### Total vegetation cover soil protection Region:LGA Whitsunday (R) QLD

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 cover class that 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









**Date: September 2025** 

### **Vegetation Cover Sep 2025**

### Land use and forest cover

Catchment Scale

of Australia (2018)

Derived from

Use of Australia

(2018) and Forests

of Australia (2018)

Anomaly show how many percetage points each

pixel is from

is, red pixels are about 20% lower than the

mean of that pixel. The mean is only for the month of the map

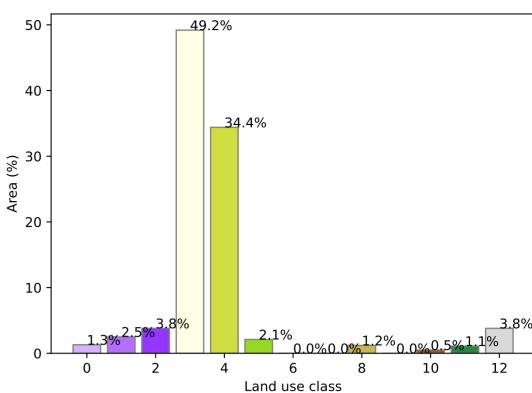
using baseline from 2001 to

2019.

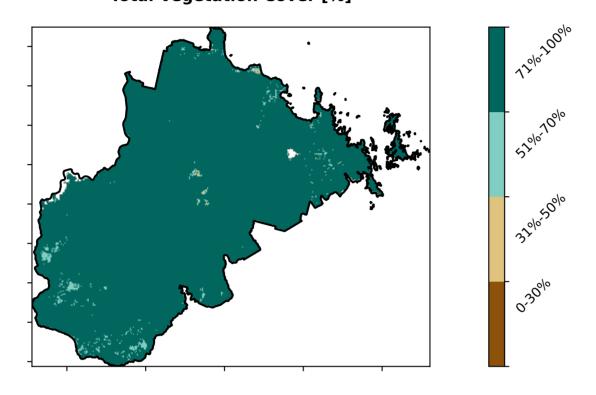
the mean. That

### Legend with land class forest cover and number, i.e. Forests is 12 1 Conservation and natural environments - Non-forest 2 Conservation and natural environments - Woodland forest 3 Conservation and natural environments - Non-Woodland forest Land Use and Forests 4 Agriculture - Grazing - Non-forest 5 Agriculture - Grazing - Woodland forest Catchment Scale Land 6 Agriculture - Grazing - Non-woodland forest 7 Agriculture - Grazing - Irrigated 8 Agriculture - Cropping - Non-irrigated 9 Agriculture - Cropping - Irrigated 10 Agriculture - Horticulture - Non-irrigated 11 Agriculture - Horticulture - Irrigated 12 Production native forests and plantation forests 13 Other uses

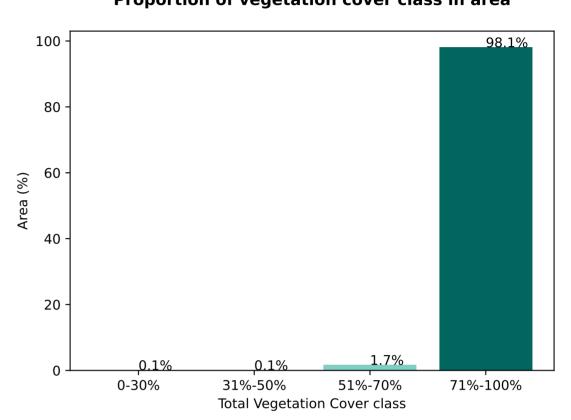
### Proportion of each land class in area

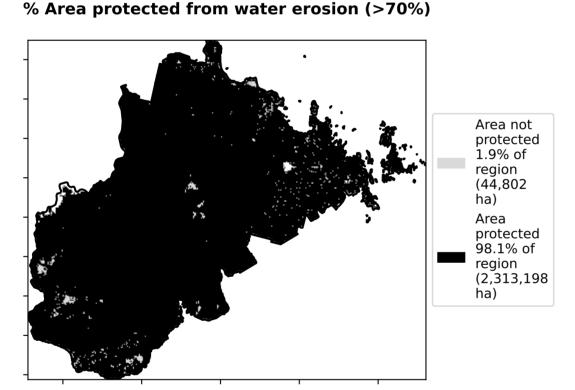


### **Total Vegetation Cover [%]**

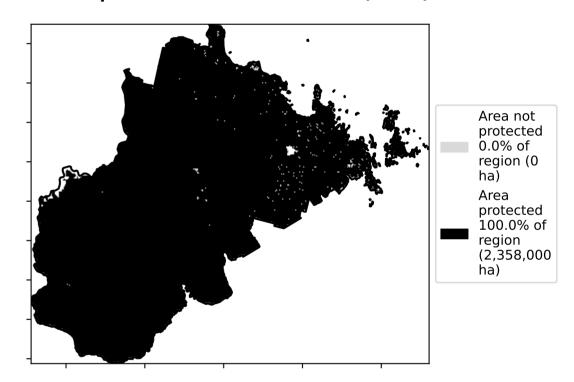


**Proportion of vegetation cover class in area** 

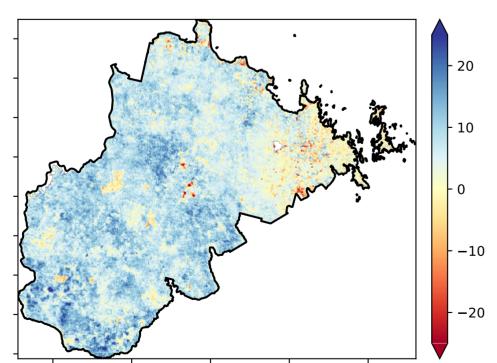




% Area protected from wind erosion (>50%)

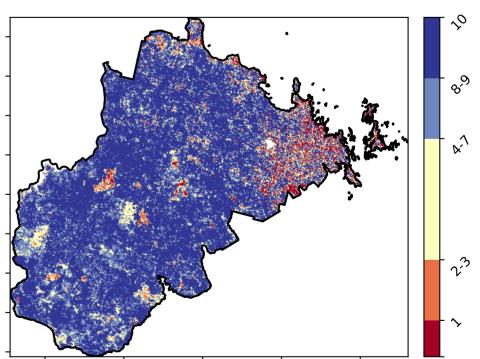


### **Total Vegetation Cover Anomaly [%]**



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 [%]**

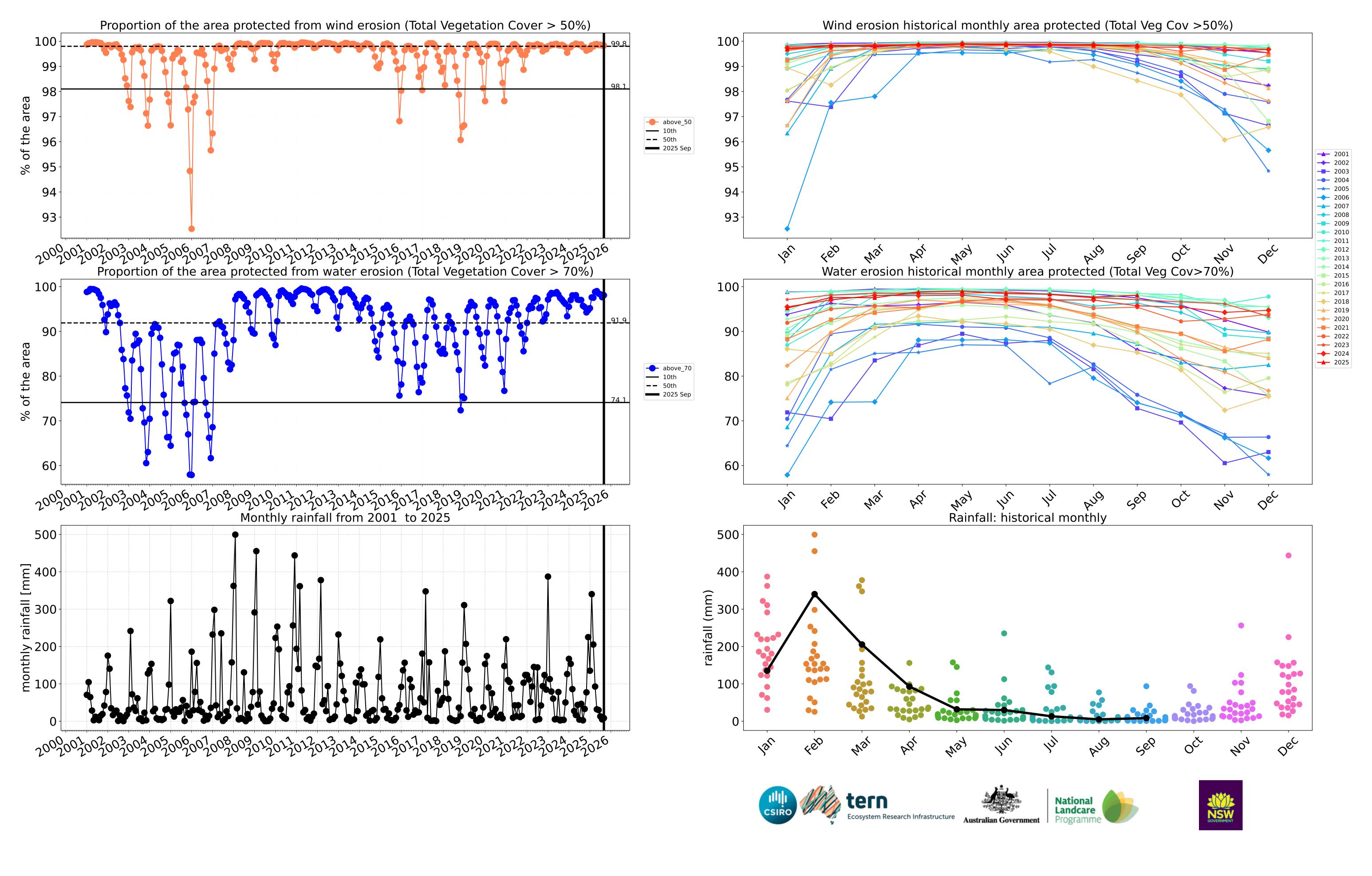








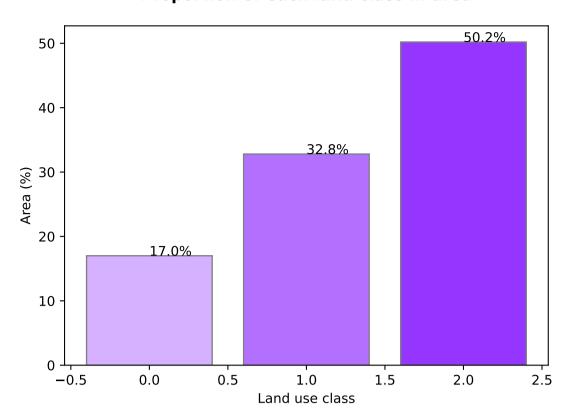




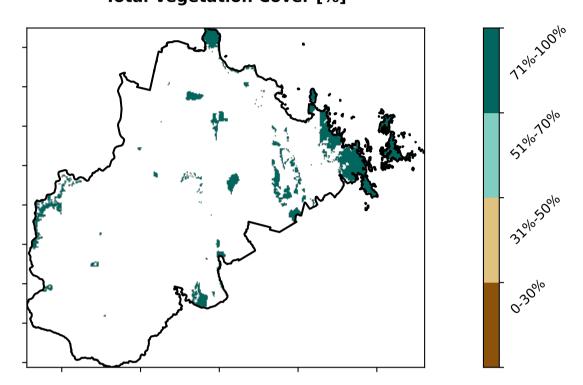
### **Conservation and natural environments**

### Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) 1 Conservation and natural environments - Nonforest Derived from 2 Conservation and natural environments - Woodland Catchment Scale Land Use of Australia 3 Conservation and natural environments - Non-(2018) and Forests of Australia (2018)

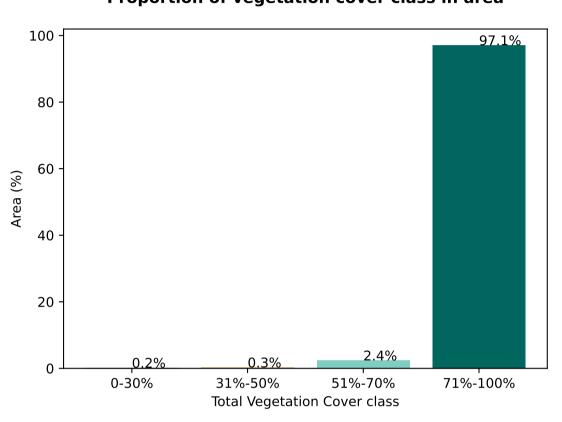
### Proportion of each land class in area



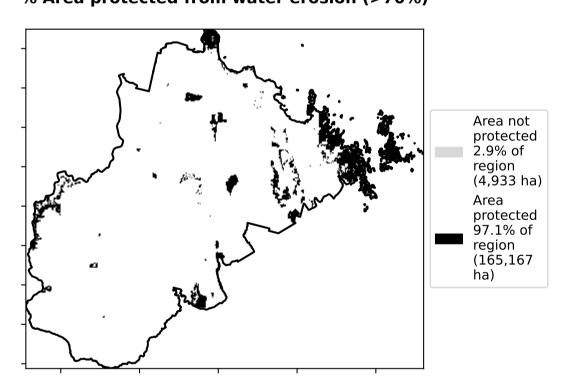
**Total Vegetation Cover [%]** 



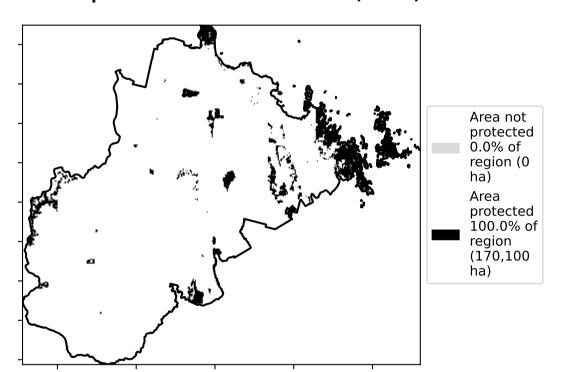
Proportion of vegetation cover class in area



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



% Area protected from wind erosion (>50%)



**Total Vegetation Cover Anomaly [%]** 

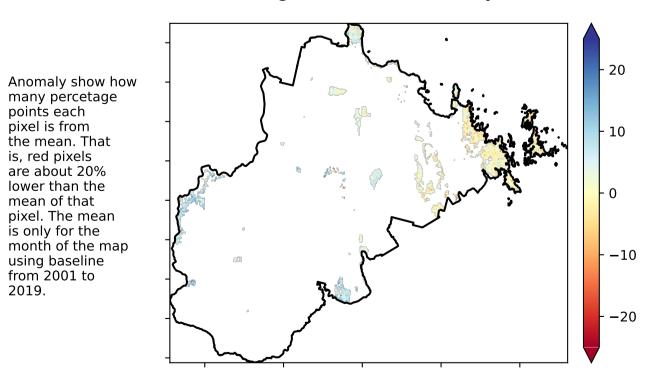
the mean. That

pixel. The mean

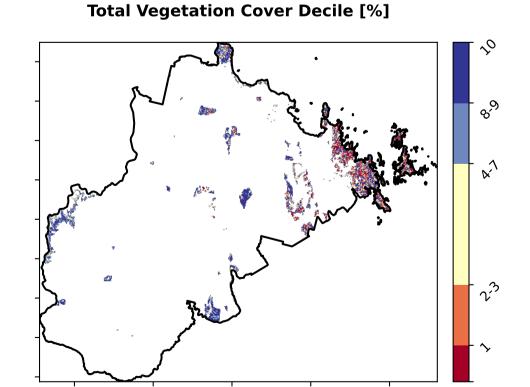
using baseline from 2001 to 2019.

is only for the month of the map

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 from 2001 to 2019.



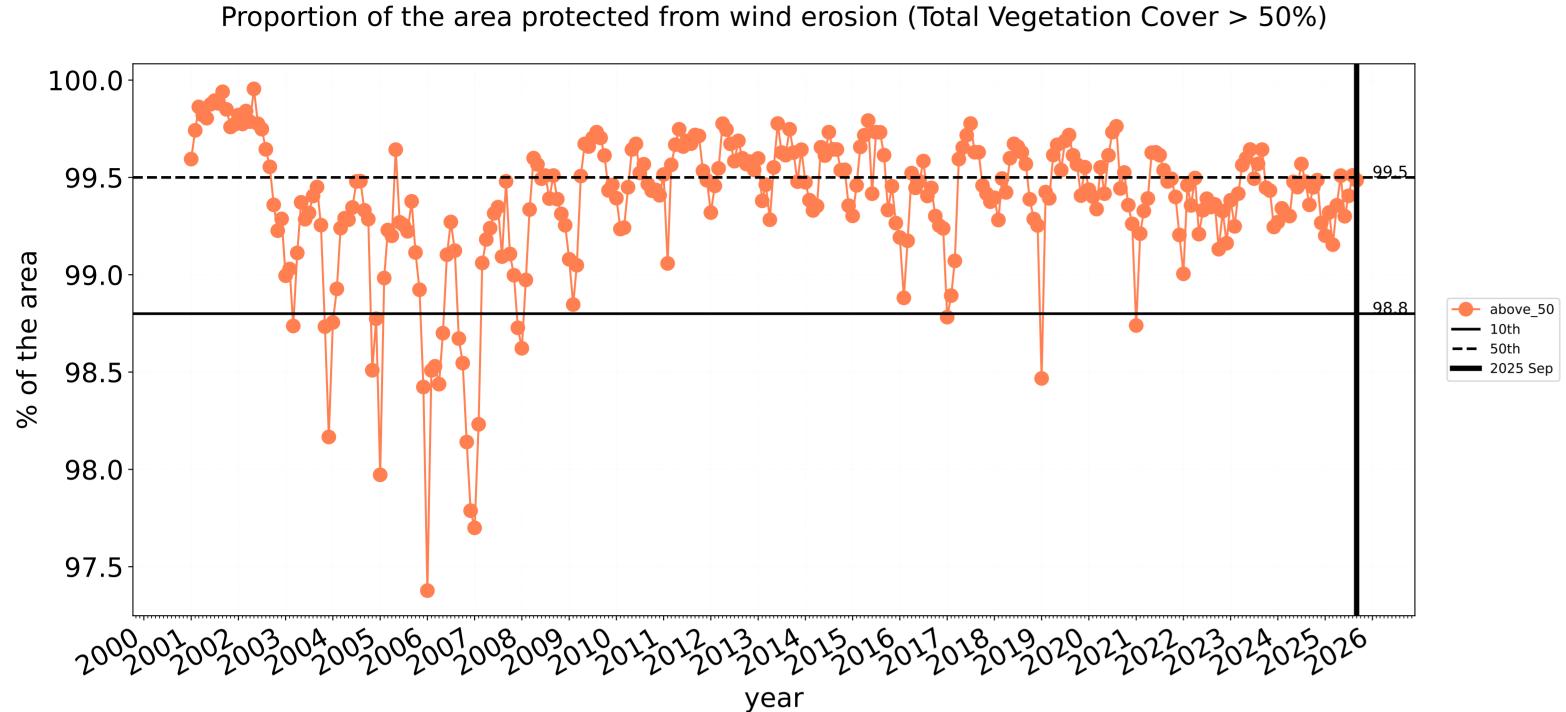


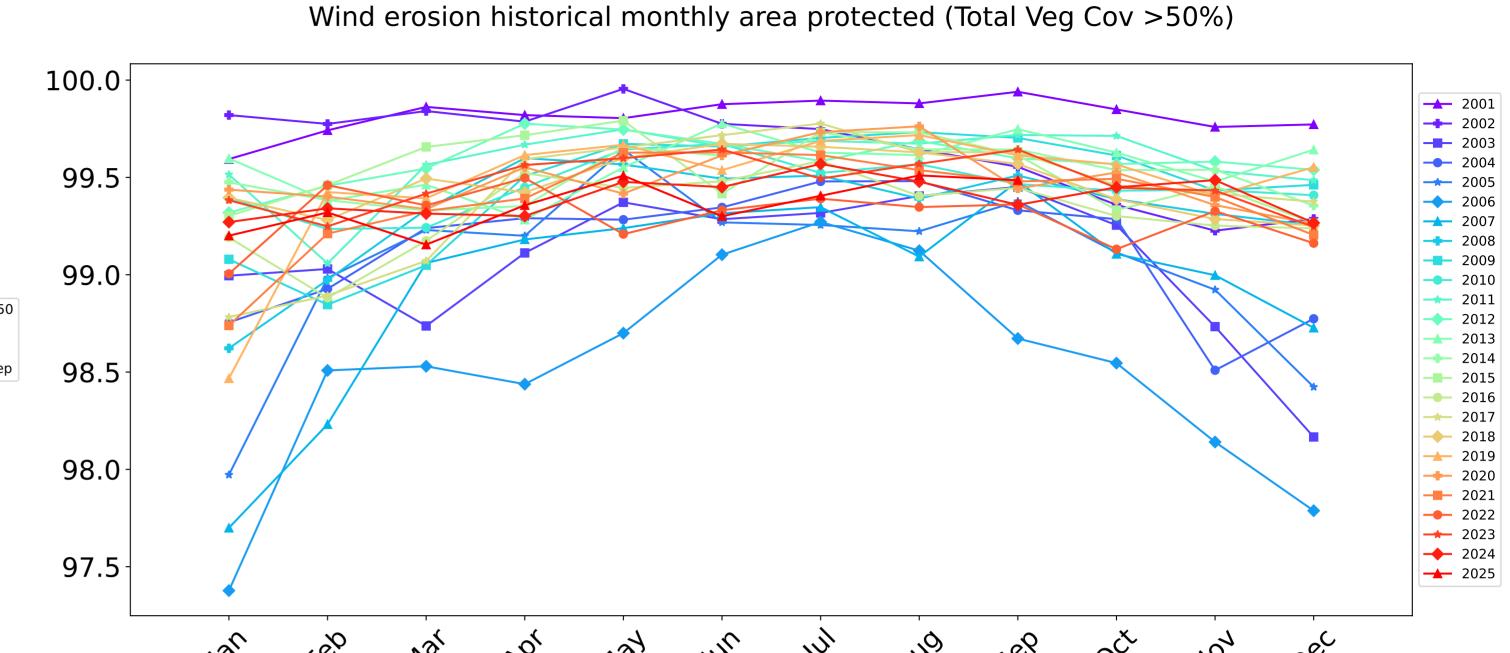


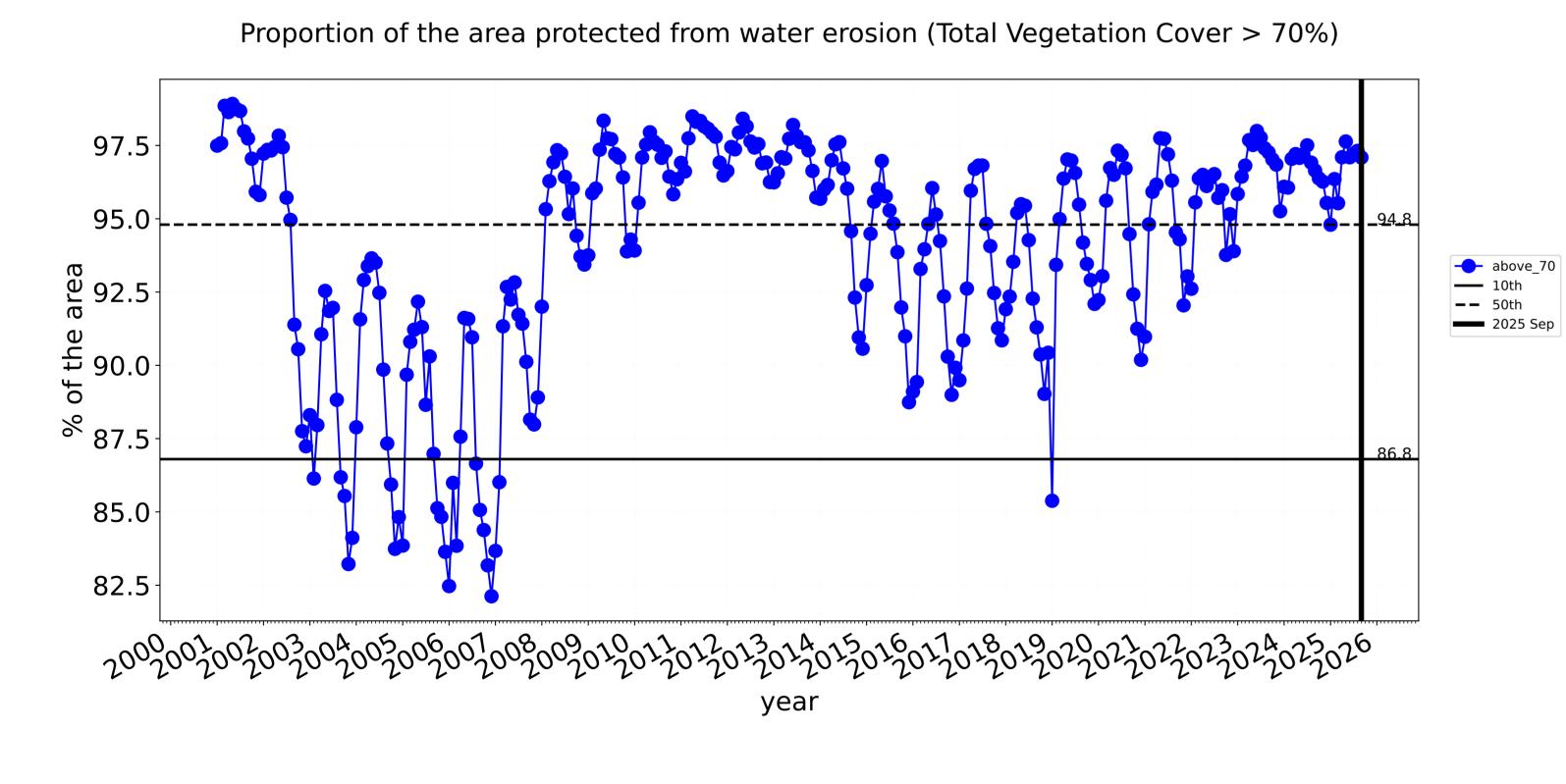


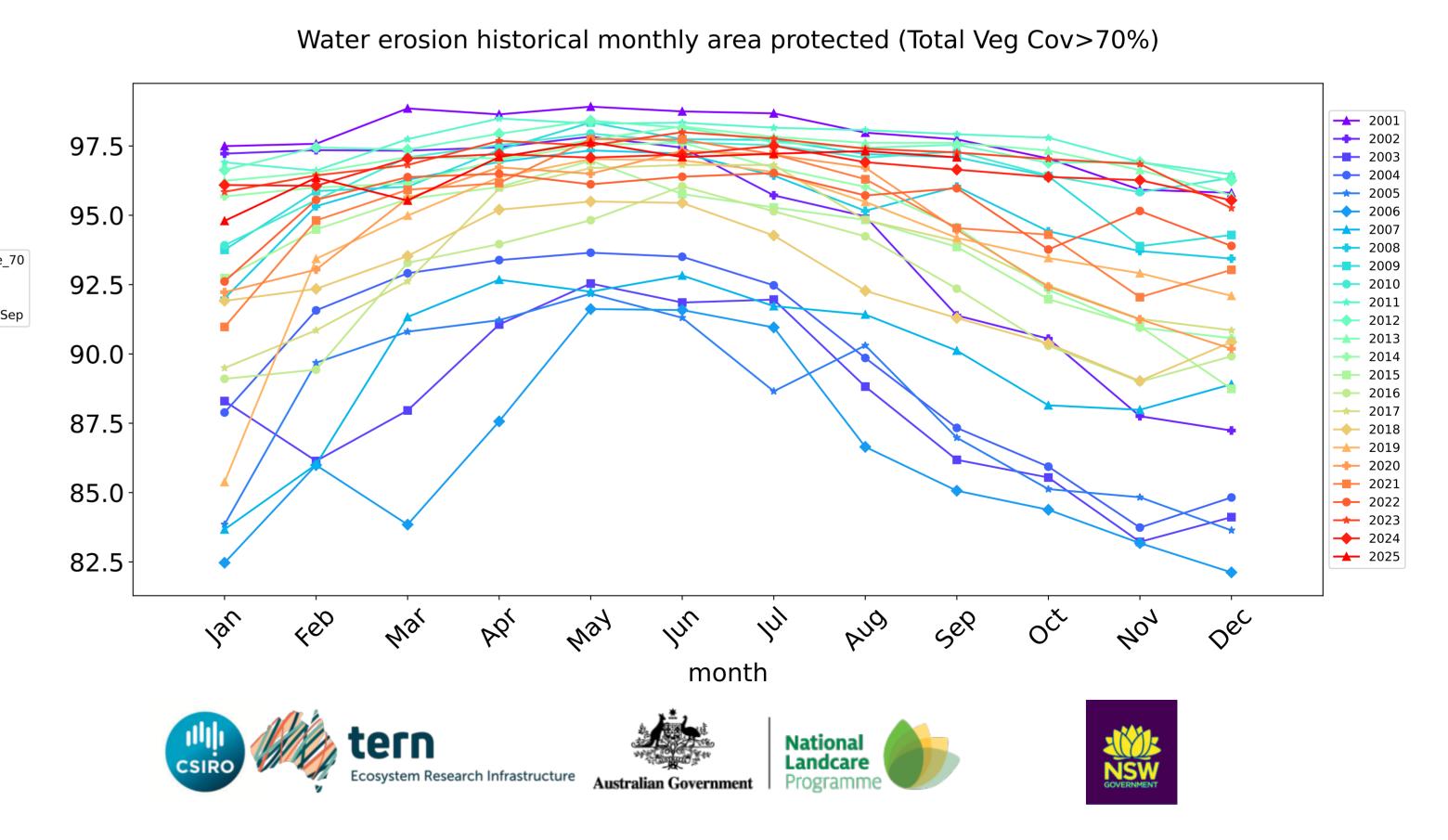


### **Conservation and natural environments timeseries**









### **Conservation and natural environments non forest**

### Land use and forest cover 1 Conservation and natural environments - Nonforest

### Total Vegetation Cover [%]

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

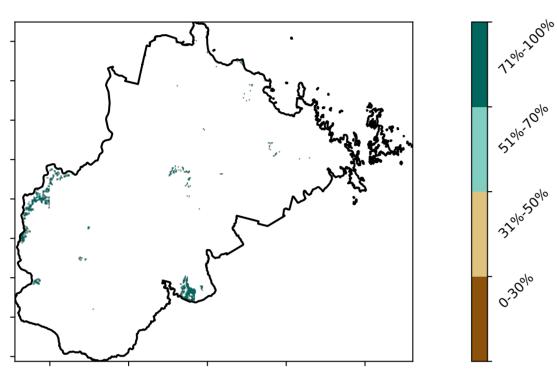
Anomaly show how many percetage points each pixel is from the mean. That

is, red pixels

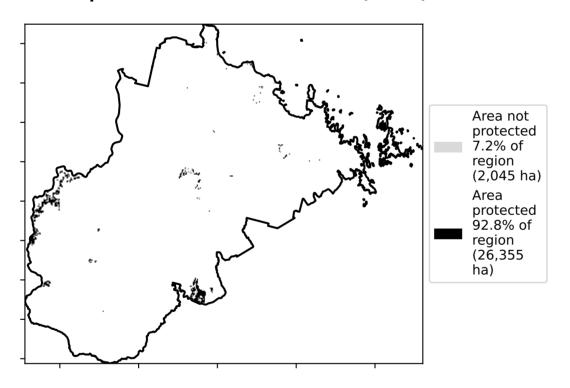
are about 20% lower than the mean of that pixel. The mean

is only for the month of the map

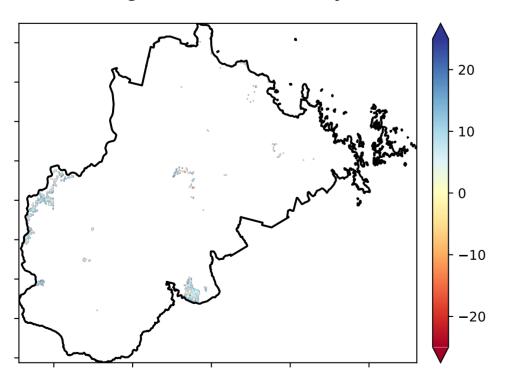
using baseline from 2001 to 2019.



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

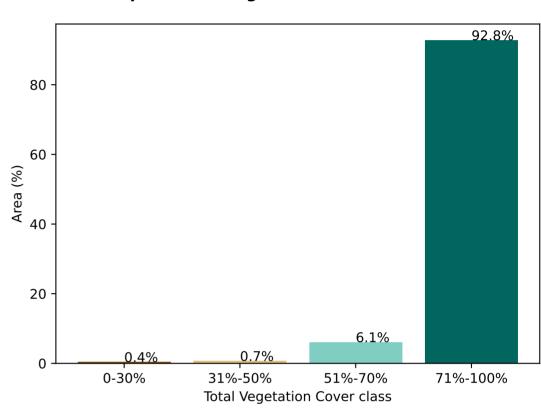


### **Total Vegetation Cover Anomaly [%]**

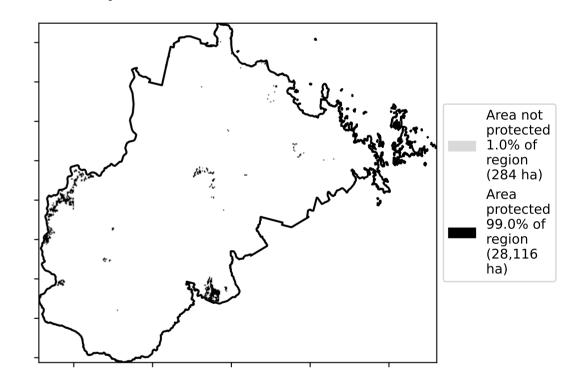


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

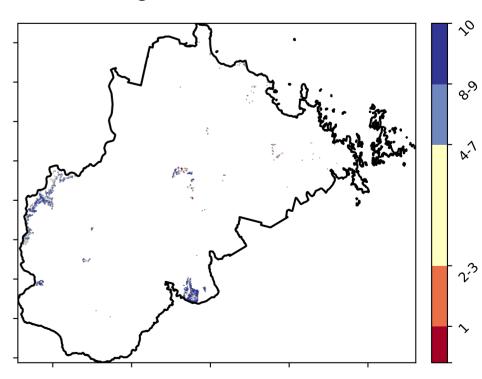
### Proportion of vegetation cover class in area



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



### Total Vegetation Cover Decile [%]



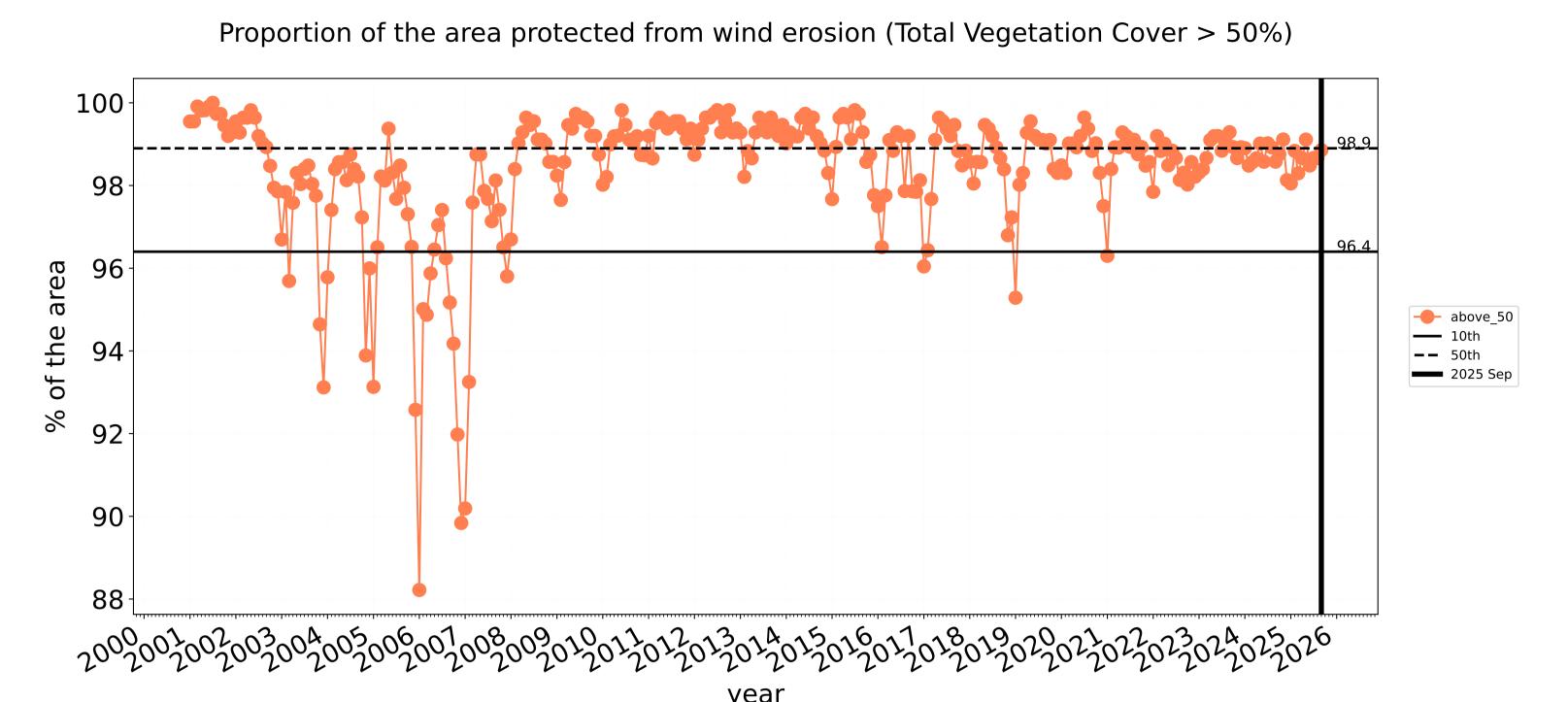


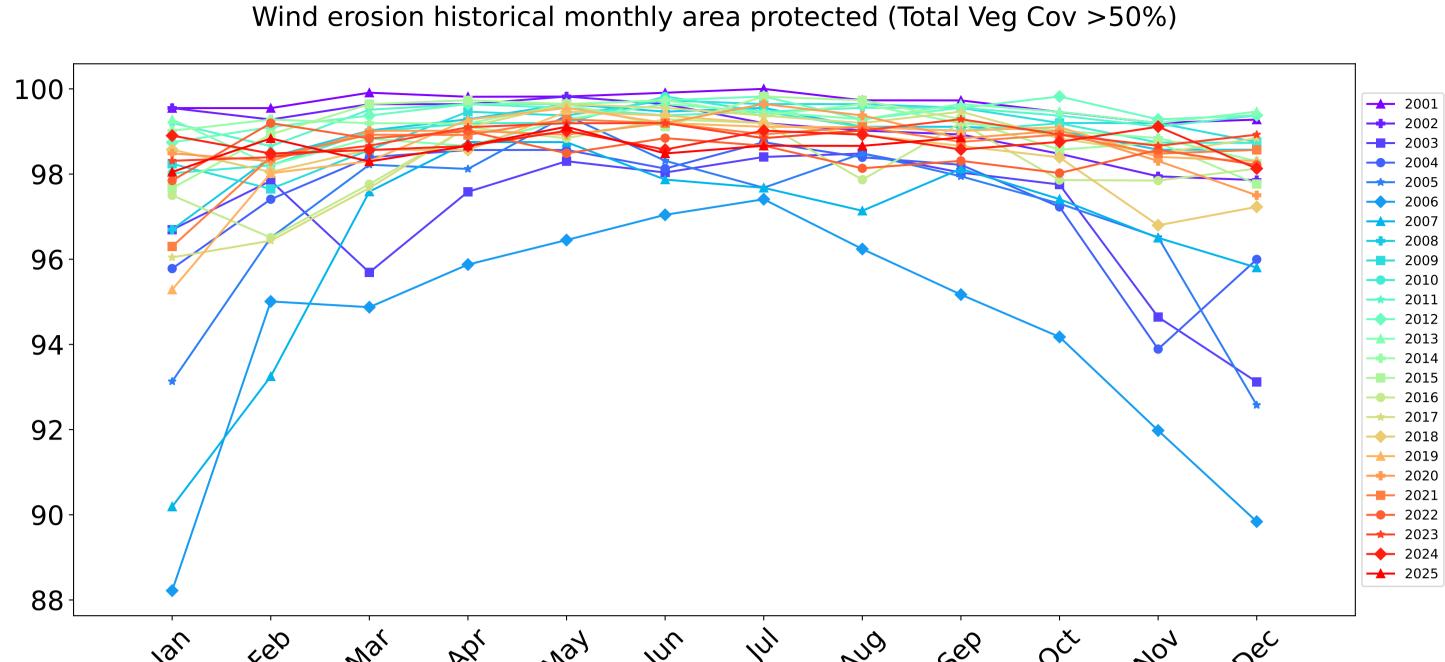


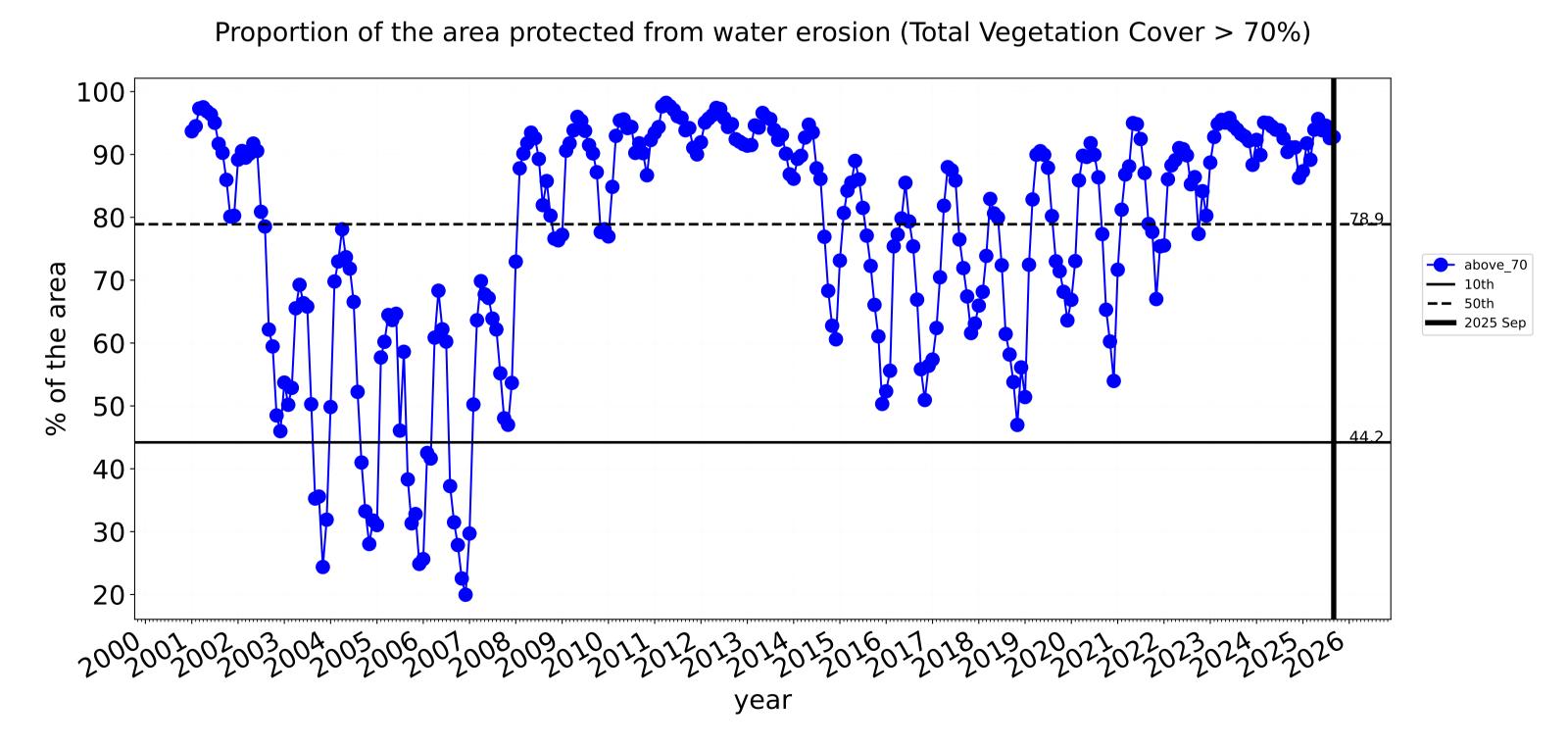


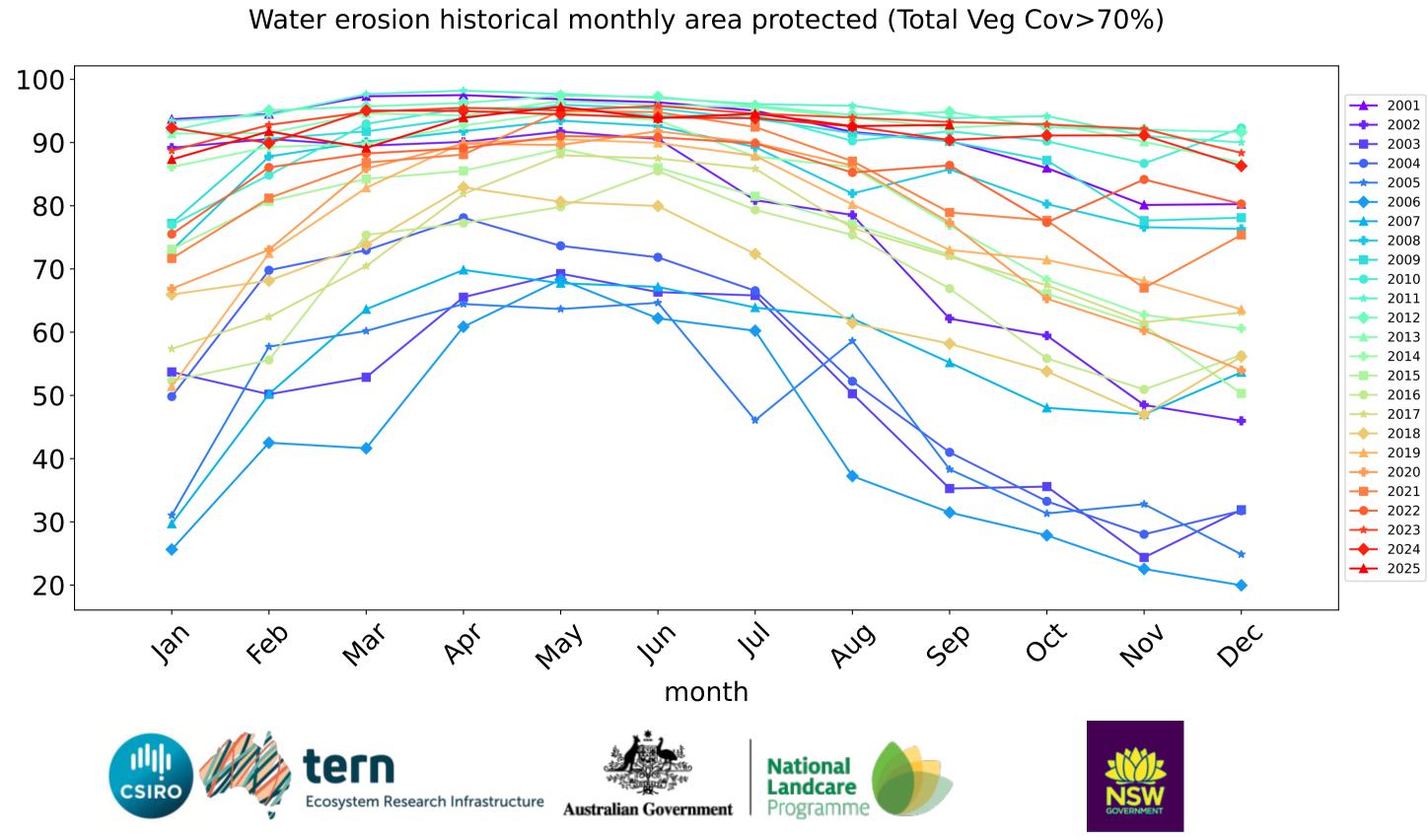


### **Conservation and natural environments non forest timeseries**





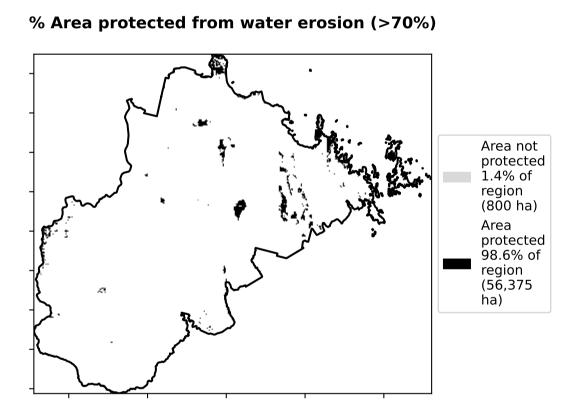


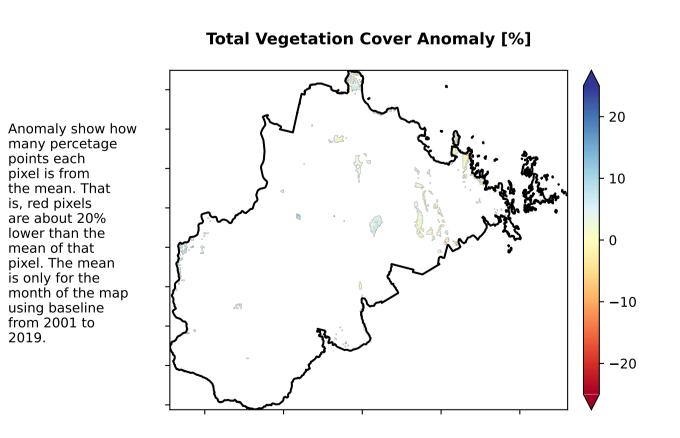


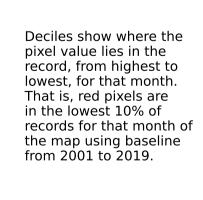
### **Conservation and natural environments Woodland forest**

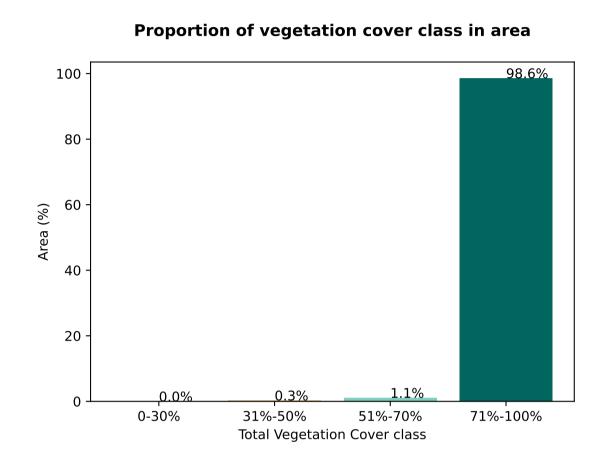
### Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Conservation and natural environments - Woodland forest

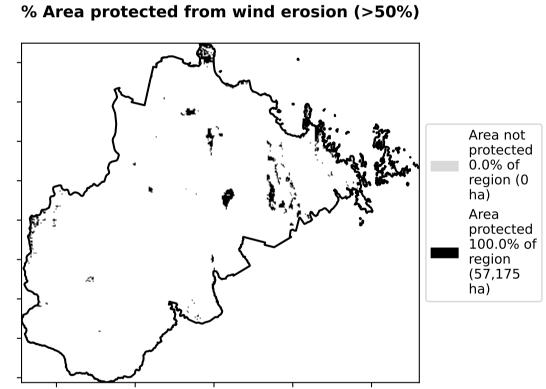
### Total Vegetation Cover [%]

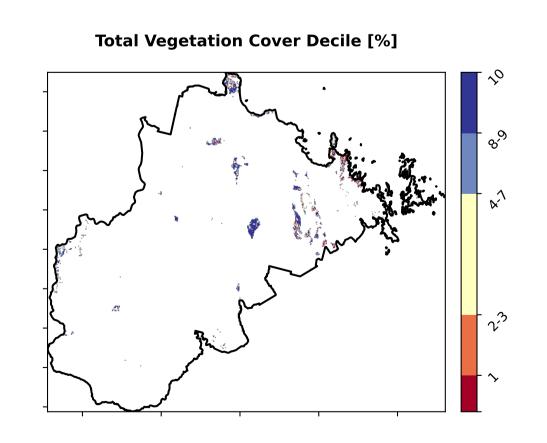












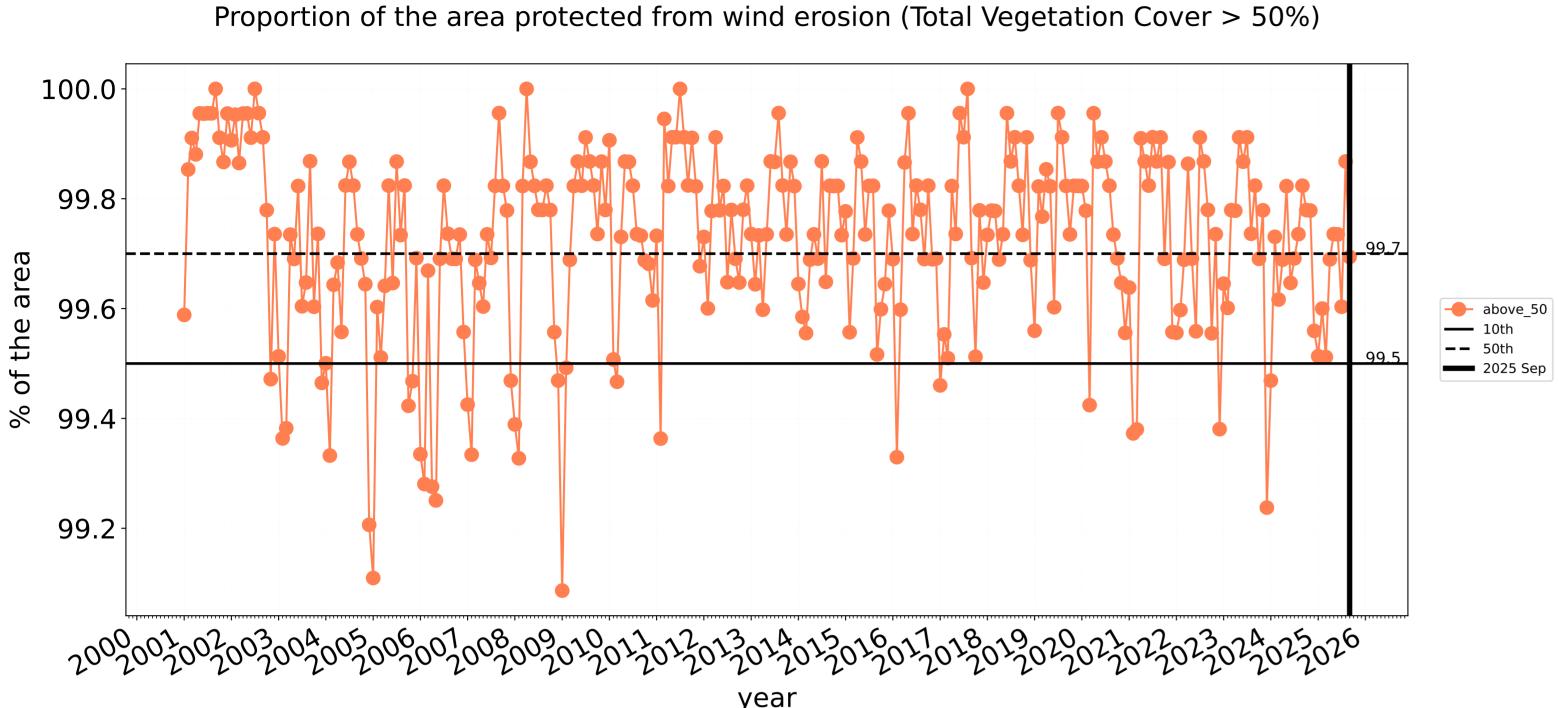


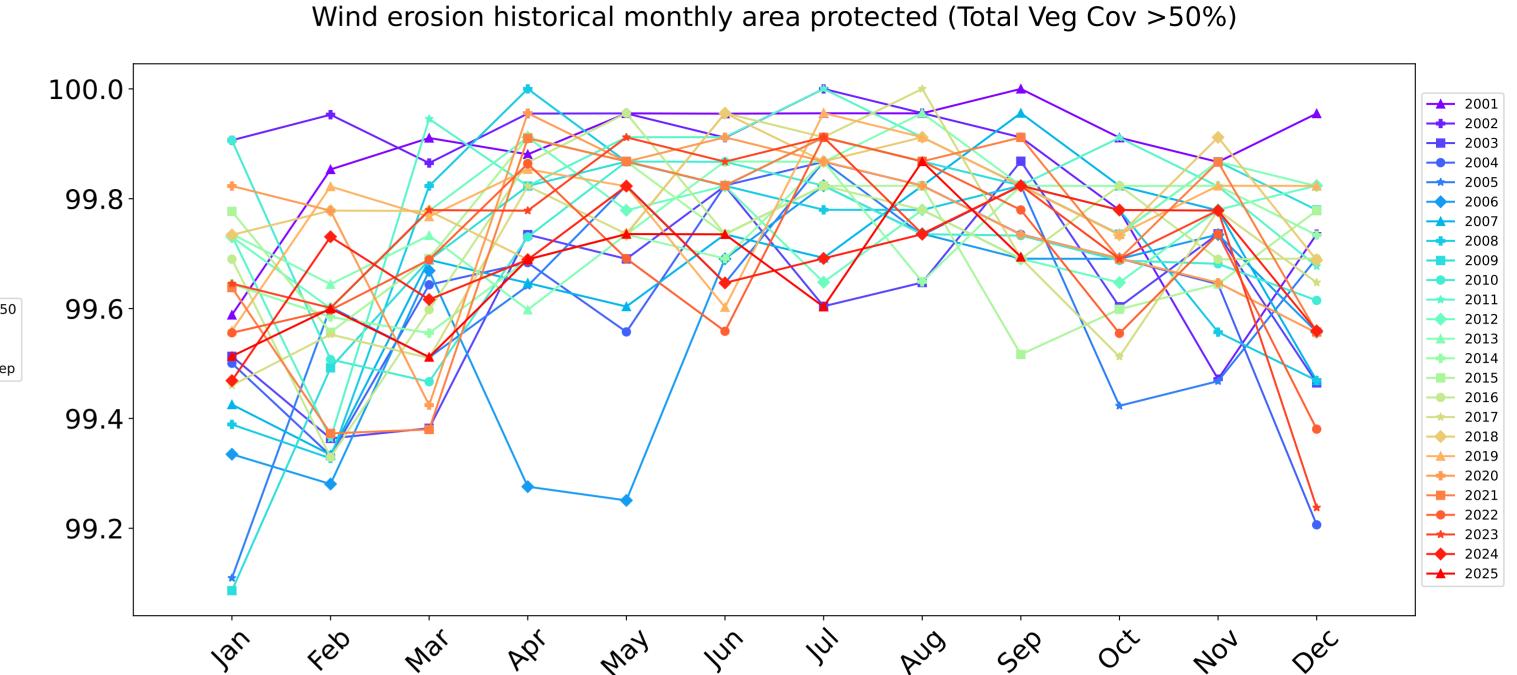


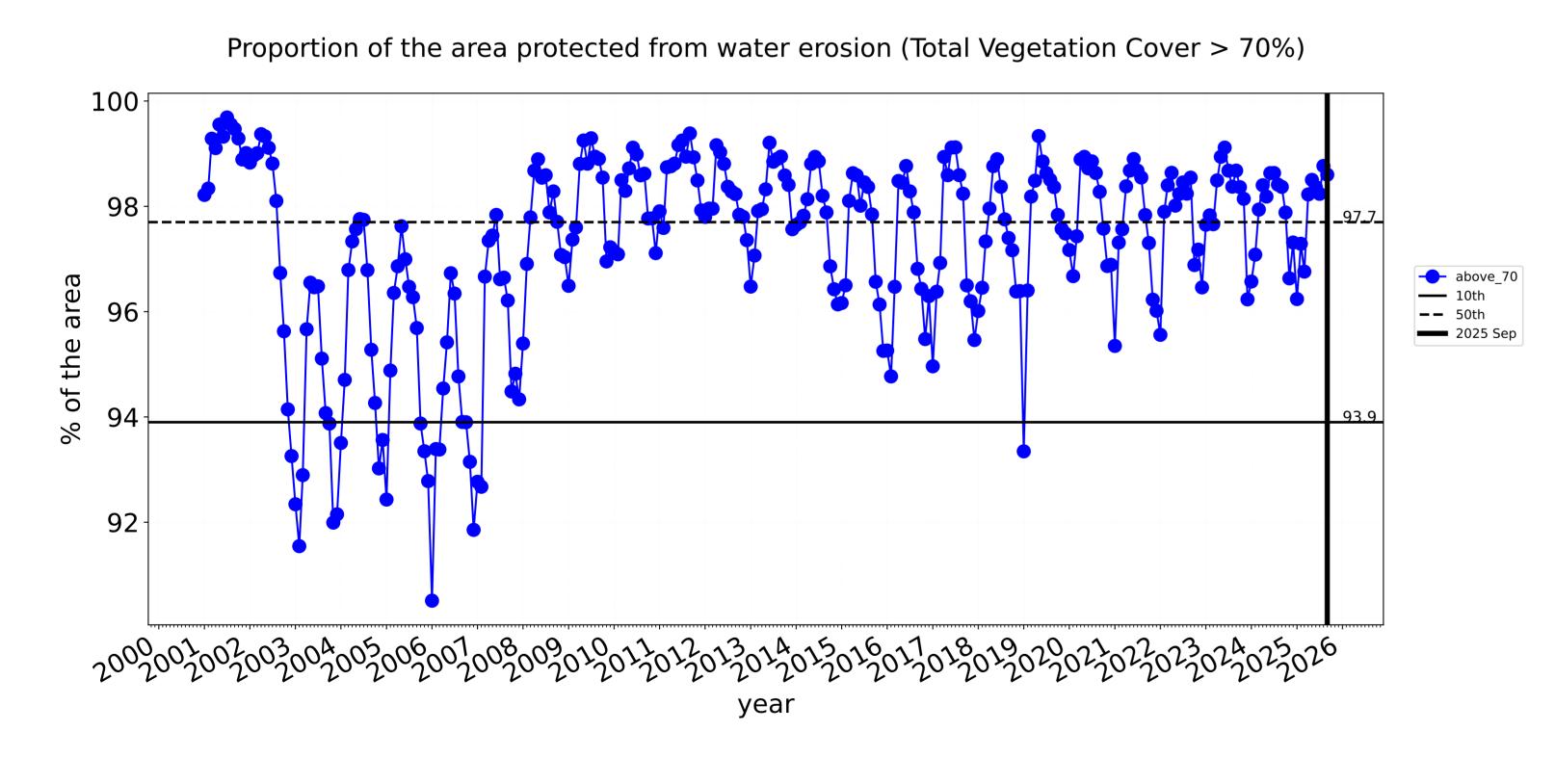


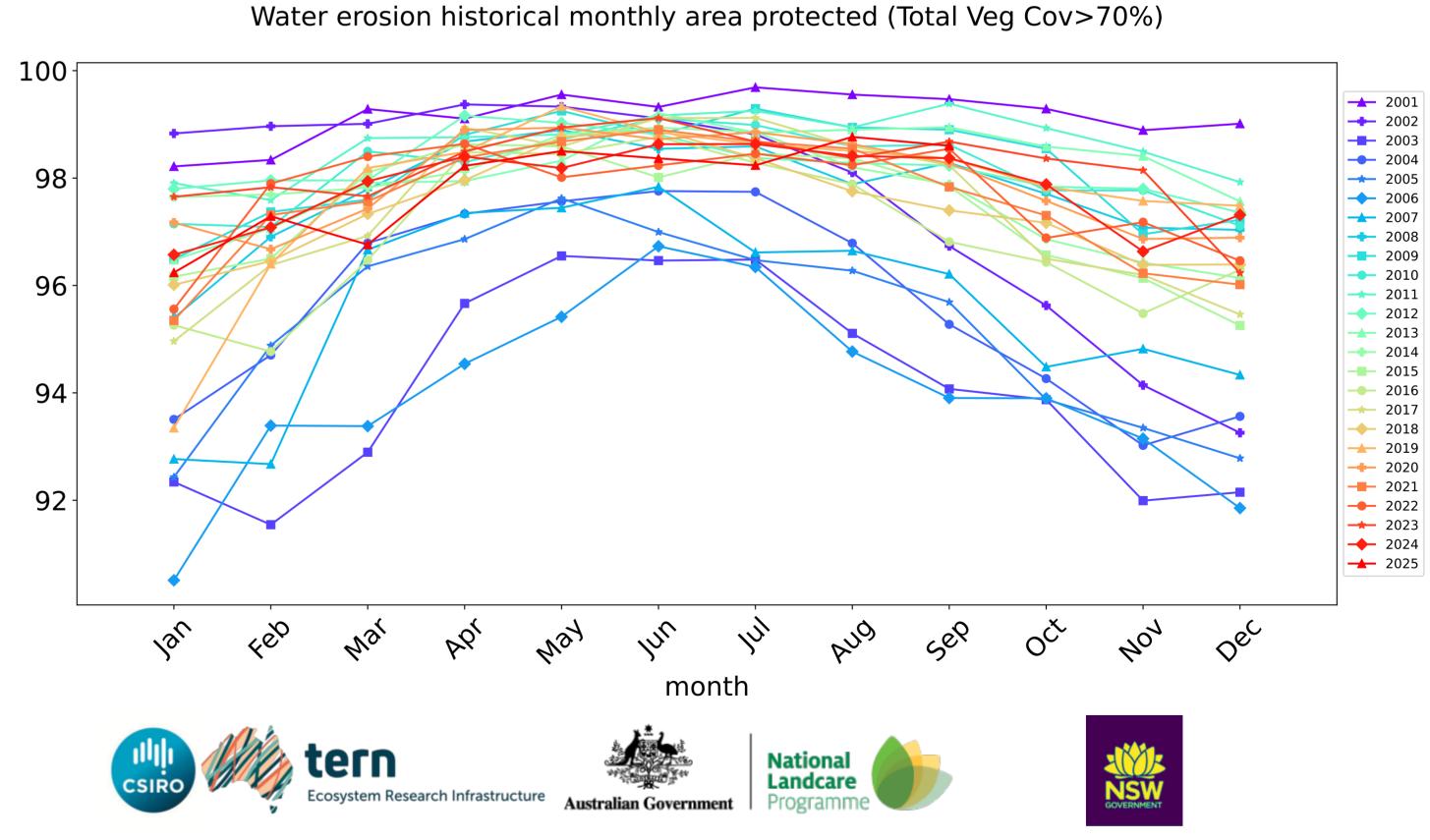


### **Conservation and natural environments Woodland forest timeseries**



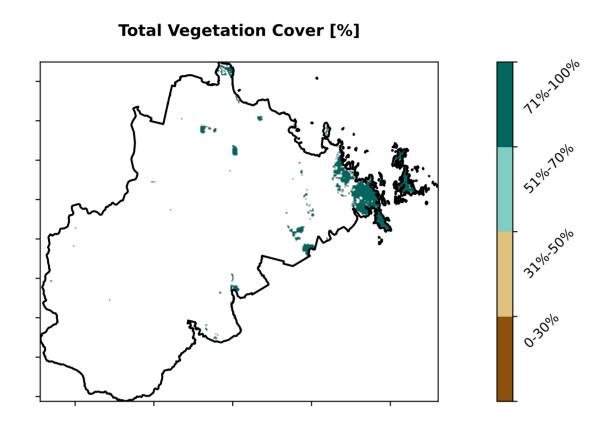


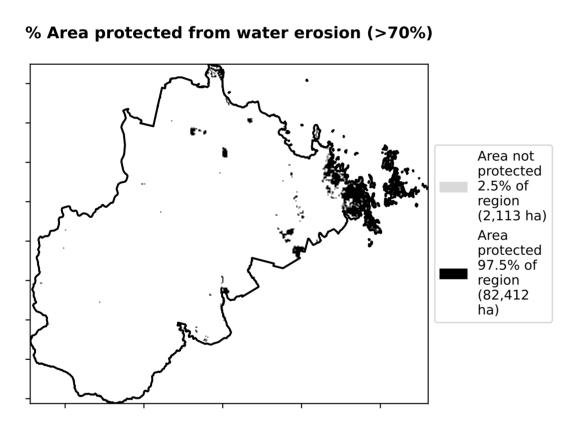


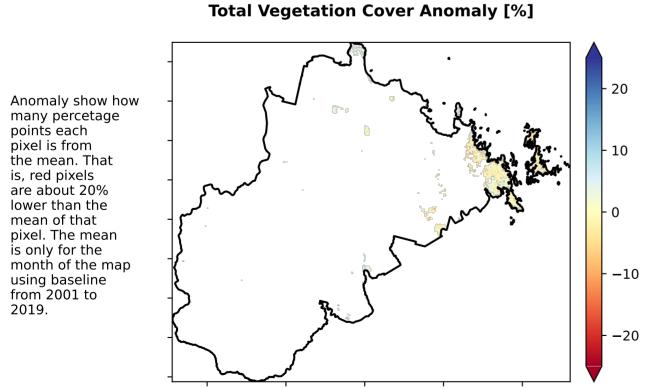


### **Conservation and natural environments Forest (non woodland)**

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





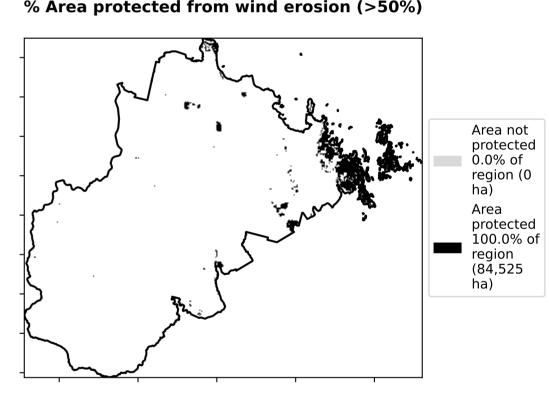


# 80 - 60 - 20 - 20 - 0.2% 0.3% 2.0% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class % Area protected from wind erosion (>50%)

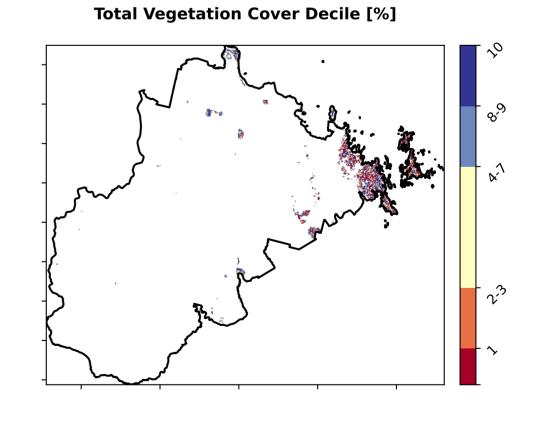
**Proportion of vegetation cover class in area** 

97.5%

100









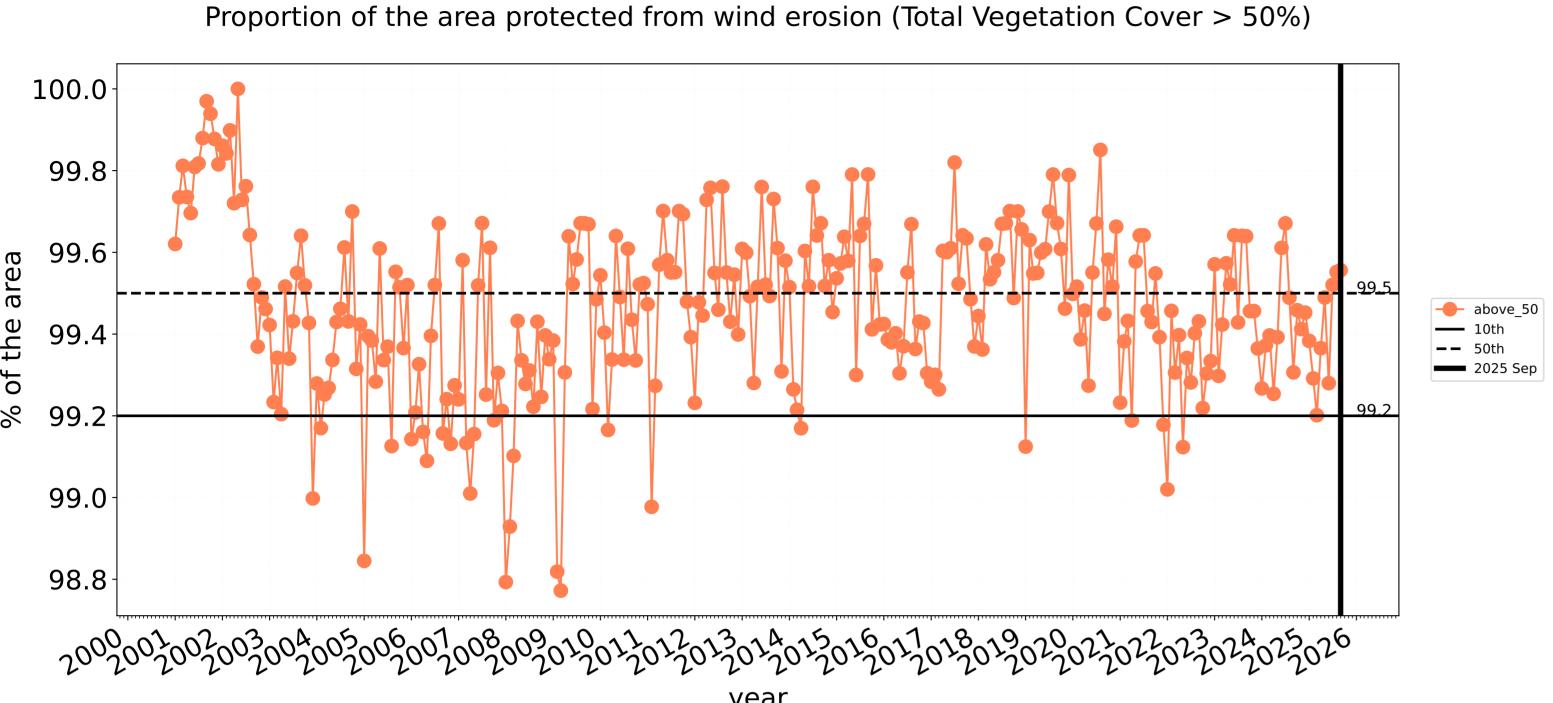


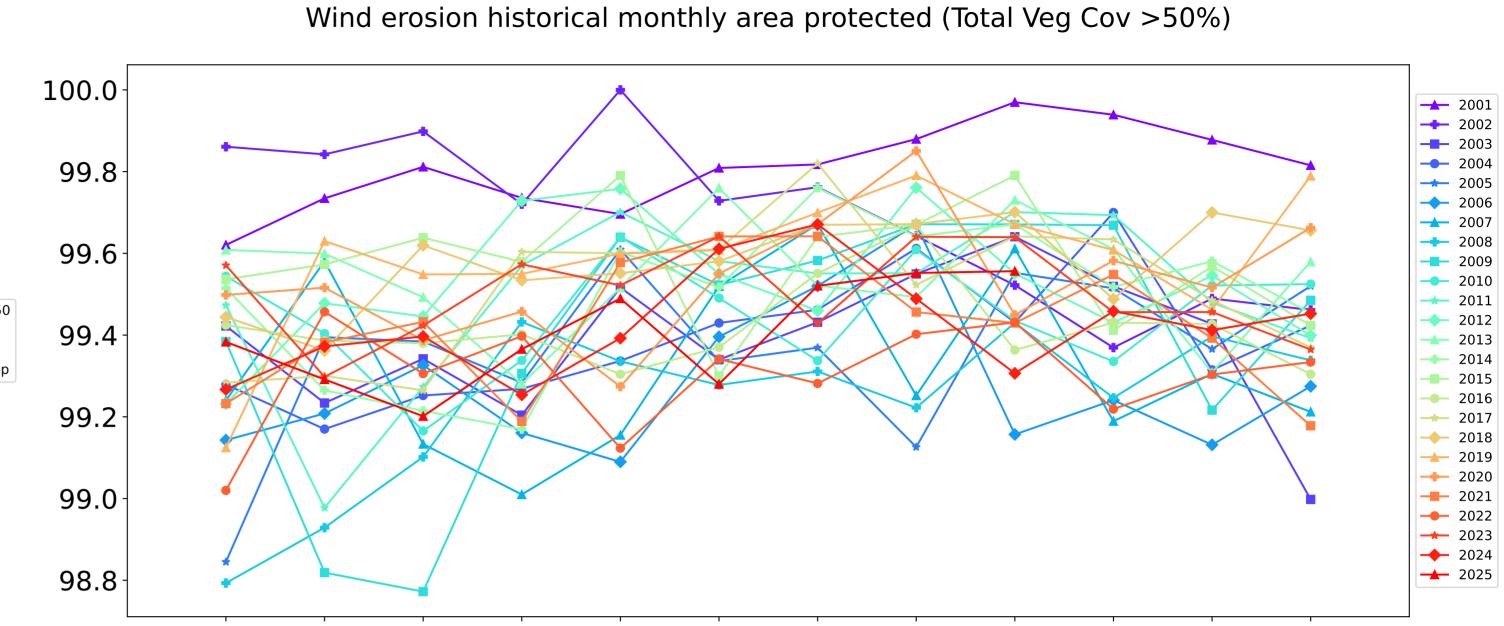
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline.

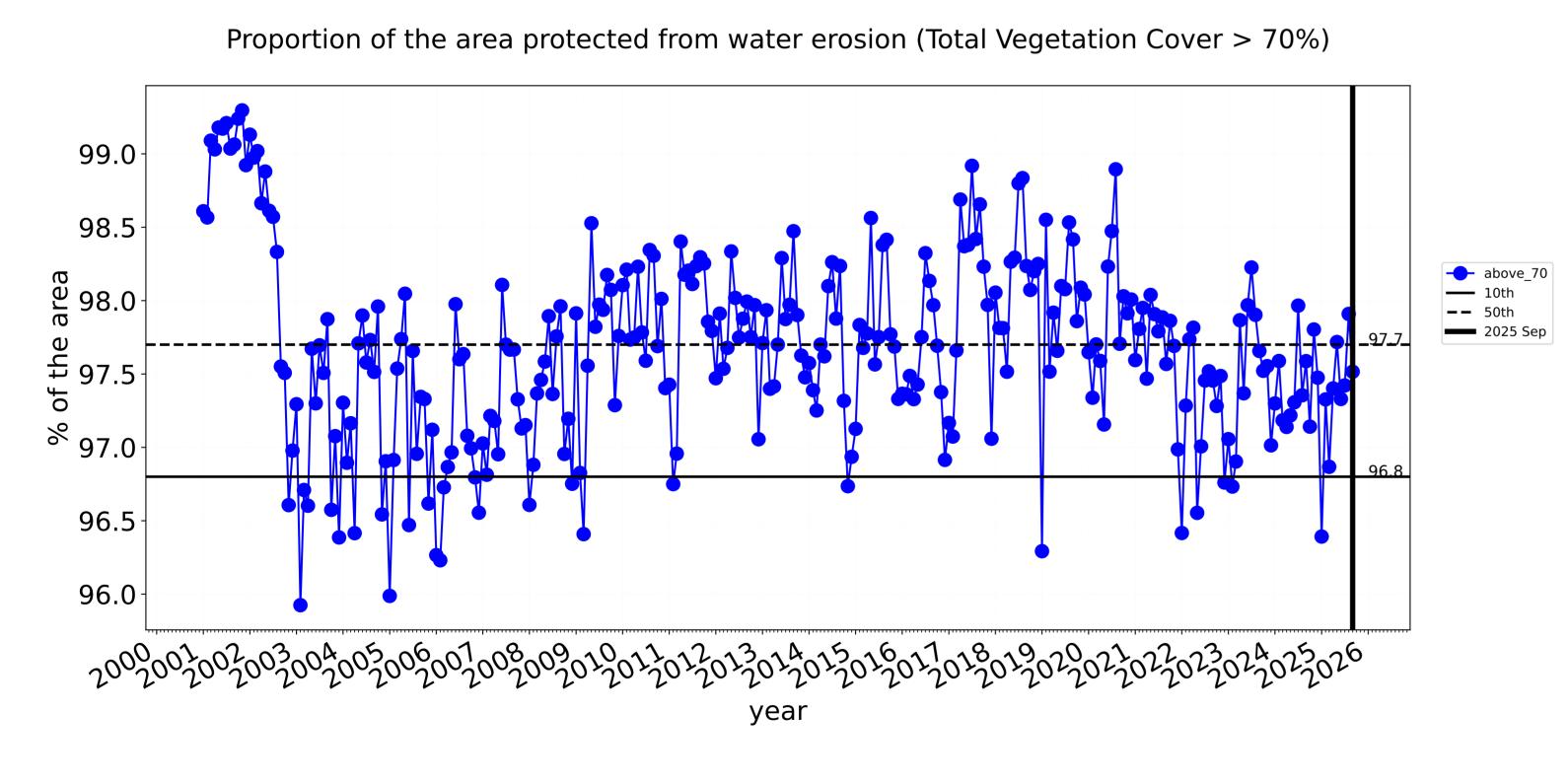
the map using baseline from 2001 to 2019.

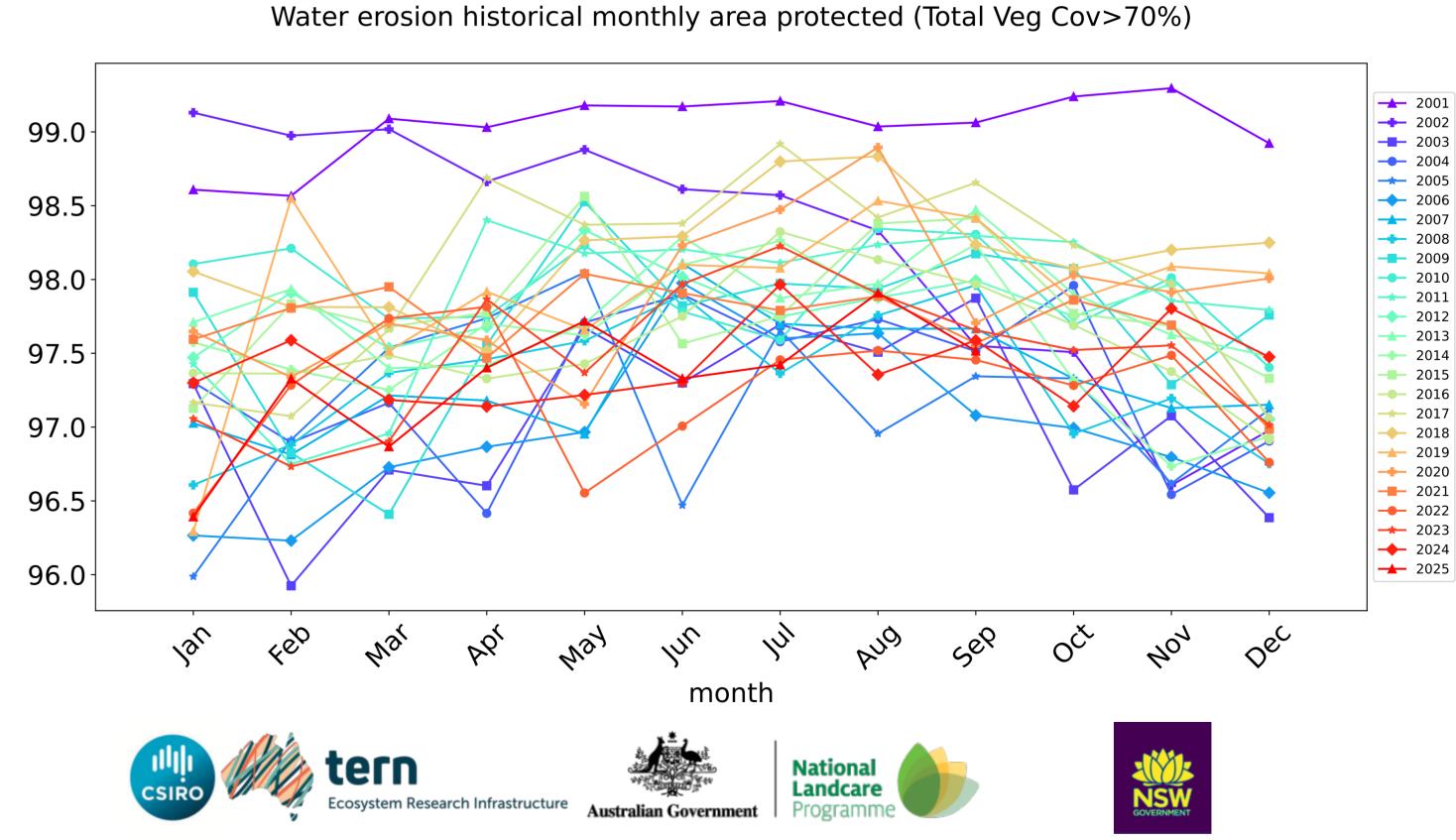












### **Agriculture**

### Land use and forest cover

Derived from

Use of Australia

the mean. That

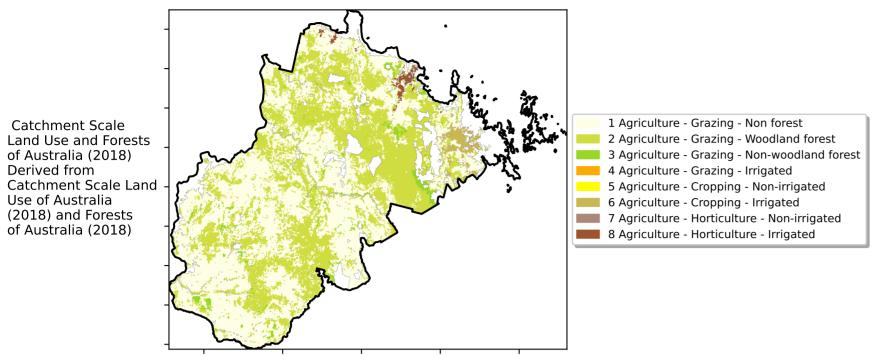
pixel. The mean

using baseline from 2001 to 2019.

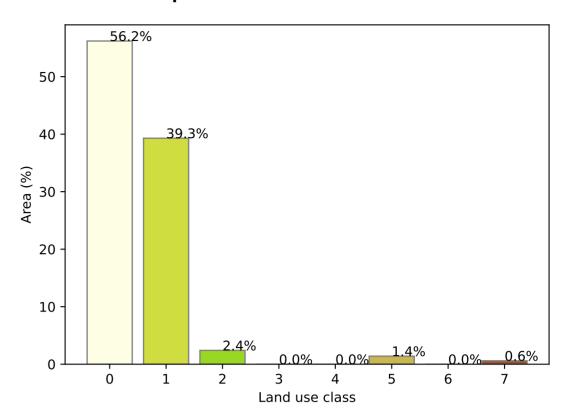
is only for the month of the map

is, red pixels are about 20% lower than the mean of that

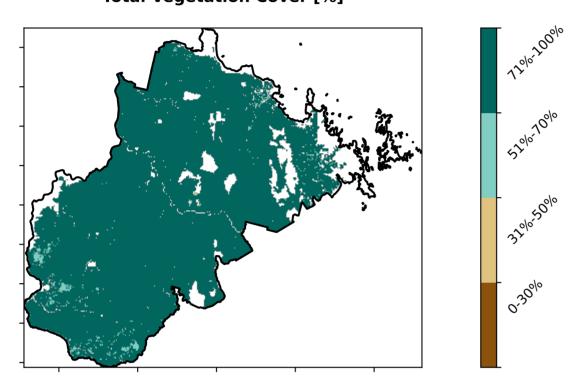
(2018) and Forests of Australia (2018)



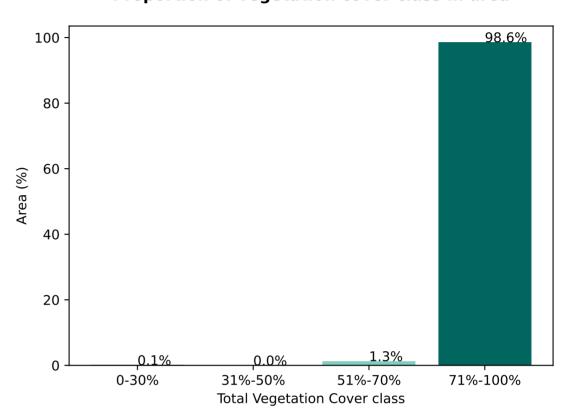
### Proportion of each land class in area



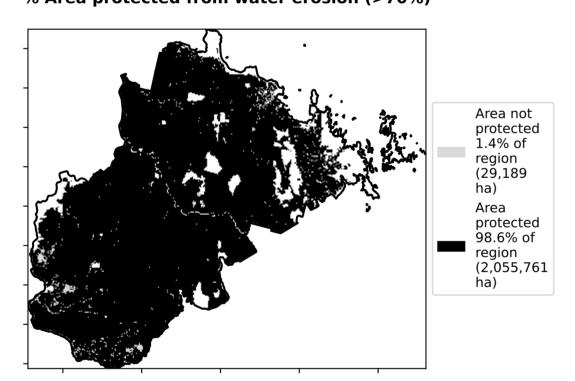
### **Total Vegetation Cover [%]**



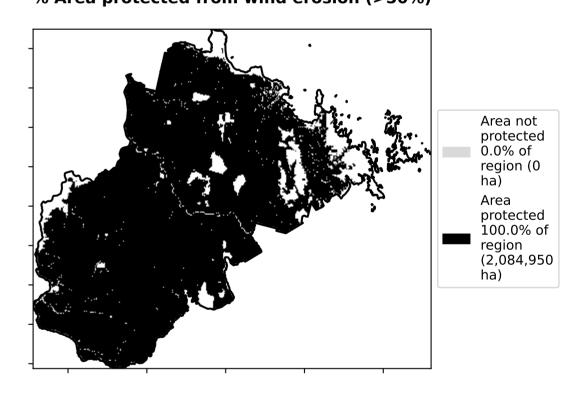
Proportion of vegetation cover class in area



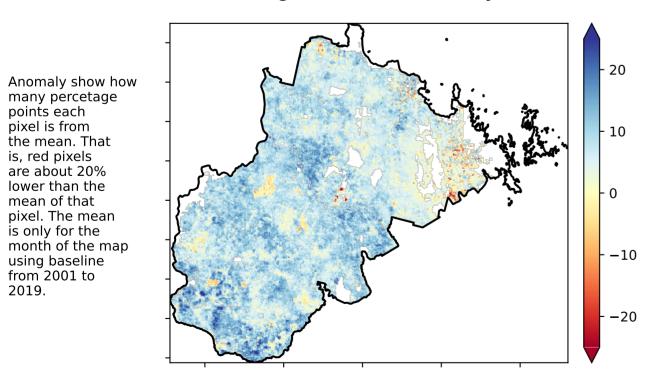
### % Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

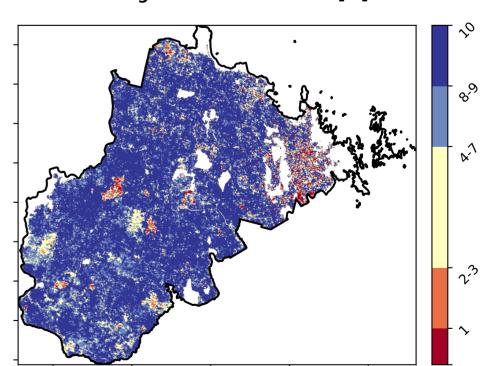


### **Total Vegetation Cover Anomaly [%]**



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 [%]** 







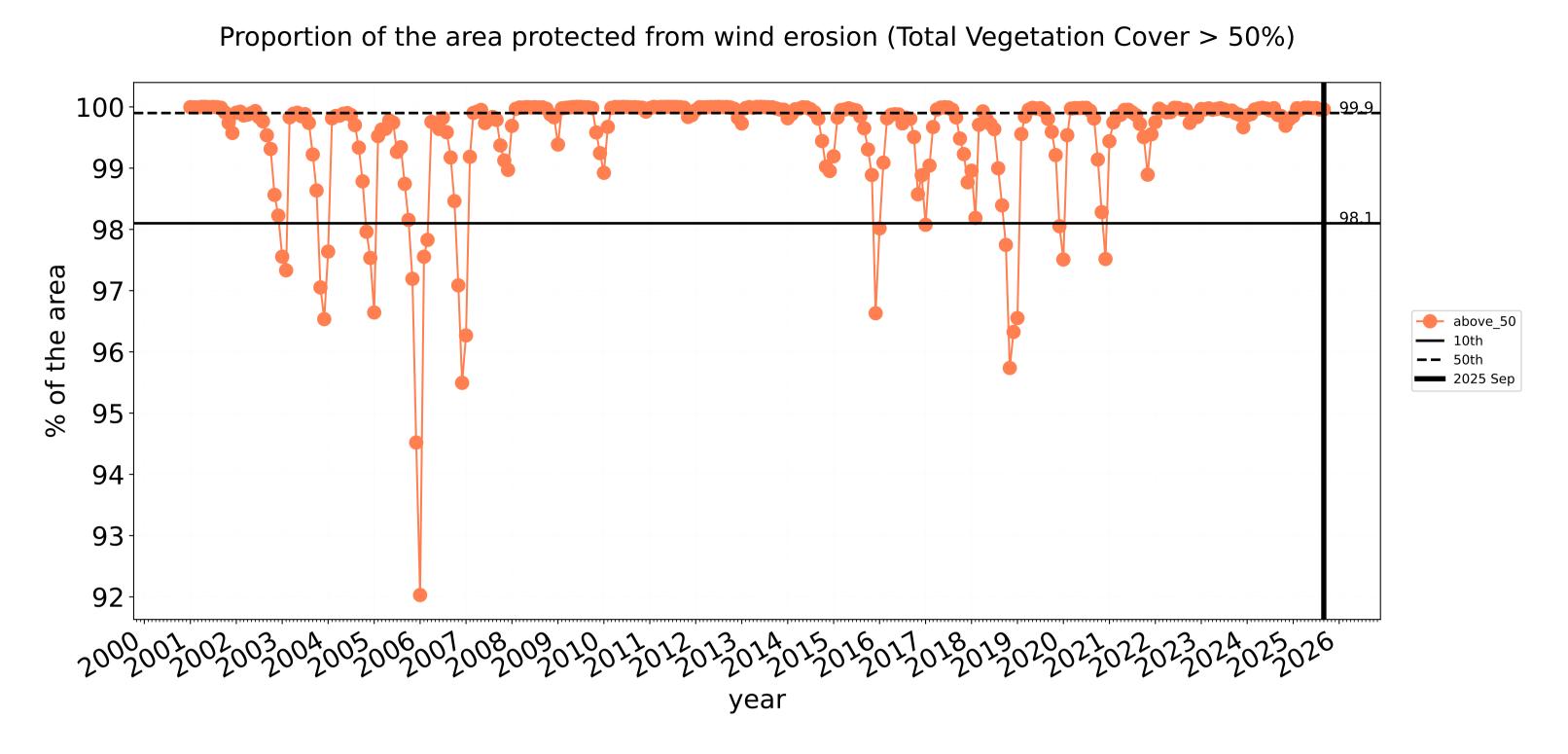


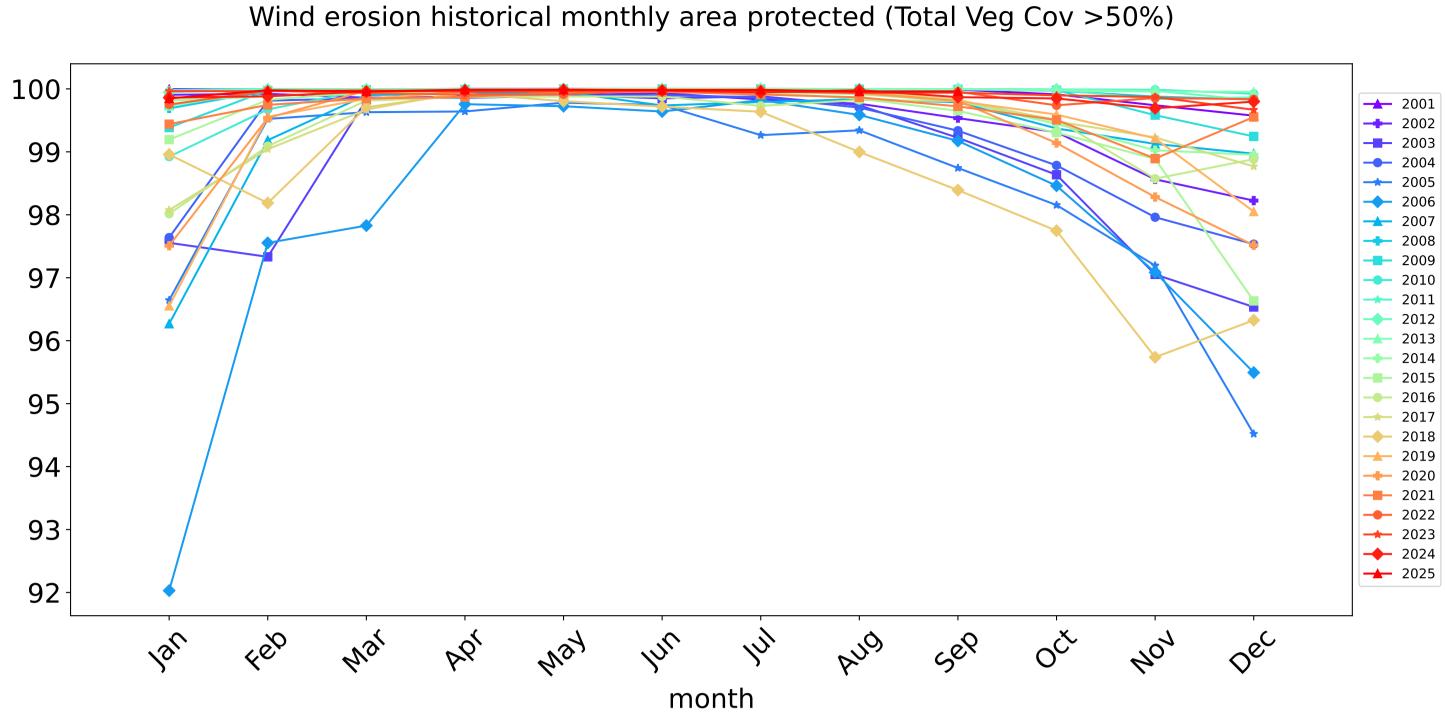


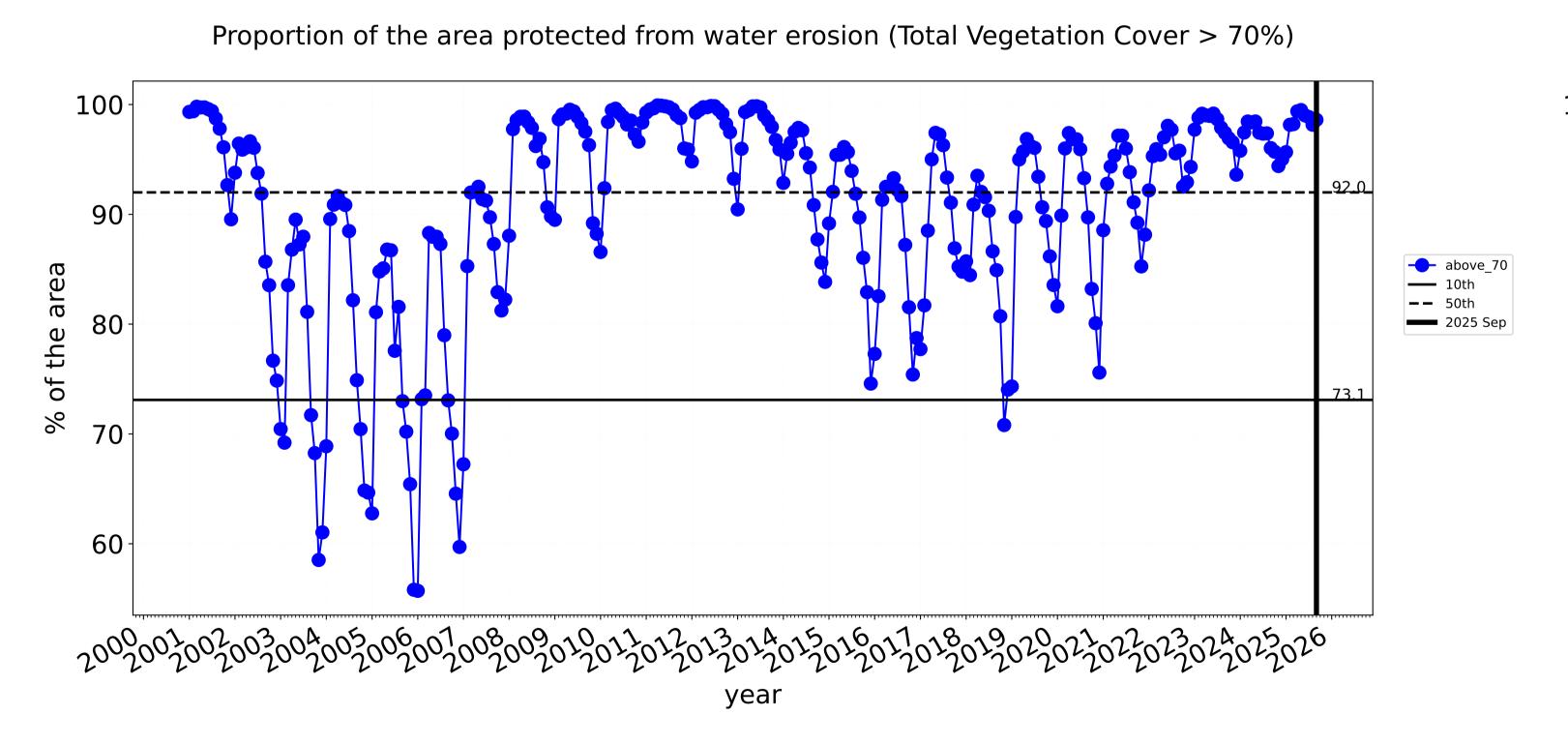


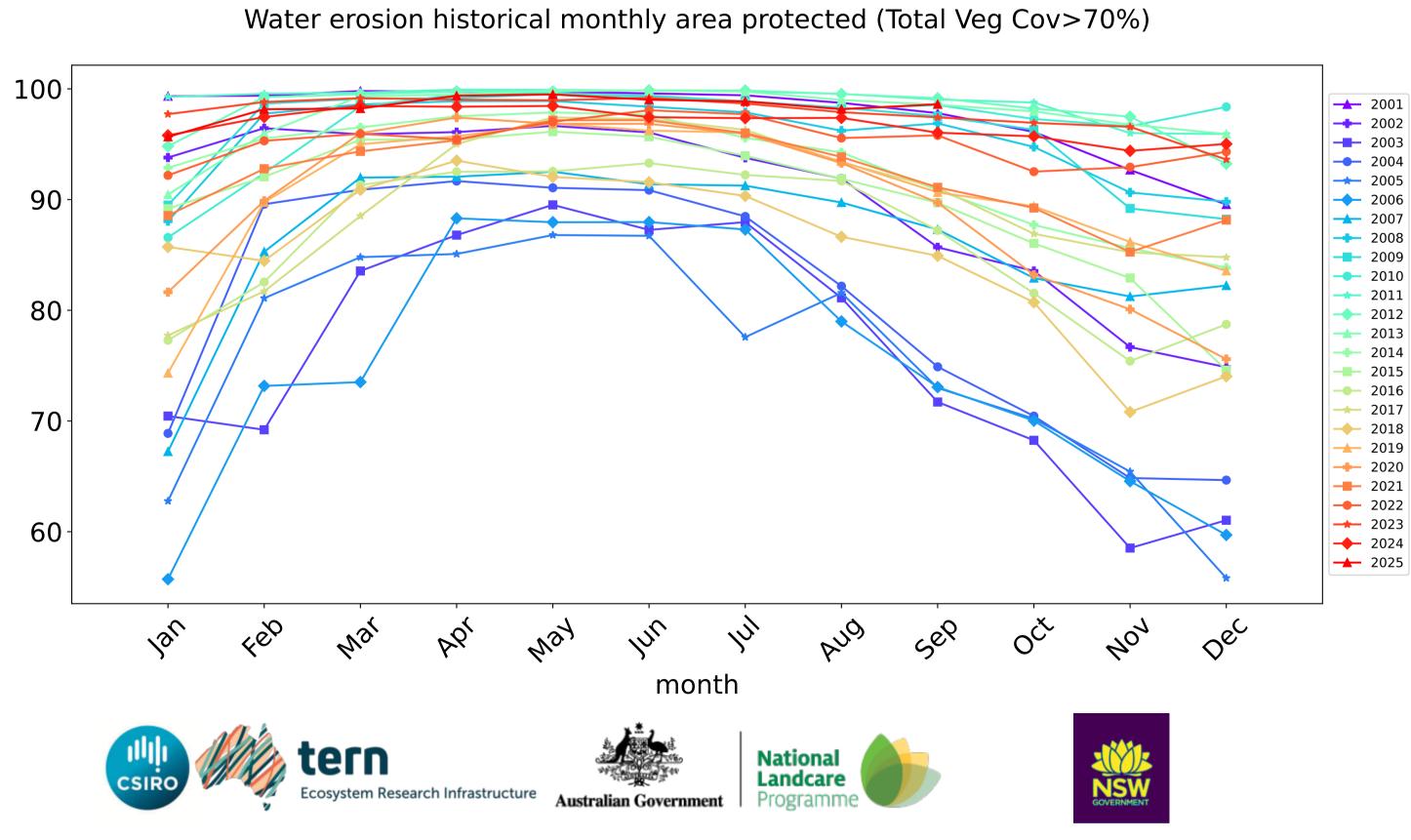


### **Agriculture timeseries**







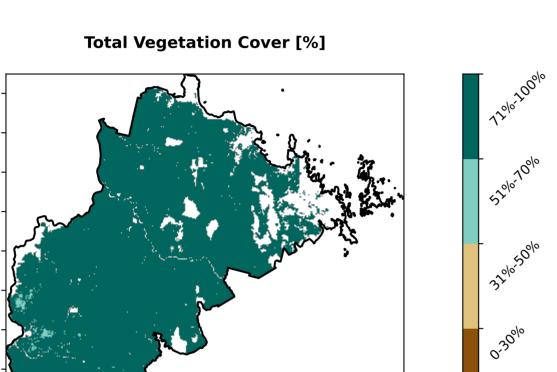


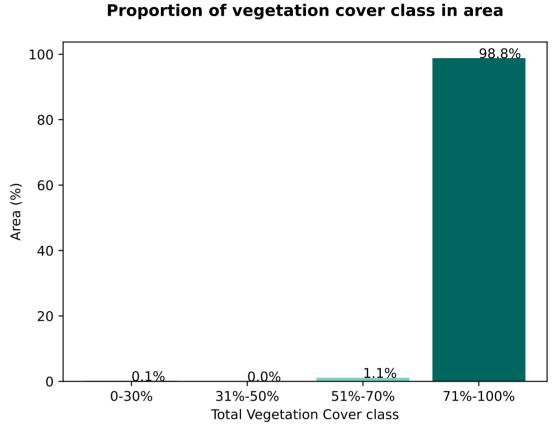
### **Grazing**

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

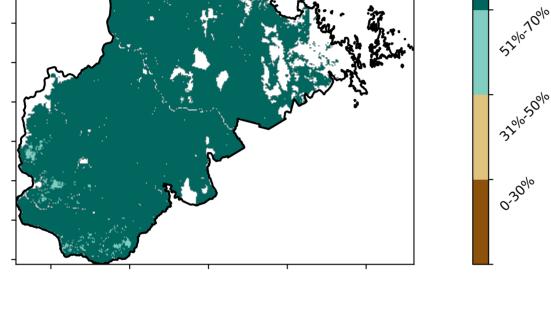
### 60 -57.4% 50 40.1% 40 Area (%) 20 10 0.5 1.0 -0.5 1.5 0.0 2.0 2.5 Land use class

Proportion of each land class in area



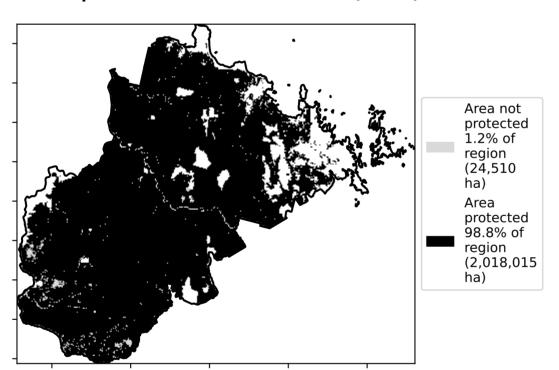


% Area protected from wind erosion (>50%)



ha) Area ha)

% Area protected from water erosion (>70%)

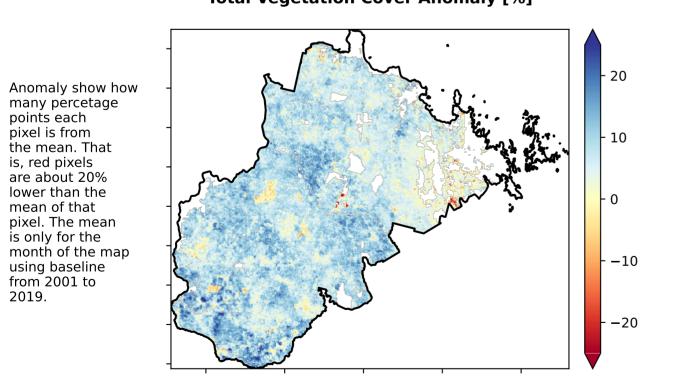


Area not protected 0.0% of region (0 protected 100.0% of region (2,042,525

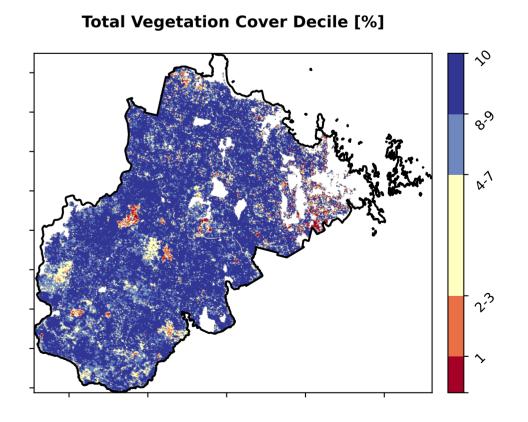
**Total Vegetation Cover Anomaly [%]** 

is, red pixels are about 20% lower than the mean of that pixel. The mean

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.



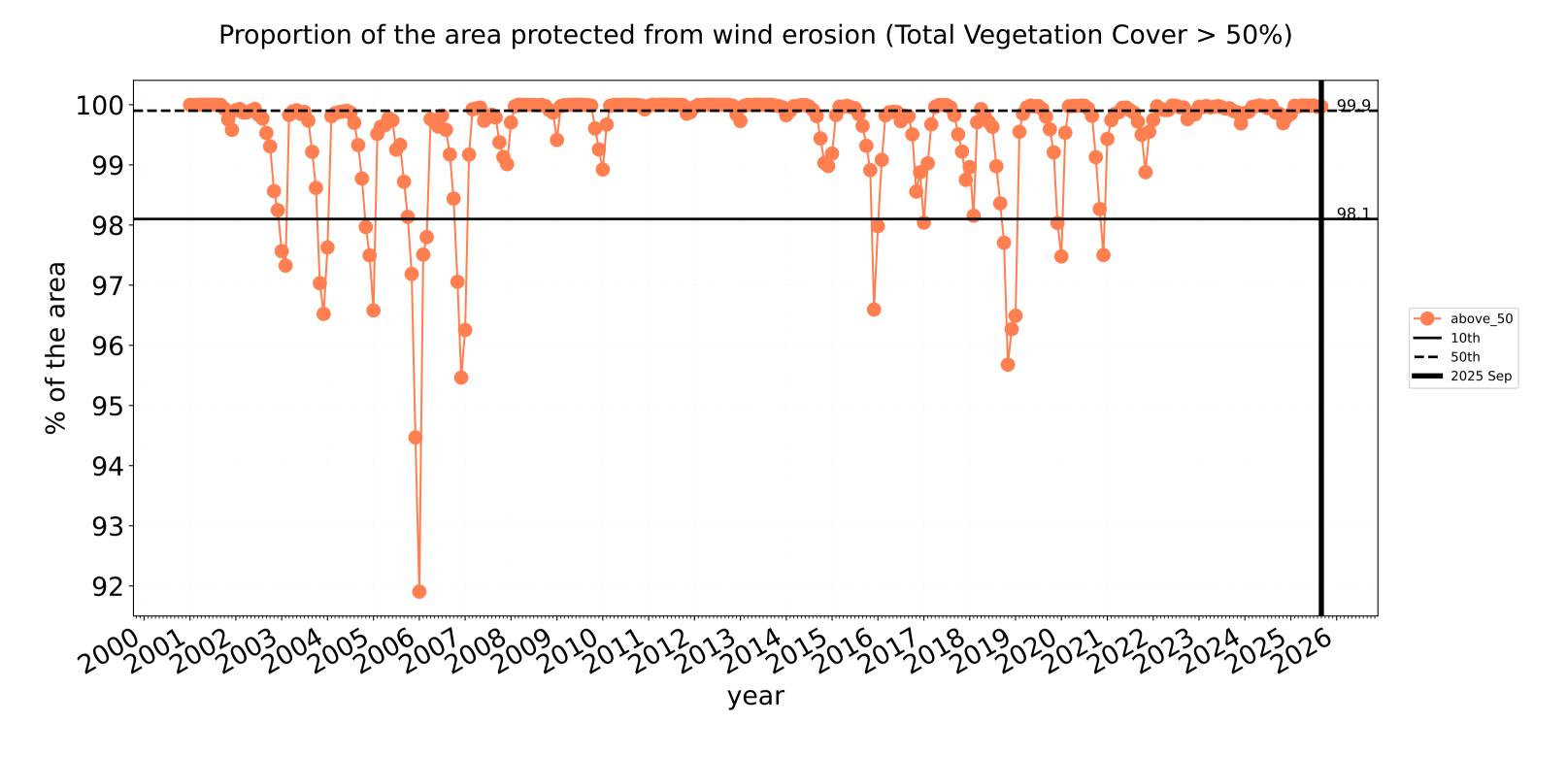


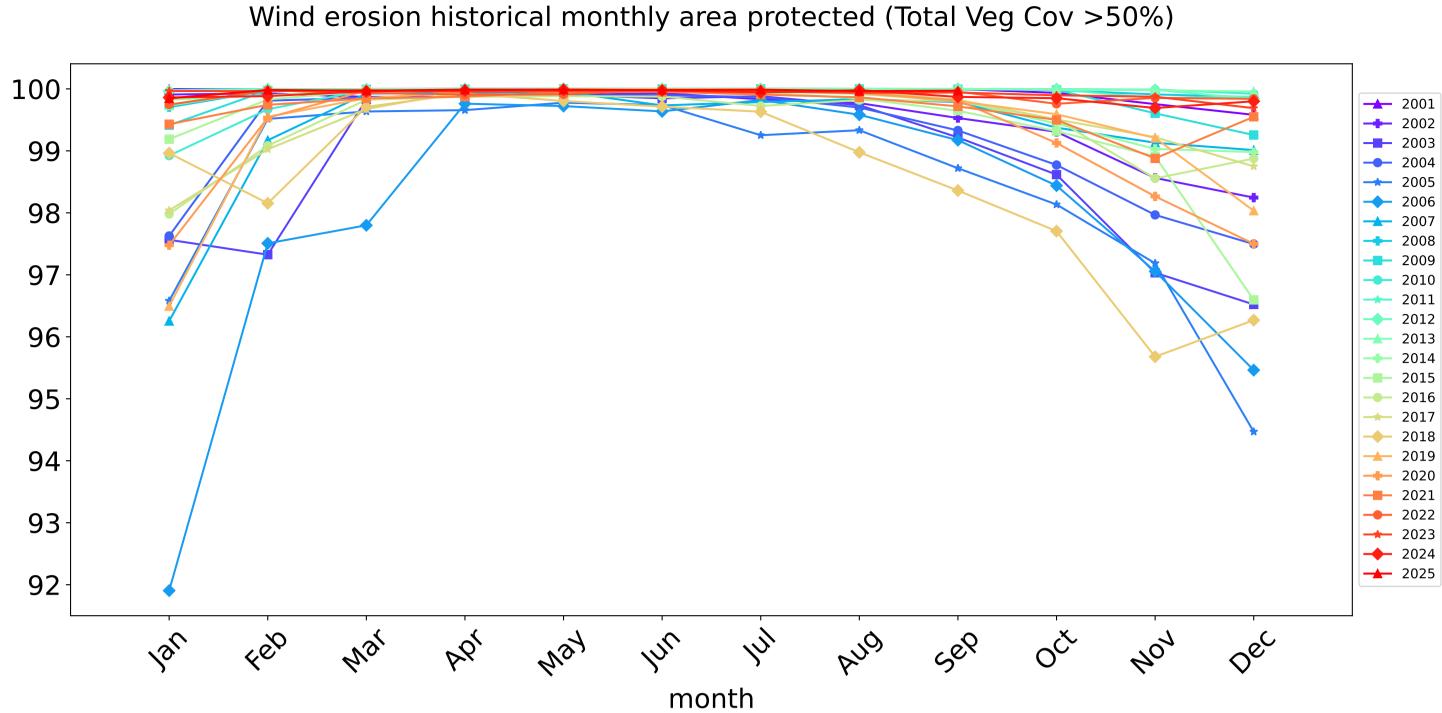


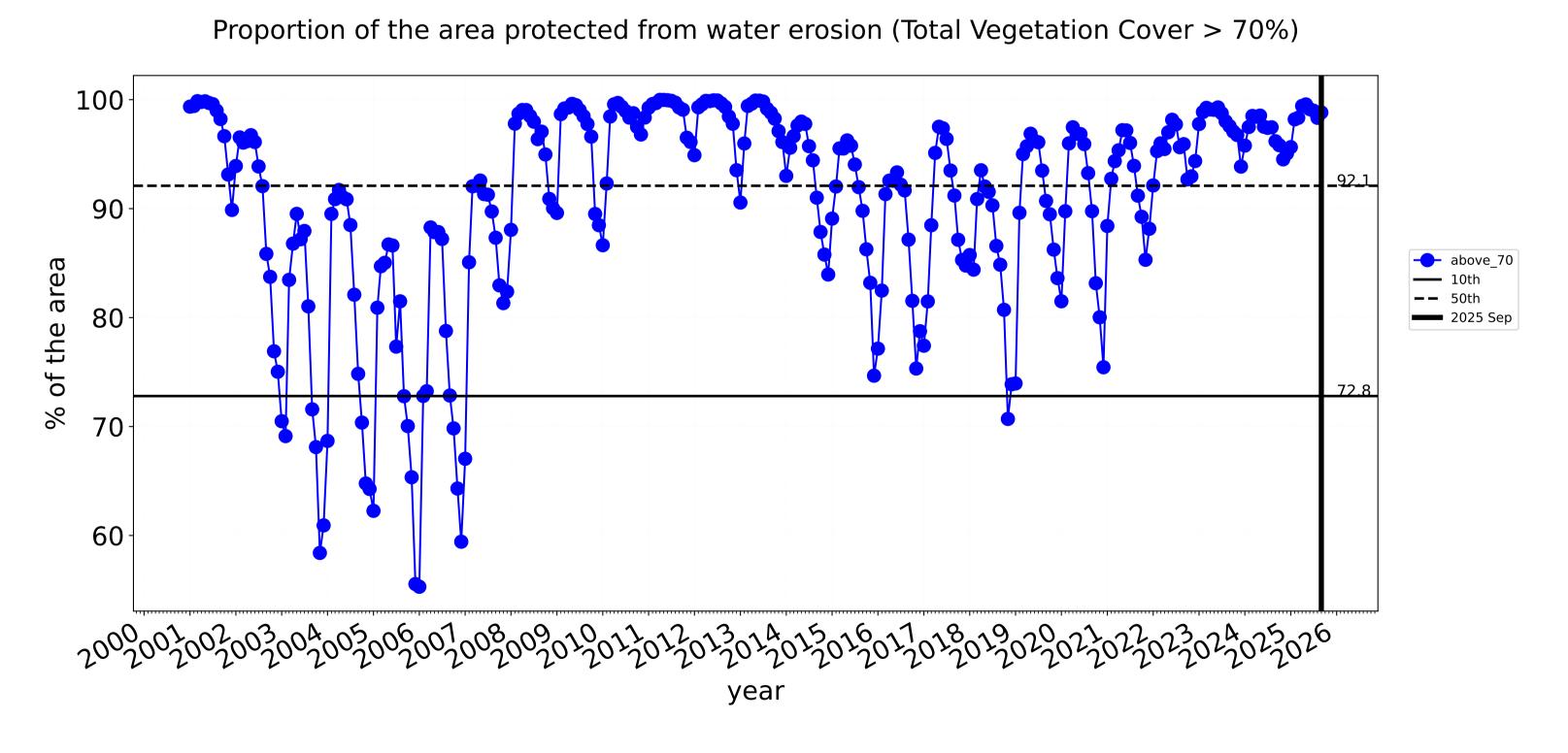


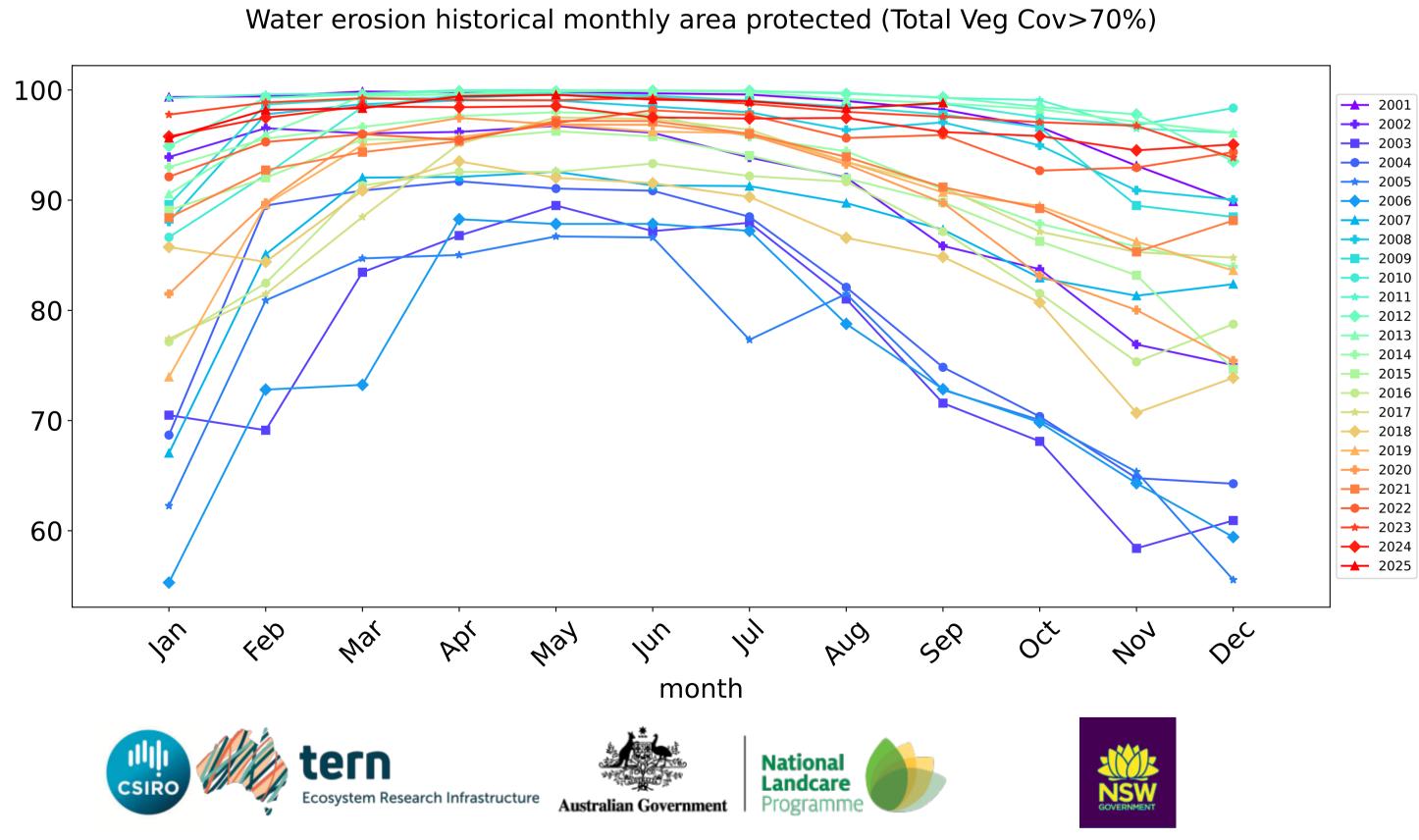


### **Grazing timeseries**





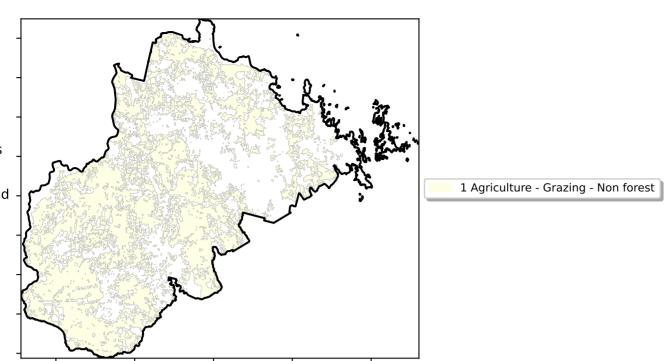




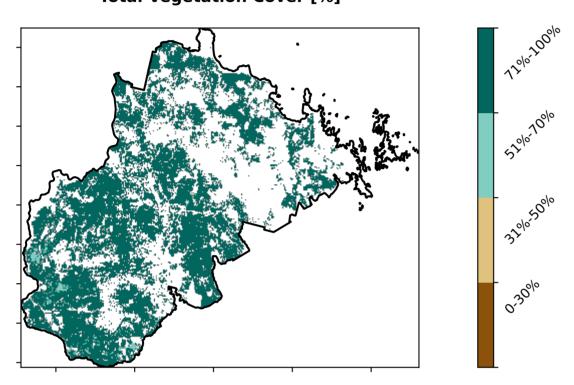
### **Grazing non forest**

### Land use and forest cover

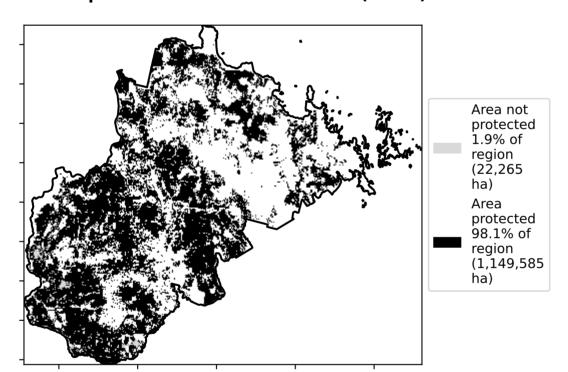
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)



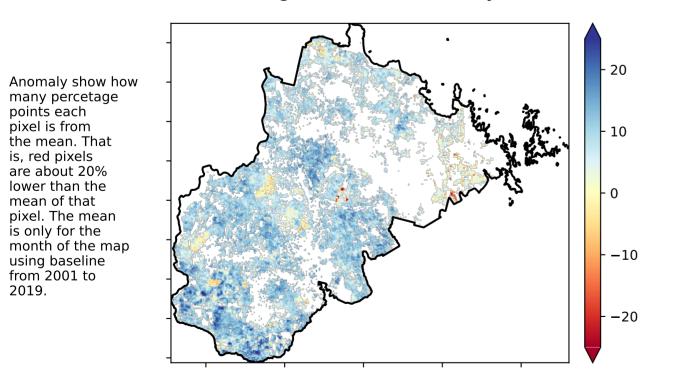
### **Total Vegetation Cover [%]**



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

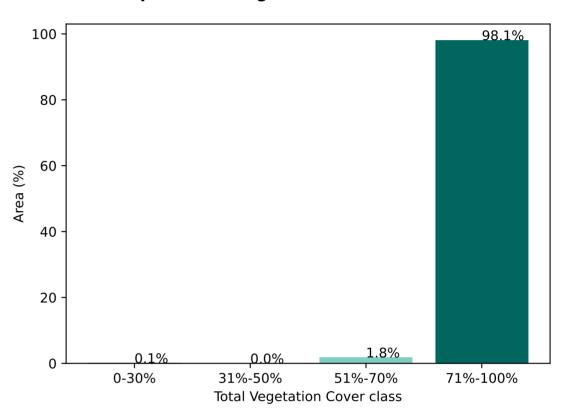


### **Total Vegetation Cover Anomaly [%]**

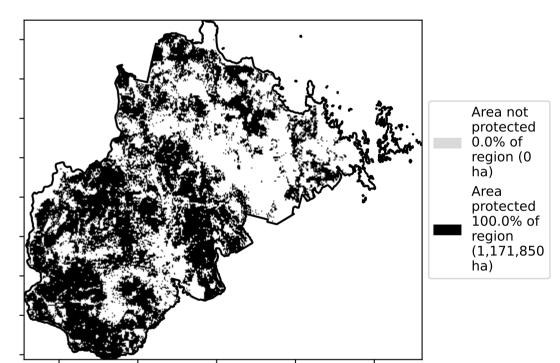


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

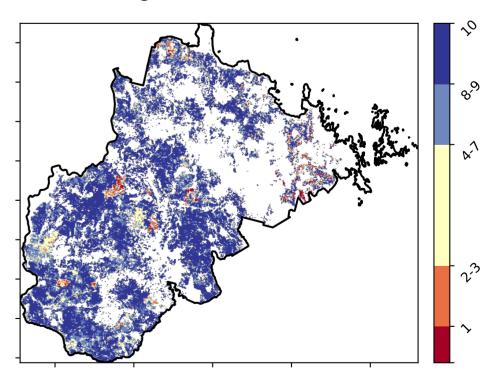
### Proportion of vegetation cover class in area



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



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





lower than the mean of that pixel. The mean is only for the month of the map

using baseline from 2001 to 2019.



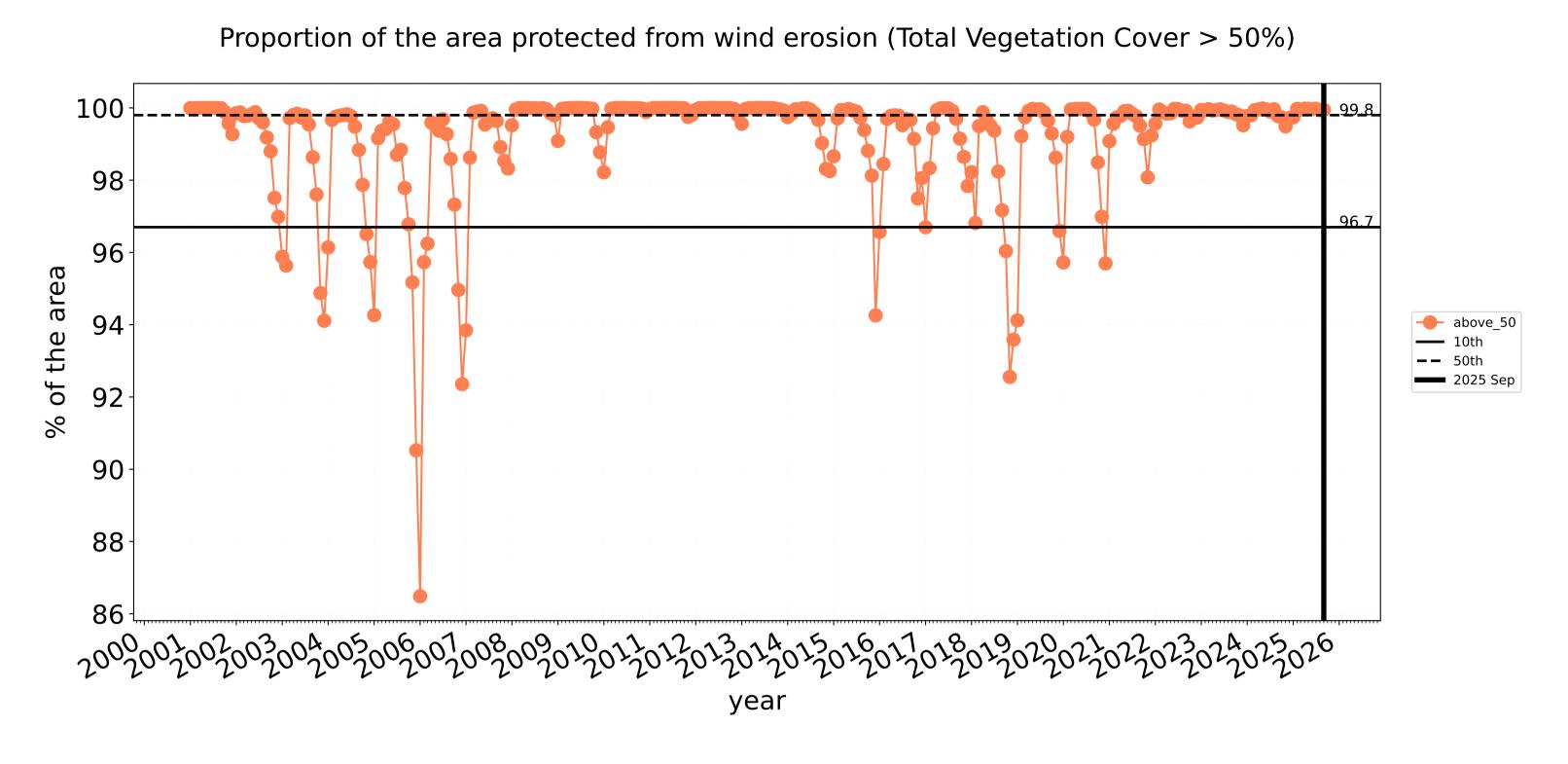


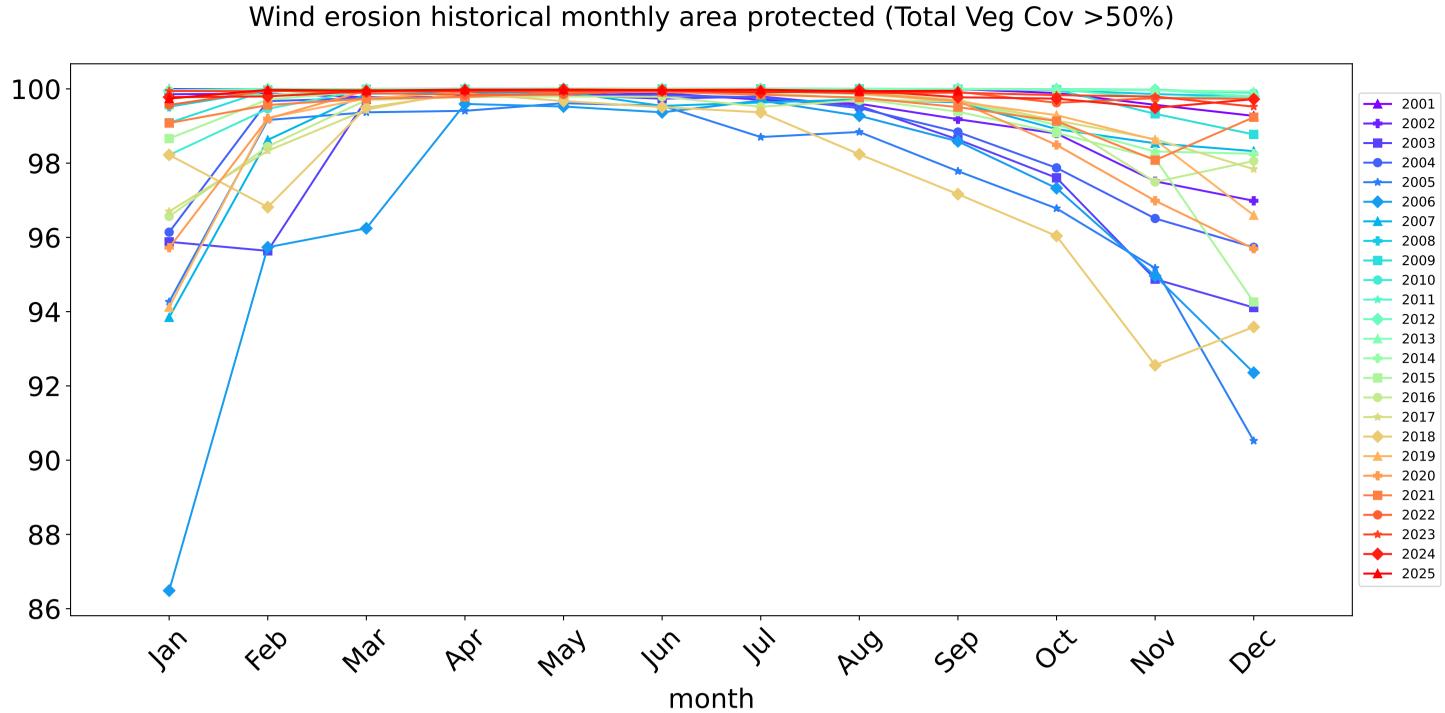


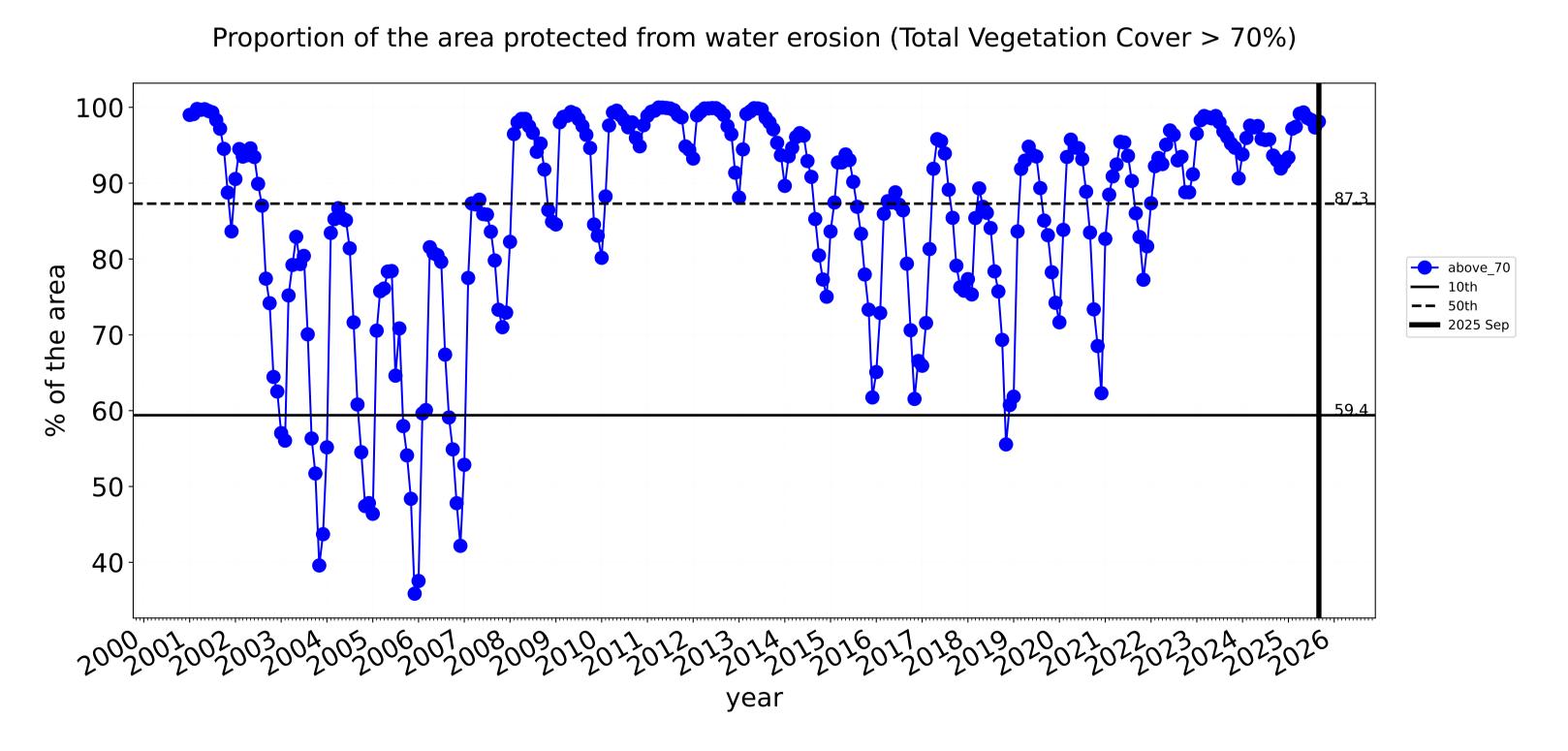


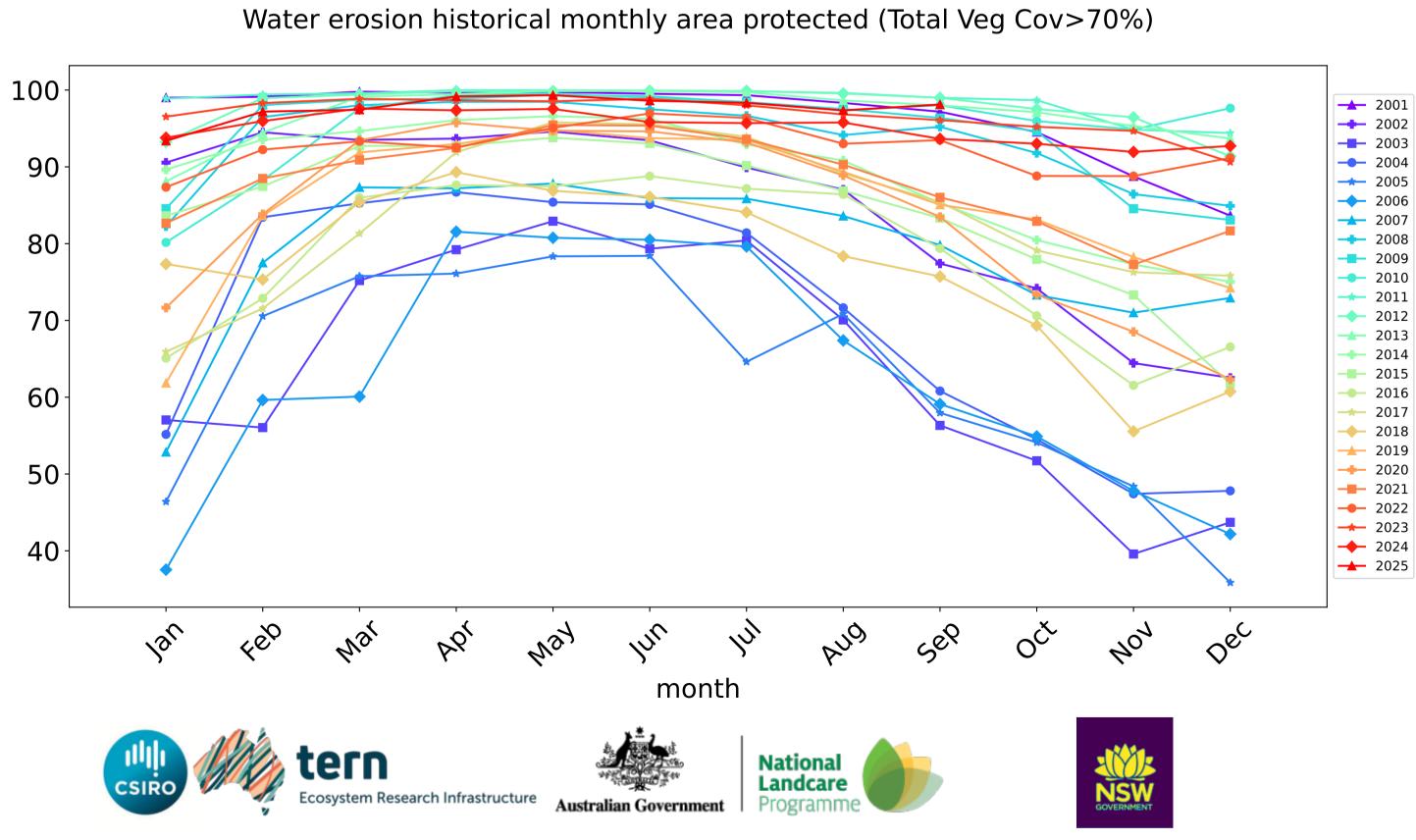


### **Grazing non forest timeseries**



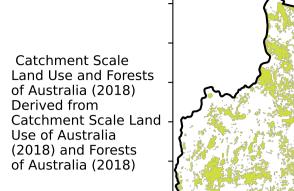


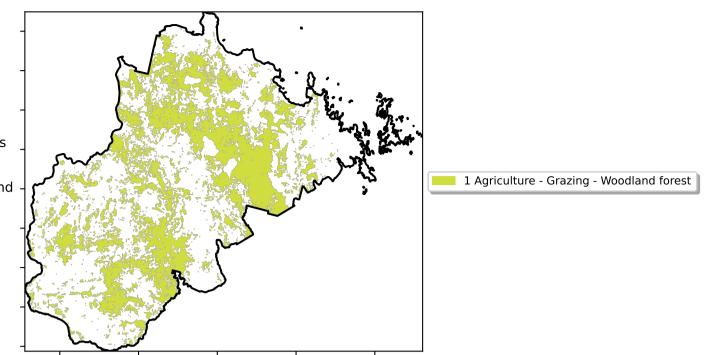




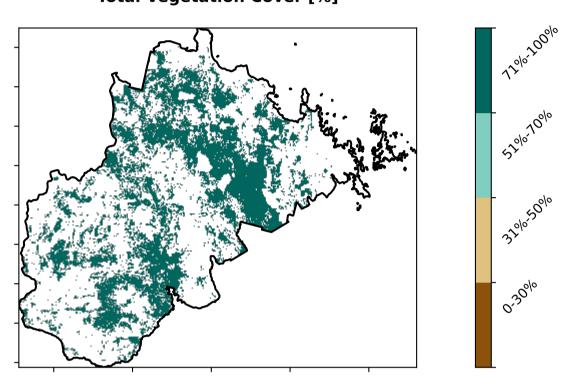
### **Grazing Woodland forest**

### Land use and forest cover

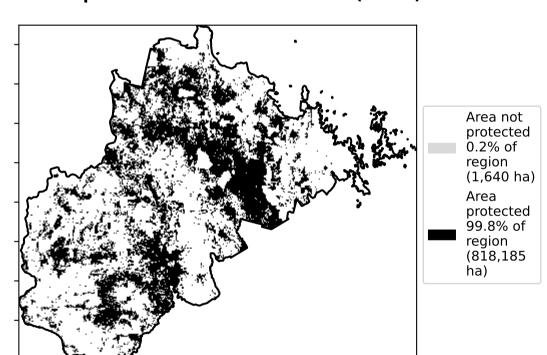




### **Total Vegetation Cover [%]**



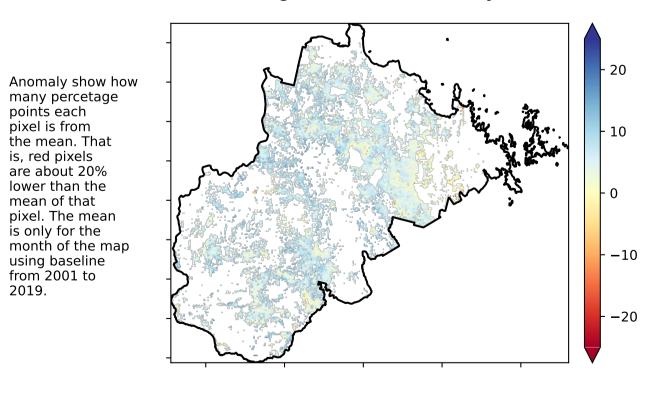
### % Area protected from water erosion (>70%)



**Total Vegetation Cover Anomaly [%]** 

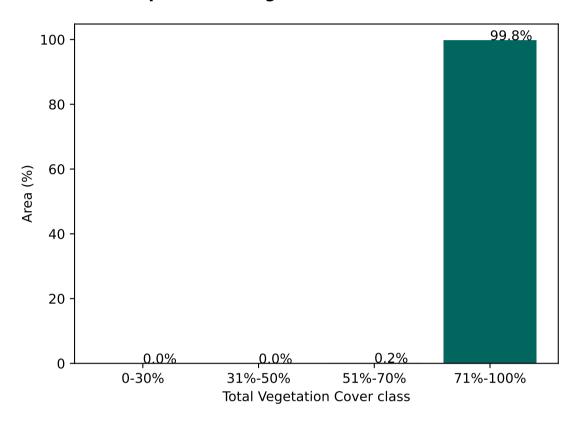
lower than the mean of that

using baseline from 2001 to 2019.

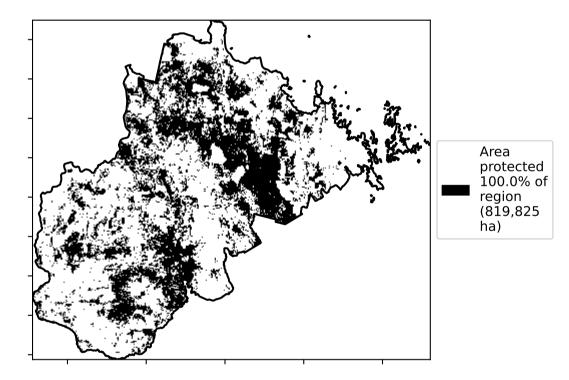


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

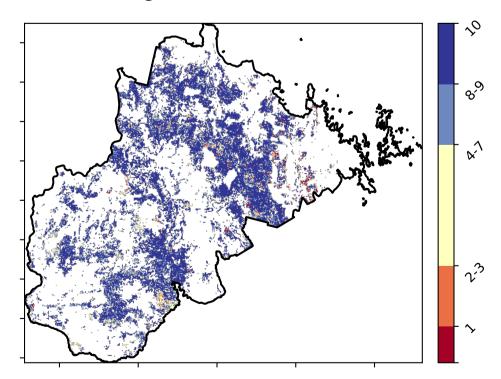
### Proportion of vegetation cover class in area



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



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



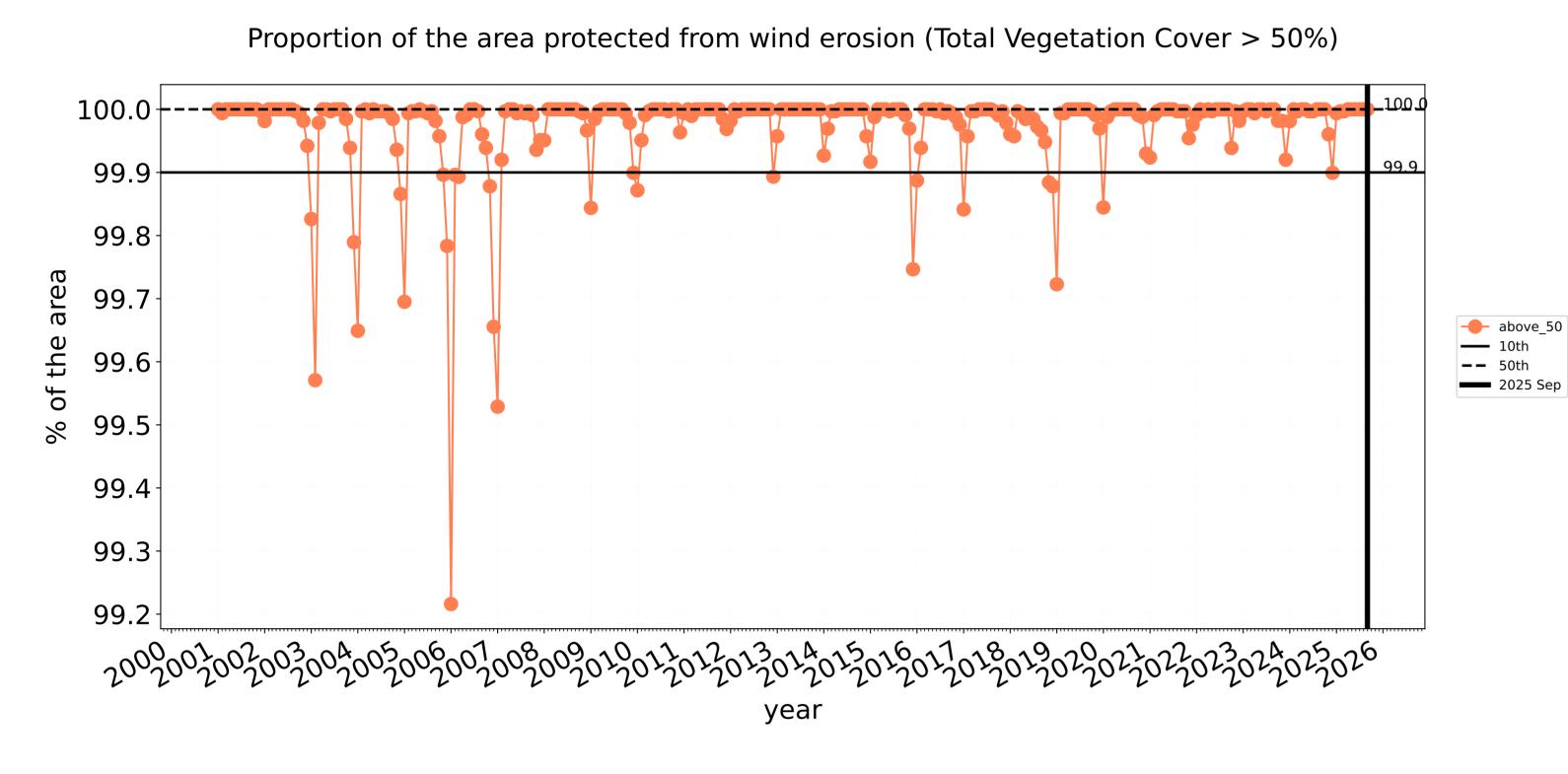


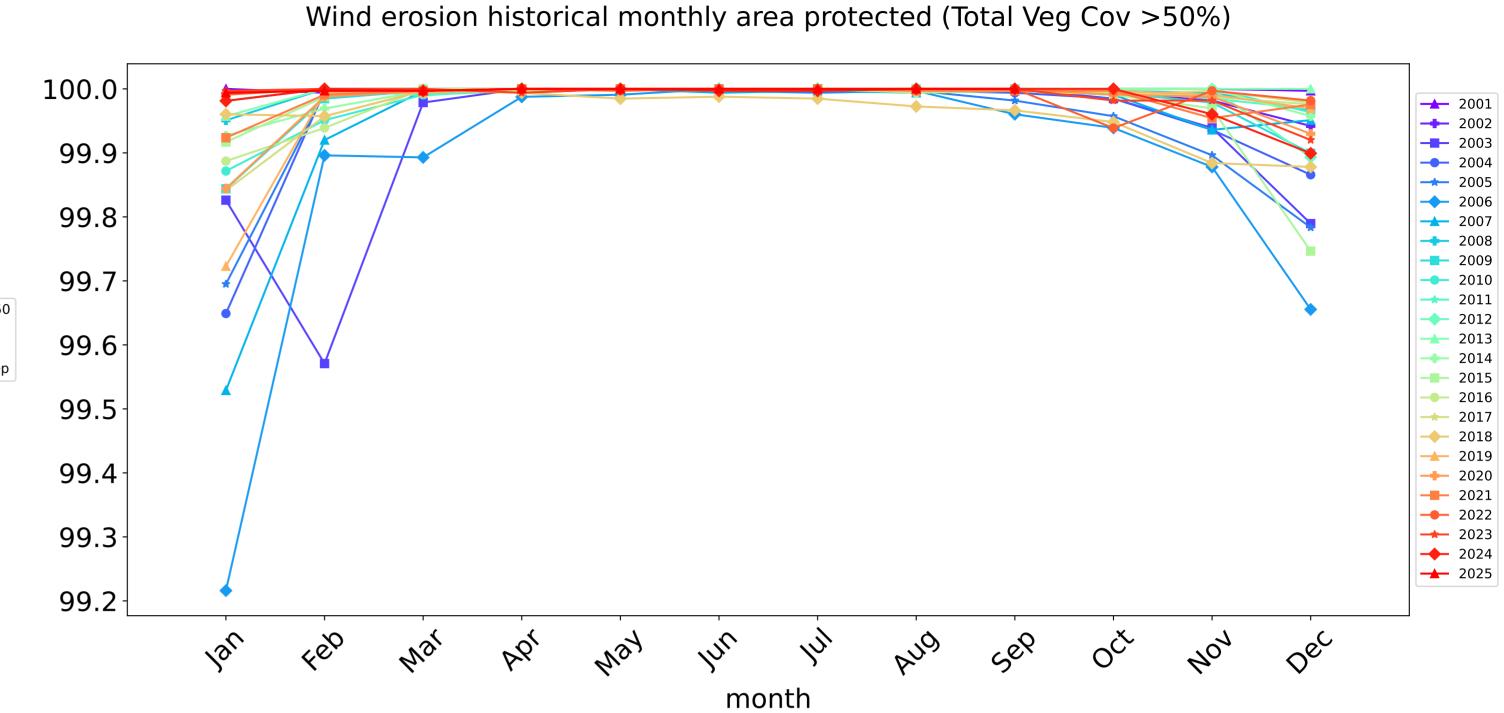


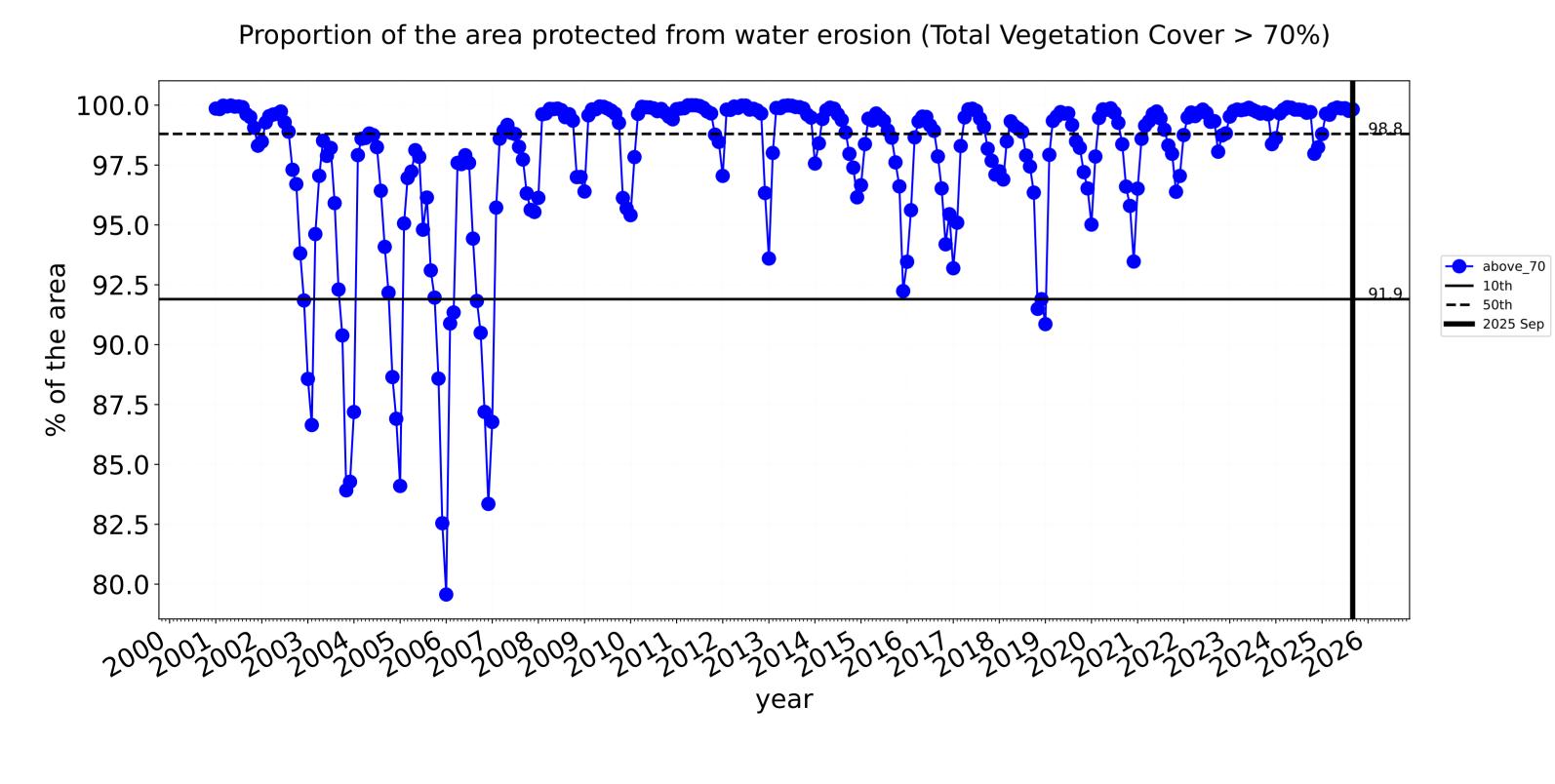


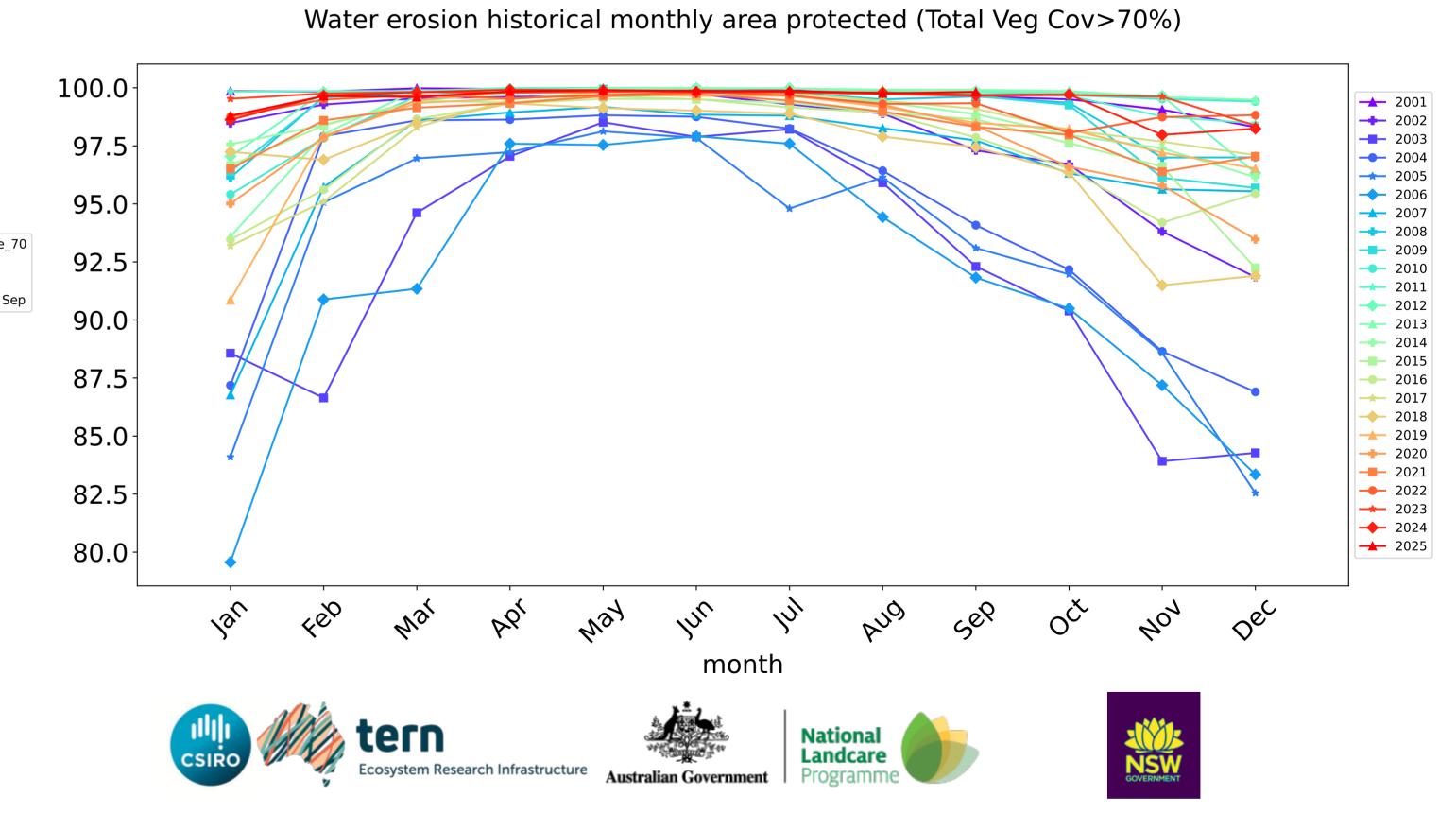


### **Grazing Woodland forest timeseries**







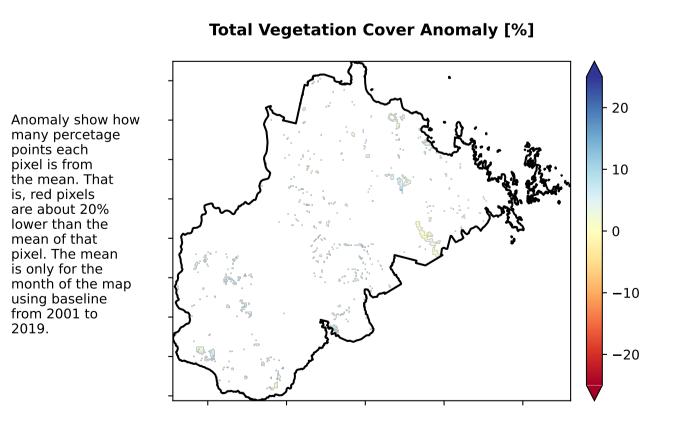


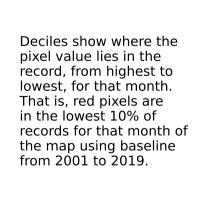
### **Grazing - Forest (non woodland)**

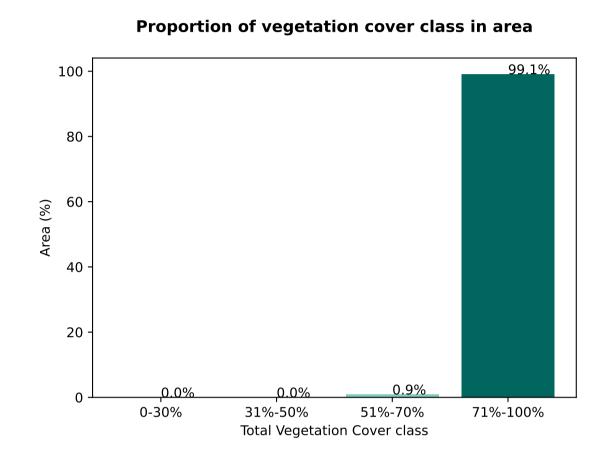
### Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) and Forests of Australia (2018)

## Total Vegetation Cover [%]

### Area not protected 0.9% of region (458 ha) Area protected 99.1% of region (50,392 ha)

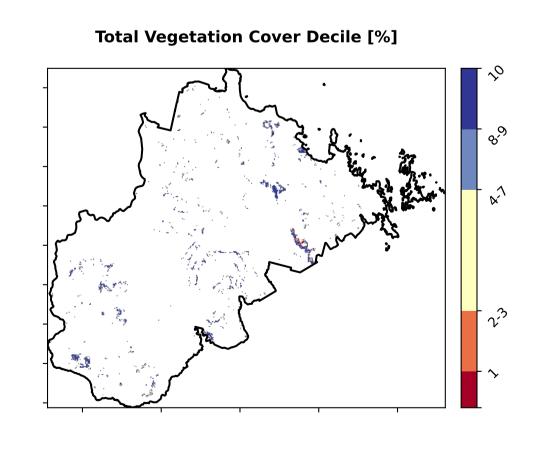






Area protected from wind erosion (>50%)

Area protected 100.0% of region (50,850 ha)

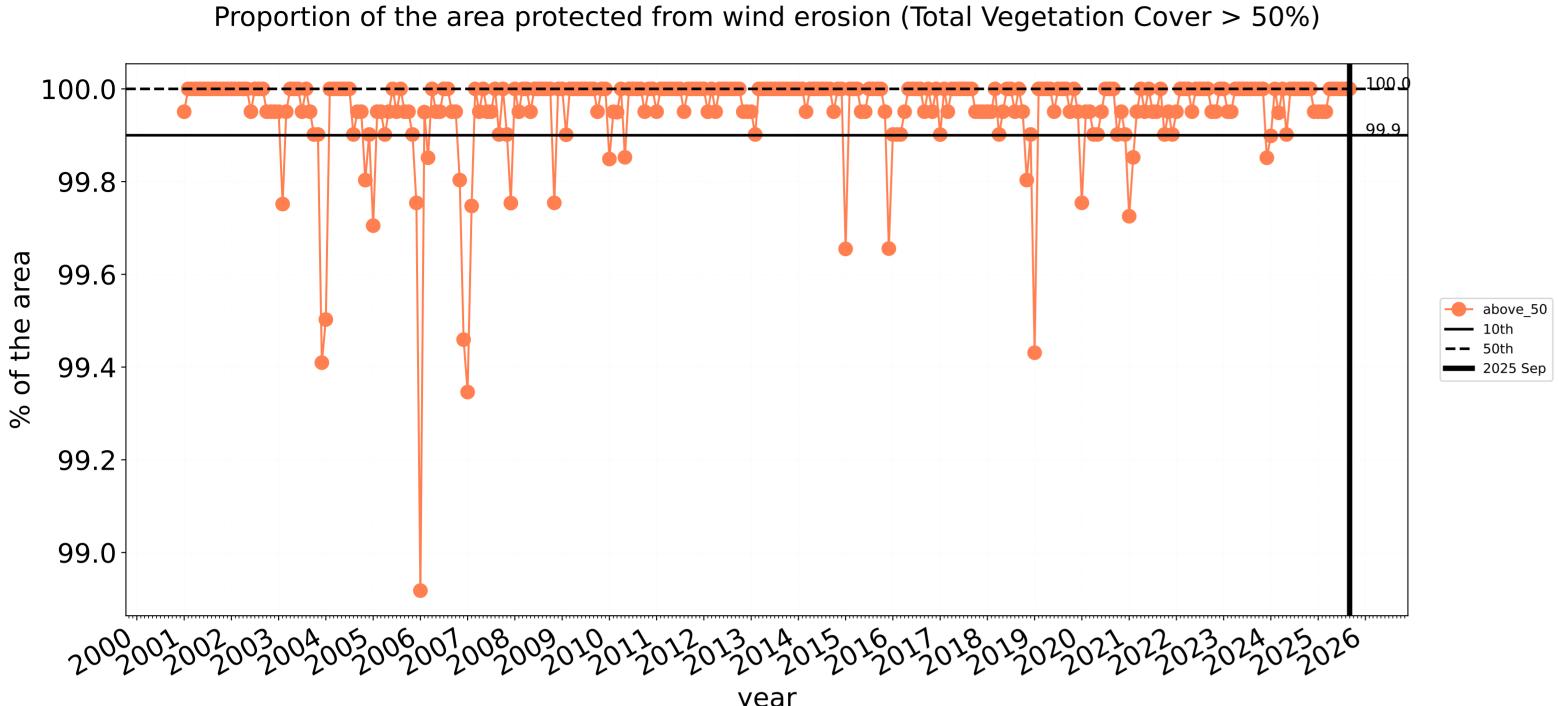


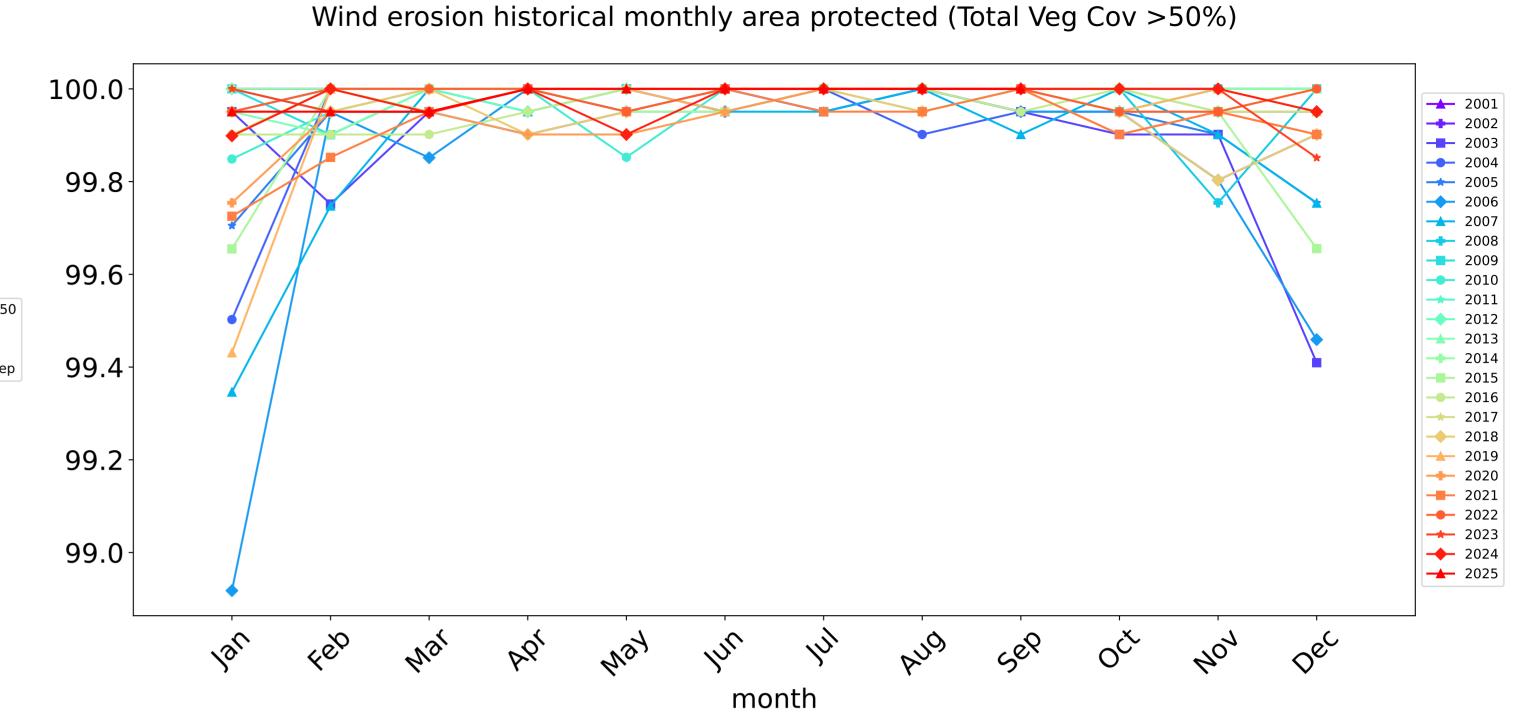


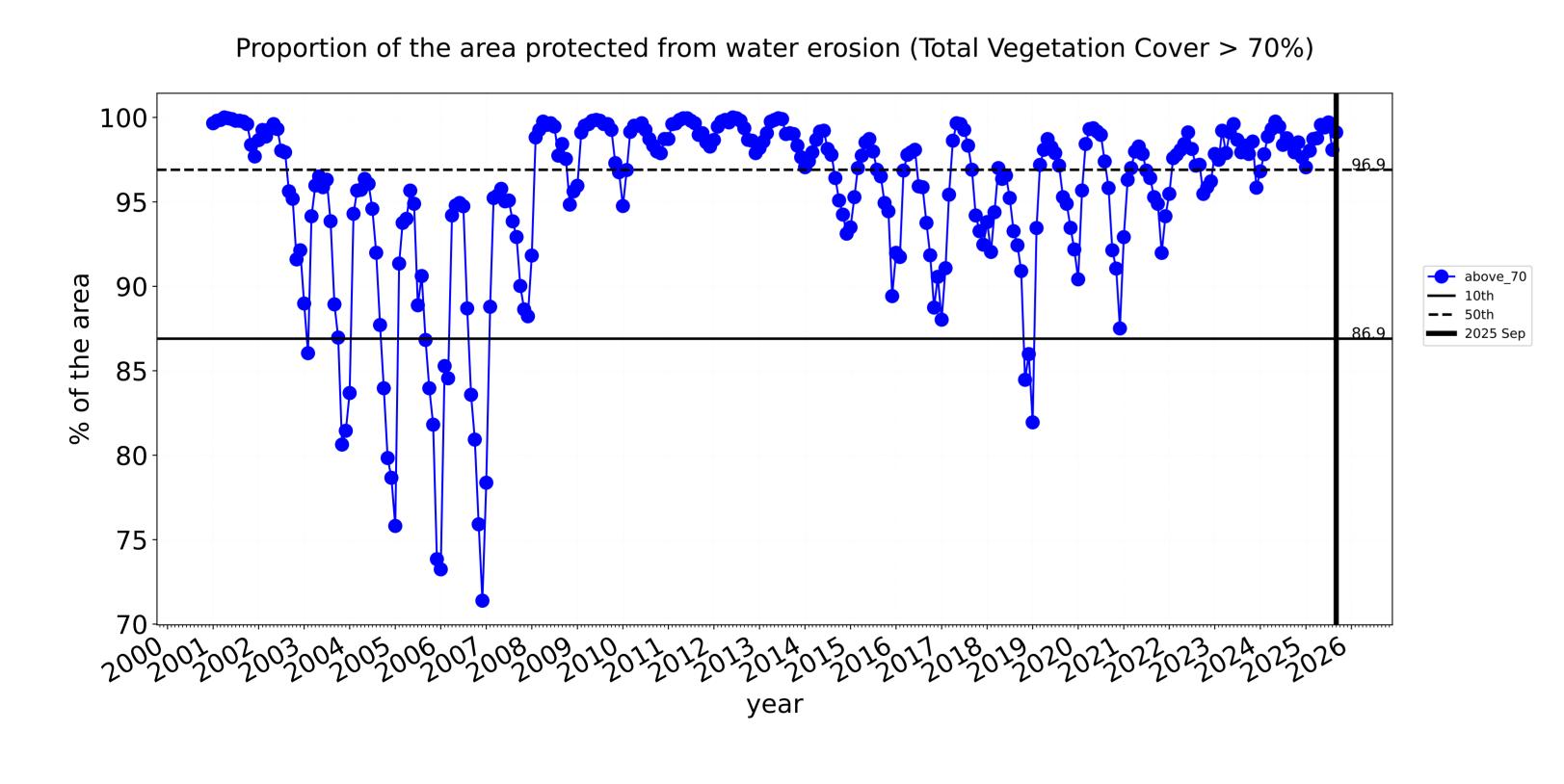


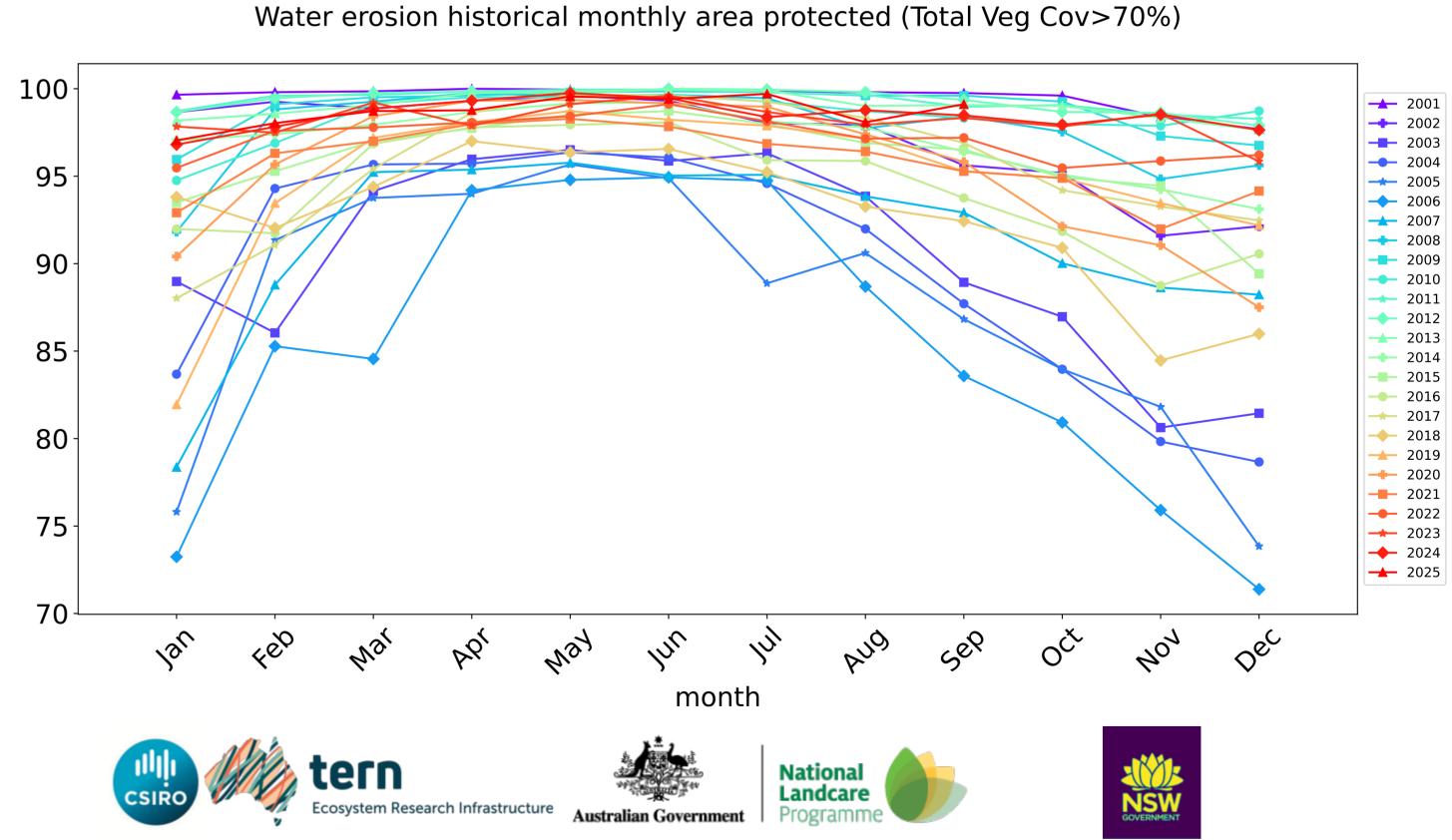






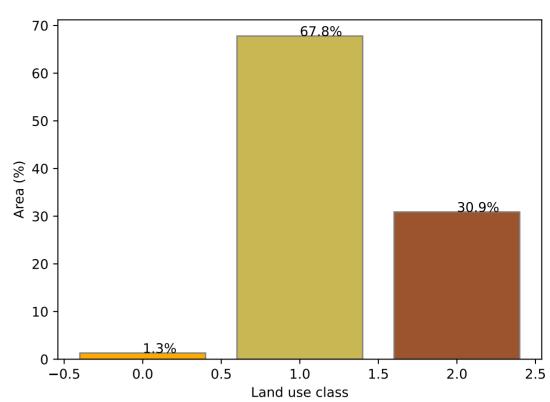




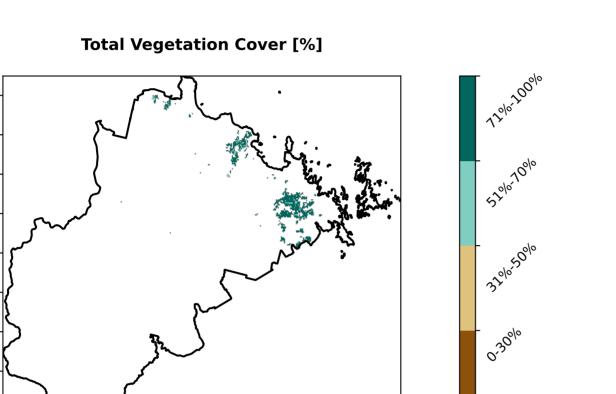


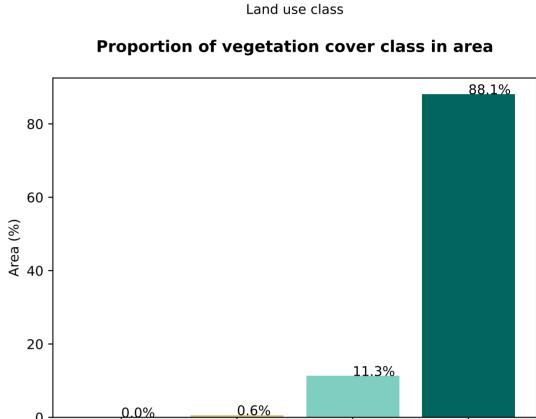
### Irrigation

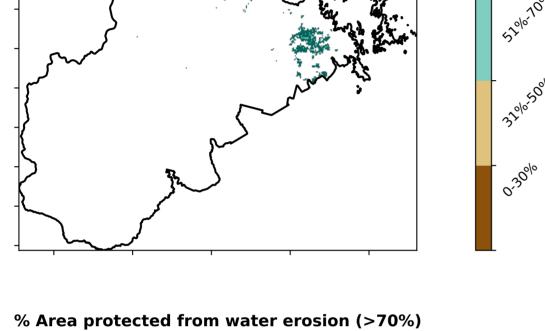
### Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated



Proportion of each land class in area



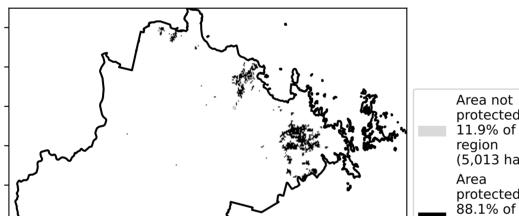


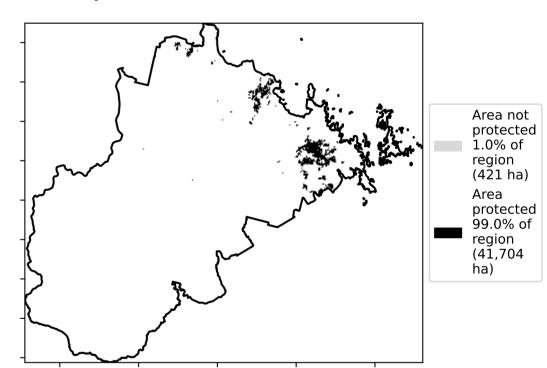


% Area protected from wind erosion (>50%)

**Total Vegetation Cover class** 

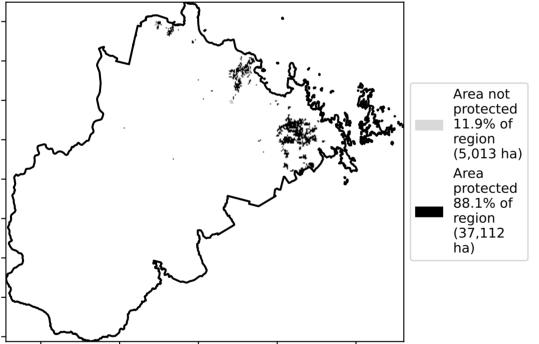
31%-50%





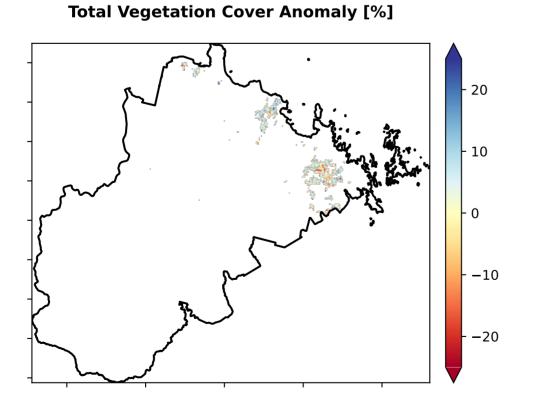
51%-70%

71%-100%

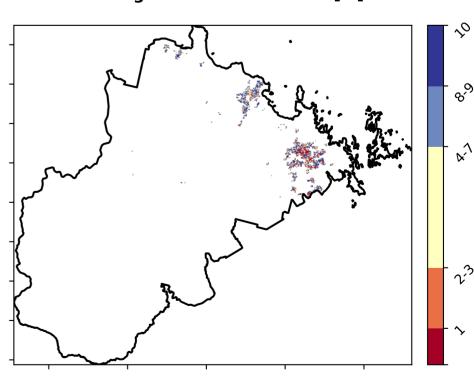


**Total Vegetation Cover Decile [%]** 

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.



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.







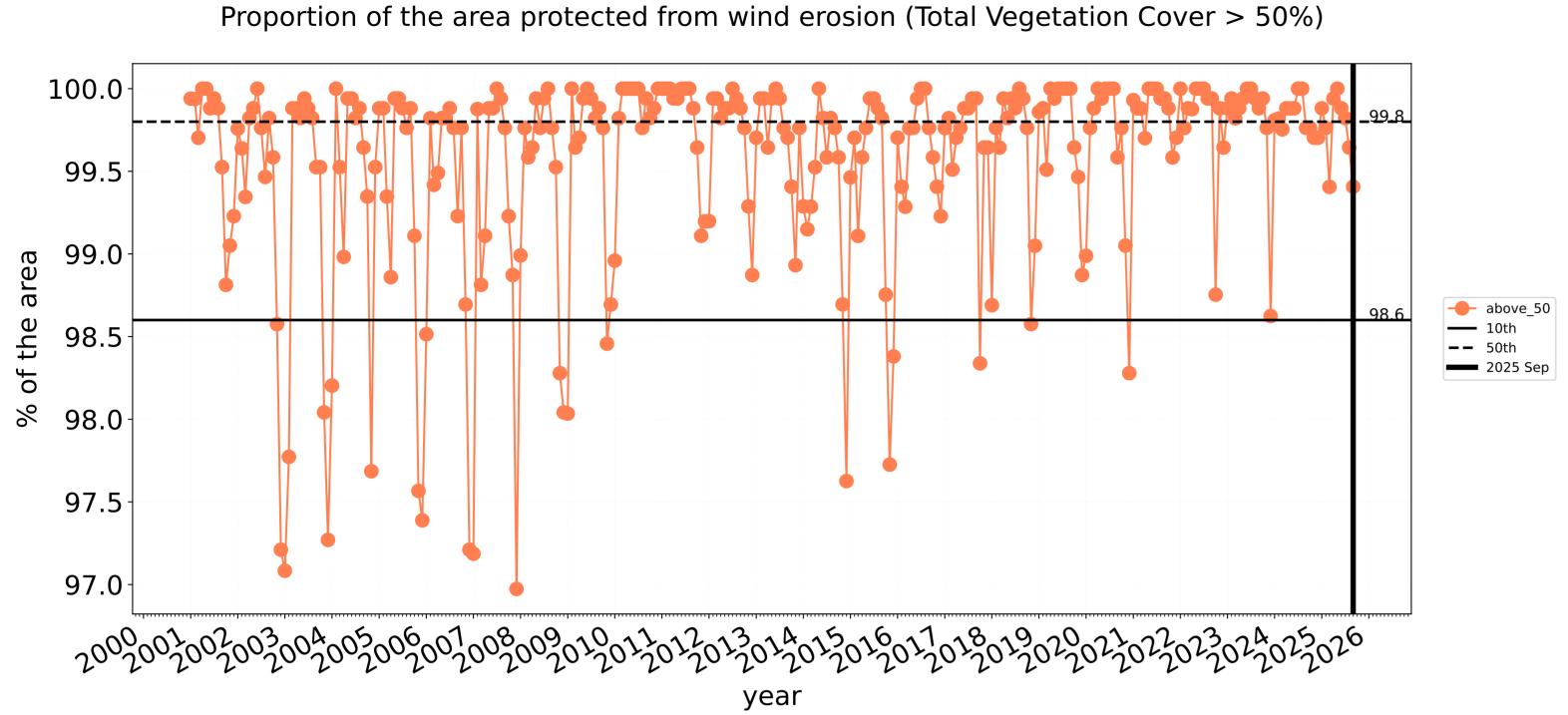


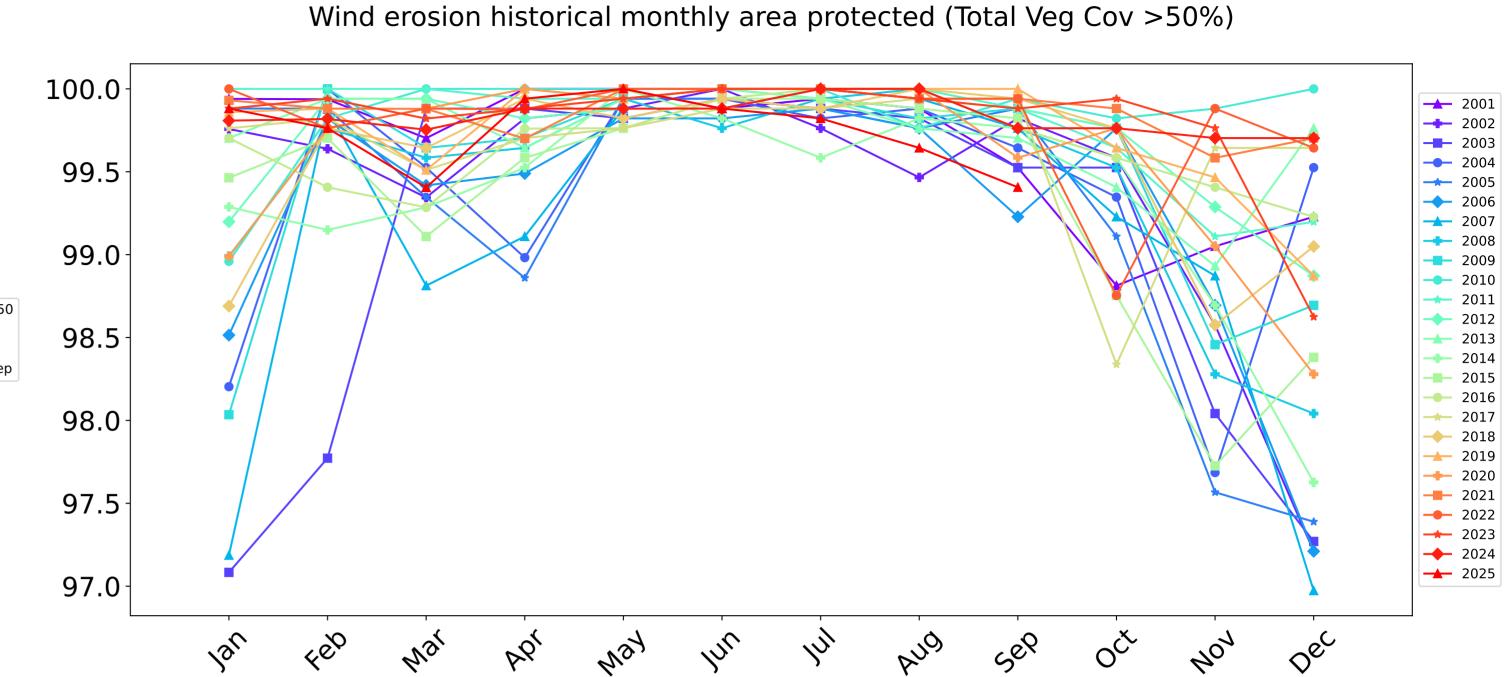
0

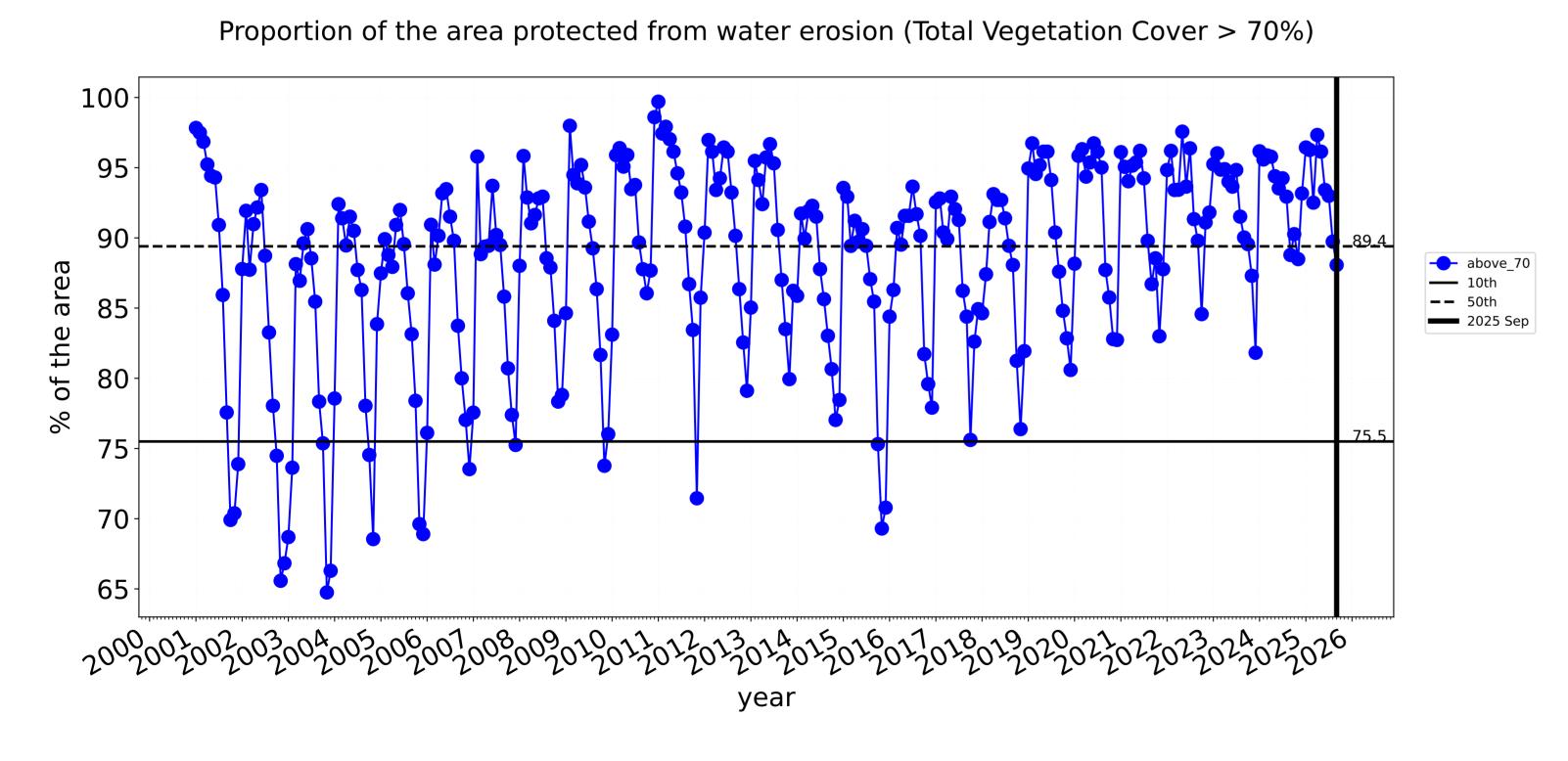
0-30%

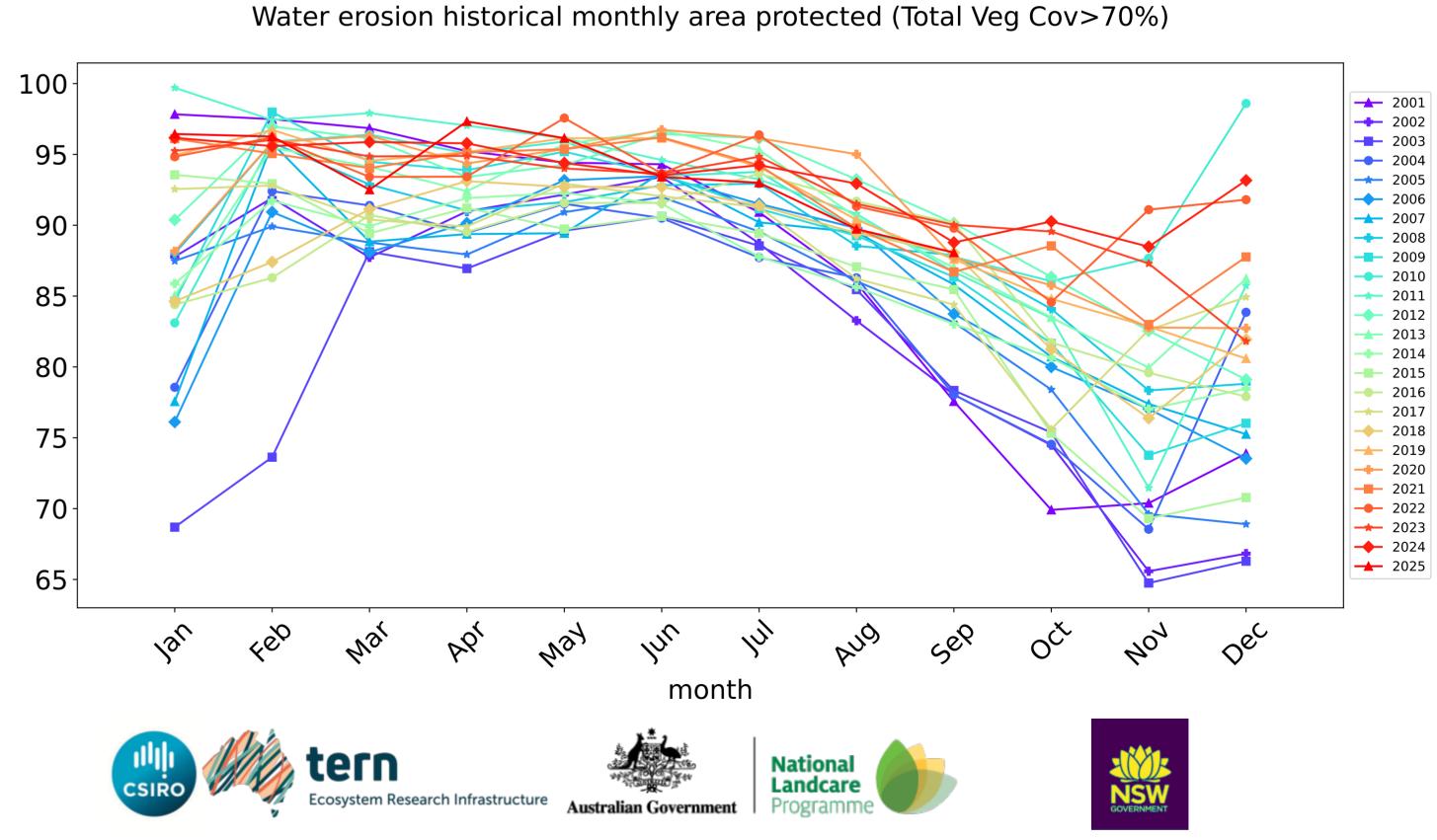


### Irrigation timeseries





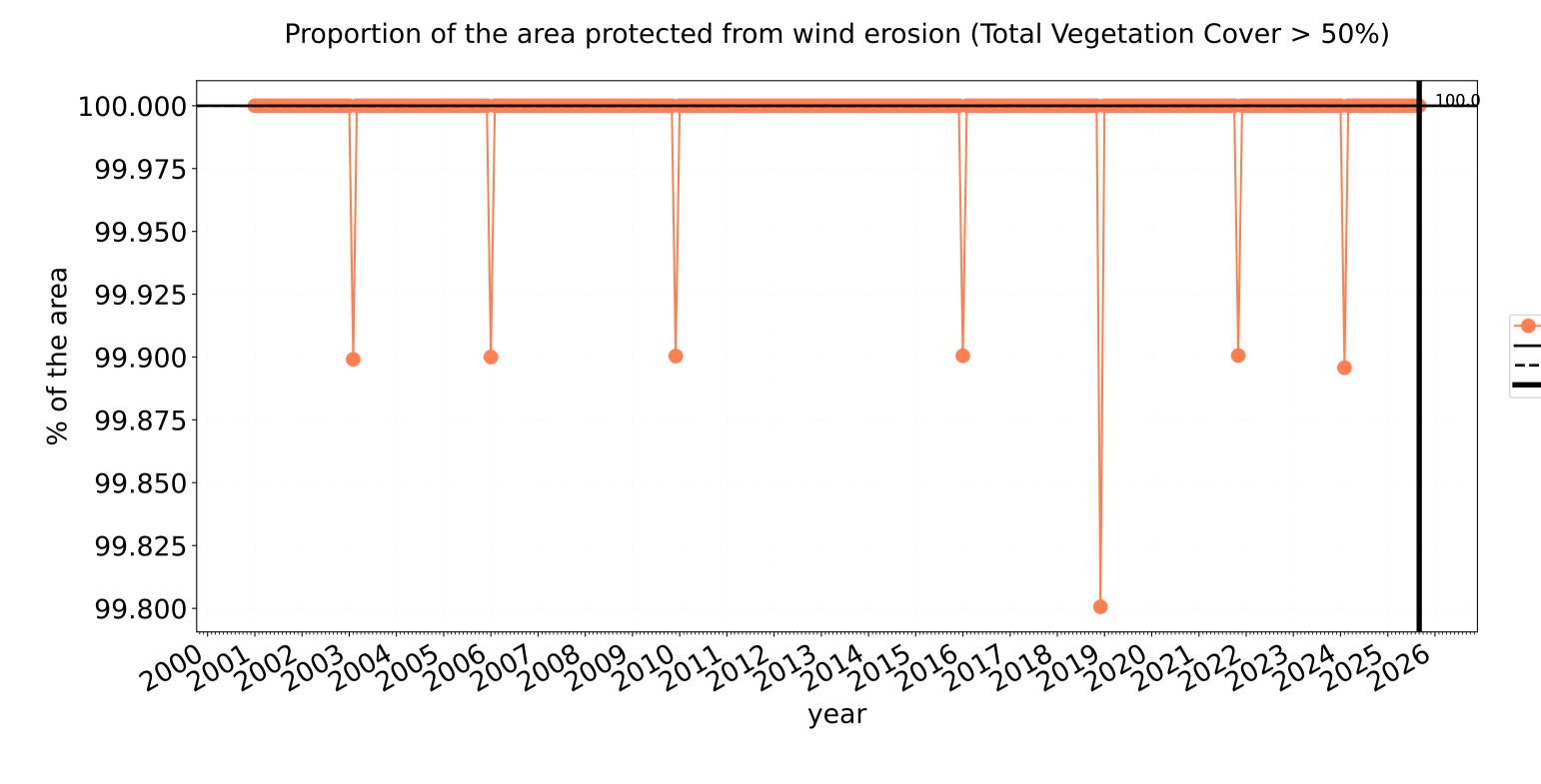


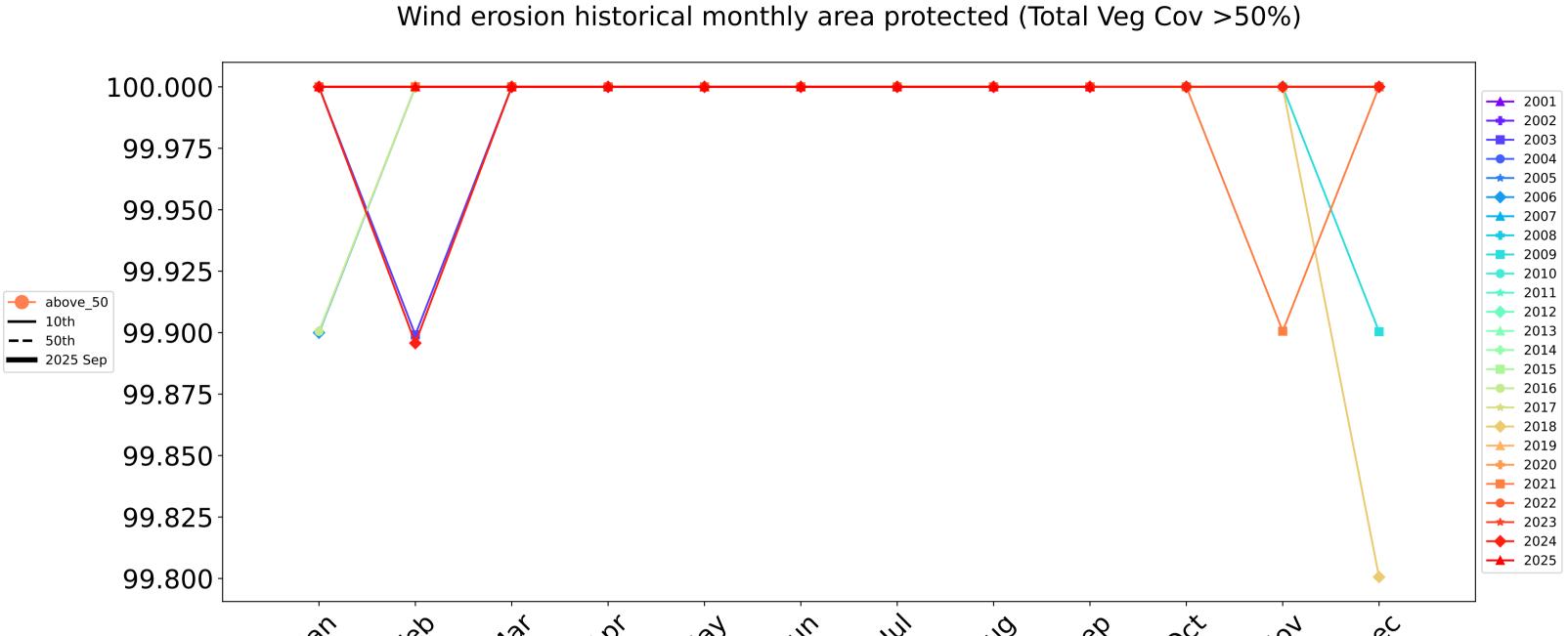


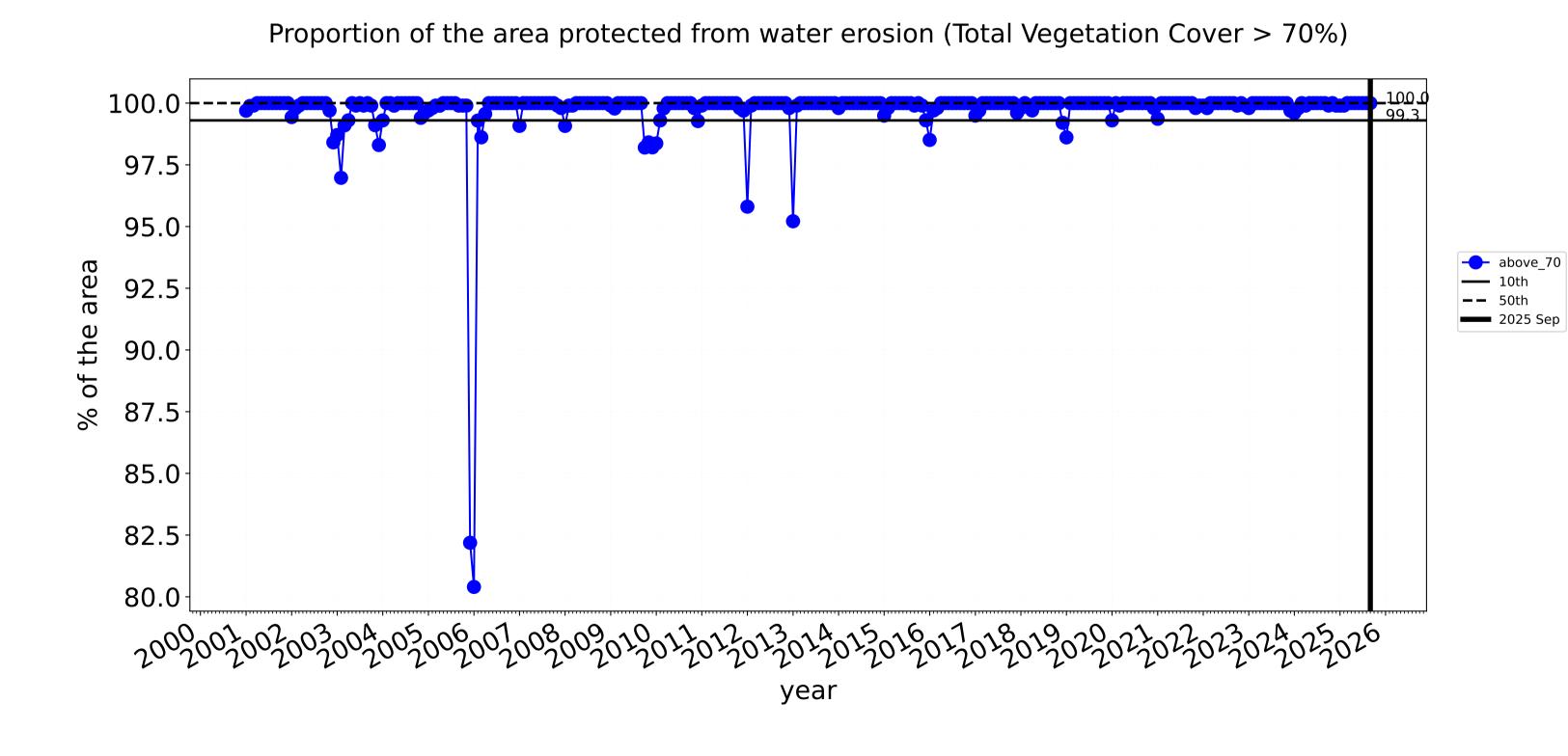
### **Production native forests and plantation forests**

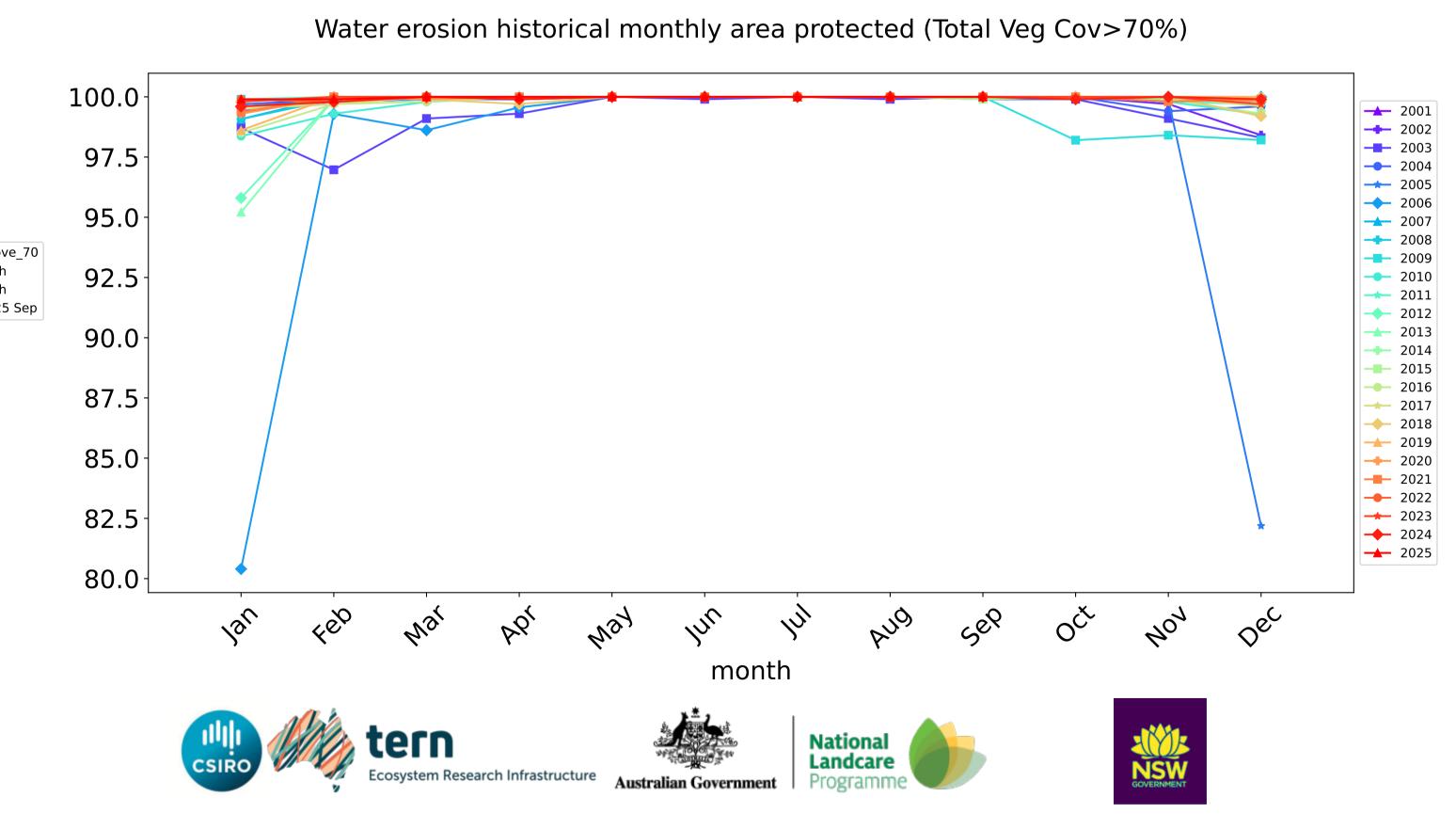
### Land use and forest cover 1 Production native forests and plantation forests

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









### Whitsunday\_(R) (2,358,000 ha and no data 23,876 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	2,358,000	100.0% 2,357,275	99.8% 2,354,075	98.1% 2,312,975	92.5% 2,180,200	68.1% 1,606,600	37.9% 892,525
Conservation and natural environments	170,100	99.8% 169,800	99.5% 169,225	97.1% 165,150	90.7% 154,300	63.4% 107,825	35.4% 60,175
Conservation and natural environments non forest	28,400	99.6% 28,275	98.9% 28,075	92.8% 26,350	73.4% 20,850	20.9% 5,925	6.0% 1,700
Conservation and natural environments Woodland forest	57,175	100.0% 57,150	99.7% 57,000	98.6% 56,375	95.1% 54,350	75.0% 42,900	48.8% 27,900
natural environments Forest (non woodland)	84,525	99.8% 84,375	99.6% 84,150	97.5% 82,425	93.6% 79,100	69.8% 59,000	36.2% 30,575
Agriculture	2,084,950	100.0% 2,084,900	100.0% 2,084,100	98.6% 2,055,975	93.5% 1,948,425	69.6% 1,452,150	38.8% 808,650
Grazing	2,042,525	100.0% 2,042,475	100.0% 2,041,925	98.8% 2,018,575	94.1% 1,921,275	70.5% 1,440,500	39.3% 803,325
Grazing non forest	1,171,850	100.0% 1,171,800	99.9% 1,171,250	98.1% 1,149,800	90.8% 1,063,825	61.6% 722,275	30.5% 357,175
Grazing Woodland forest	819,825	100.0% 819,825	100.0% 819,825	99.8% 818,375	98.7% 809,000	83.4% 684,050	52.1% 427,025
Grazing - Forest (non woodland)	50,850	100.0% 50,850	100.0% 50,850	99.1% 50,400	95.3% 48,450	67.2% 34,175	37.6% 19,125
Irrigation	42,125	100.0% 42,125	99.4% 41,875	88.1% 37,100	63.8% 26,875	27.2% 11,450	12.3% 5,175
Production native forests and plantation forests	25,150	100.0% 25,150	100.0% 25,150	100.0% 25,150	99.8% 25,100	86.6% 21,775	54.3% 13,650







