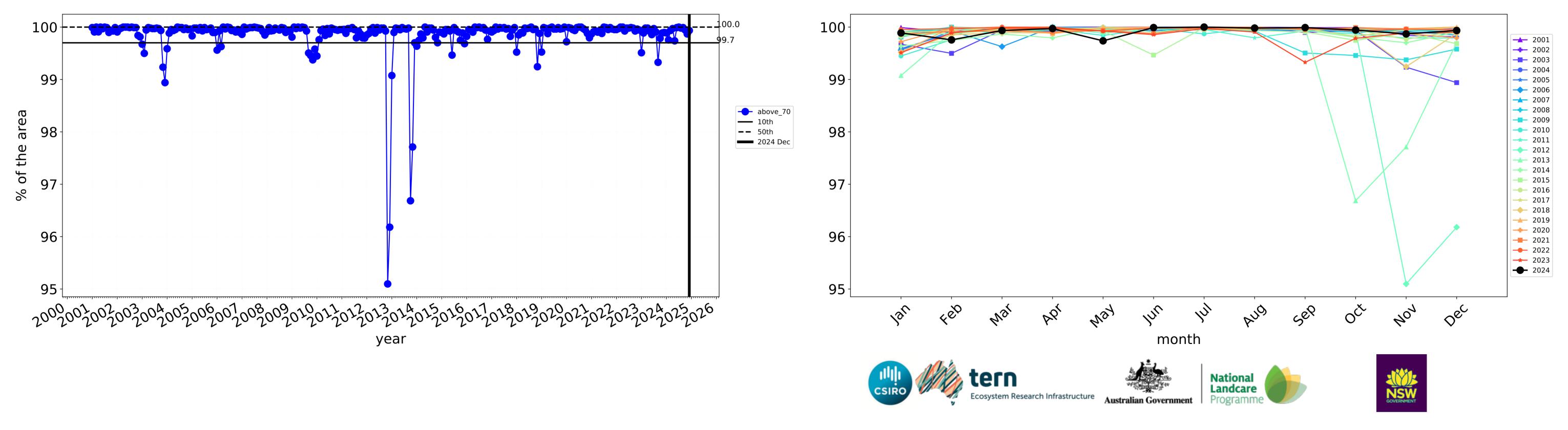


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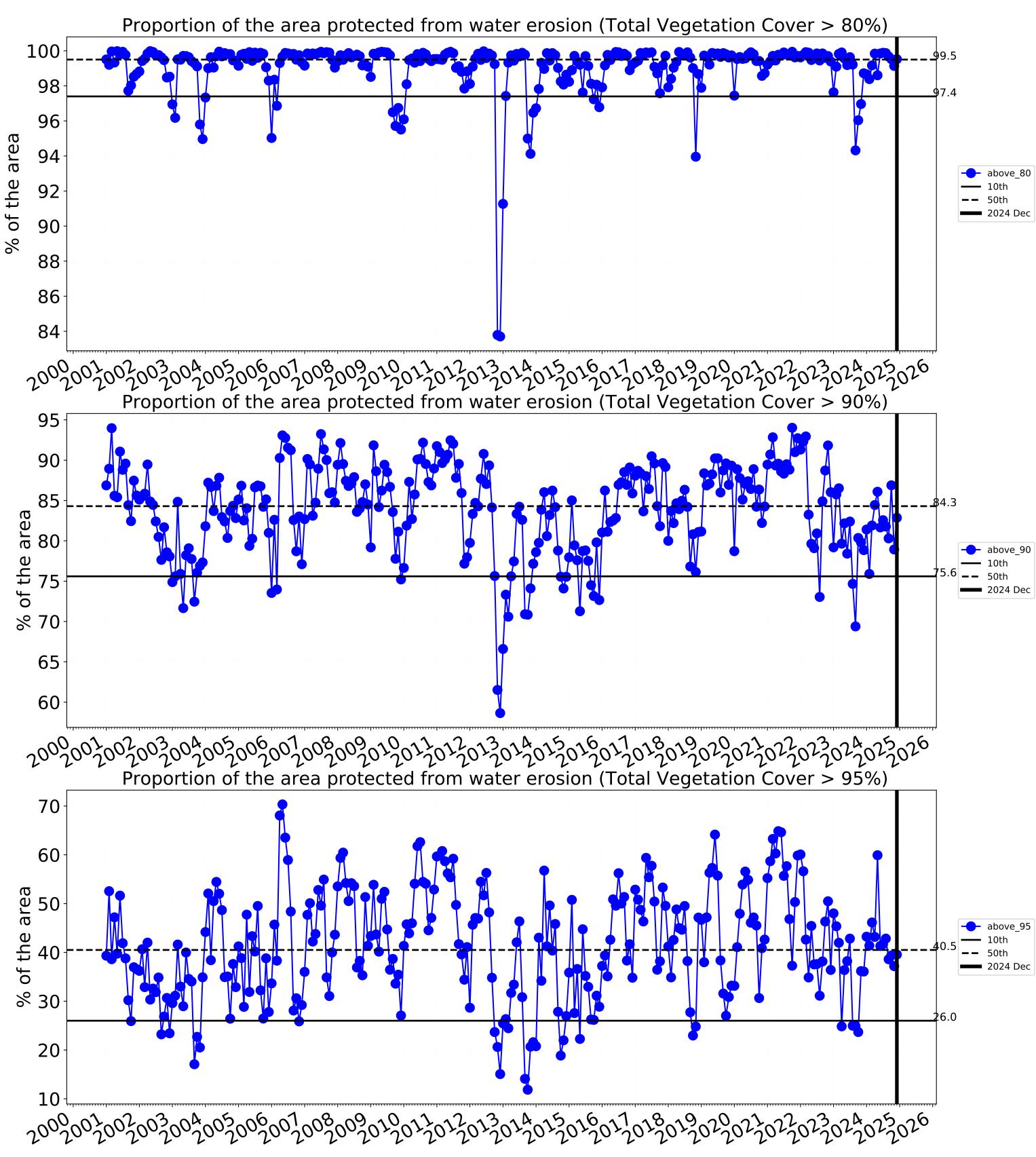


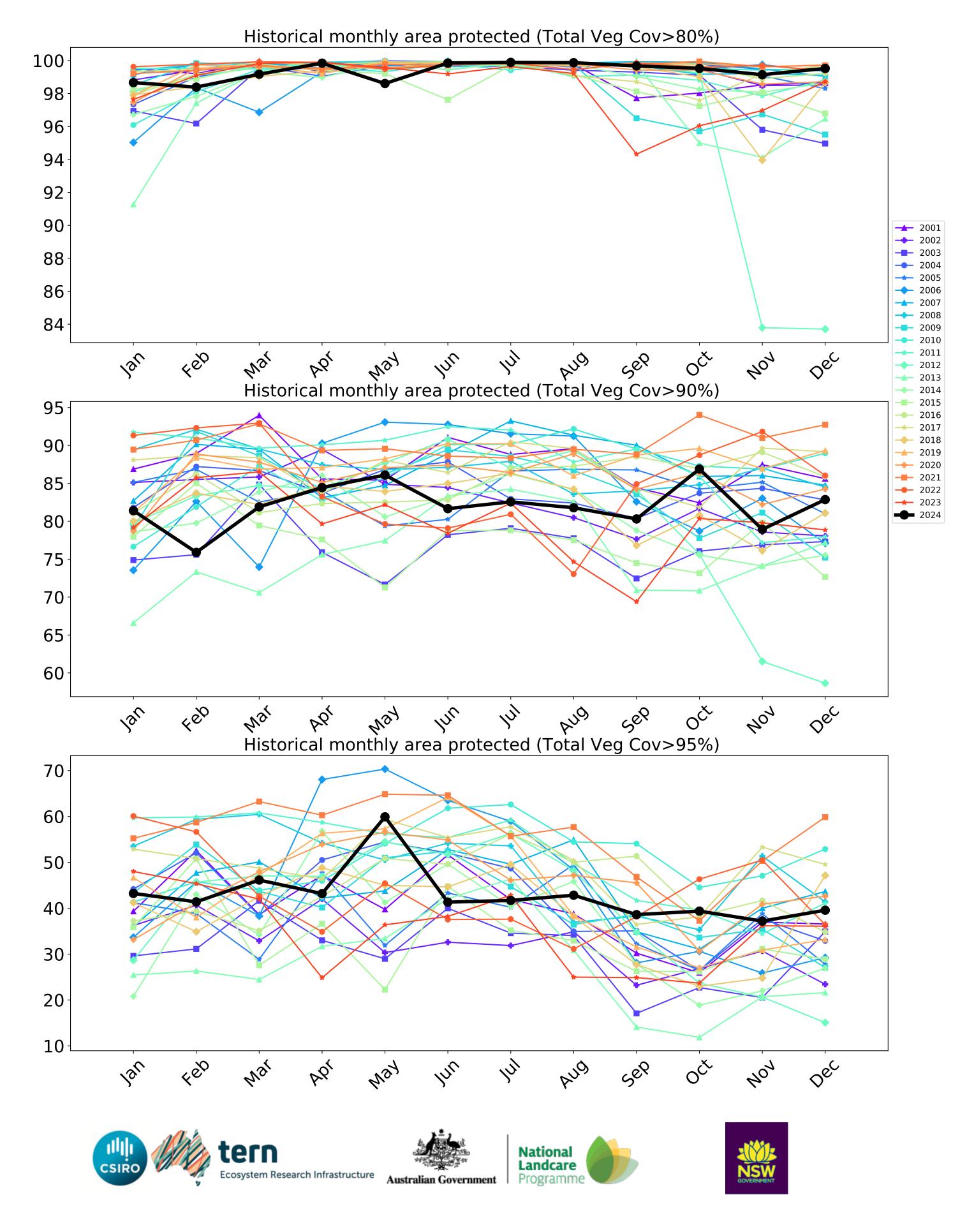
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



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

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





### Agriculture

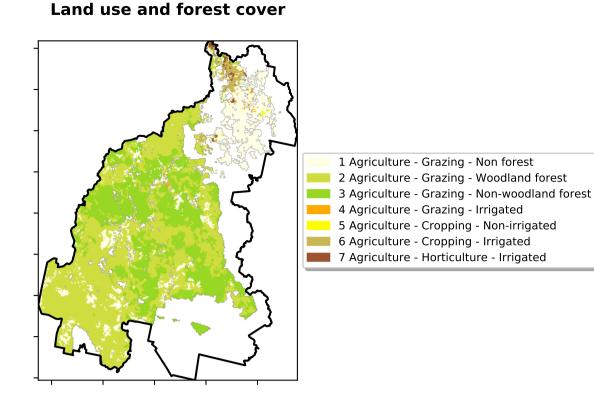
12%200%

52%70%

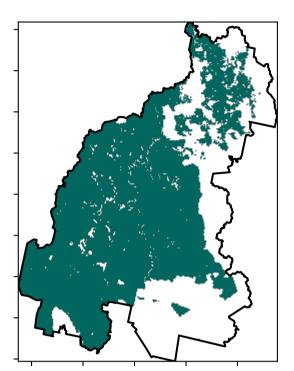
32010

0.30%

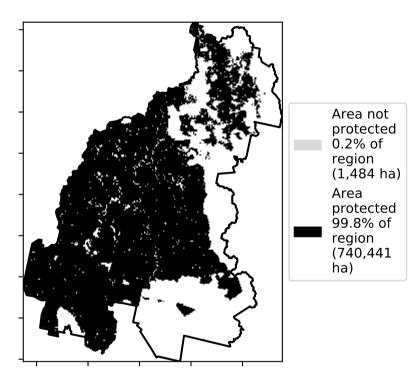
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

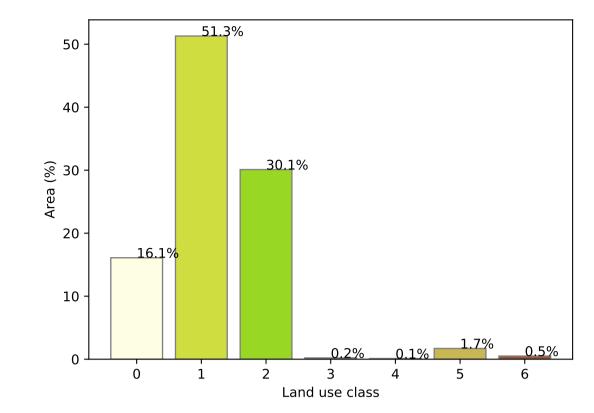


#### **Total Vegetation Cover [%]**



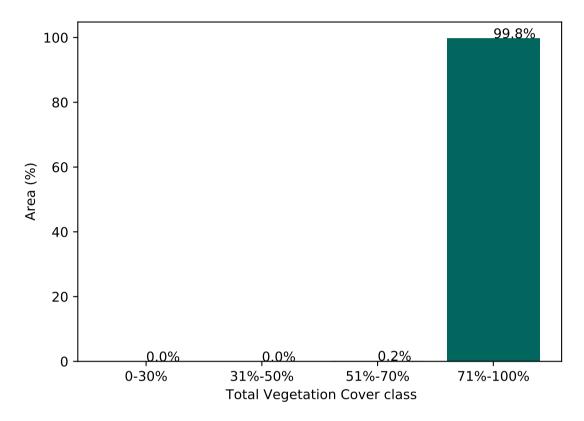
% Area protected from water erosion (>70%)



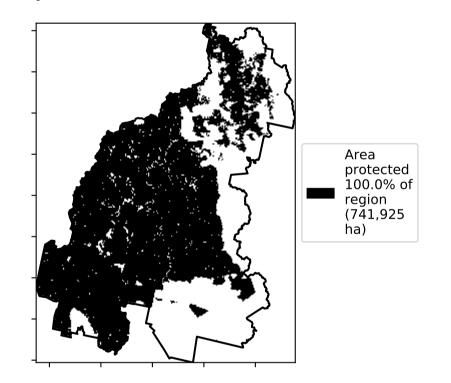


#### Proportion of each land class in area

Proportion of vegetation cover class in area

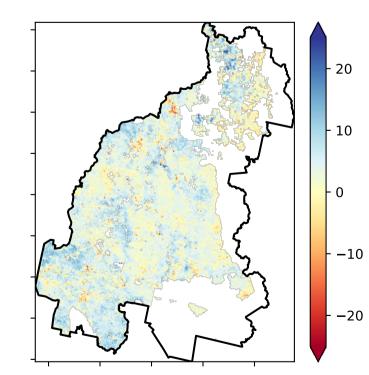


% Area protected from wind erosion (>50%)

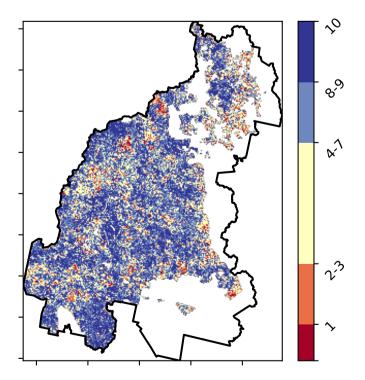


**Total Vegetation Cover Anomaly [%]** 

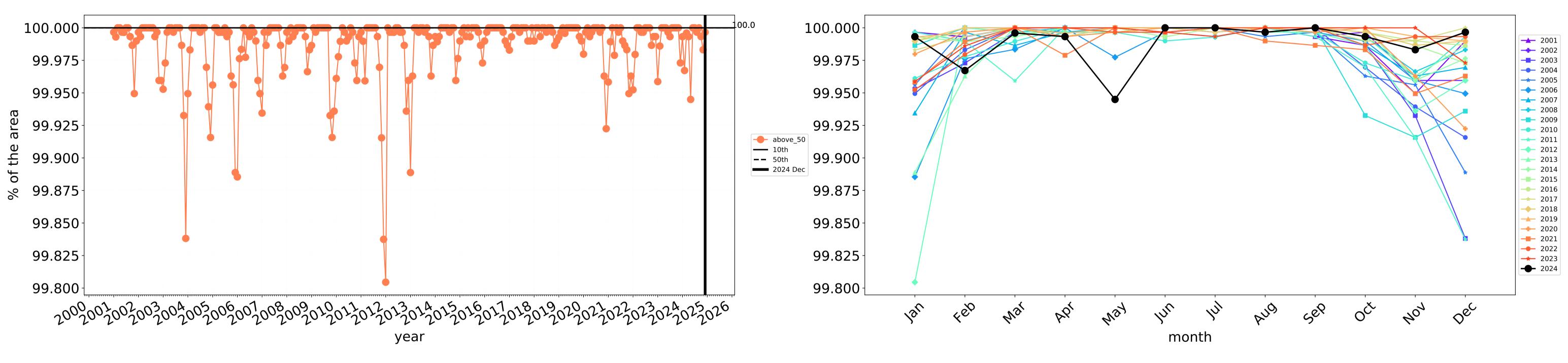
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



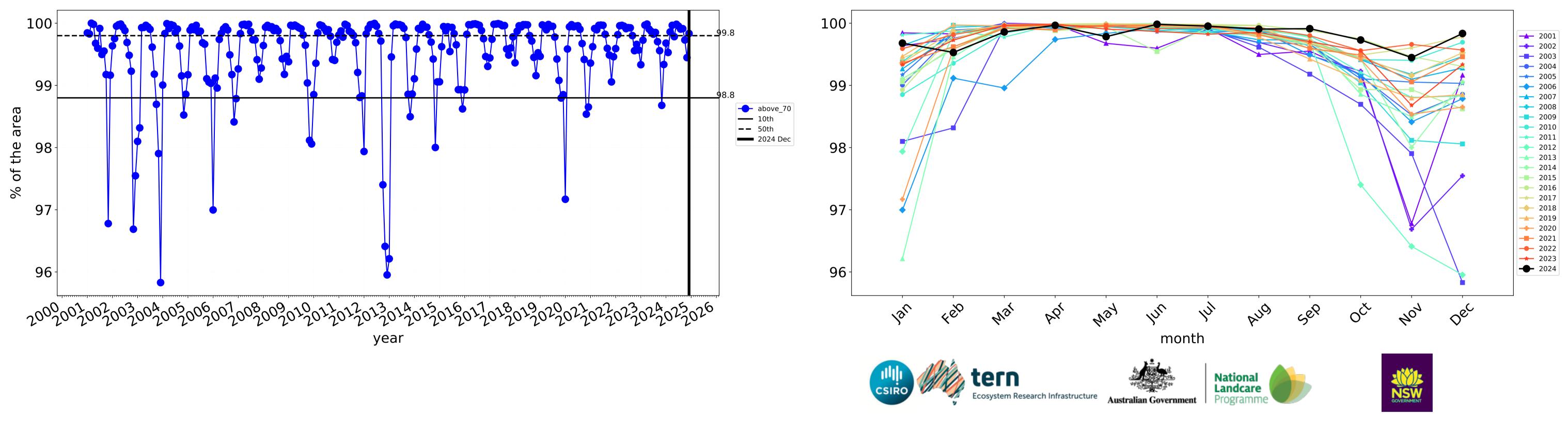
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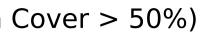






Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

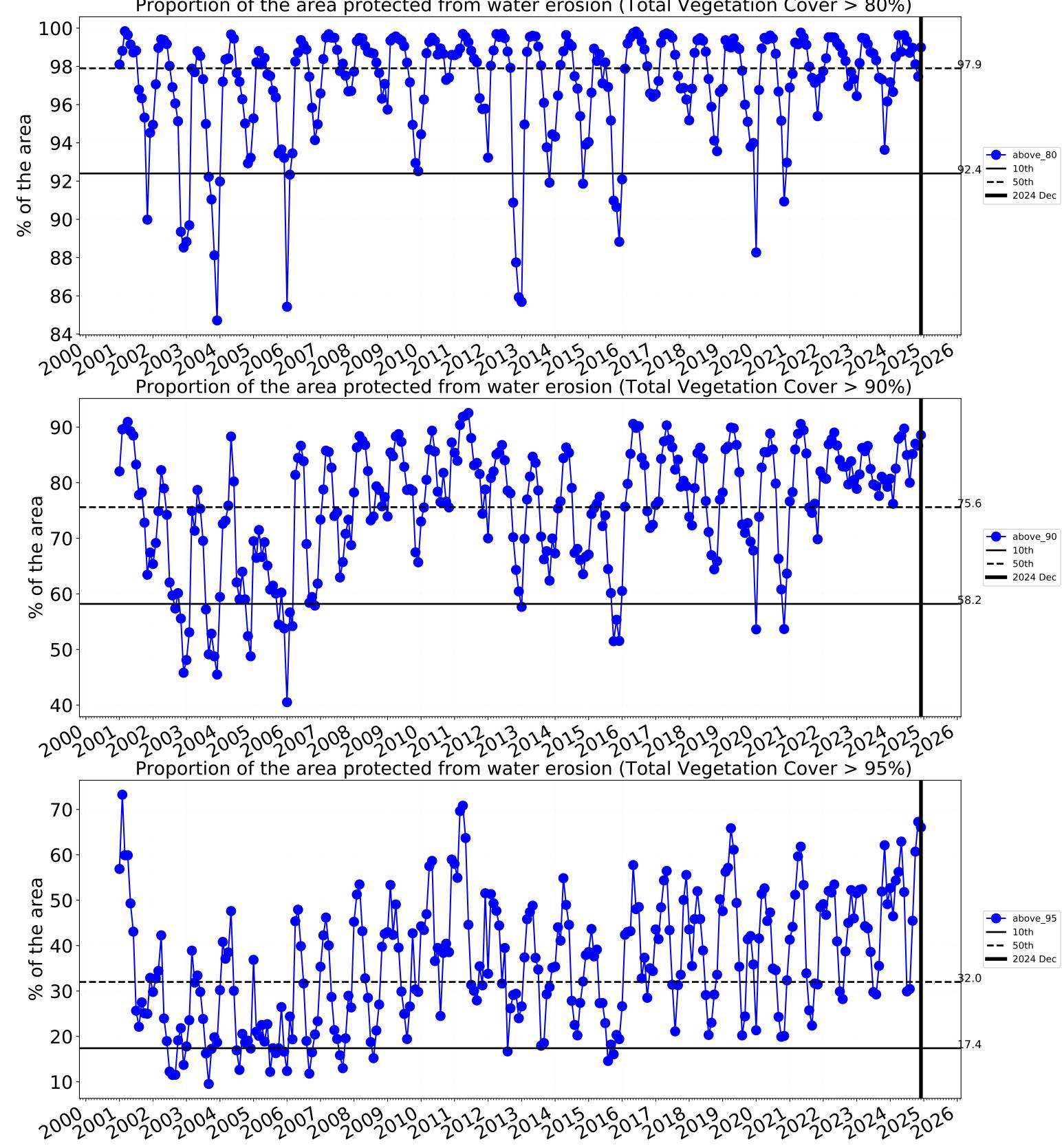




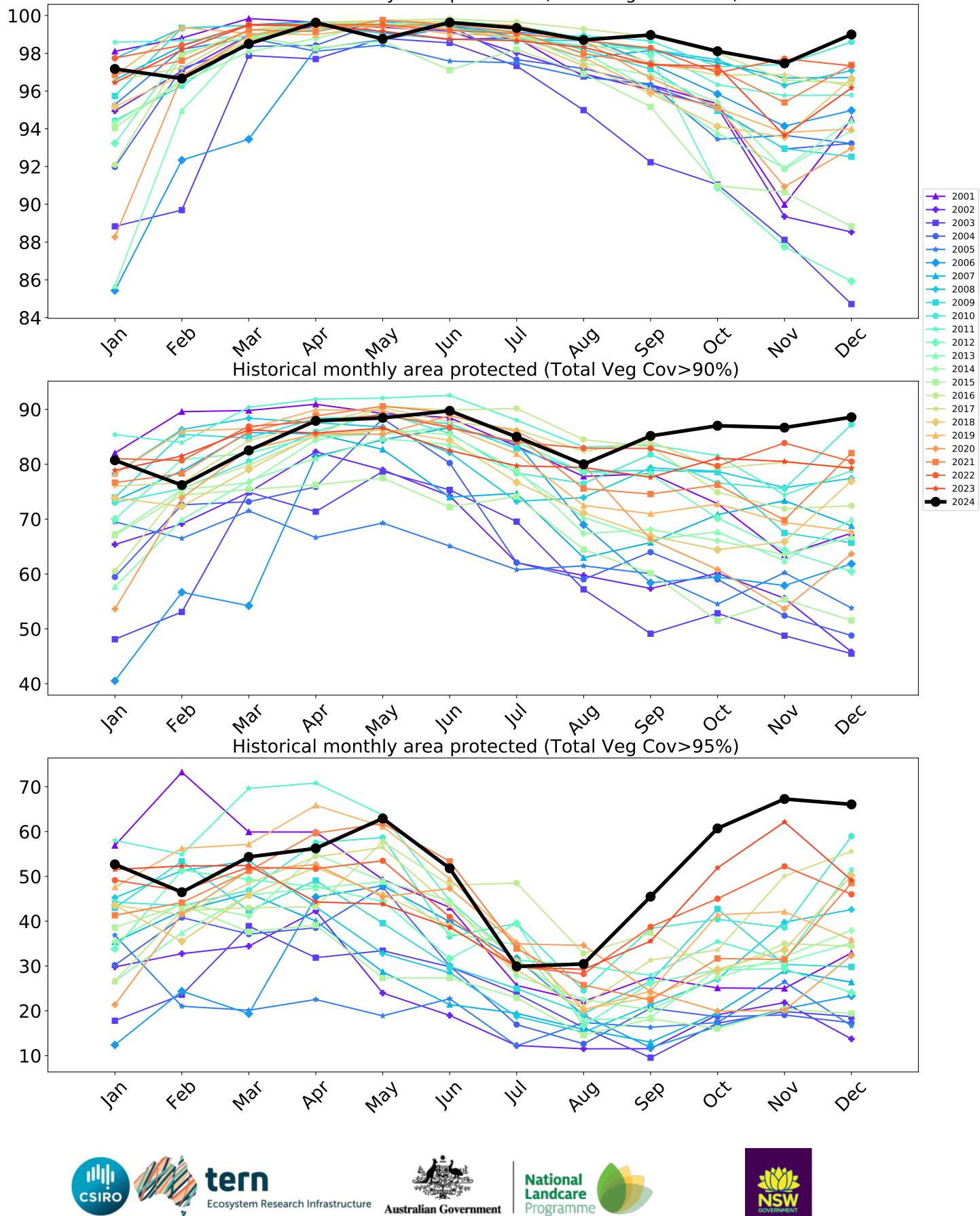
Wind erosion historical monthly area protected (Total Veg Cov >50%)

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

Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)





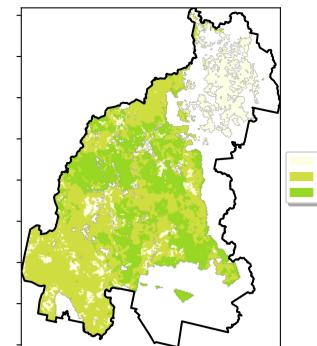






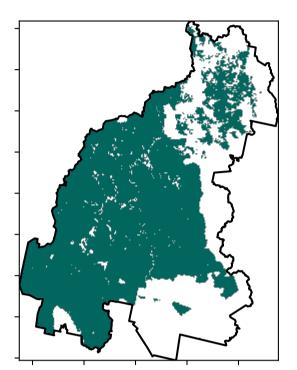
### Grazing

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

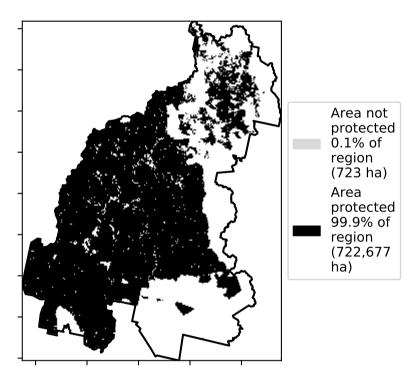


Land use and forest cover

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









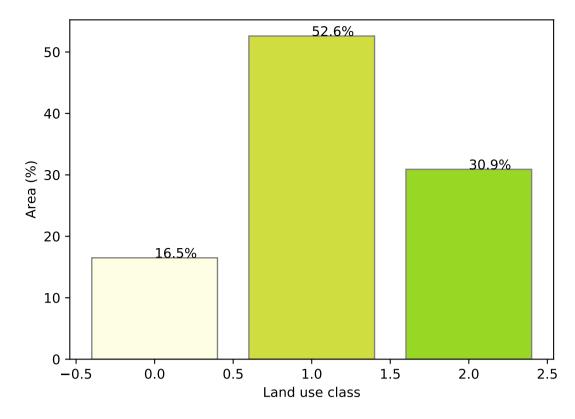
12%-200%

52%70%

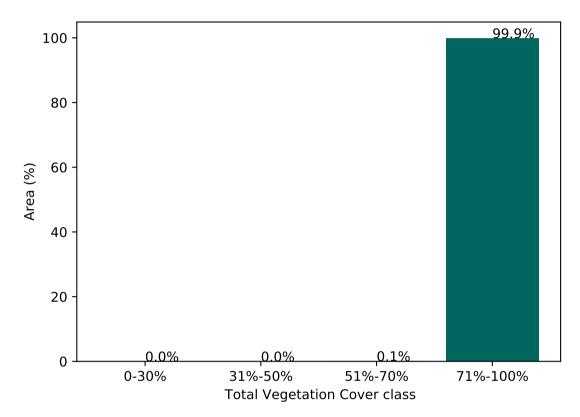
32010

0.30%

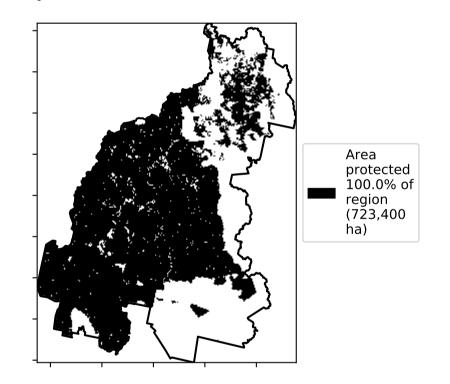
#### Proportion of each land class in area



#### Proportion of vegetation cover class in area

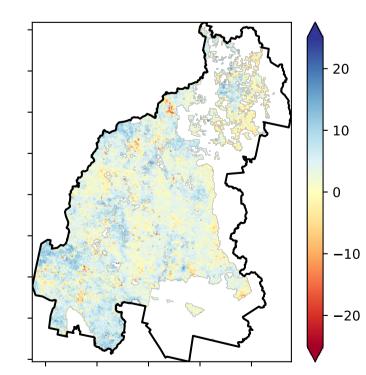


% Area protected from wind erosion (>50%)

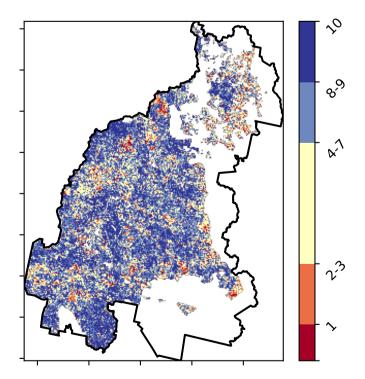


**Total Vegetation Cover Anomaly [%]** 

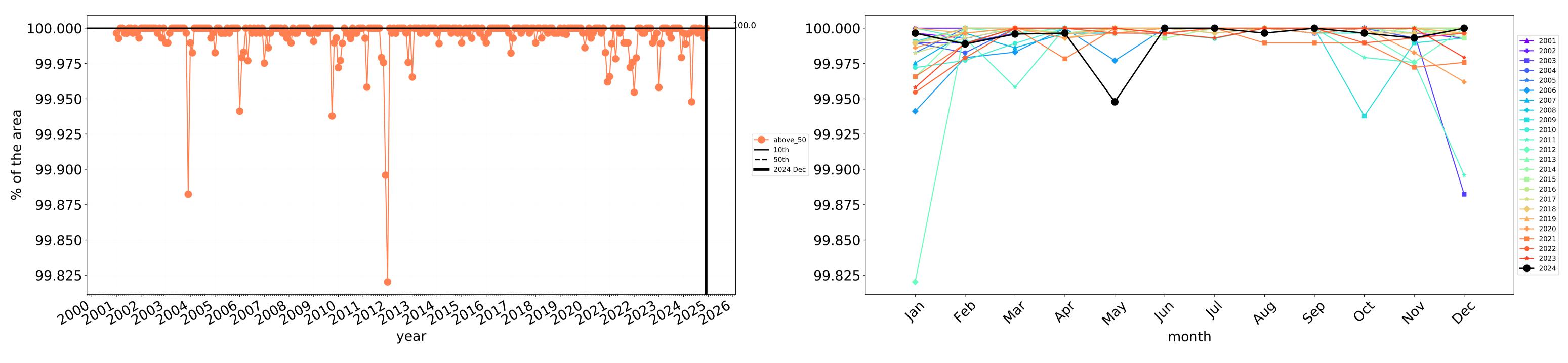
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



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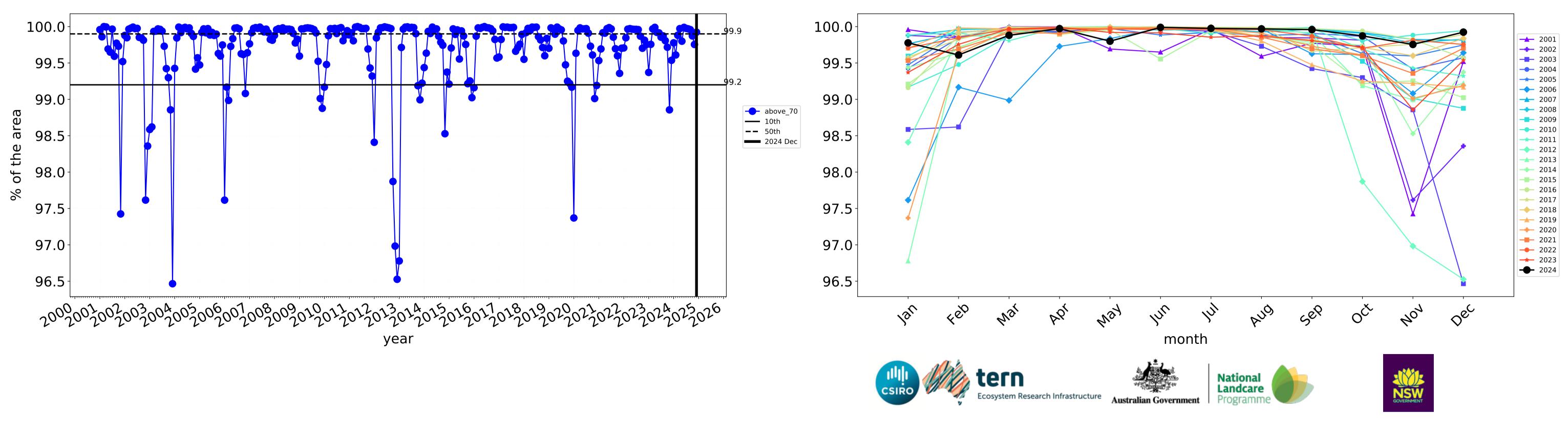






Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



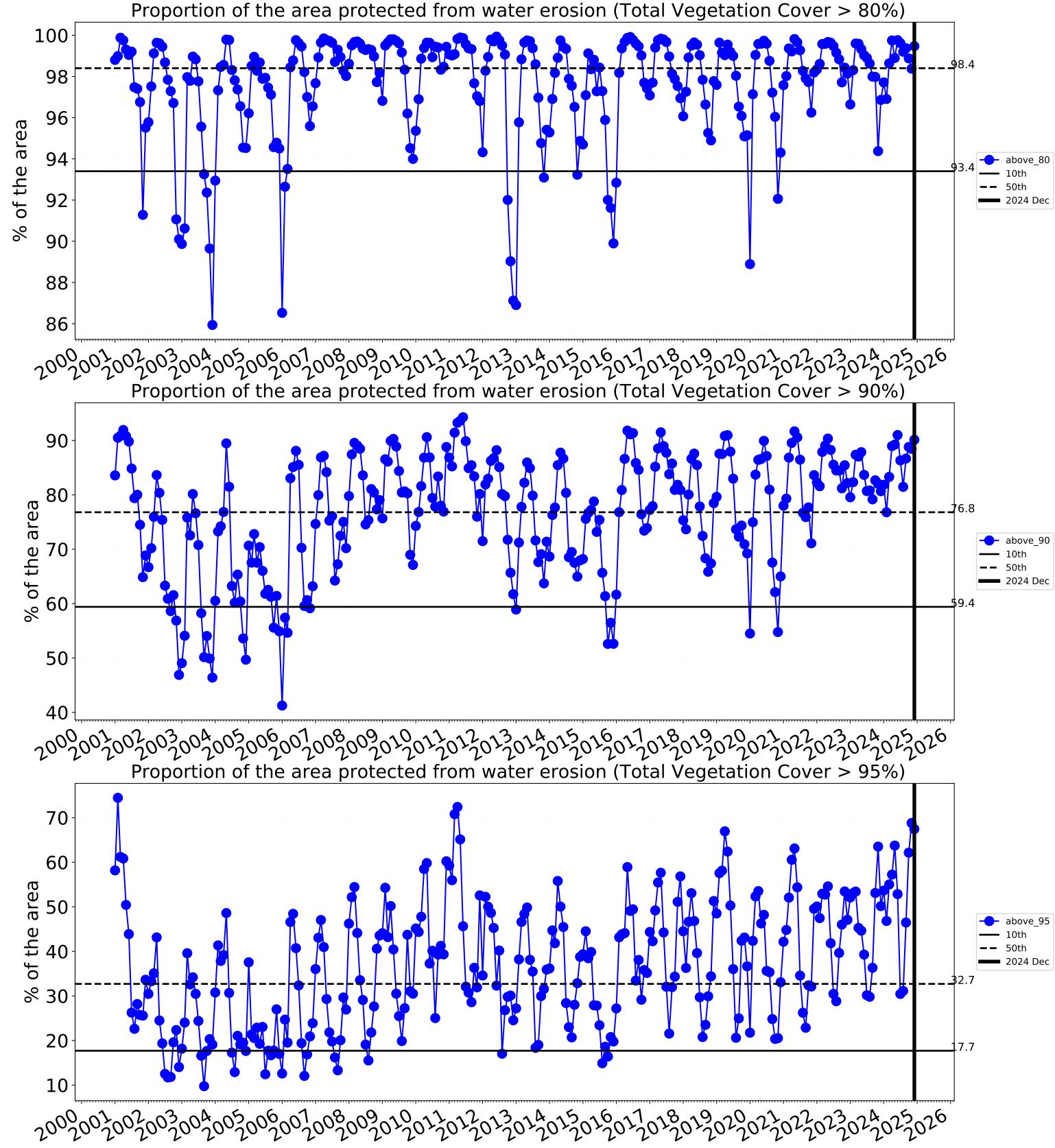




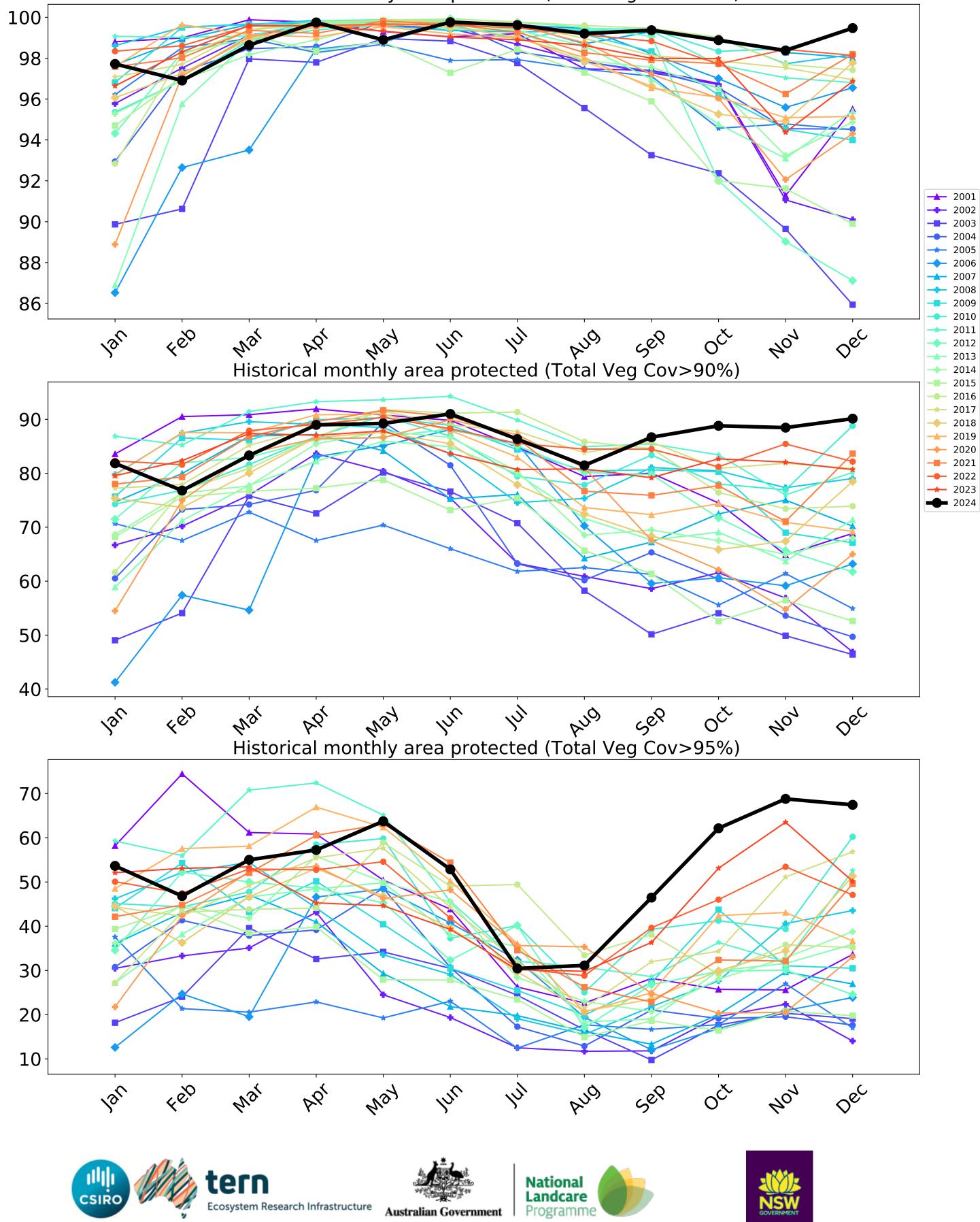
Wind erosion historical monthly area protected (Total Veg Cov >50%)

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







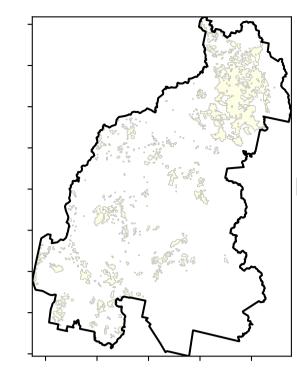






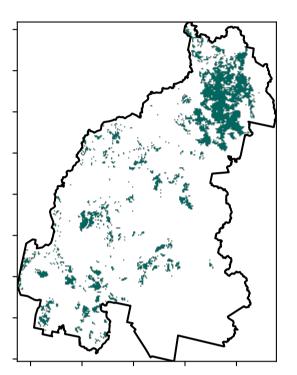
### **Grazing non forest**

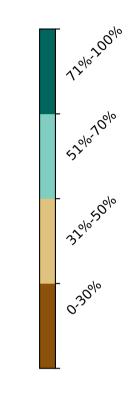
Land use and forest cover



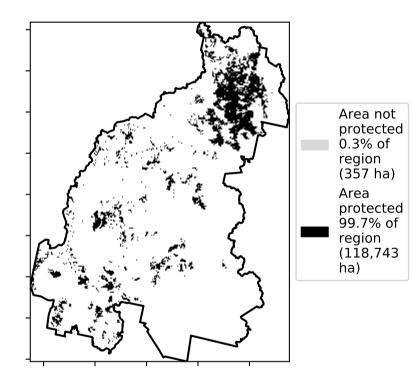
1 Agriculture - Grazing - Non forest

**Total Vegetation Cover [%]** 

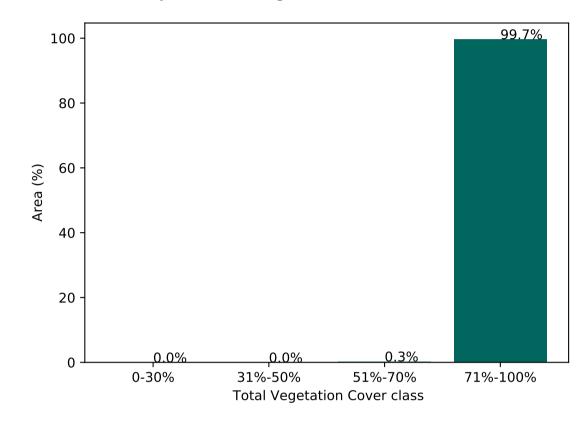




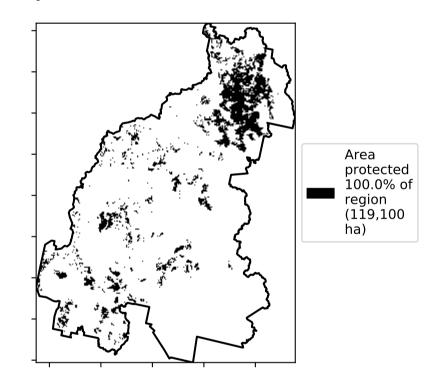
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



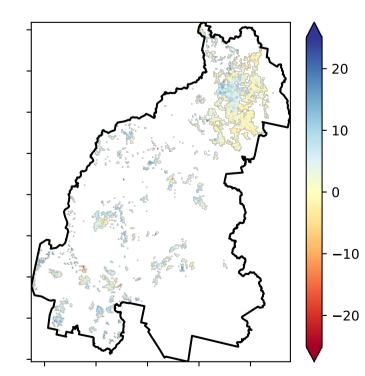
% Area protected from wind erosion (>50%)



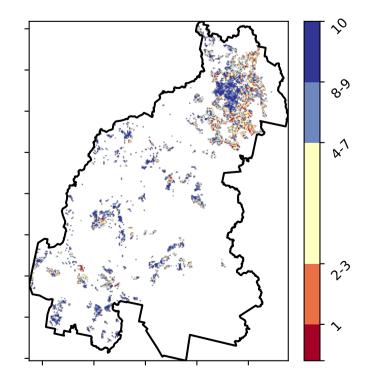
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

**Total Vegetation Cover Anomaly [%]** 

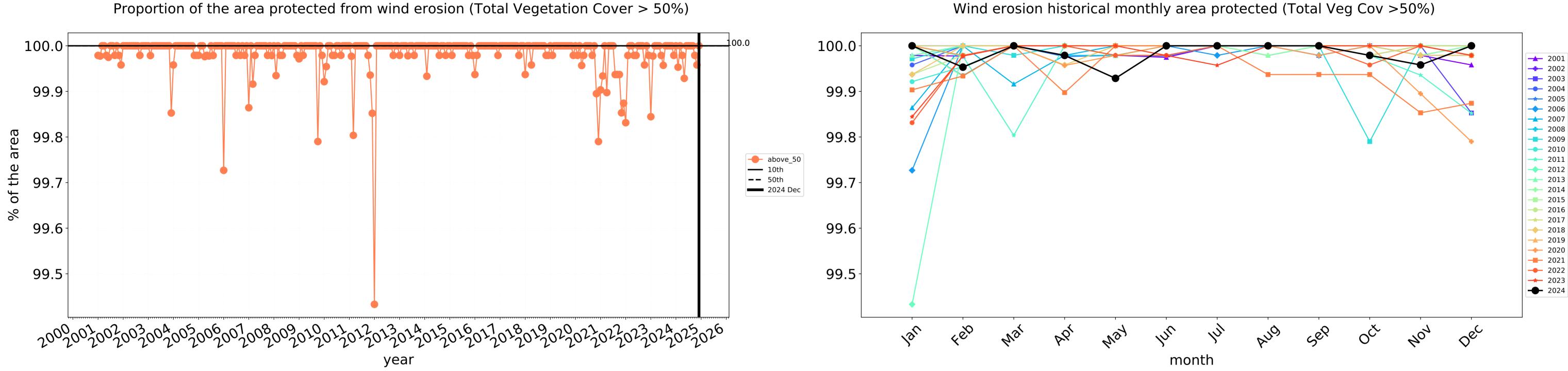
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



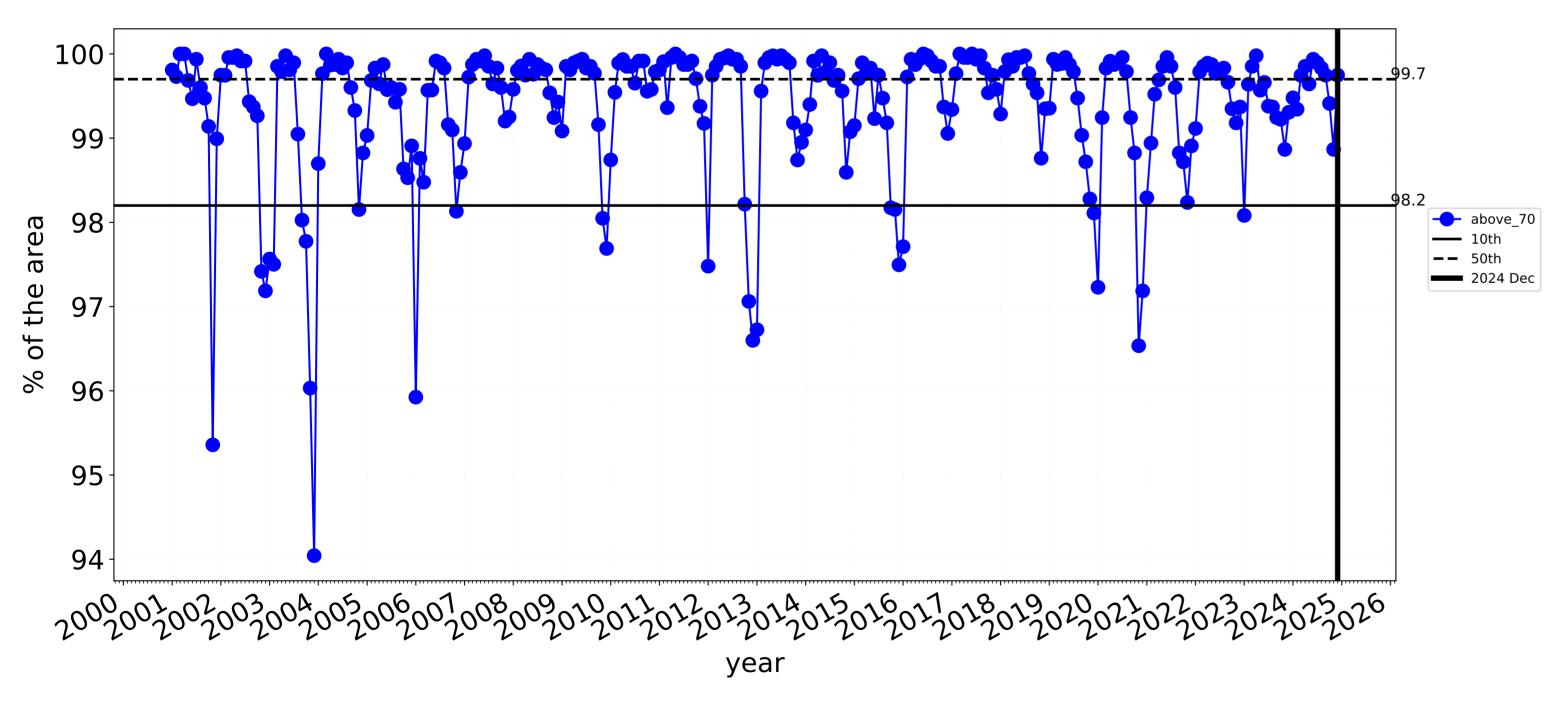
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





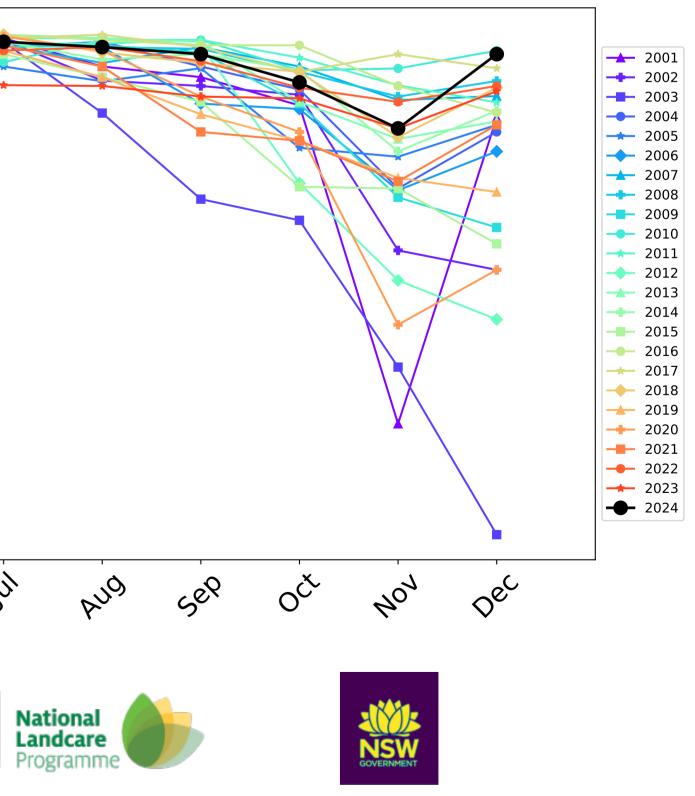


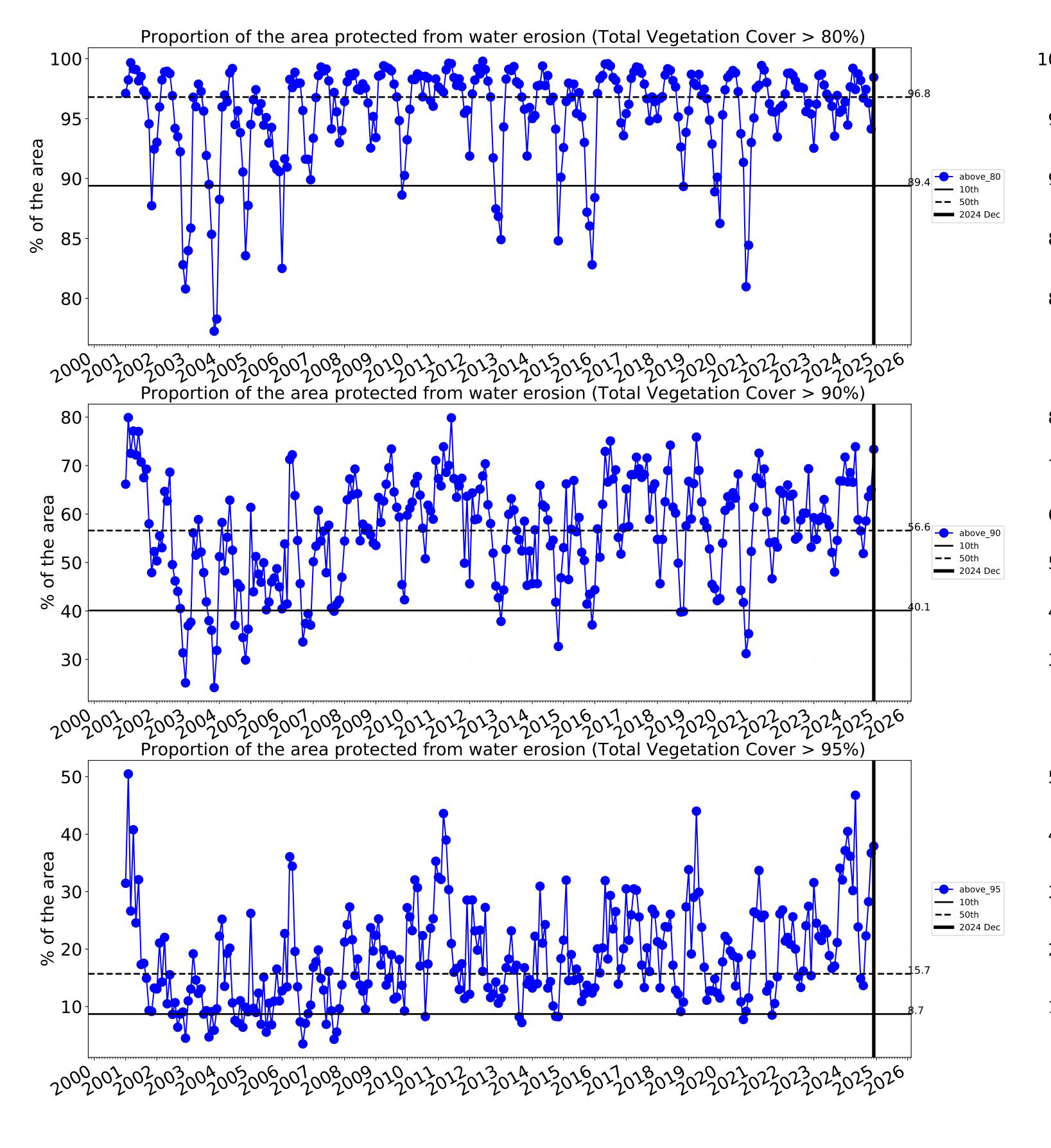
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

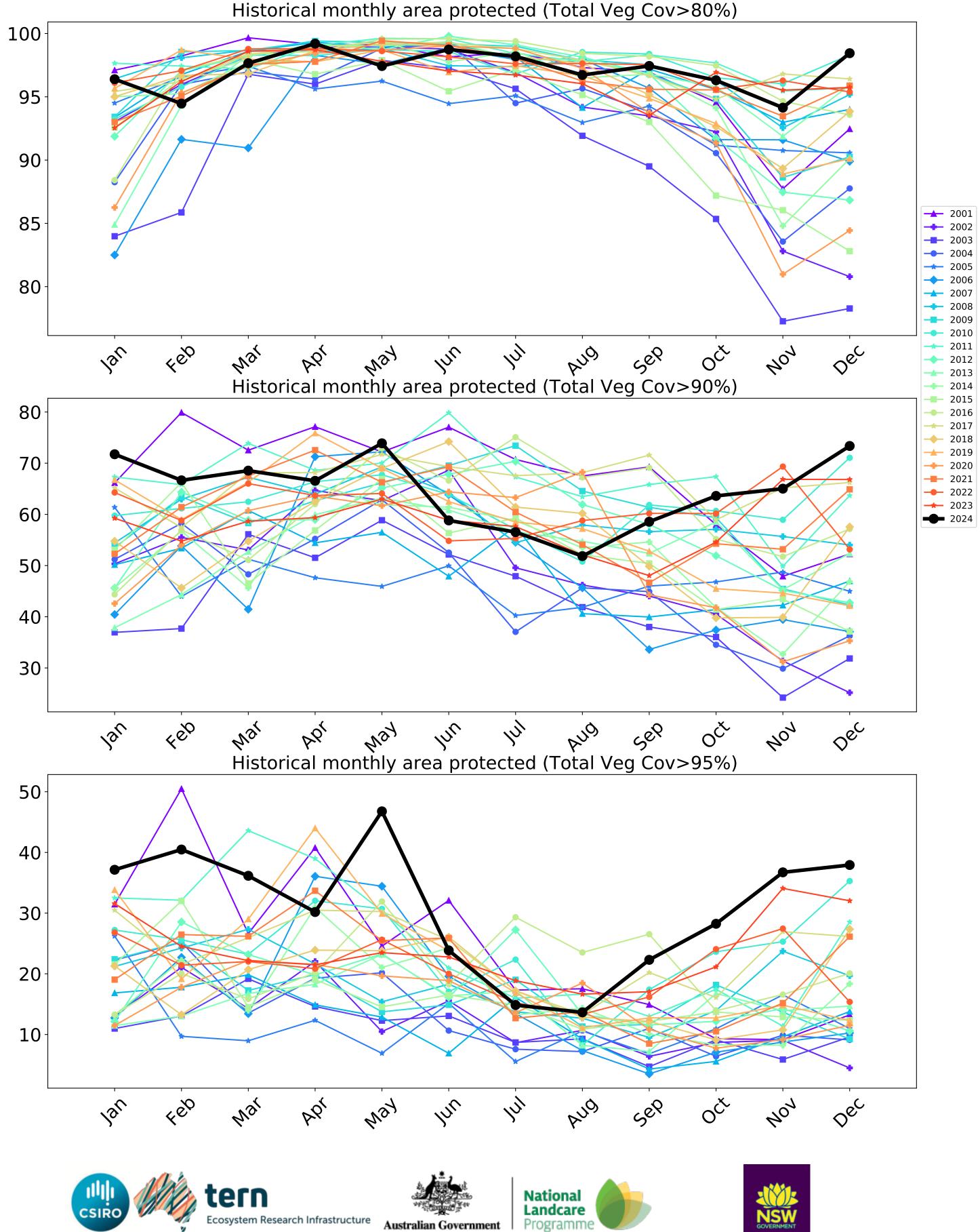


100-99 98 97 96 95<sup>-</sup> 94 4eb Jan way In Mai 1<sup>1</sup>1 Þ6, month tern Ecosystem Research Infrastructure Australian Government

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

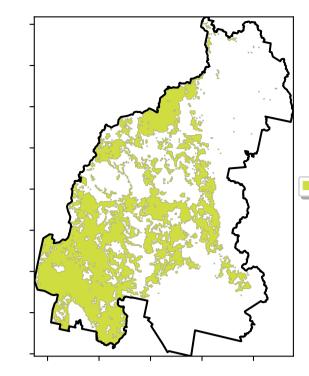






### **Grazing Woodland forest**

Land use and forest cover



1 Agriculture - Grazing - Woodland forest

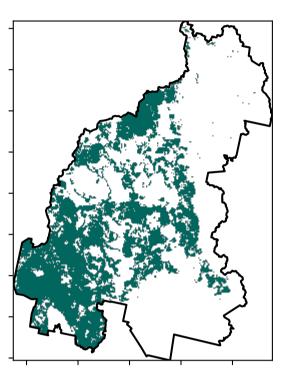
72%200%

52%70%

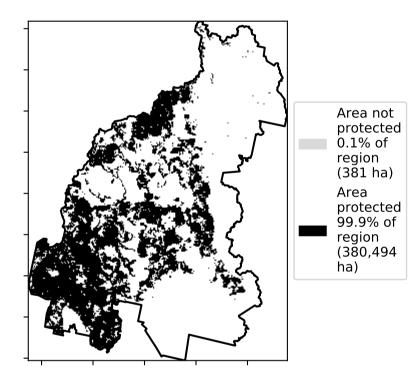
32010

0.30%

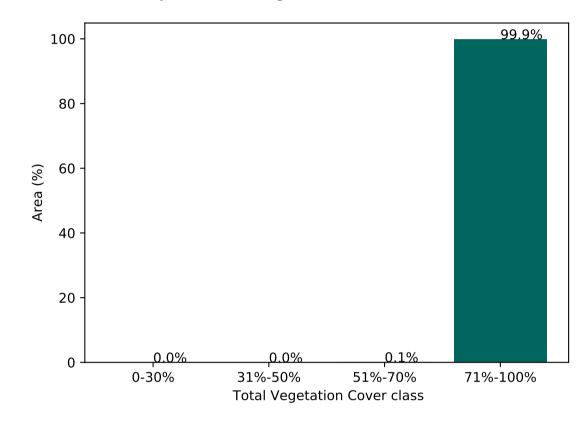
**Total Vegetation Cover [%]** 



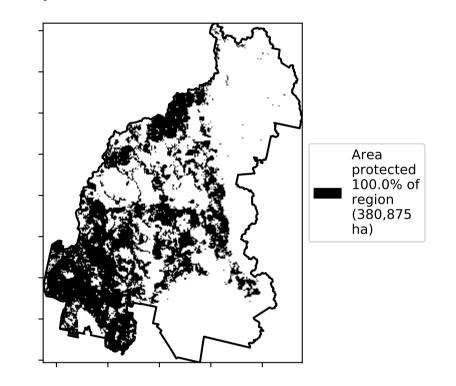




Proportion of vegetation cover class in area



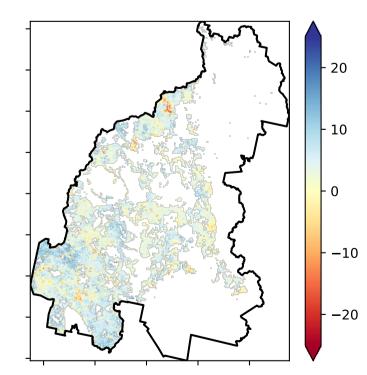
% Area protected from wind erosion (>50%)



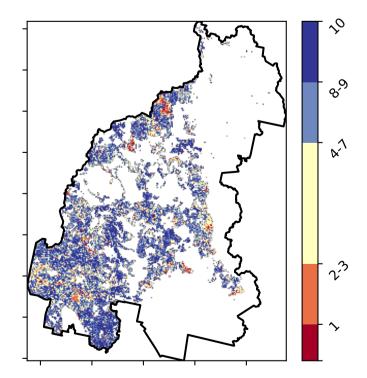
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

**Total Vegetation Cover Anomaly [%]** 

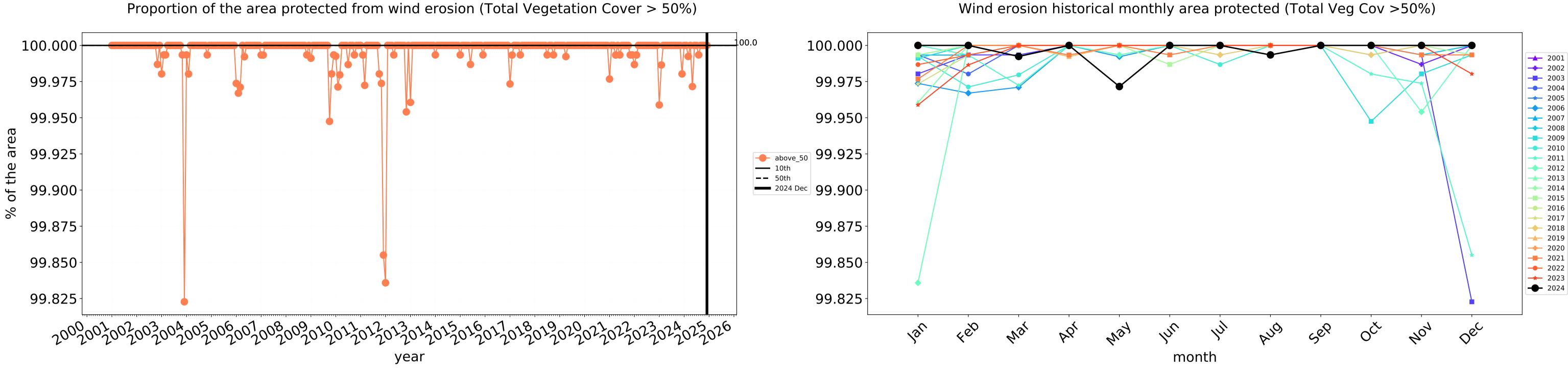
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

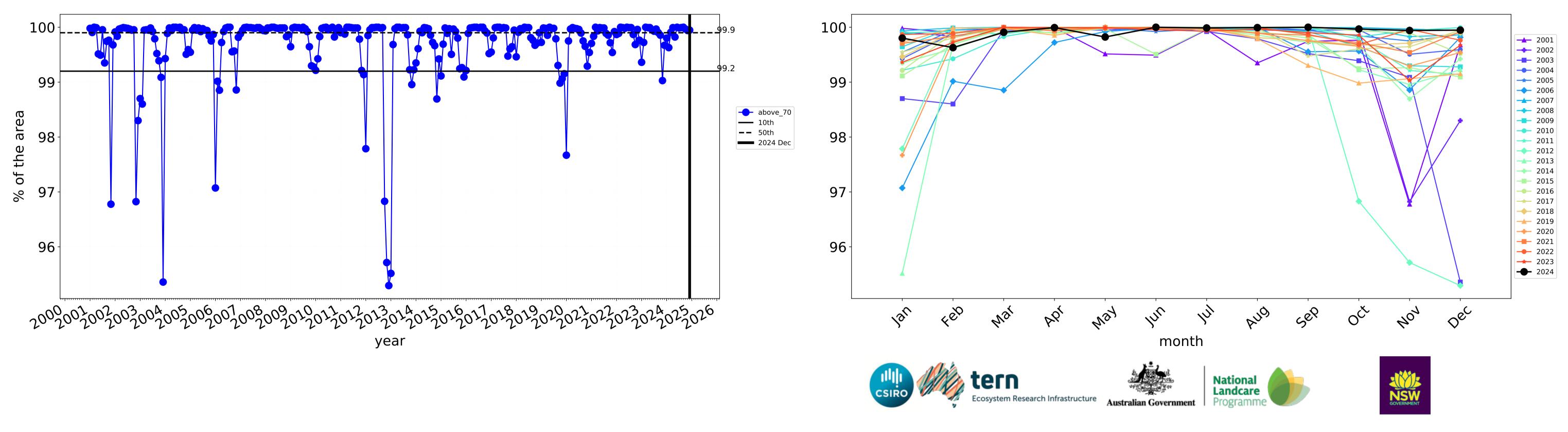


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

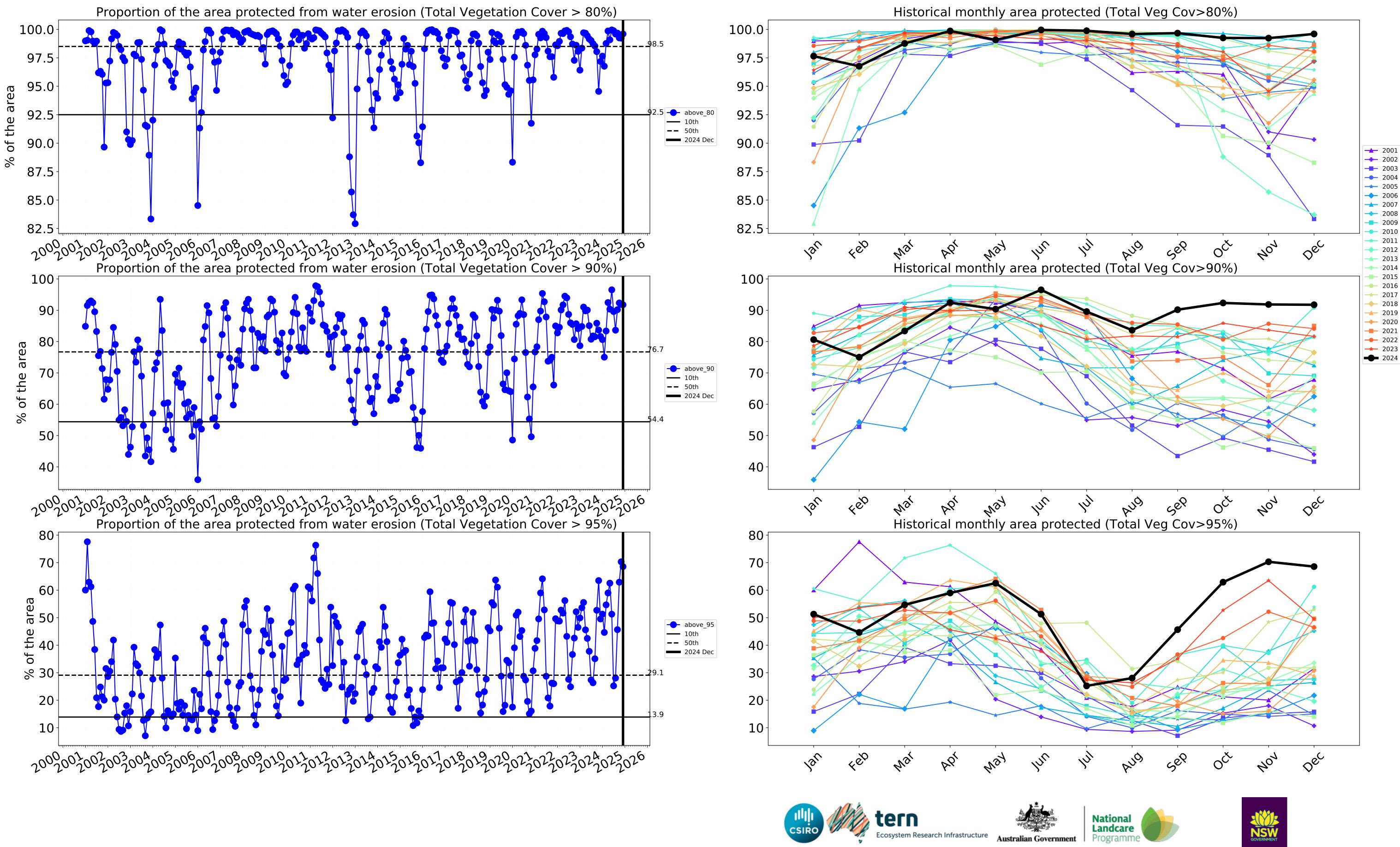






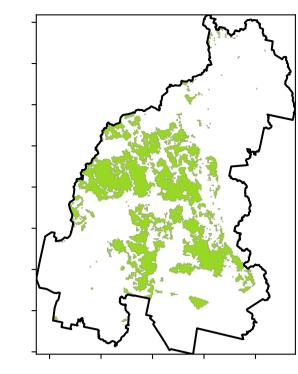


Water erosion historical monthly area protected (Total Veg Cov>70%)



### Grazing - Forest (non woodland)

Land use and forest cover



1 Agriculture - Grazing - Non-woodland forest

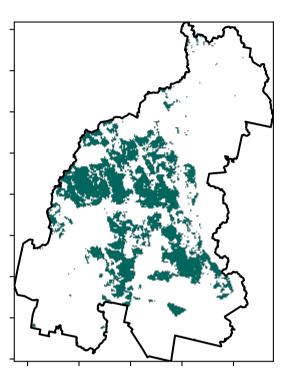
12%200%

52%70%

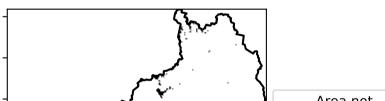
32010

0.30%

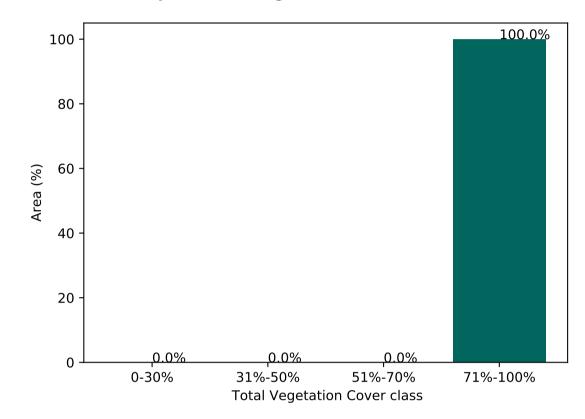
**Total Vegetation Cover [%]** 



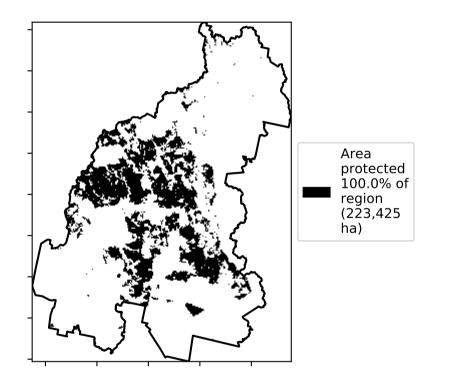




Proportion of vegetation cover class in area

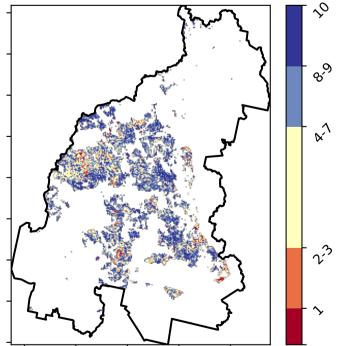


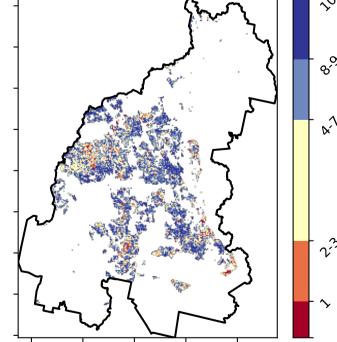
% Area protected from wind erosion (>50%)



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 Decile [%]** 







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

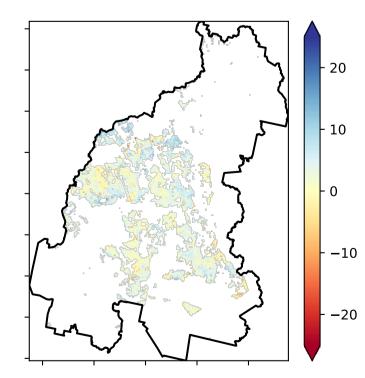
records for that month of

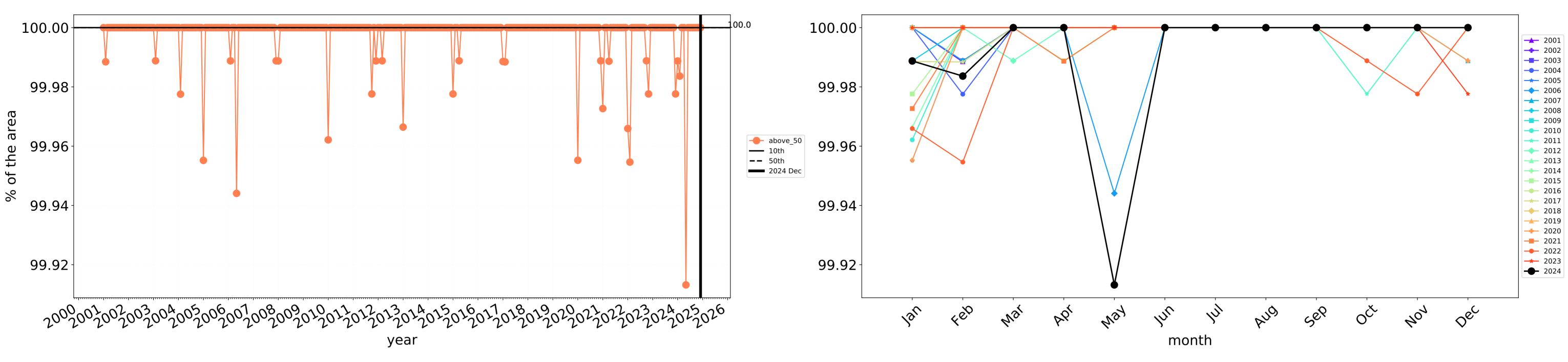
the map using baseline from 2001 to 2019.

Area not protected 0.0% of region (0 ha) Area protected 100.0% of region (223,425 ha)

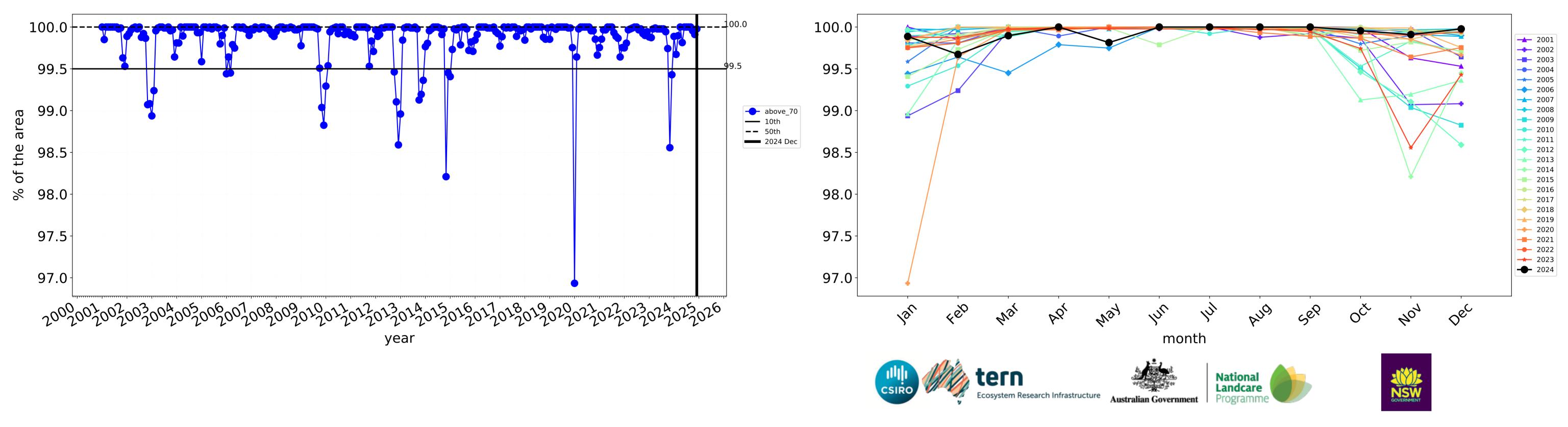
**Total Vegetation Cover Anomaly [%]** 

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



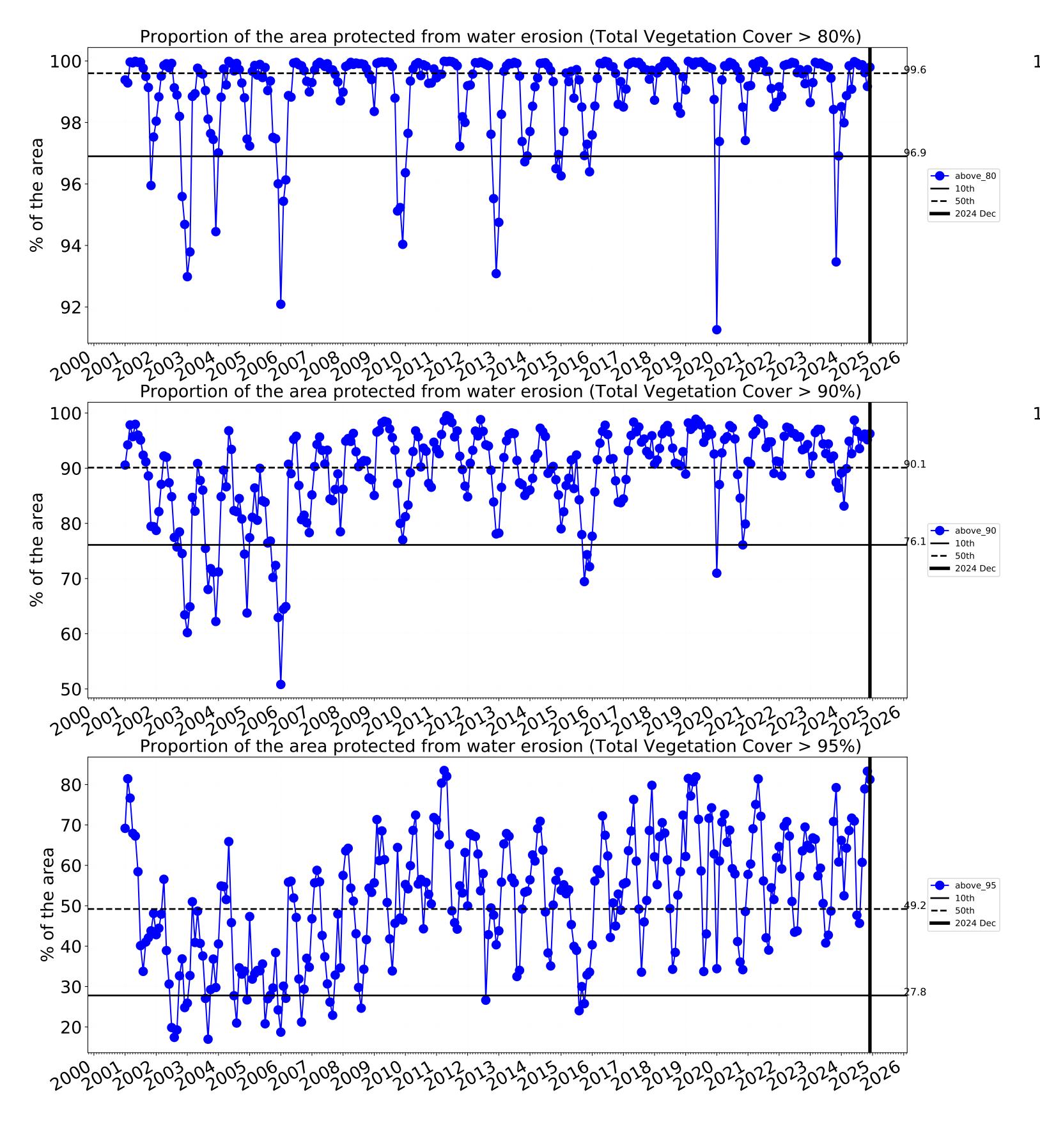


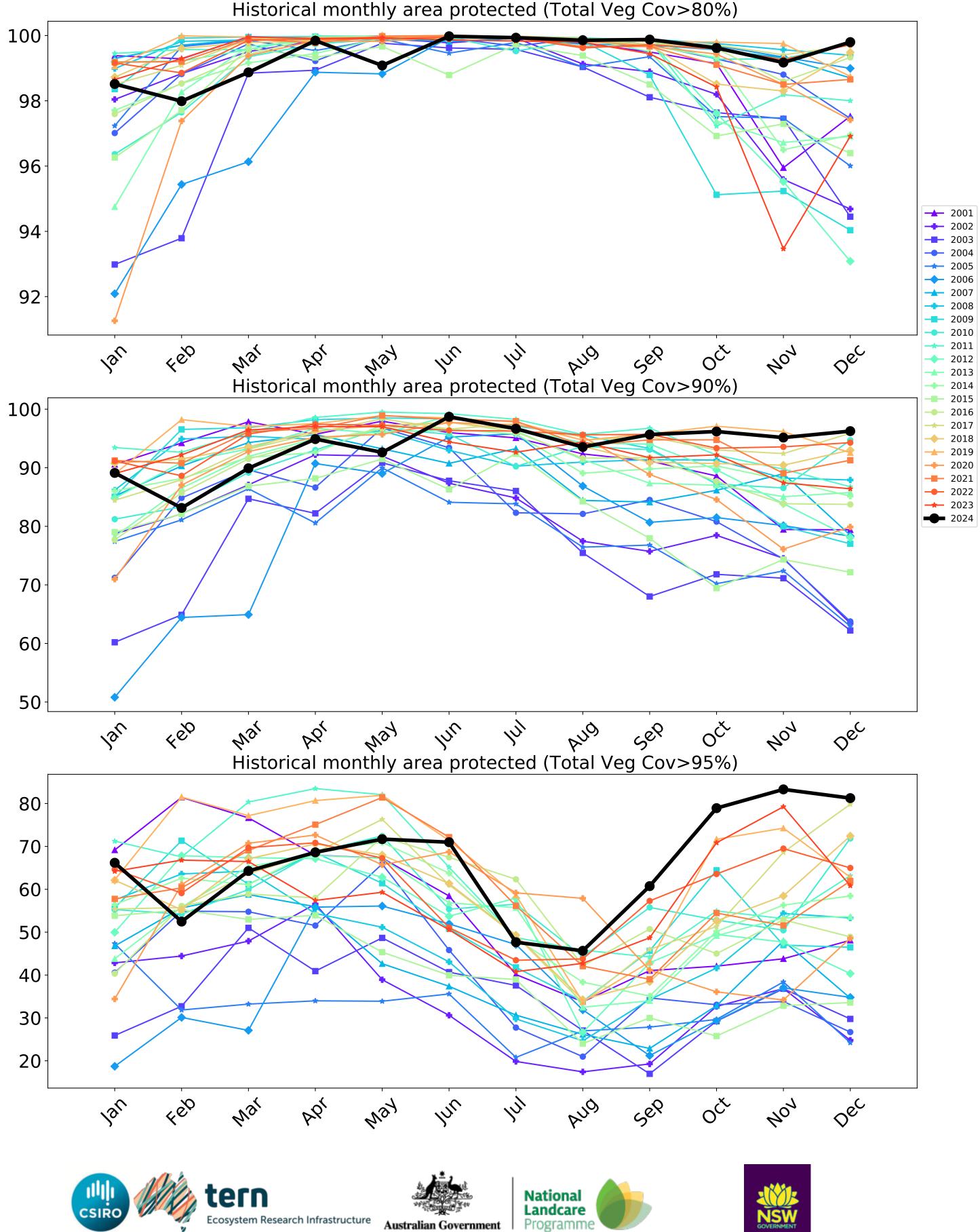
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



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

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



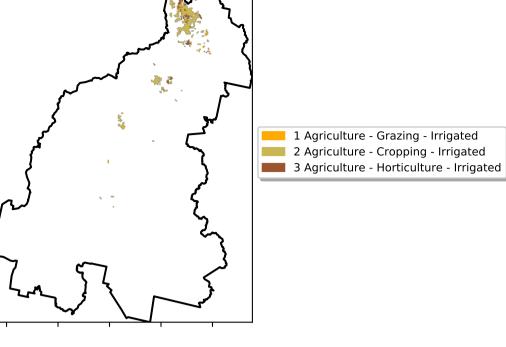




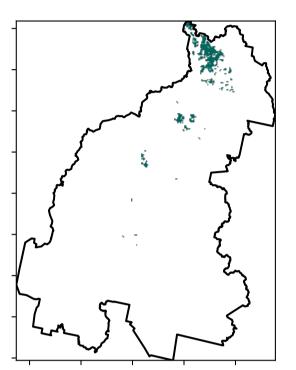
### Irrigation

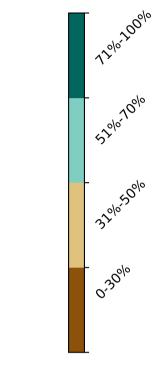
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



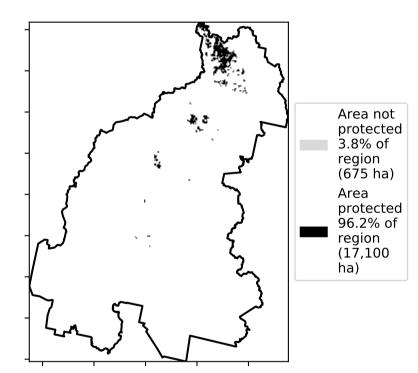


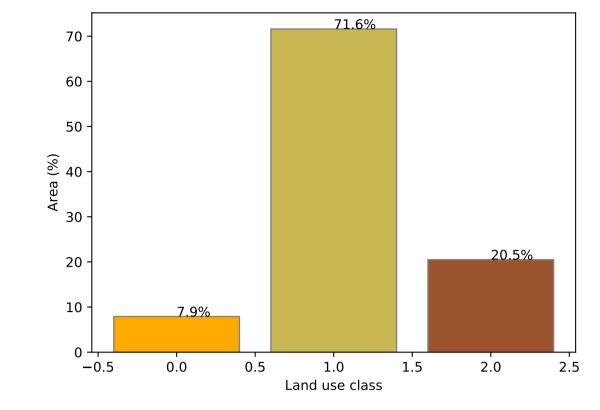
### **Total Vegetation Cover [%]**





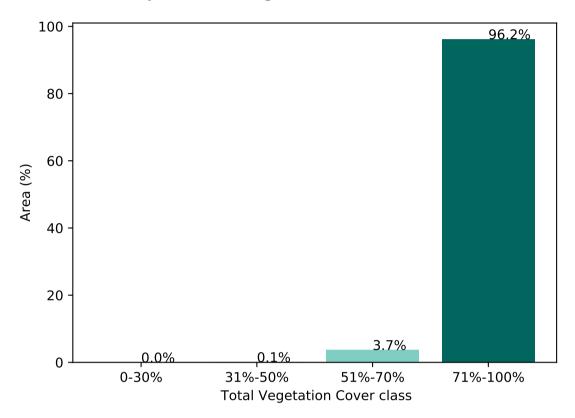
% Area protected from water erosion (>70%)



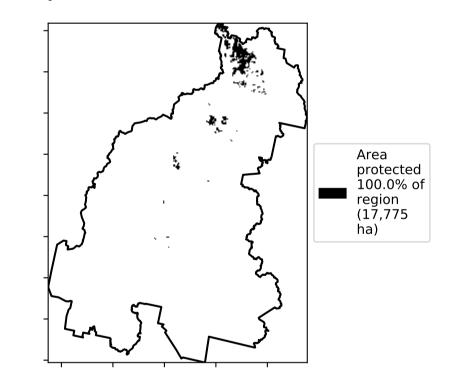


#### Proportion of each land class in area

Proportion of vegetation cover class in area

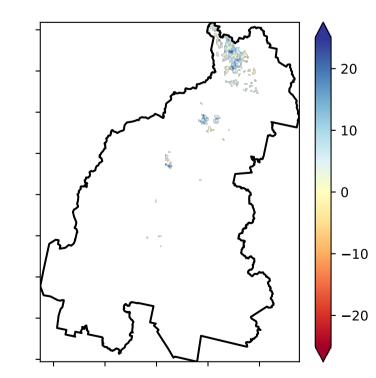


% Area protected from wind erosion (>50%)

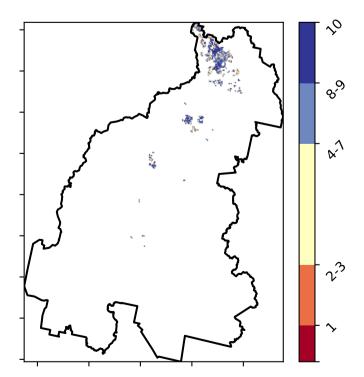


**Total Vegetation Cover Anomaly [%]** 

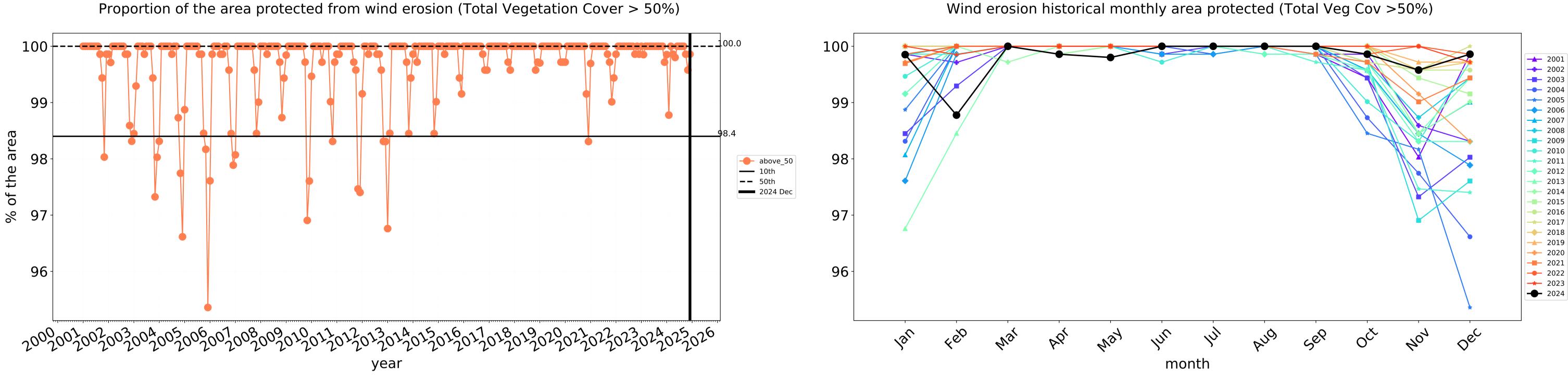
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



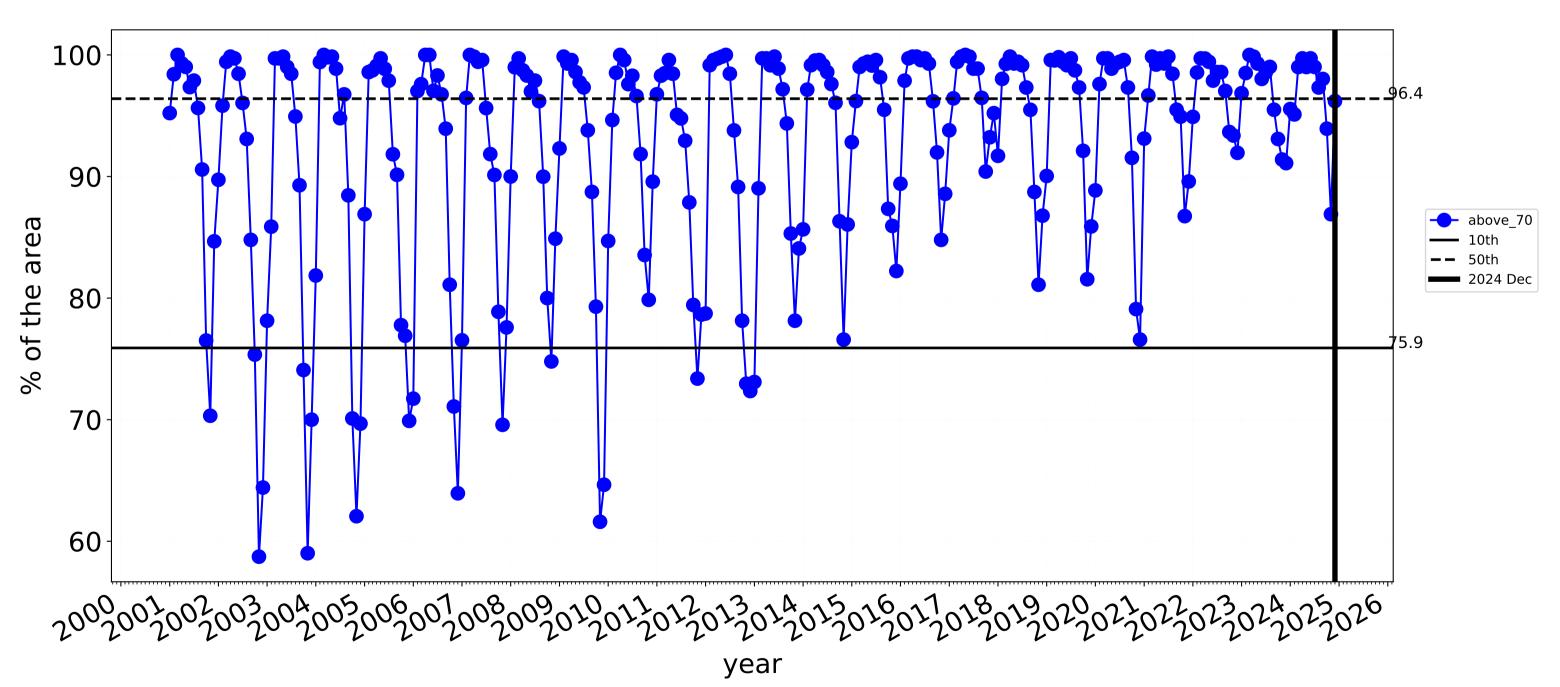
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





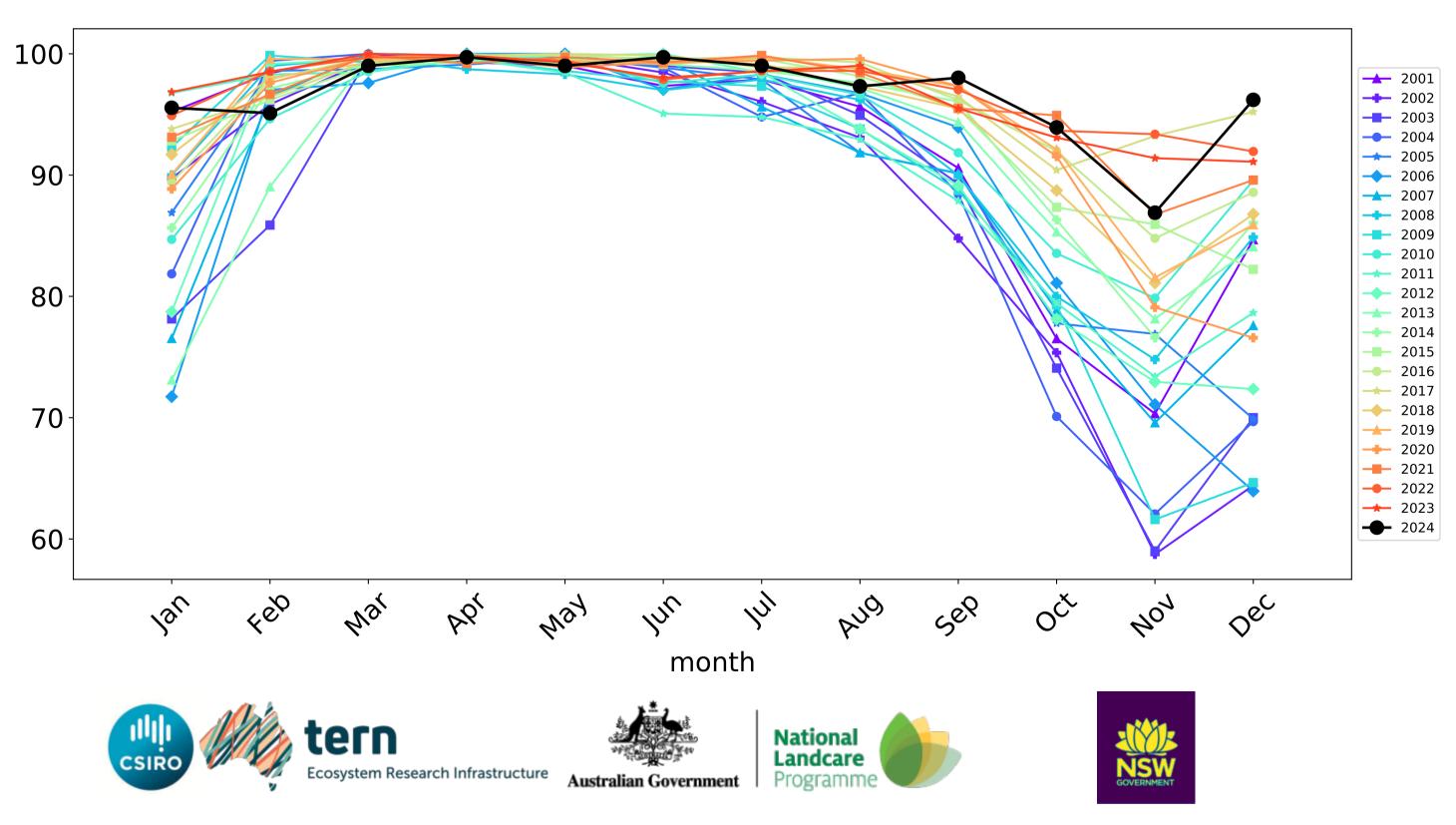


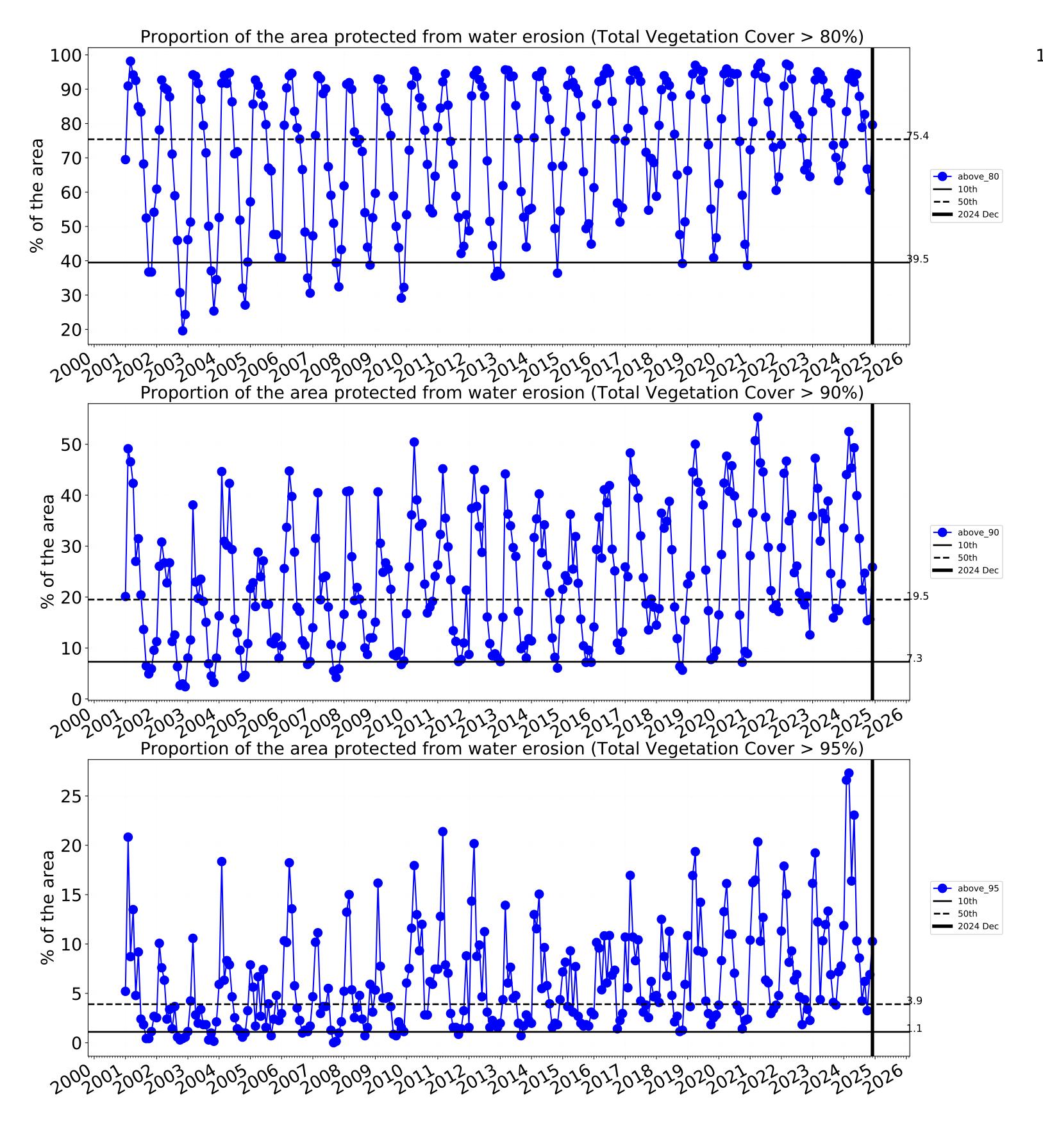
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

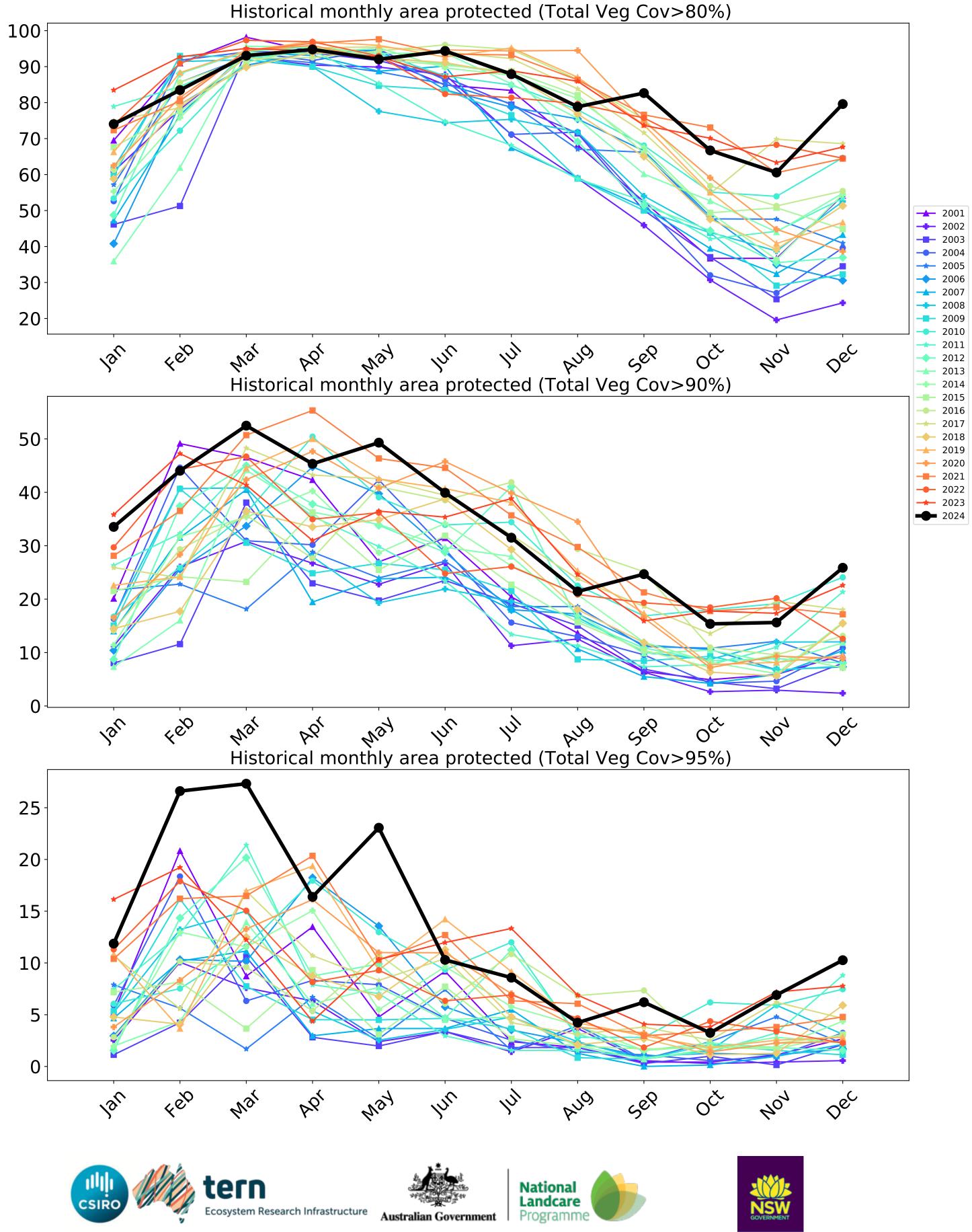


### Irrigation timeseries

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

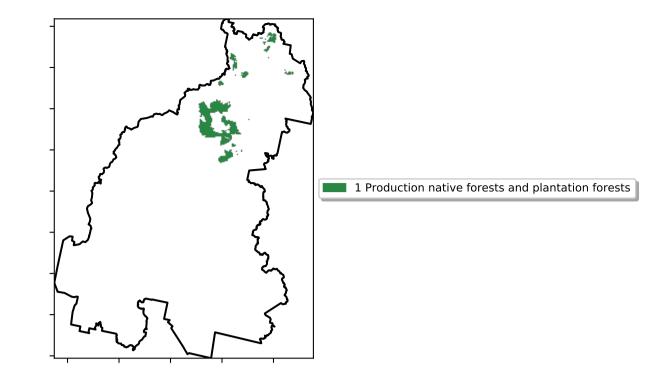




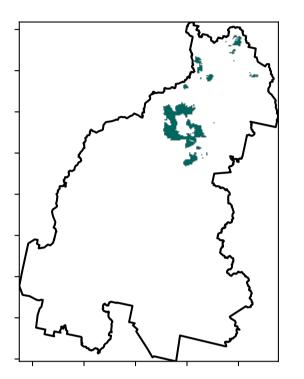


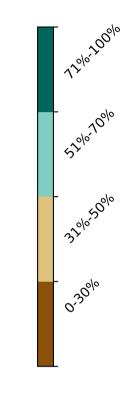
### **Production native forests and plantation forests**

Land use and forest cover

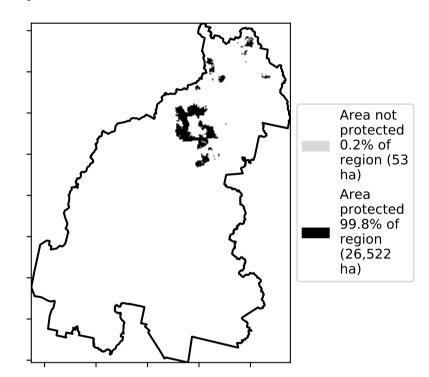


**Total Vegetation Cover [%]** 

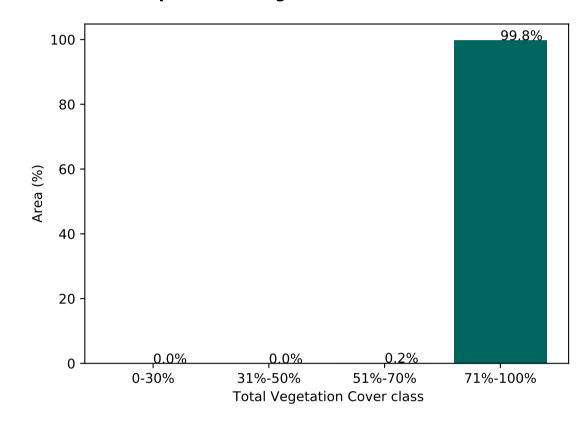




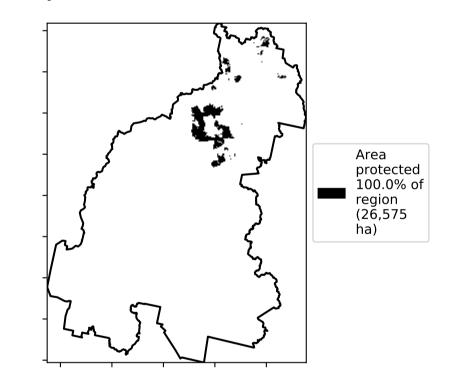
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

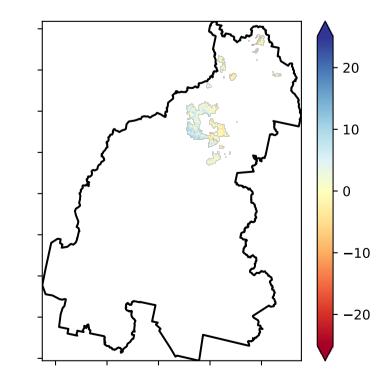


**Total Vegetation Cover Anomaly [%]** 

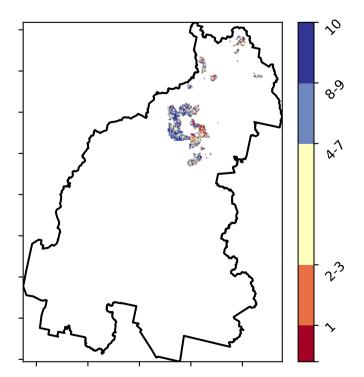
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

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

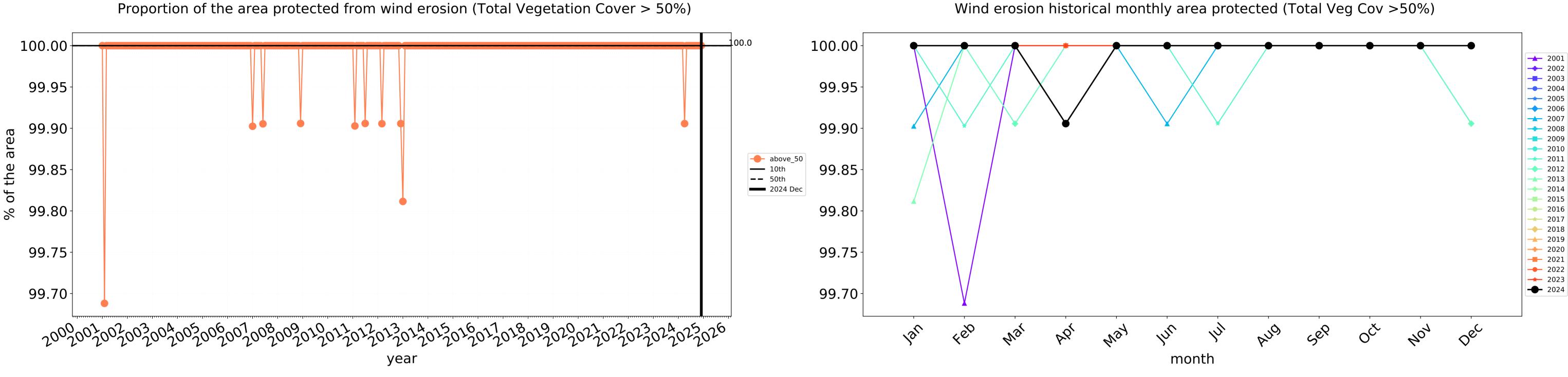
Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

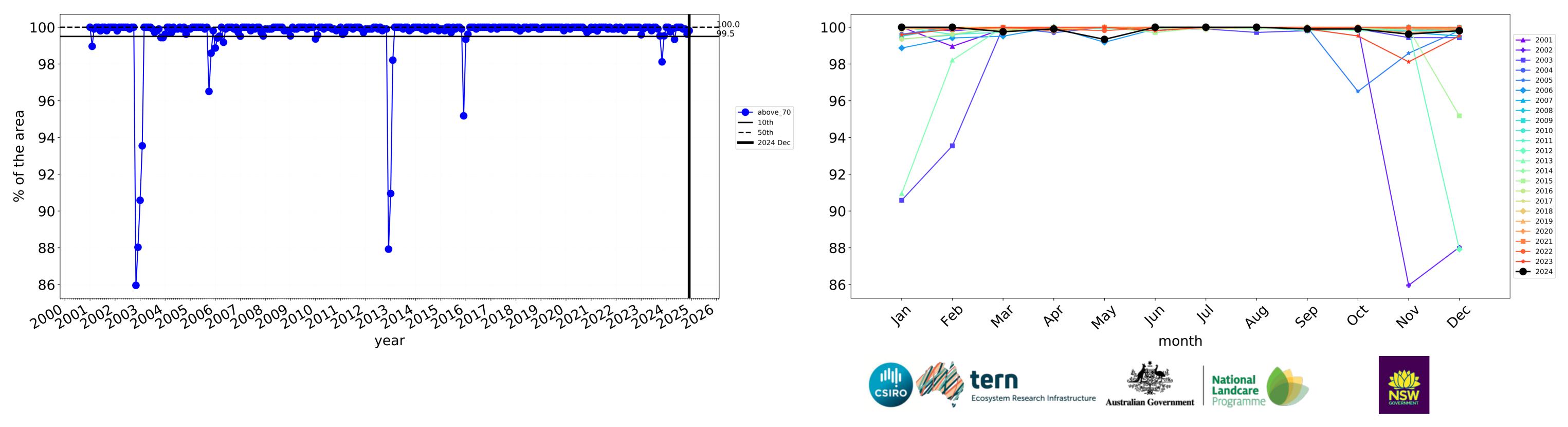


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

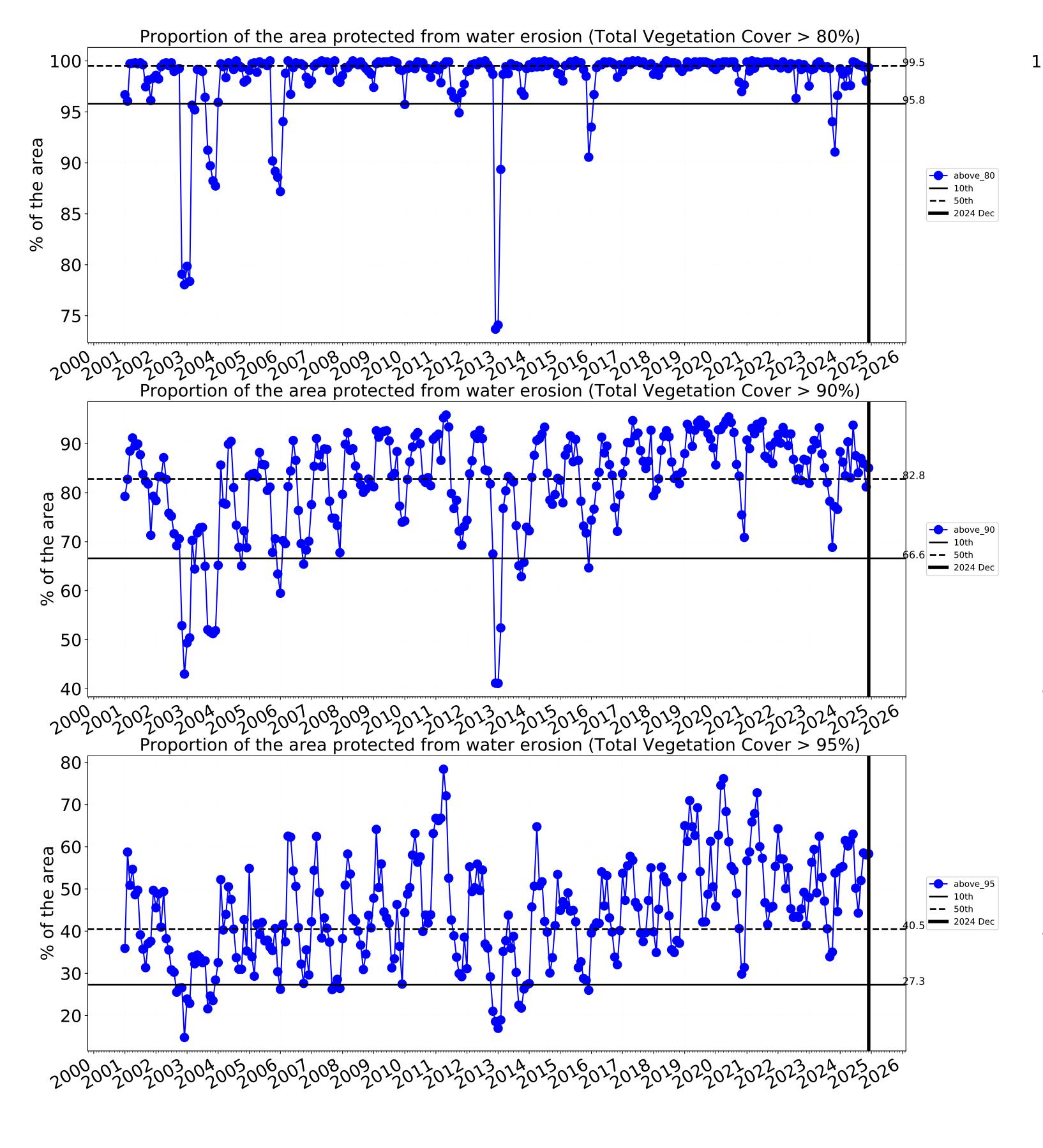


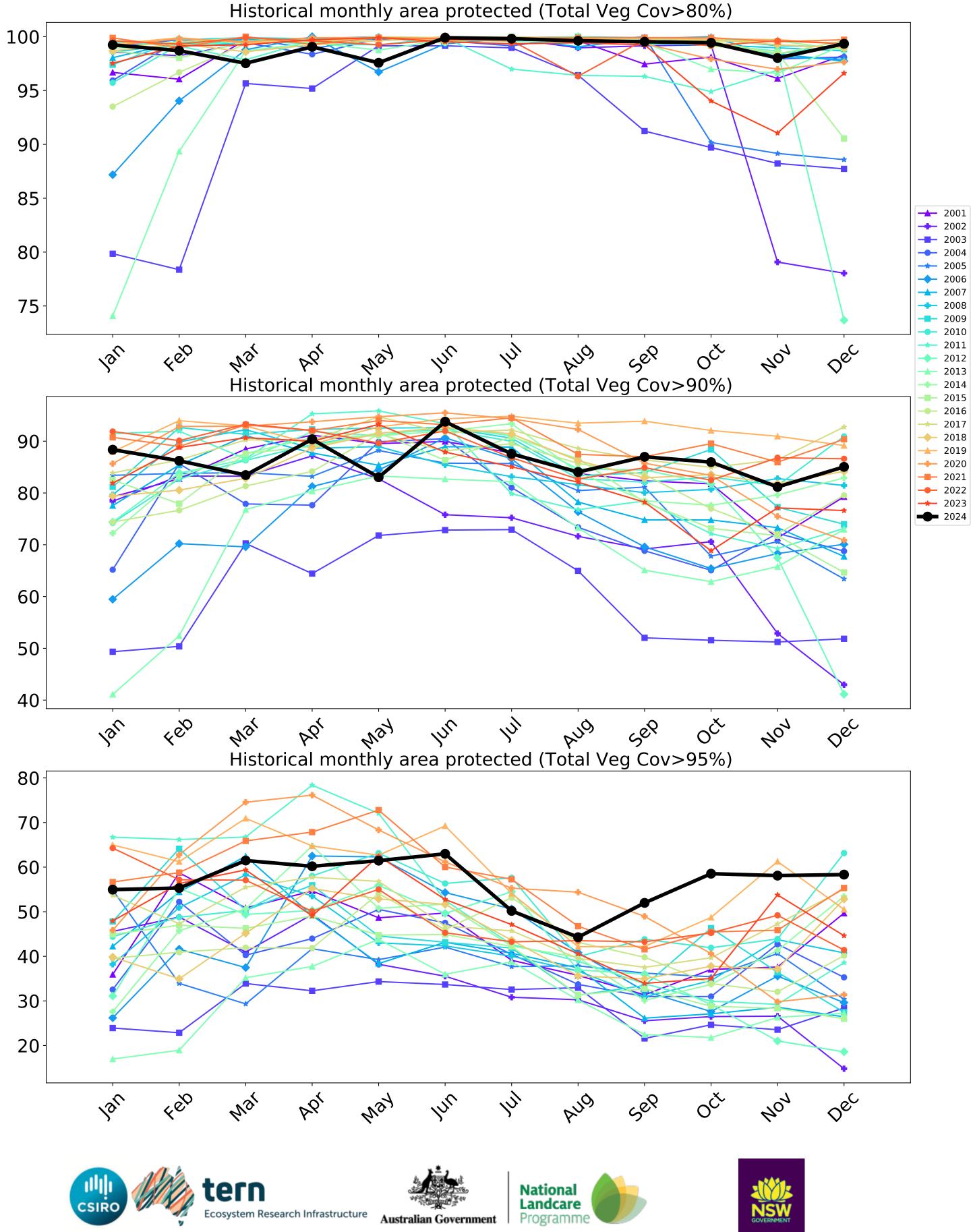






Water erosion historical monthly area protected (Total Veg Cov>70%)





# Tablelands\_(R) (1,125,550 ha and no data 2,736 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	1,125,550	100.0% 1,125,500	100.0% 1,125,375	99.8% 1,123,000	98.9% 1,113,575	86.5% 973,275	58.6% 659,075
Conservation and natural environments	327,025	100.0% 327,025	100.0% 327,000	99.9% 326,825	99.6% 325,575	84.0% 274,700	43.7% 142,825
Conservation and natural environments Woodland forest	57,075	100.0% 57,075	100.0% 57,075	100.0% 57,050	99.7% 56,900	89.5% 51,075	63.2% 36,050
Conservation and natural environments Forest (non woodland)	267,800	100.0% 267,800	100.0% 267,775	99.9% 267,625	99.5% 266,525	82.9% 221,900	39.6% 105,950
Agriculture	741,925	100.0% 741,925	100.0% 741,900	99.8% 740,700	99.0% 734,475	88.6% 657,175	66.1% 490,175
Grazing	723,400	100.0% 723,400	100.0% 723,400	99.9% 722,850	99.5% 719,575	90.1% 651,925	67.4% 487,900
Grazing non forest	119,100	100.0% 119,100	100.0% 119,100	99.7% 118,800	98.4% 117,250	73.4% 87,375	37.9% 45,175
Grazing Woodland forest	380,875	100.0% 380,875	100.0% 380,875	99.9% 380,675	99.6% 379,350	91.8% 349,500	68.6% 261,175
Grazing - Forest (non woodland)	223,425	100.0% 223,425	100.0% 223,425	100.0% 223,375	99.8% 222,975	96.3% 215,050	81.3% 181,550
Irrigation	17,775	100.0% 17,775	99.9% 17,750	96.2% 17,100	79.6% 14,150	25.9% 4,600	10.3% 1,825
Production native forests and plantation forests	26,575	100.0% 26,575	100.0% 26,575	99.8% 26,525	99.3% 26,400	85.0% 22,600	58.3% 15,500

