## Total vegetation cover soil protection Region:LGA Gympie (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:

**Date: November 2022** 

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



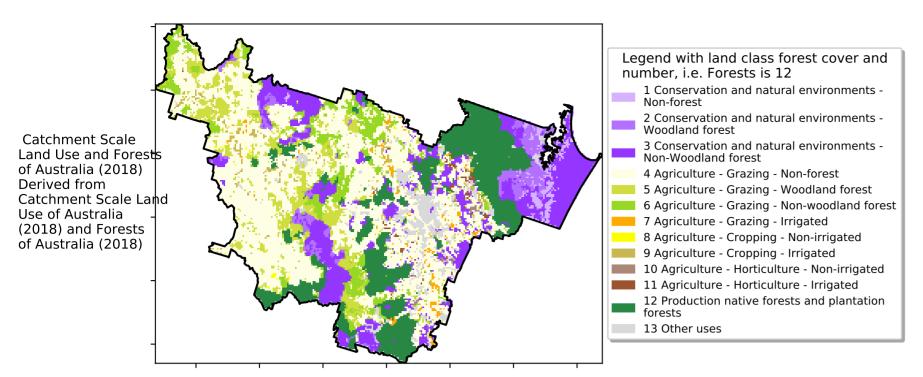




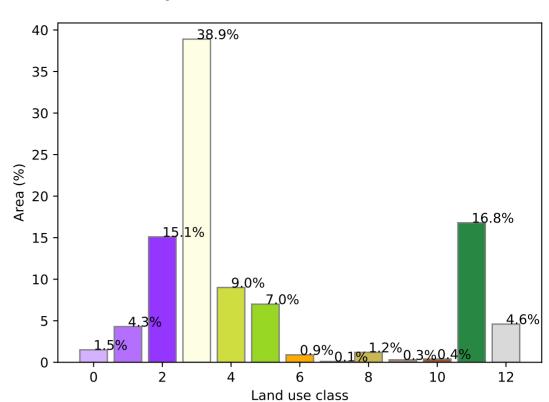


### **Vegetation Cover Nov 2022**

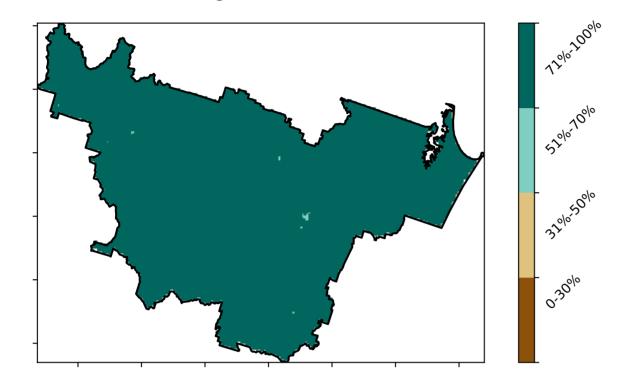
### Land use and forest cover



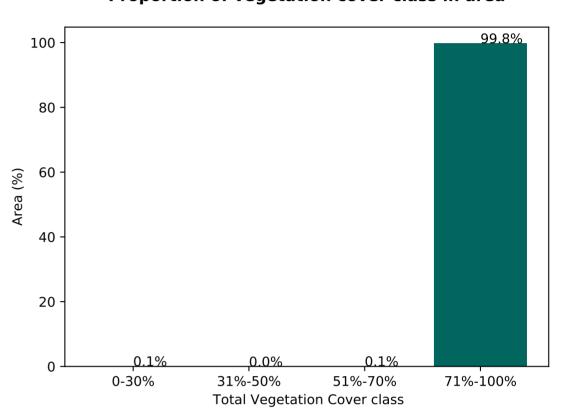
### Proportion of each land class in area



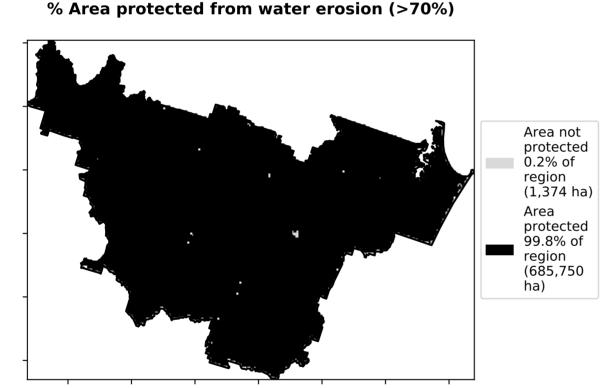
### **Total Vegetation Cover [%]**



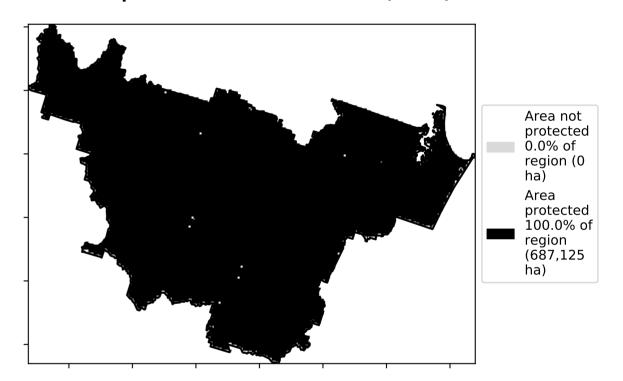
Proportion of vegetation cover class in area



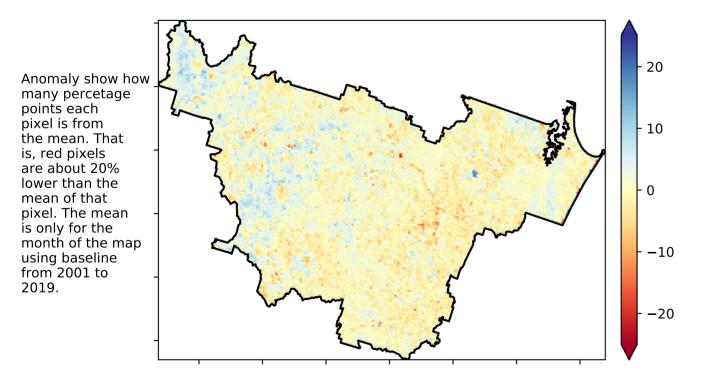
### 0/ Aven protected from water eresion (> 700/)



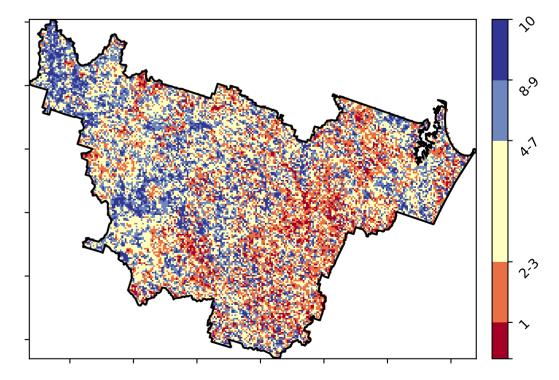
% Area protected from wind erosion (>50%)



### 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.

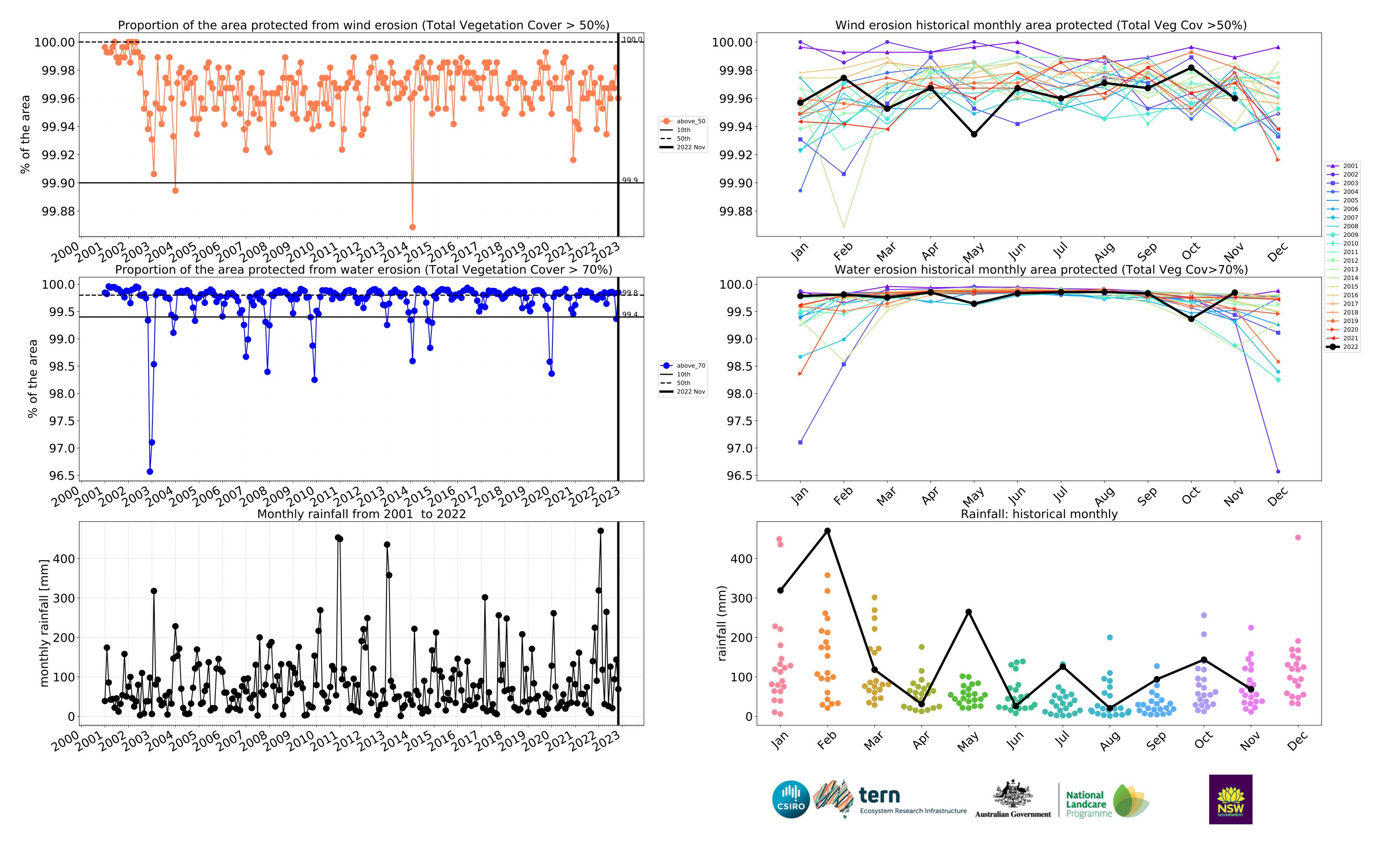


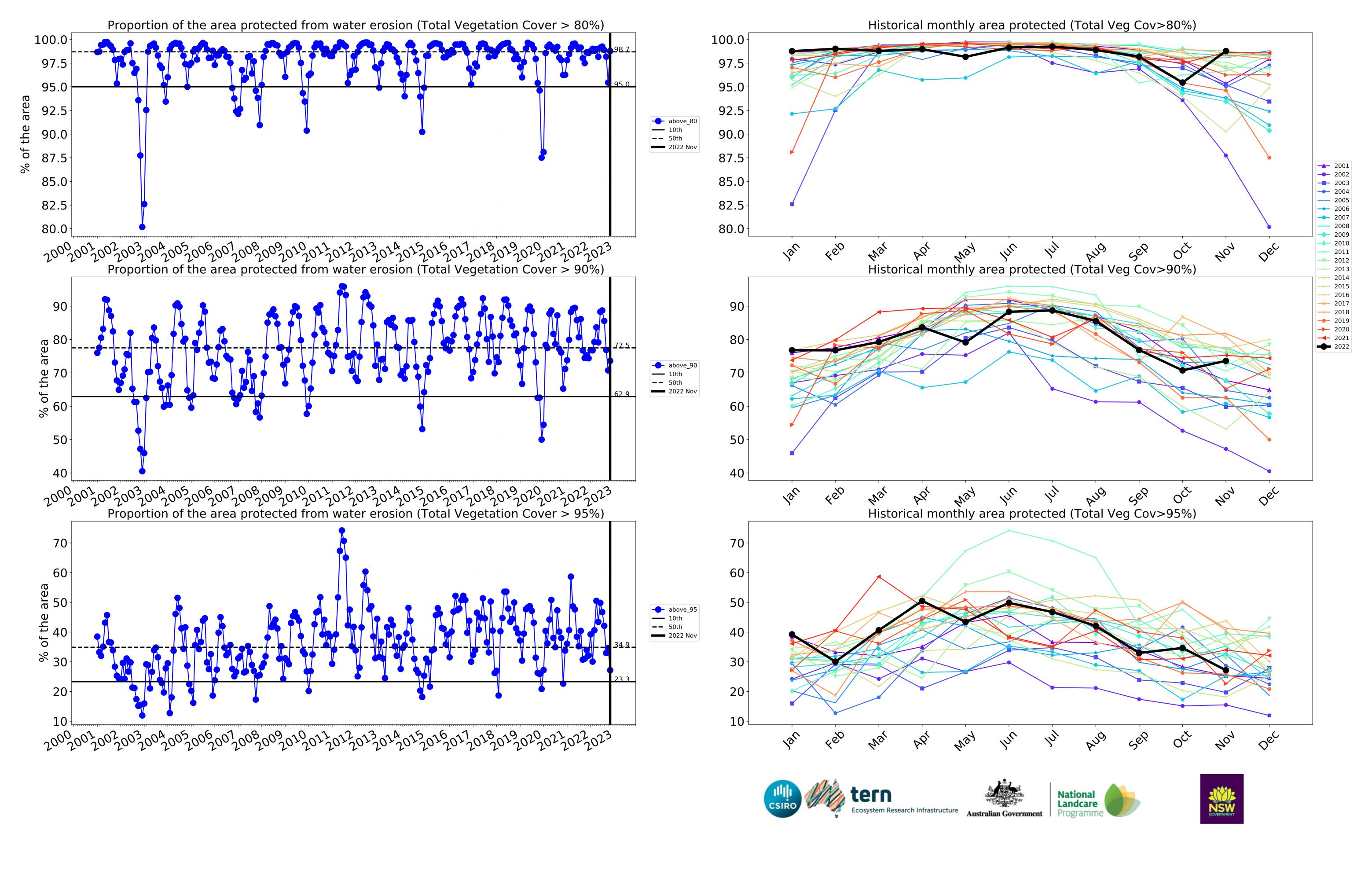




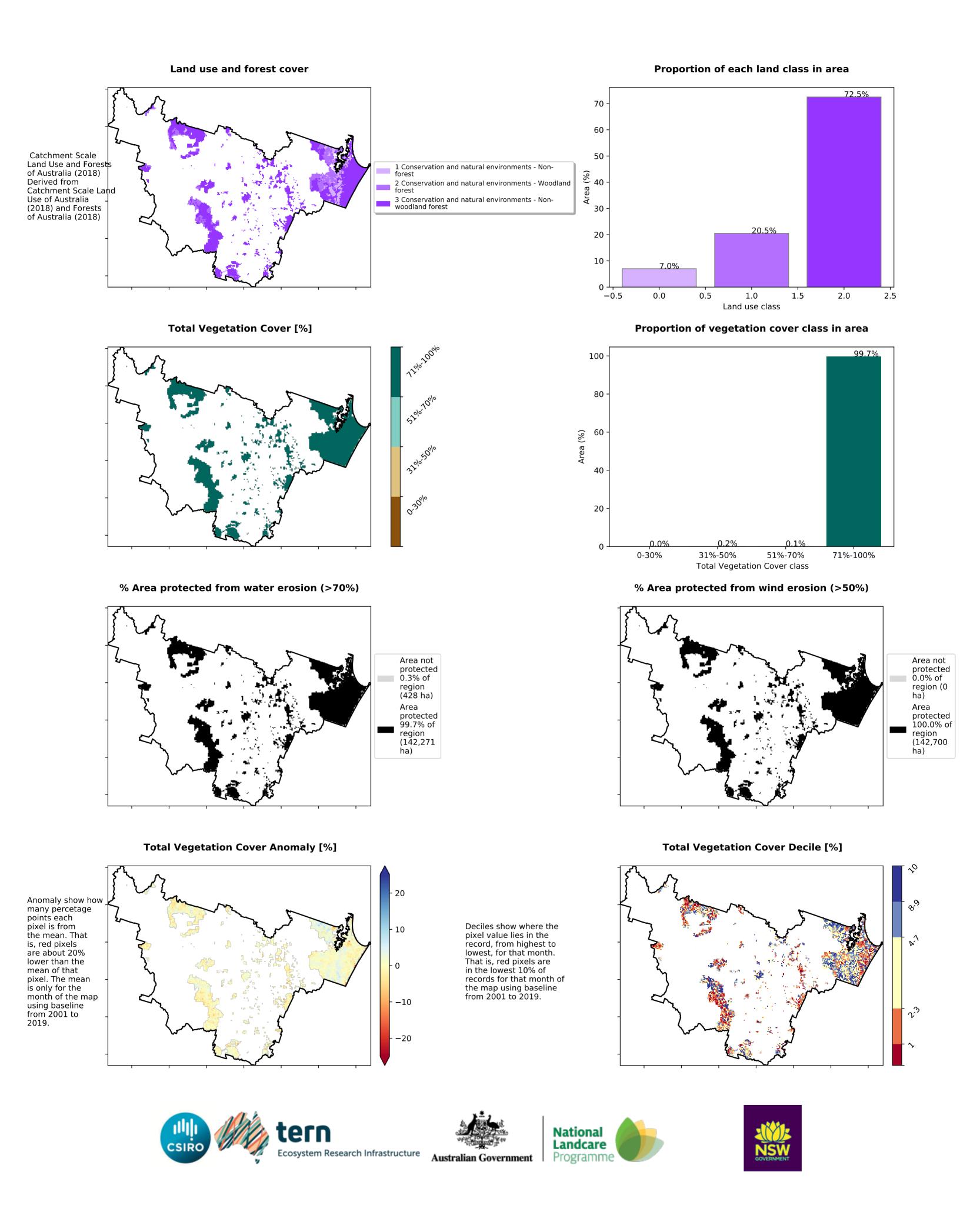




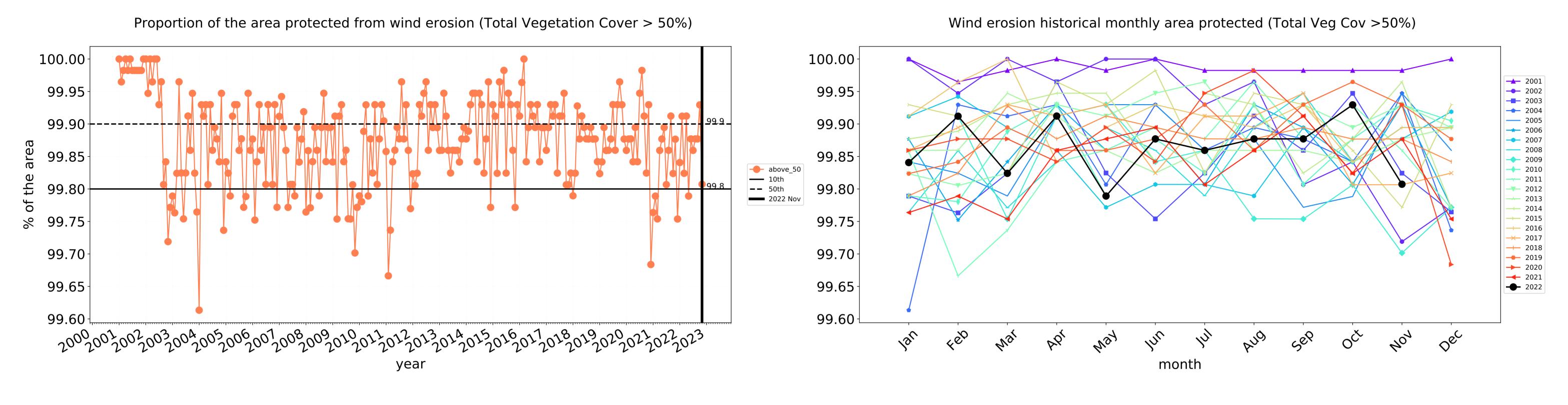


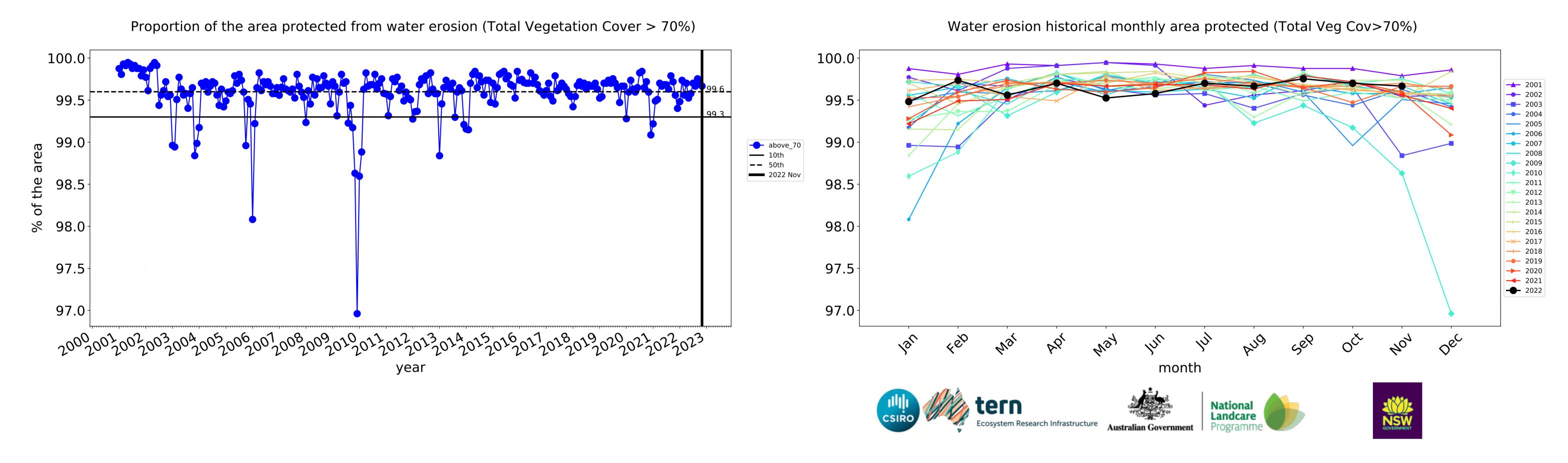


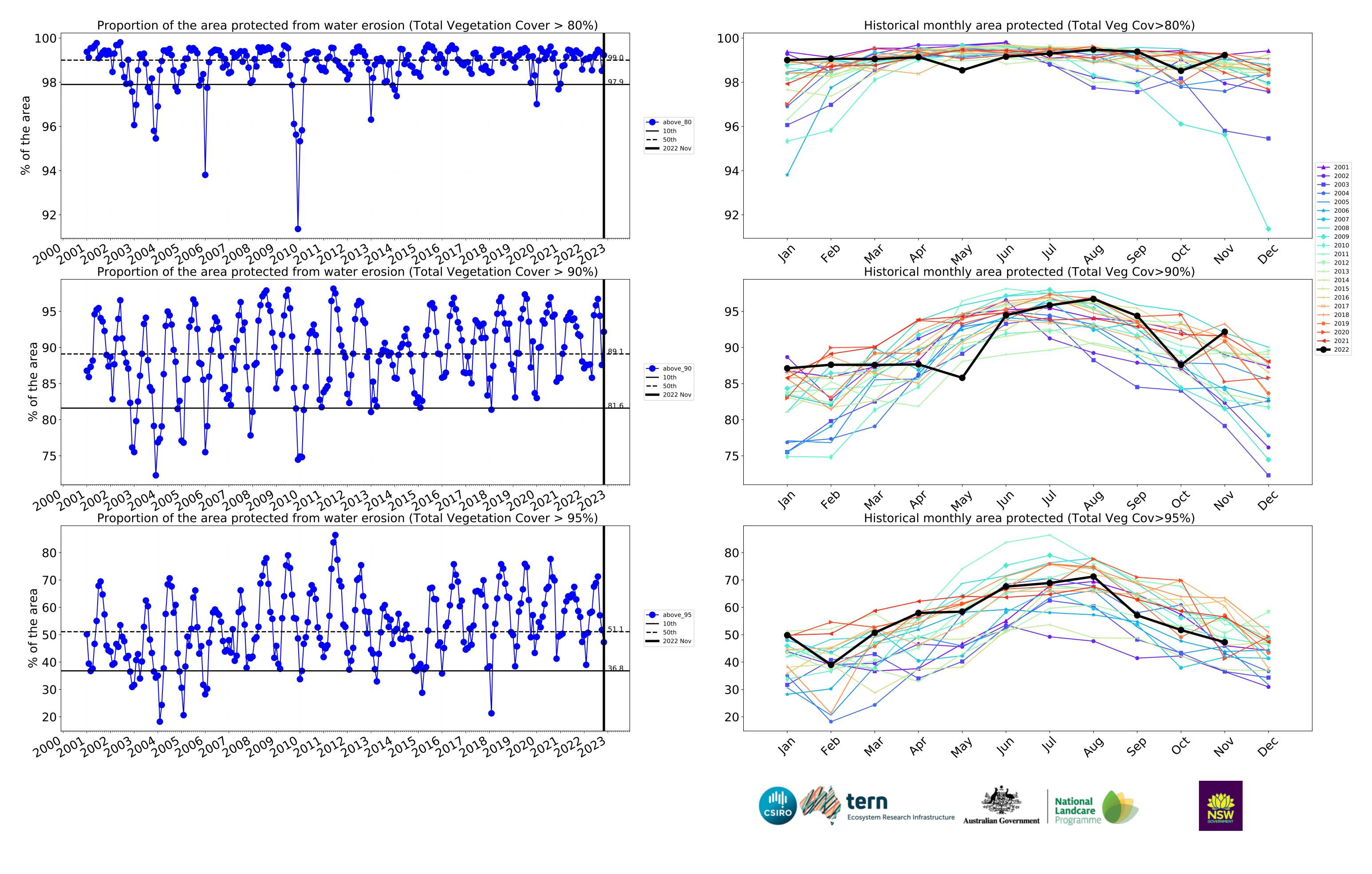
### **Conservation and natural environments**



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



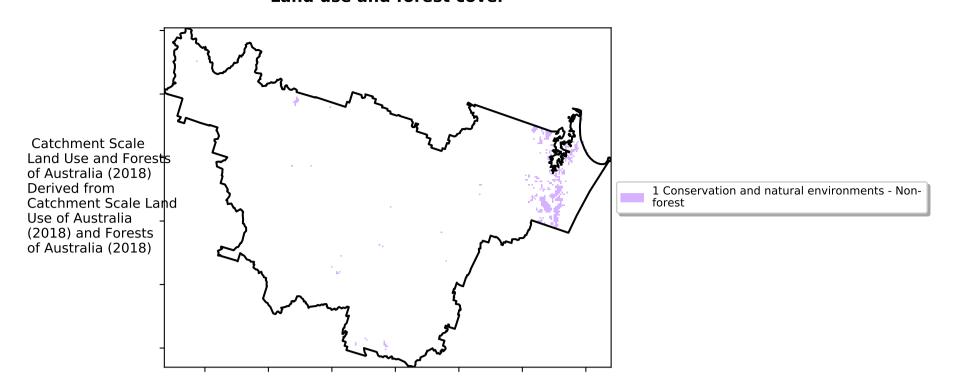




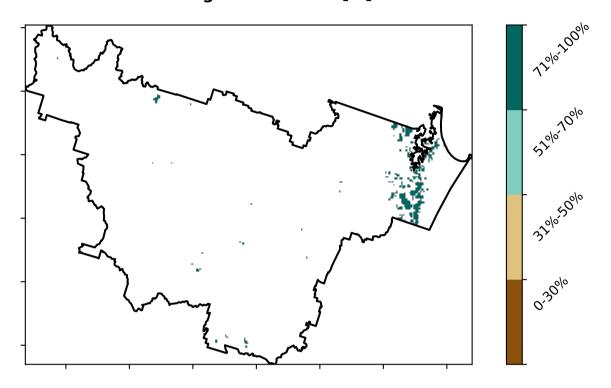
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### **Conservation and natural environments non forest**

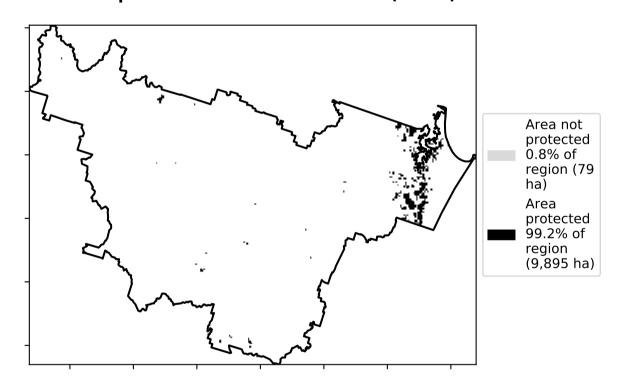
### Land use and forest cover



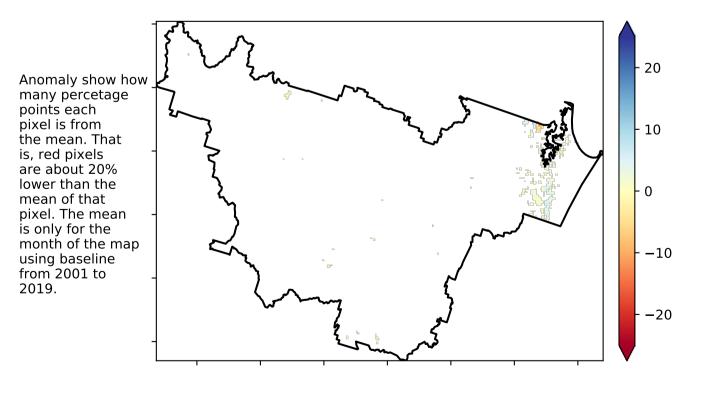
### **Total Vegetation Cover [%]**



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

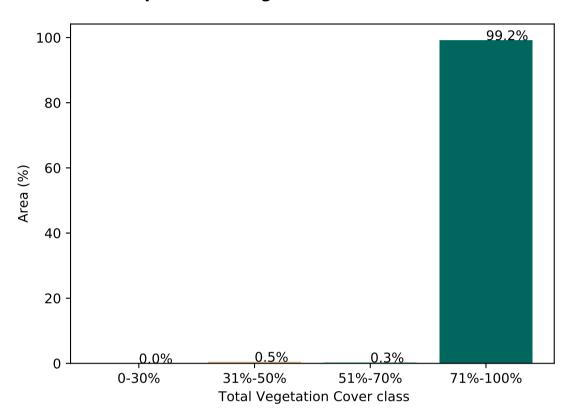


### Total Vegetation Cover Anomaly [%]

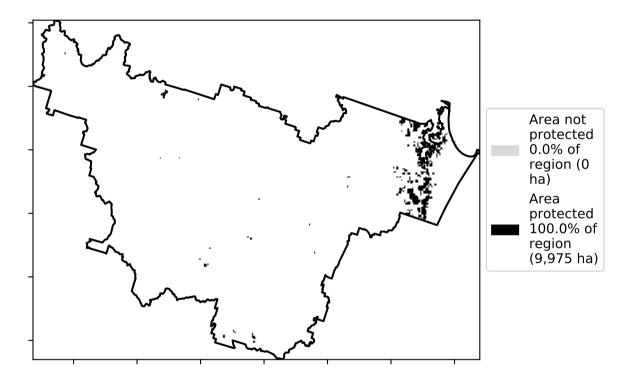


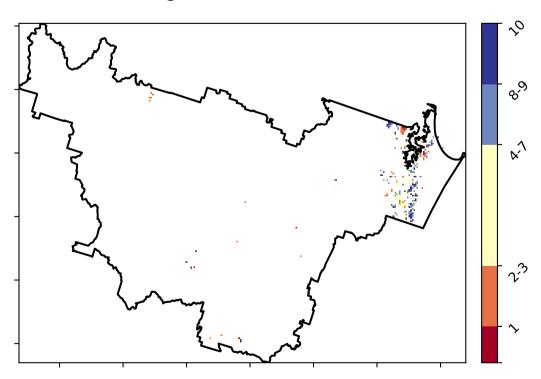
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





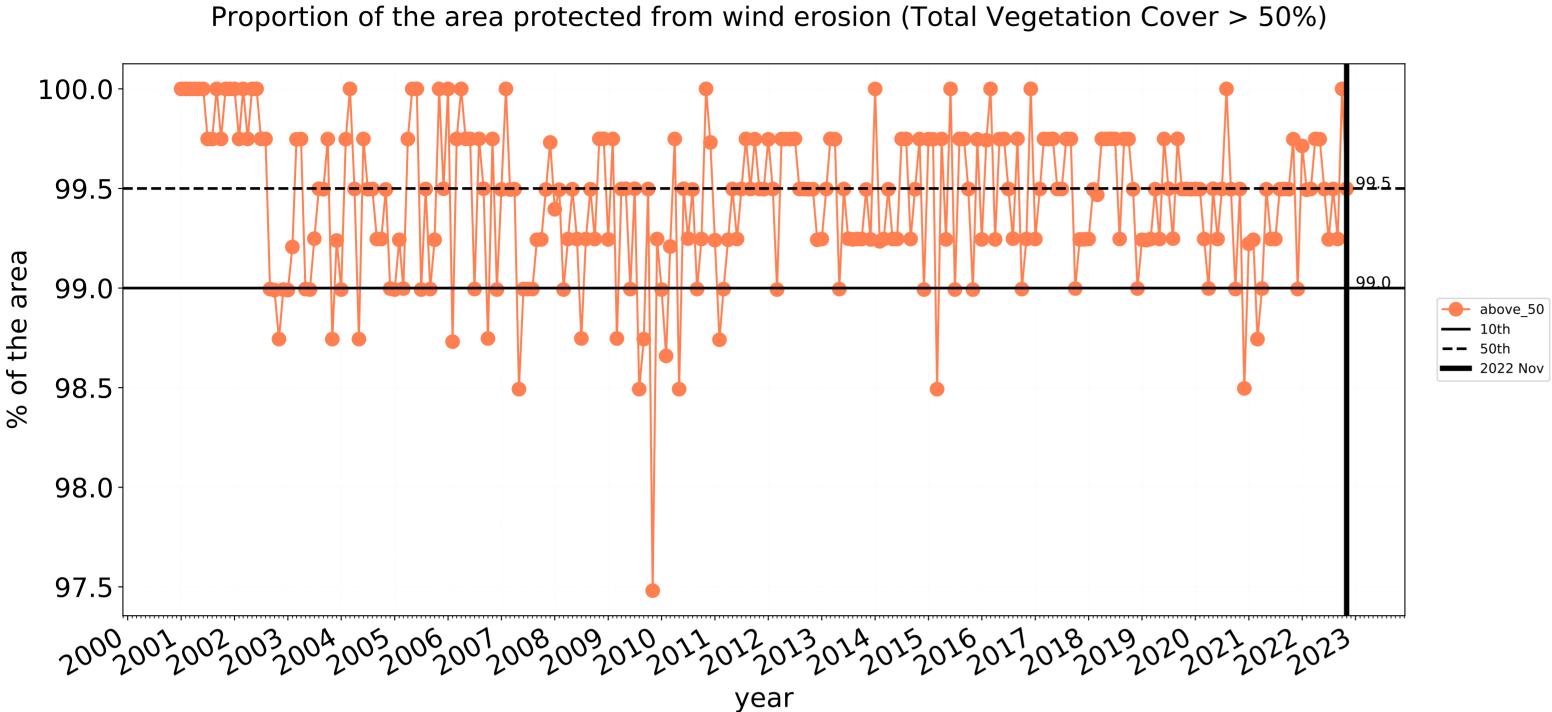


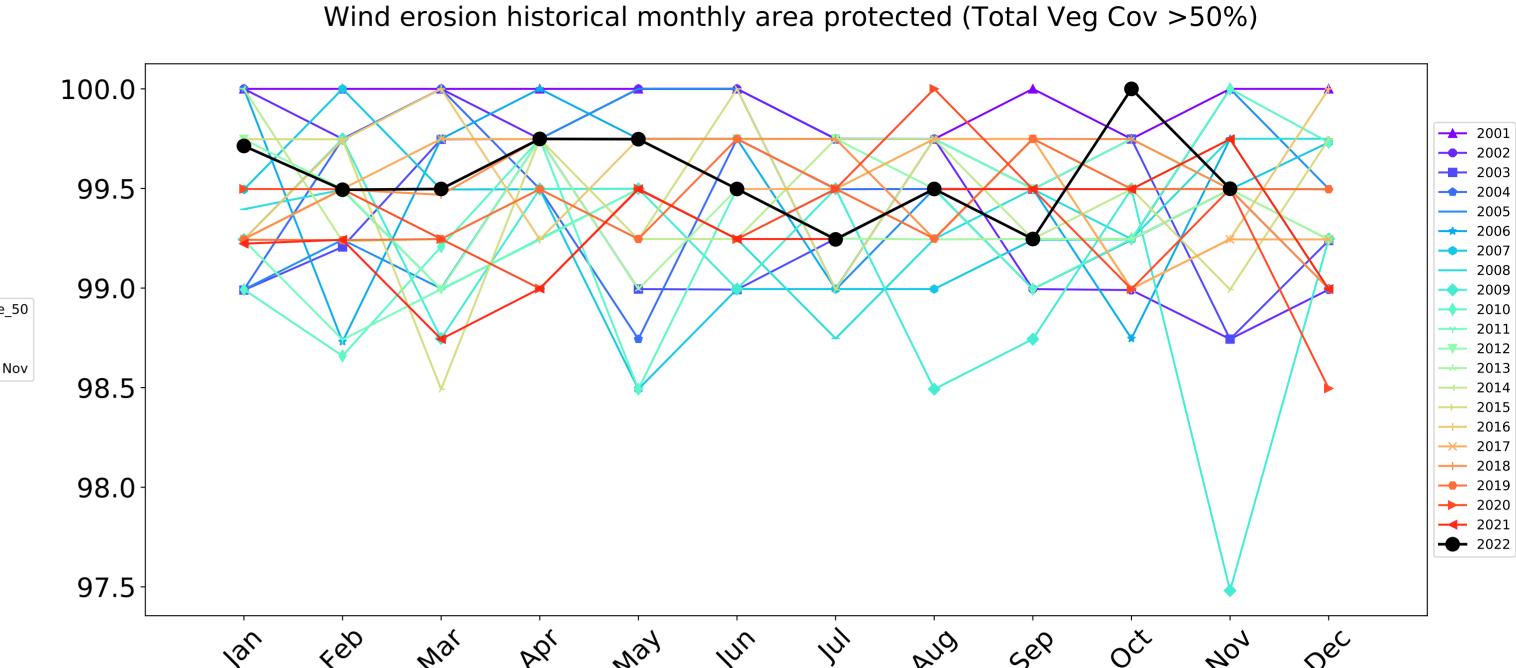




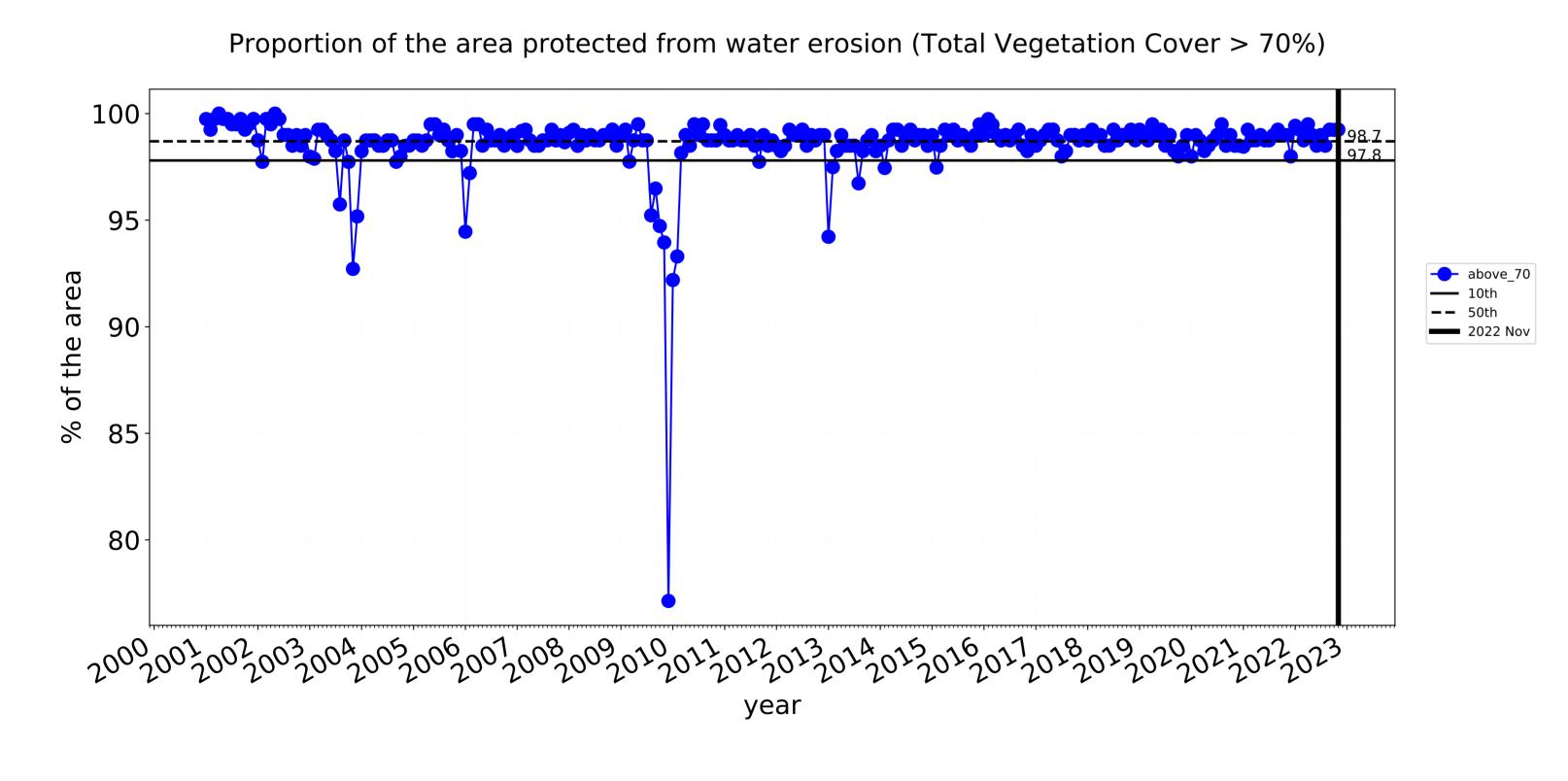


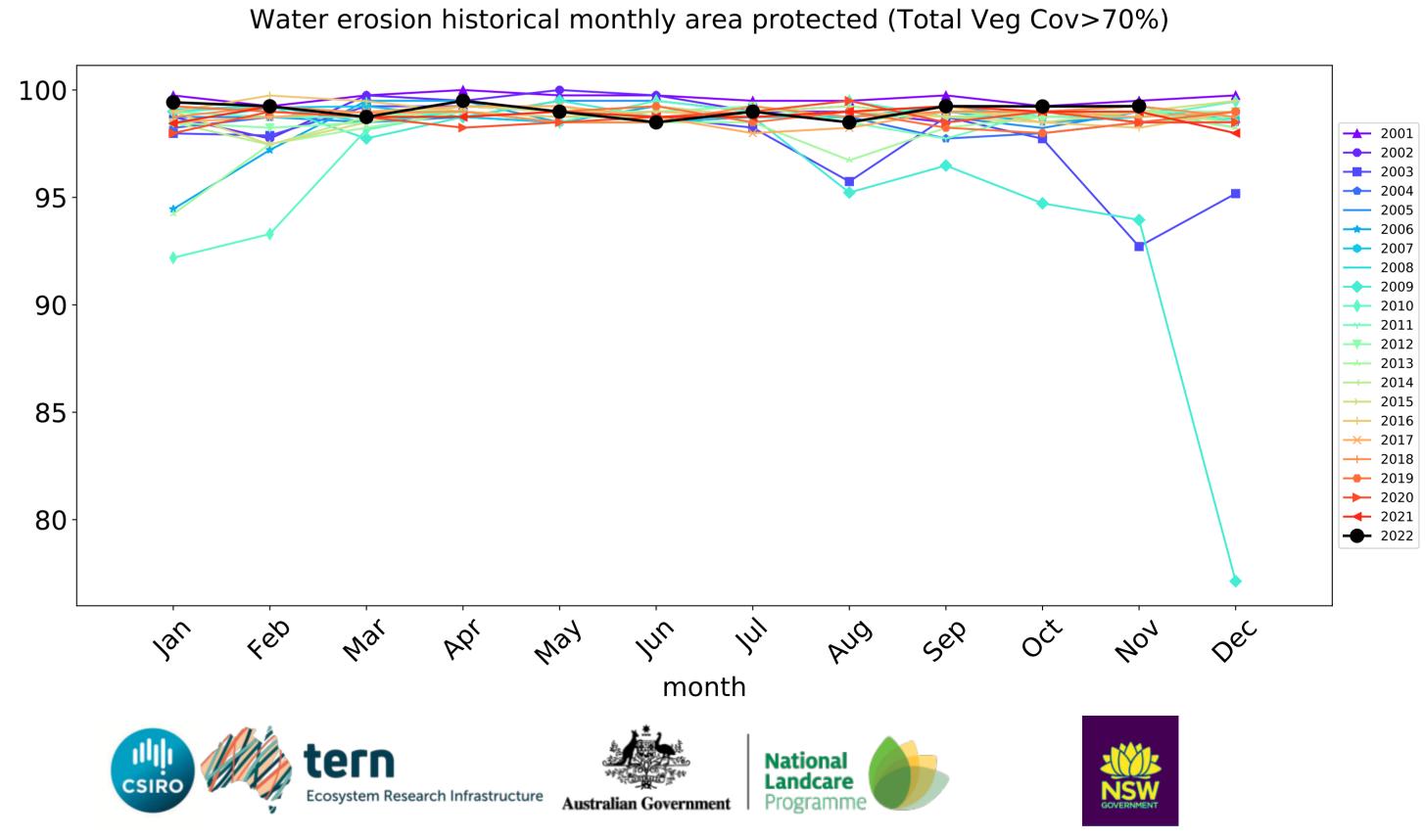
### Conservation and natural environments non forest timeseries

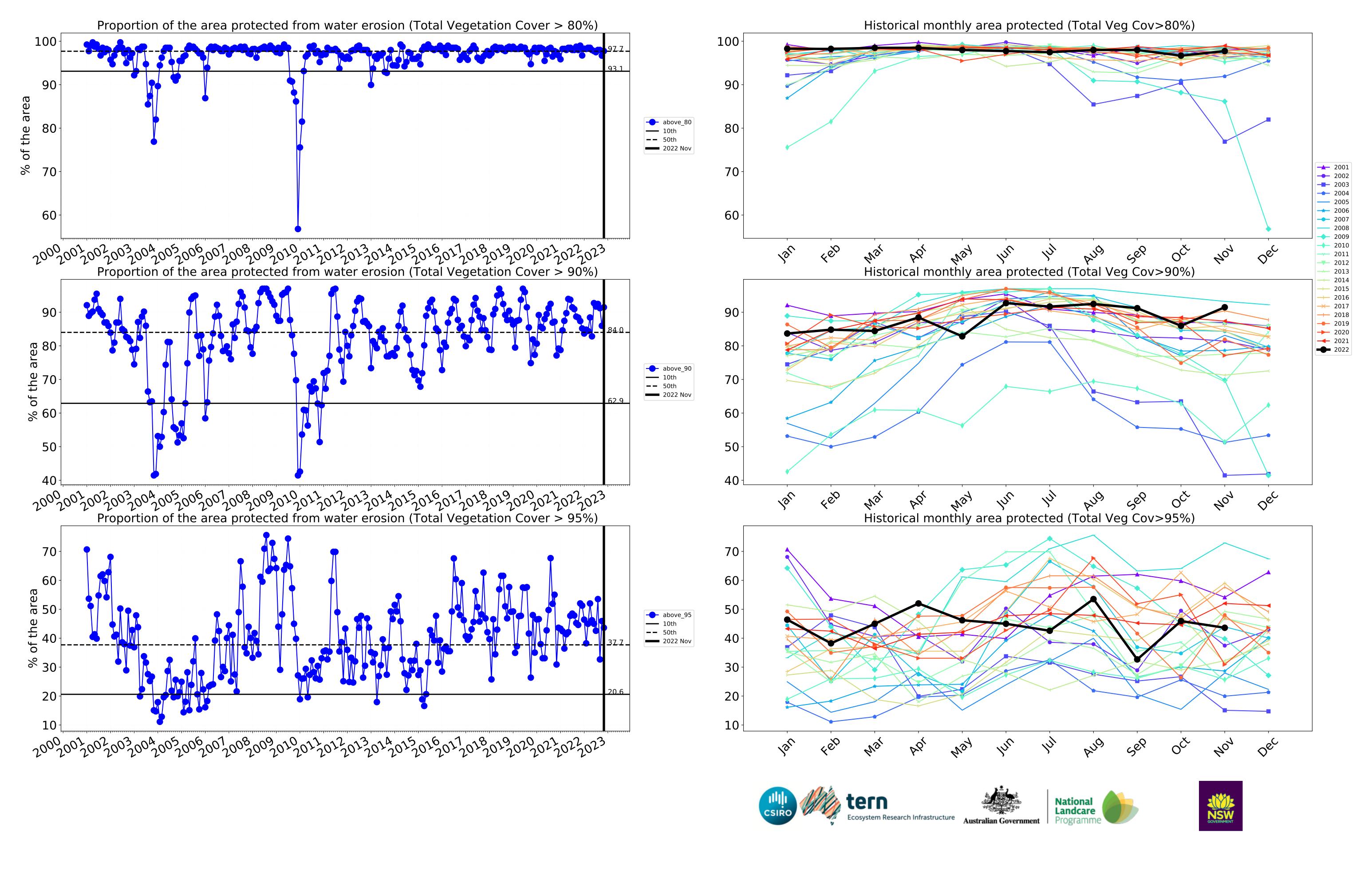




month



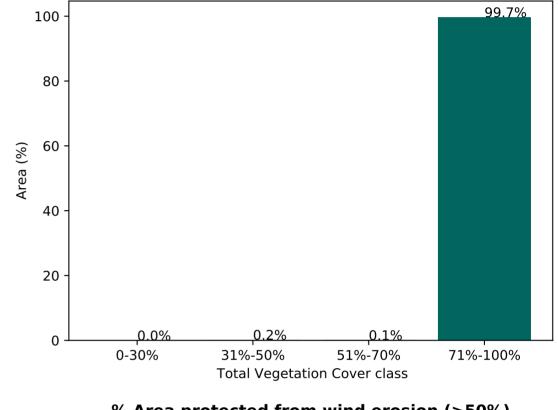




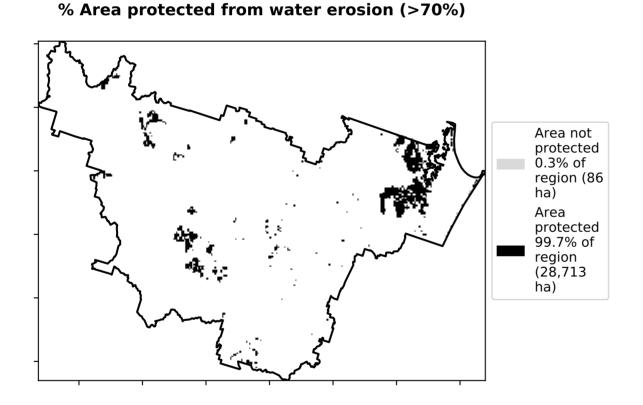
### **Conservation and natural environments Woodland forest**

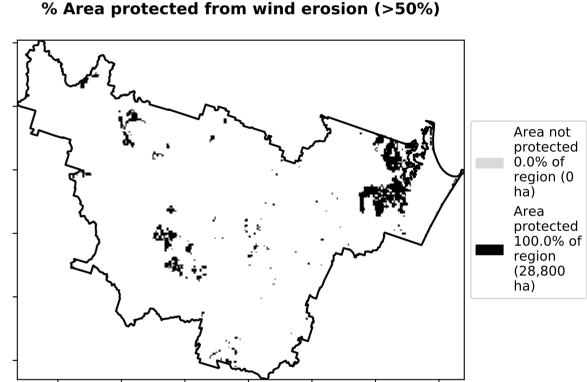
### Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Woodland Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

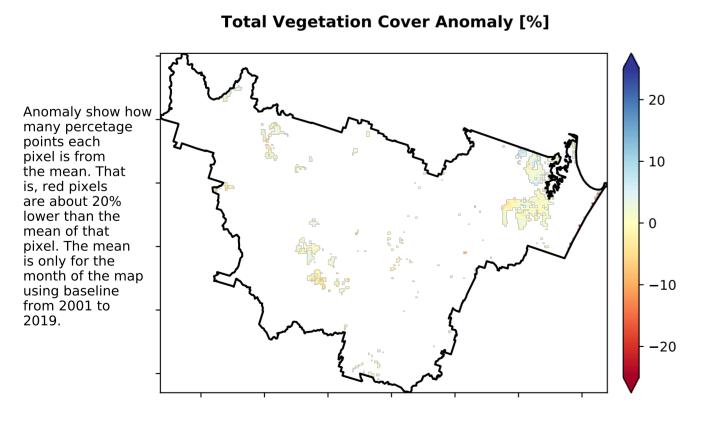
# **Total Vegetation Cover [%]**



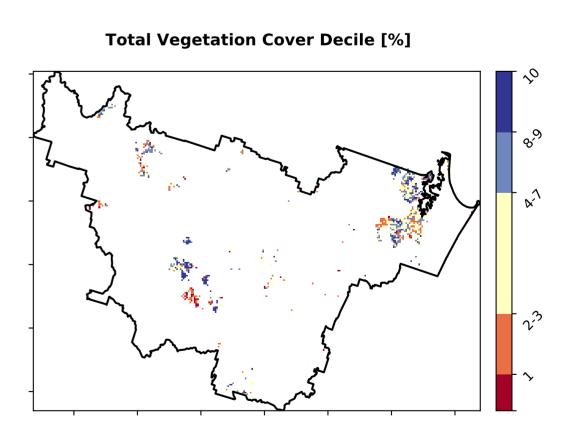
Proportion of vegetation cover class in area







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.



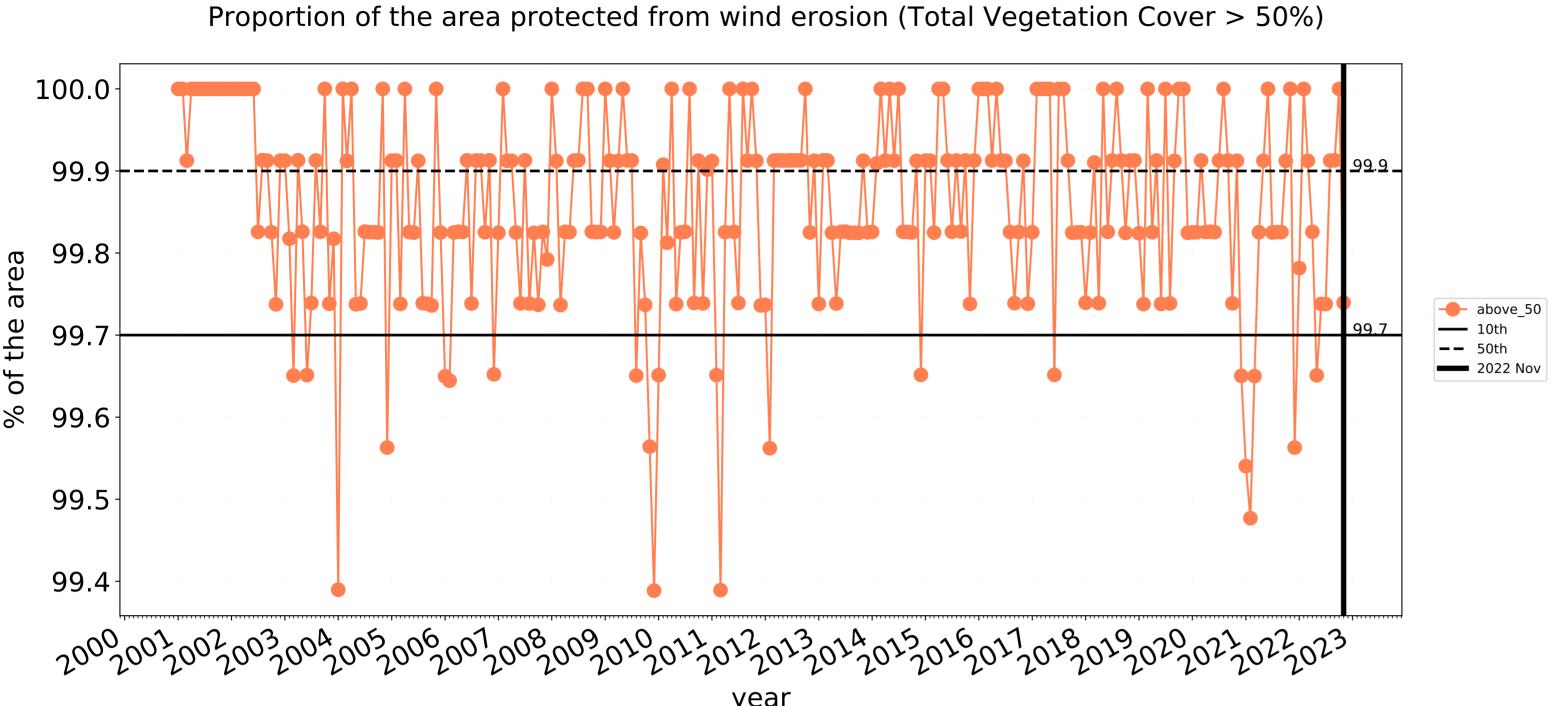


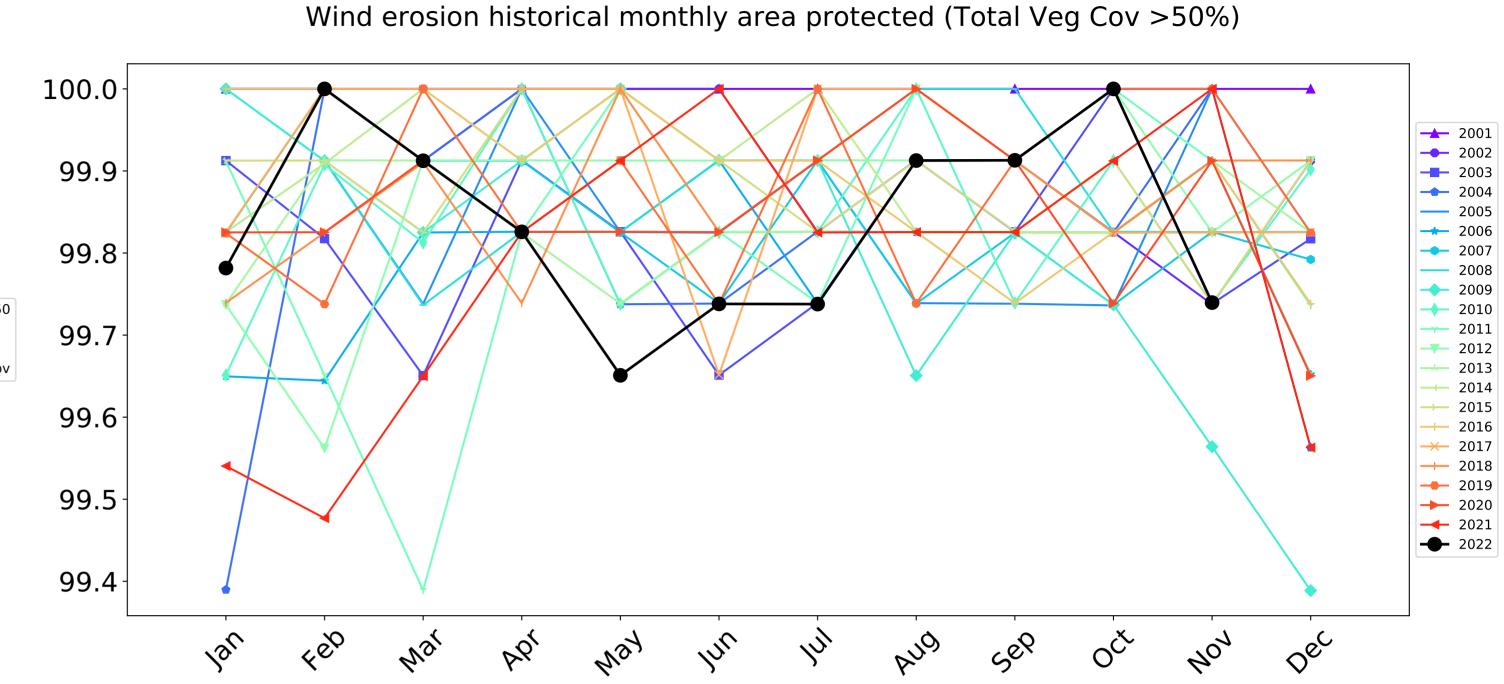




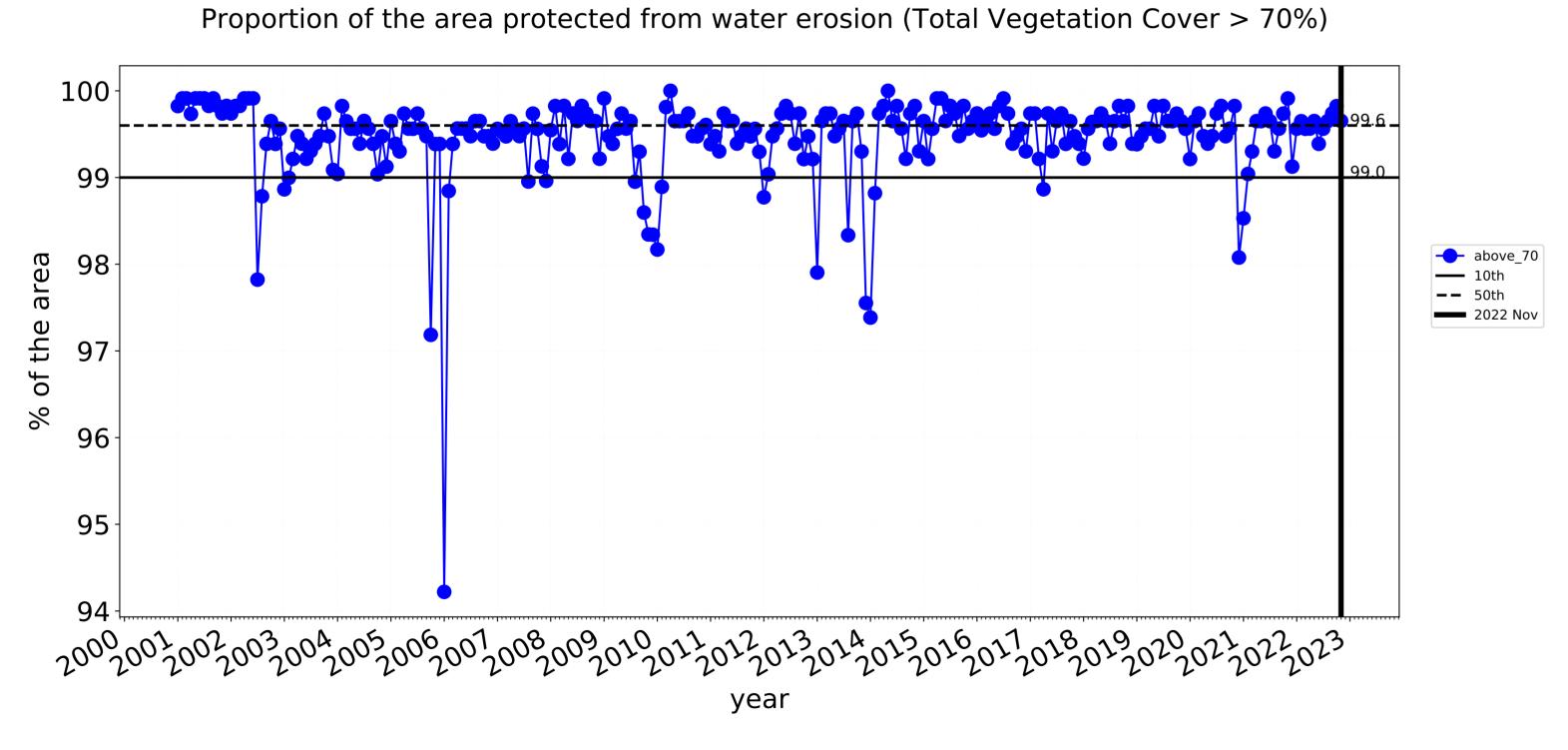


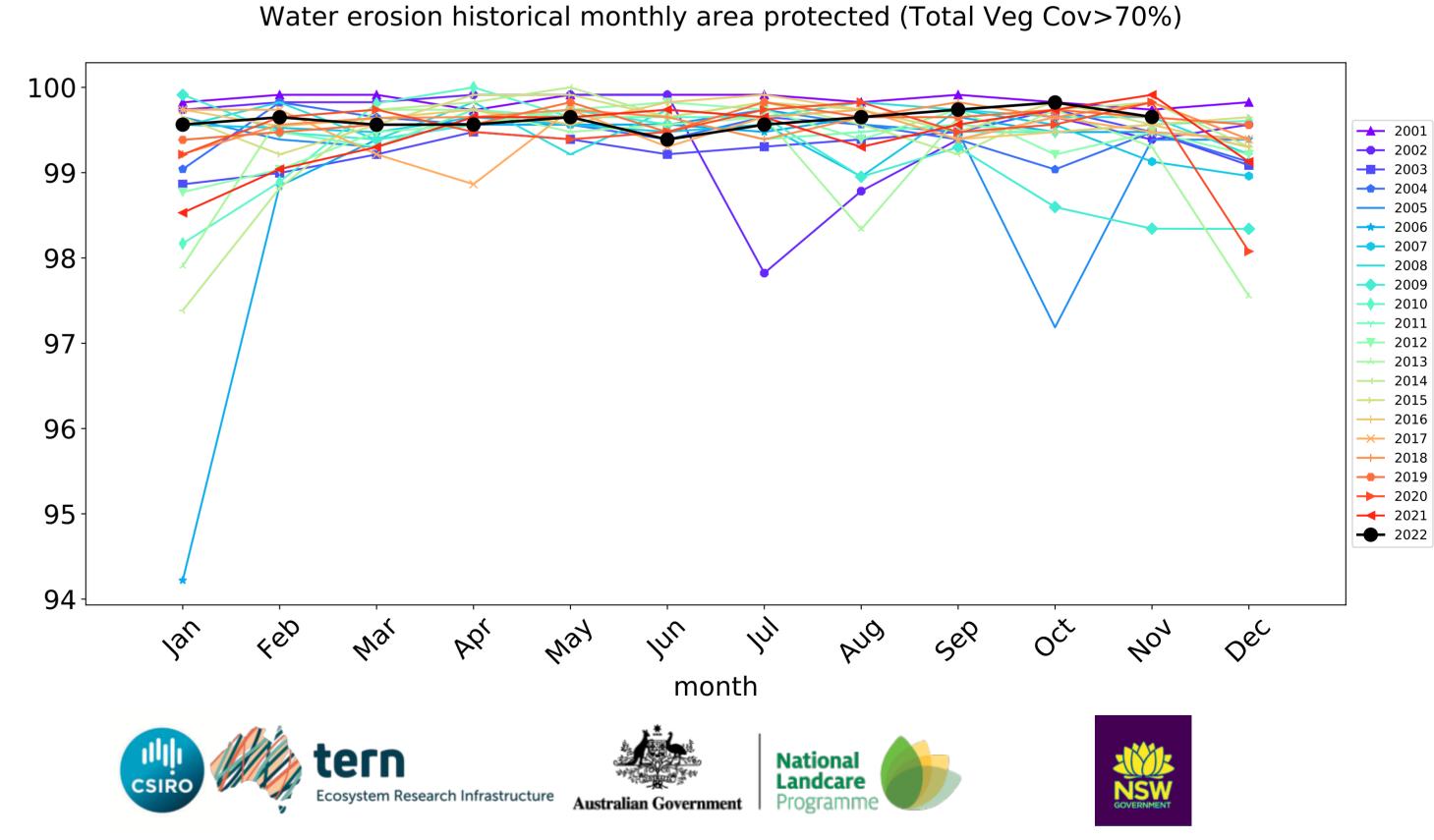
### **Conservation and natural environments Woodland forest timeseries**

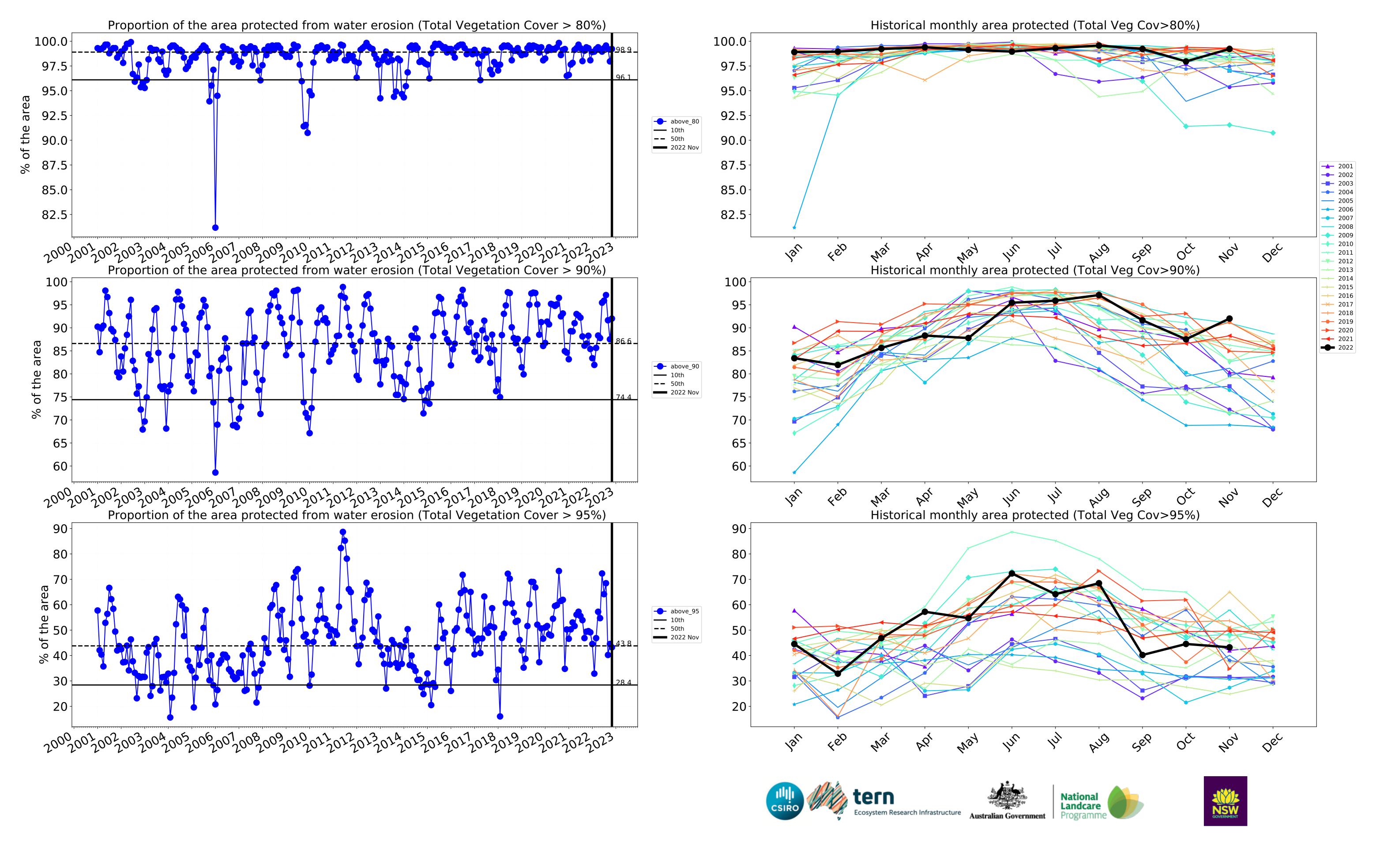




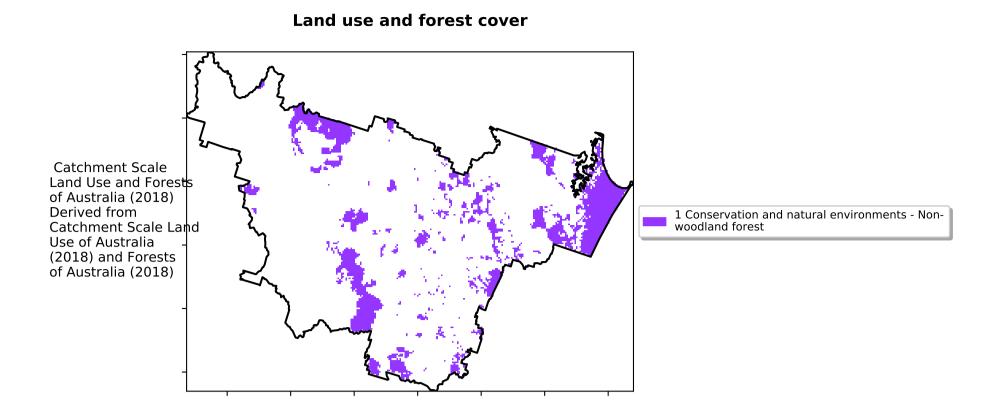
month



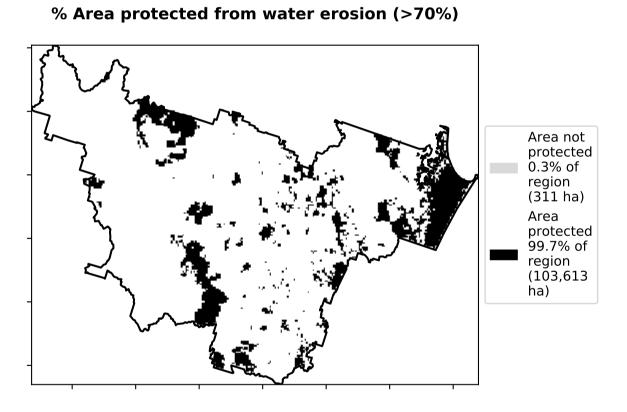


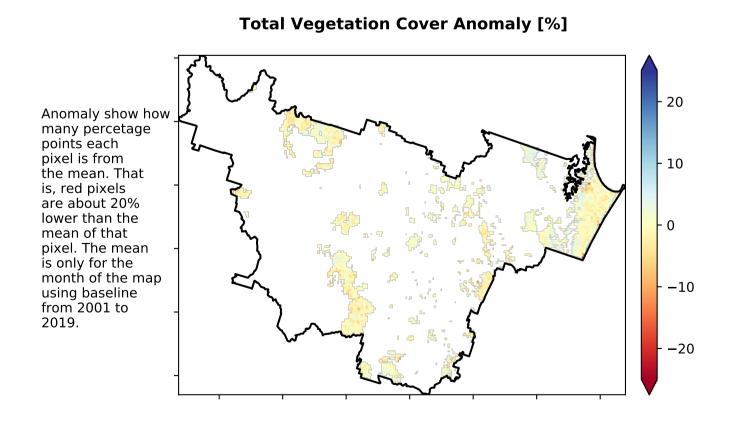


### **Conservation and natural environments Forest (non woodland)**

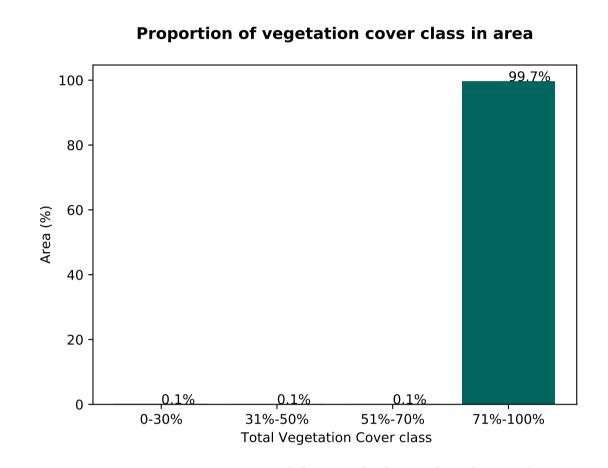


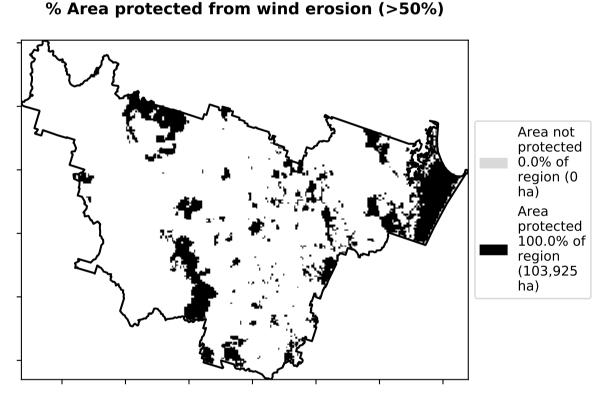
# Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]

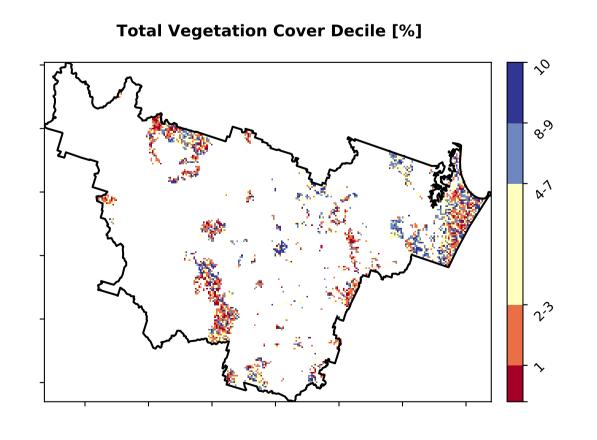




# Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





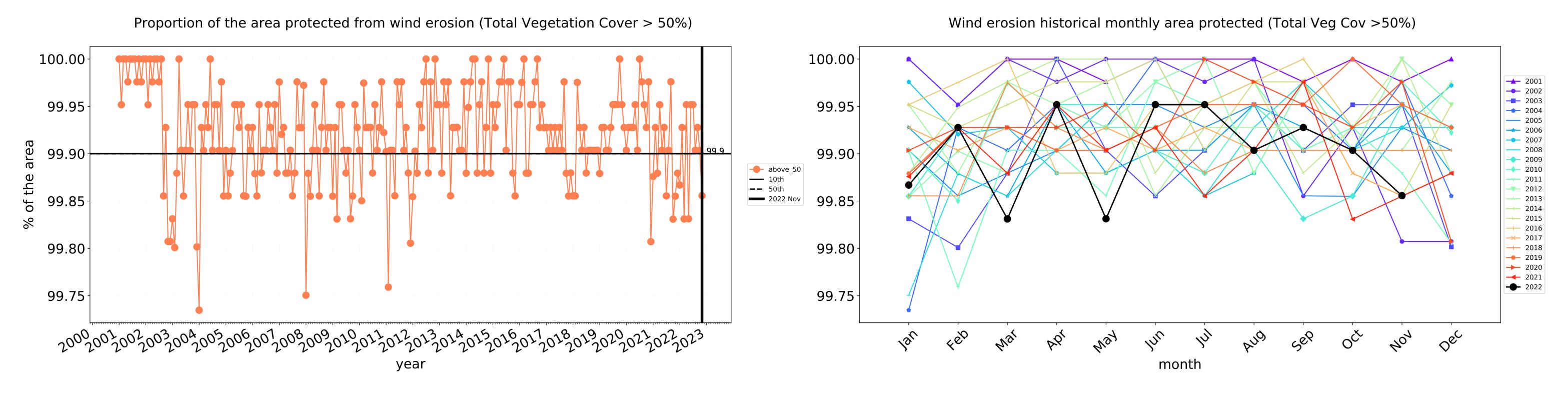


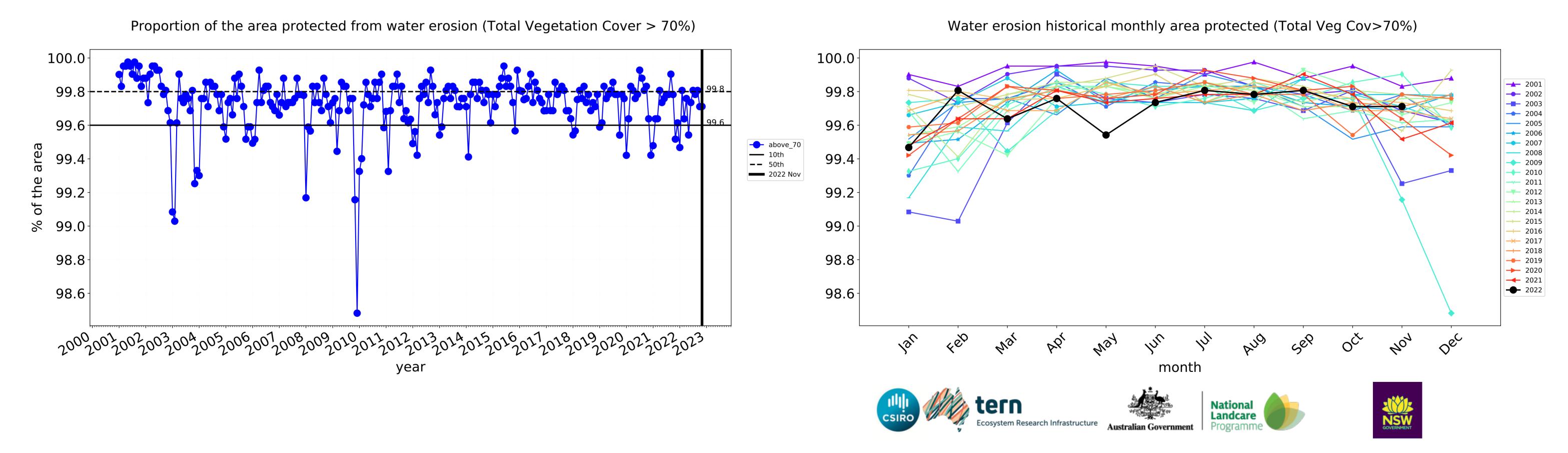


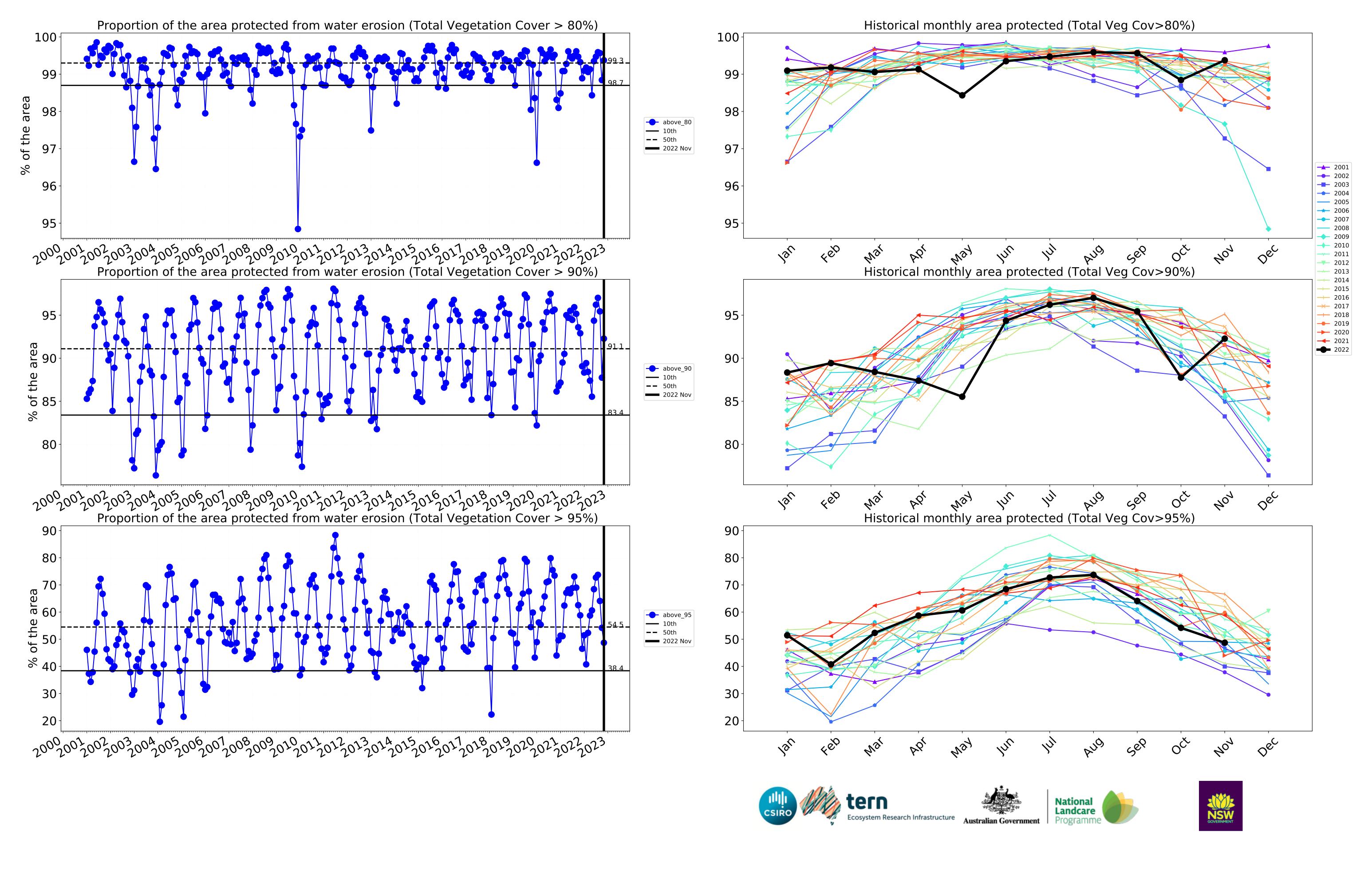






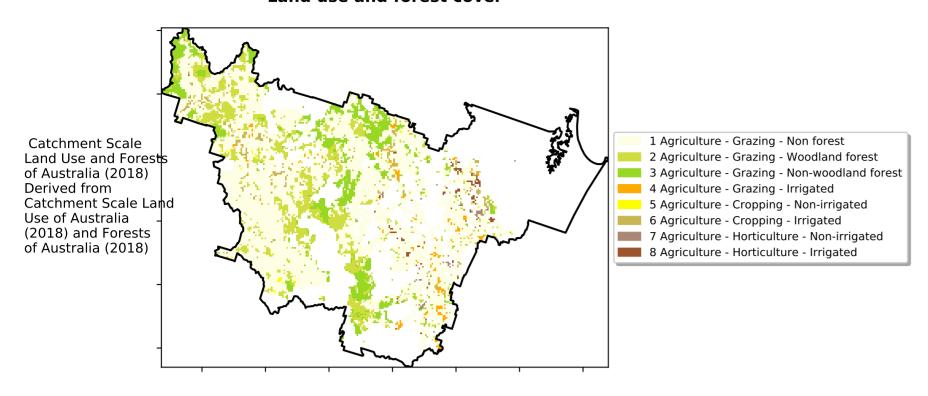




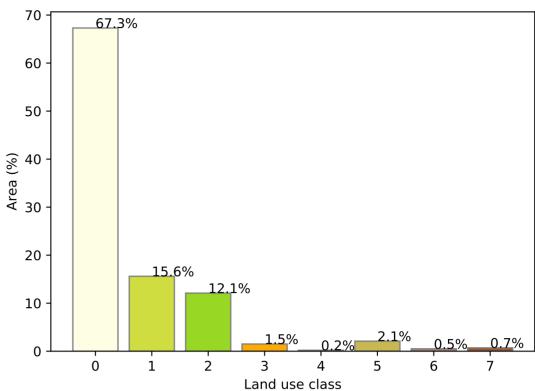


### **Agriculture**

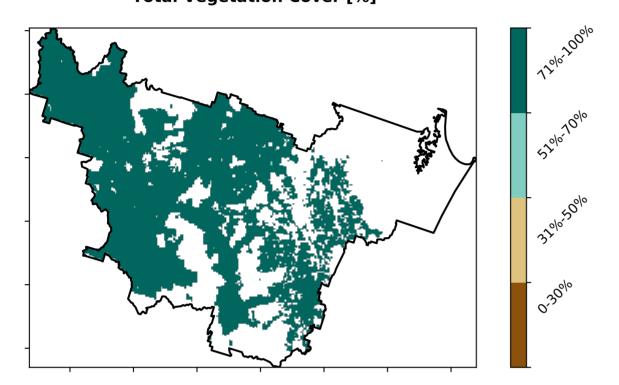
### Land use and forest cover



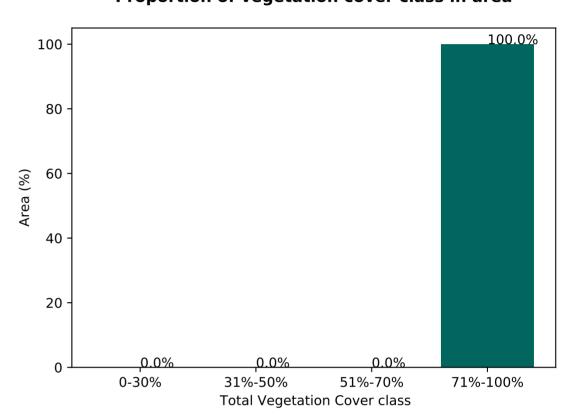
### Proportion of each land class in area



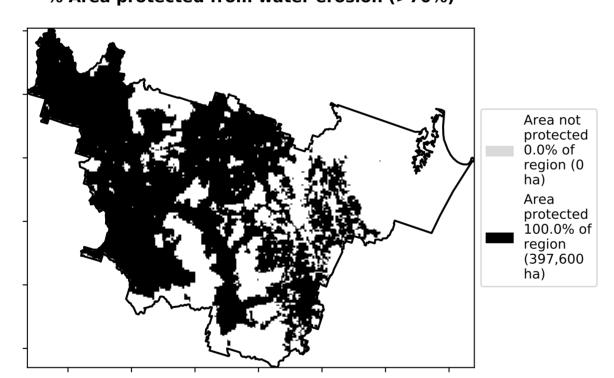
**Total Vegetation Cover [%]** 



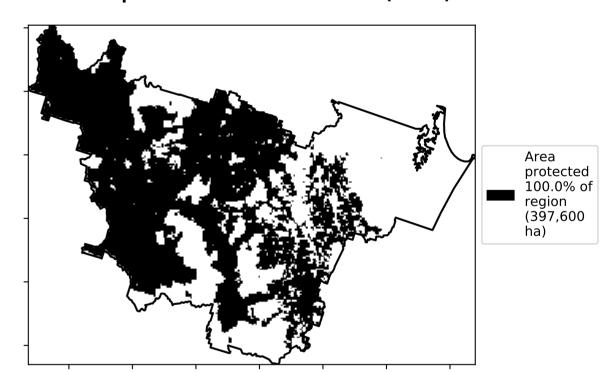
Proportion of vegetation cover class in area



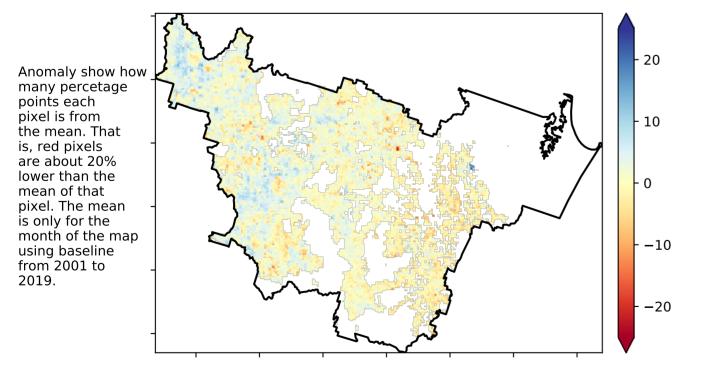
### % Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

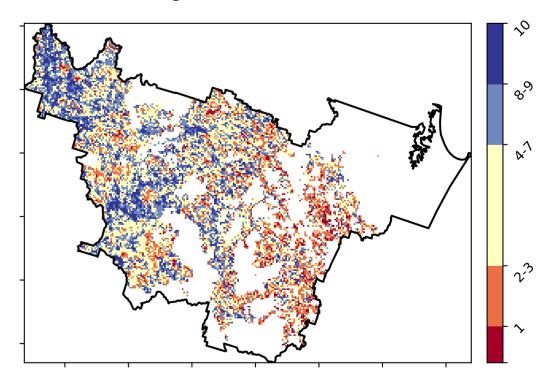


### **Total Vegetation Cover Anomaly [%]**



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 [%]



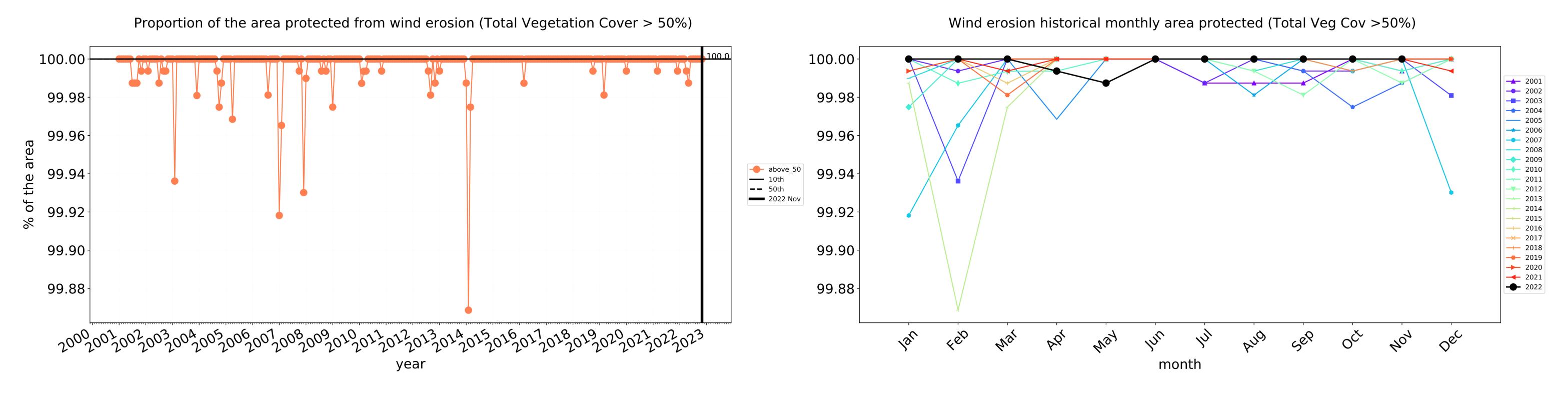


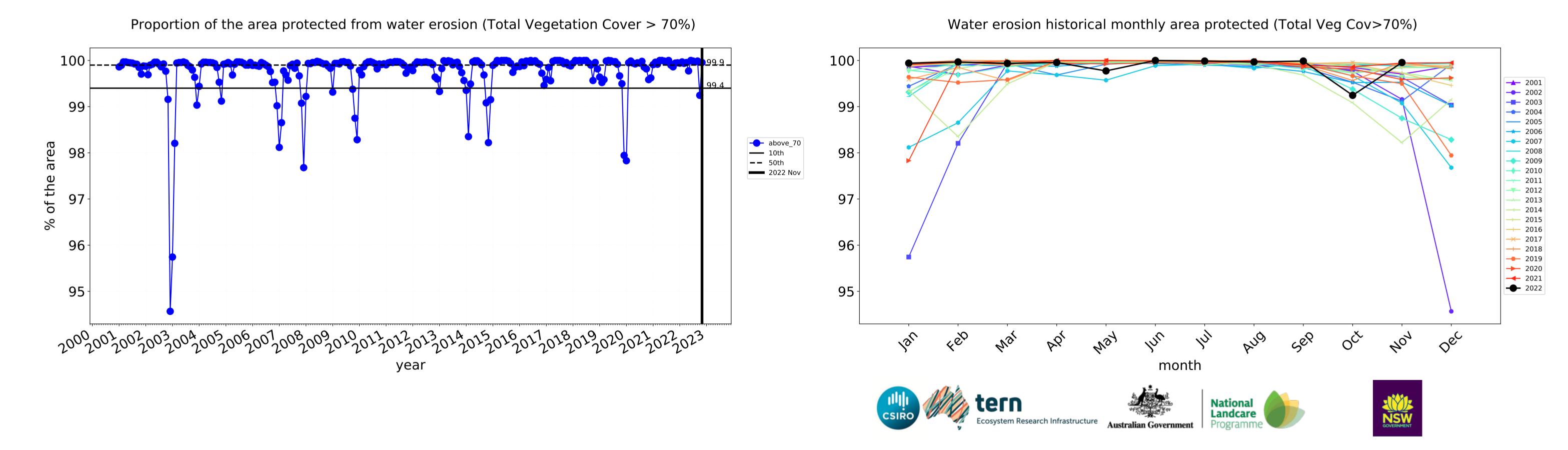


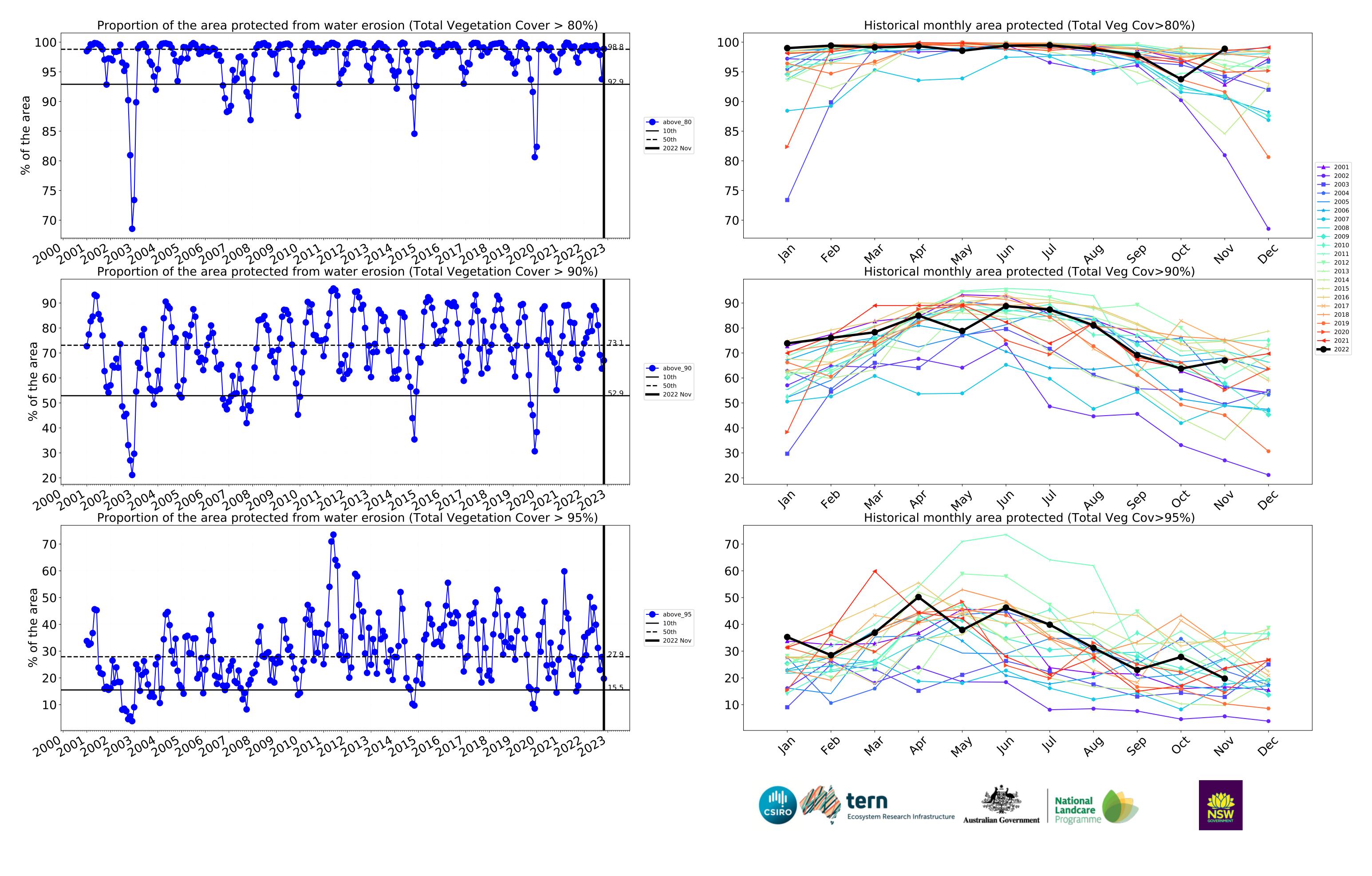




### **Agriculture timeseries**

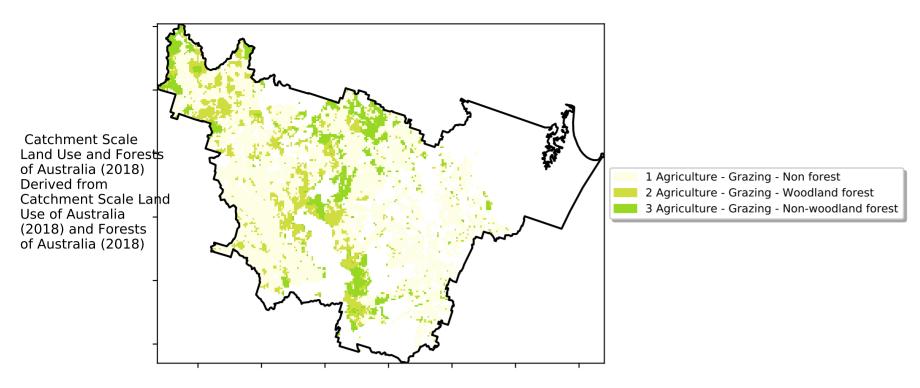




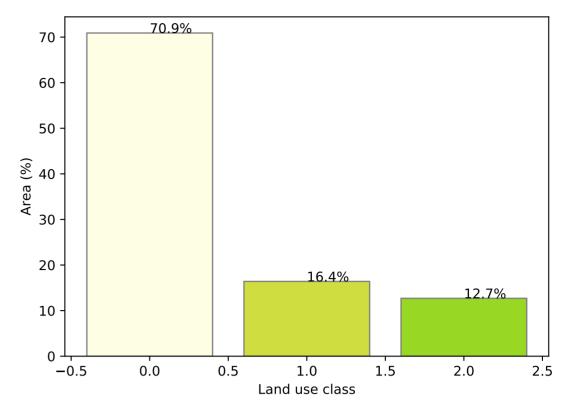


### **Grazing**

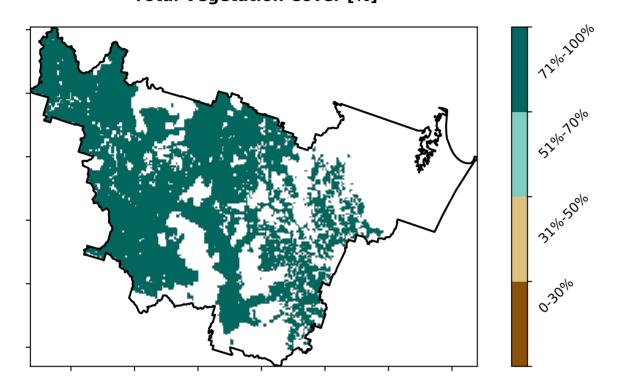
### Land use and forest cover



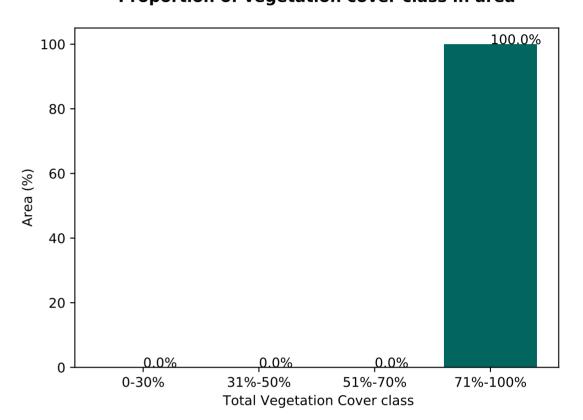
### Proportion of each land class in area



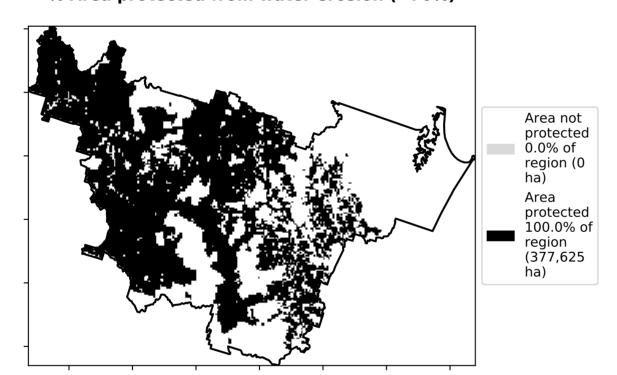
### **Total Vegetation Cover [%]**



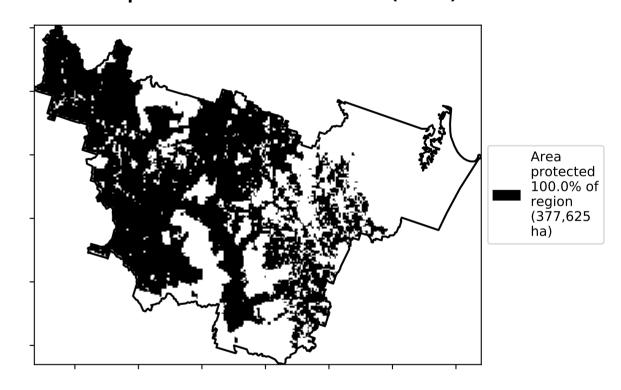
Proportion of vegetation cover class in area



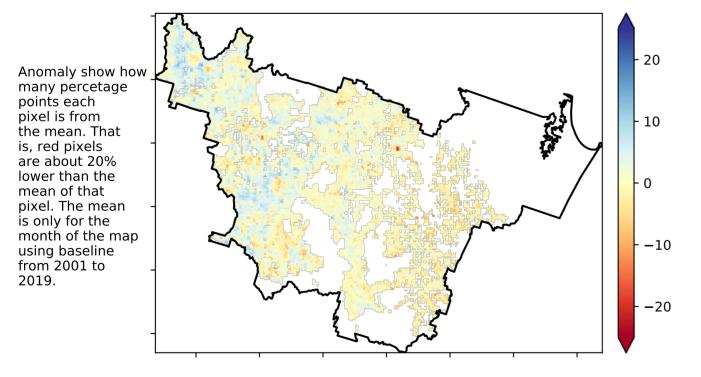
### % Area protected from water erosion (>70%)



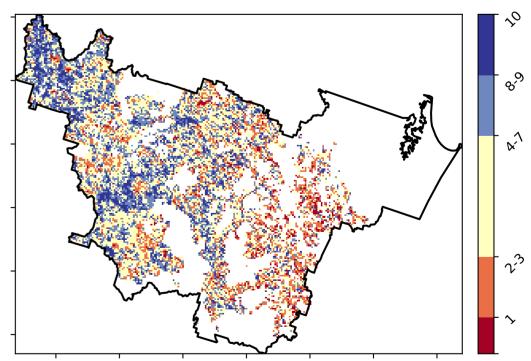
% Area protected from wind erosion (>50%)



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



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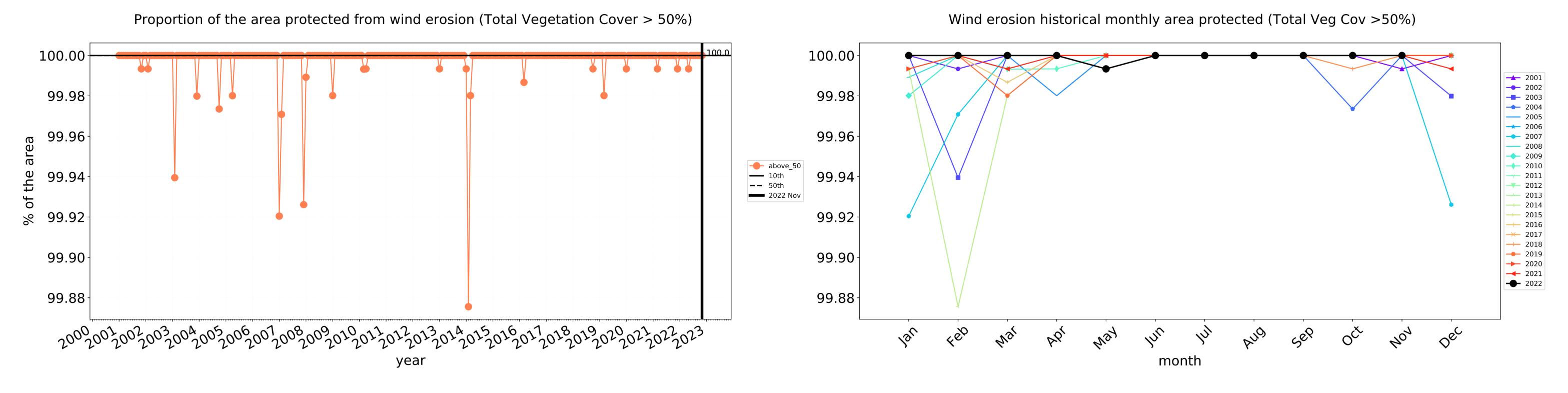


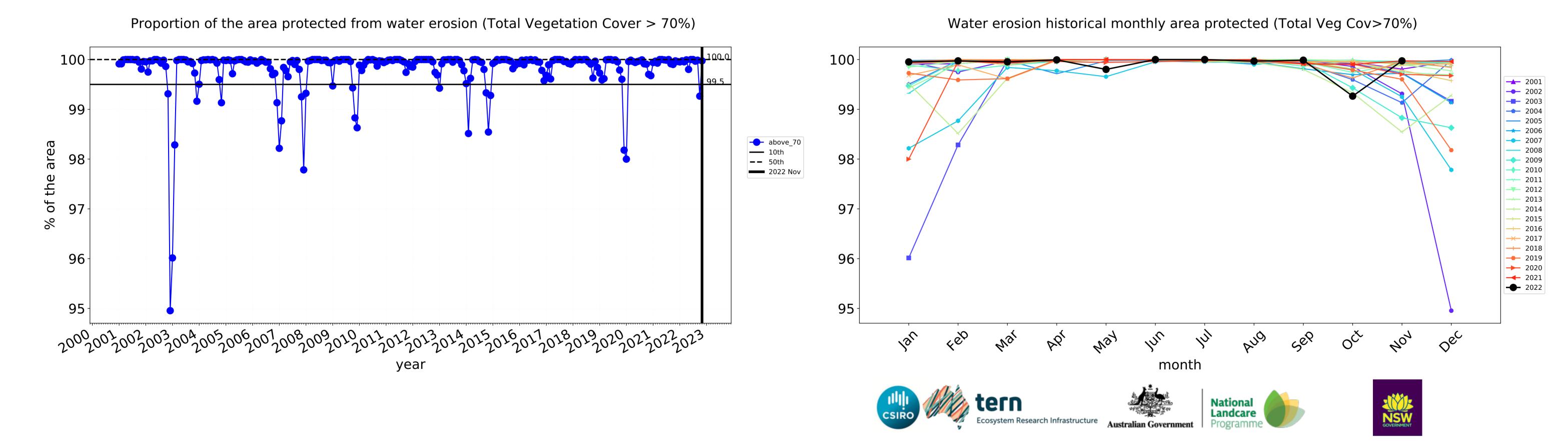


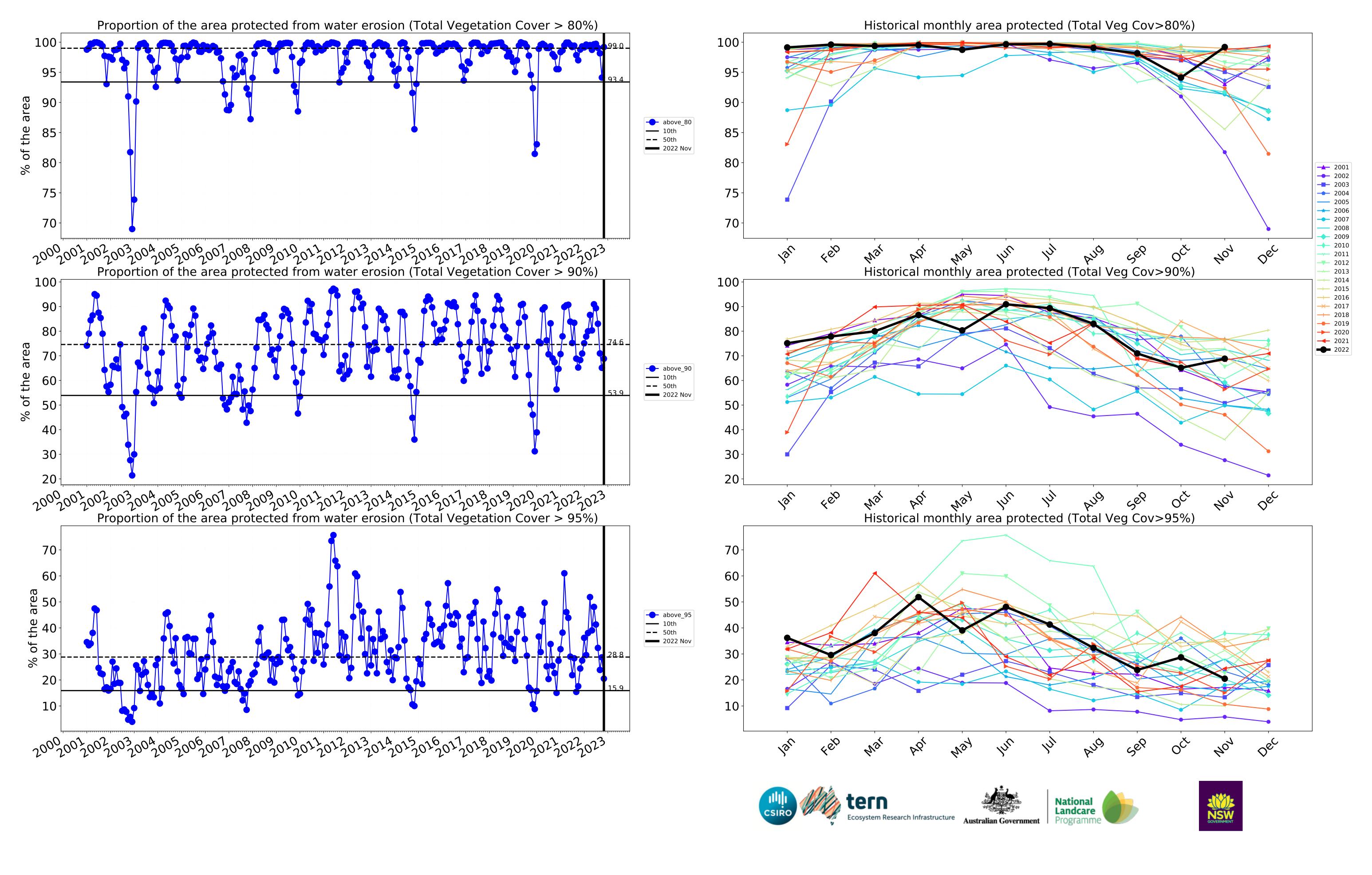




### **Grazing timeseries**

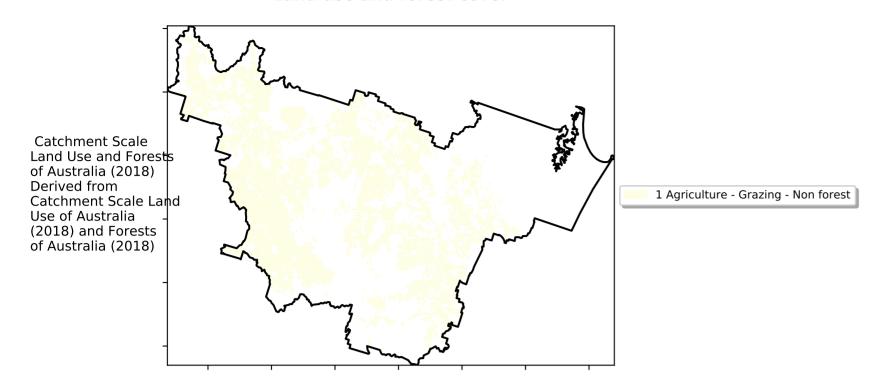




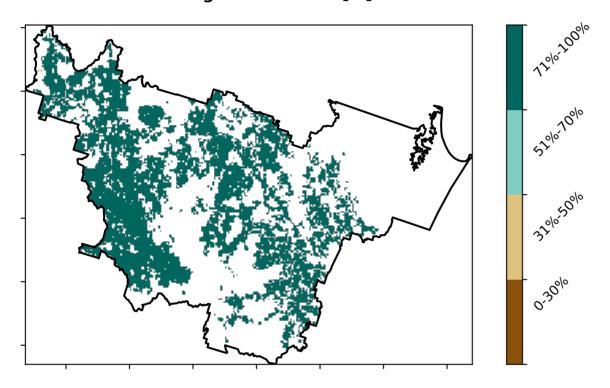


### **Grazing non forest**

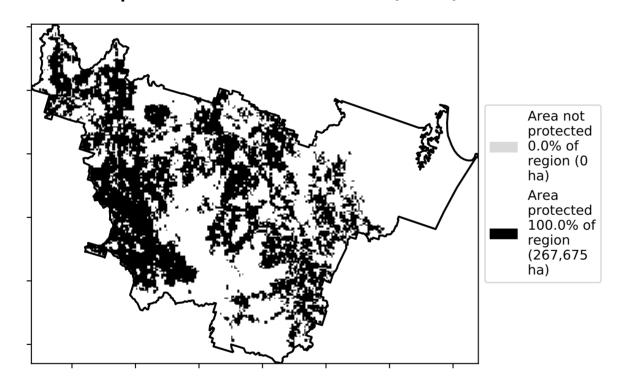
### Land use and forest cover



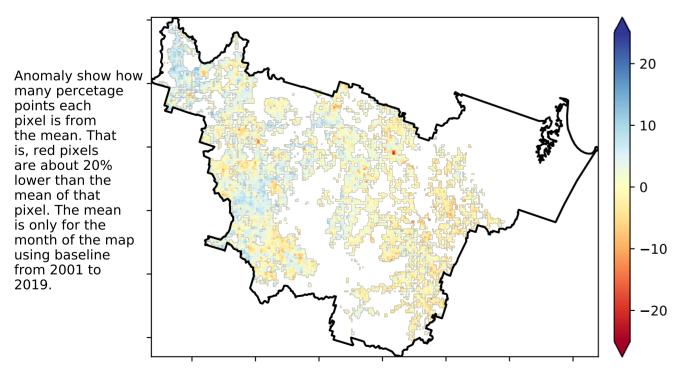
### **Total Vegetation Cover [%]**



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

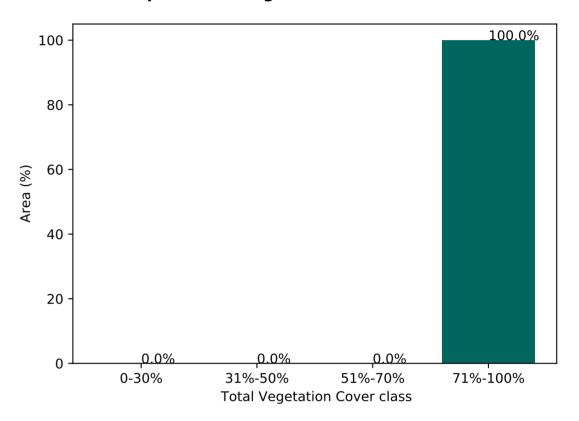


### **Total Vegetation Cover Anomaly [%]**

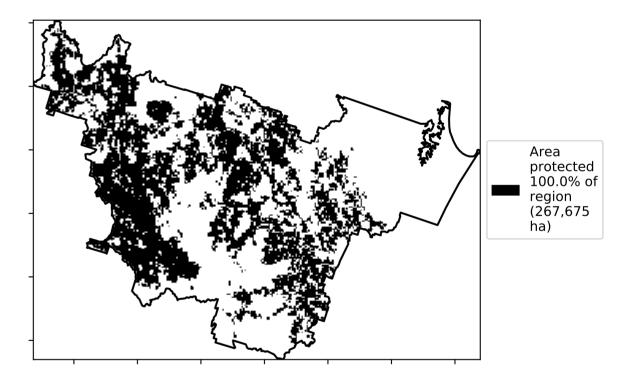


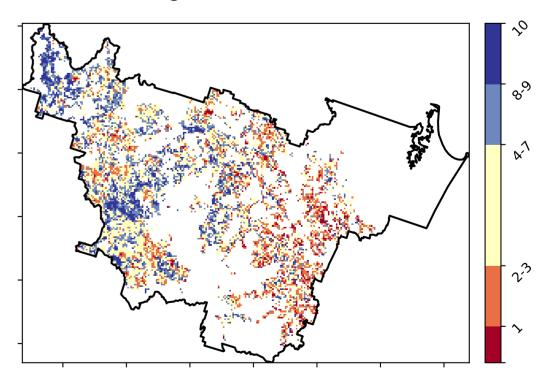
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





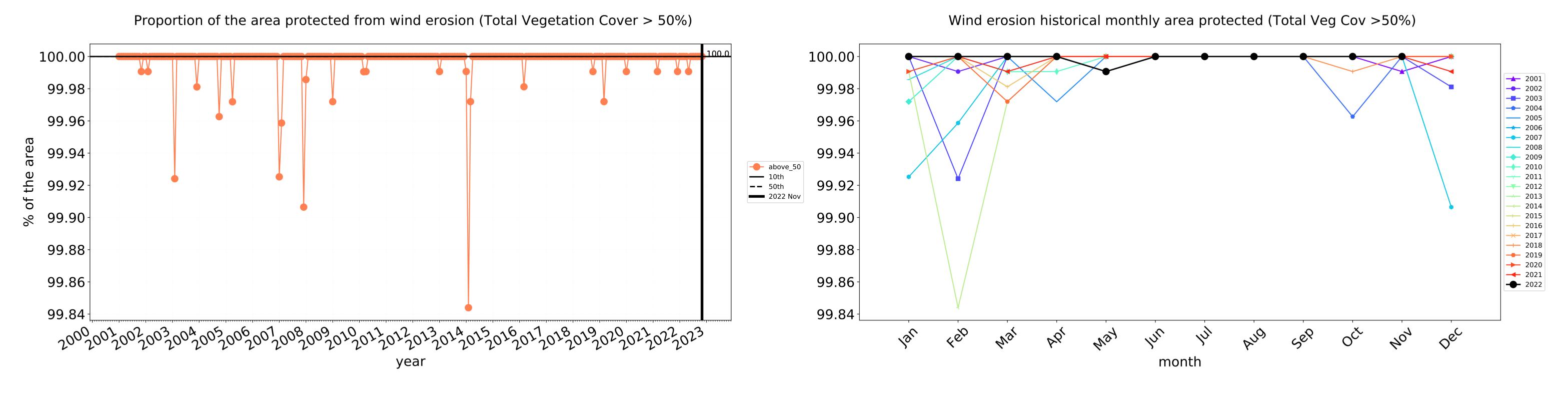


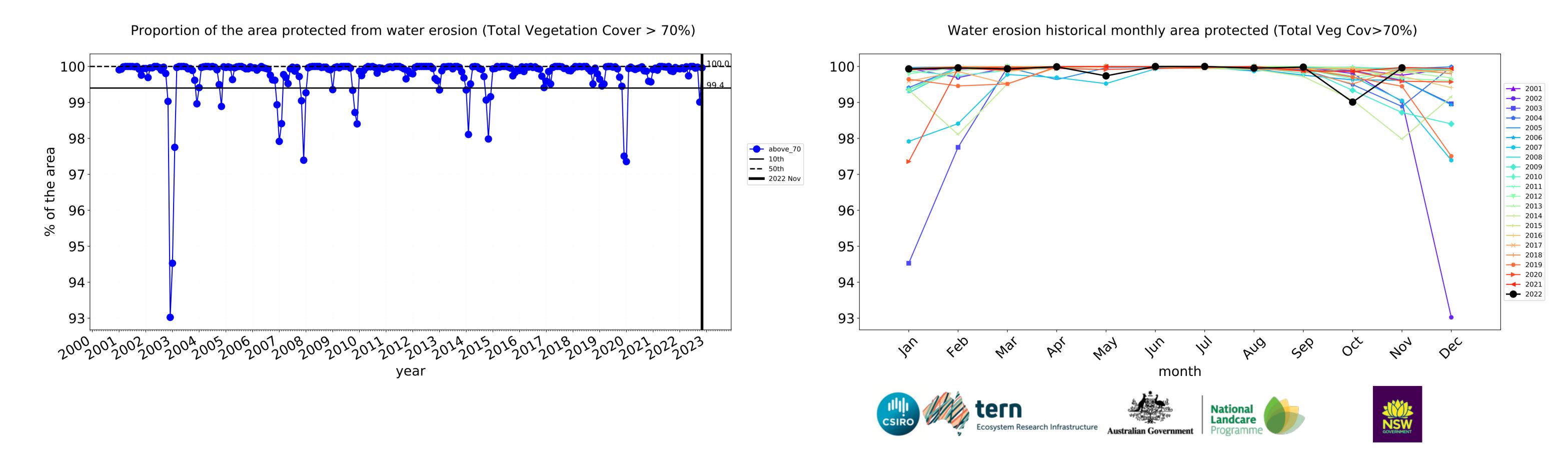


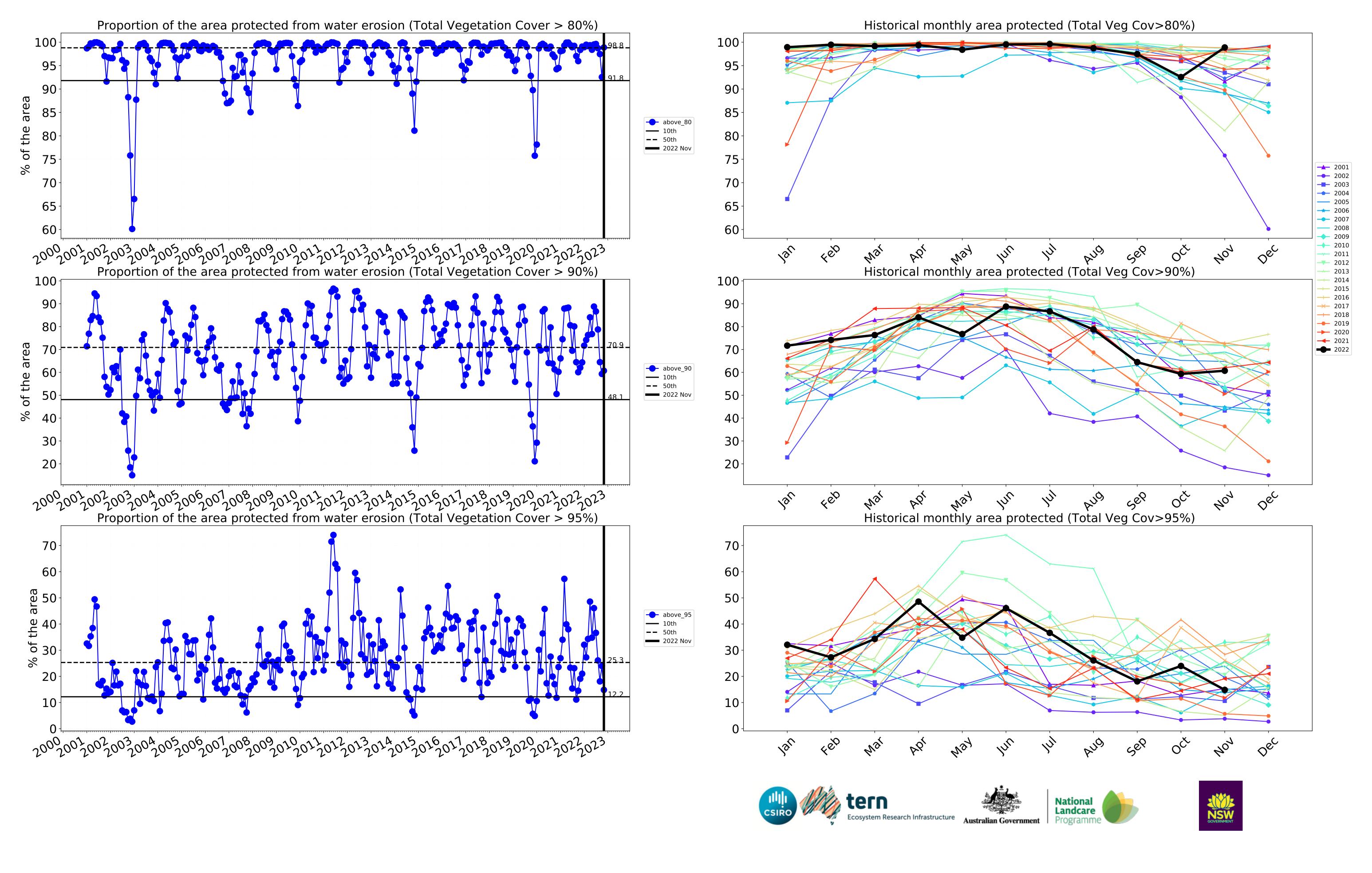




### **Grazing non forest timeseries**

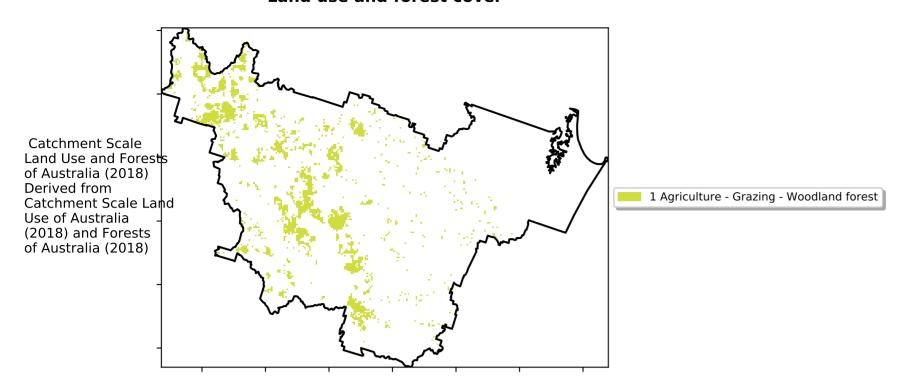




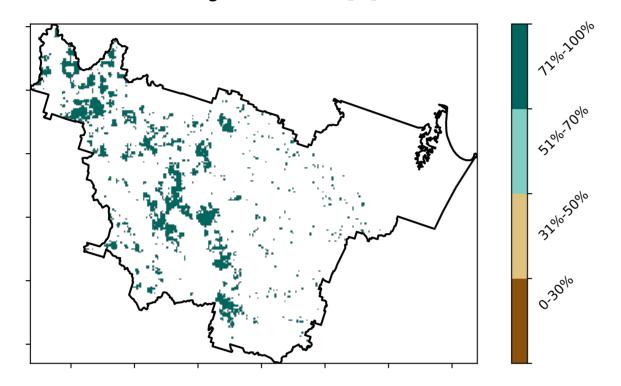


### **Grazing Woodland forest**

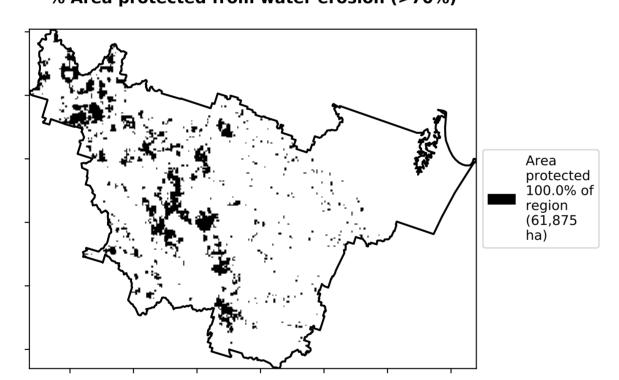
### Land use and forest cover



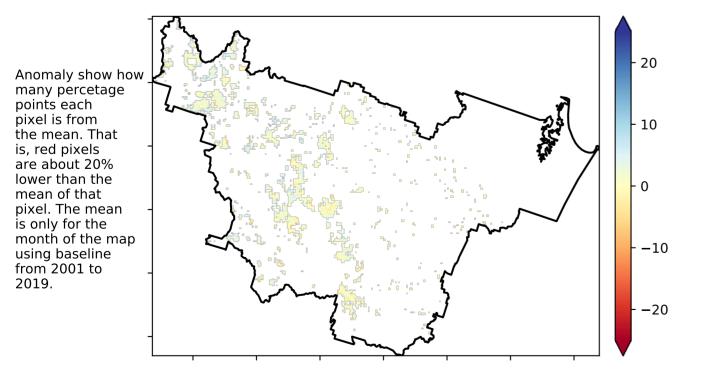
### Total Vegetation Cover [%]



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

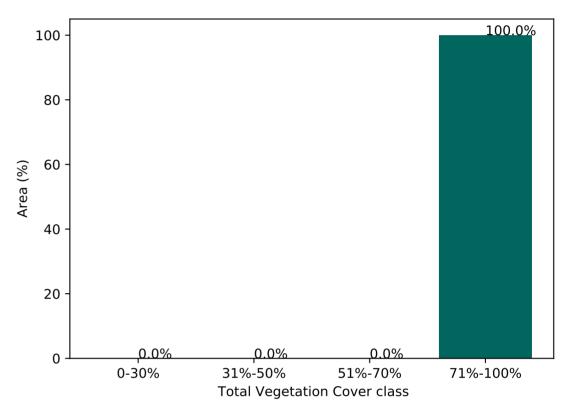


### Total Vegetation Cover Anomaly [%]

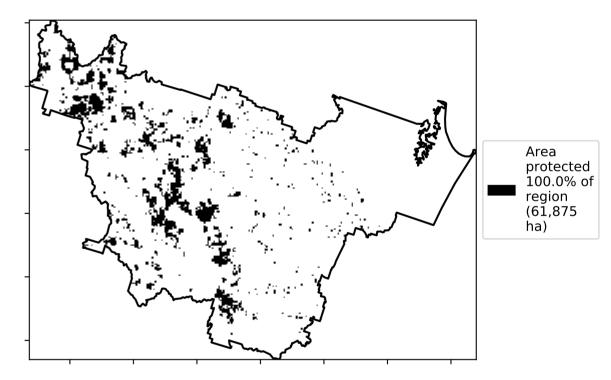


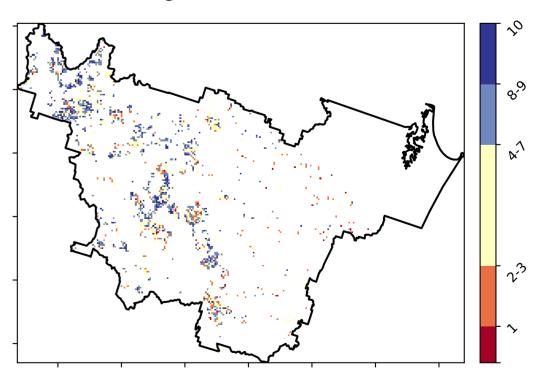
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### **Proportion of vegetation cover class in area**



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





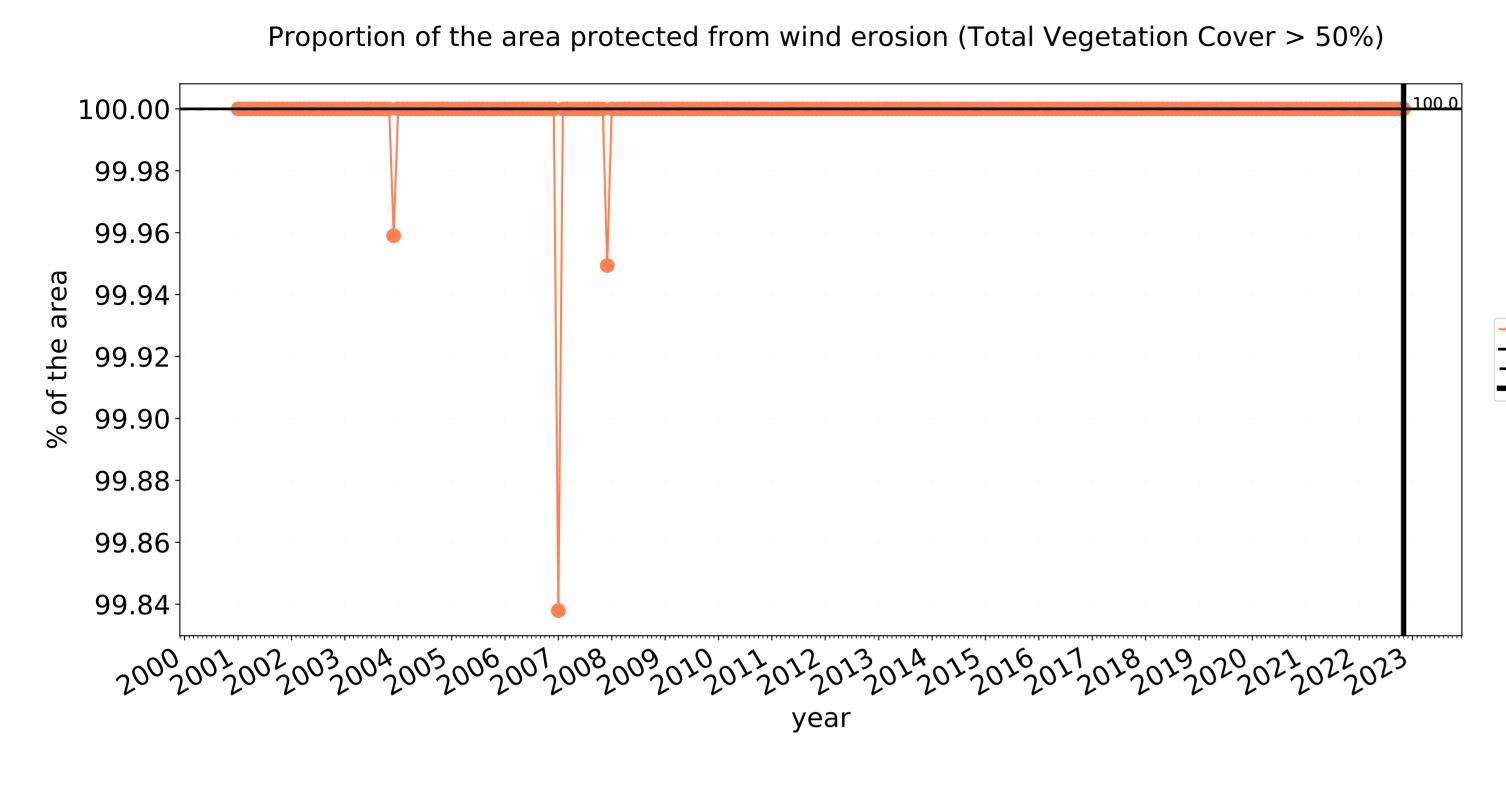


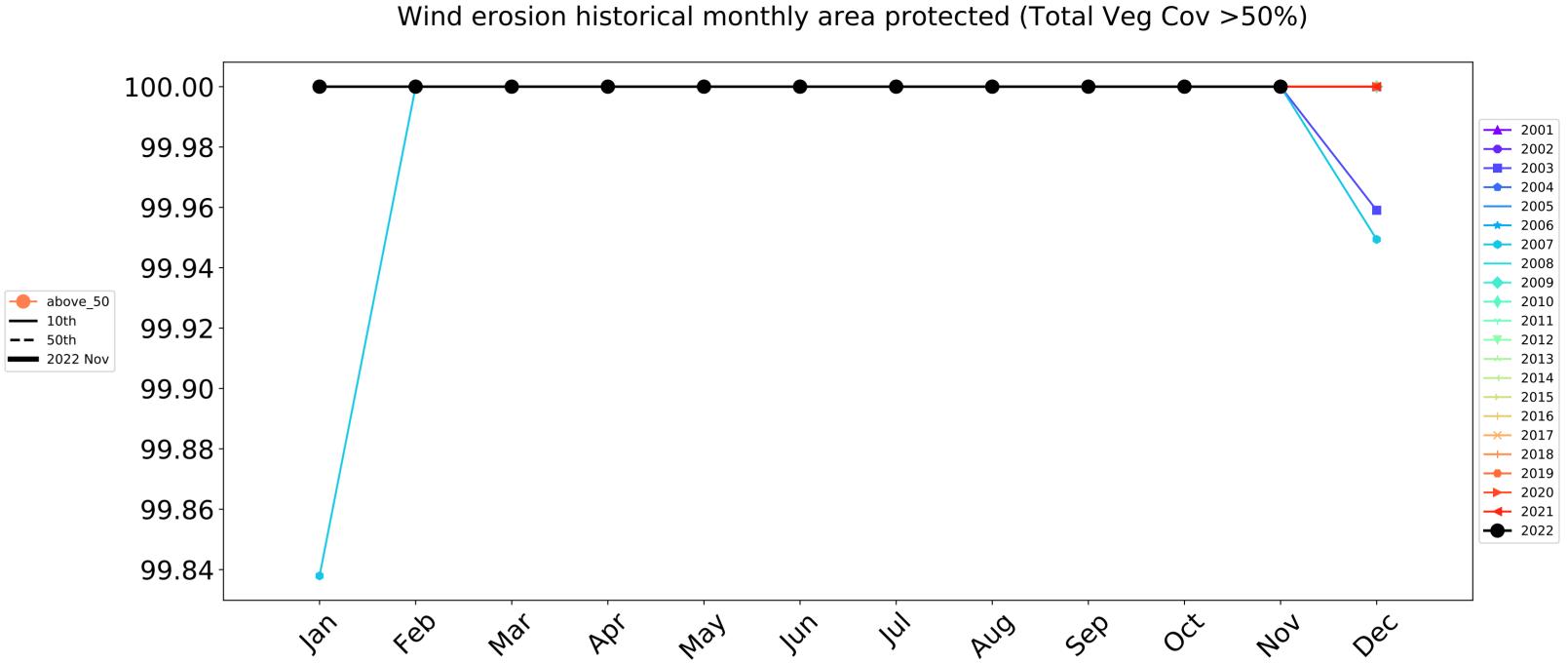




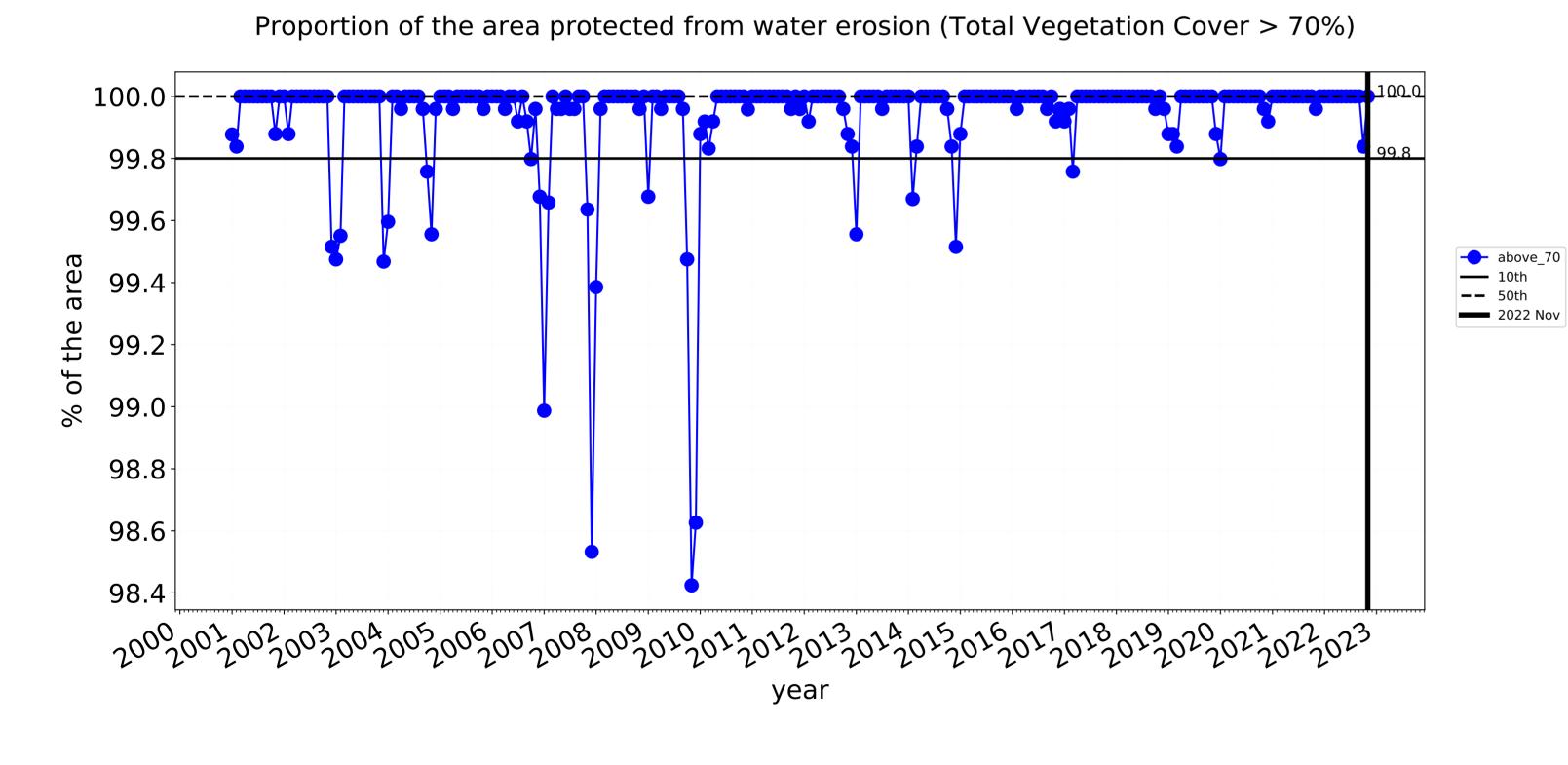


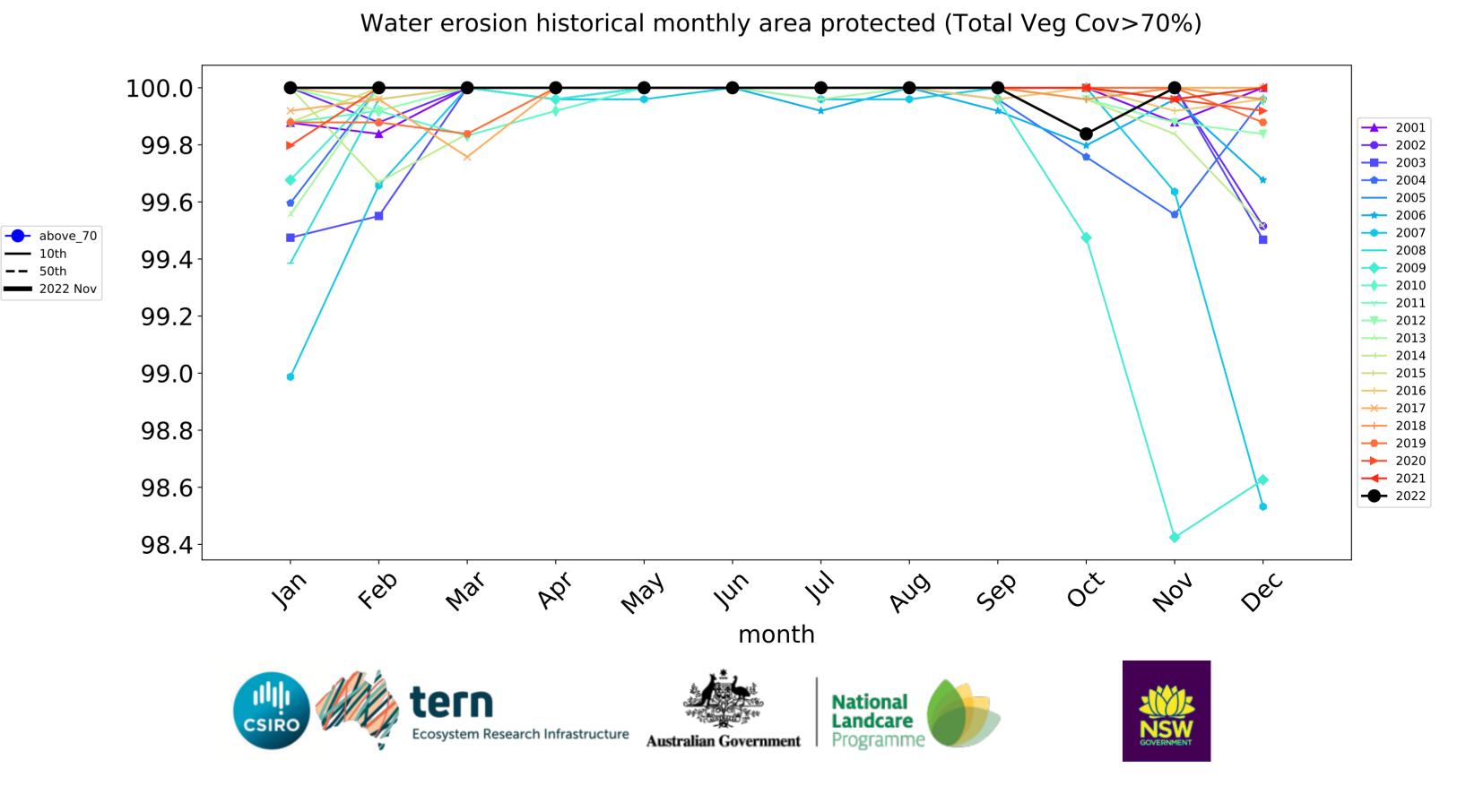
### **Grazing Woodland forest timeseries**

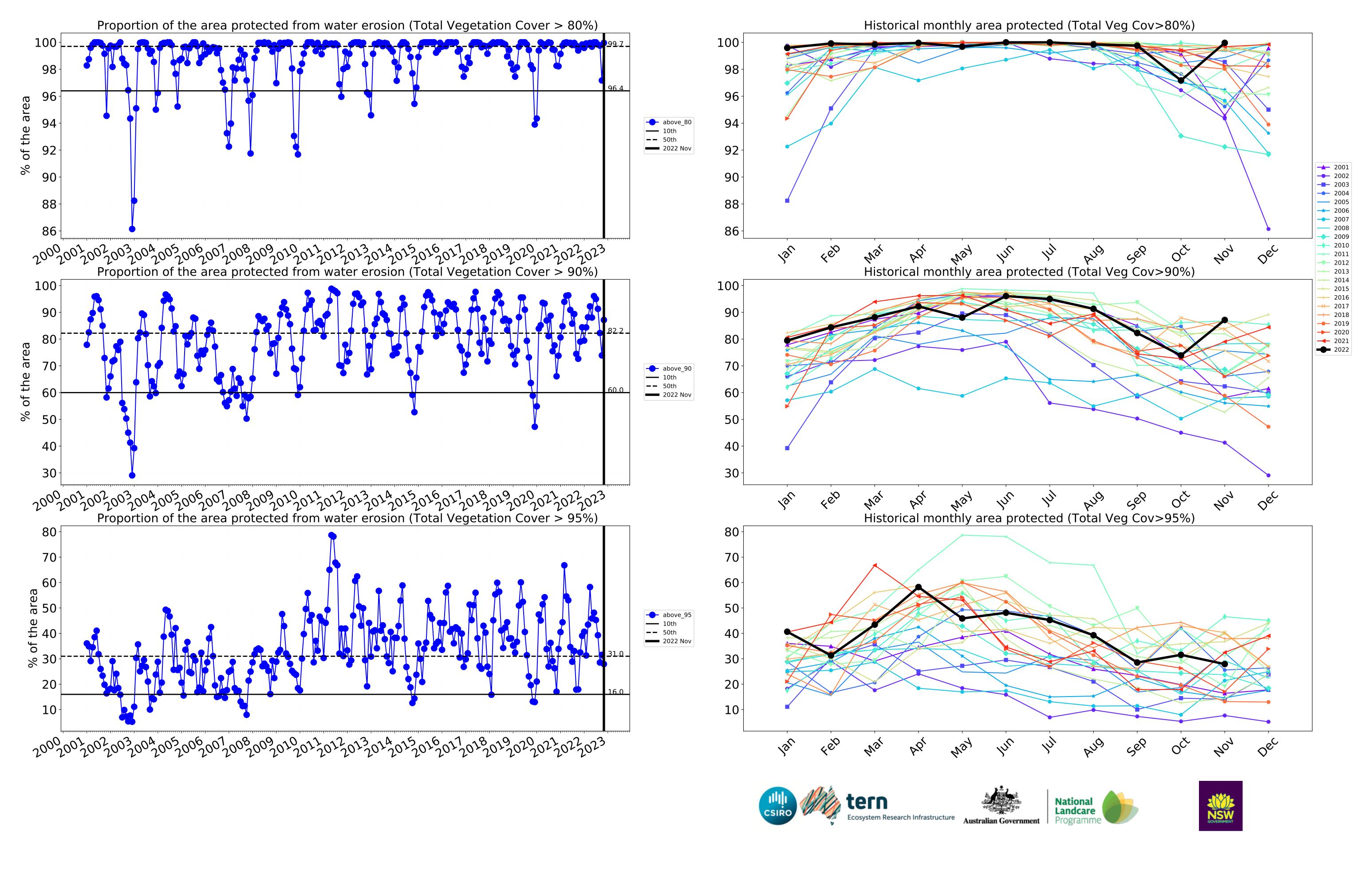




month

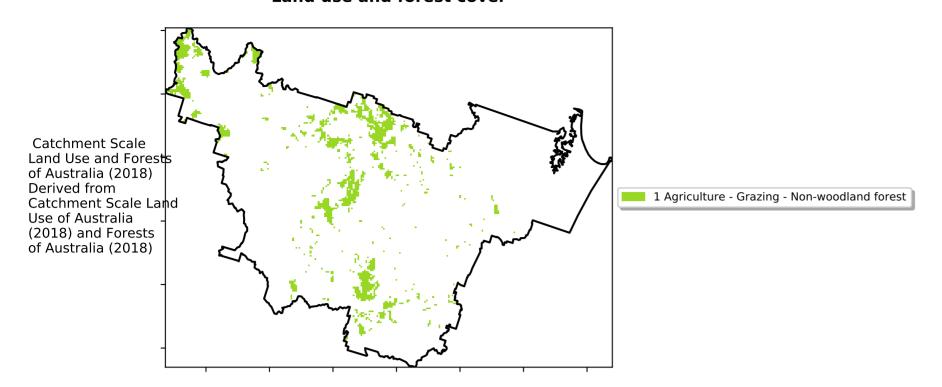




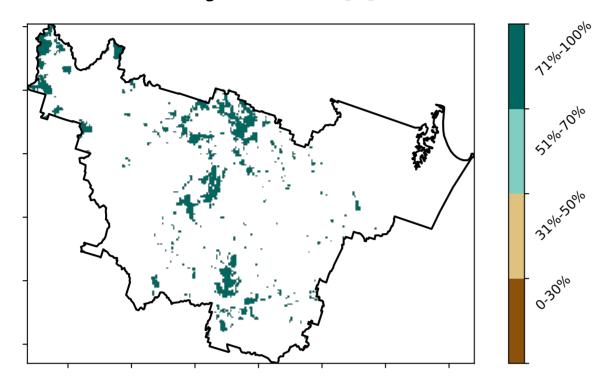


### **Grazing - Forest (non woodland)**

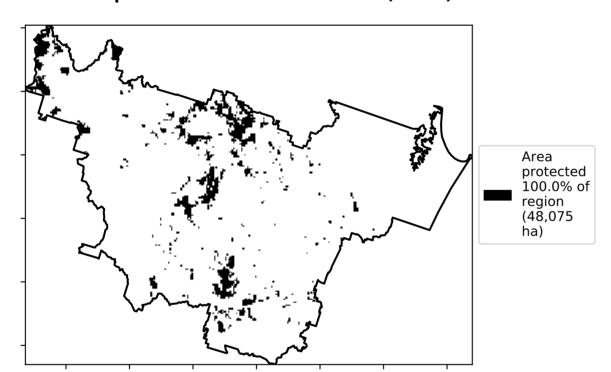
### Land use and forest cover



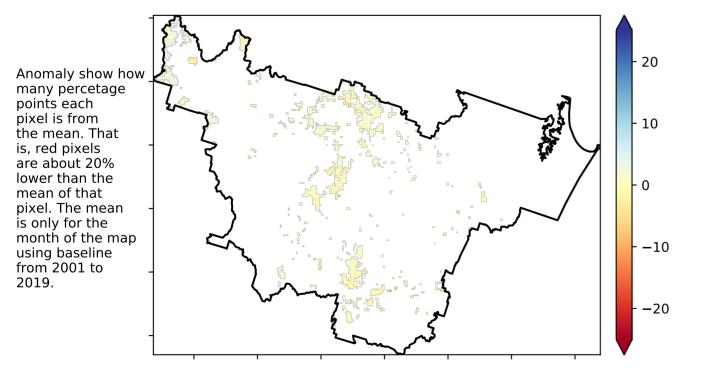
### **Total Vegetation Cover [%]**



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

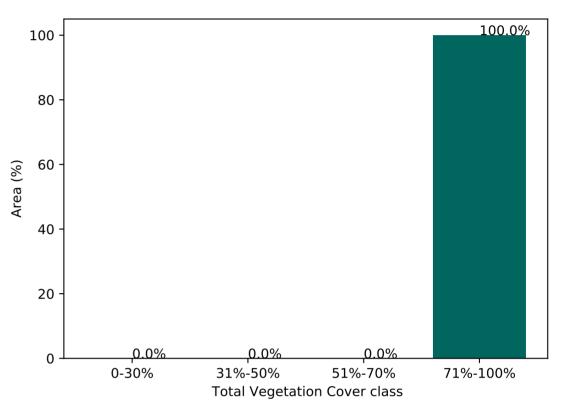


### Total Vegetation Cover Anomaly [%]

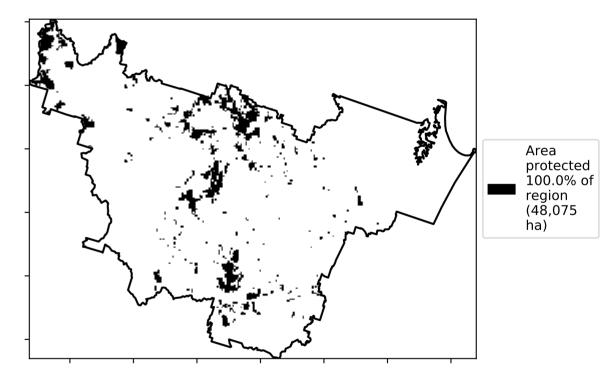


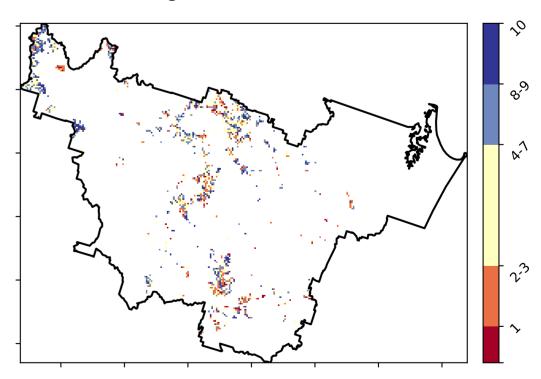
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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



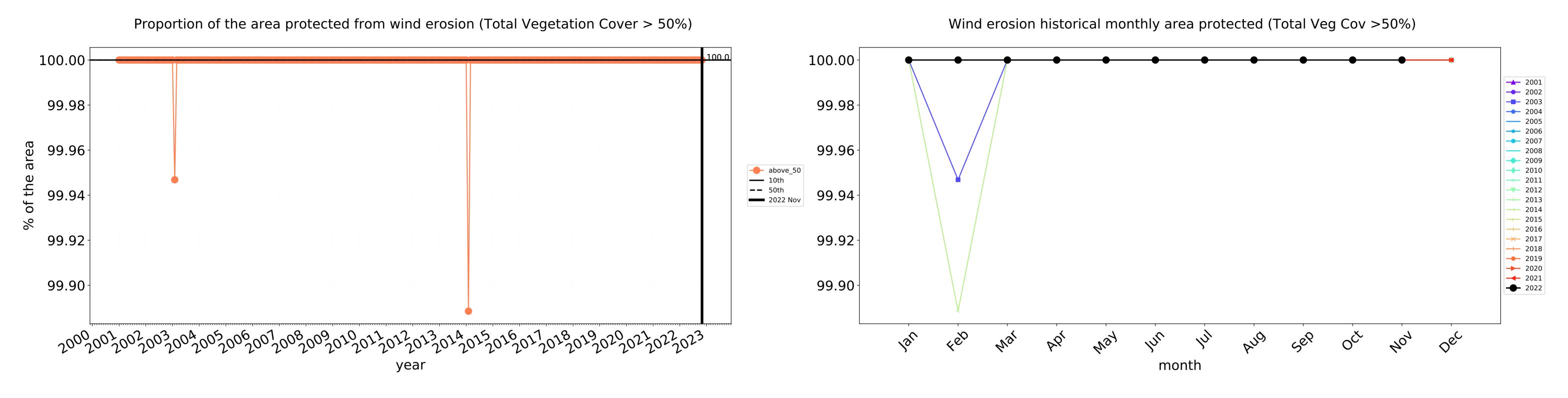


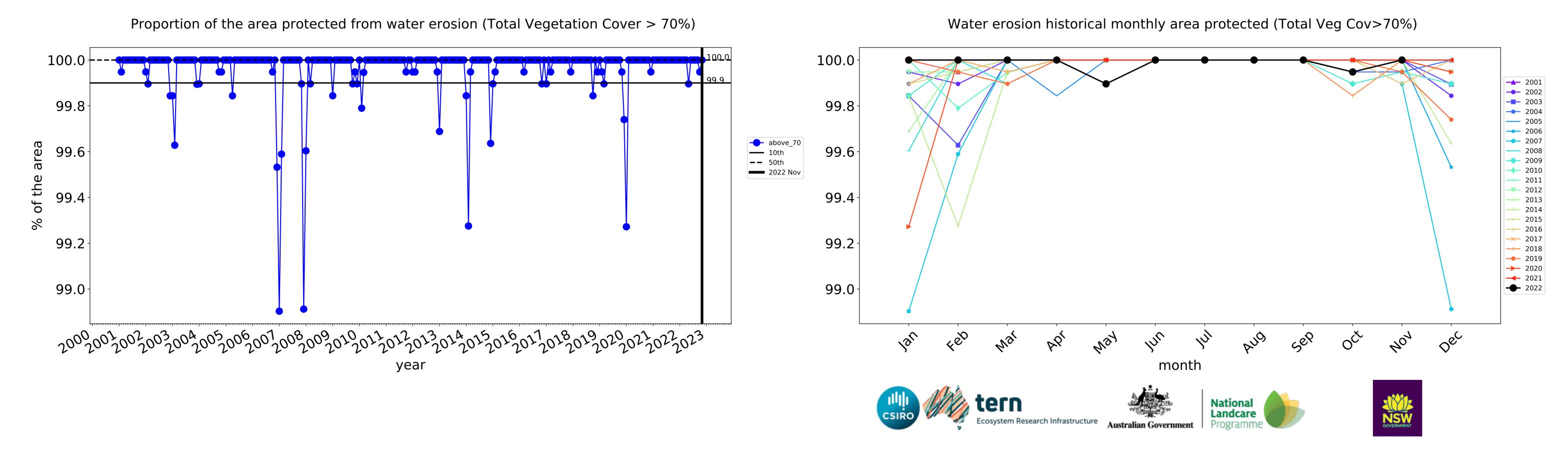


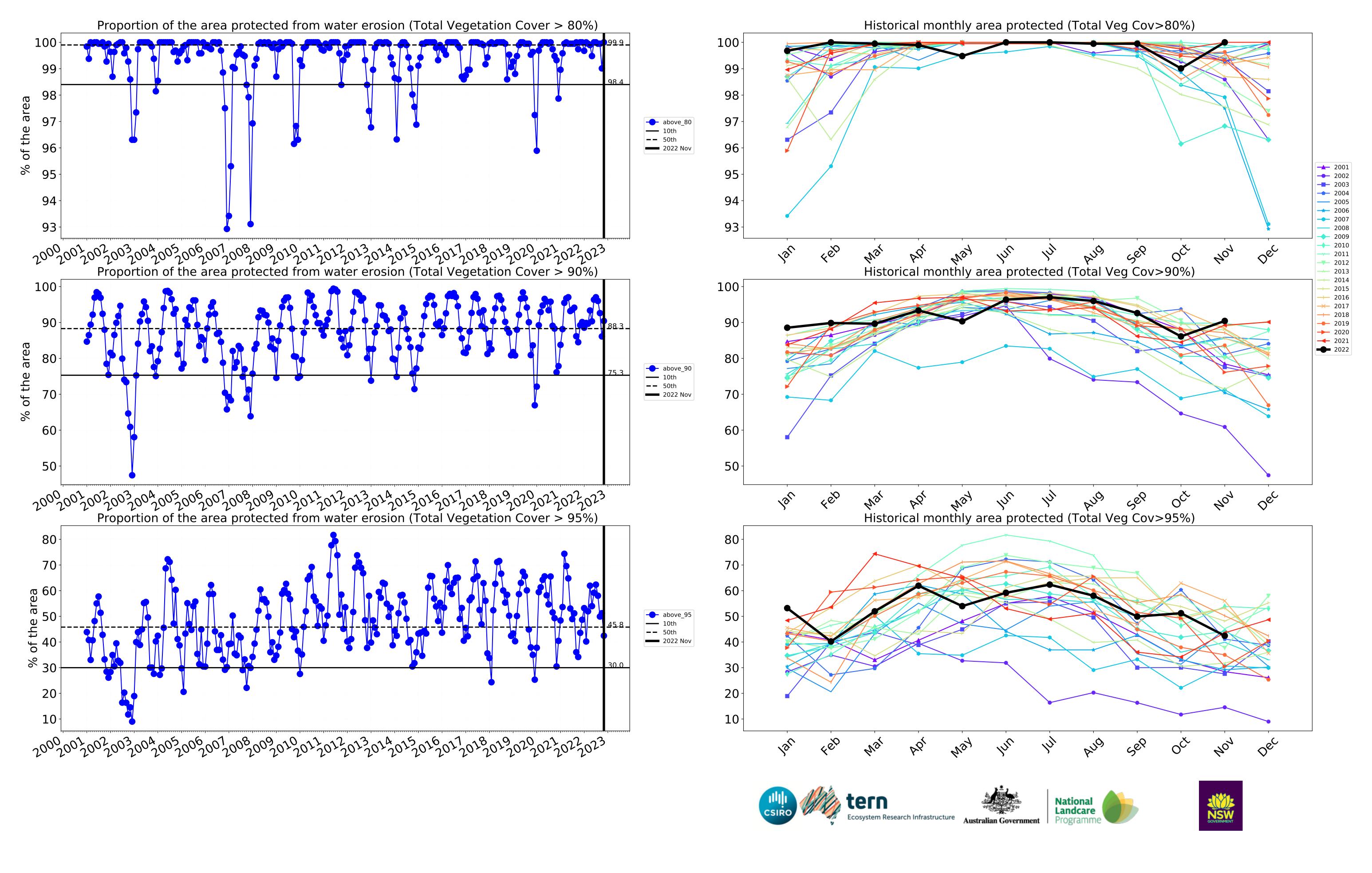






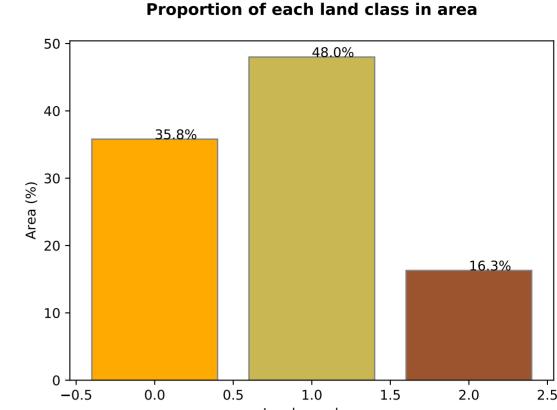


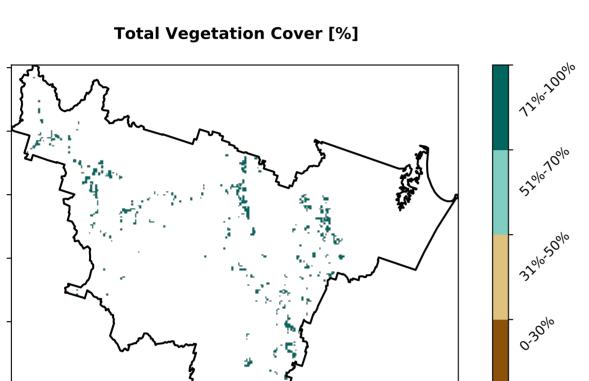


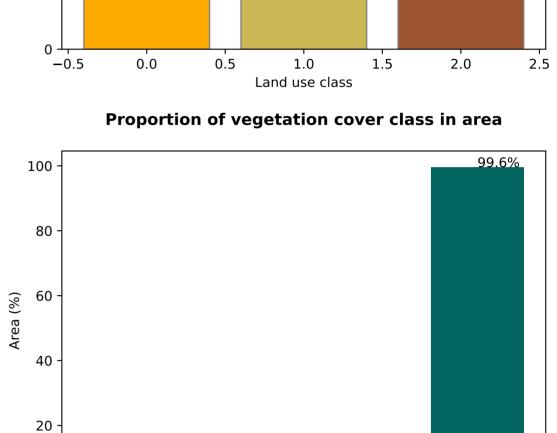


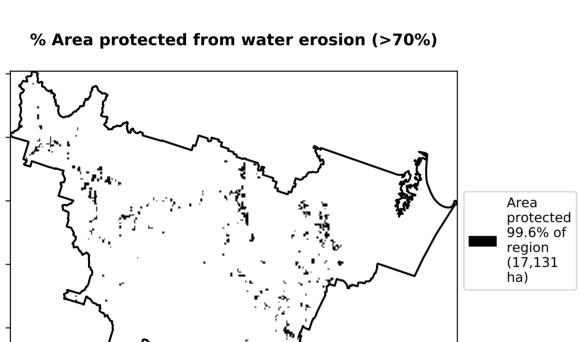
### **Irrigation**

## 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









% Area protected from wind erosion (>50%)

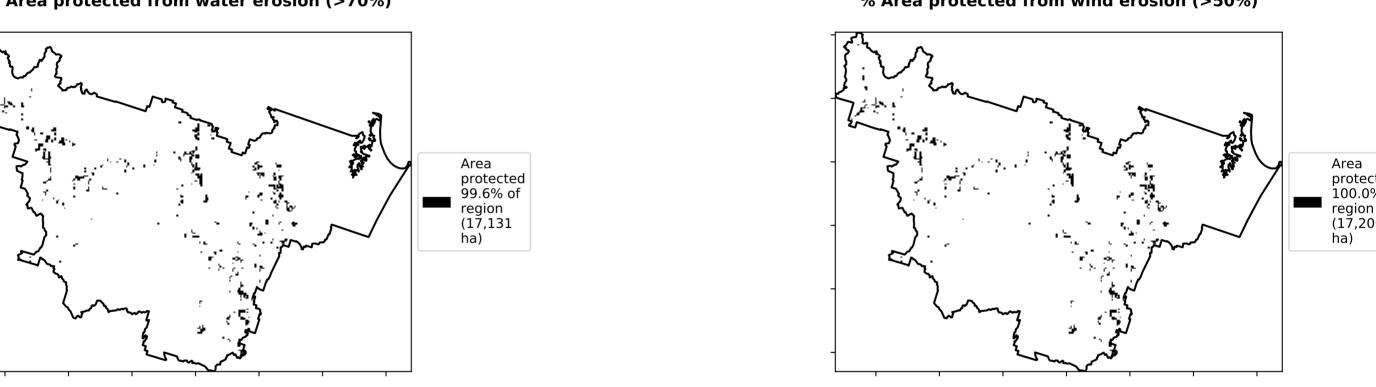
**Total Vegetation Cover class** 

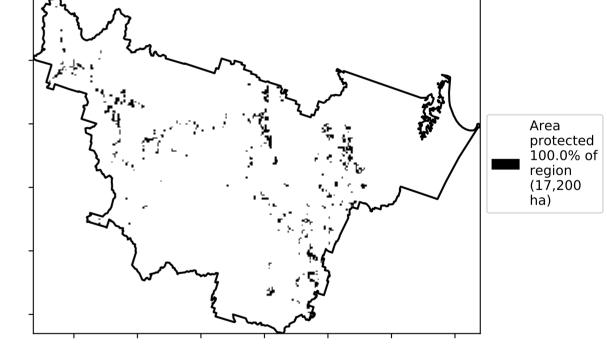
0.0%

31%-50%

0.0%

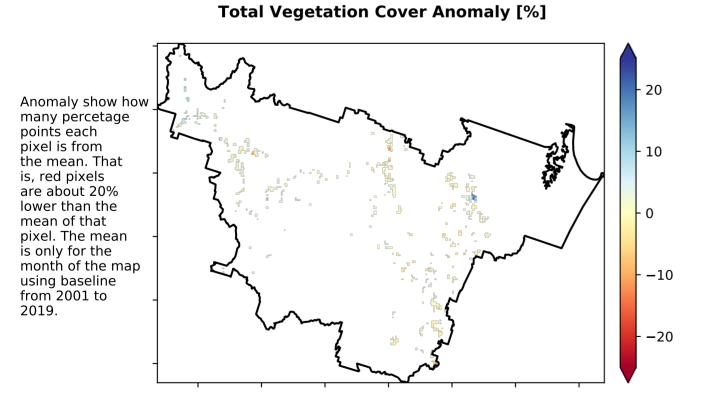
0-30%



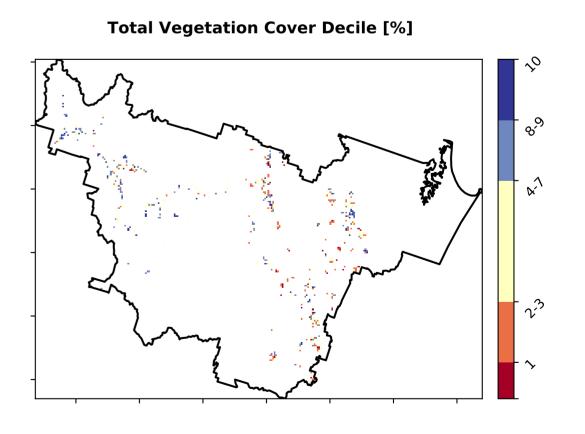


51%-70%

71%-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 map using baseline from 2001 to 2019.



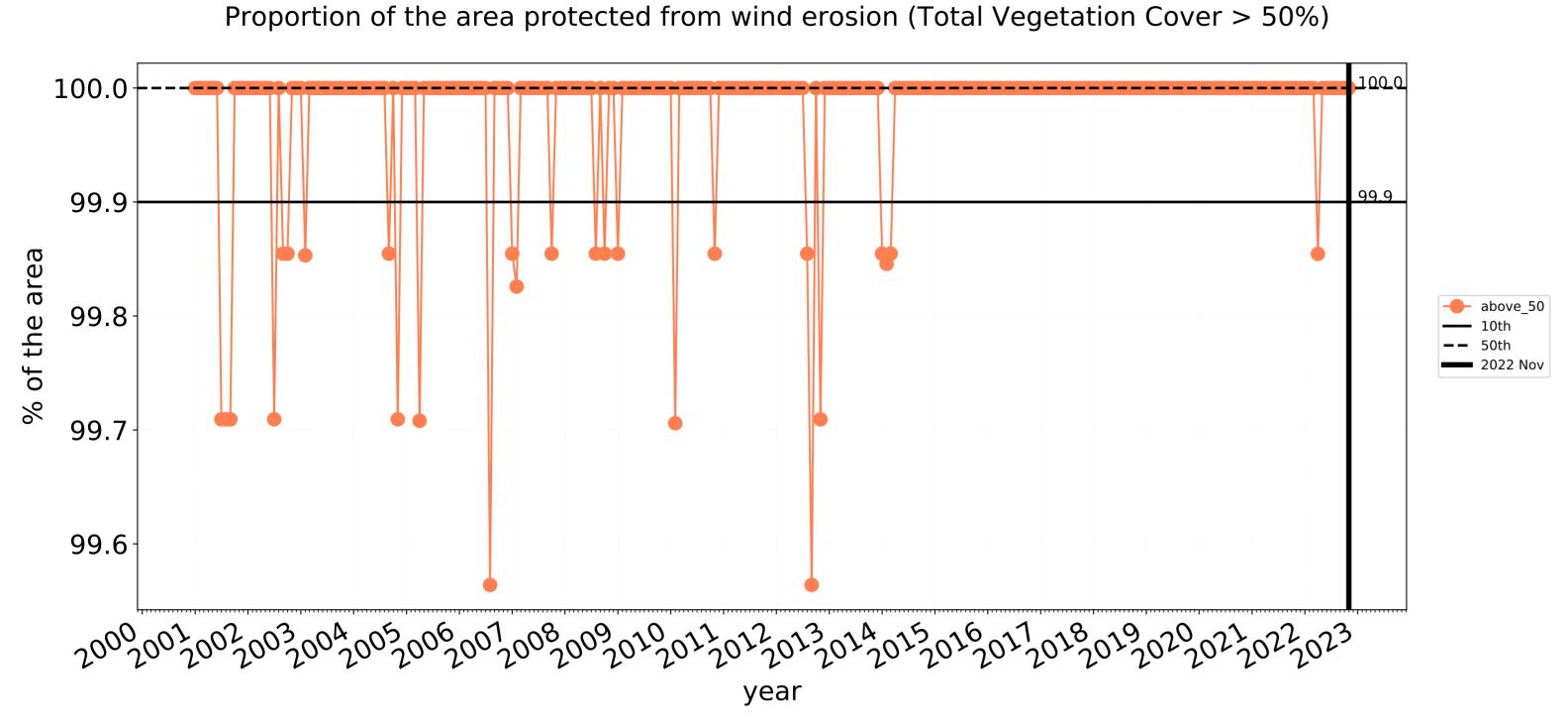


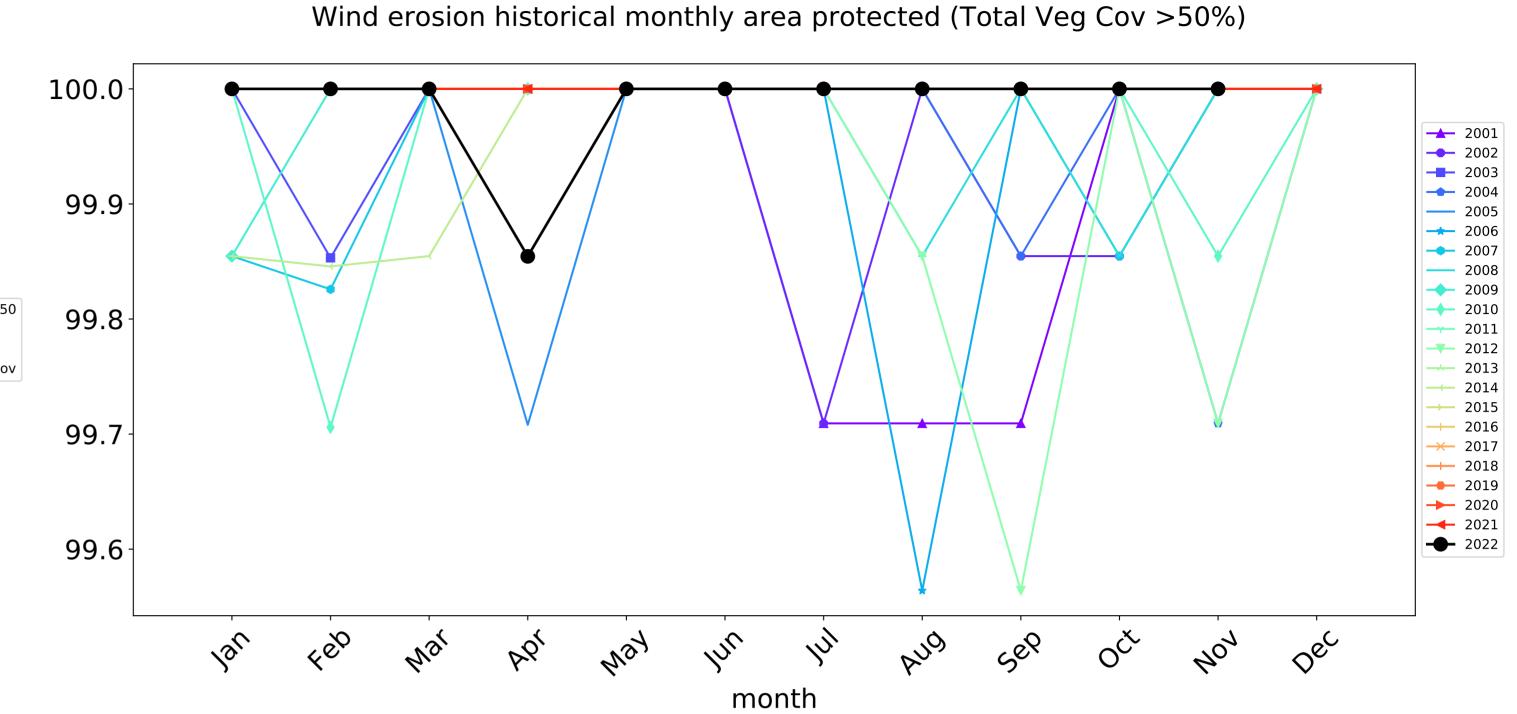


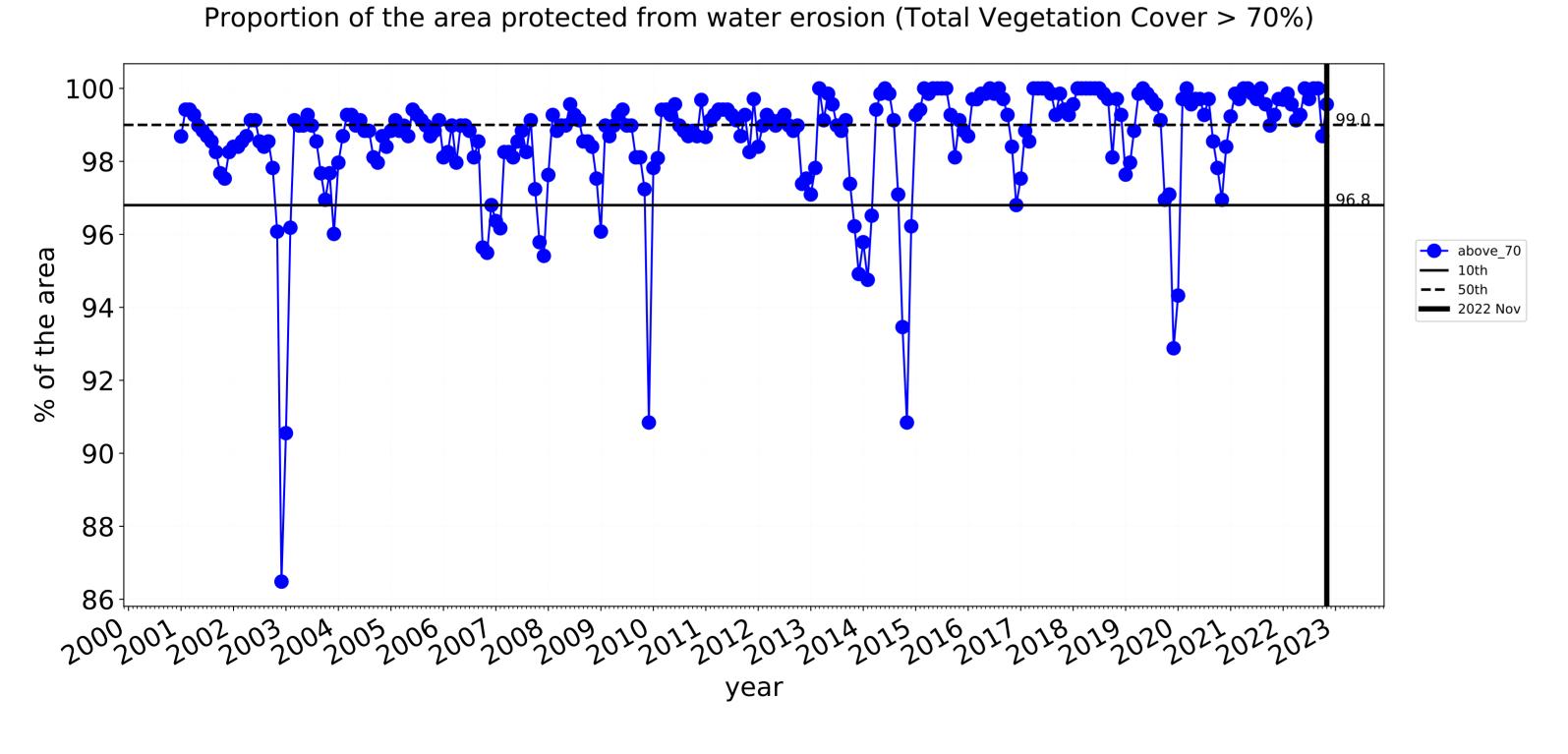


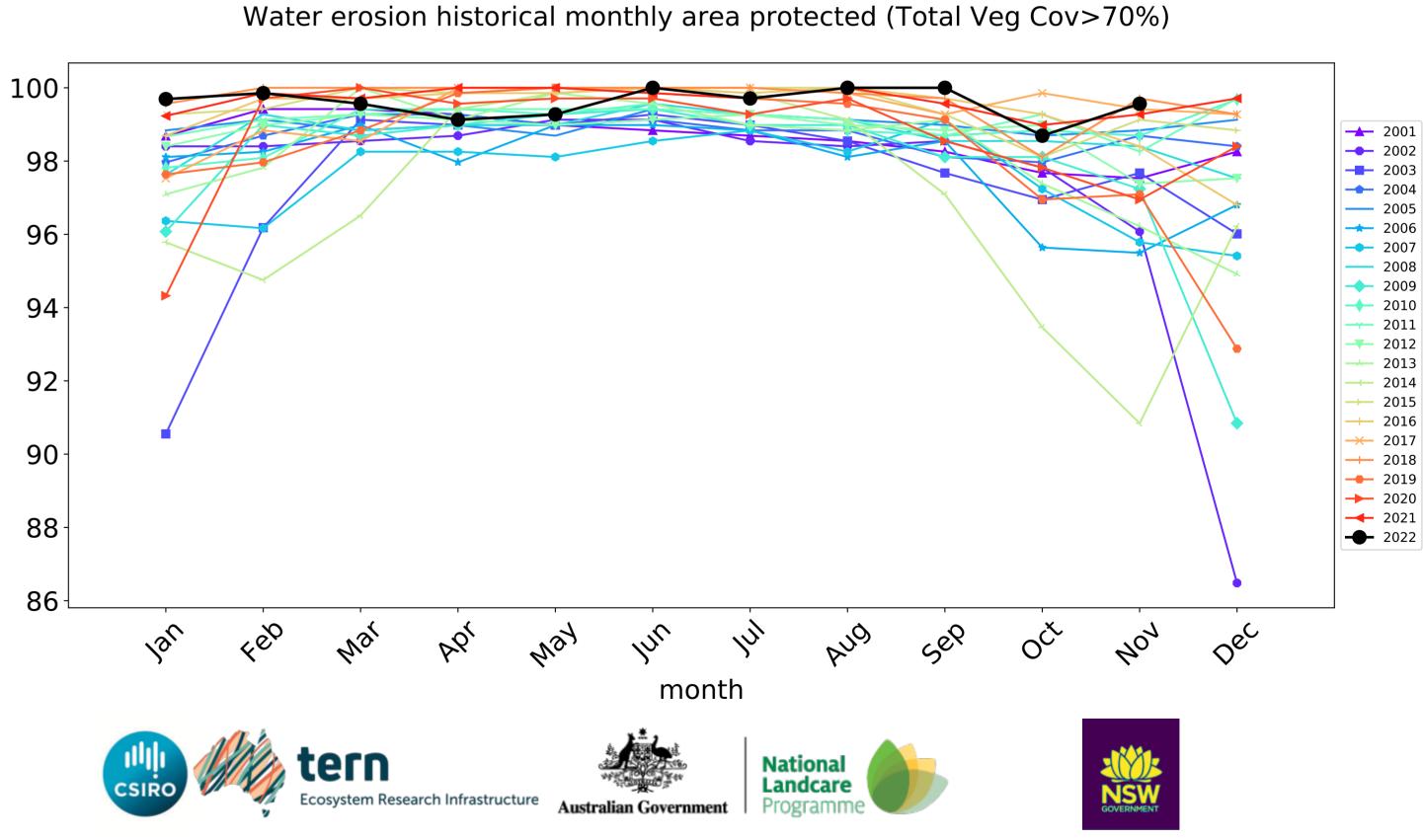


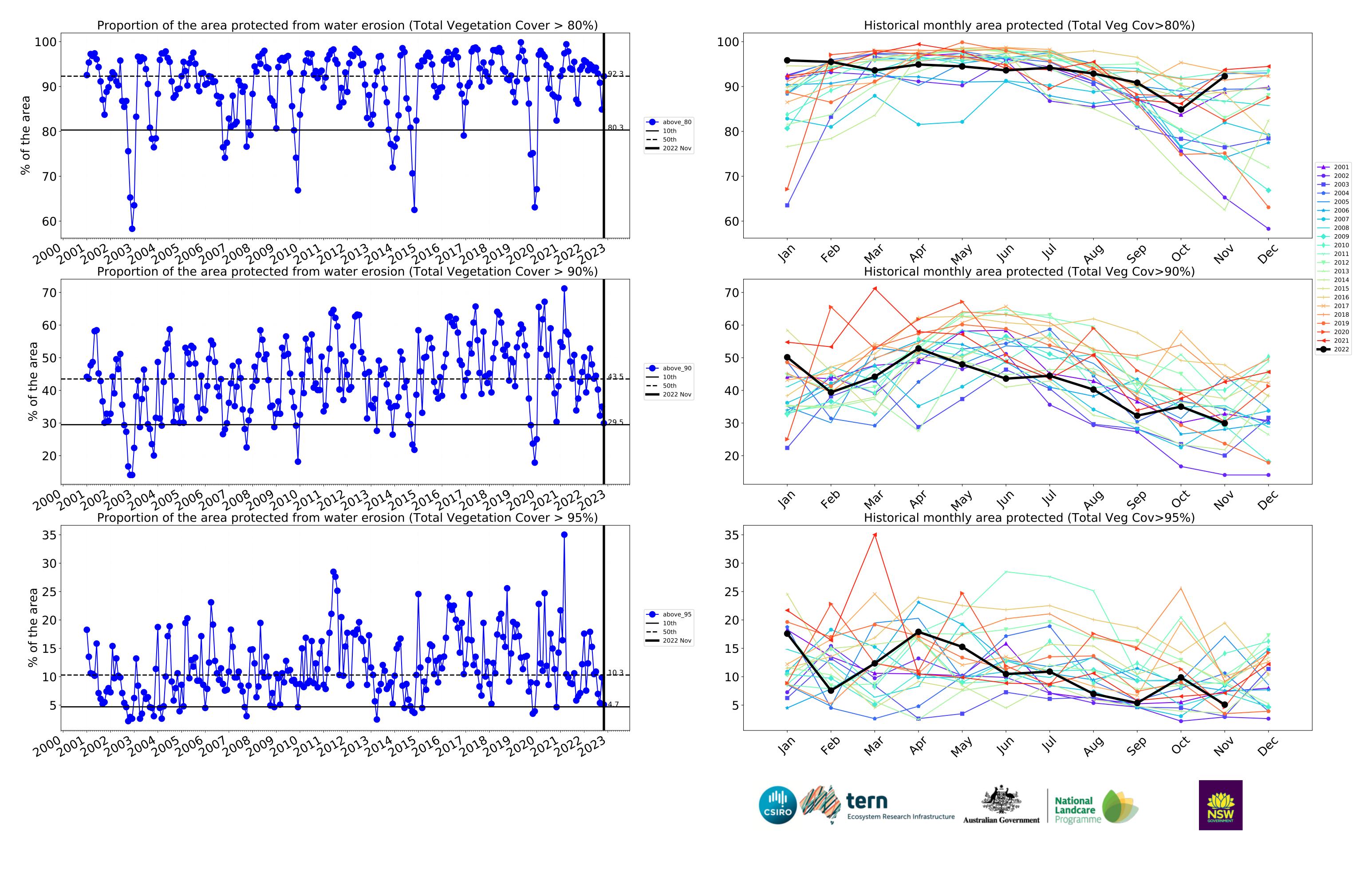
### Irrigation timeseries





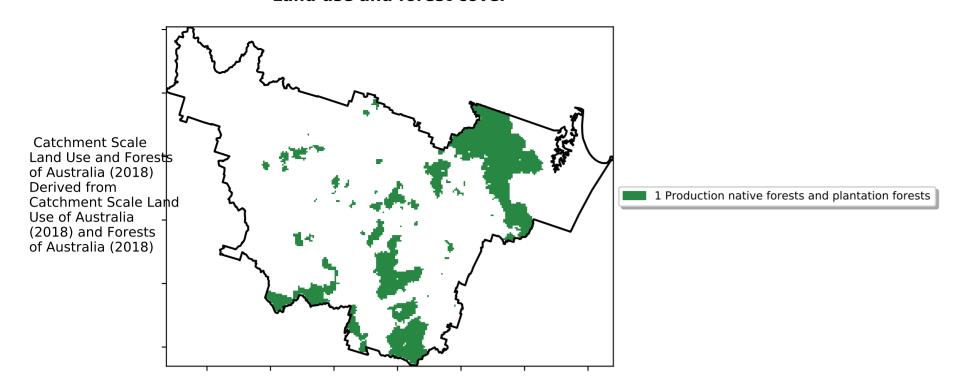




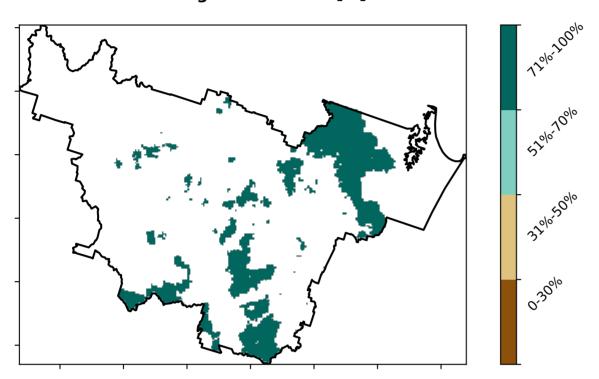


### **Production native forests and plantation forests**

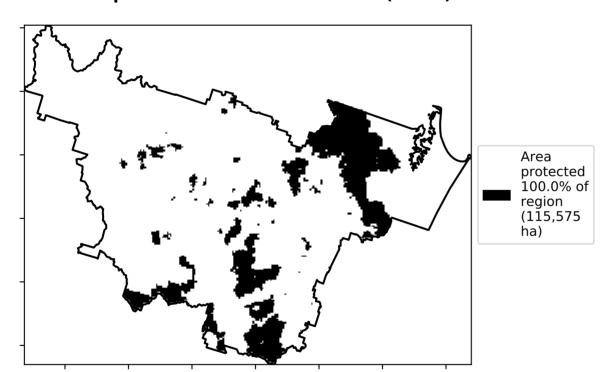
### Land use and forest cover



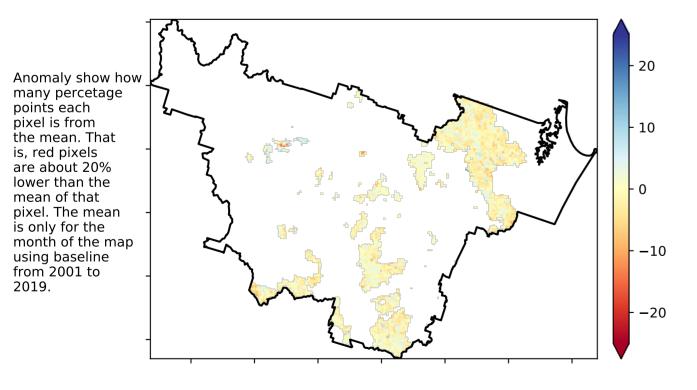
### **Total Vegetation Cover [%]**



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

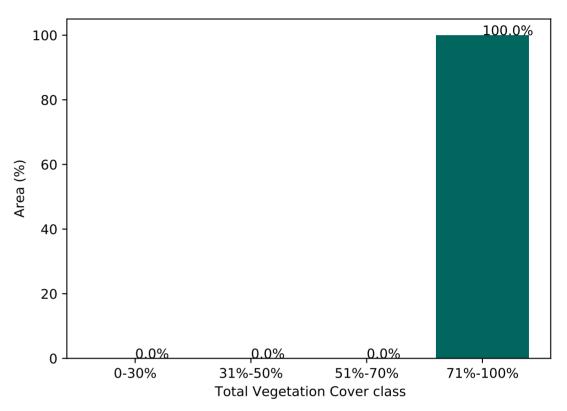


### Total Vegetation Cover Anomaly [%]

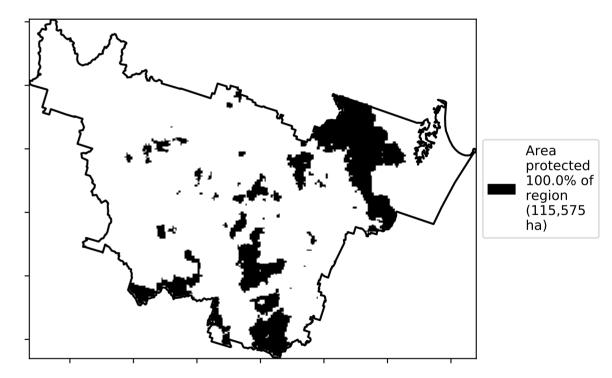


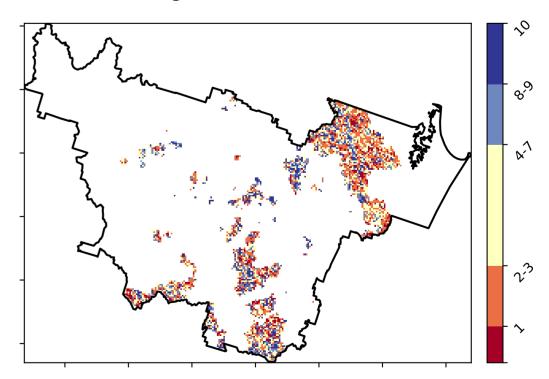
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### Proportion of vegetation cover class in area



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





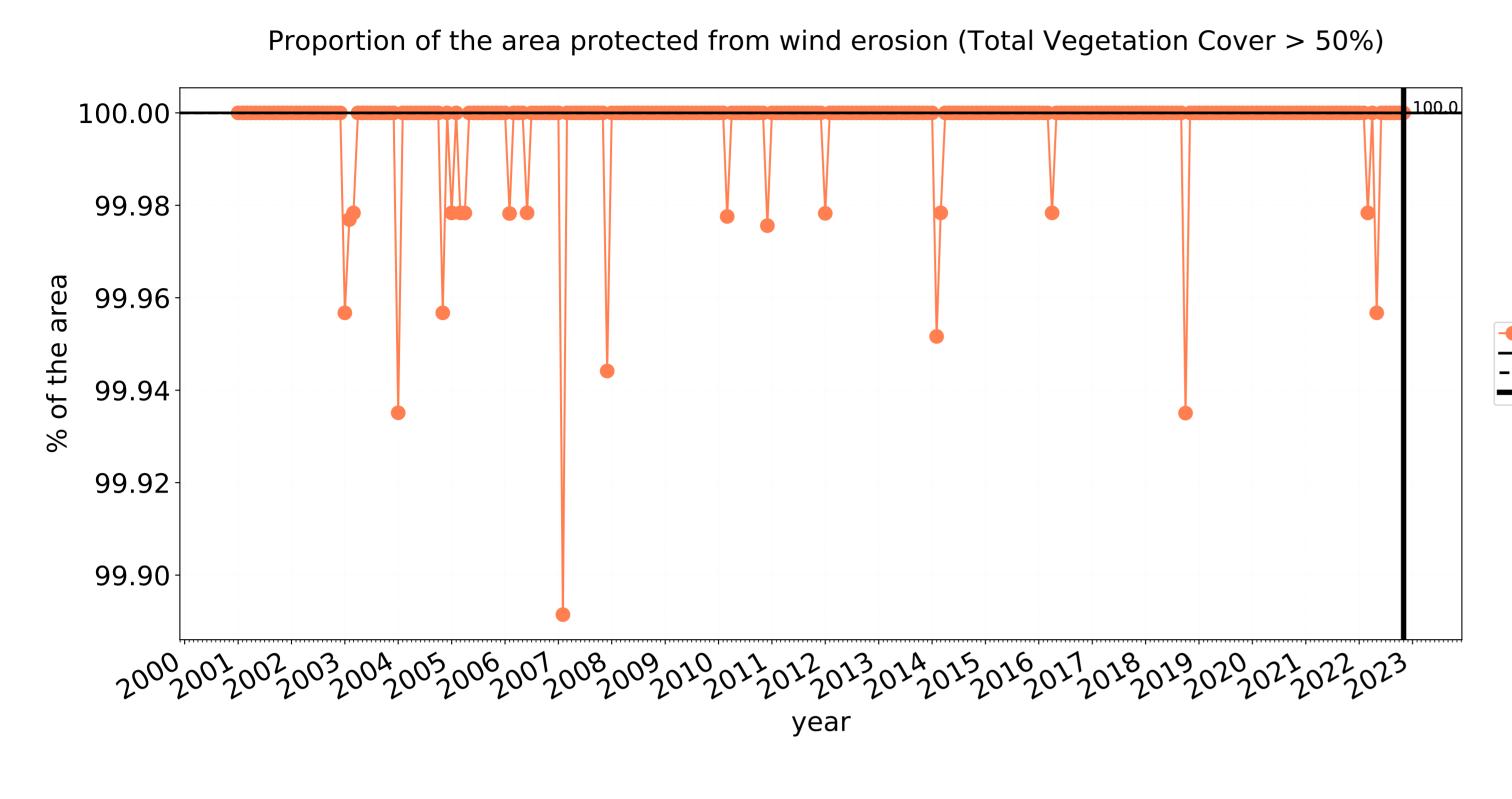


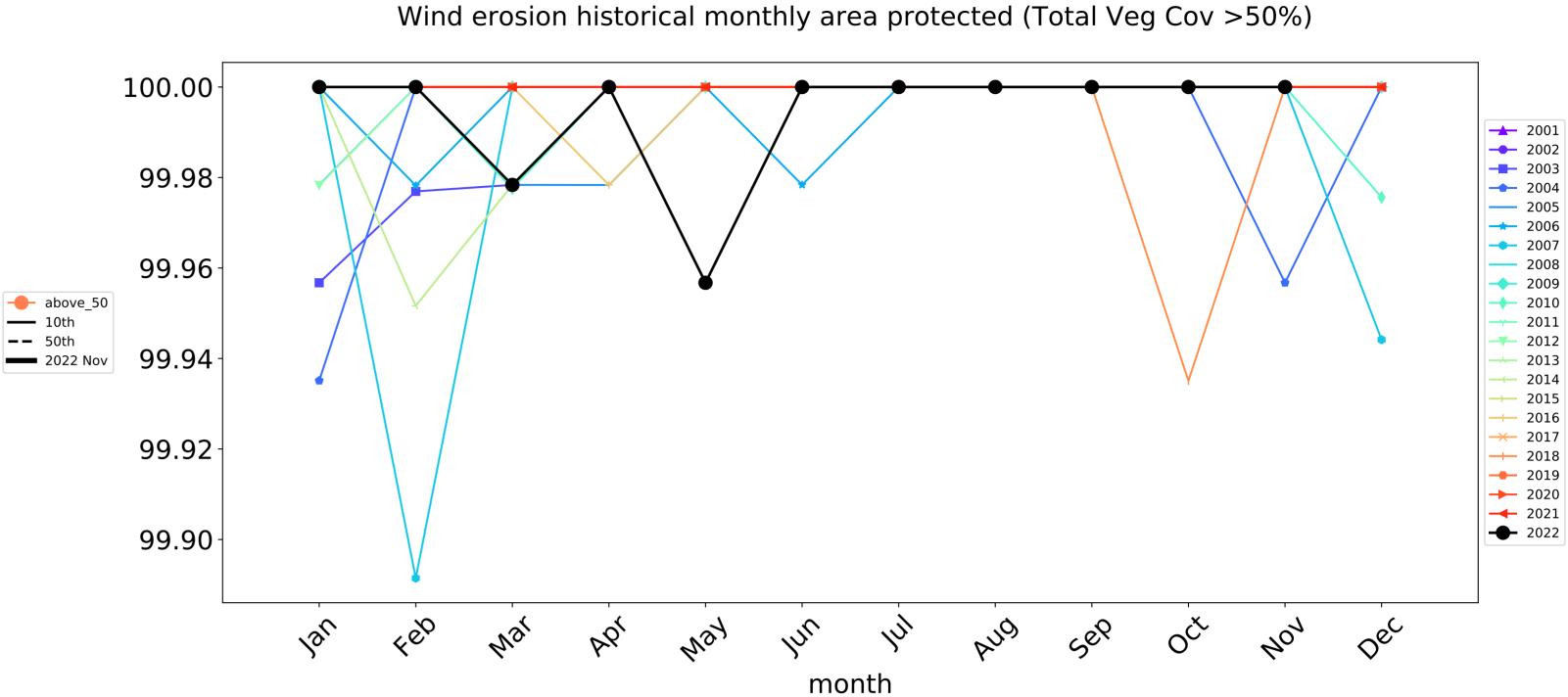


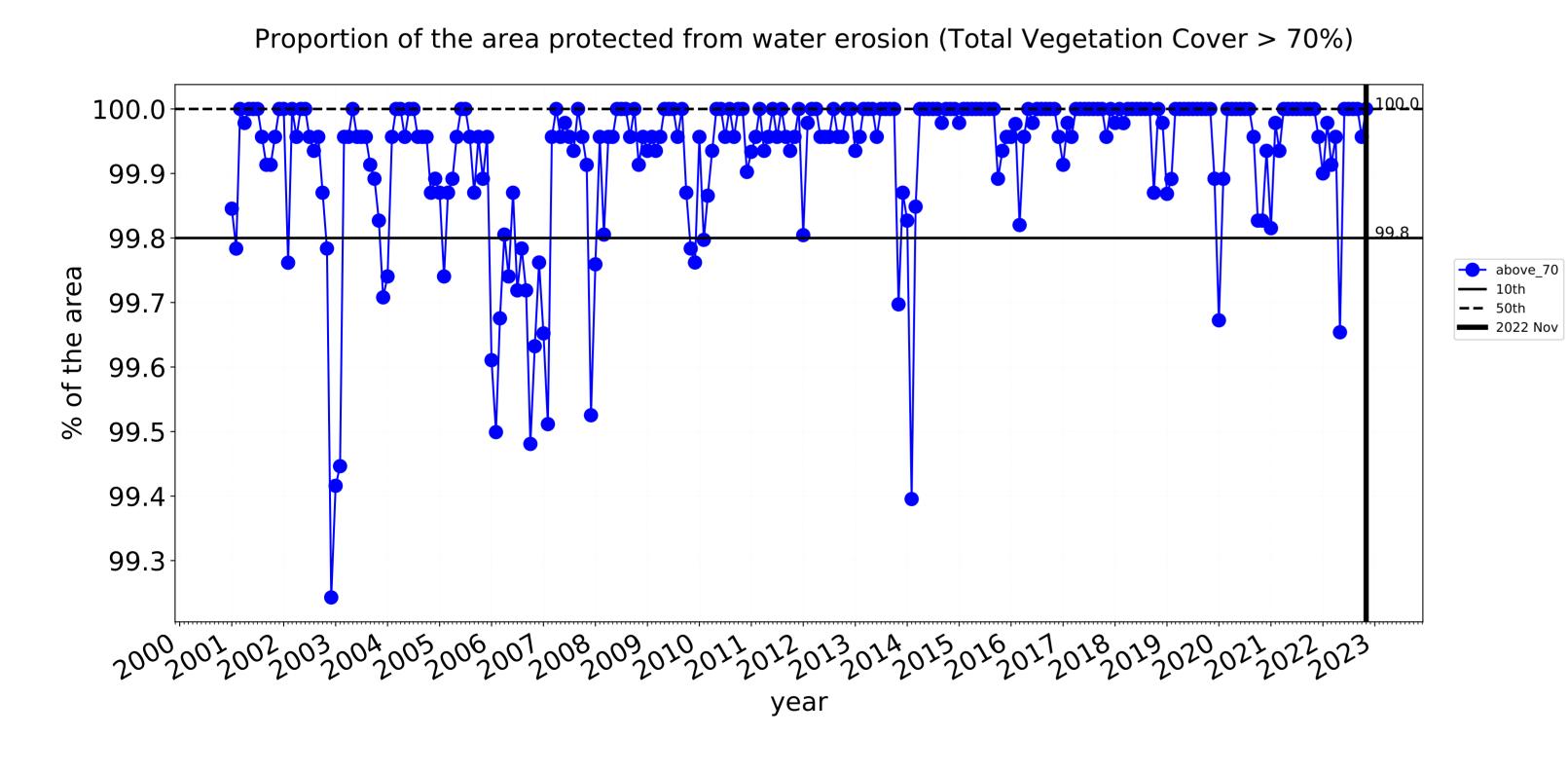


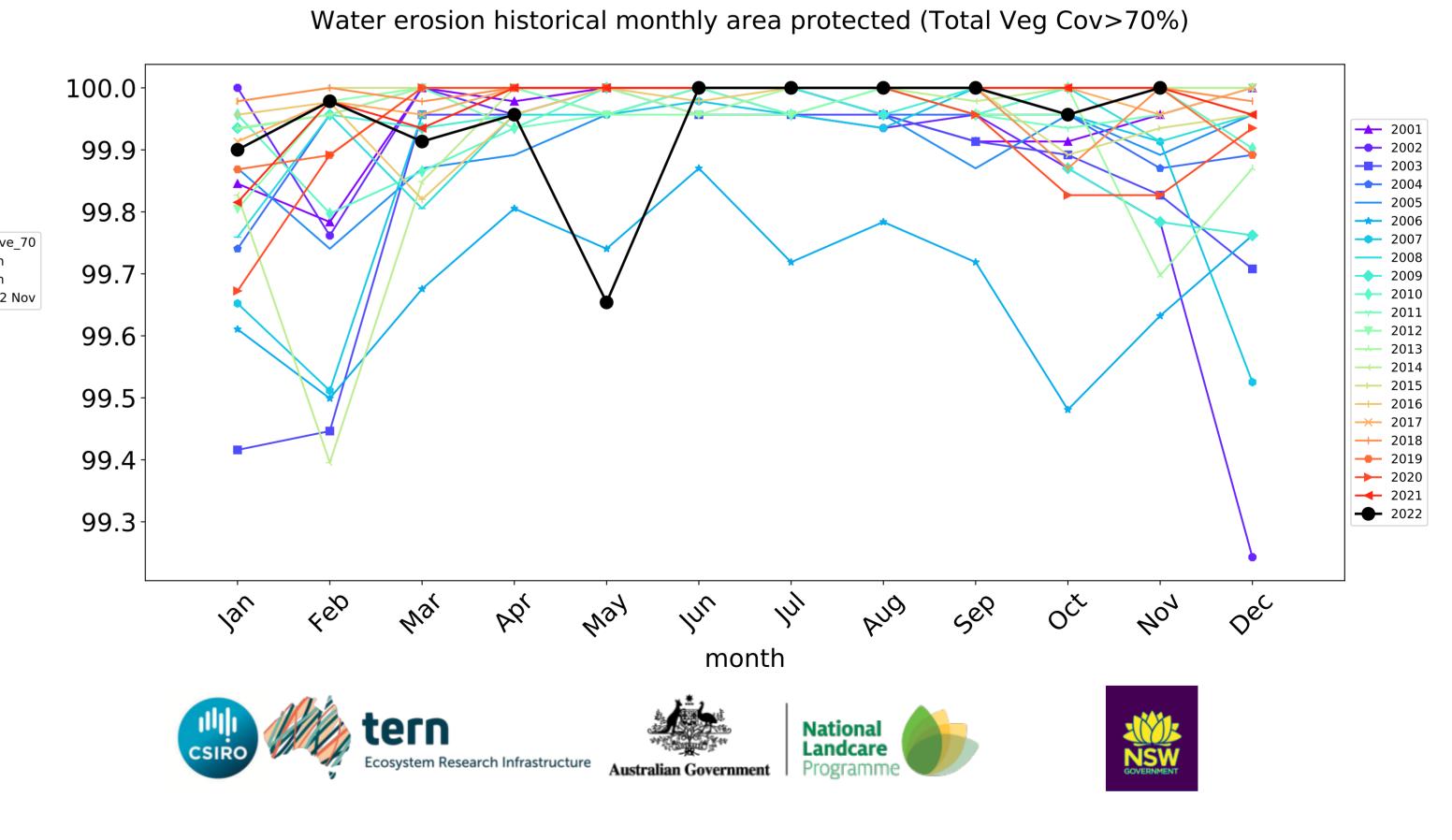


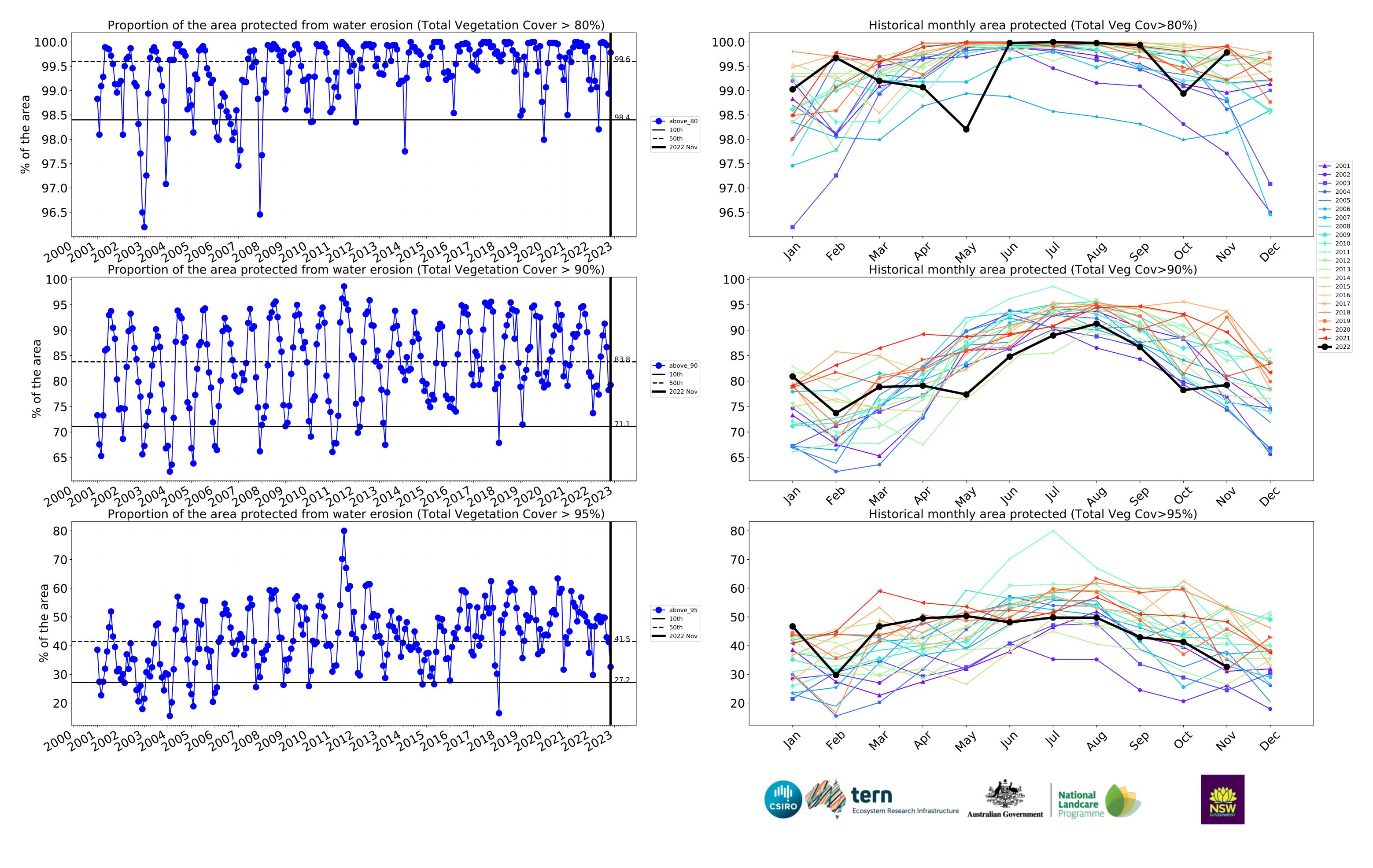
### **Production native forests and plantation forests timeseries**











# Gympie\_(R) (687,125 ha and no data 1,250 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	687,125	100.0% 687,075	100.0% 686,850	99.8% 686,075	98.8% 678,750	73.6% 505,750	27.2% 186,775
Conservation and natural environments	142,700	100.0% 142,650	99.8% 142,425	99.7% 142,225	99.2% 141,600	92.2% 131,525	47.2% 67,425
Conservation and natural environments non forest	9,975	100.0% 9,975	99.5% 9,925	99.2% 9,900	97.7% 9,750	91.5% 9,125	43.6% 4,350
Conservation and natural environments Woodland forest	28,800	99.9% 28,775	99.7% 28,725	99.7% 28,700	99.2% 28,575	92.0% 26,500	43.2% 12,450
Conservation and natural environments Forest (non woodland)	103,925	100.0% 103,900	99.9% 103,775	99.7% 103,625	99.4% 103,275	92.3% 95,900	48.7% 50,625
Agriculture	397,600	100.0% 397,600	100.0% 397,600	100.0% 397,425	98.9% 393,175	67.0% 266,400	19.7% 78,500
Grazing	377,625	100.0% 377,625	100.0% 377,625	100.0% 377,525	99.2% 374,600	68.8% 259,900	20.5% 77,375
Grazing non forest	267,675	100.0% 267,675	100.0% 267,675	100.0% 267,575	98.9% 264,675	60.7% 162,500	14.8% 39,700
Grazing Woodland forest	61,875	100.0% 61,875	100.0% 61,875	100.0% 61,875	100.0% 61,850	87.2% 53,925	27.9% 17,275
Grazing - Forest (non woodland)	48,075	100.0% 48,075	100.0% 48,075	100.0% 48,075	100.0% 48,075	90.4% 43,475	42.4% 20,400
Irrigation	17,200	100.0% 17,200	100.0% 17,200	99.6% 17,125	92.3% 15,875	29.9% 5,150	5.1% 875
Production native forests and plantation forests	115,575	100.0% 115,575	100.0% 115,575	100.0% 115,575	99.8% 115,325	79.2% 91,575	32.6% 37,700







