### Total vegetation cover soil protection Region:LGA Hinchinbrook (S) 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:

Date: April 2024

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









### **Vegetation Cover Apr 2024**

30

25

### Land use and forest cover

Catchment Scale

of Australia (2018)

(2018) and Forests

of Australia (2018)

Anomaly show how many percetage points each pixel is from

the mean. That

month of the map

using baseline from 2001 to

2019.

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

Derived from

Use of Australia

### 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

### 23.0% 20 10 5

Proportion of each land class in area

29.6%

2

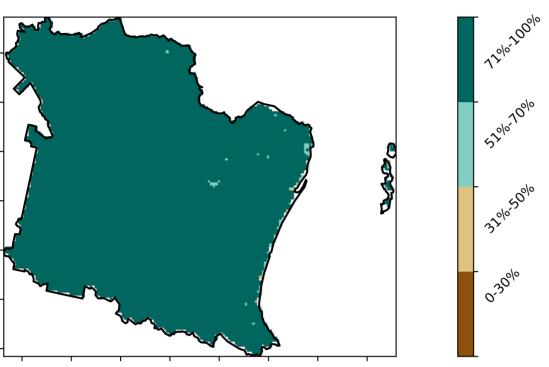
### Proportion of vegetation cover class in area

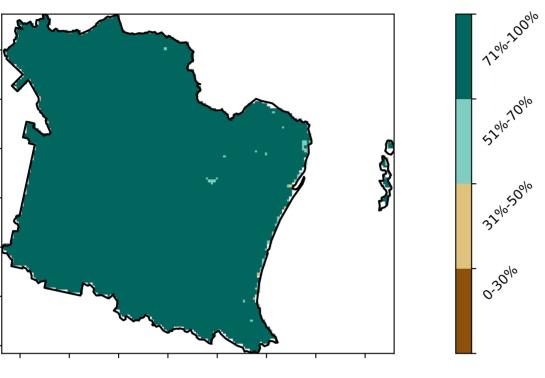
Land use class

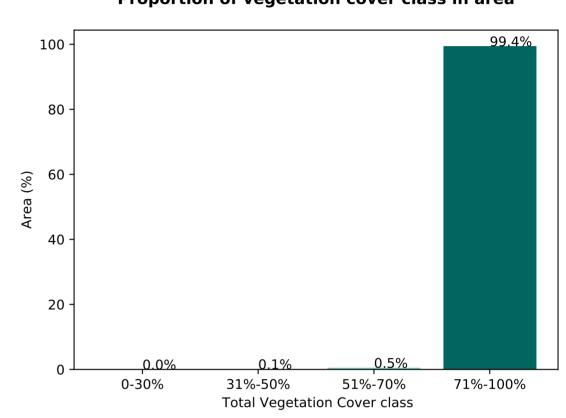
10

8

12

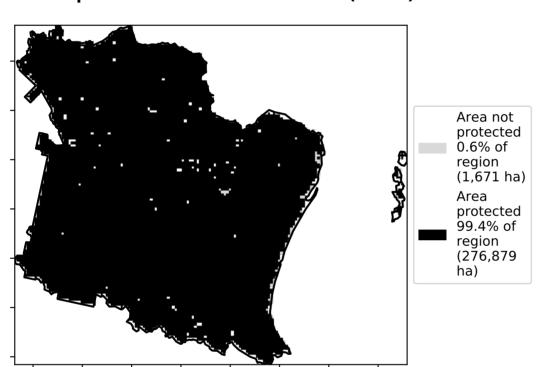




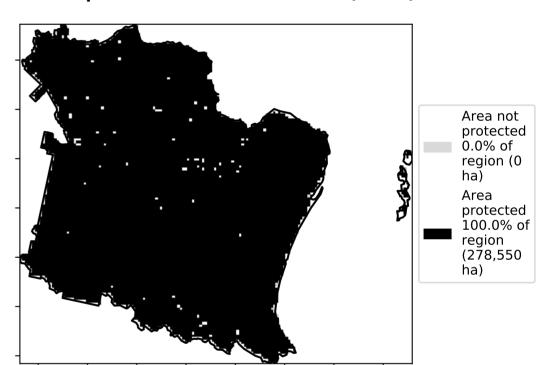


### % Area protected from water erosion (>70%)

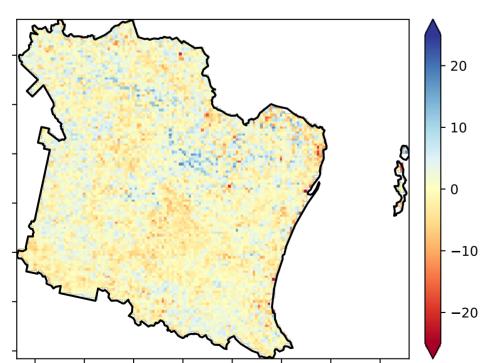
**Total Vegetation Cover [%]** 



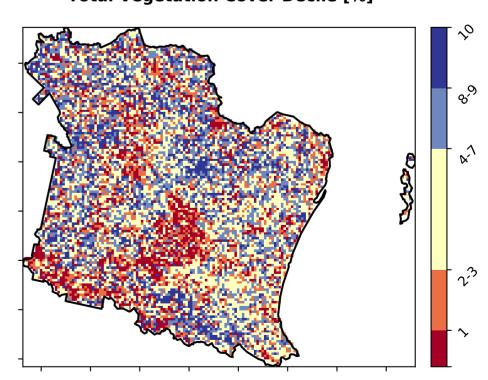
% Area protected from wind erosion (>50%)



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



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

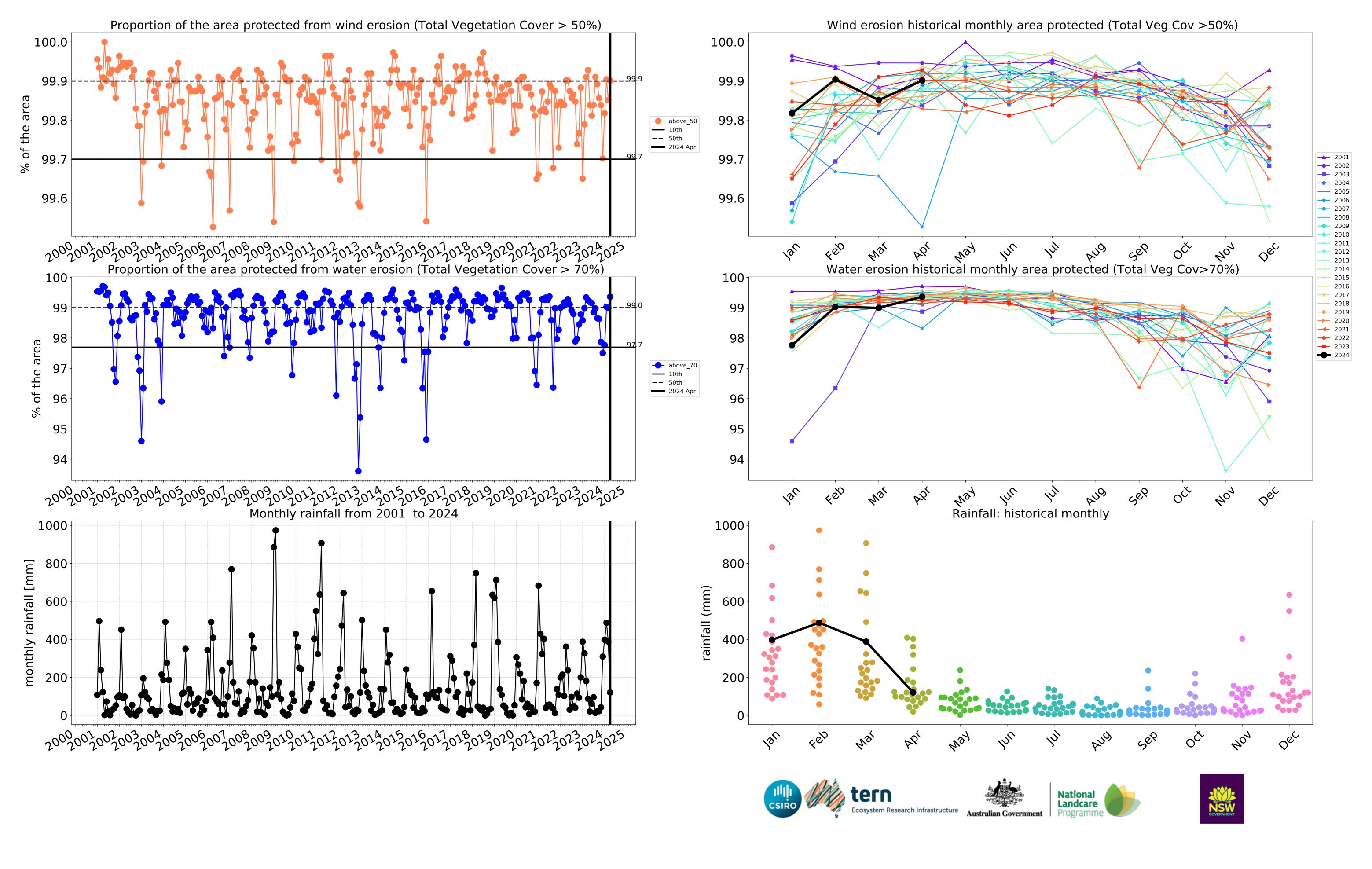


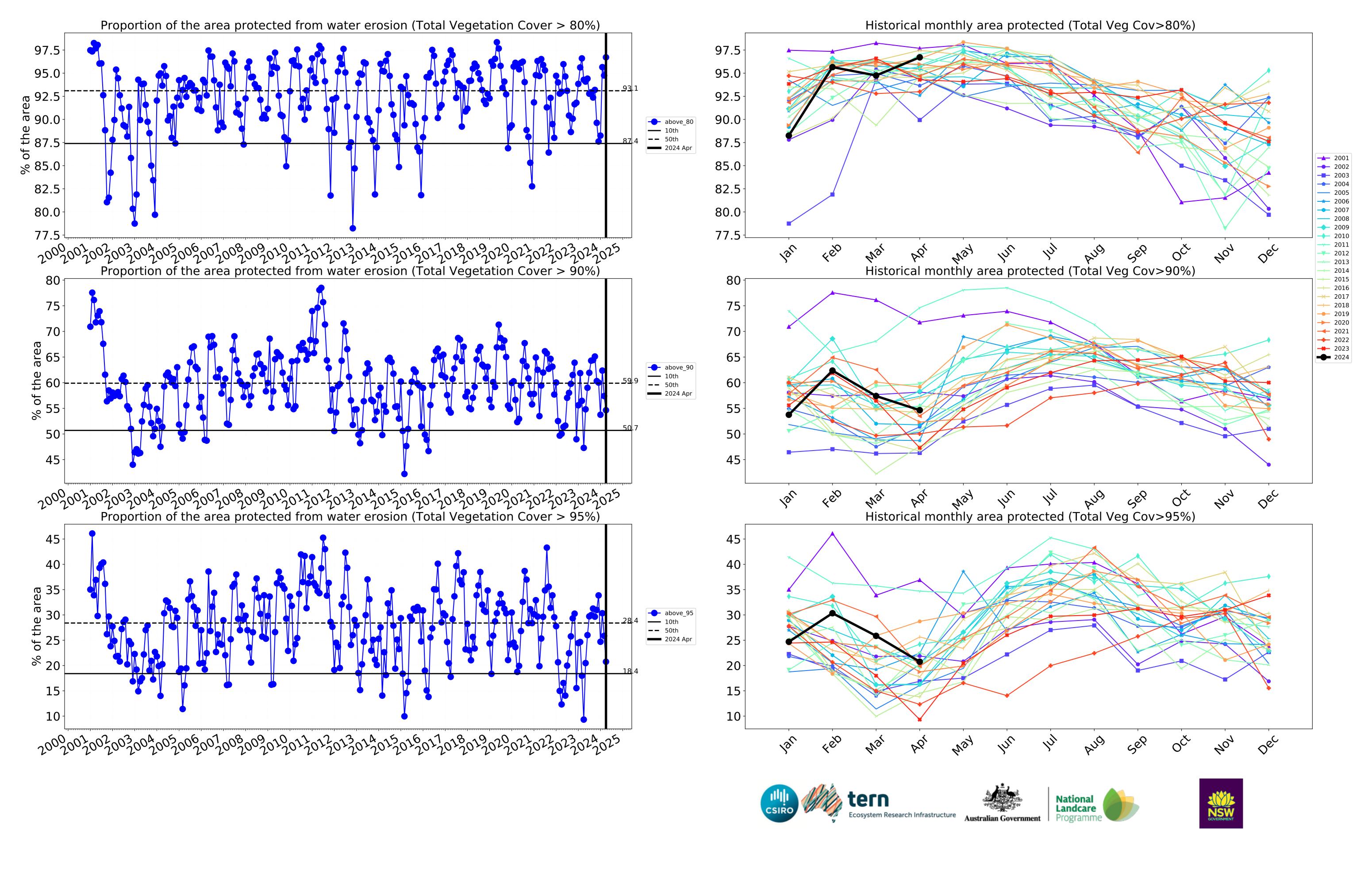








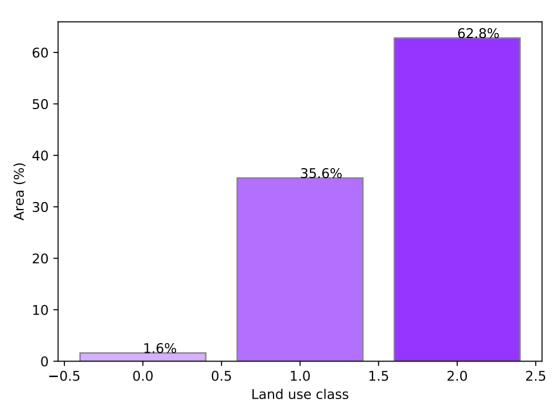




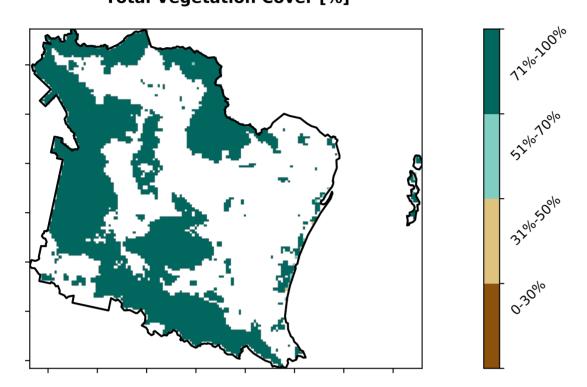
### **Conservation and natural environments**

# Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) Tonservation and natural environments - Nonforest 2 Conservation and natural environments - Woodland forest 3 Conservation and natural environments - Nonwoodland forest of Australia (2018)

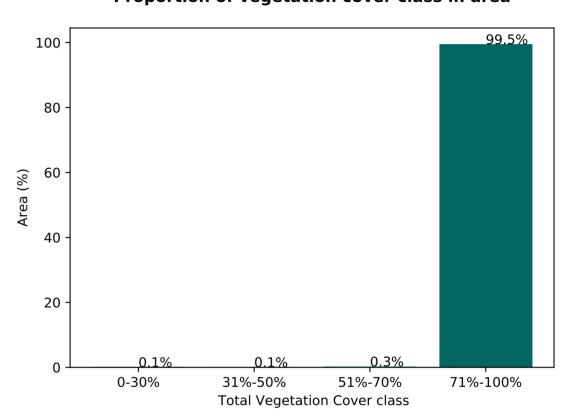
### Proportion of each land class in area



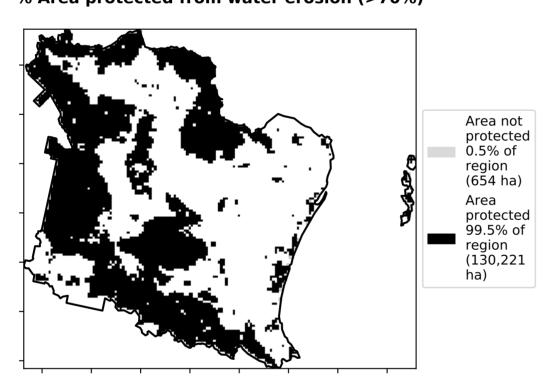
### Total Vegetation Cover [%]



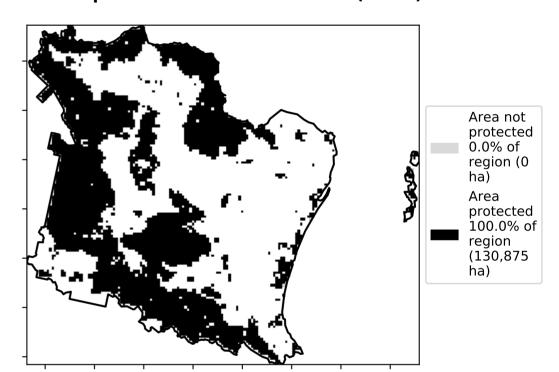
Proportion of vegetation cover class in area



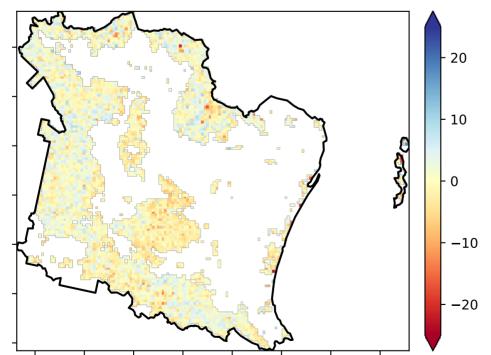
### % Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

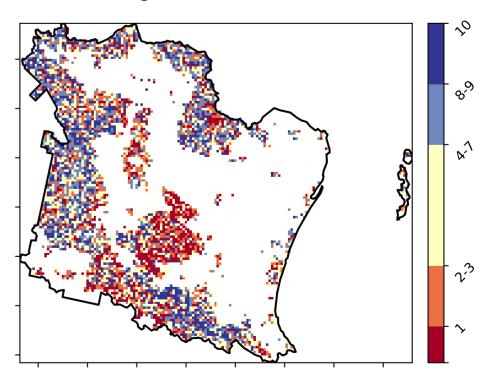


### Total Vegetation Cover Anomaly [%]



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 [%]**





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

using baseline from 2001 to 2019.

is only for the month of the map

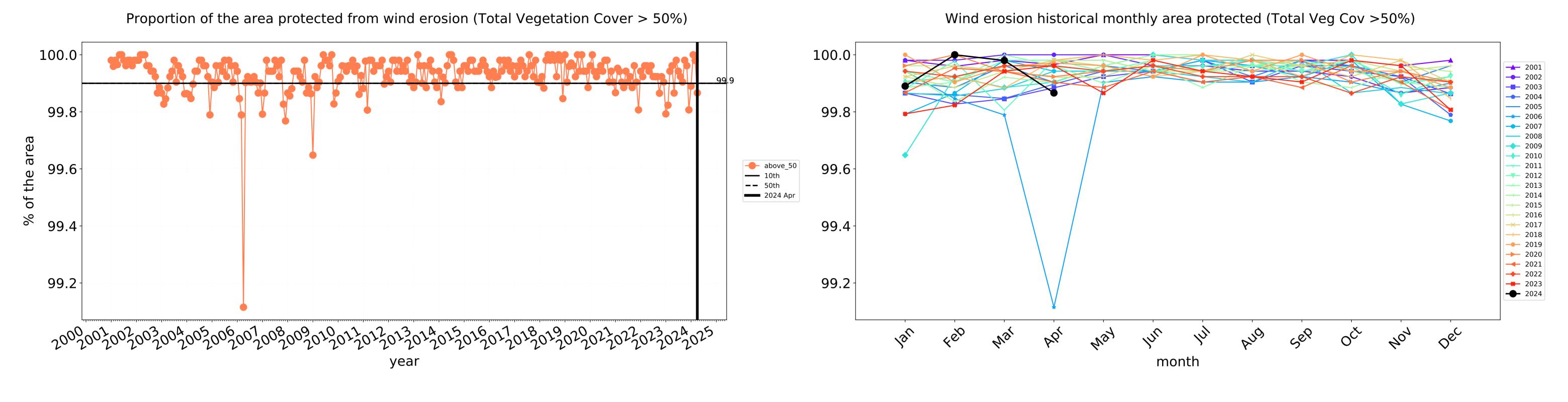


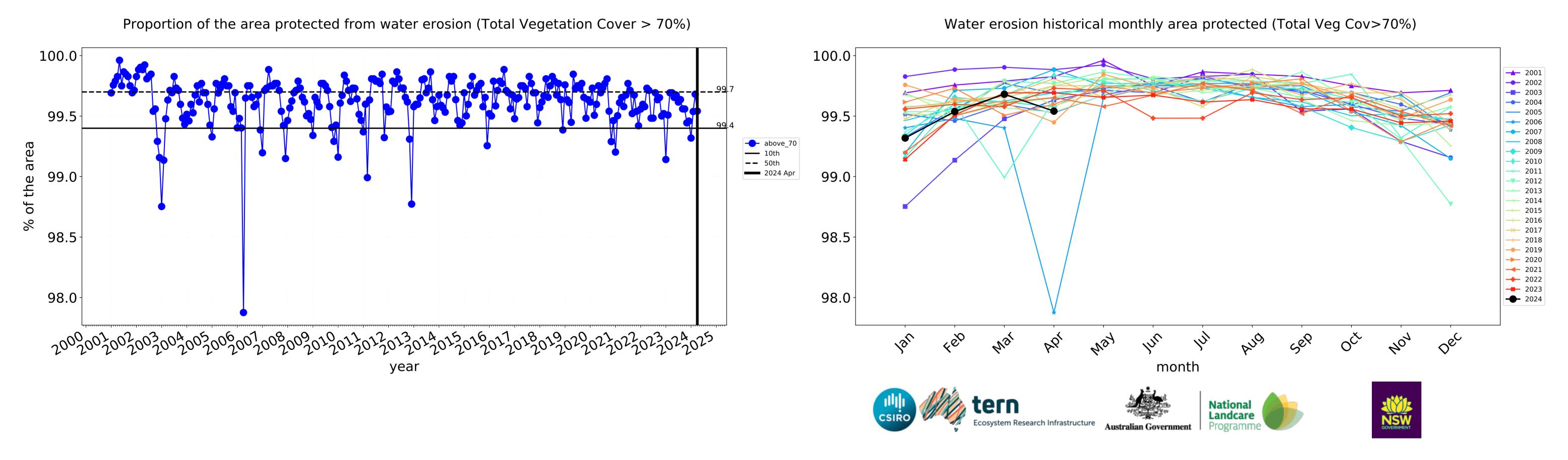


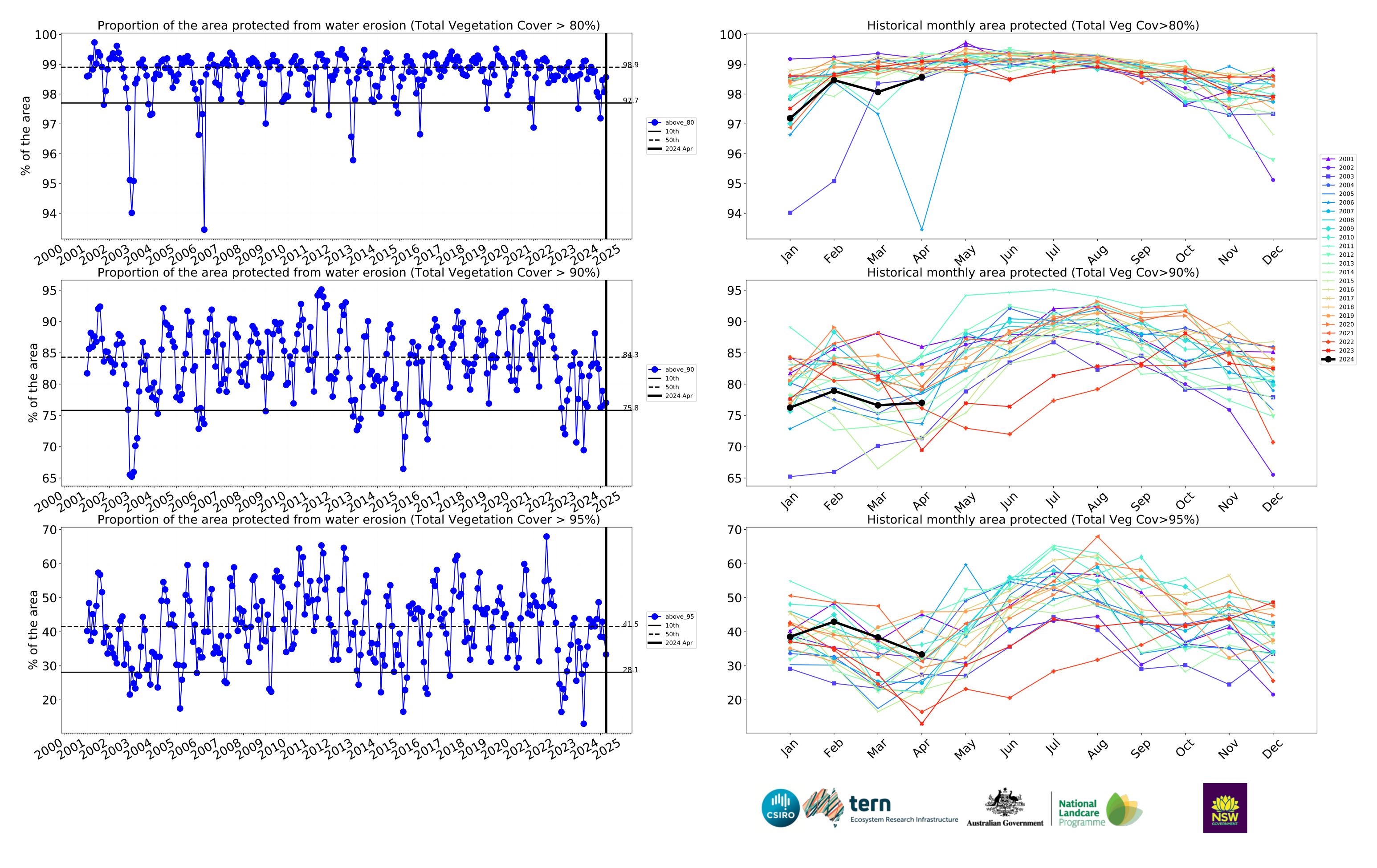




### **Conservation and natural environments timeseries**

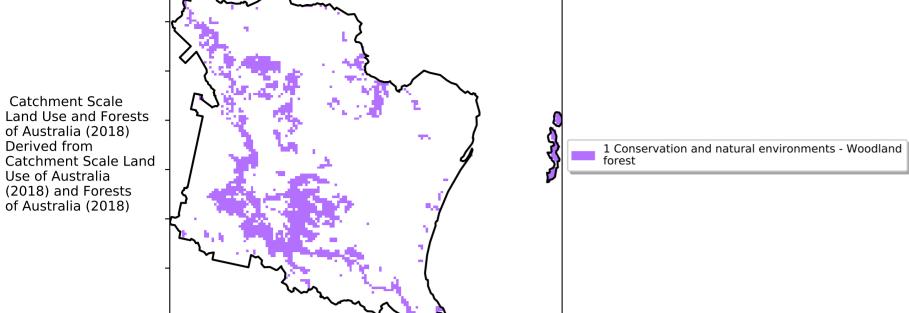






### **Conservation and natural environments Woodland forest**

### Land use and forest cover



Derived from Catchment Scale Land Use of Australia

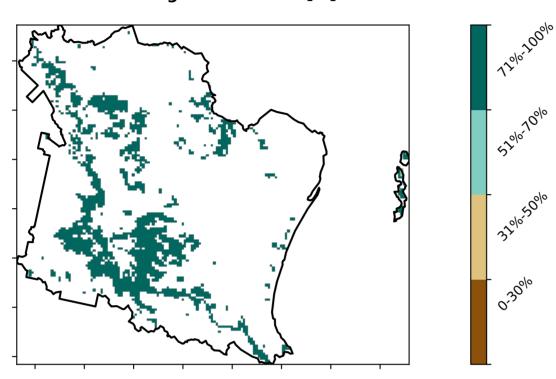
the mean. That

is, red pixels are about 20% lower than the

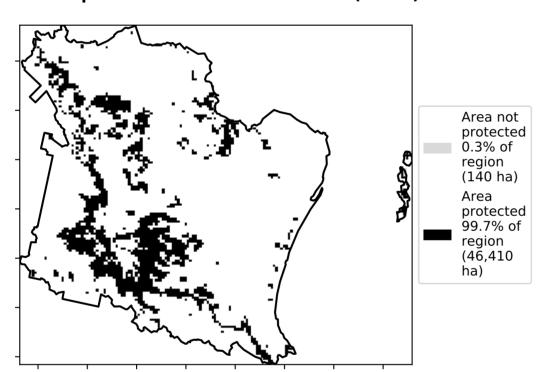
mean of that pixel. The mean is only for the month of the map

using baseline from 2001 to 2019.

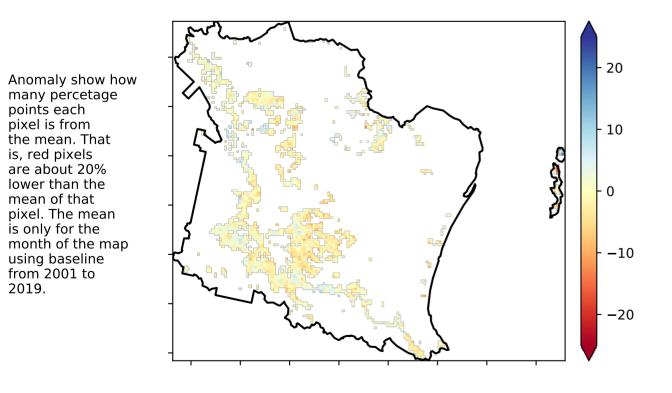
### **Total Vegetation Cover [%]**



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

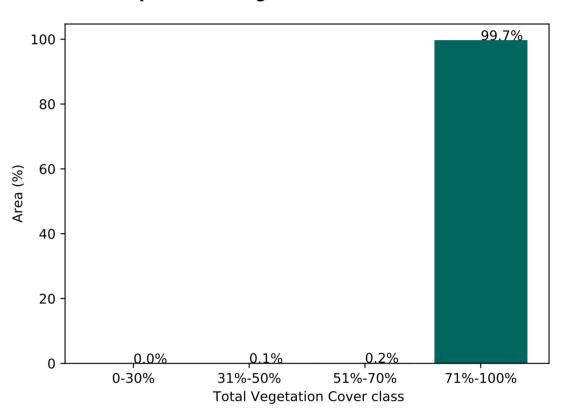


### **Total Vegetation Cover Anomaly [%]**

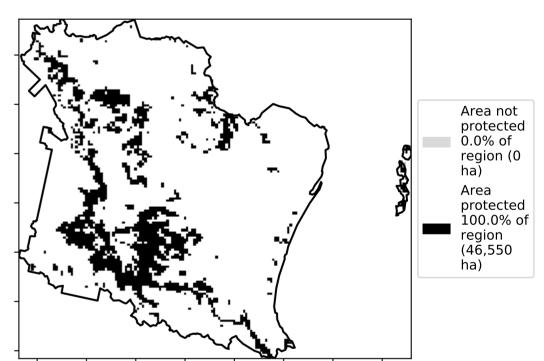


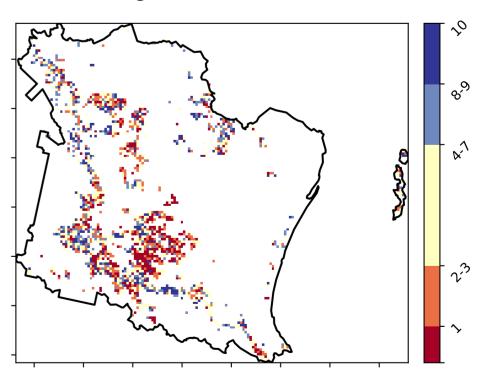
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





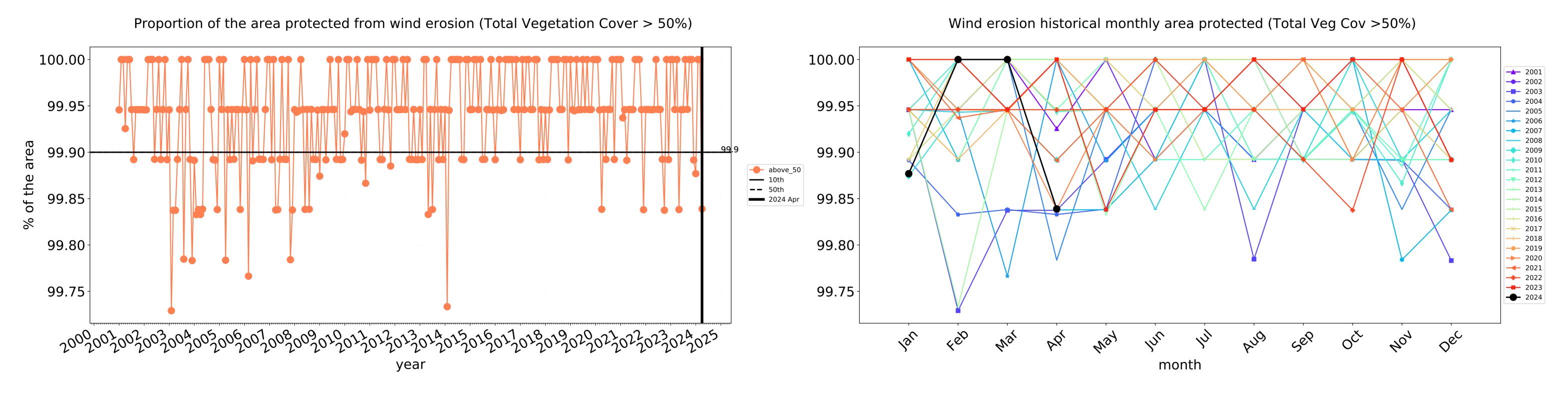


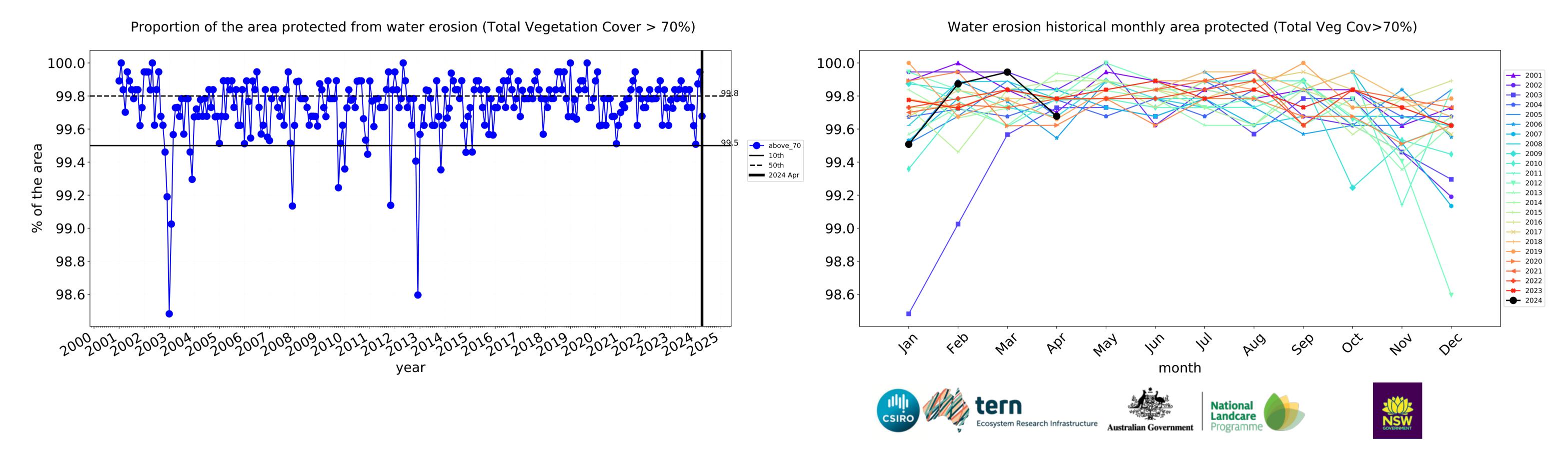


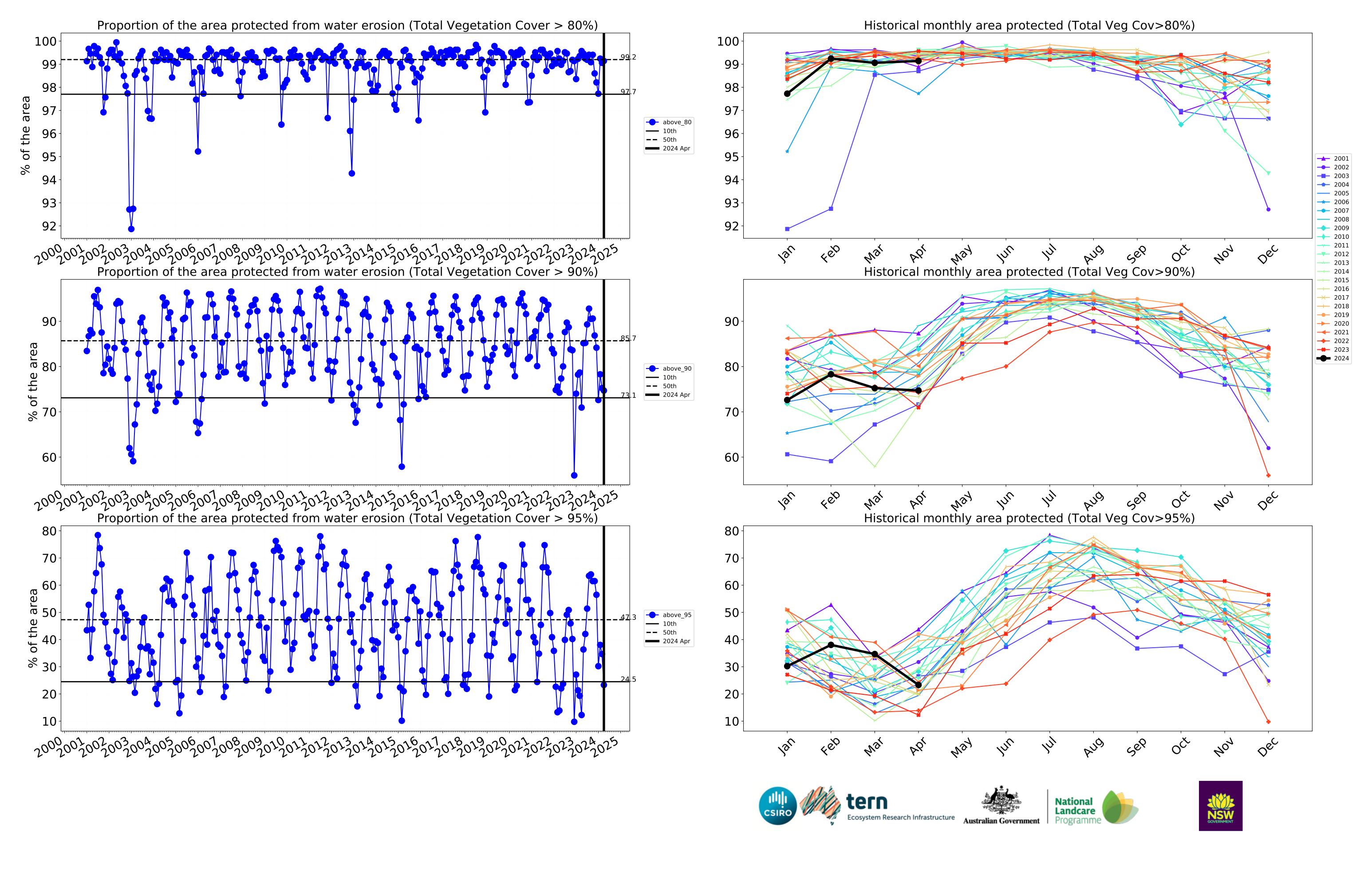




### **Conservation and natural environments Woodland forest timeseries**

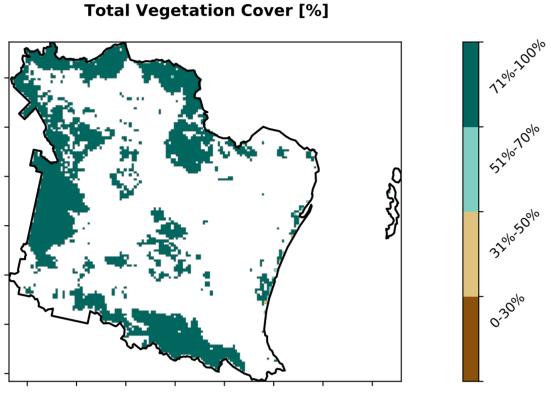






### **Conservation and natural environments Forest (non woodland)**

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

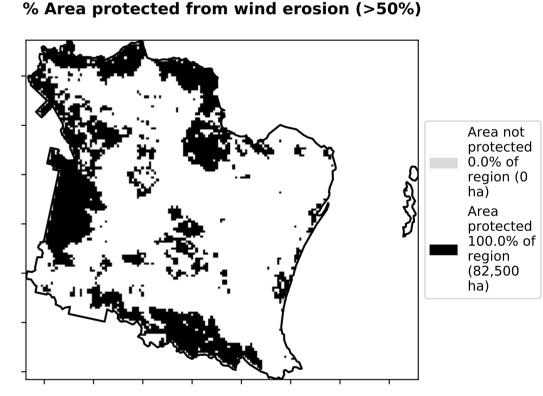


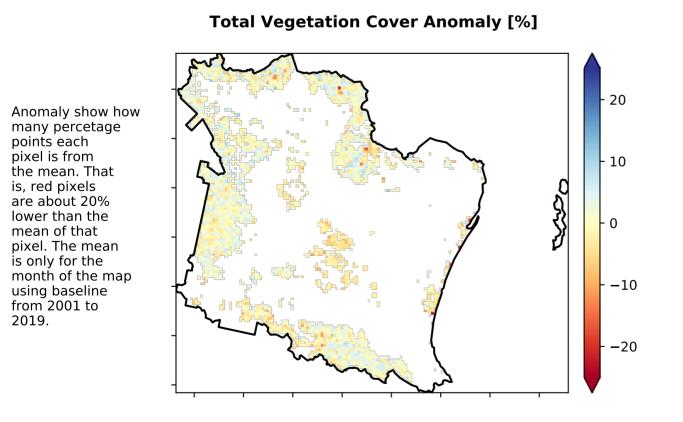
### 99.5% 100 80 20 31%-50% 51%-70% 0-30% 71%-100% **Total Vegetation Cover class**

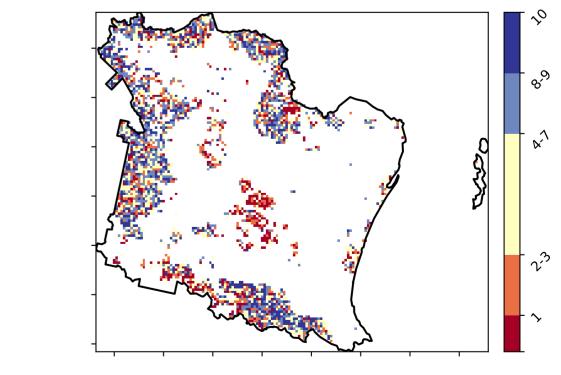
Proportion of vegetation cover class in area

### Area not protected 0.5% of region (412 ha) Area protected 99.5% of region (82,088 ha)

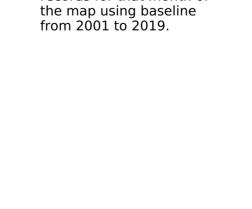
% Area protected from water erosion (>70%)







**Total Vegetation Cover Decile [%]** 



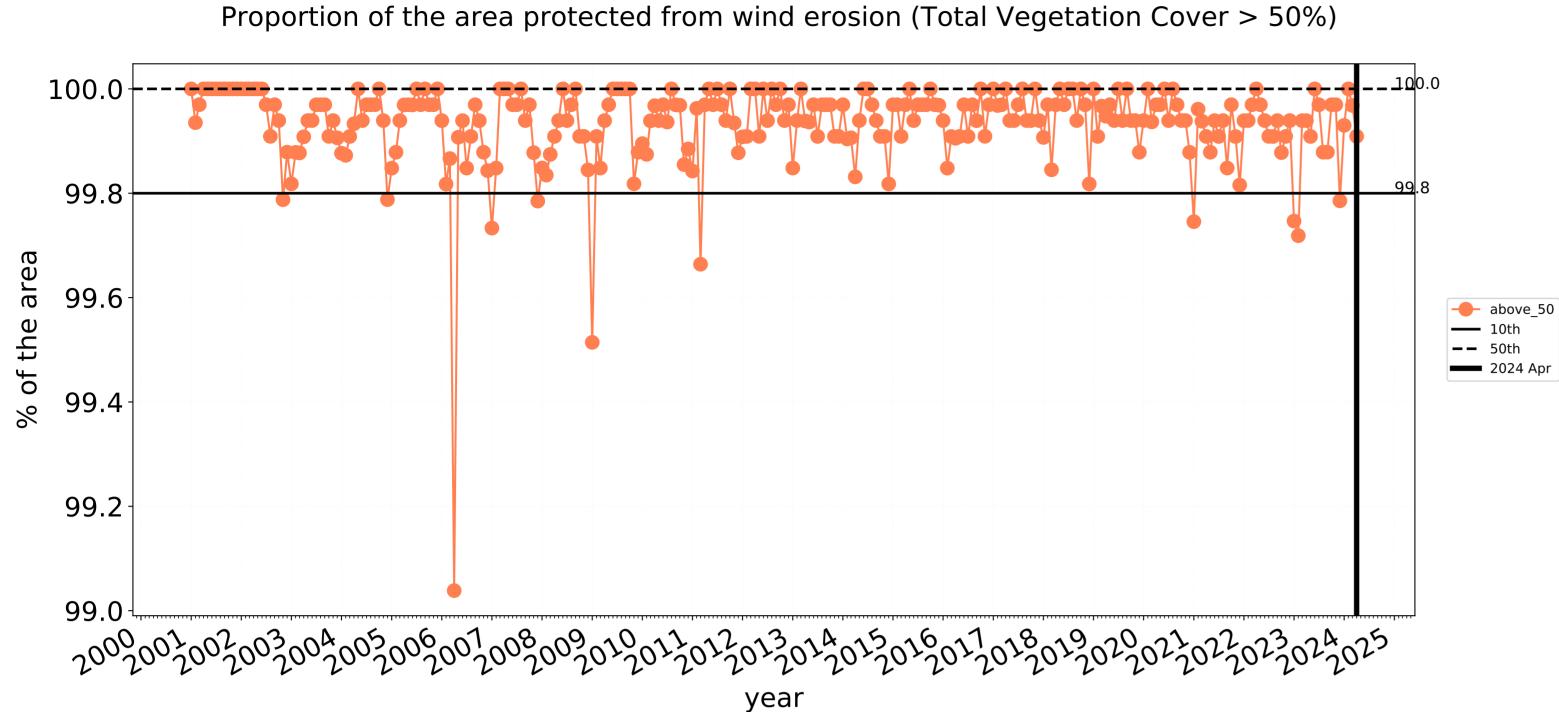
Deciles show where the pixel value lies in the

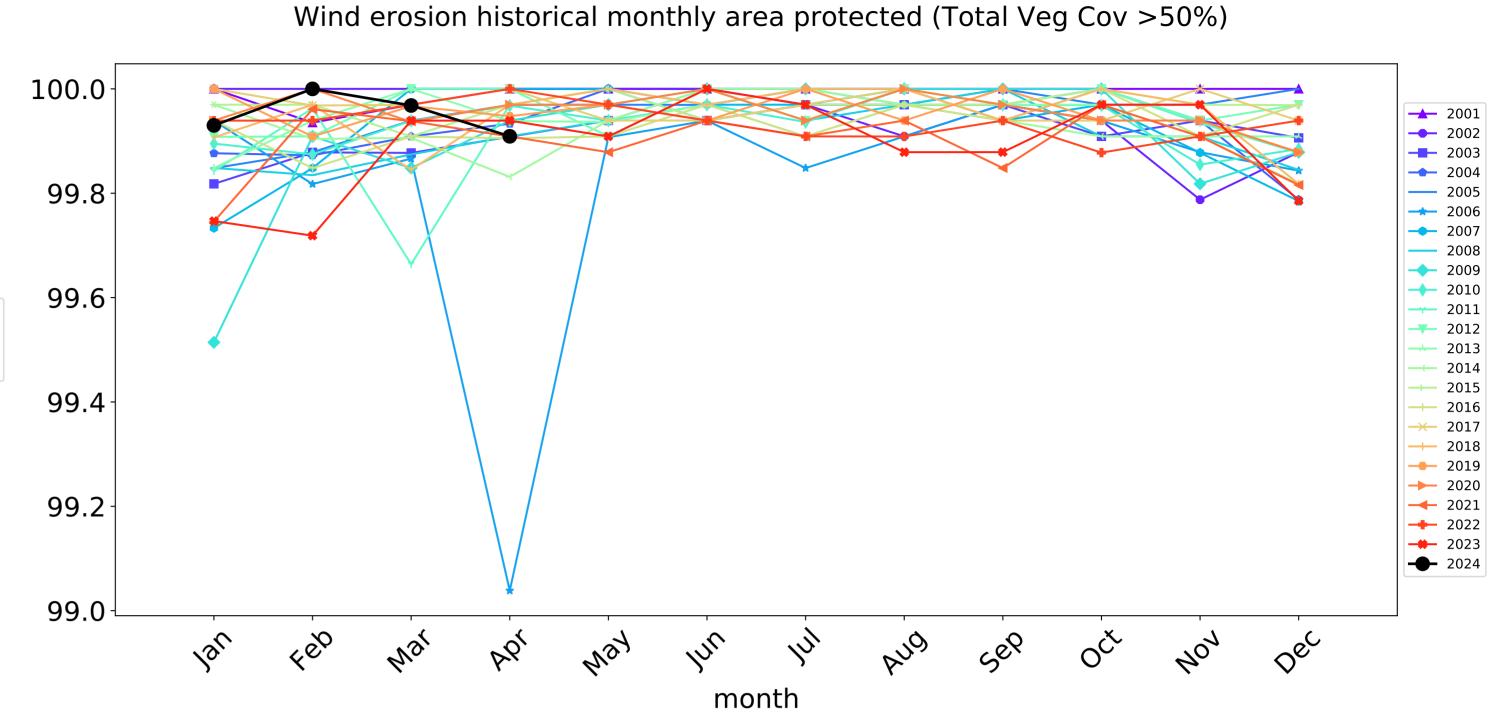
record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseling.

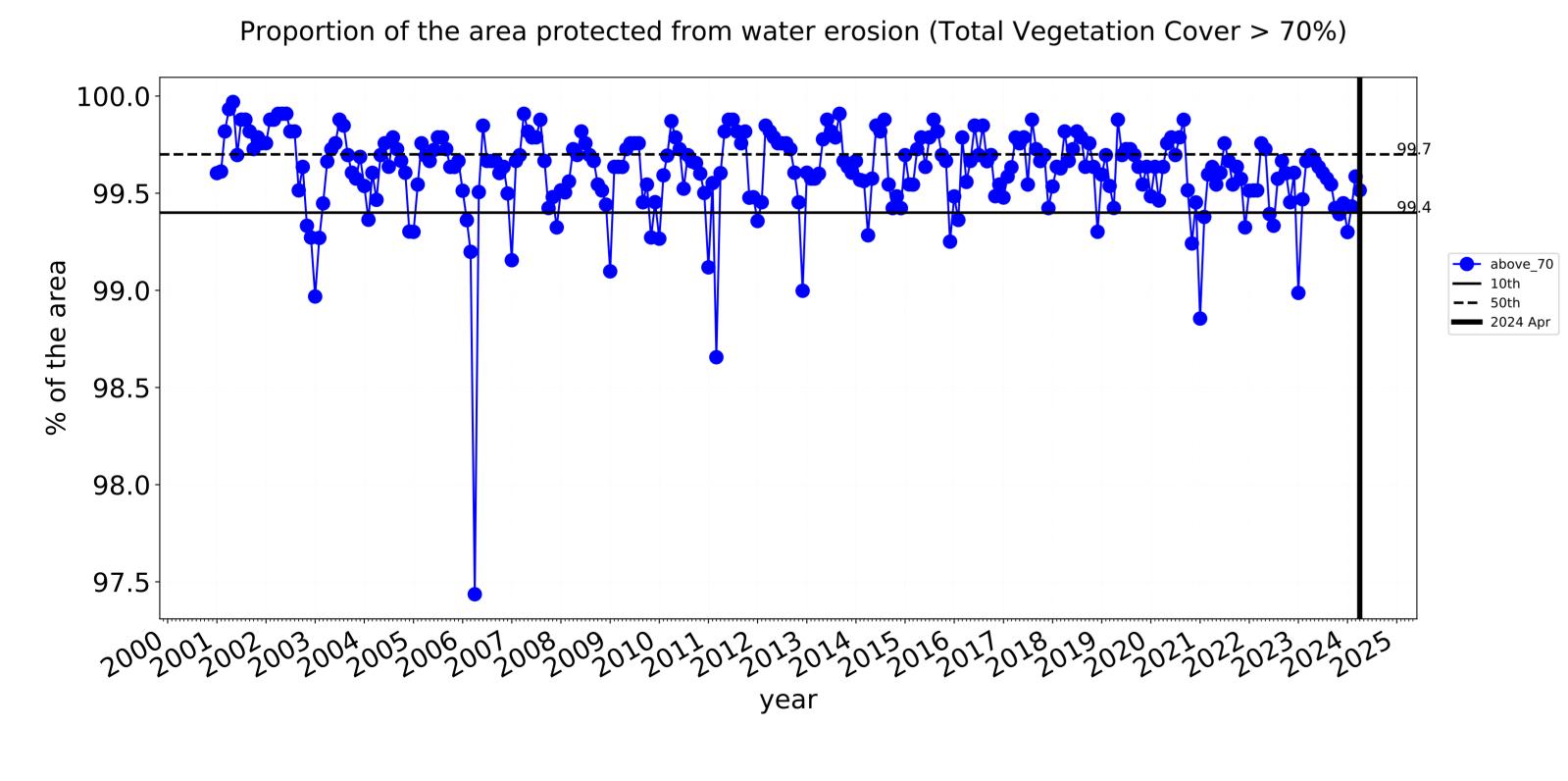


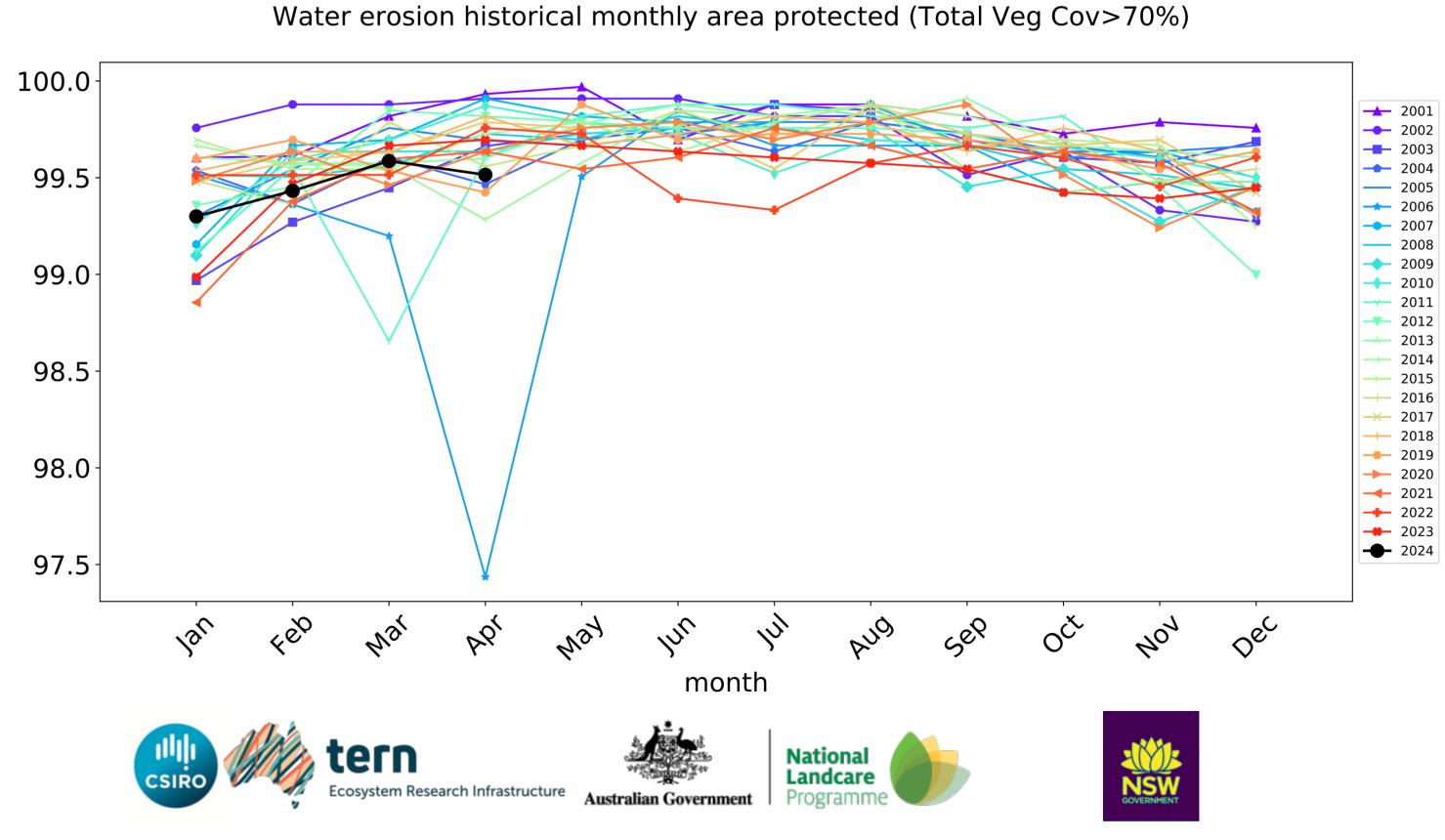


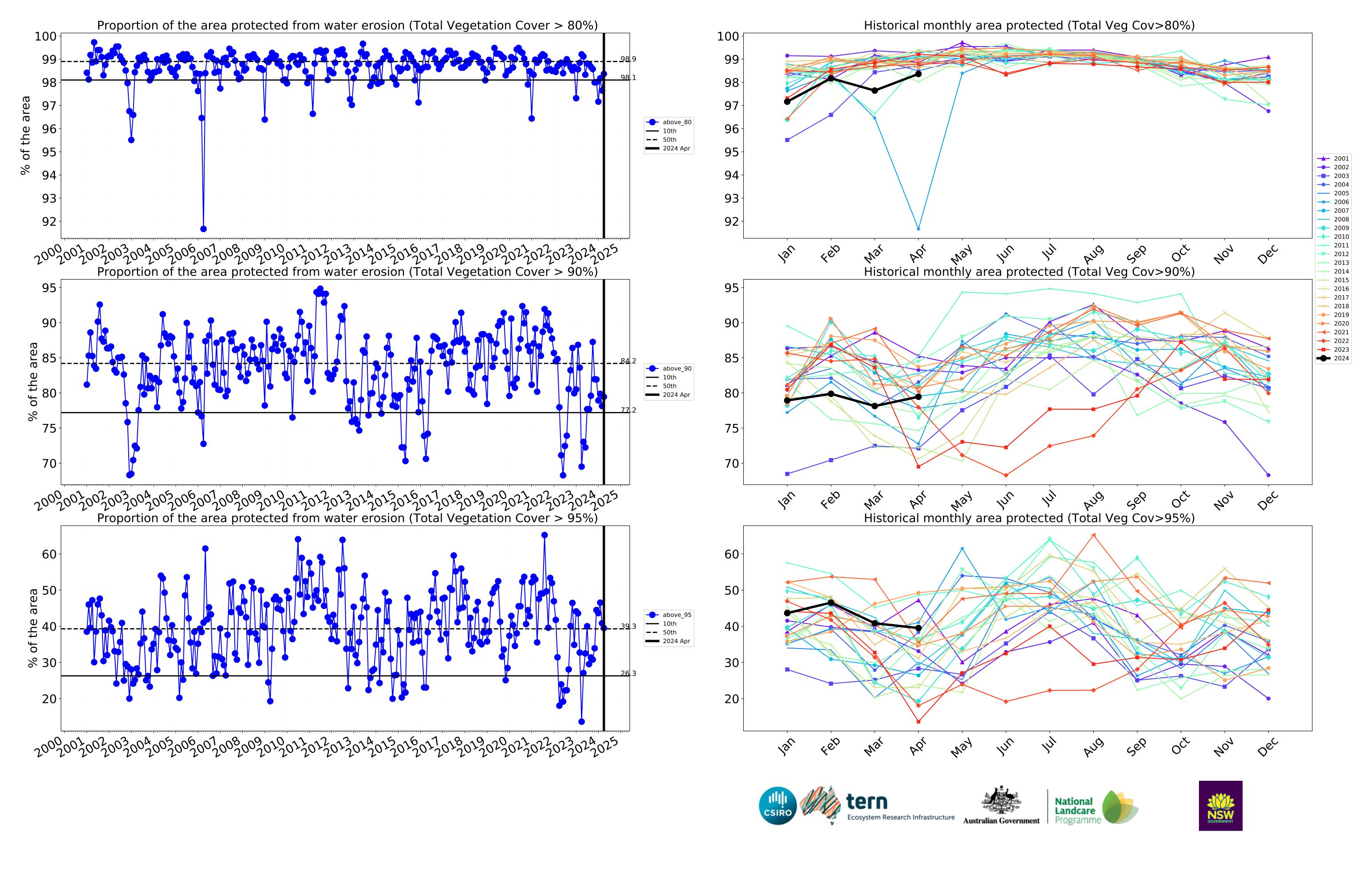








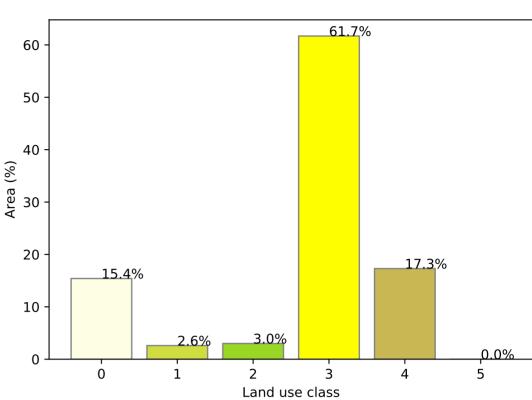




### **Agriculture**

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

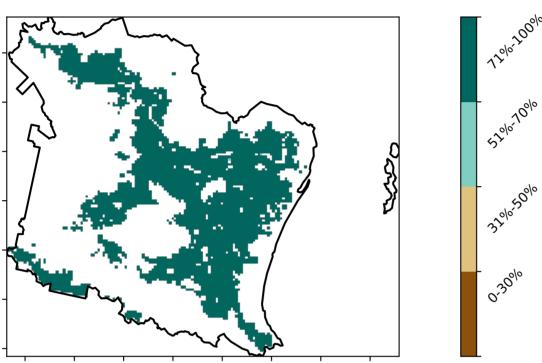
# Area (%)



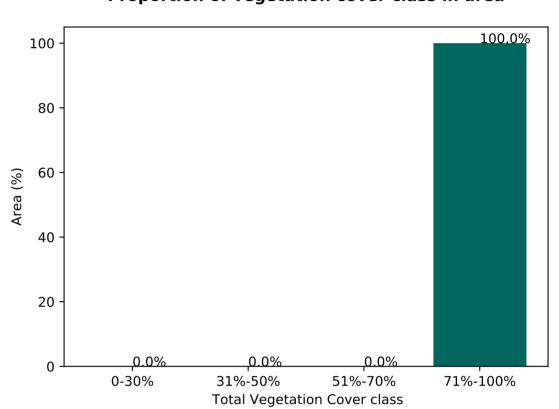
Proportion of each land class in area

### Total Vegetation Cover [%]

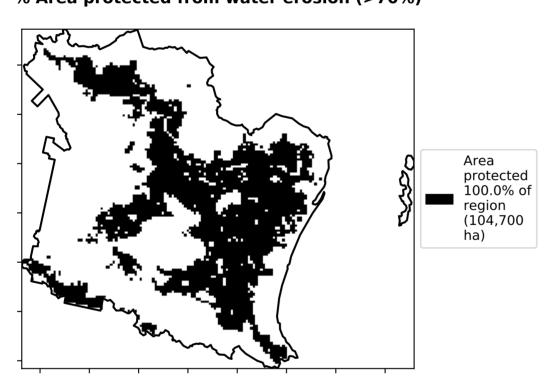
Land use and forest cover



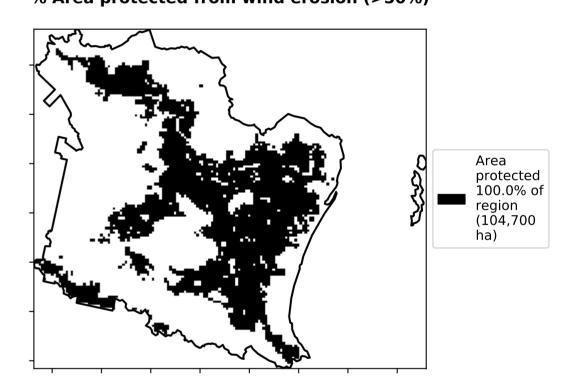
Proportion of vegetation cover class in area



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



% Area protected from wind erosion (>50%)



### Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage points each pixel is from

the mean. That

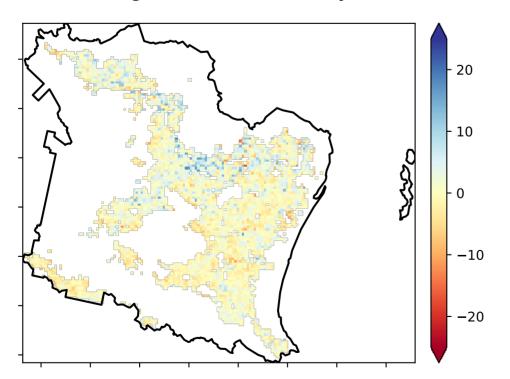
is, red pixels

are about 20% lower than the mean of that

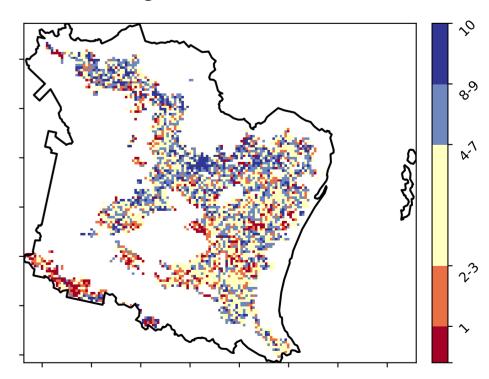
pixel. The mean

using baseline from 2001 to 2019.

is only for the month of the map



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.



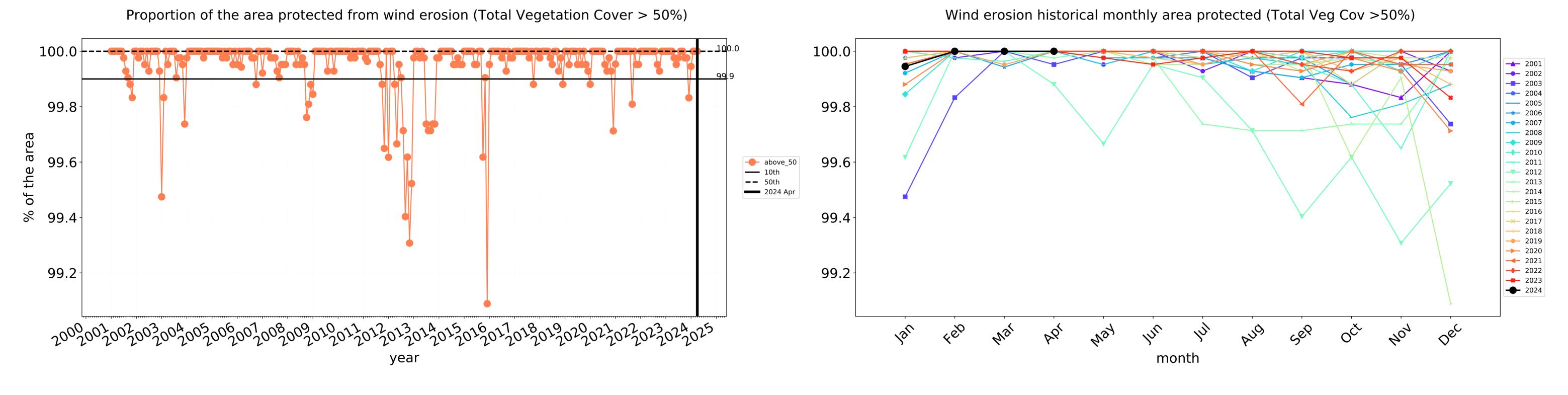


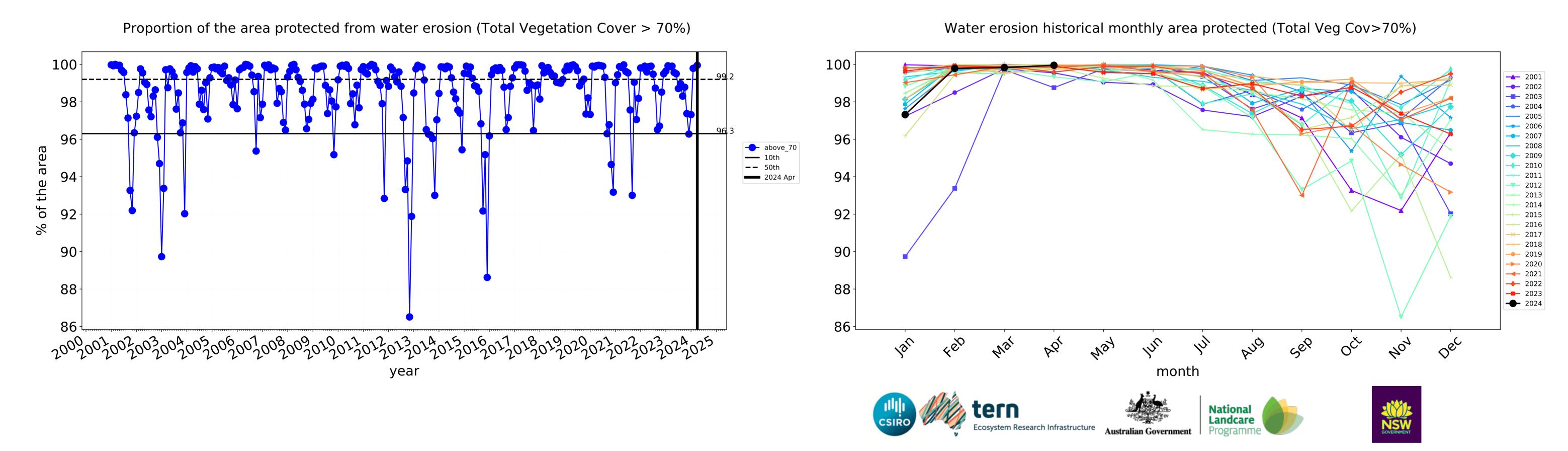


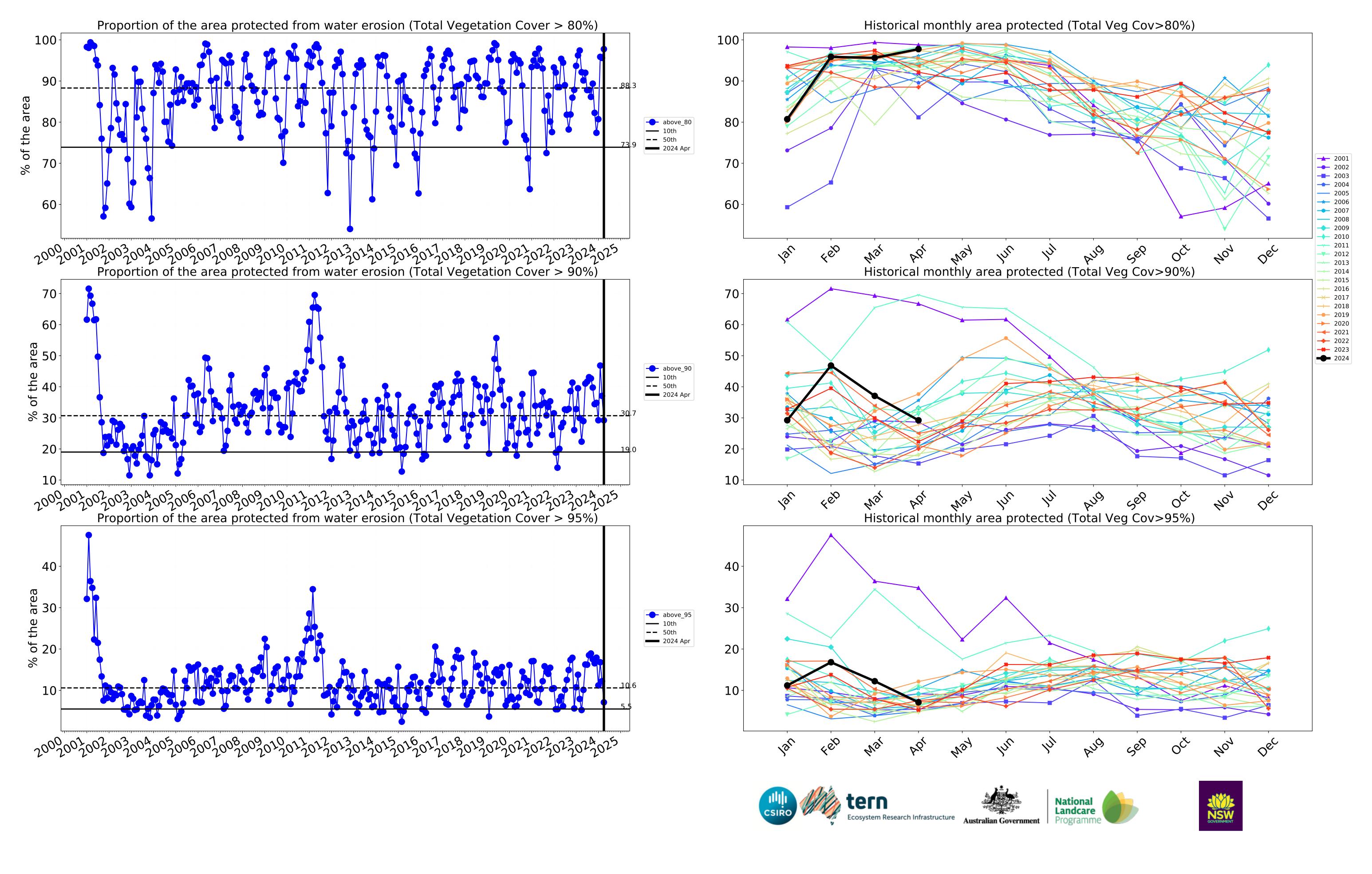




### **Agriculture timeseries**





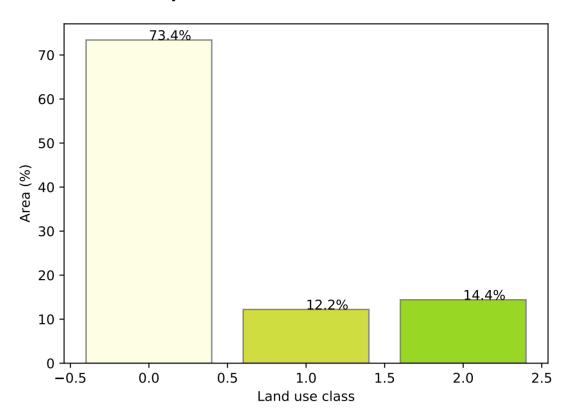


### **Grazing**

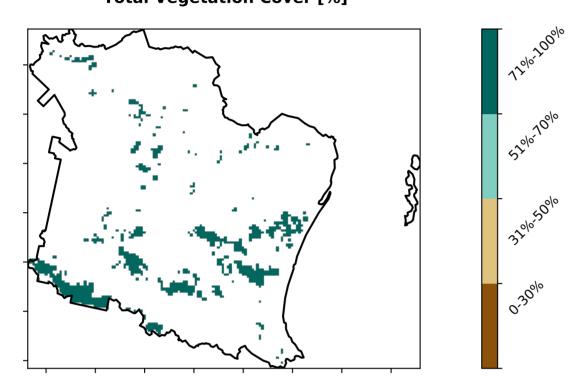
### Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) The Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest The Agriculture - Grazing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

Land use and forest cover

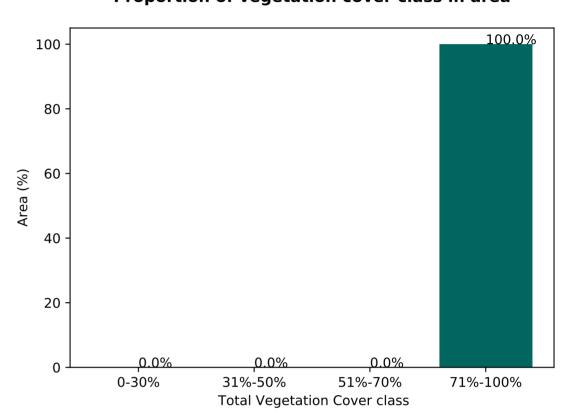
### Proportion of each land class in area



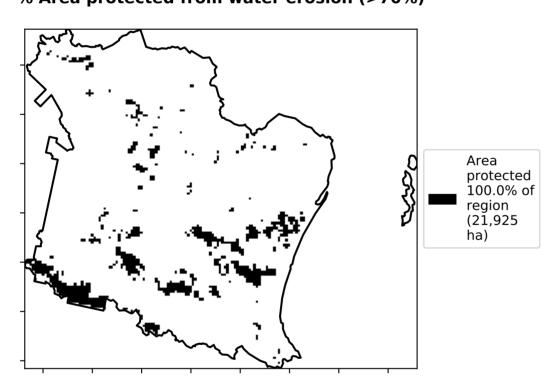
Total Vegetation Cover [%]



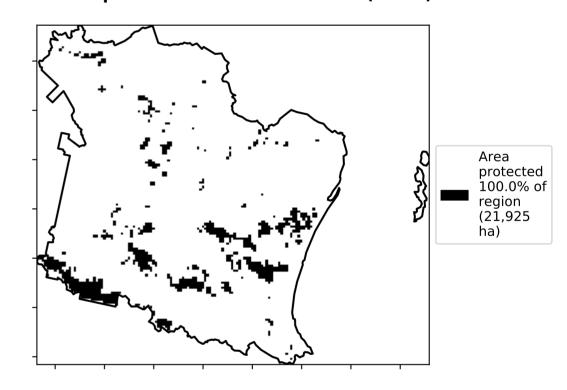
Proportion of vegetation cover class in area



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



% Area protected from wind erosion (>50%)



**Total Vegetation Cover Anomaly [%]** 

Anomaly show how many percetage points each

pixel is from

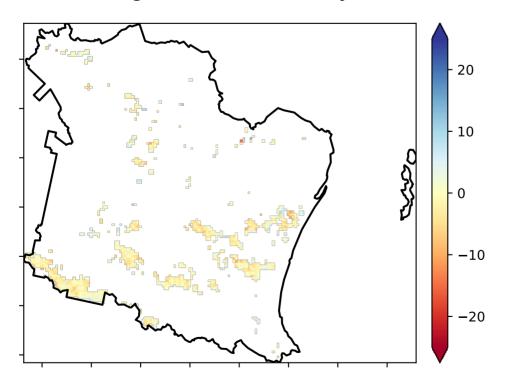
the mean. That is, red pixels

are about 20% lower than the mean of that

pixel. The mean

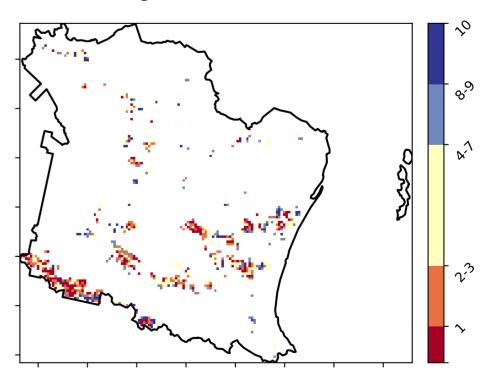
using baseline from 2001 to 2019.

is only for the month of the map



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 [%]** 



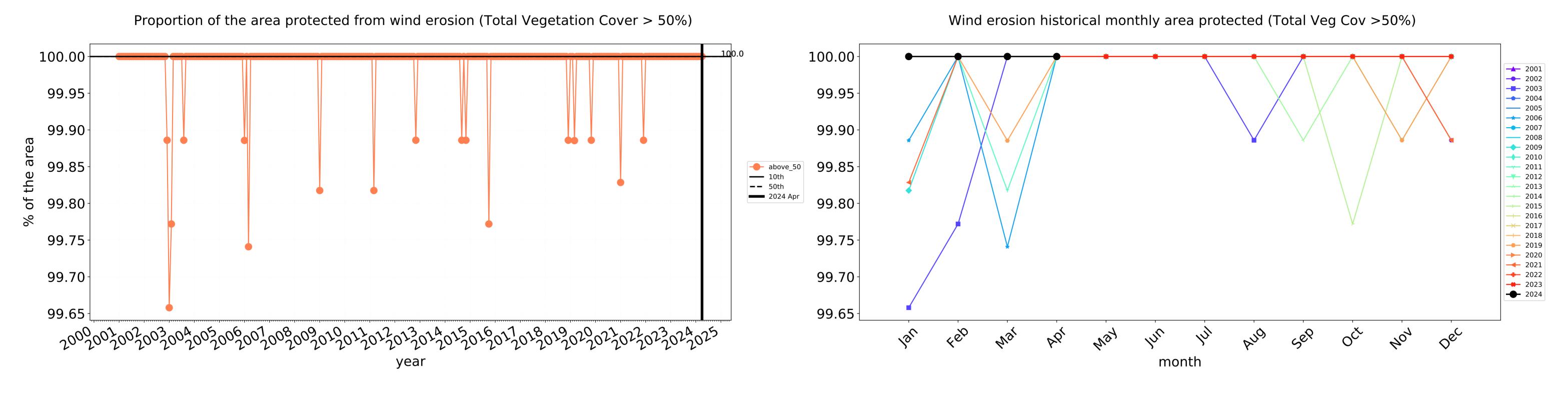


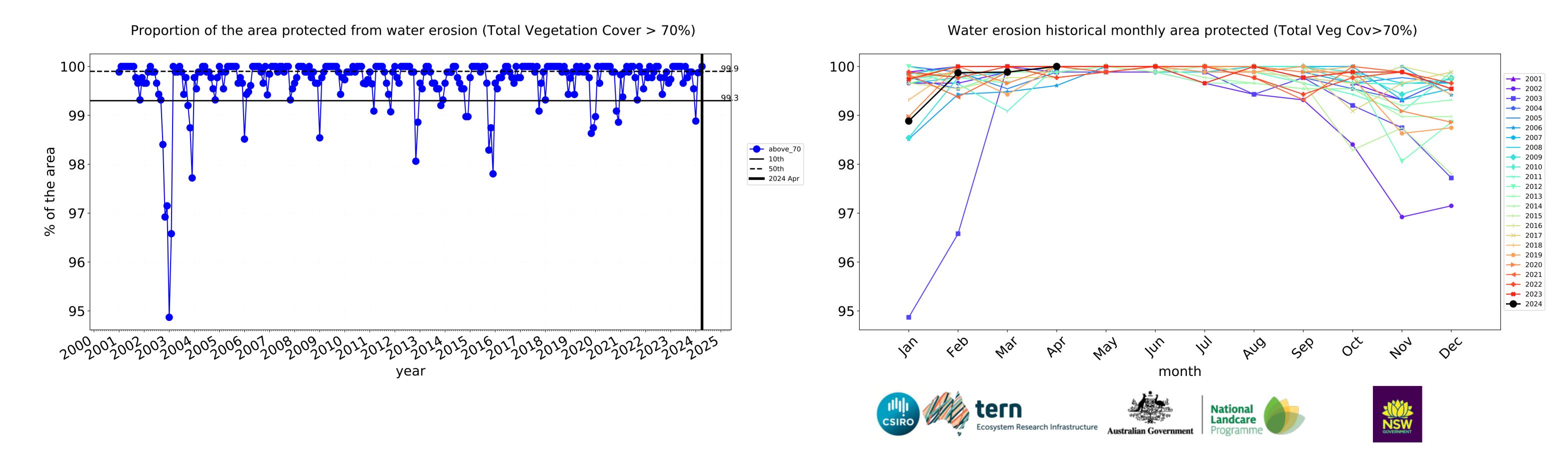


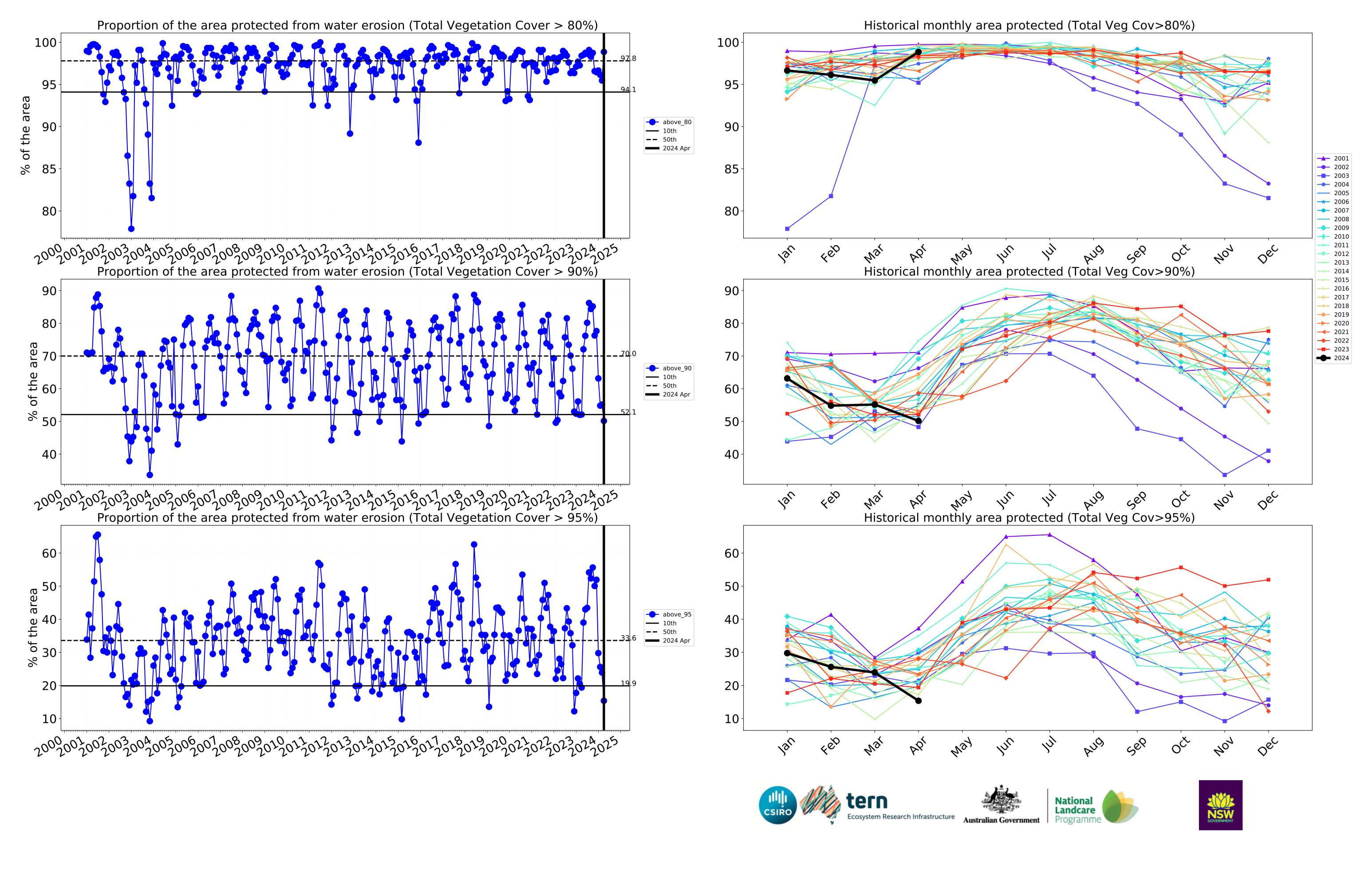




### **Grazing timeseries**



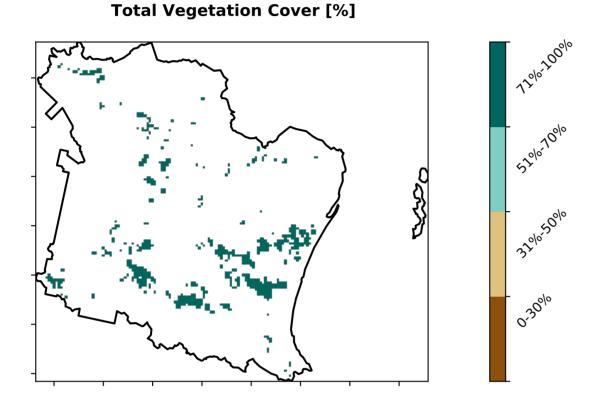




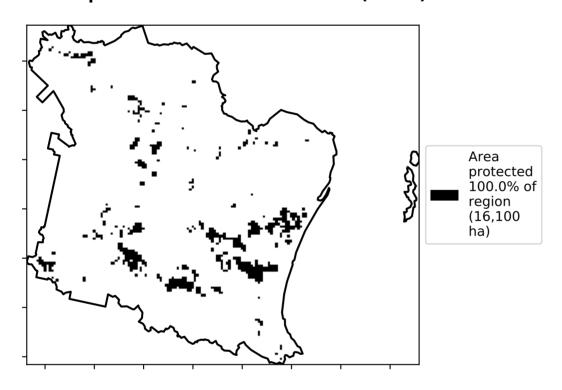
### **Grazing non forest**

### Land use and forest cover





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



### Total Vegetation Cover Anomaly [%]

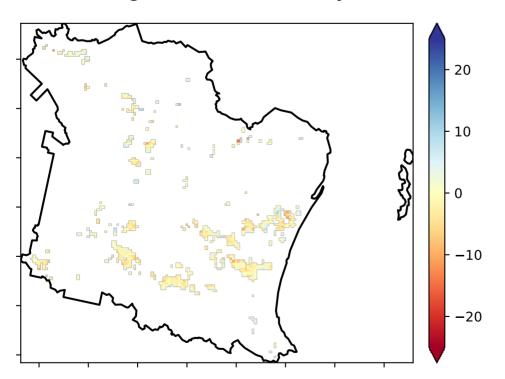
Anomaly show how many percetage points each pixel is from

the mean. That

is, red pixels are about 20% lower than the

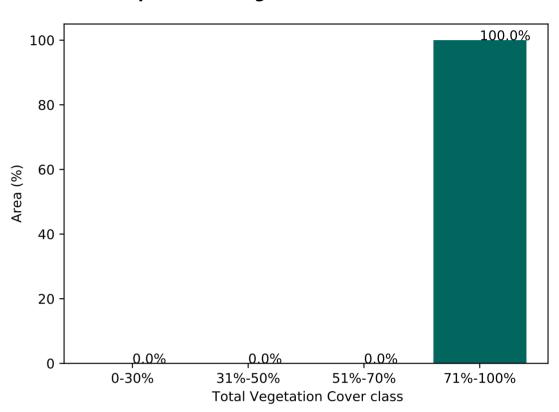
mean of that pixel. The mean is only for the month of the map

using baseline from 2001 to 2019.

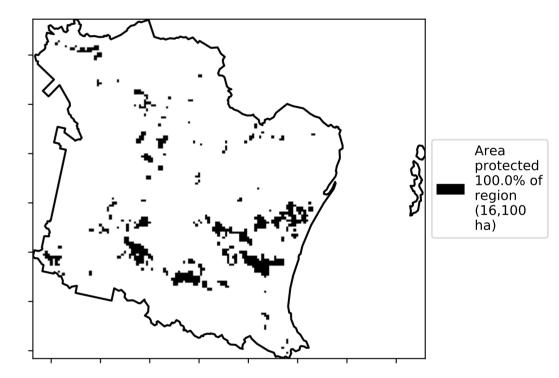


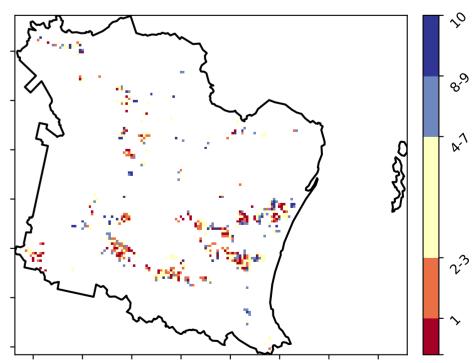
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





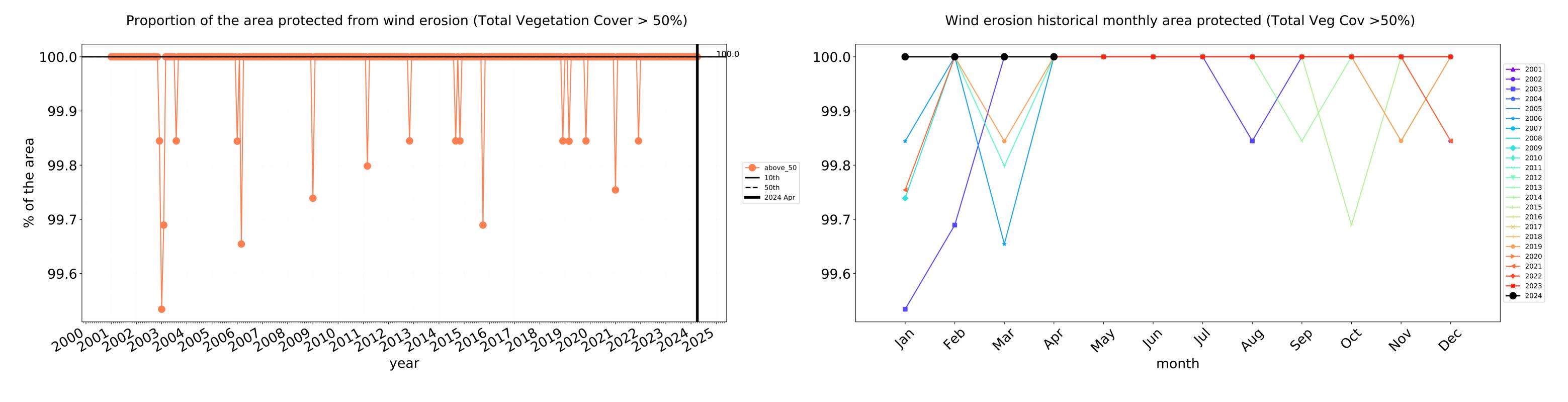


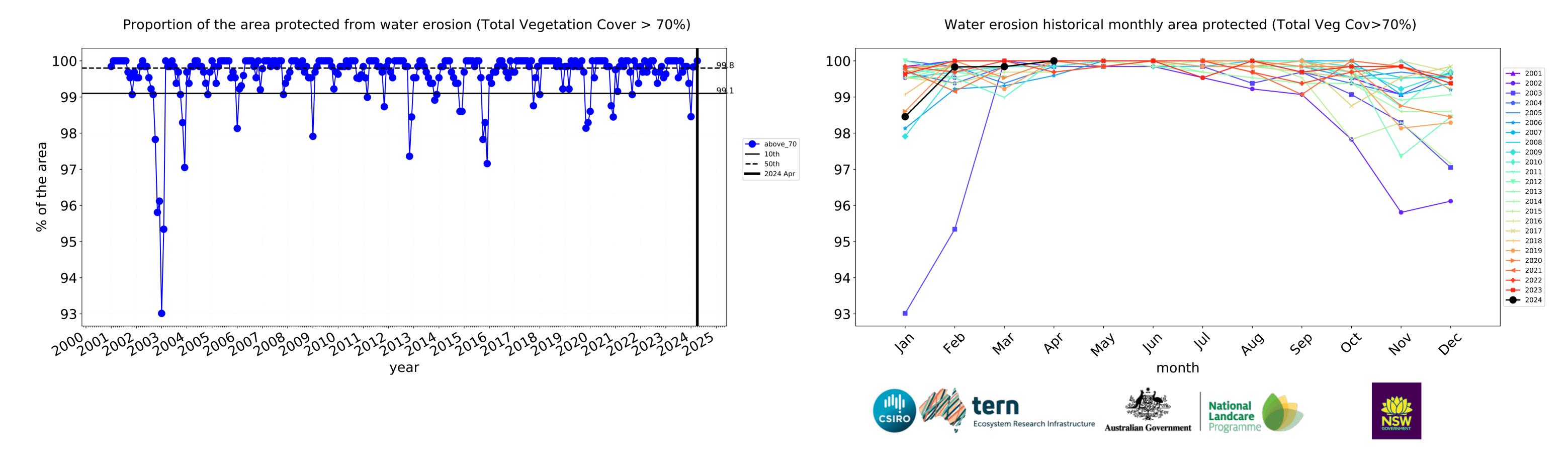


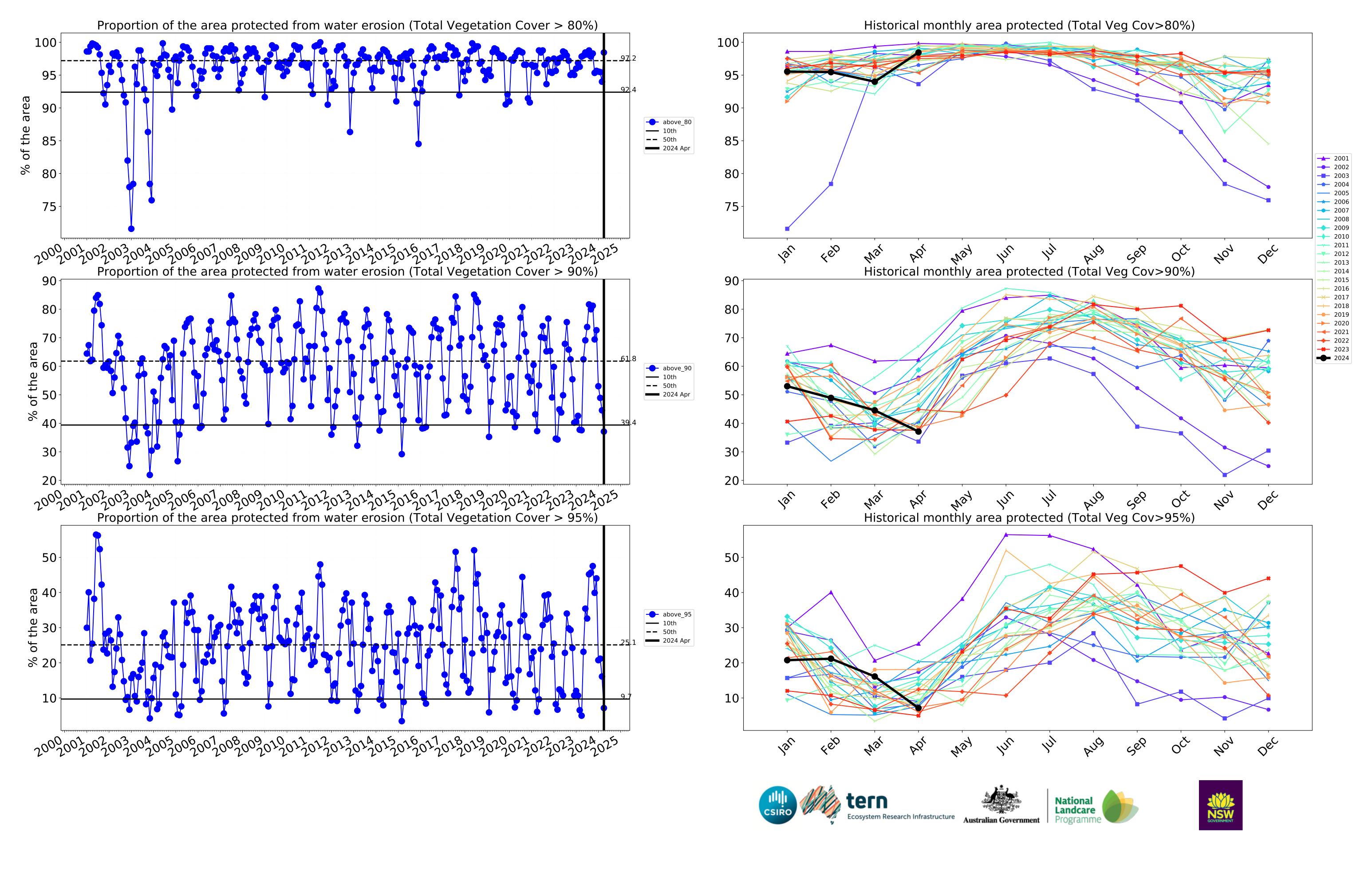




### **Grazing non forest timeseries**







### **Grazing Woodland 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)

Anomaly show how many percetage points each pixel is from

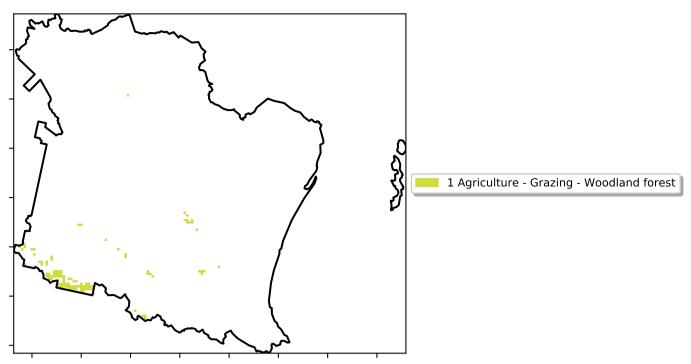
the mean. That is, red pixels

are about 20% lower than the mean of that

pixel. The mean

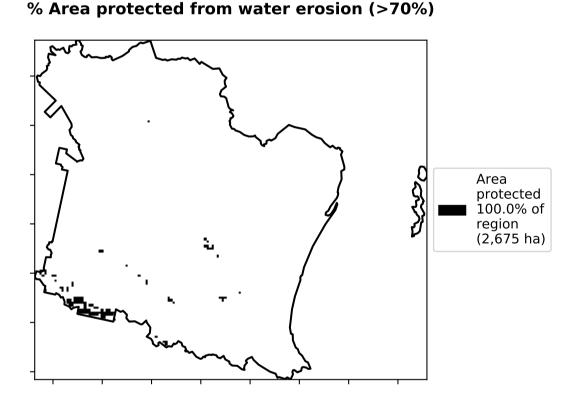
using baseline from 2001 to 2019.

is only for the month of the map

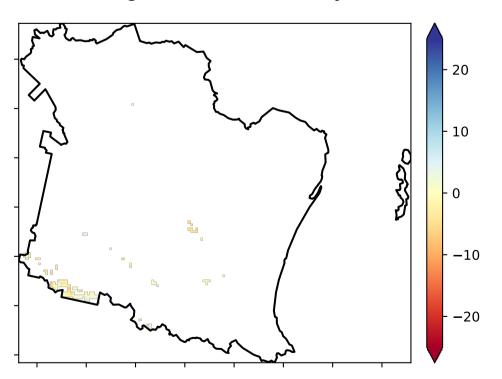


### **Total Vegetation Cover [%]**



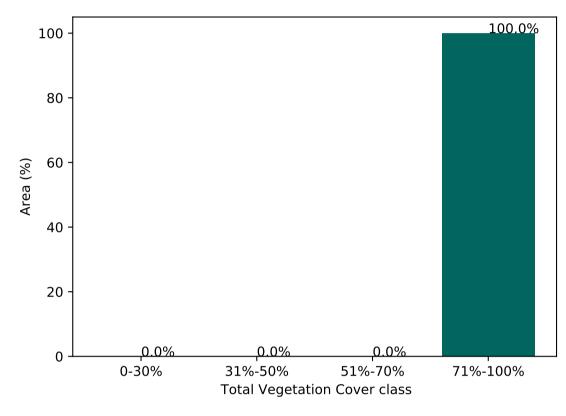


### Total Vegetation Cover Anomaly [%]

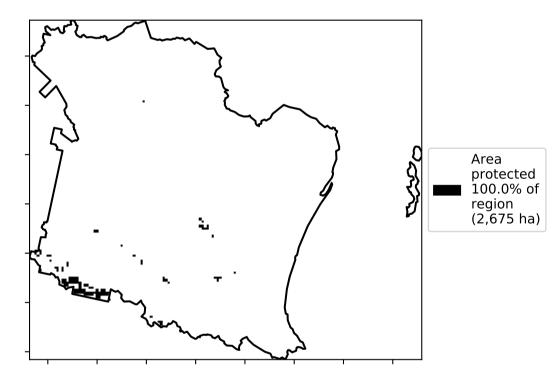


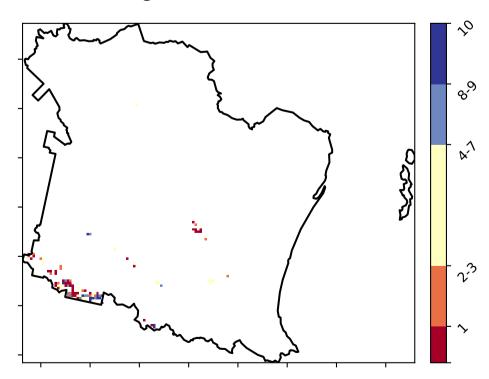
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





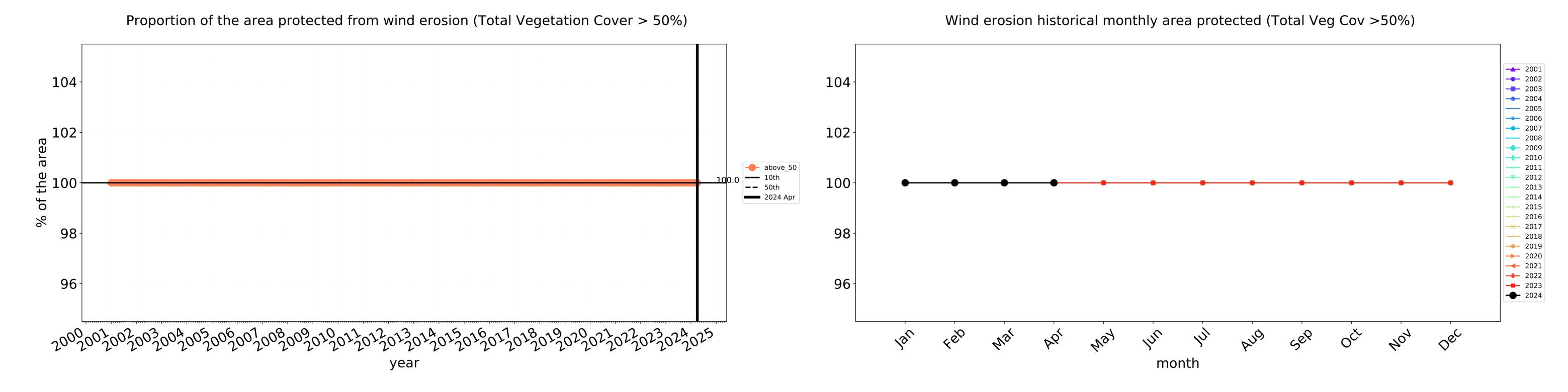


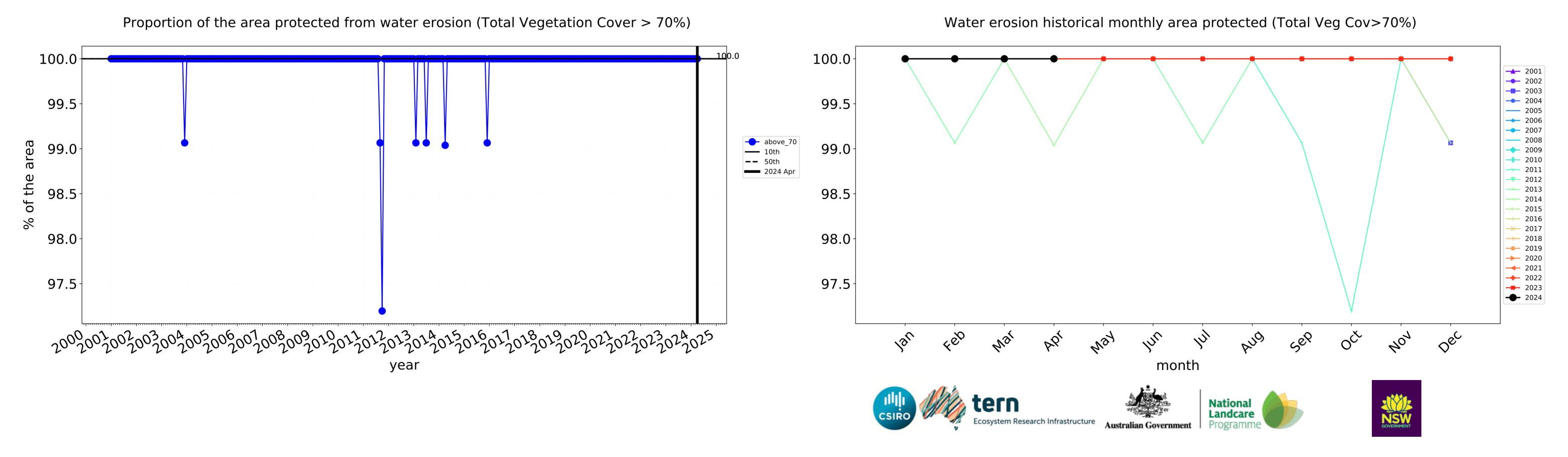


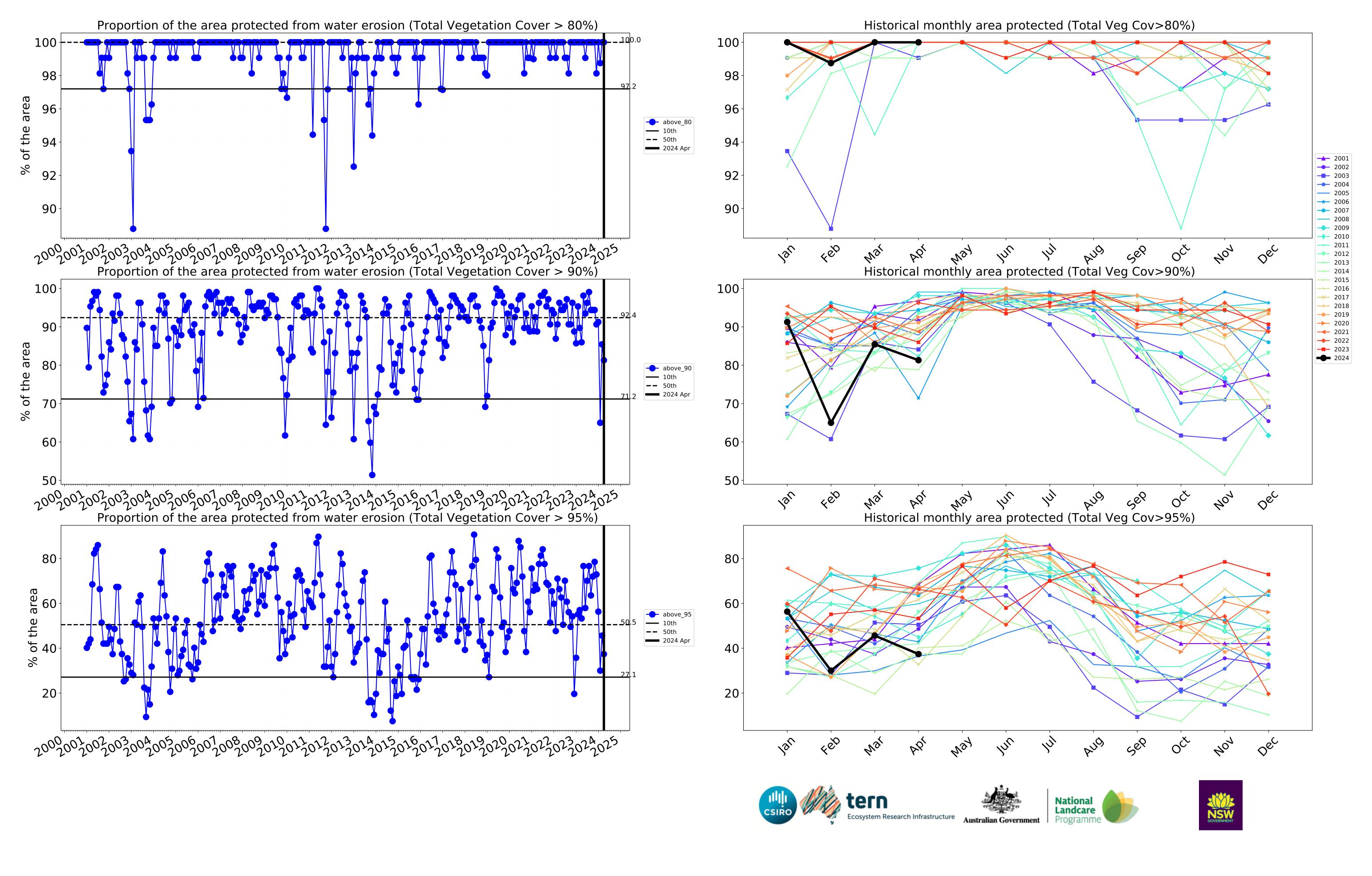




### **Grazing Woodland forest timeseries**







### **Grazing - 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)

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

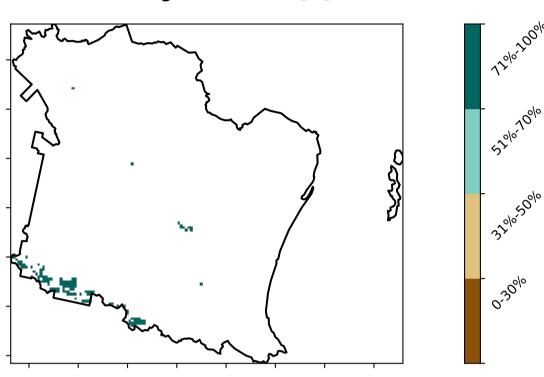
pixel. The mean

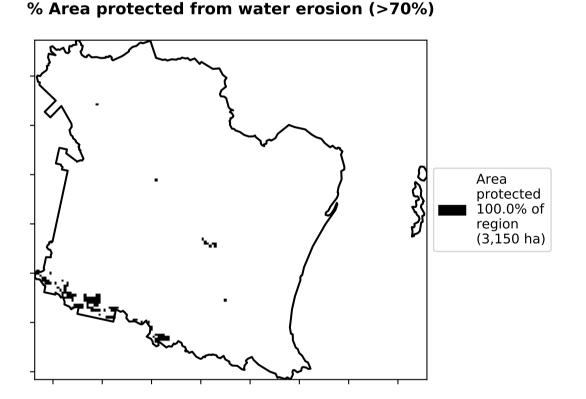
using baseline from 2001 to 2019.

is only for the month of the map

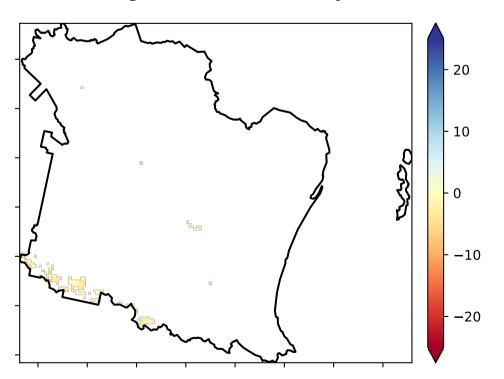


### **Total Vegetation Cover [%]**



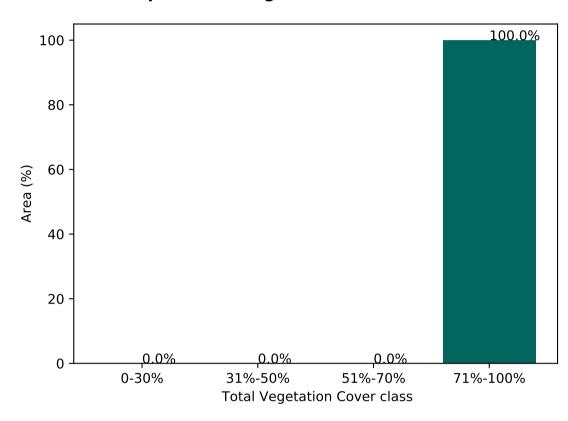


Total Vegetation Cover Anomaly [%]

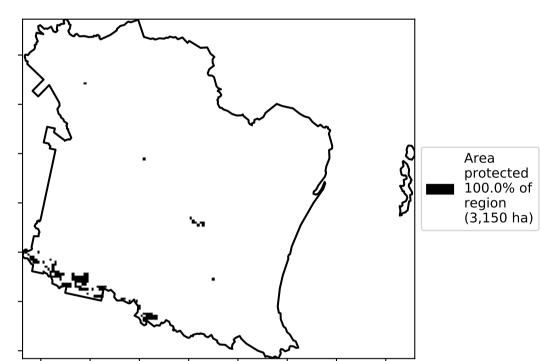


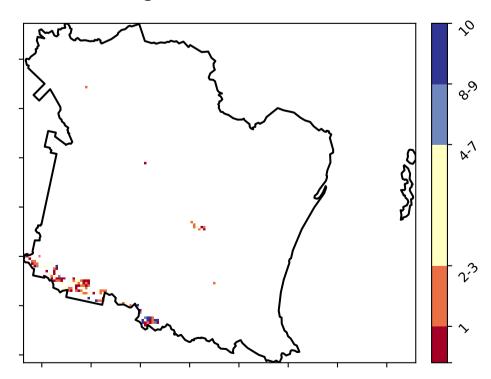
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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



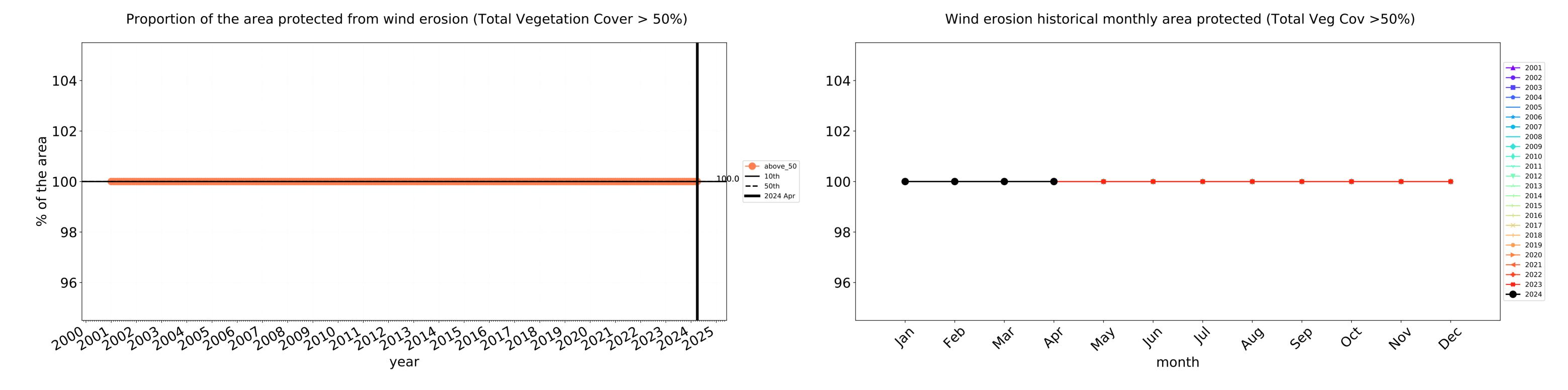


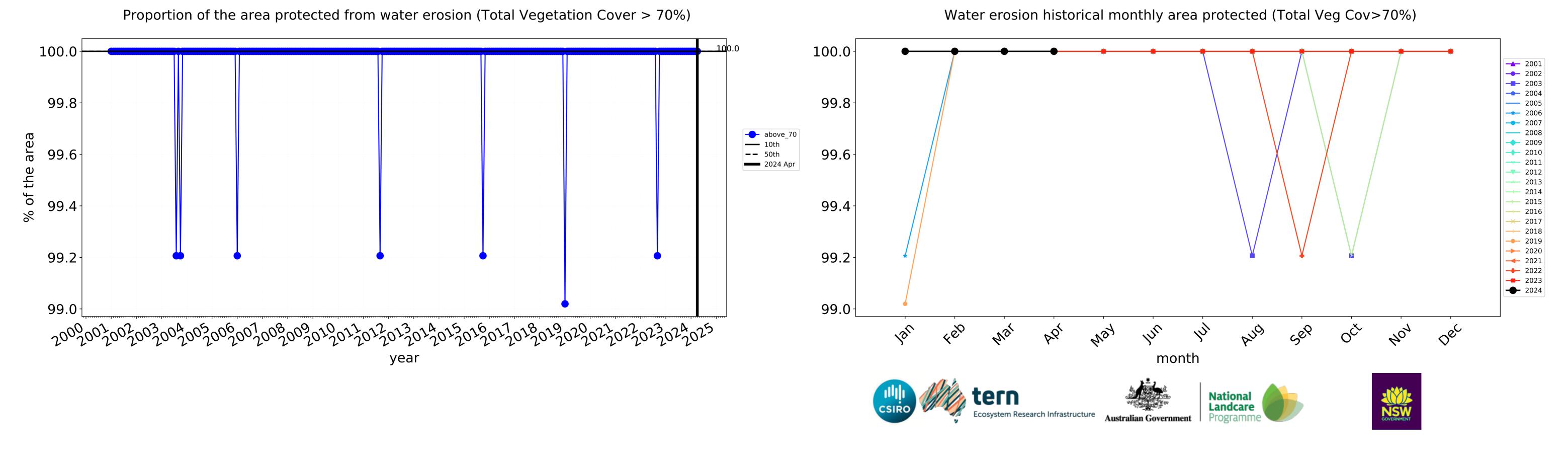


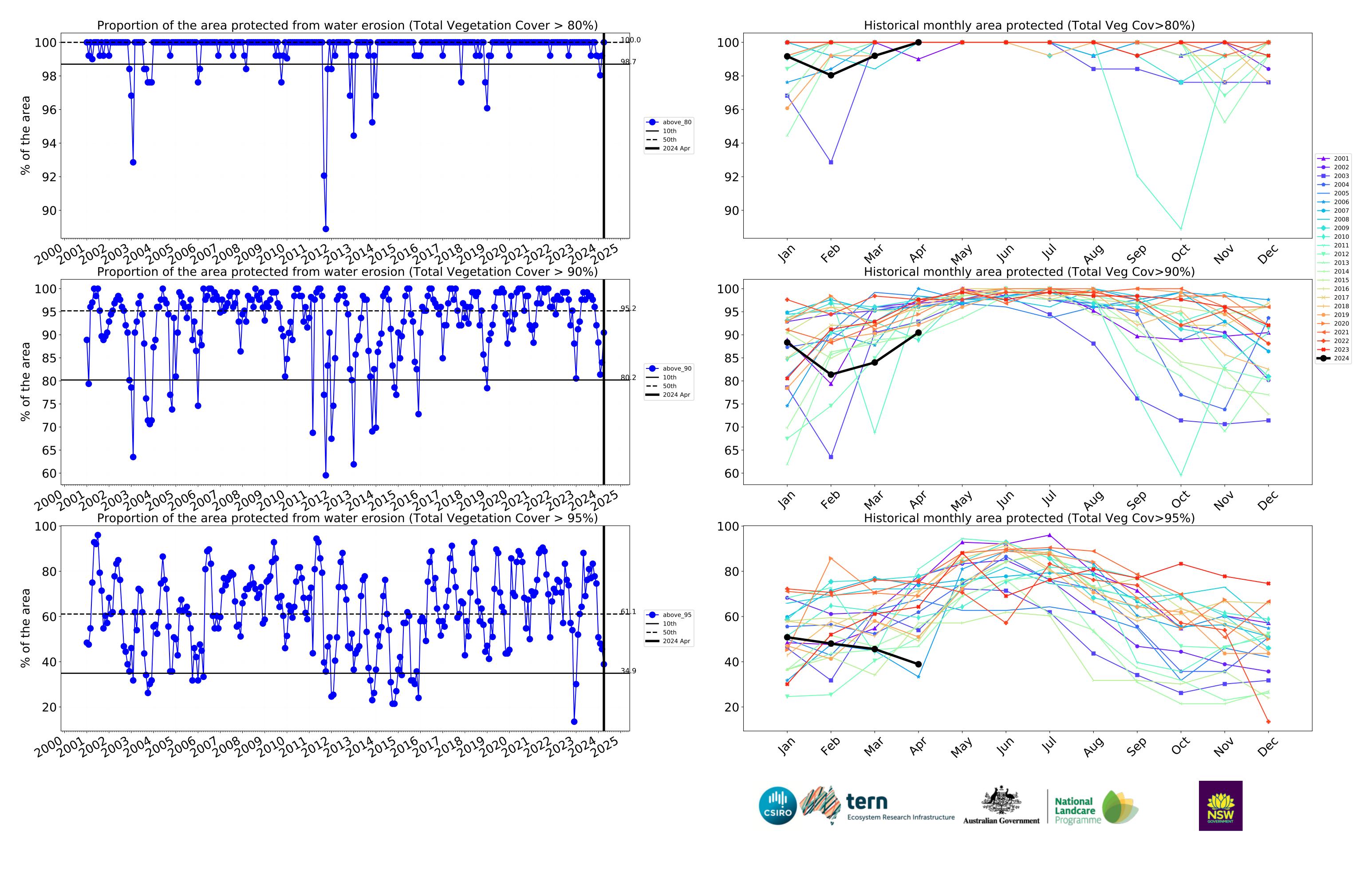






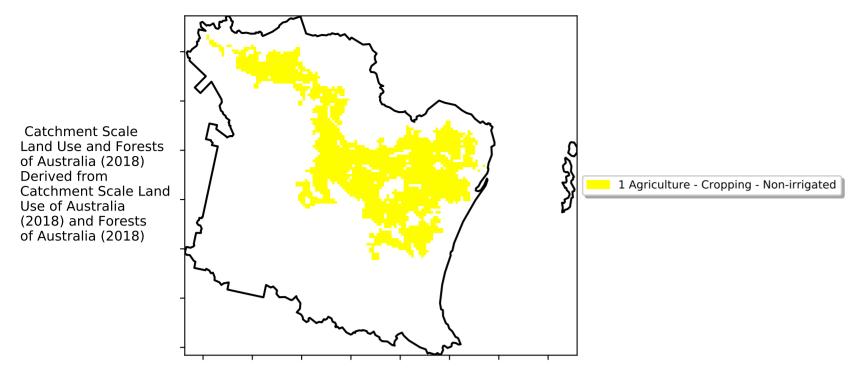




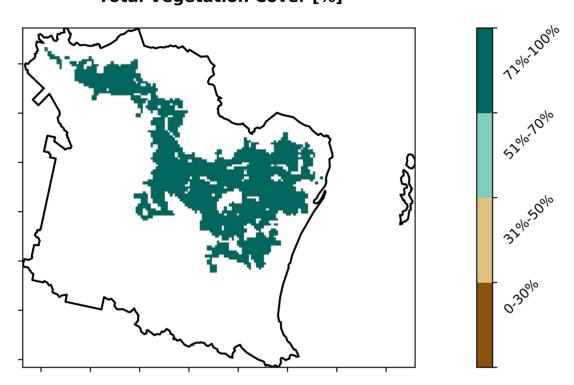


### **Cropping**

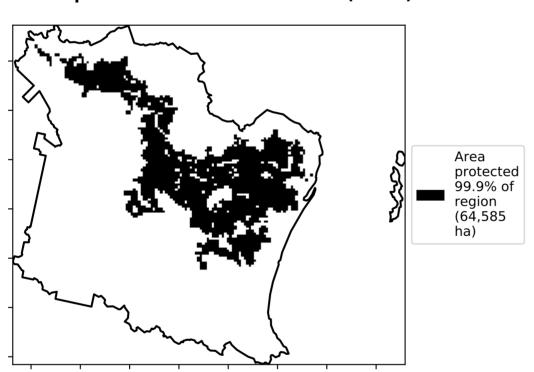
### Land use and forest cover



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



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

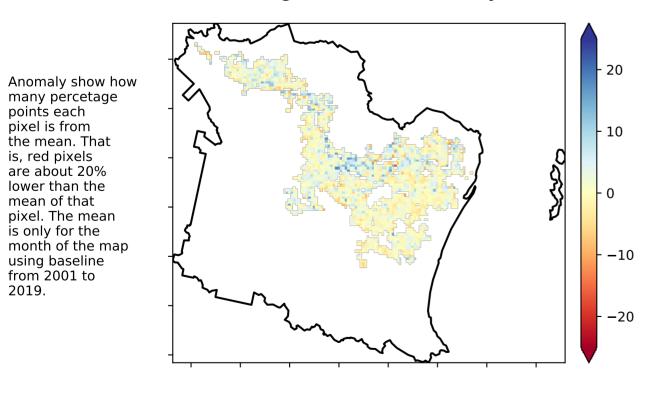


### **Total Vegetation Cover Anomaly [%]**

the mean. That is, red pixels are about 20%

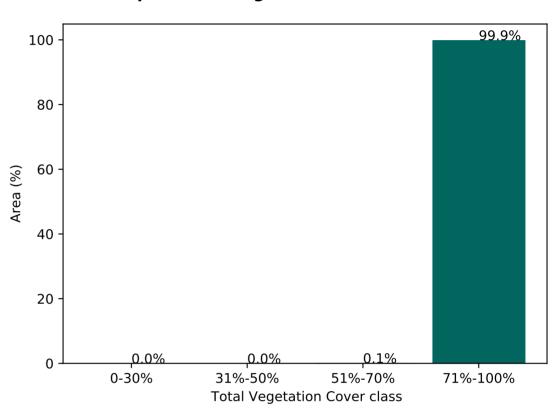
lower than the mean of that pixel. The mean

is only for the month of the map using baseline from 2001 to 2019.

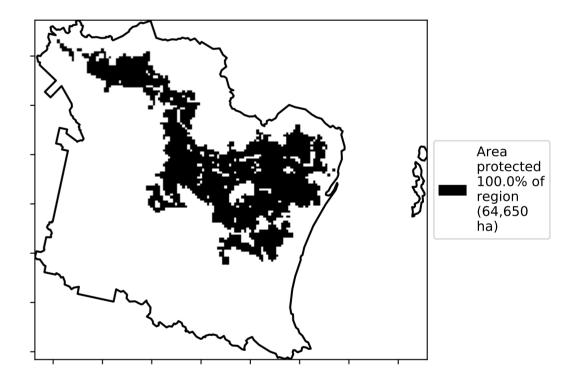


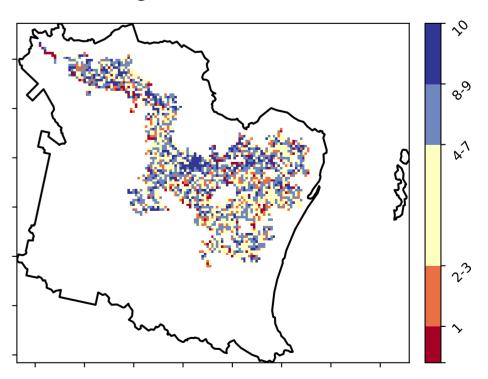
Deciles show where the pixel value lies in the record, from highest to lowest, for that month.
That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





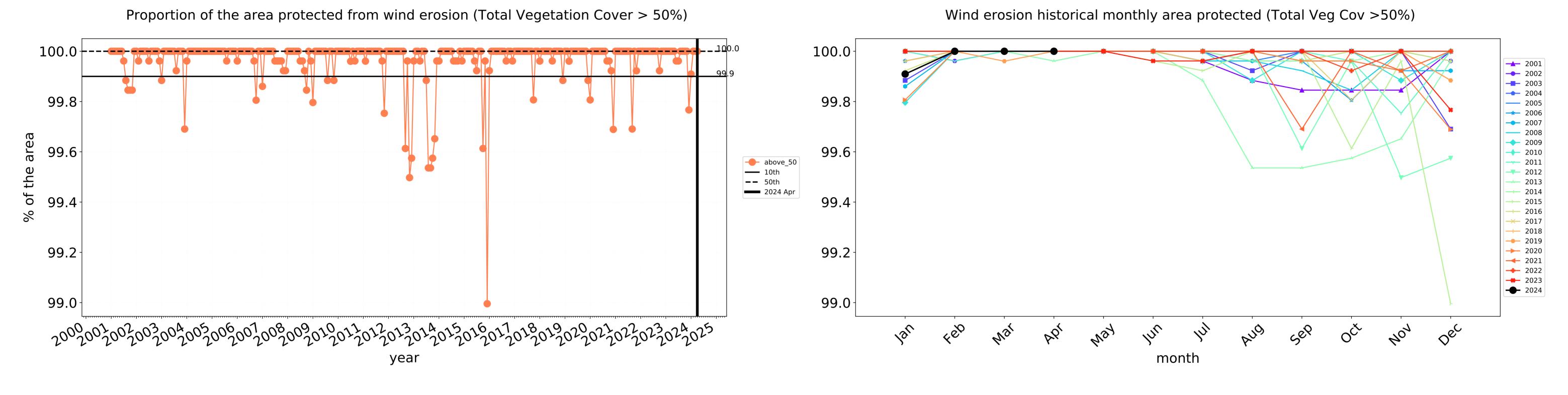


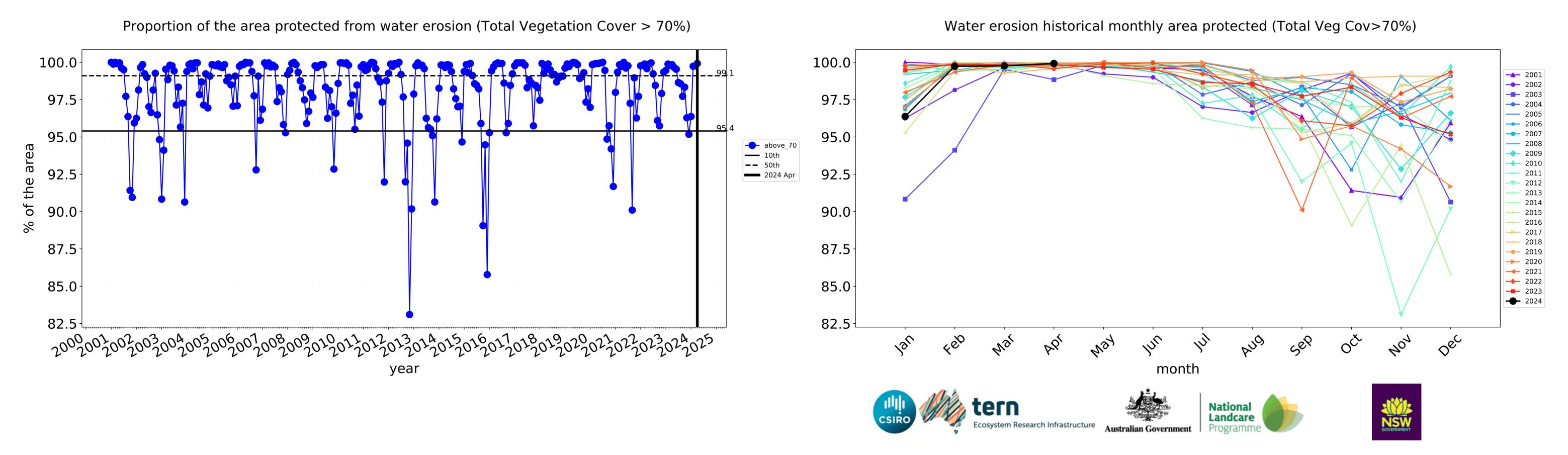


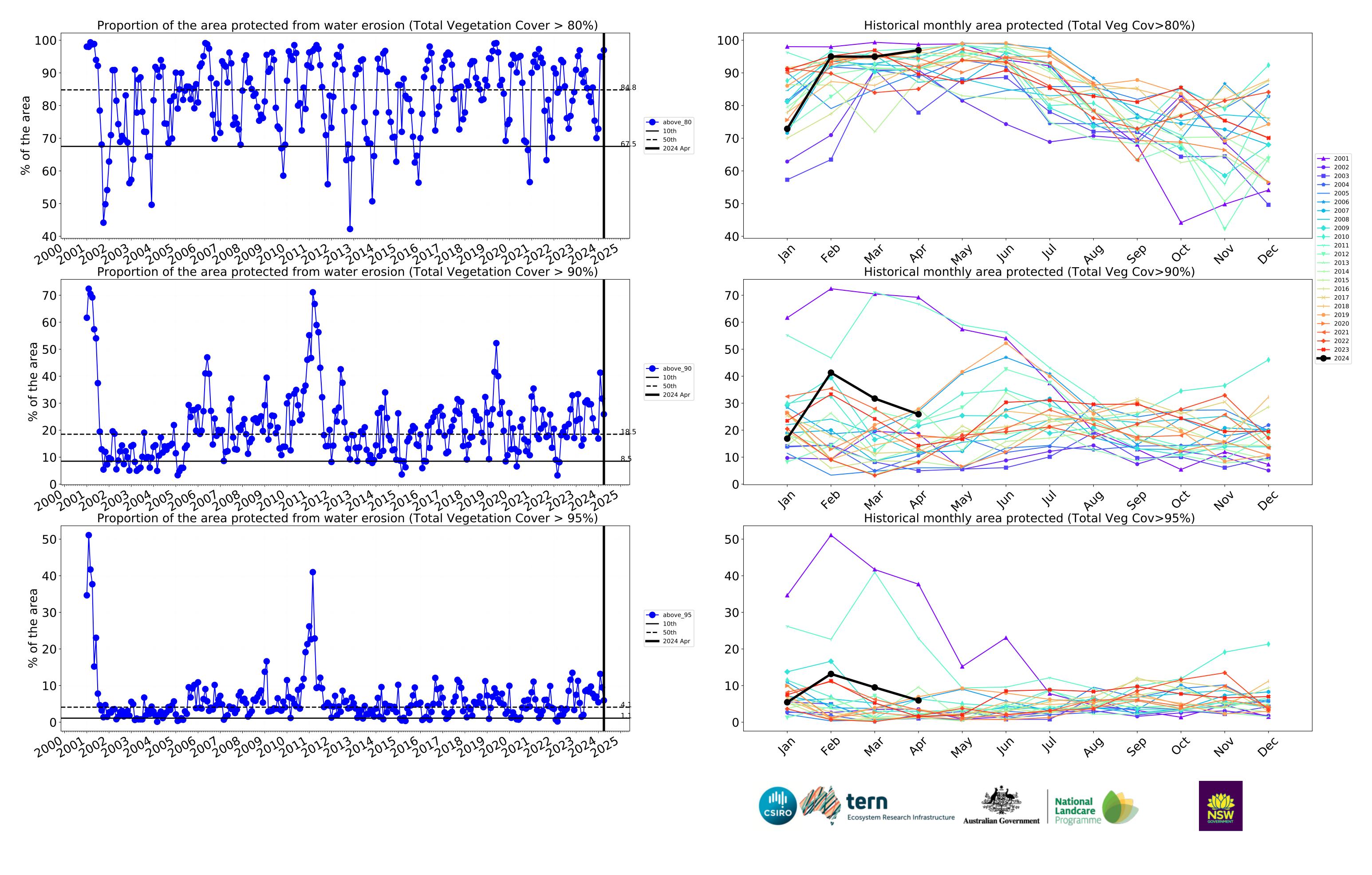




### **Cropping timeseries**





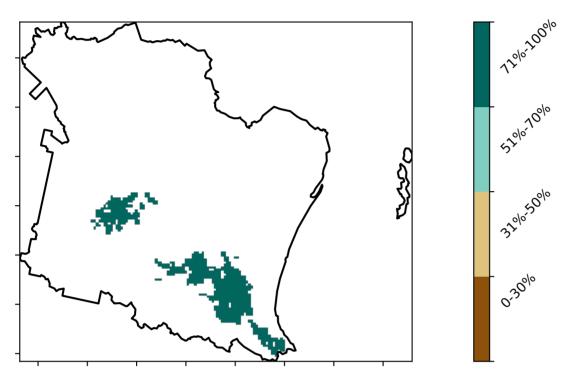


### **Irrigation**

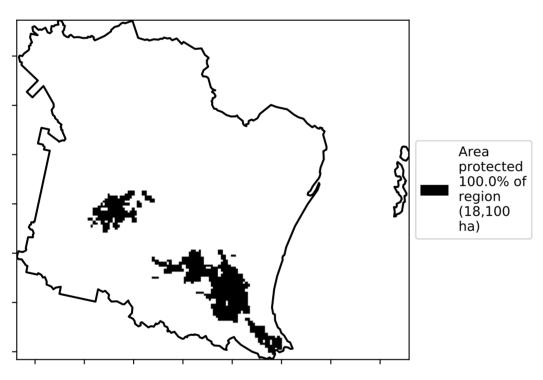
### Land use and forest cover

### 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 - Cropping - Irrigated

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



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



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

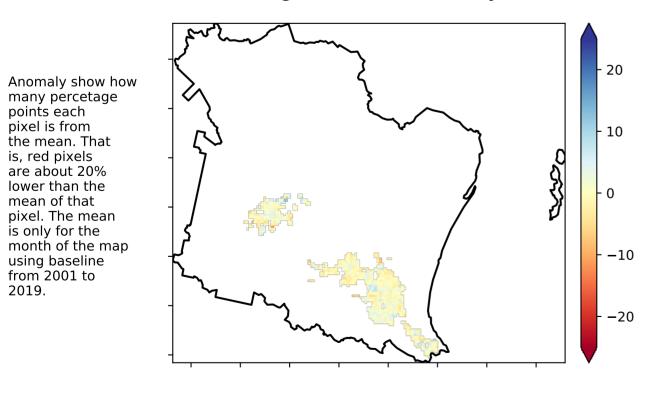
the mean. That

are about 20% lower than the

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

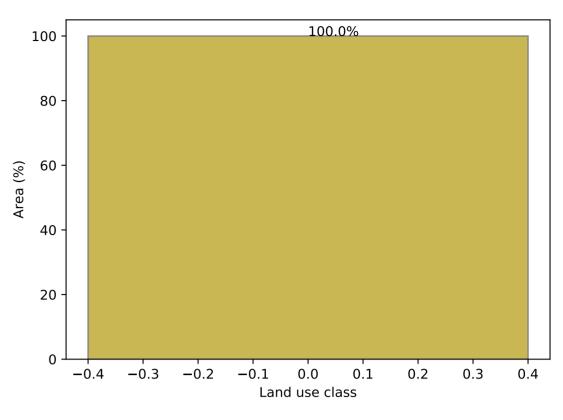
using baseline from 2001 to 2019.

is, red pixels

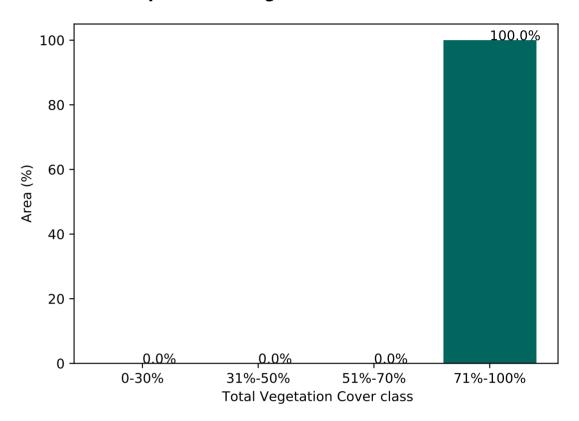


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

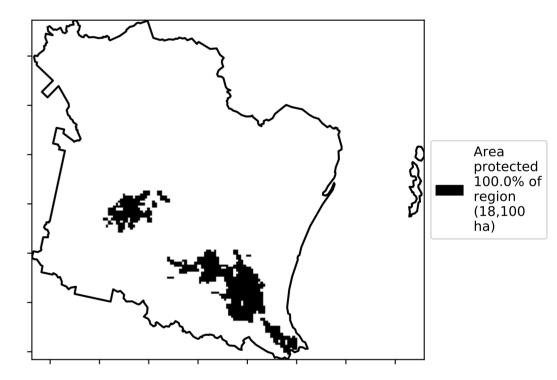
### Proportion of each land class in area

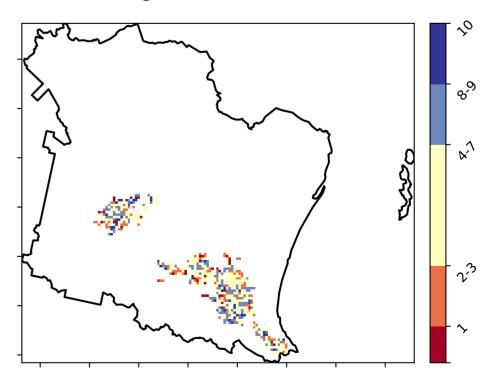


Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





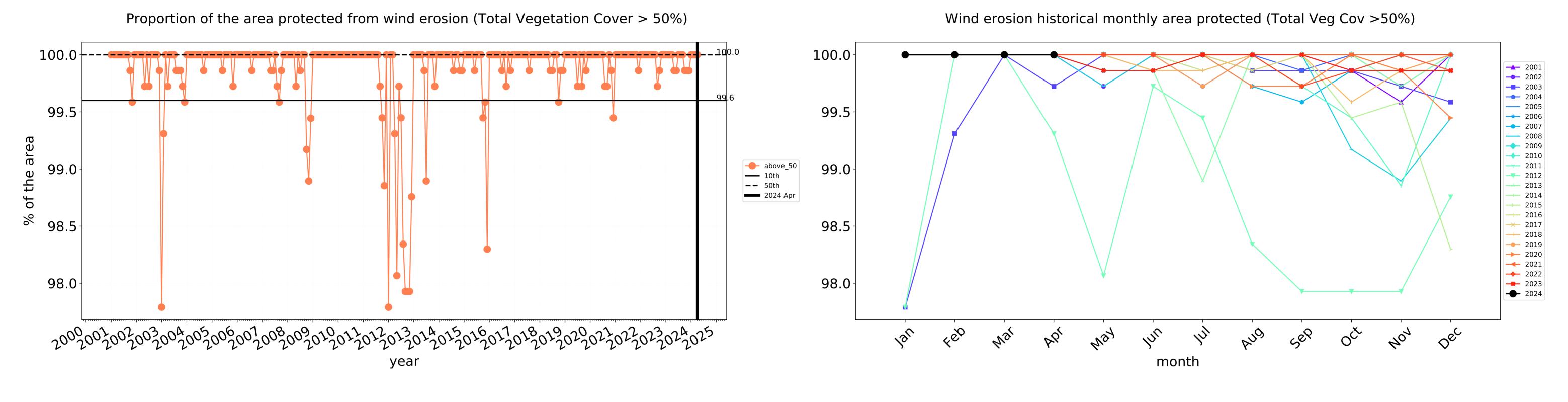


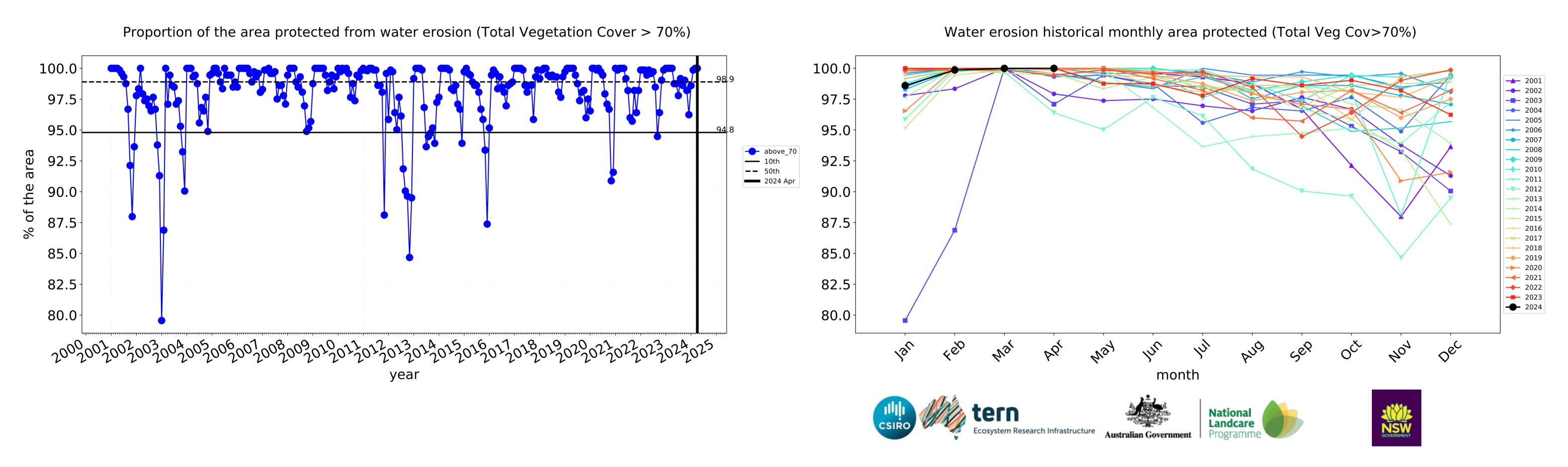


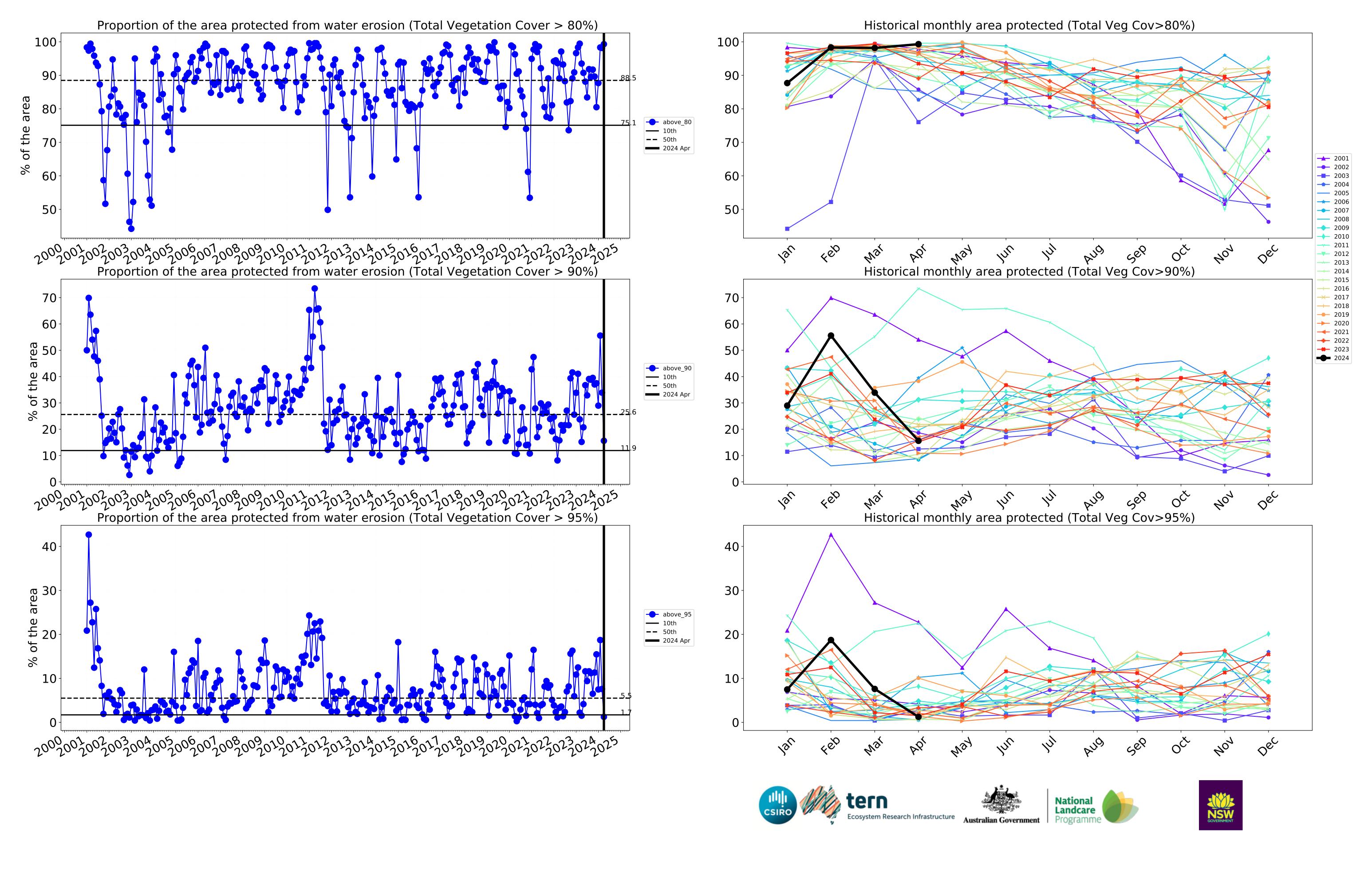




### Irrigation timeseries

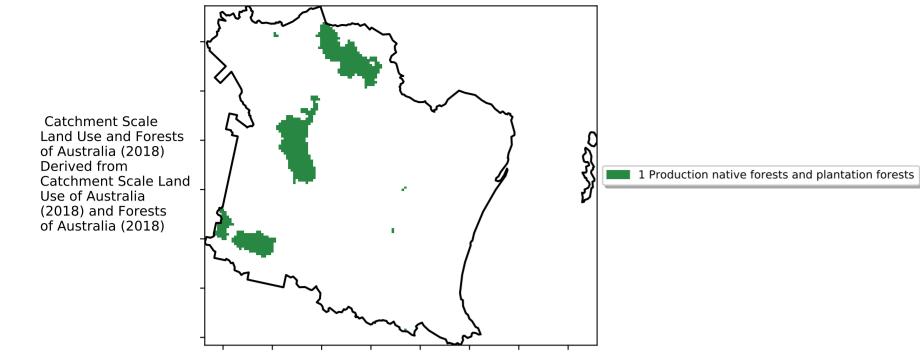




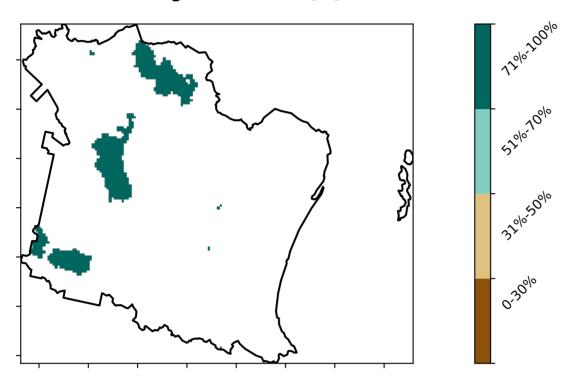


### **Production native forests and plantation forests**

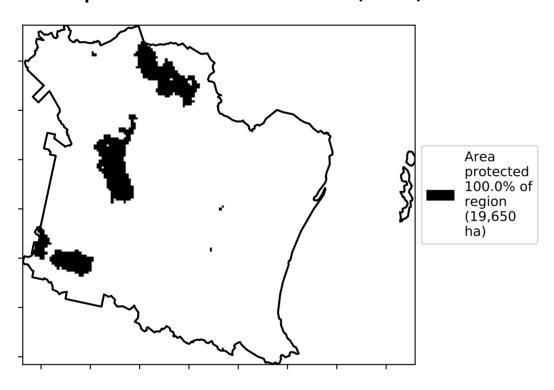
### Land use and forest cover



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



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



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

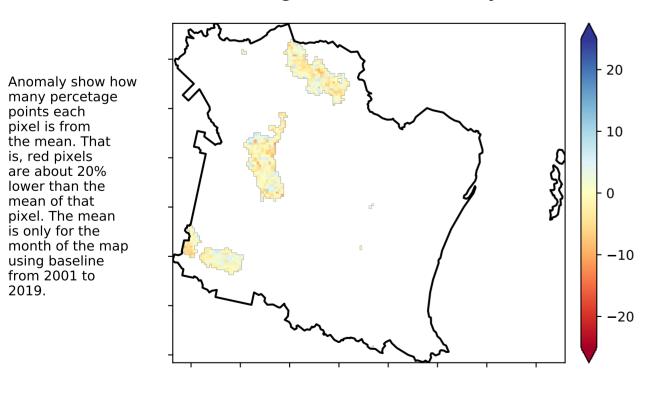
the mean. That is, red pixels

are about 20% lower than the mean of that

pixel. The mean

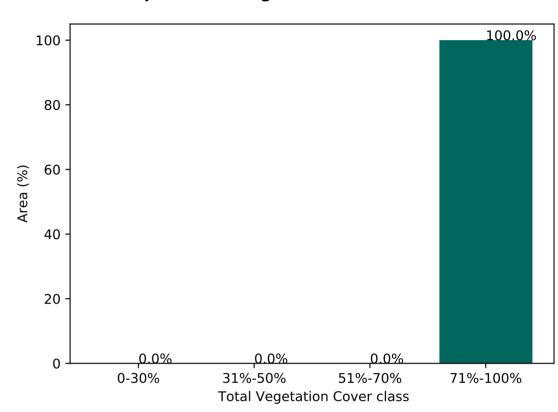
using baseline from 2001 to 2019.

is only for the month of the map

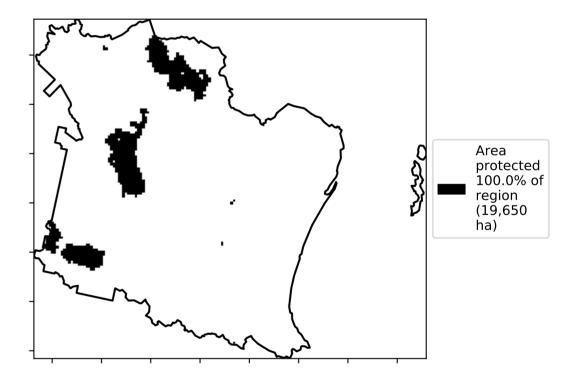


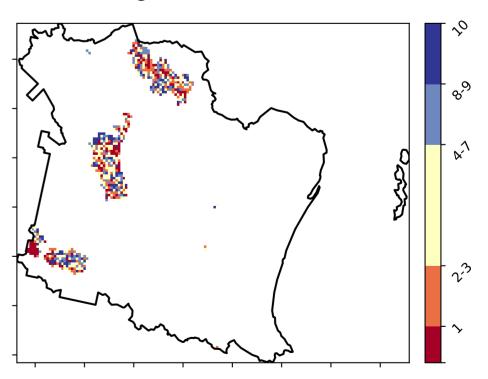
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





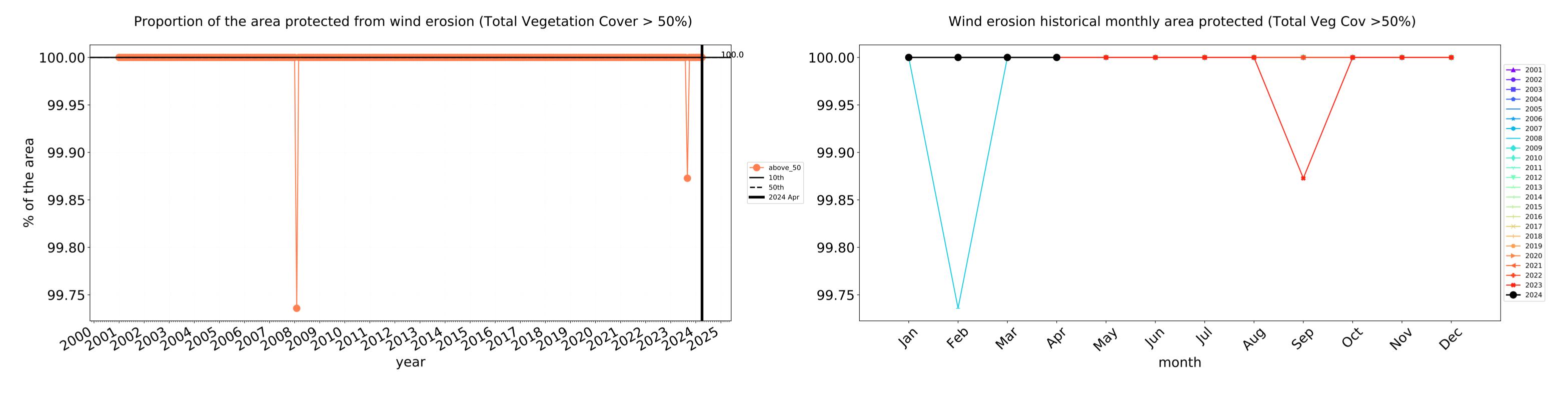


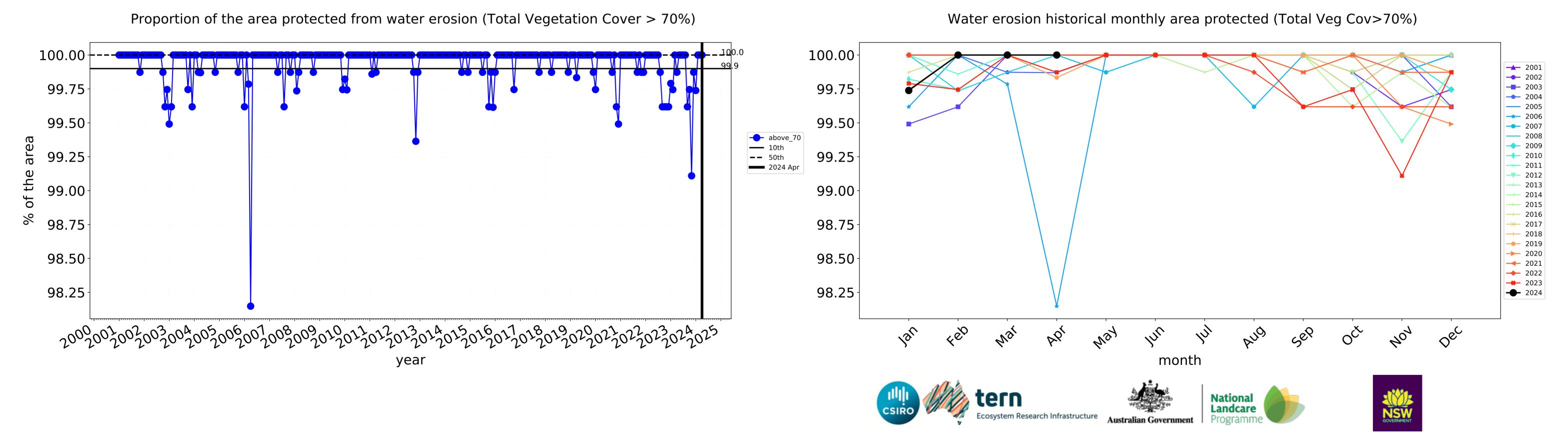


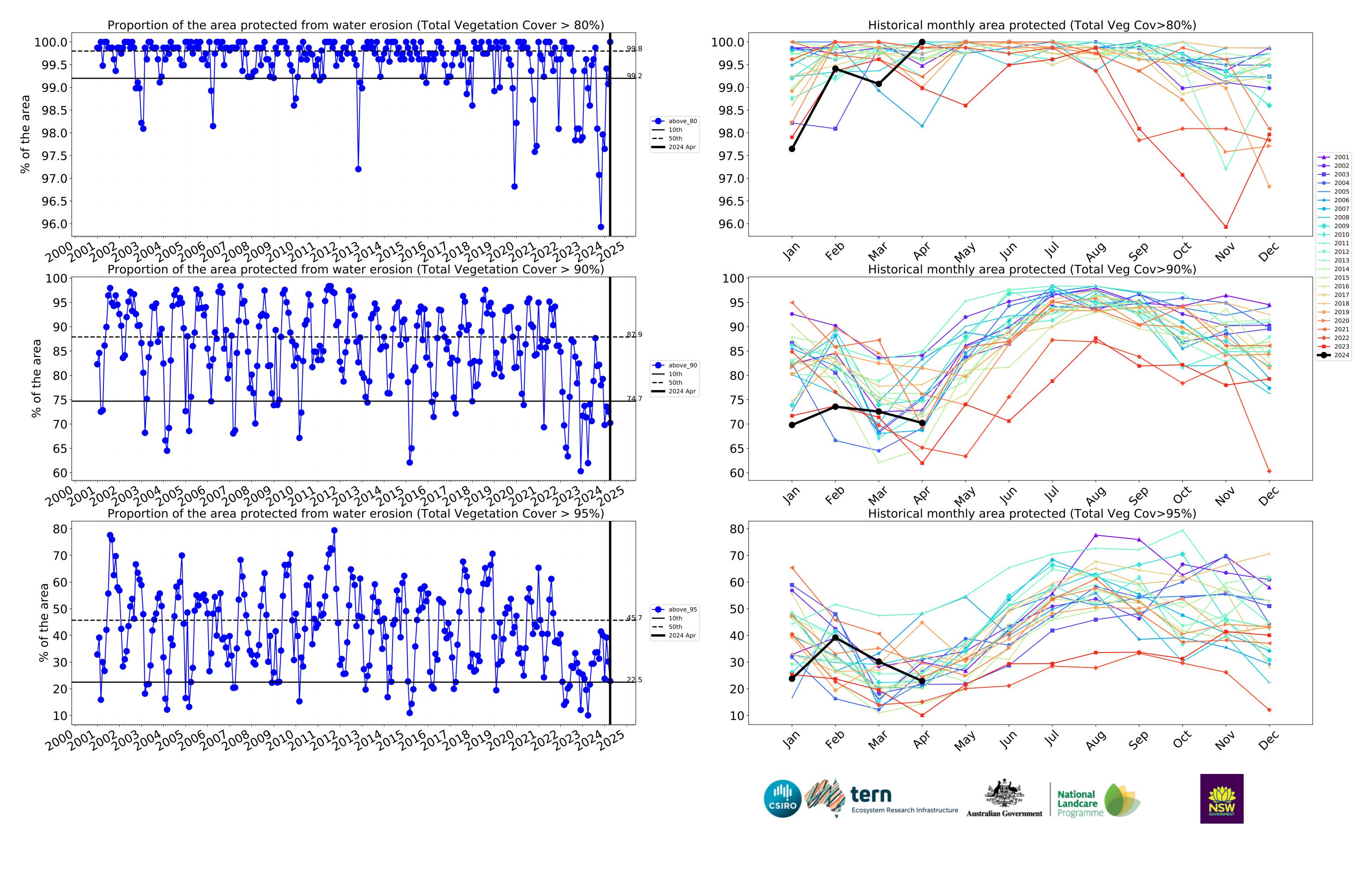




### **Production native forests and plantation forests timeseries**







### Hinchinbrook\_(S) (278,550 ha and no data 2,112 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	278,550	100.0% 278,500	99.9% 278,275	99.4% 276,775	96.7% 269,400	54.6% 152,200	20.8% 57,800
Conservation and natural environments	130,875	100.0% 130,850	99.9% 130,700	99.5% 130,275	98.6% 129,000	77.0% 100,800	33.3% 43,625
Conservation and natural environments Woodland forest	46,550	99.9% 46,525	99.8% 46,475	99.7% 46,400	99.1% 46,150	74.7% 34,775	23.3% 10,850
Conservation and natural environments Forest (non woodland)	82,500	100.0% 82,500	99.9% 82,425	99.5% 82,100	98.4% 81,150	79.5% 65,550	39.5% 32,600
Agriculture	104,700	100.0% 104,700	100.0% 104,700	100.0% 104,650	97.8% 102,350	29.2% 30,600	7.1% 7,450
Grazing	21,925	100.0% 21,925	100.0% 21,925	100.0% 21,925	98.9% 21,675	50.2% 11,000	15.4% 3,375
Grazing non forest	16,100	100.0% 16,100	100.0% 16,100	100.0% 16,100	98.4% 15,850	37.1% 5,975	7.1% 1,150
Grazing Woodland forest	2,675	100.0% 2,675	100.0% 2,675	100.0% 2,675	100.0% 2,675	81.3% 2,175	37.4% 1,000
Grazing - Forest (non woodland)	3,150	100.0% 3,150	100.0% 3,150	100.0% 3,150	100.0% 3,150	90.5% 2,850	38.9% 1,225
Cropping	64,650	100.0% 64,650	100.0% 64,650	99.9% 64,600	96.9% 62,675	25.9% 16,750	6.0% 3,850
Irrigation	18,100	100.0% 18,100	100.0% 18,100	100.0% 18,100	99.3% 17,975	15.6% 2,825	1.2% 225
Production native forests and plantation forests	19,650	100.0% 19,650	100.0% 19,650	100.0% 19,650	100.0% 19,650	70.2% 13,800	22.9% 4,500







