### Total vegetation cover soil protection Region:NRM Hunter NSW

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: October 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



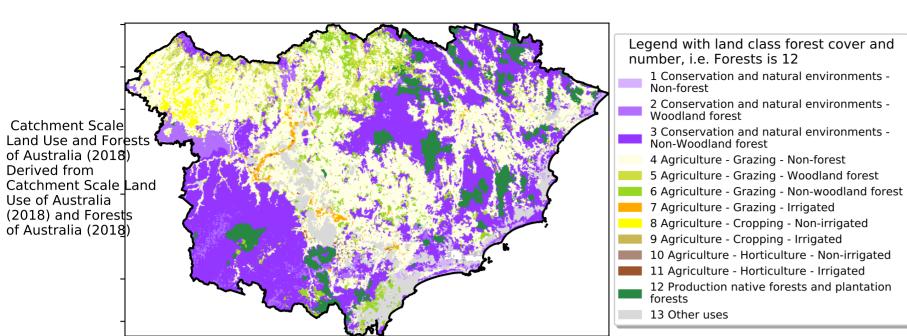




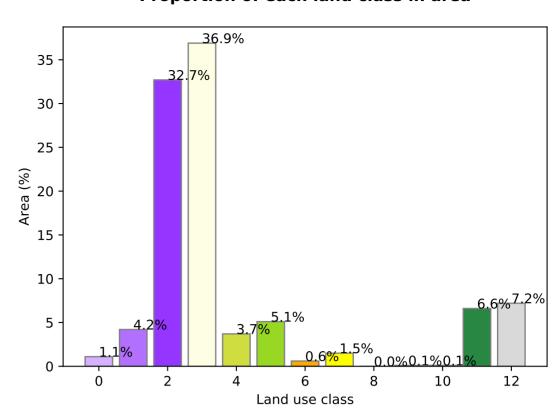


#### **Vegetation Cover Oct 2024**

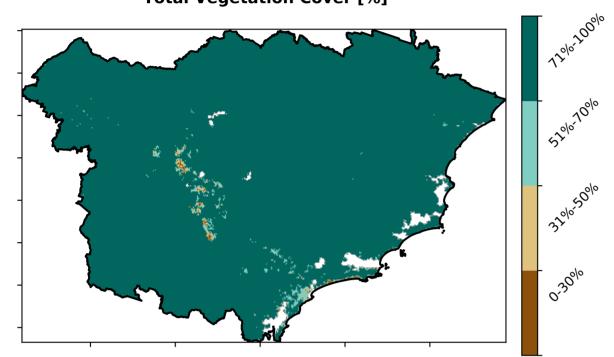
#### Land use and forest cover



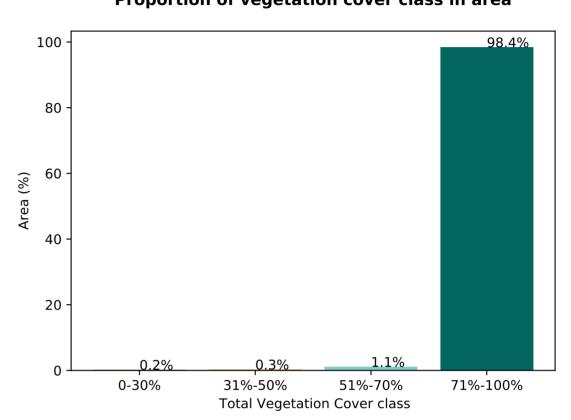
#### Proportion of each land class in area



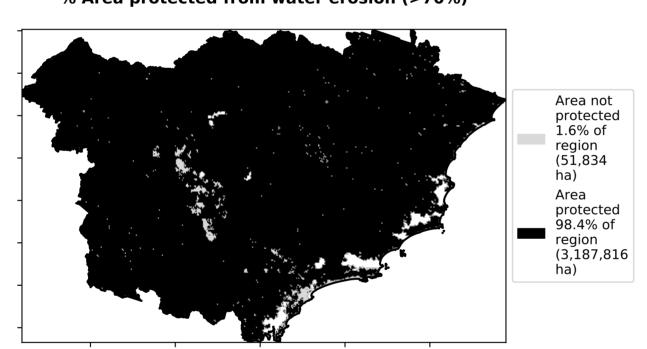
Total Vegetation Cover [%]



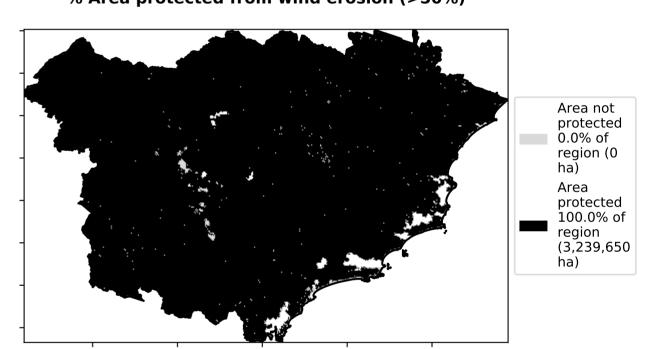
Proportion of vegetation cover class in area



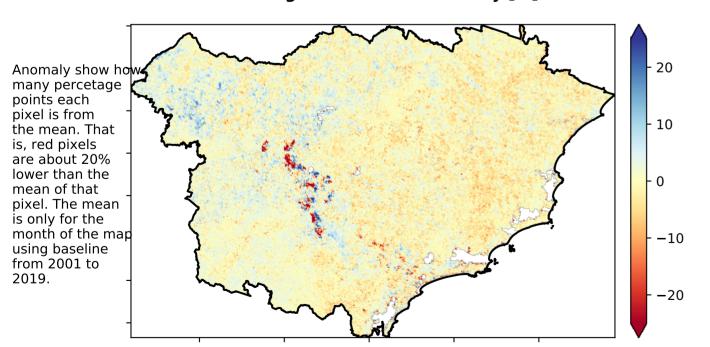
% Area protected from water erosion (>70%)



% 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.

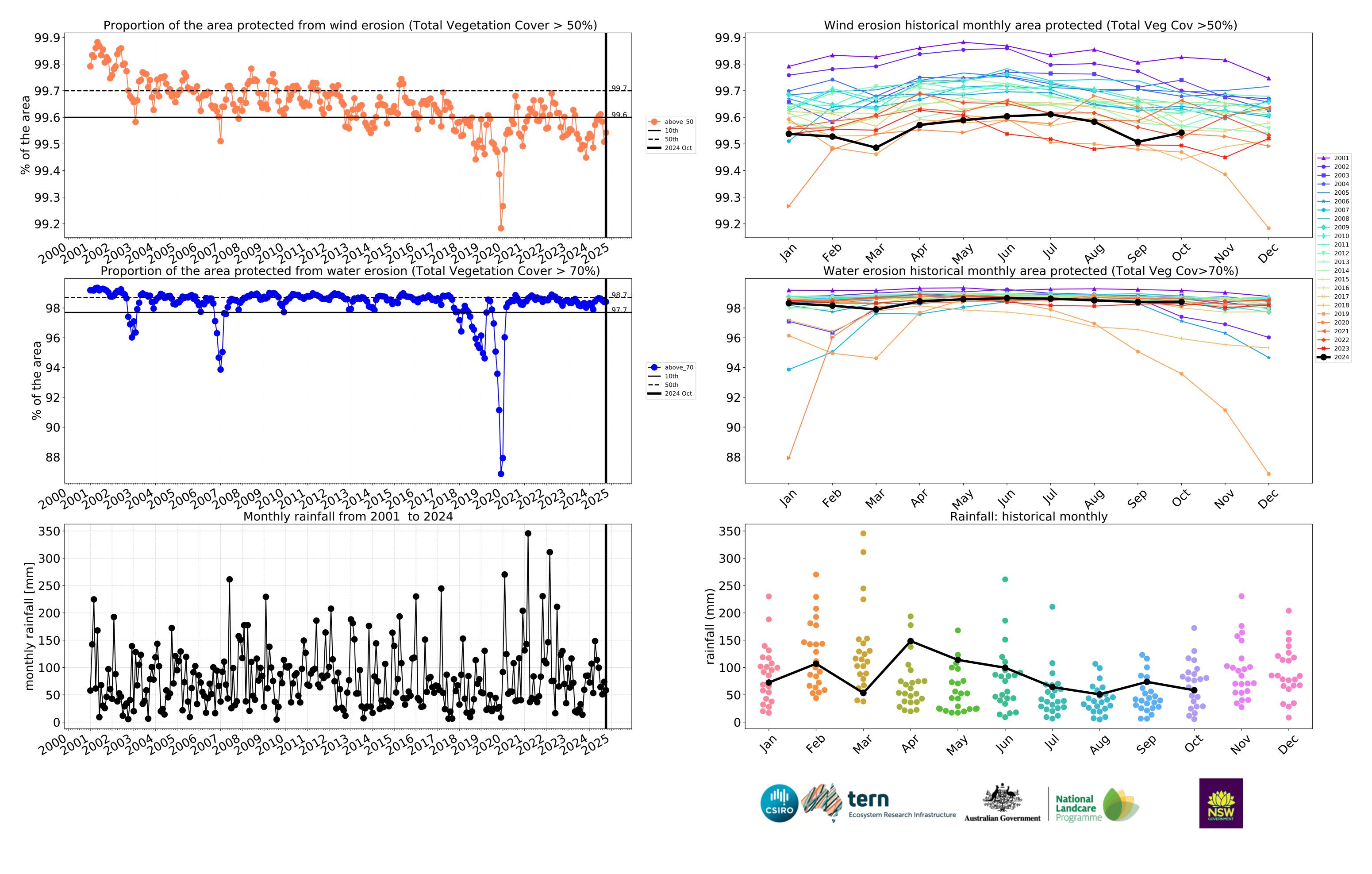
**Total Vegetation Cover Decile [%]** 



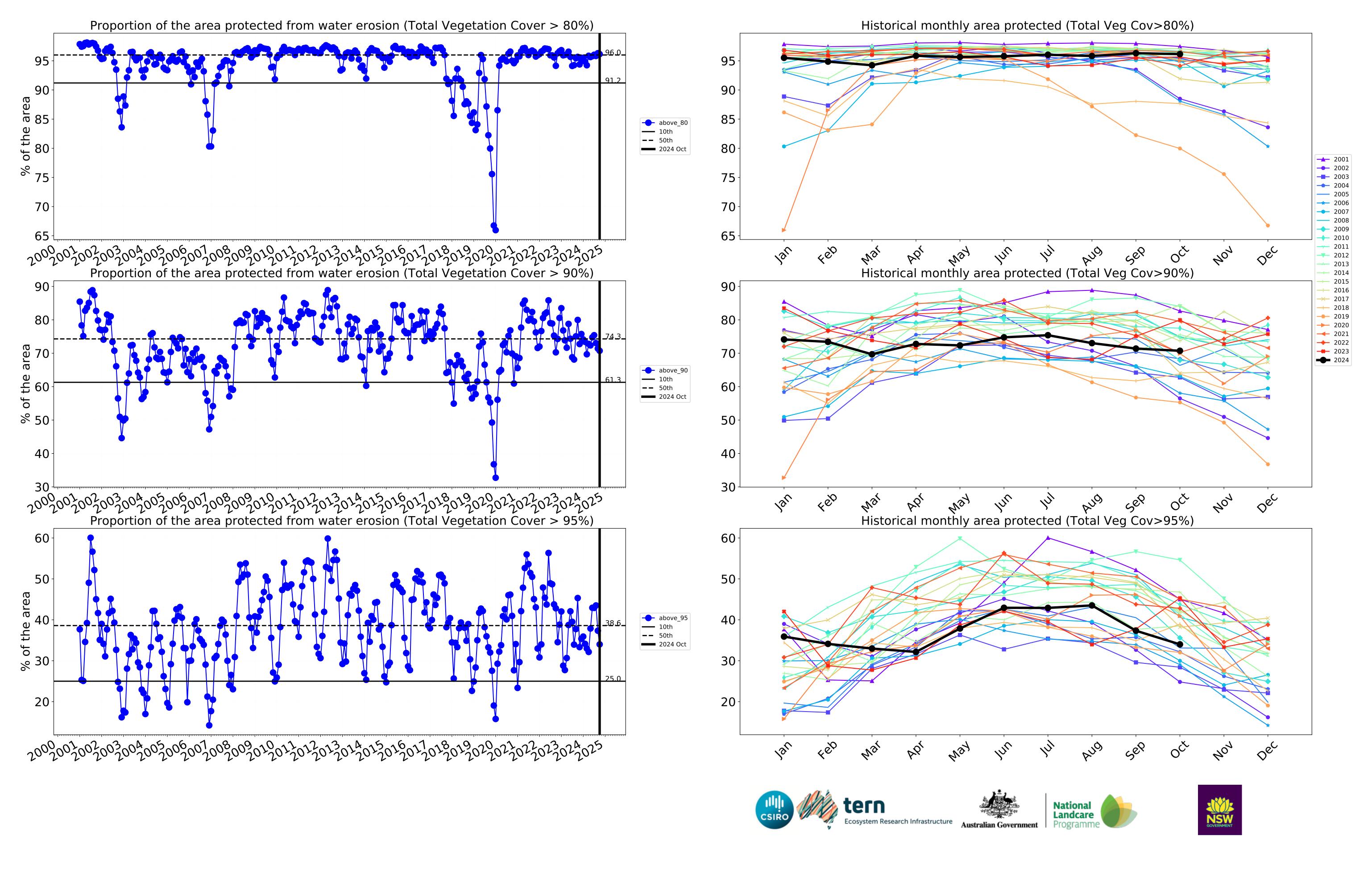




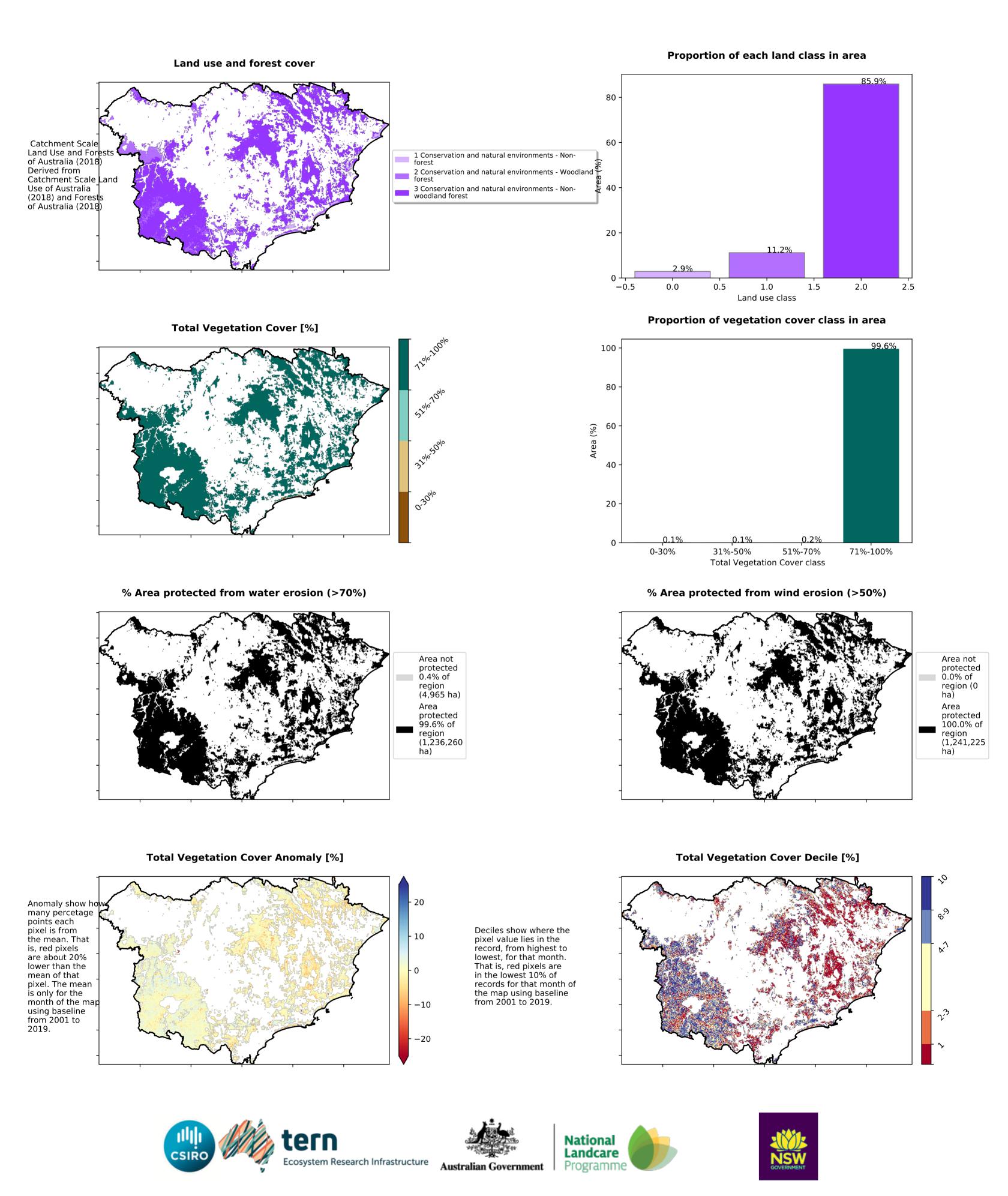




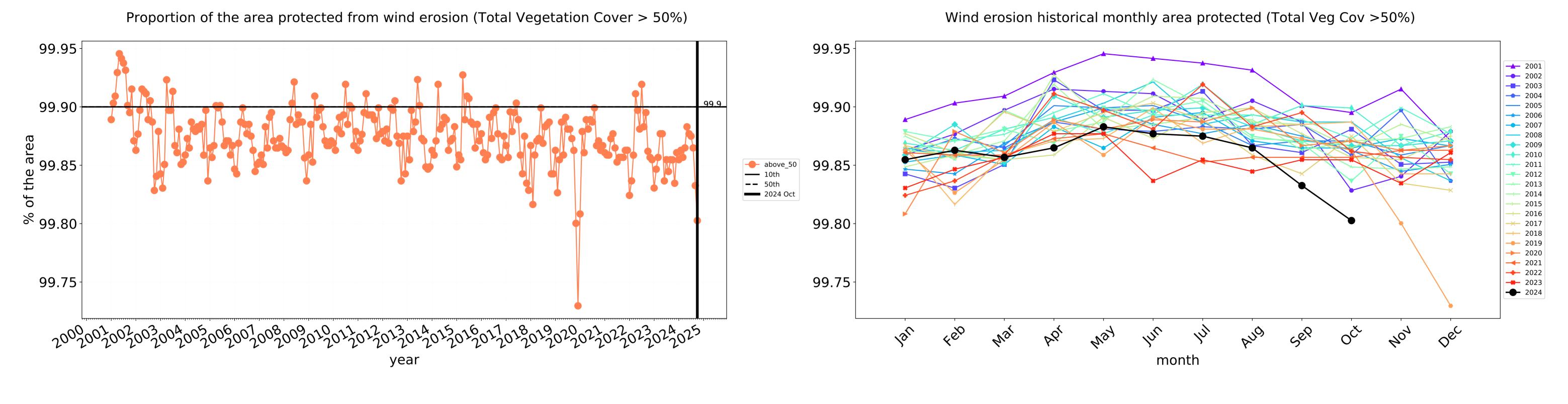
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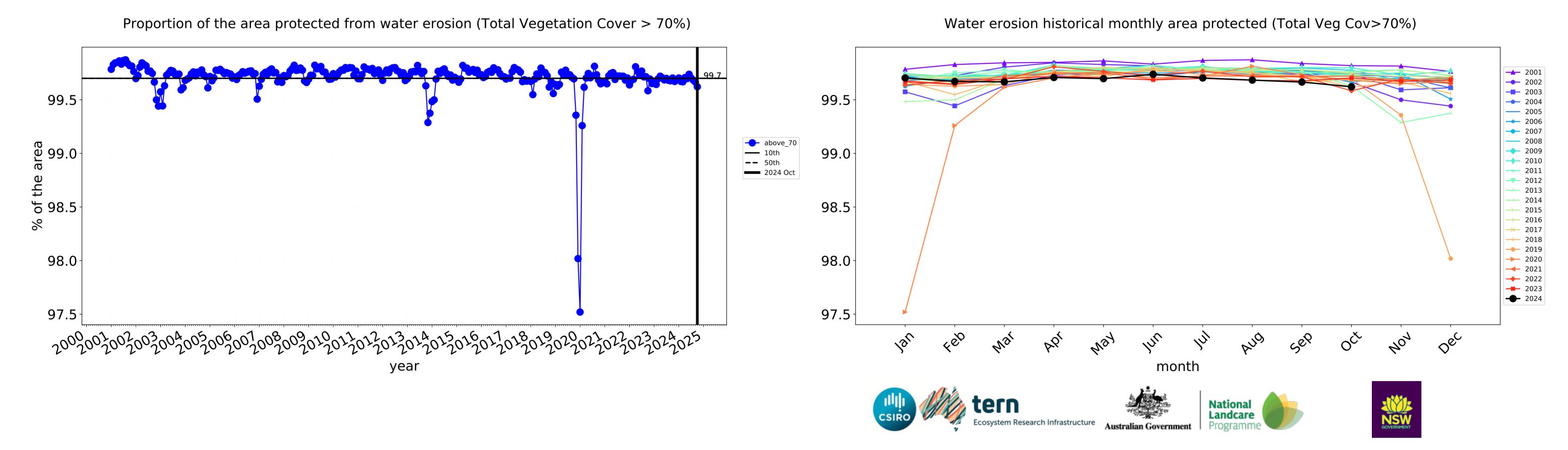


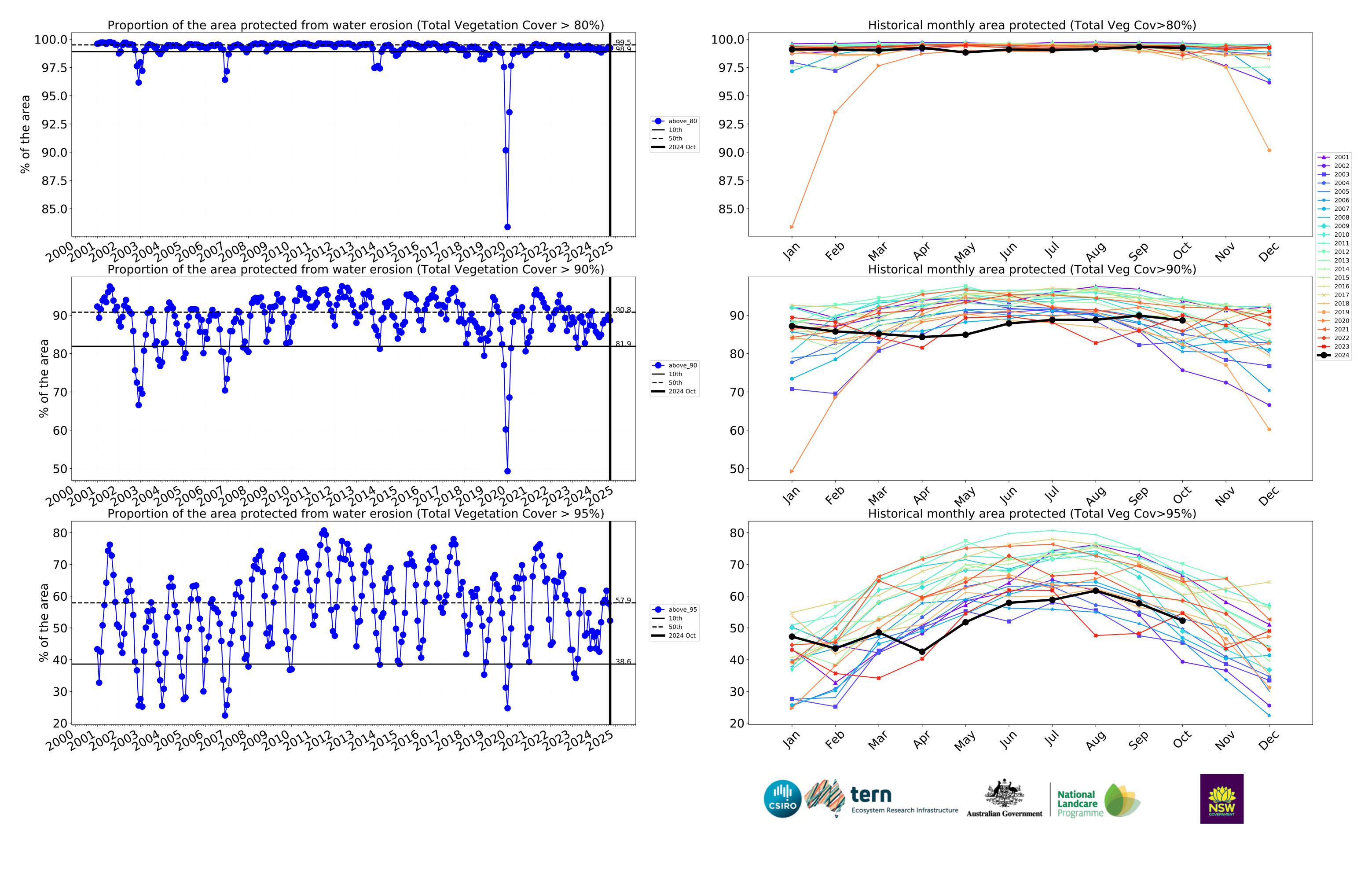
#### **Conservation and natural environments**



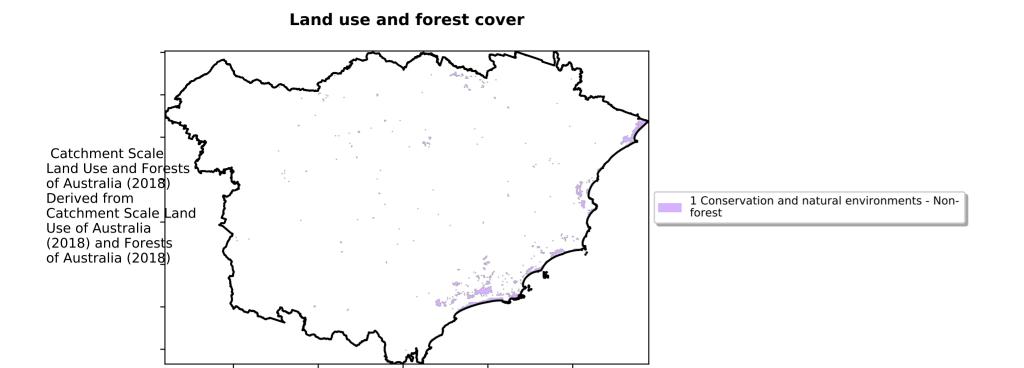
#### **Conservation and natural environments timeseries**



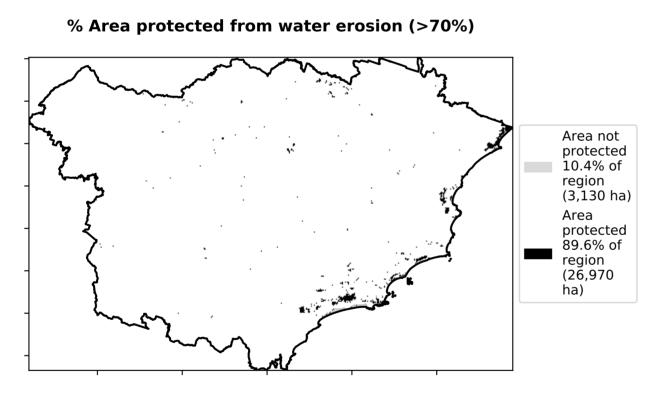


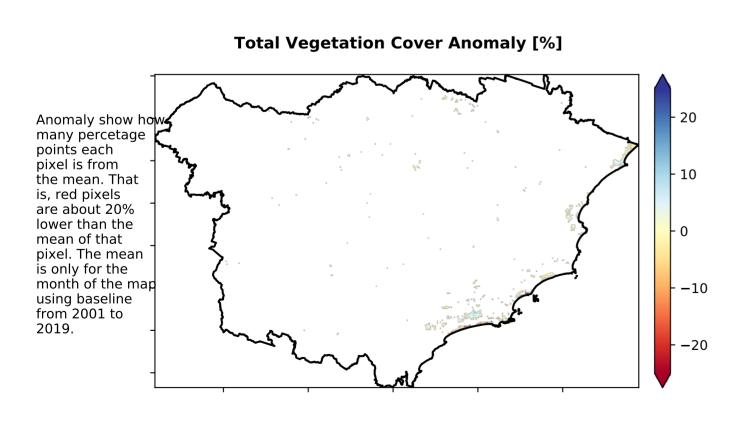


#### **Conservation and natural environments non forest**



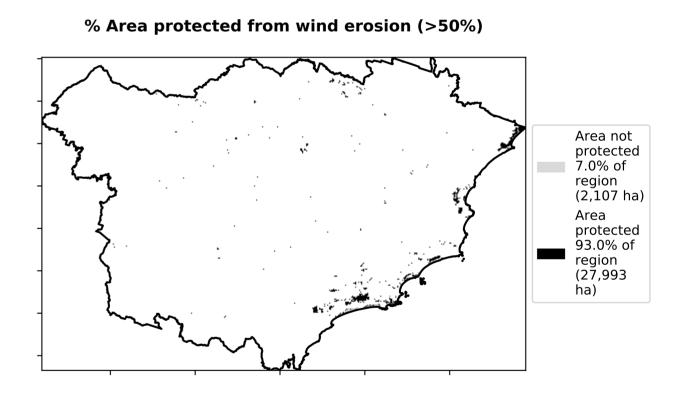
# Total Vegetation Cover [%]

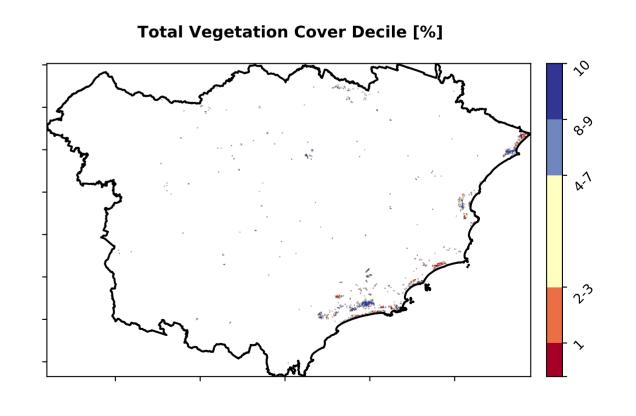




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

# 80 - 89.6% 80 - 60 - 60 - 20 - 4.5% 2.2% 3.7% 0-30% 31%-50% 51%-70% Total Vegetation Cover class





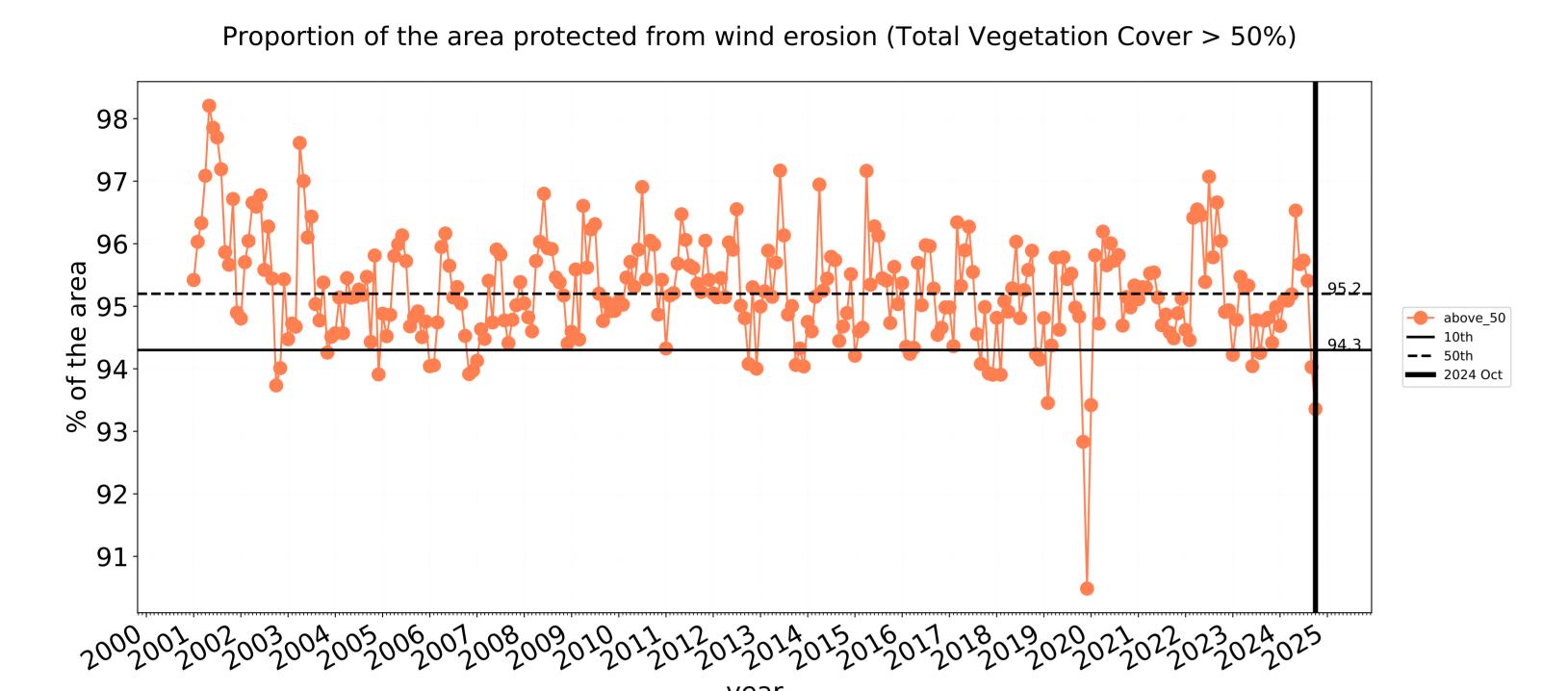




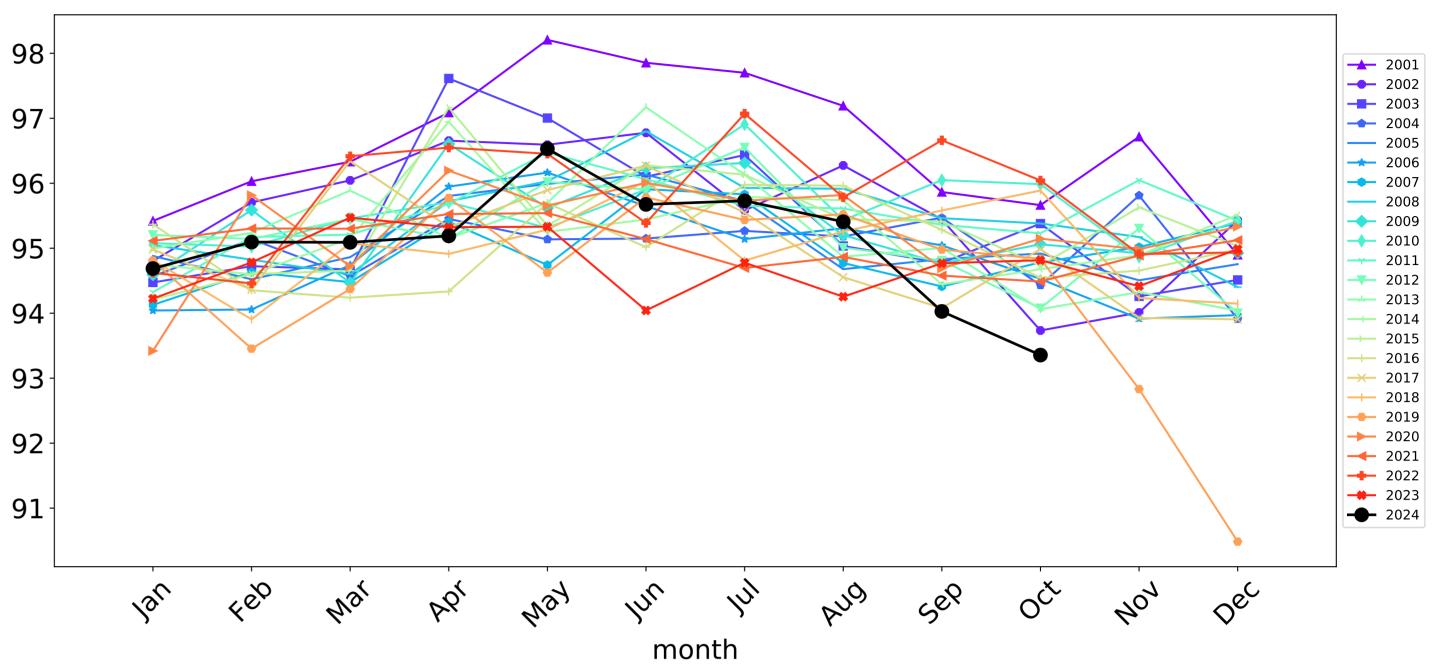




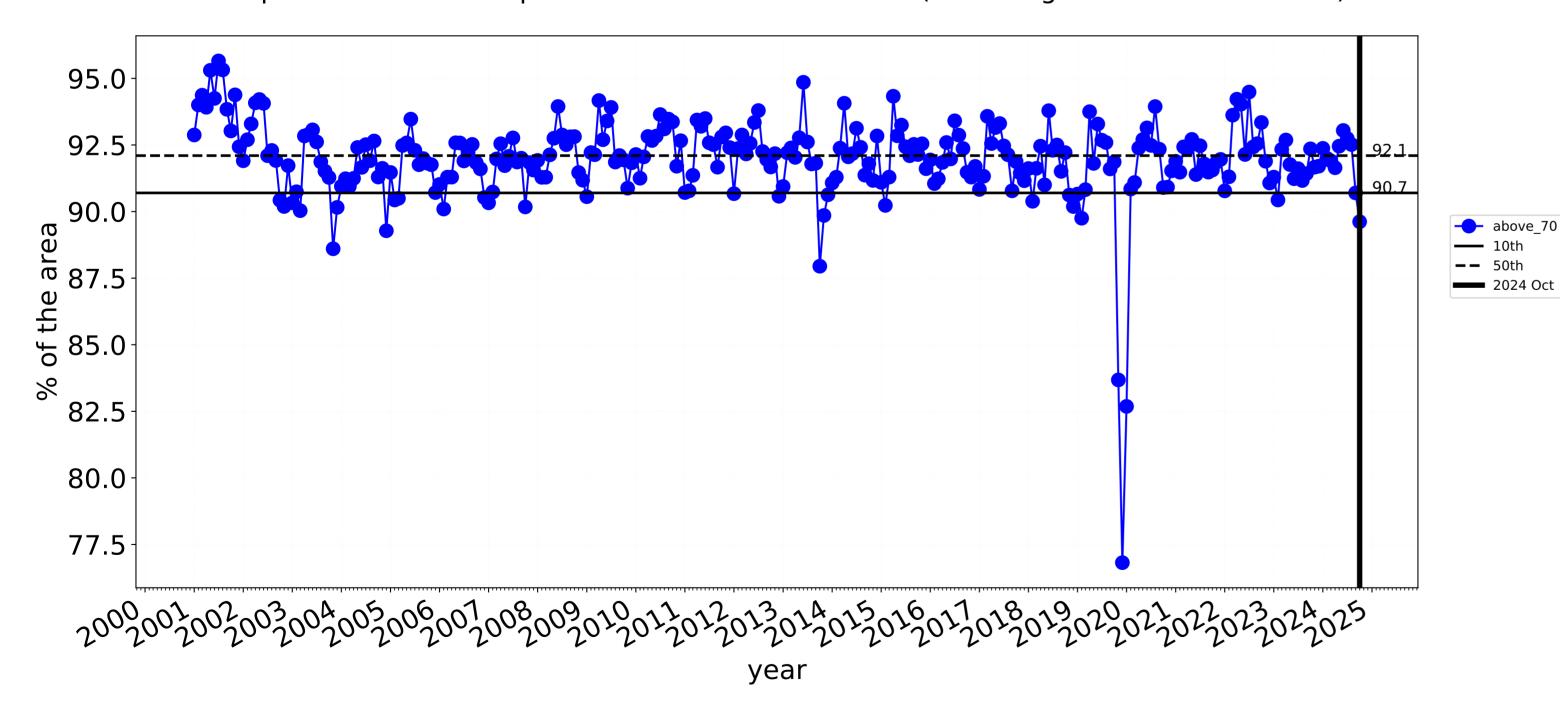
#### Conservation and natural environments non forest timeseries



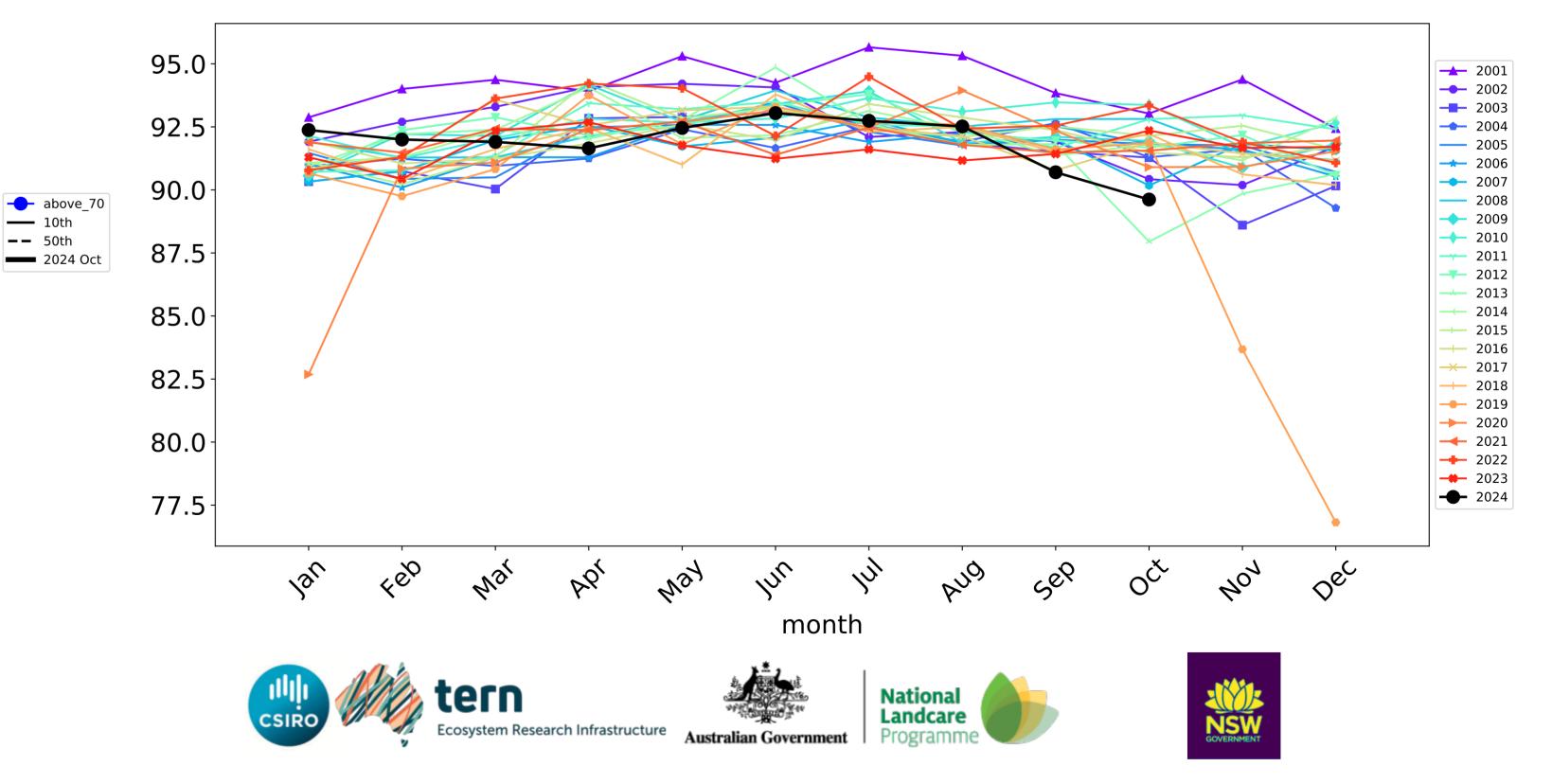
### Wind erosion historical monthly area protected (Total Veg Cov >50%)

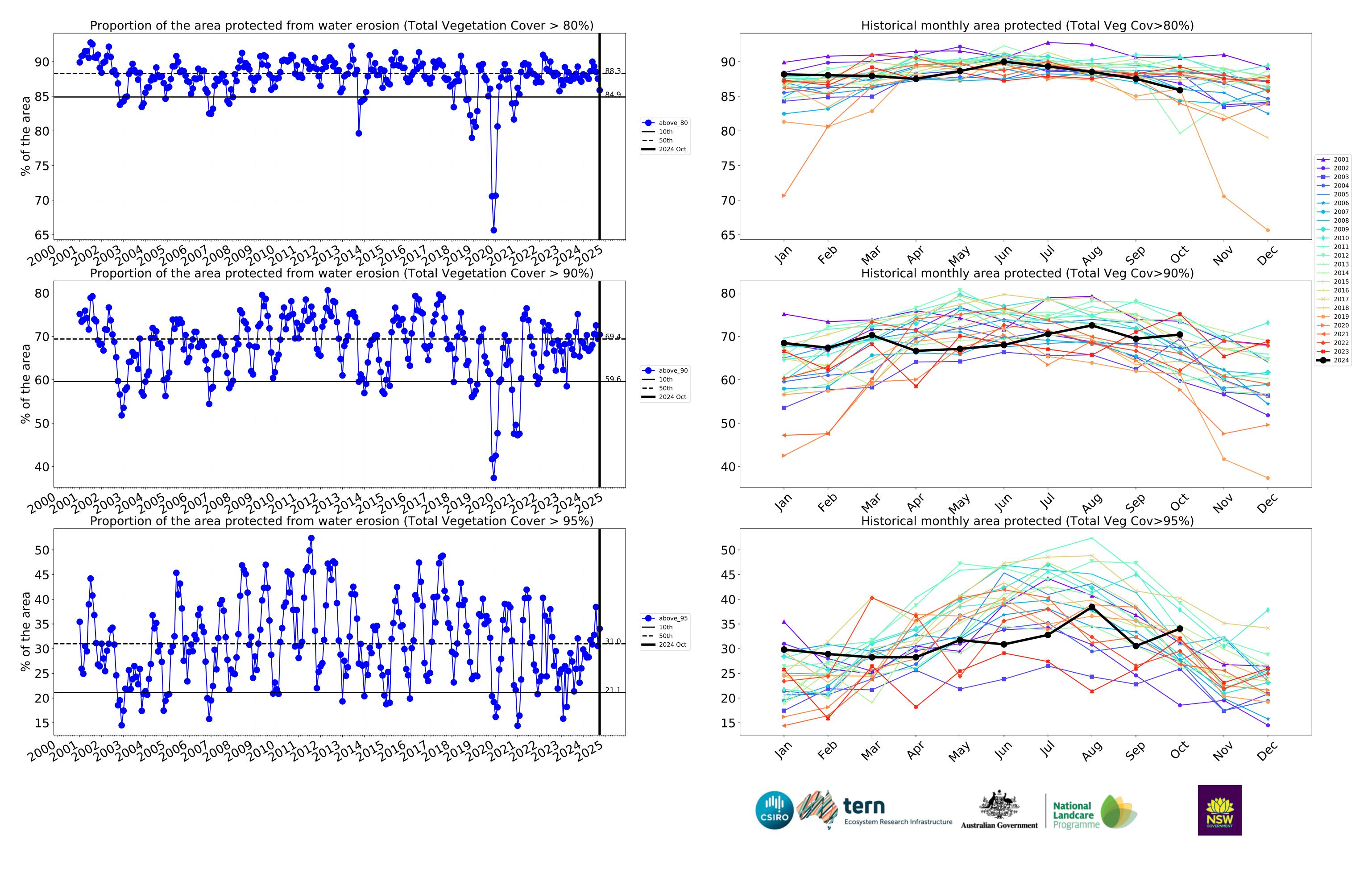




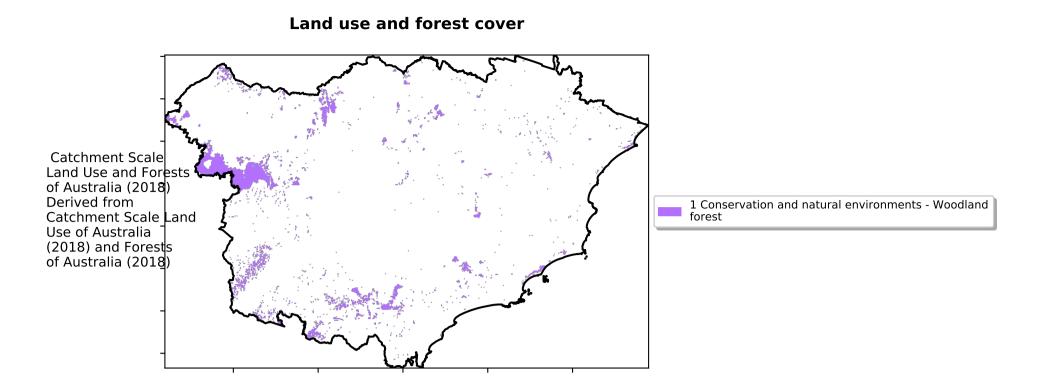


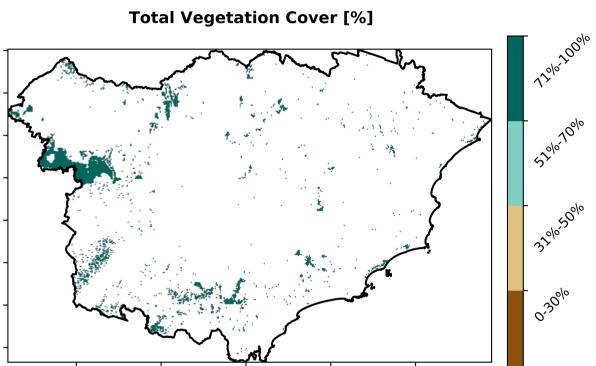
#### Water erosion historical monthly area protected (Total Veg Cov>70%)

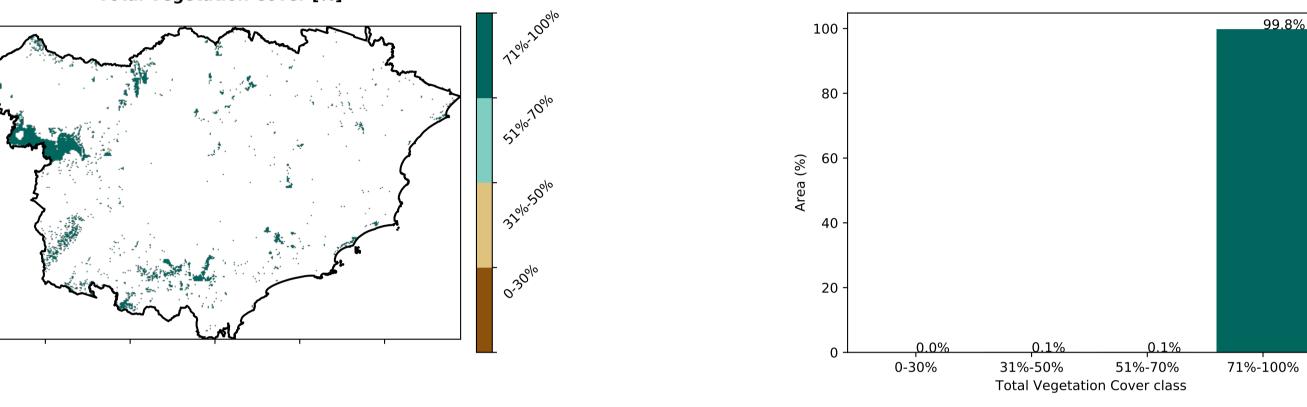


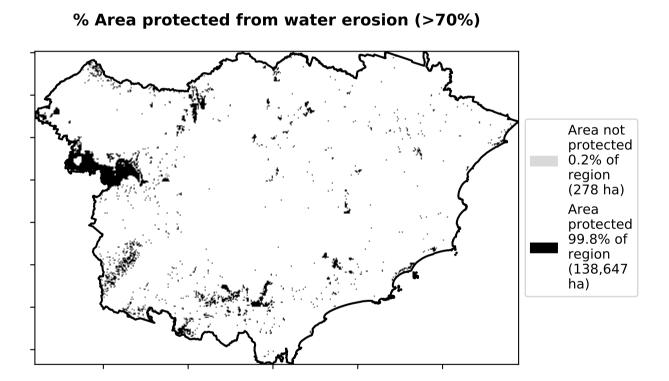


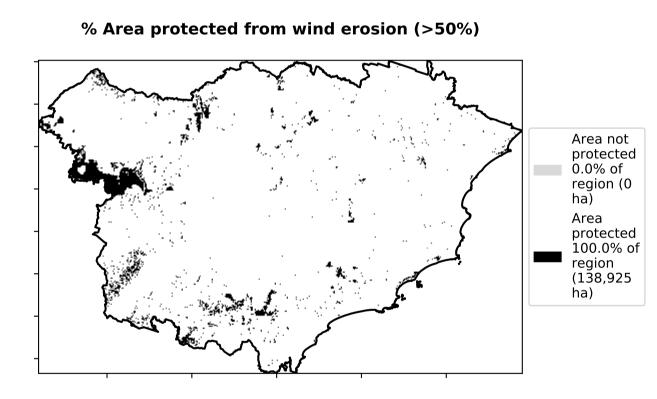
#### **Conservation and natural environments Woodland forest**



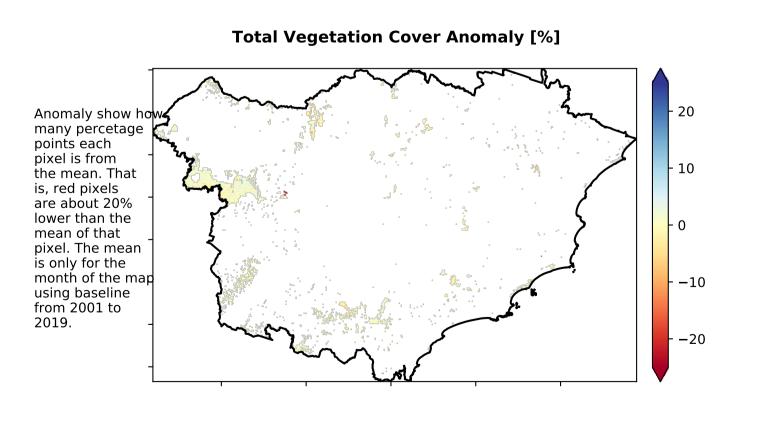


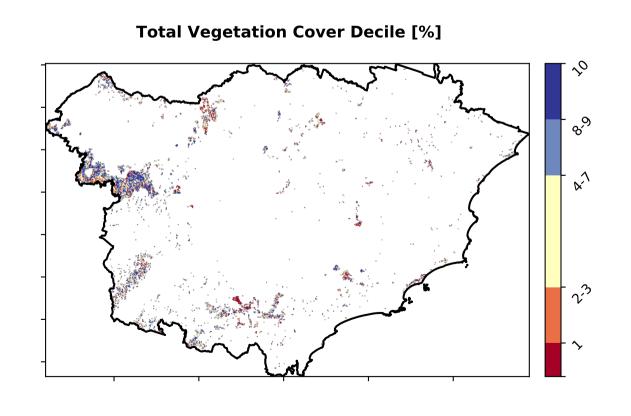






**Proportion of vegetation cover class in area** 





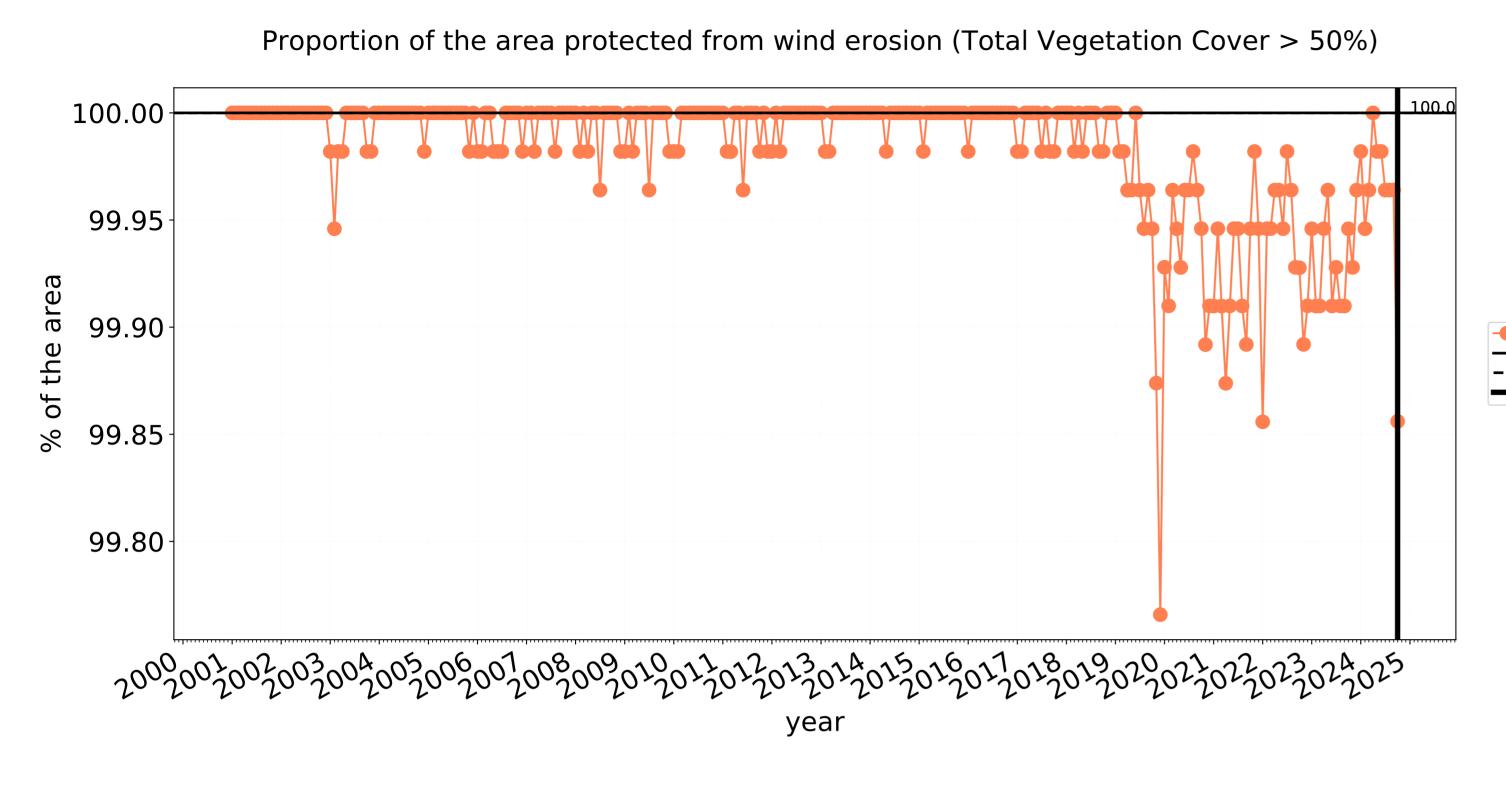


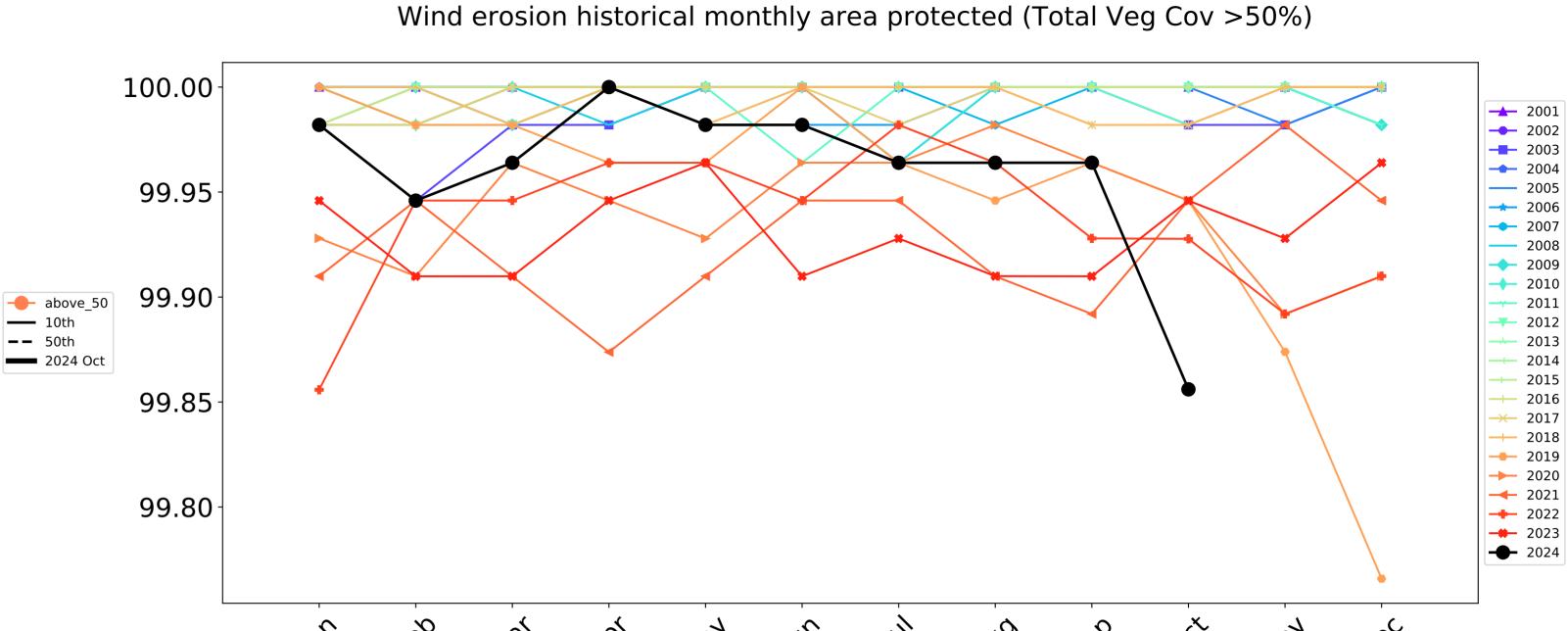




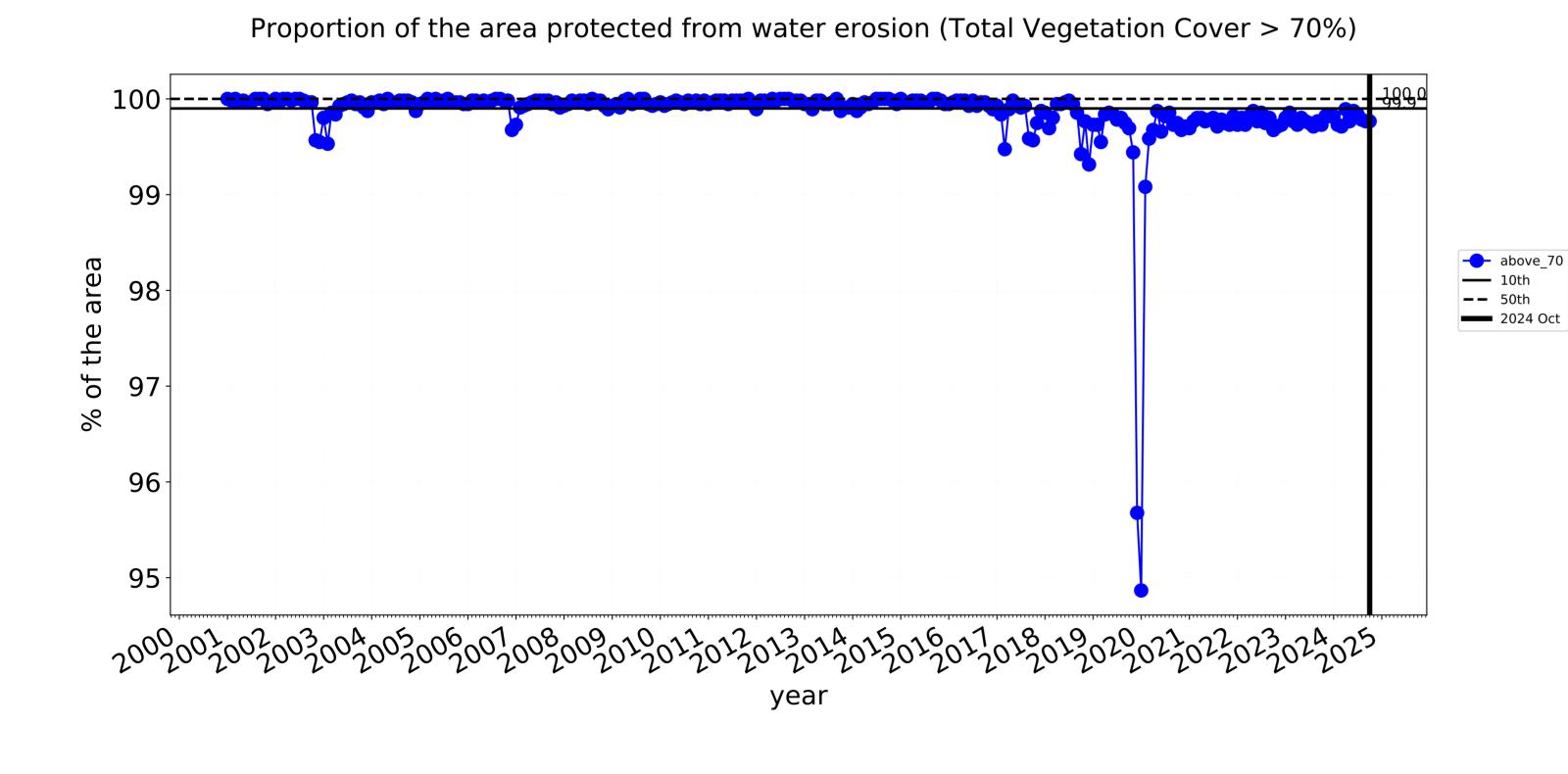


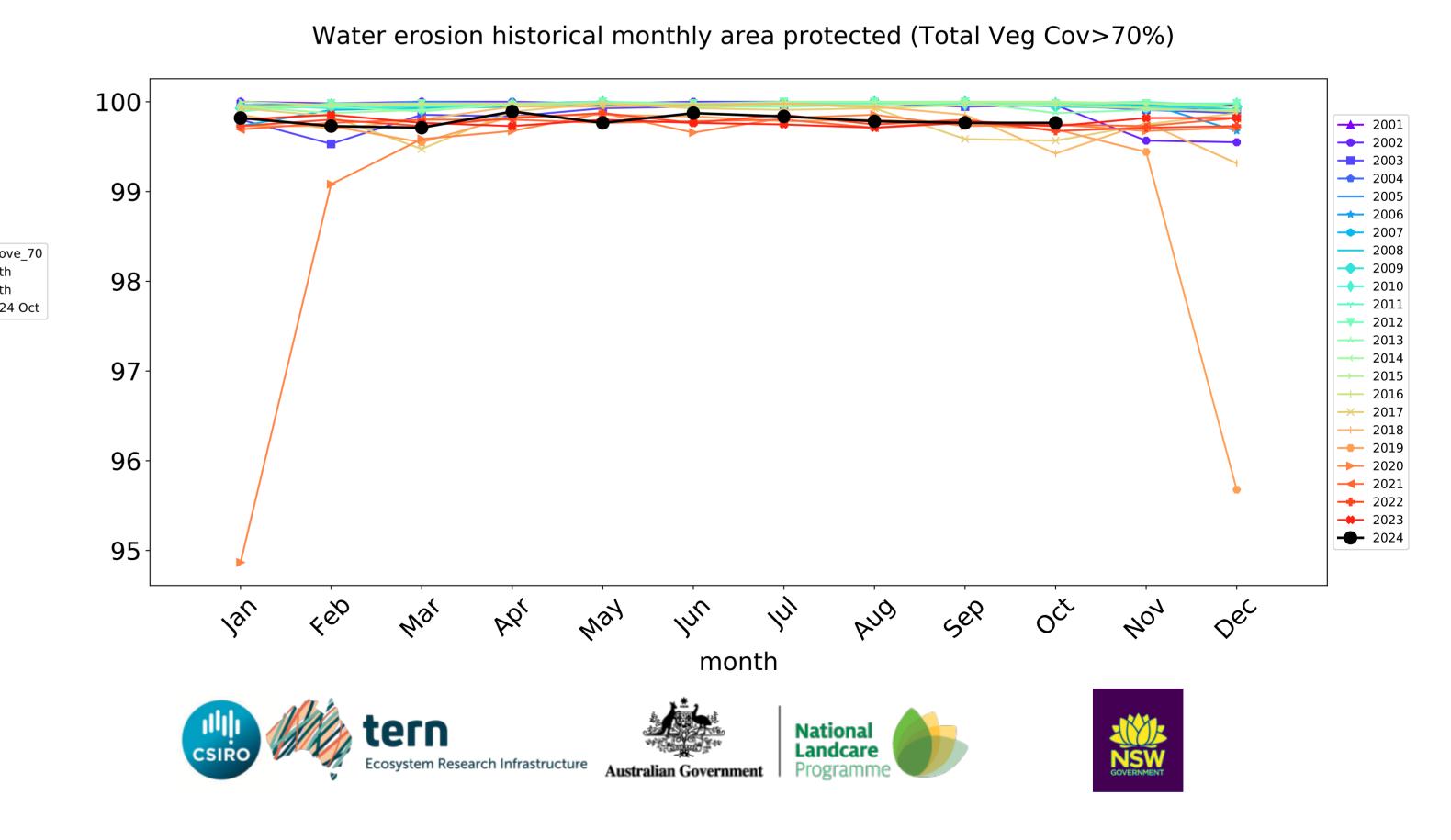
#### **Conservation and natural environments Woodland forest timeseries**

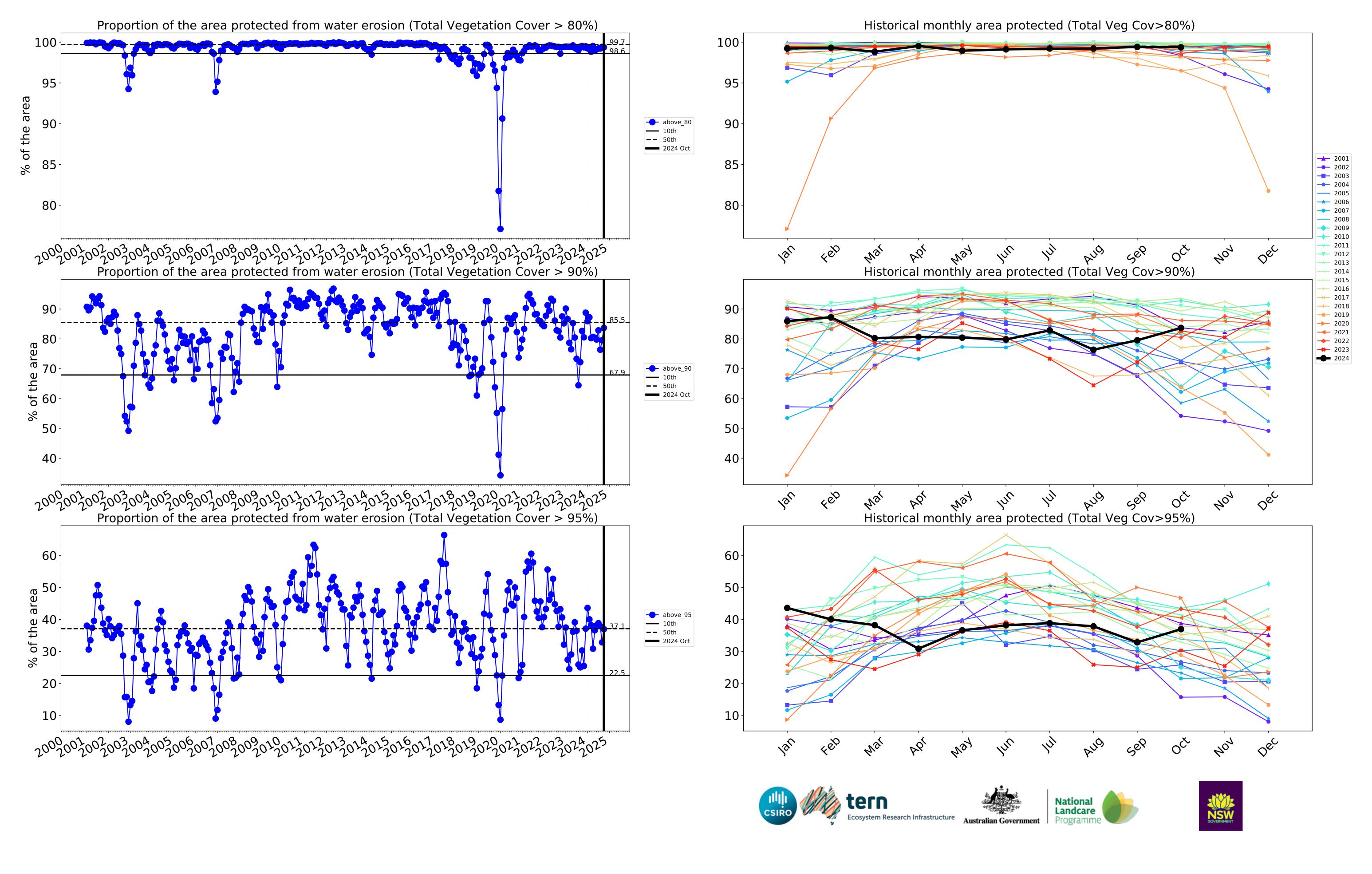




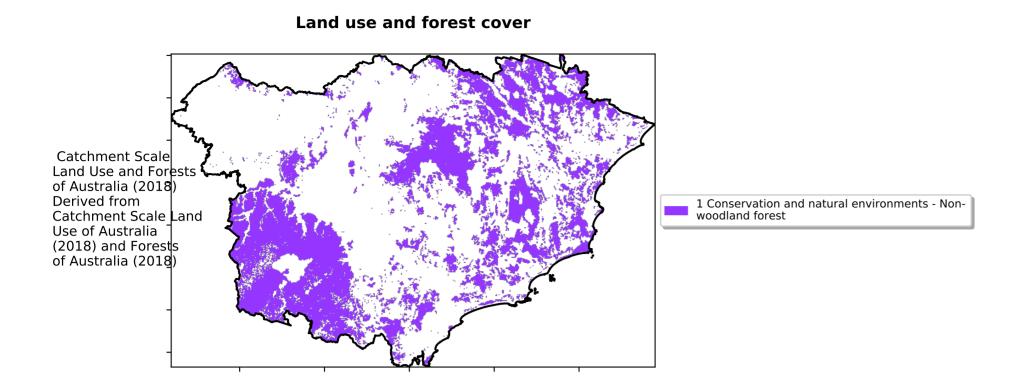
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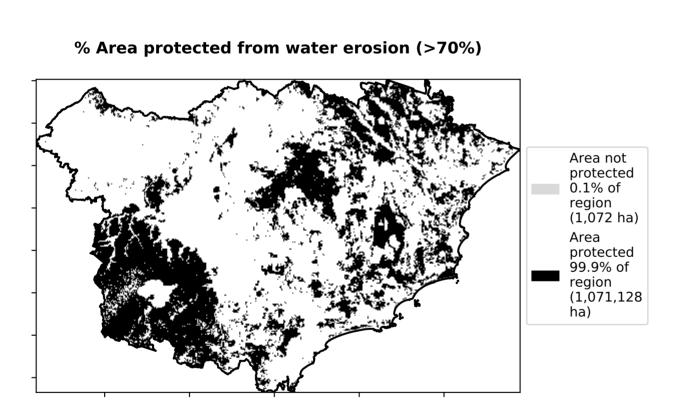


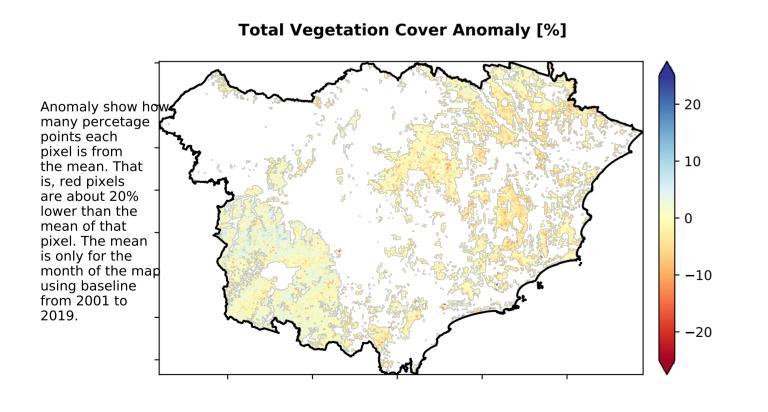


#### **Conservation and natural environments Forest (non woodland)**

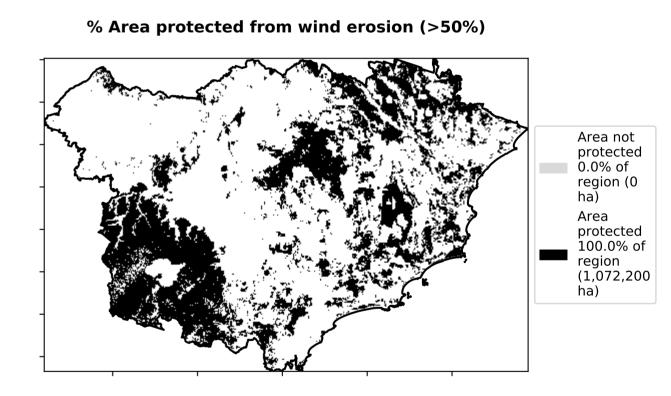


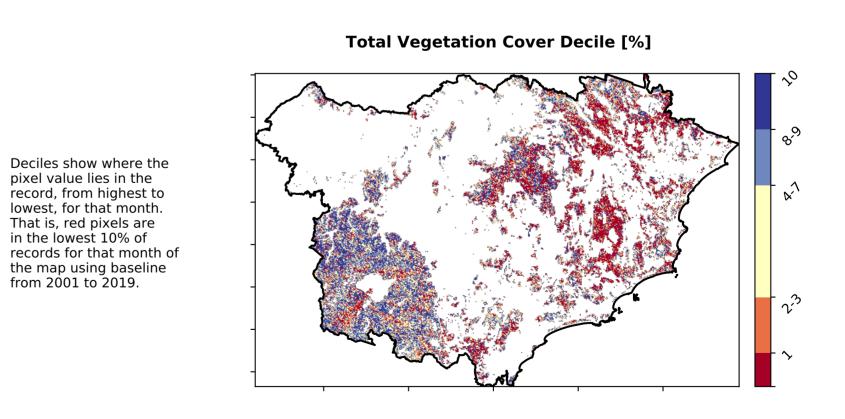
# Total Vegetation Cover [%] Total Vegetation Cover [%] Tiple Ideal T





# Proportion of vegetation cover class in area 100 - 99.9% 80 - 99.9% 40 - 20 - 0.0% 0.0% 0.1% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class





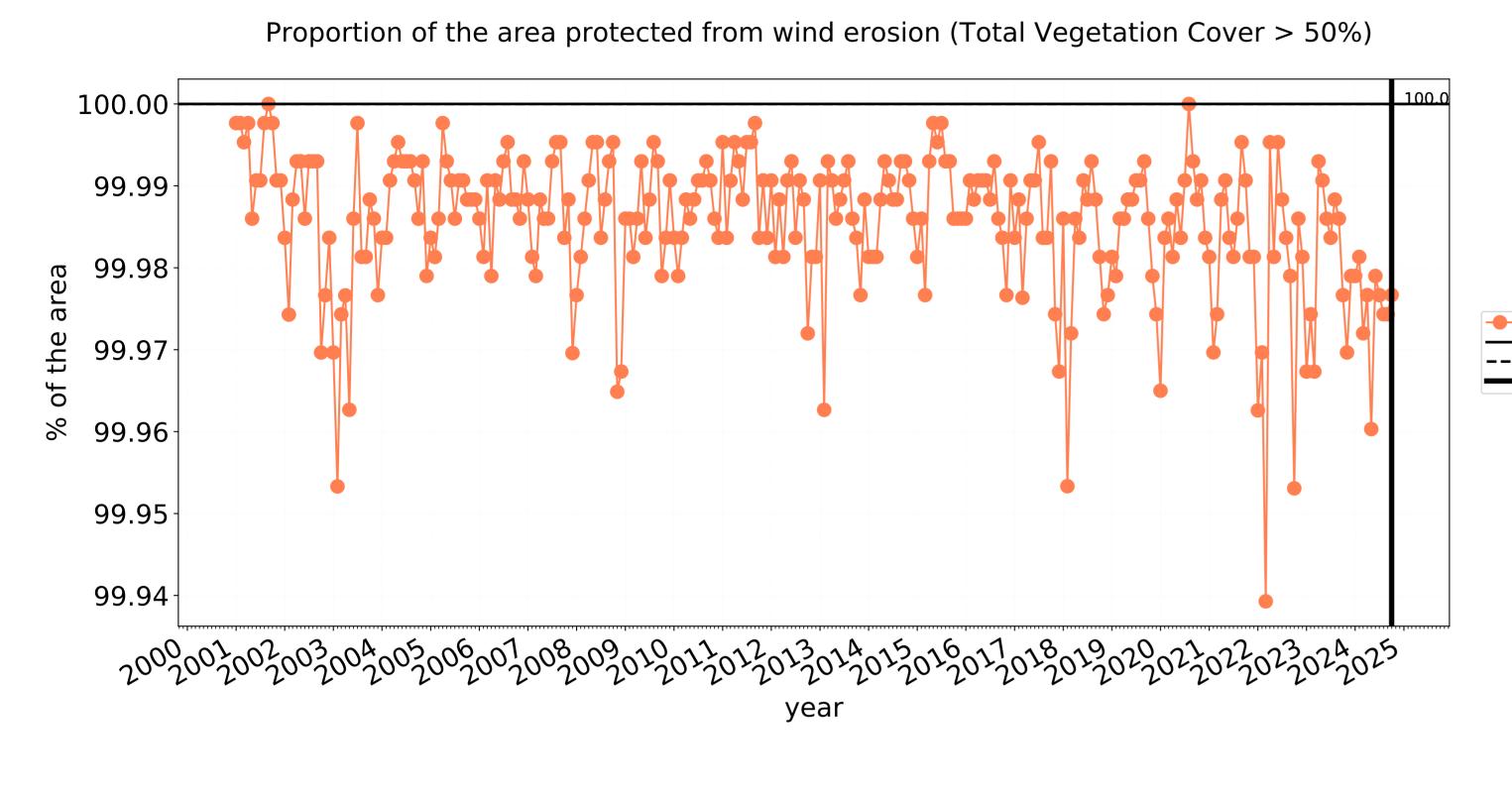


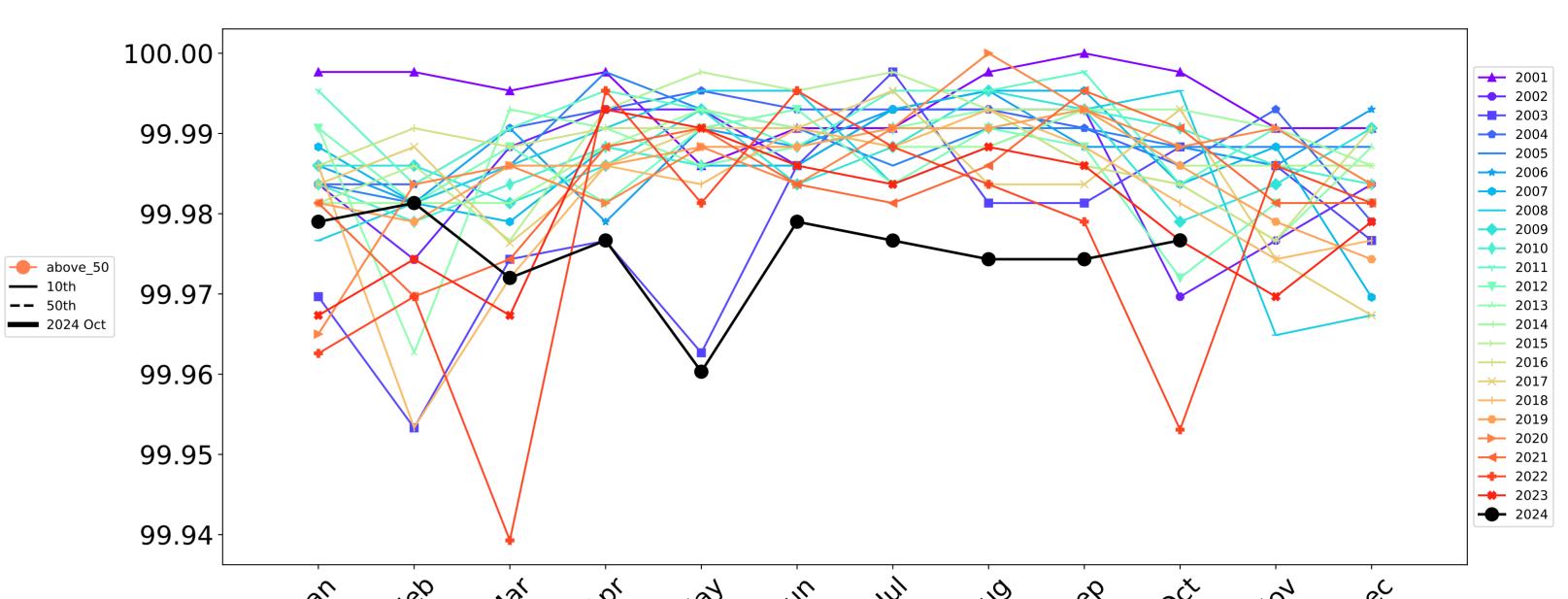






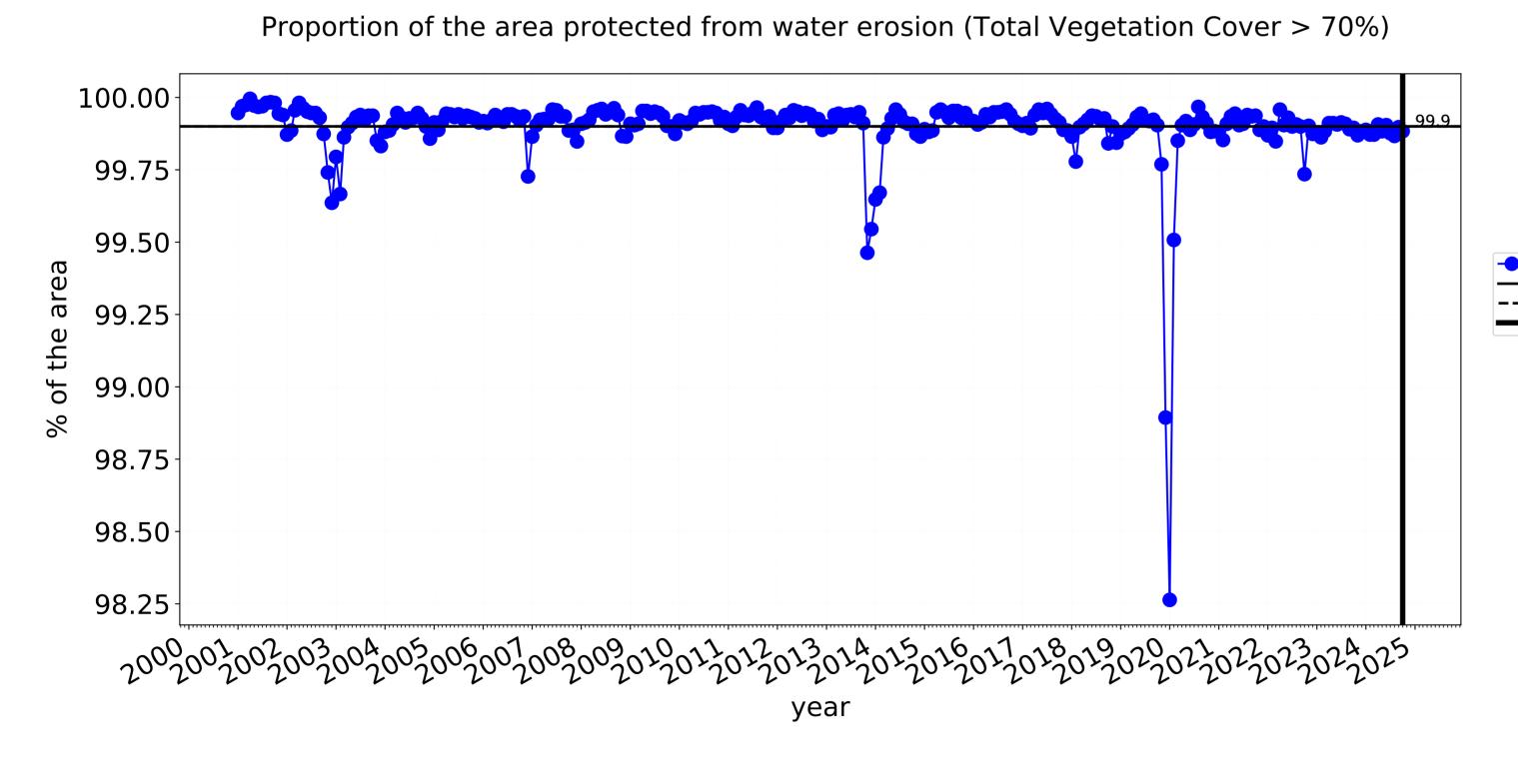
#### Conservation and natural environments Forest (non woodland) timeseries

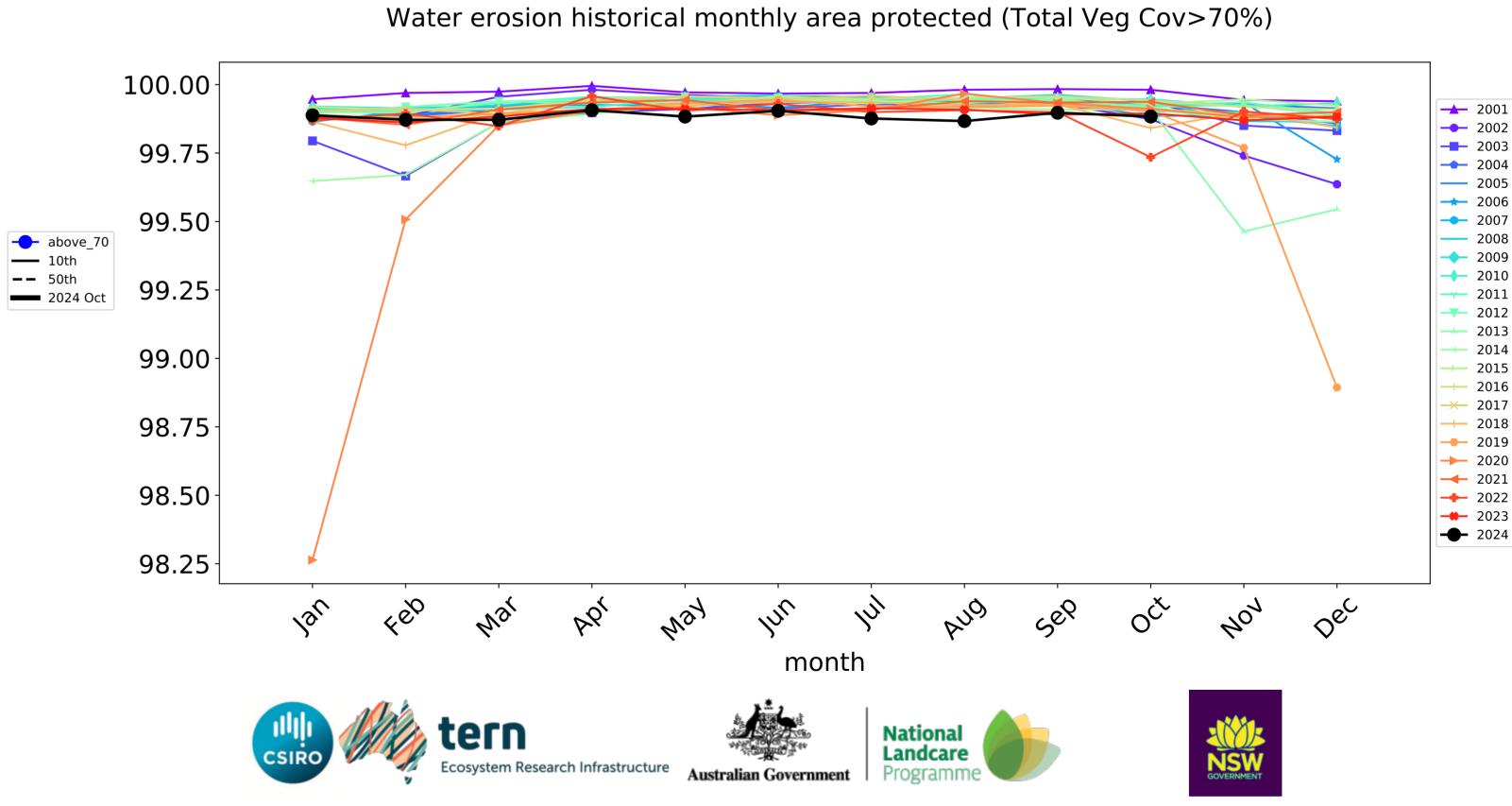


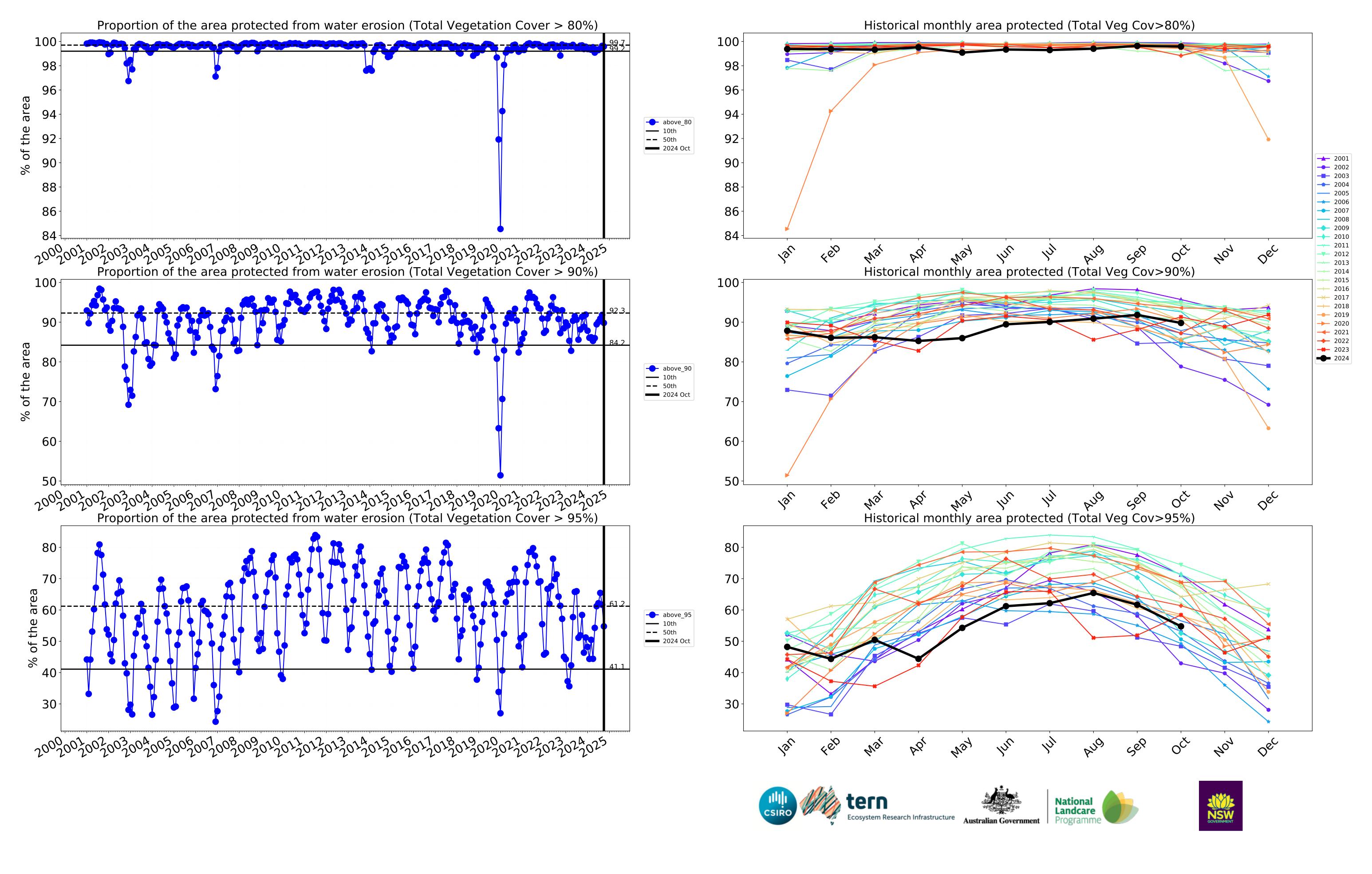


month

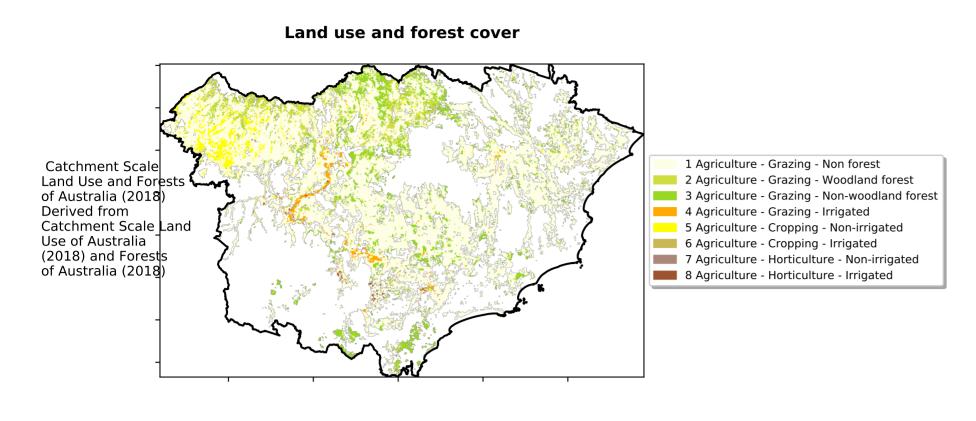
Wind erosion historical monthly area protected (Total Veg Cov >50%)





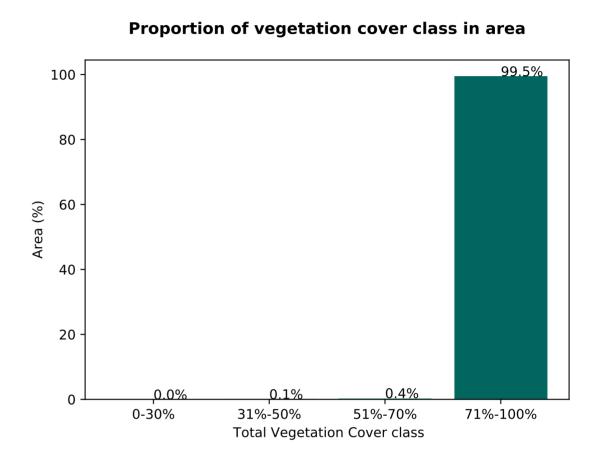


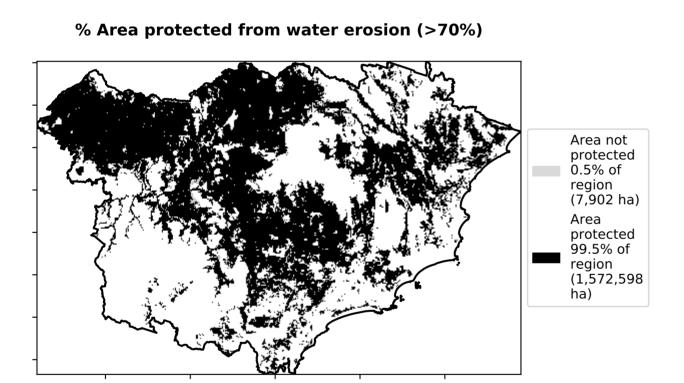
#### **Agriculture**

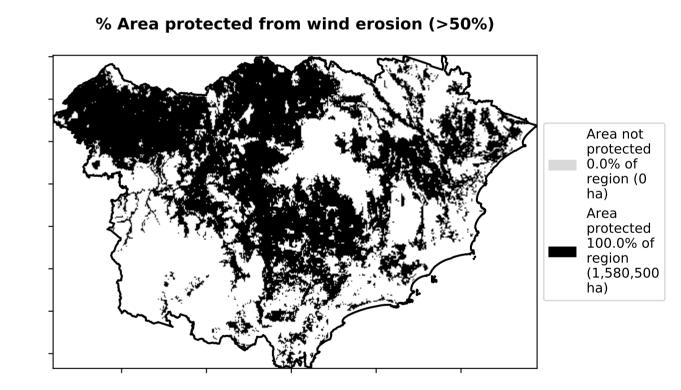


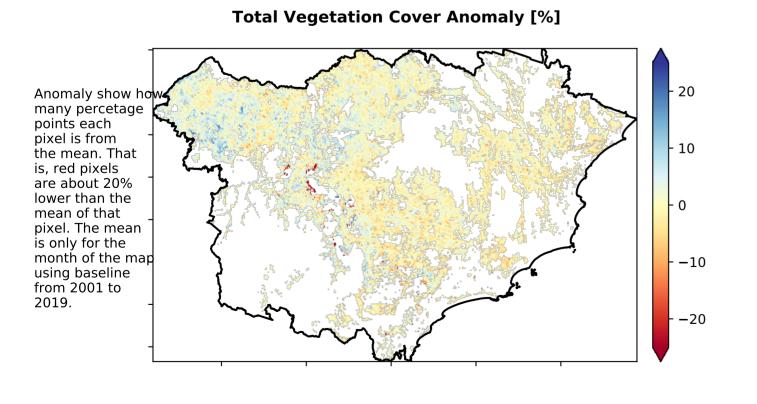
# Proportion of each land class in area 80 76.7% 70 60 50 20 10 7.6% 10.7% 10.7% 10.7% Land use class

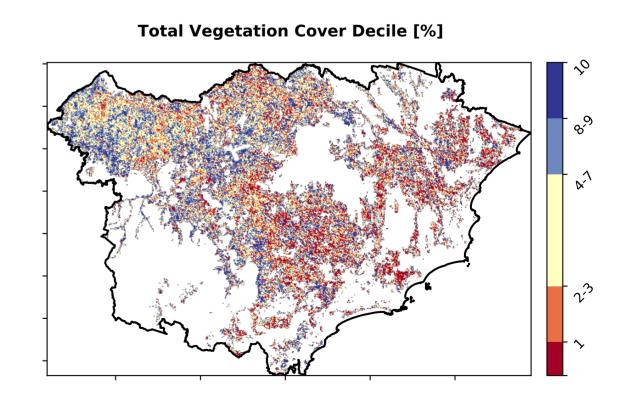
## Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]











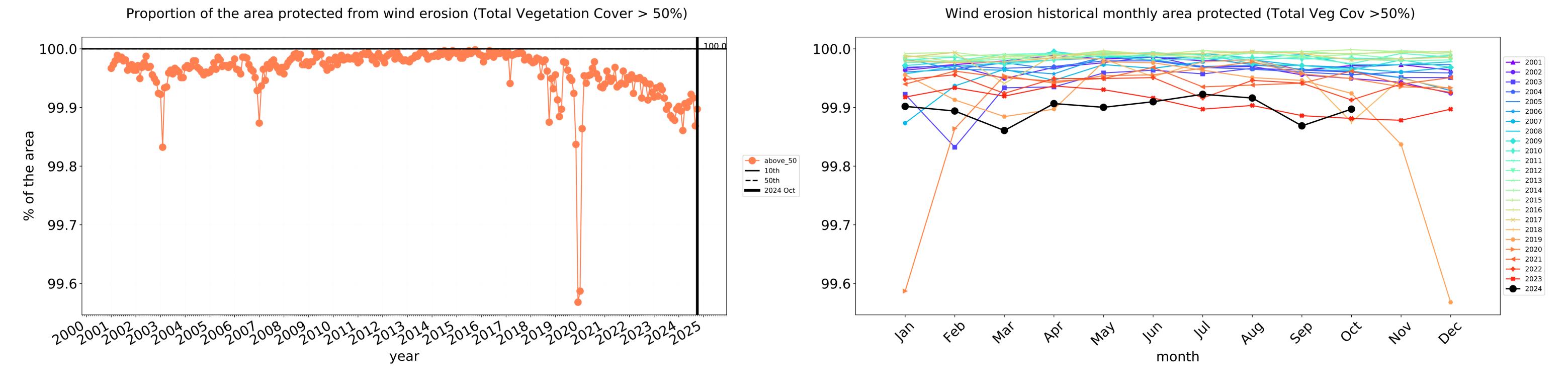


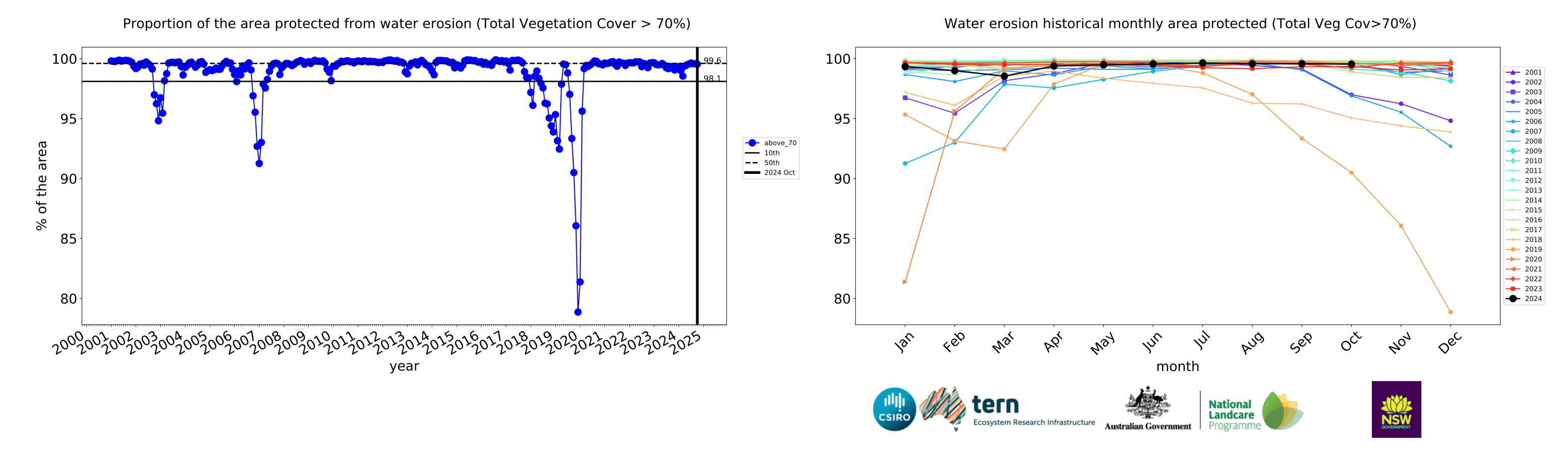


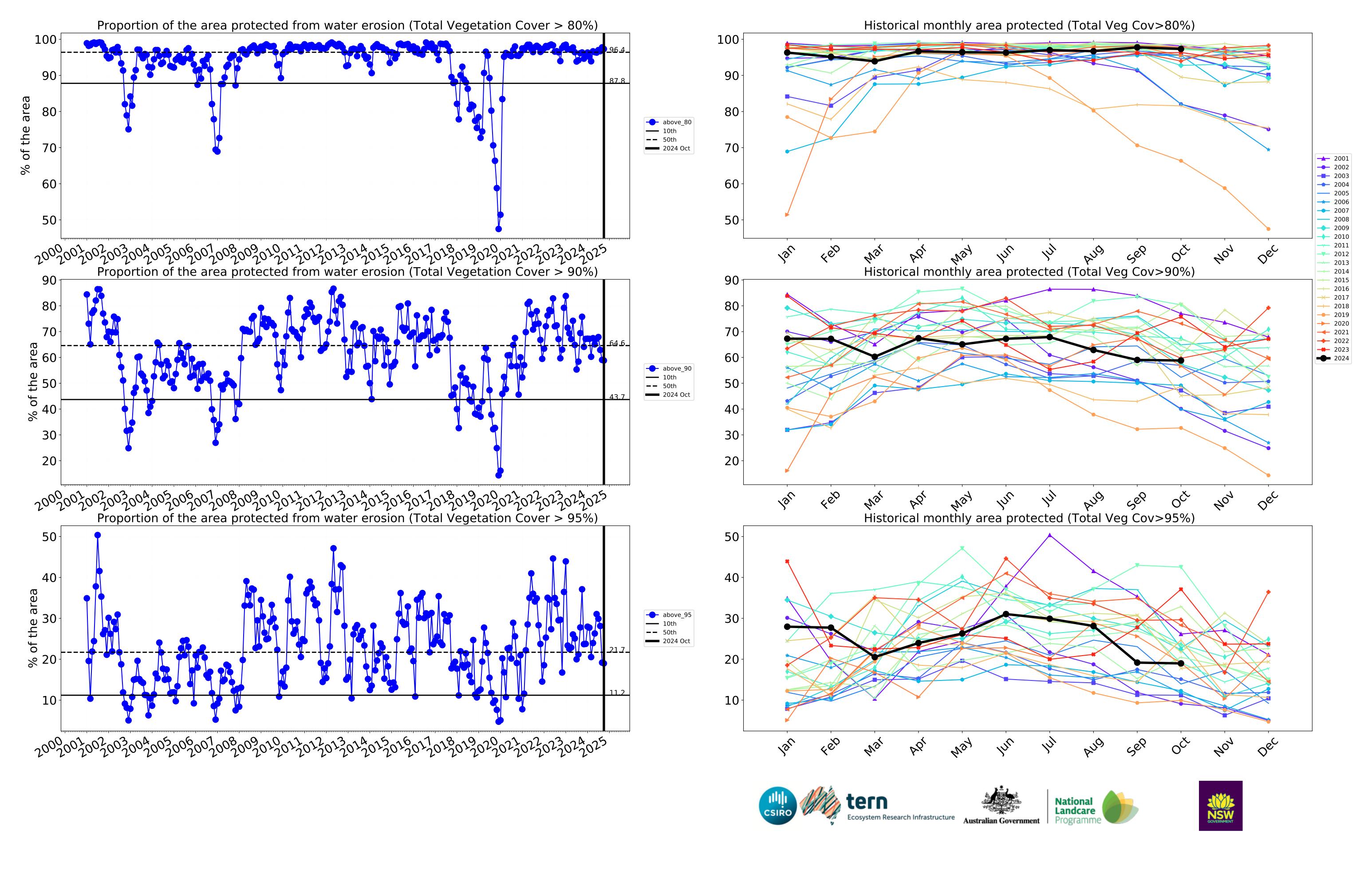




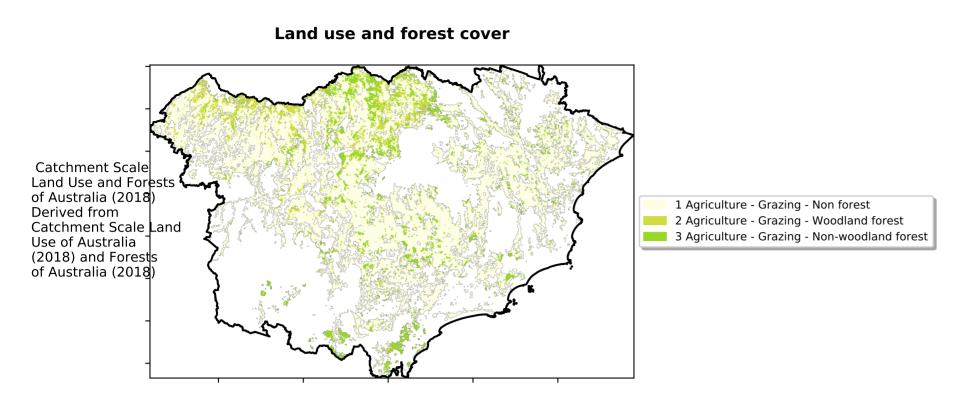
#### **Agriculture timeseries**



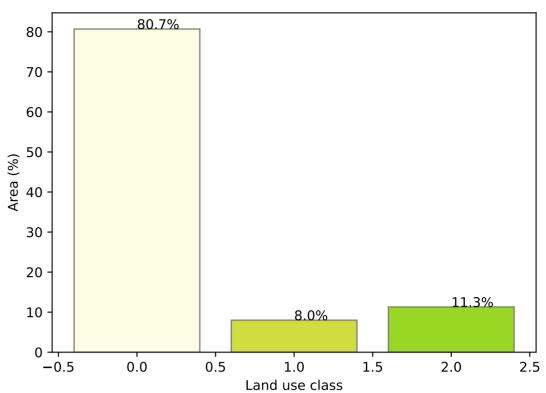




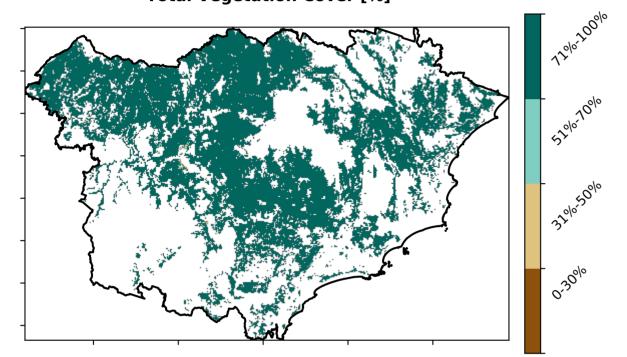
#### **Grazing**



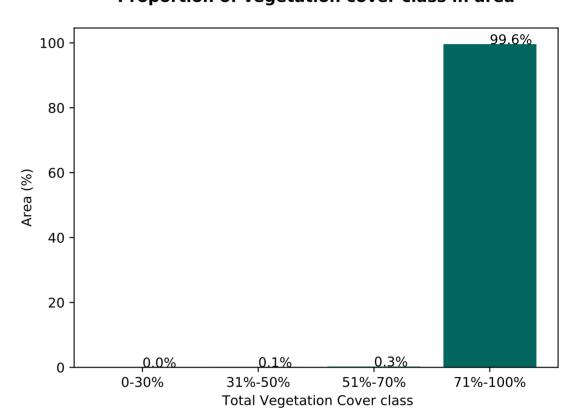
#### Proportion of each land class in area



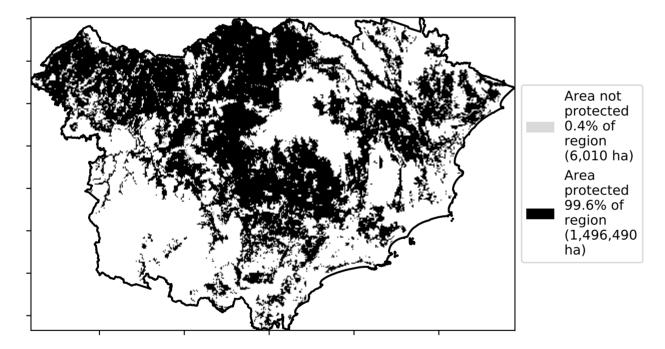




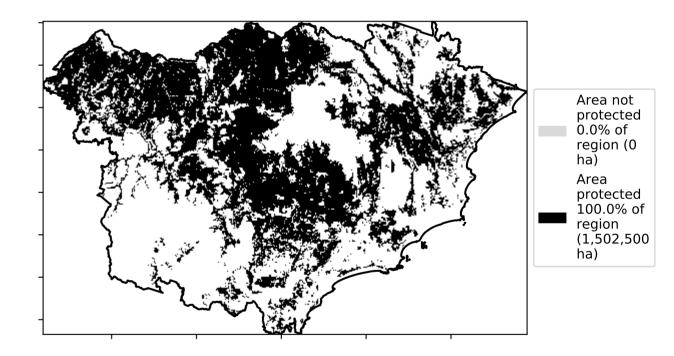
#### Proportion of vegetation cover class in area



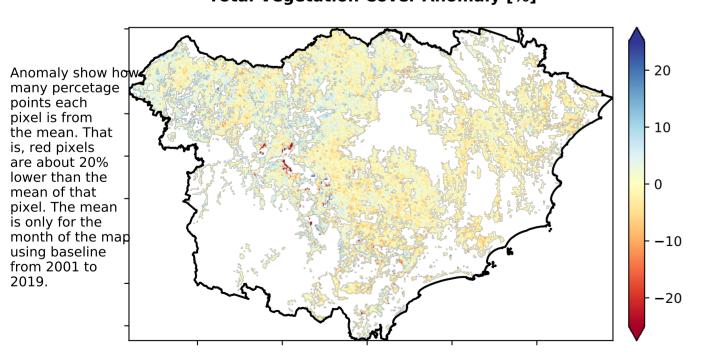
#### % Area protected from water erosion (>70%)

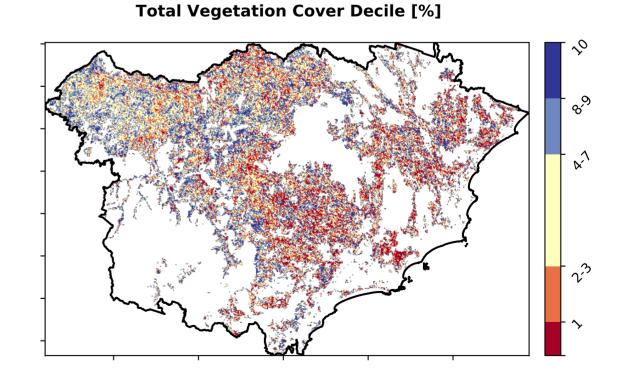


% Area protected from wind erosion (>50%)



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









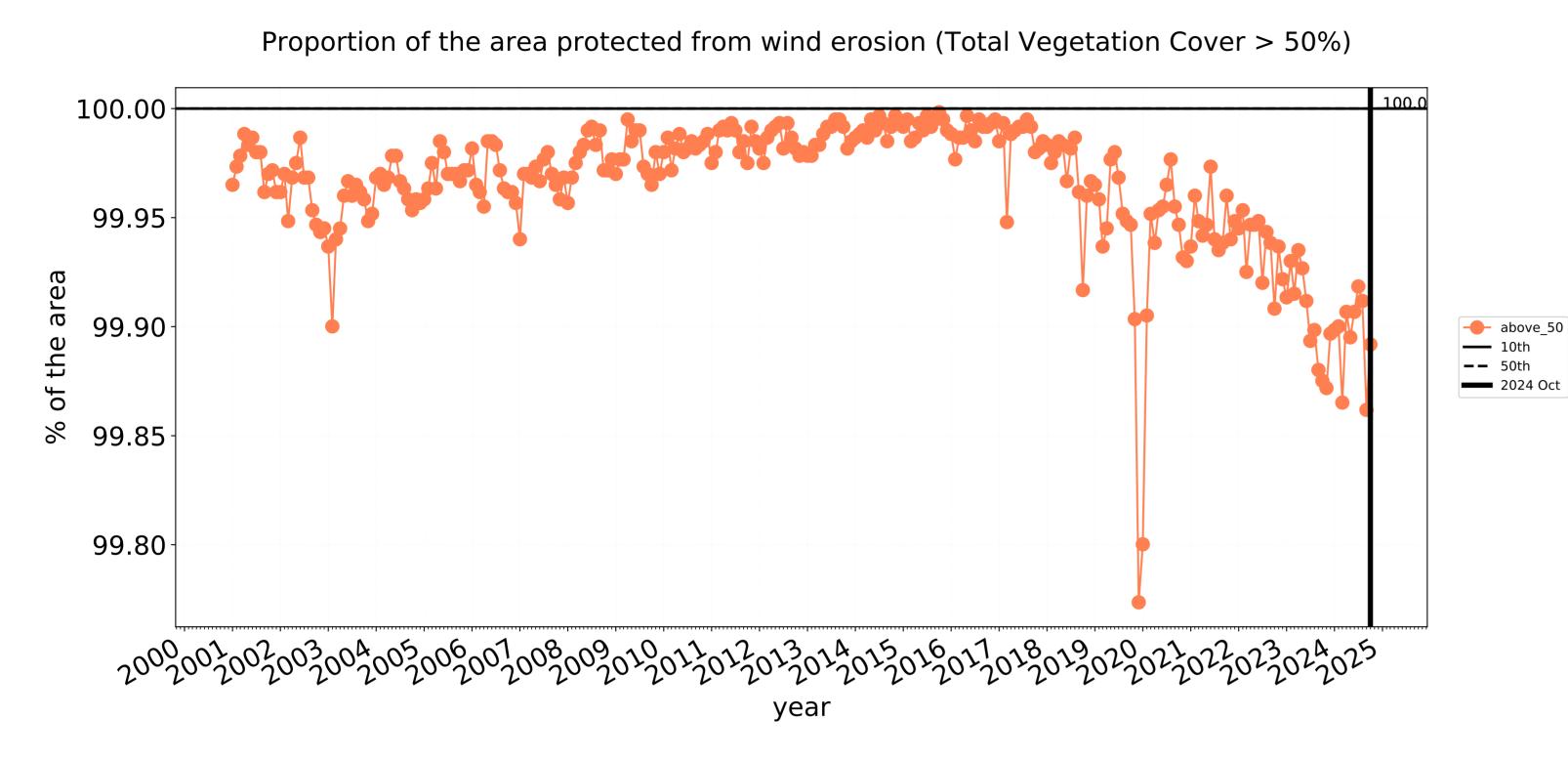


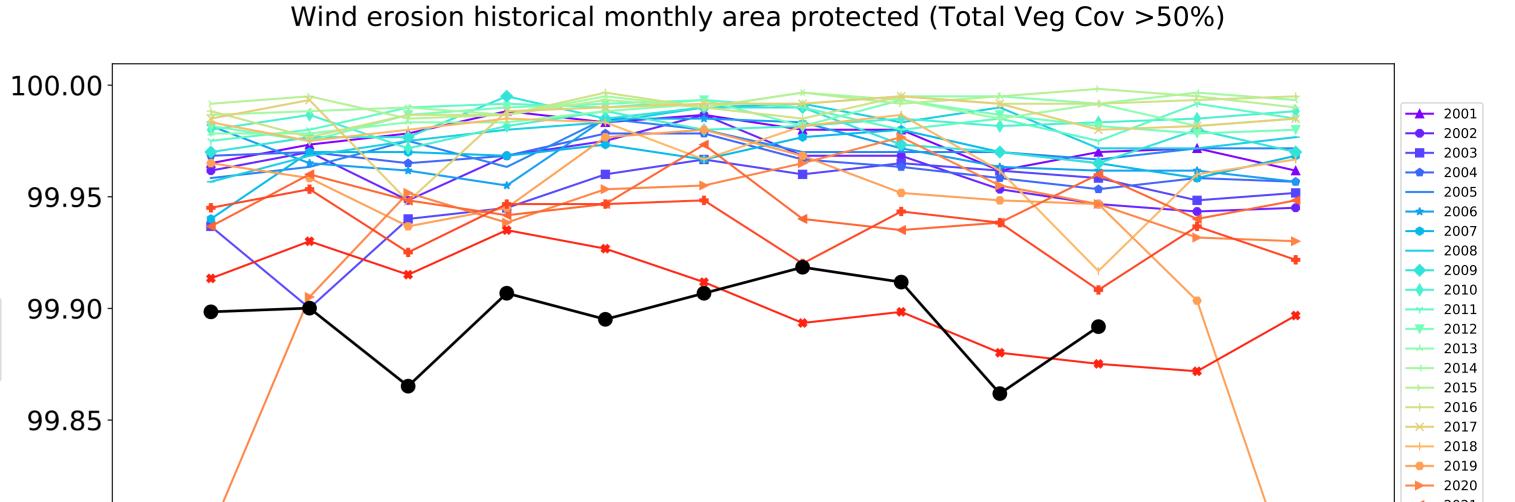




#### **Grazing timeseries**

99.80

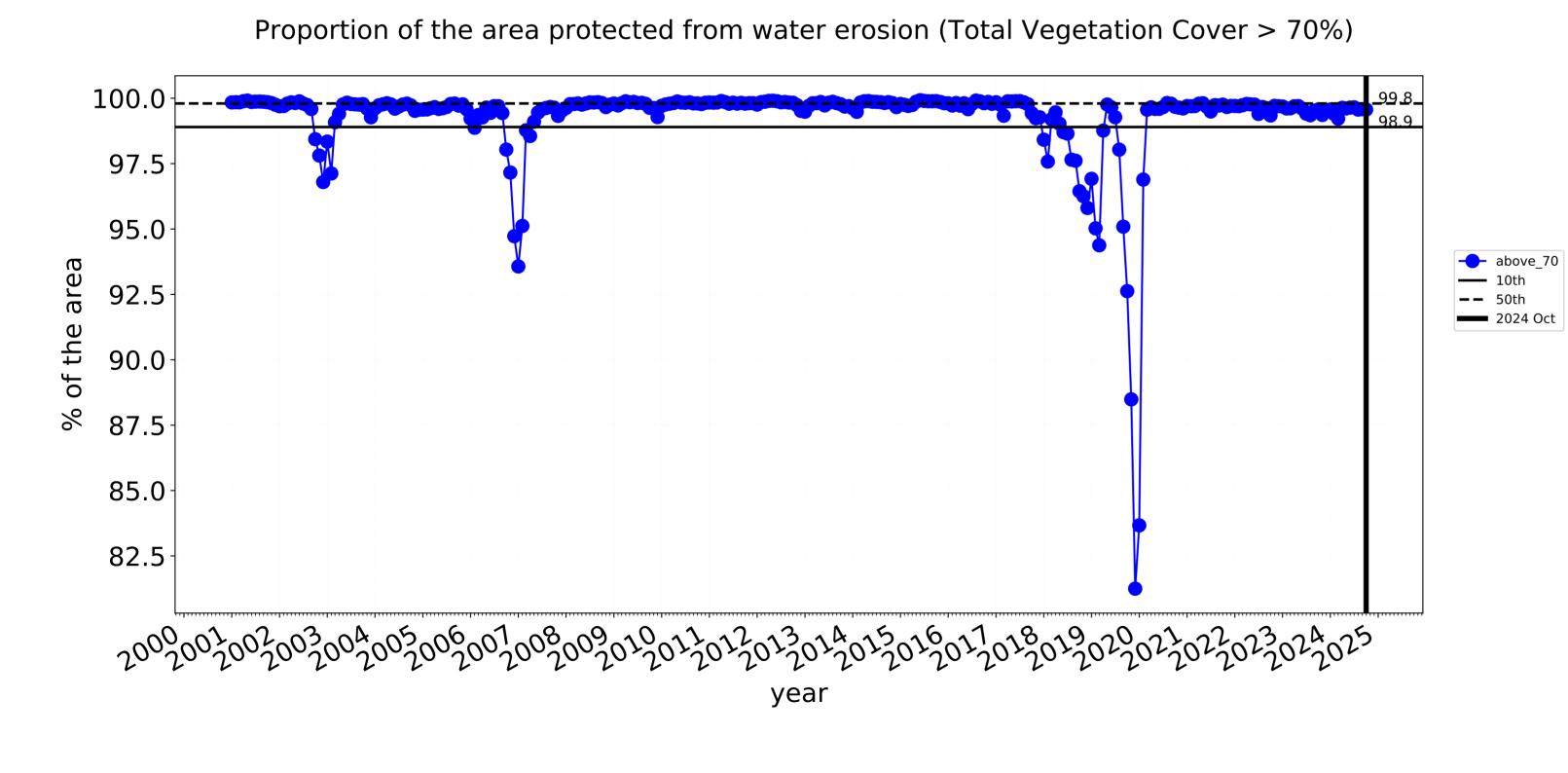


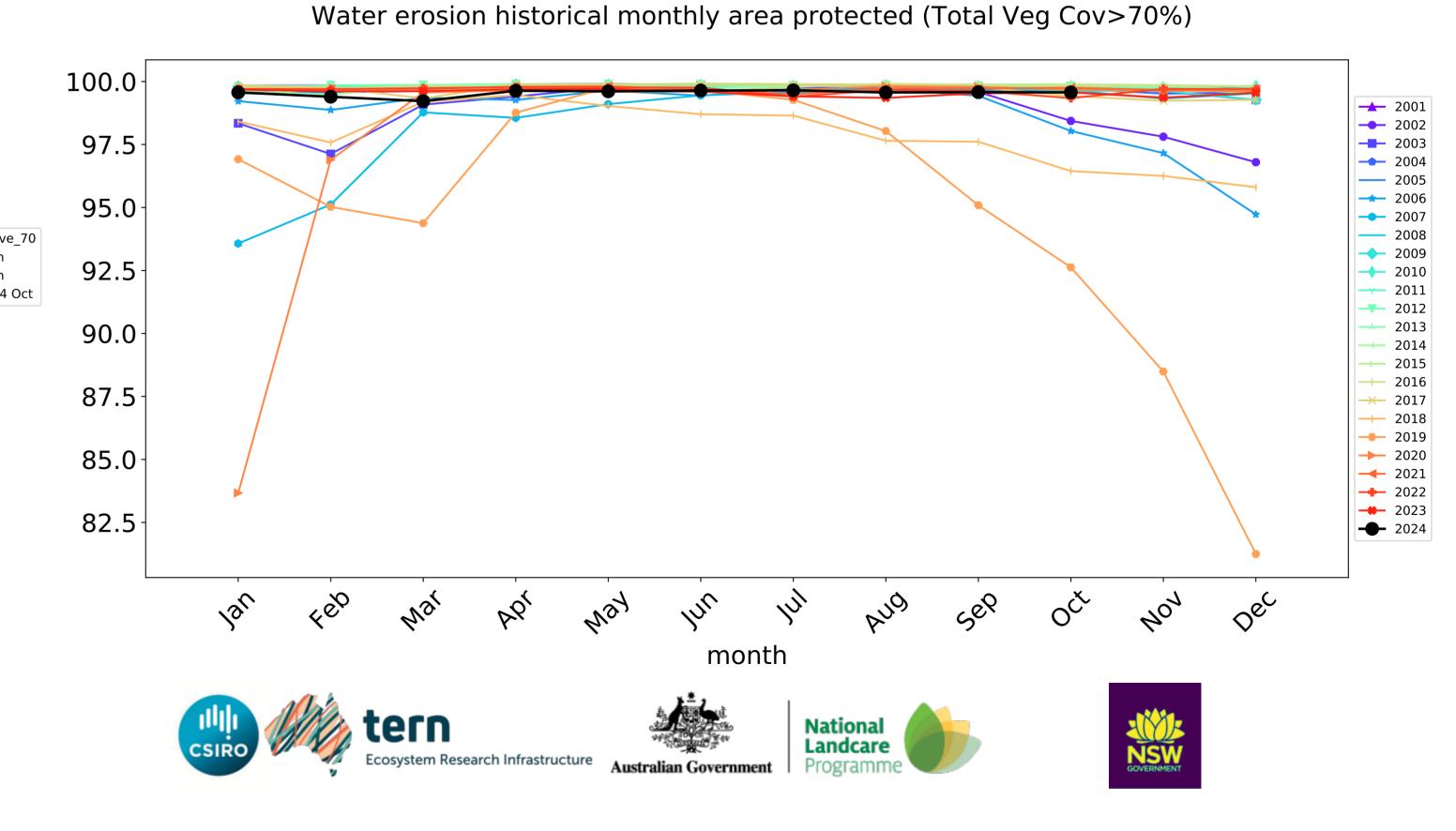


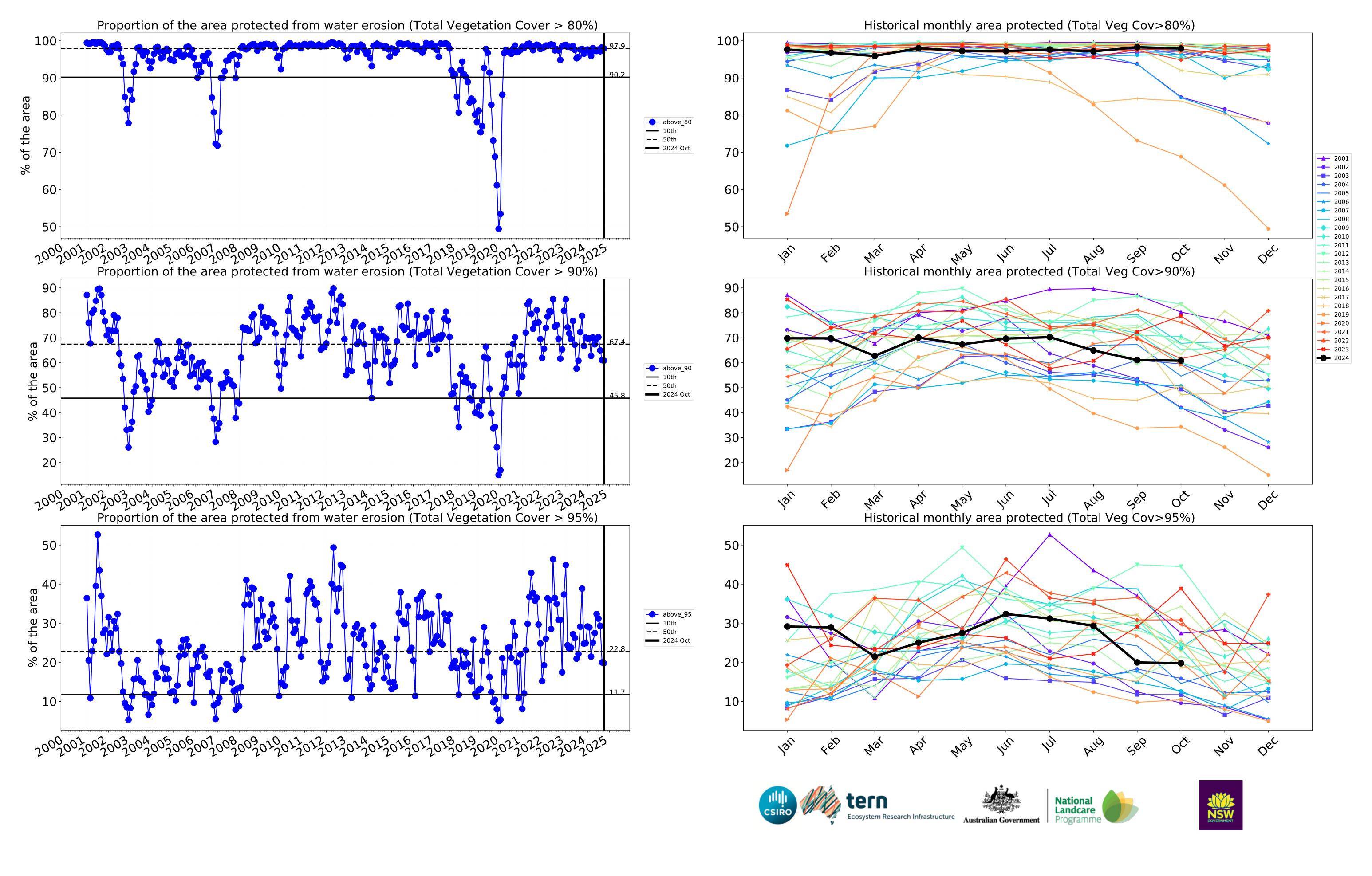
month

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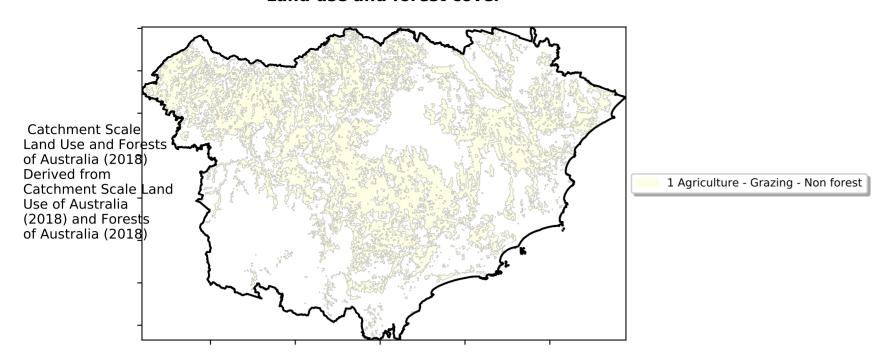




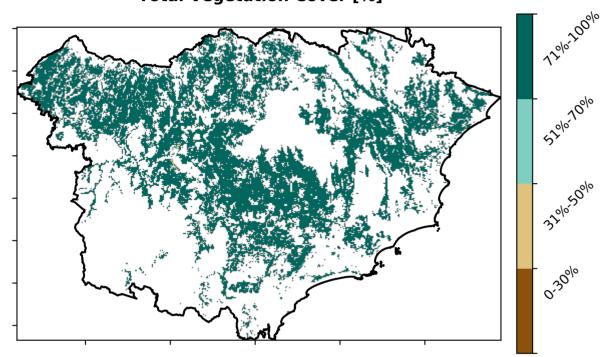


#### **Grazing non forest**

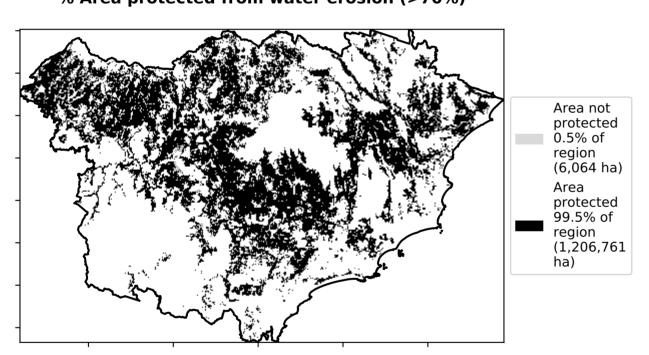
#### Land use and forest cover



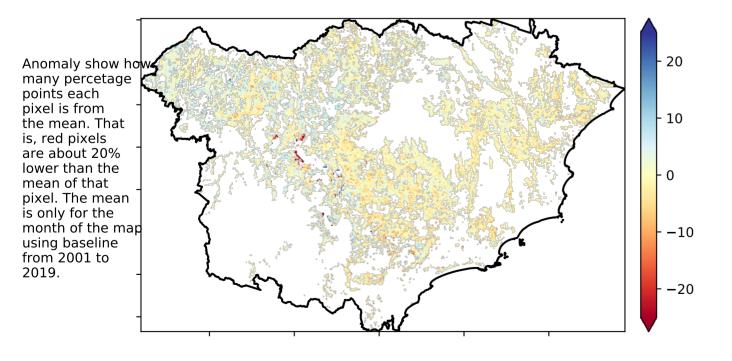
#### Total Vegetation Cover [%]



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

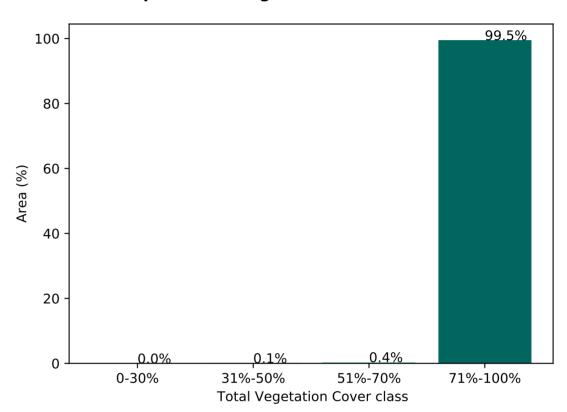


#### **Total Vegetation Cover Anomaly [%]**

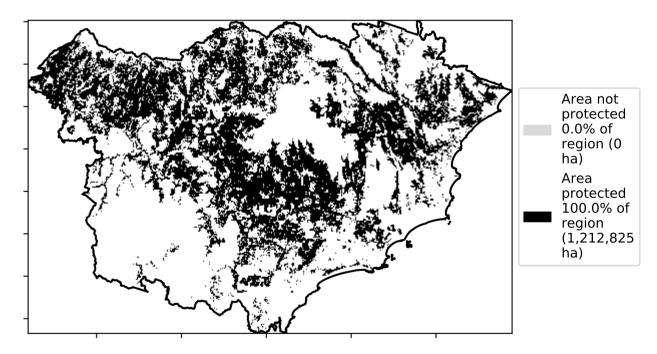


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

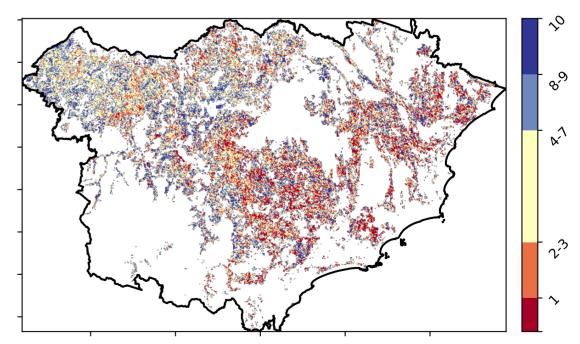
#### Proportion of vegetation cover class in area



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



#### Total Vegetation Cover Decile [%]



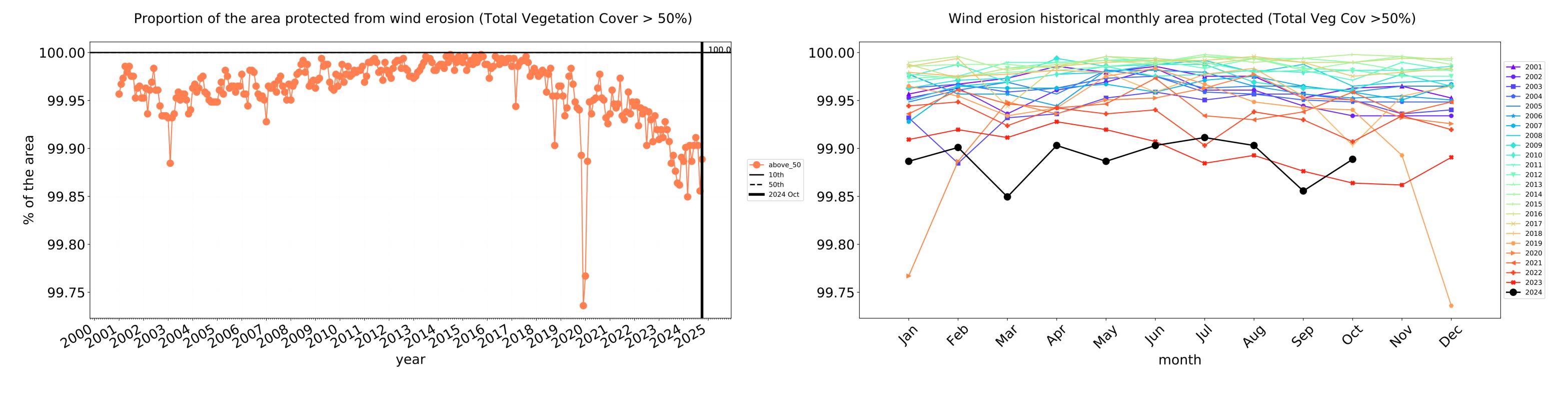


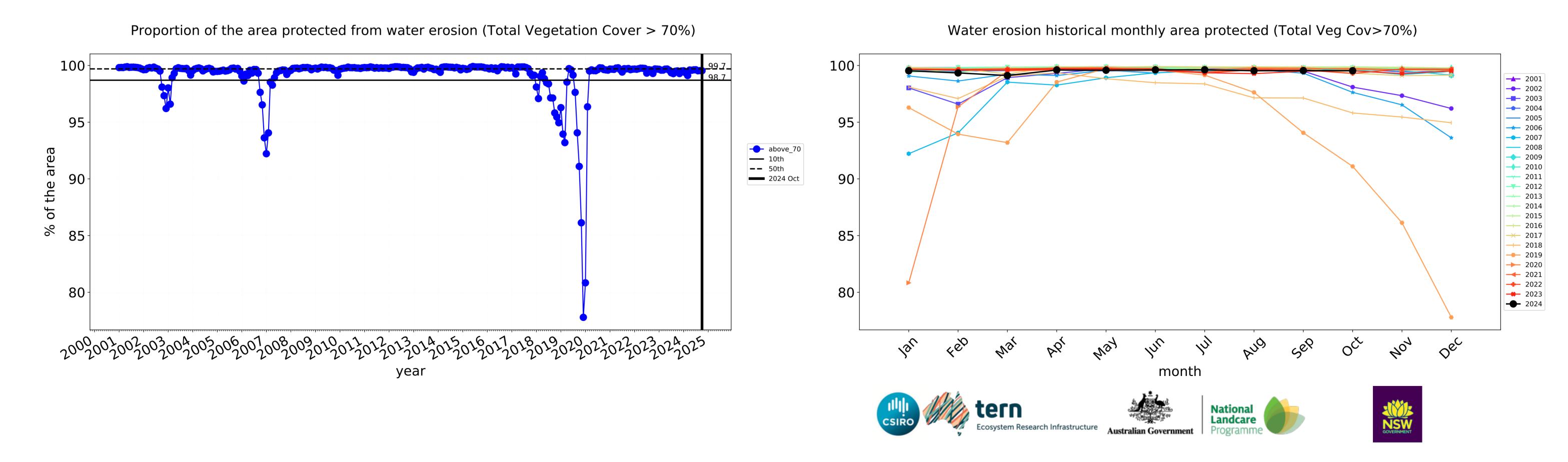


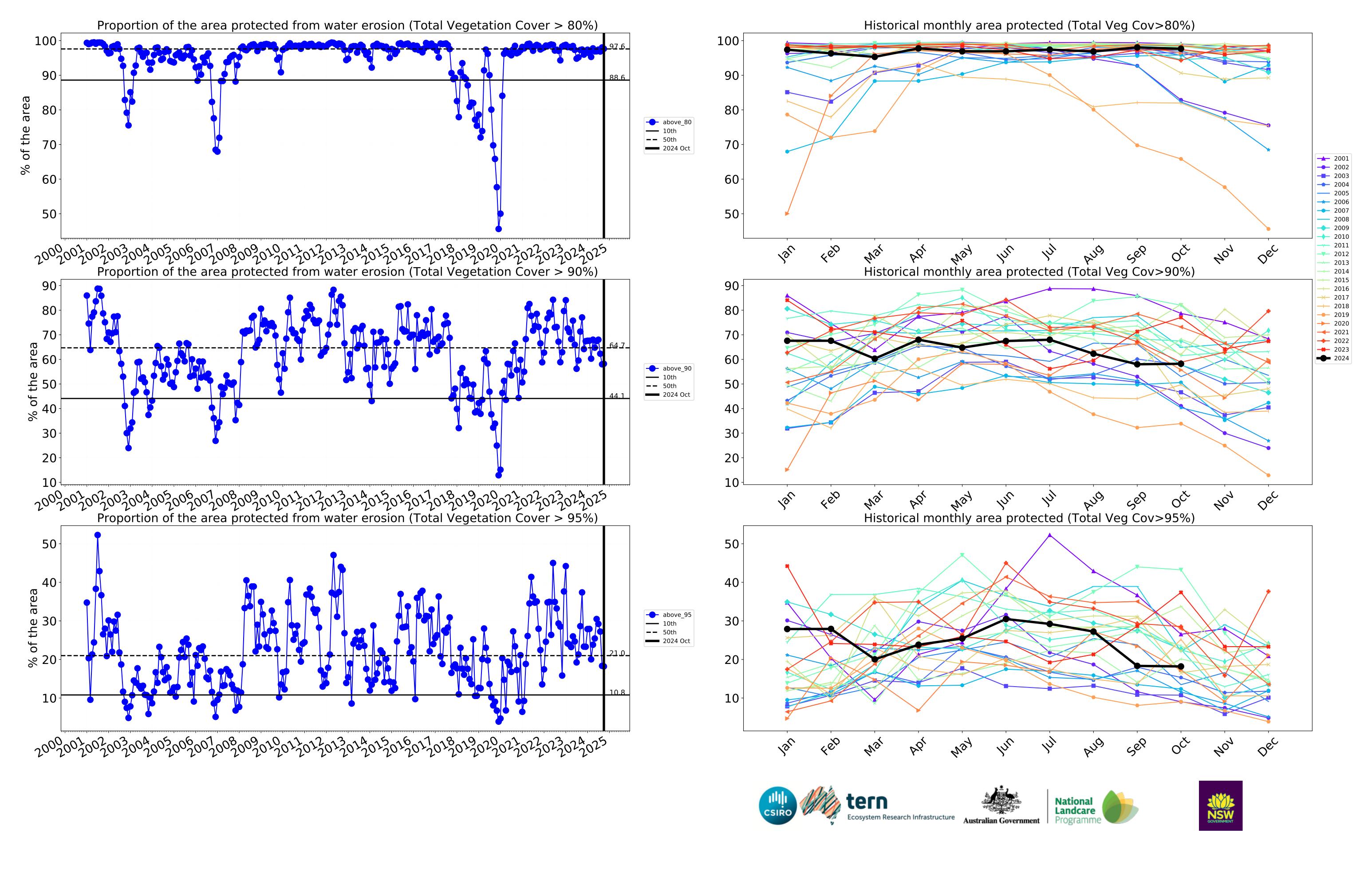




#### **Grazing non forest timeseries**





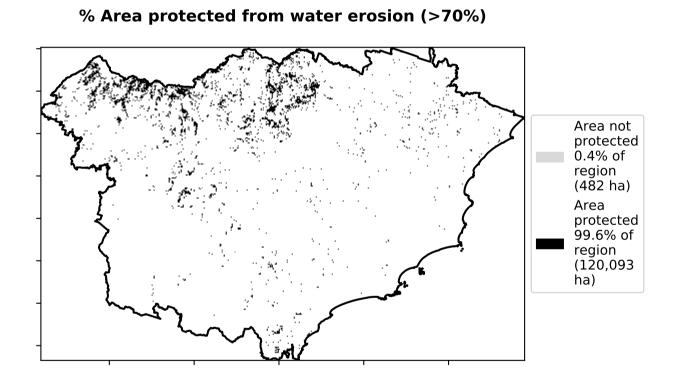


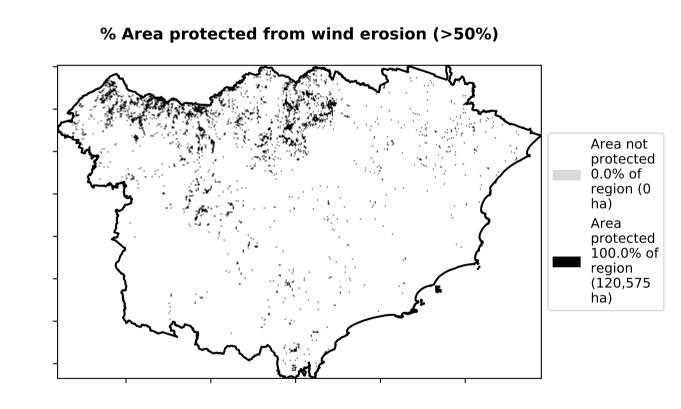
#### **Grazing Woodland forest**

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

# **Total Vegetation Cover [%]**

#### 100 80 Area (%) 20 -0.2% 31%-50% 51%-70% 0-30% **Total Vegetation Cover class**

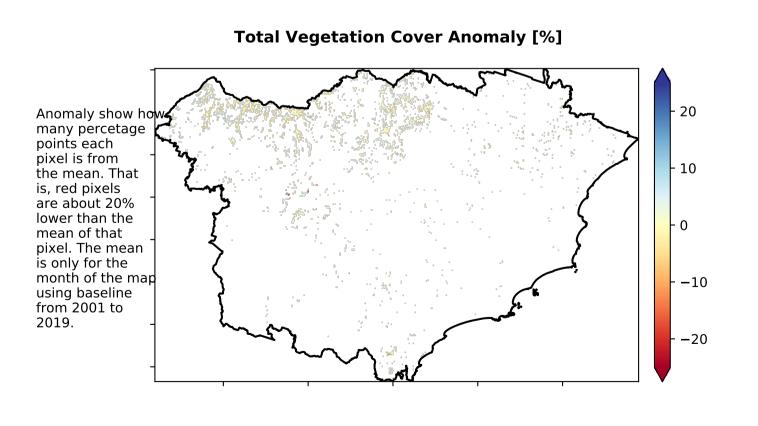


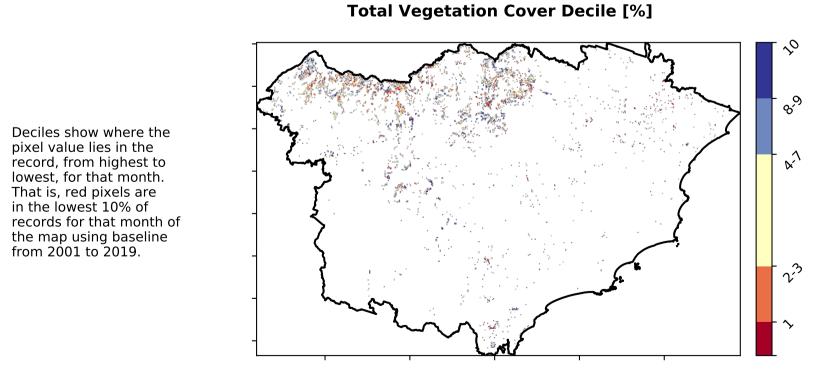


**Proportion of vegetation cover class in area** 

99.6%

71%-100%



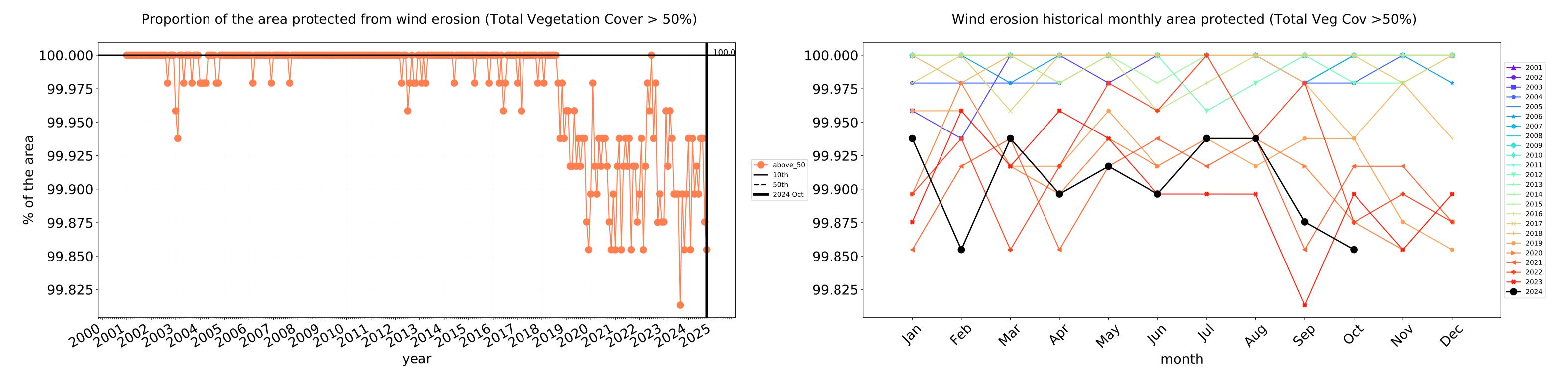


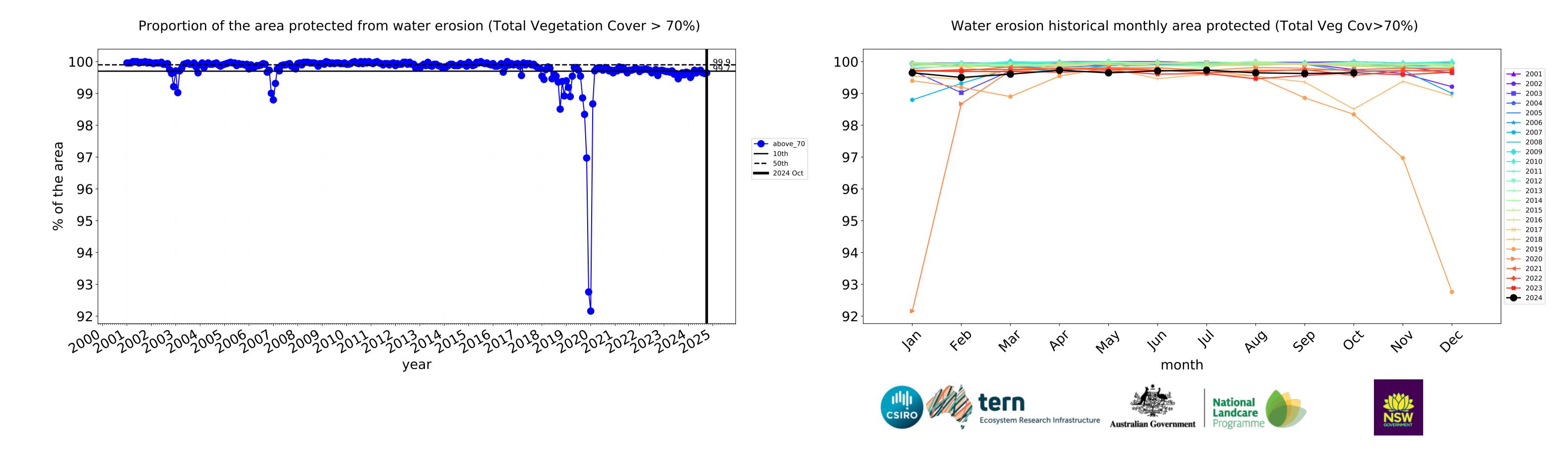


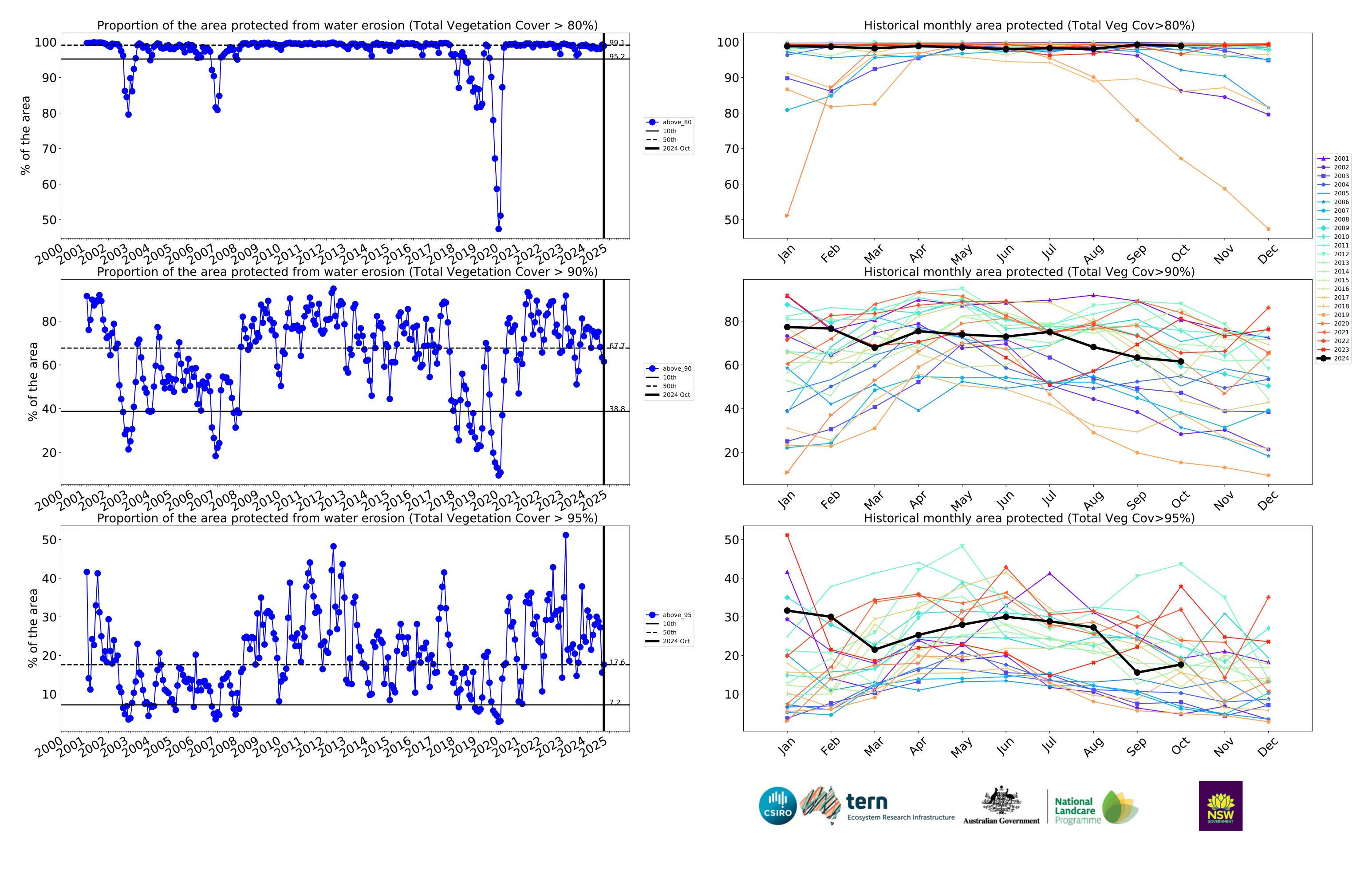




#### **Grazing Woodland forest timeseries**





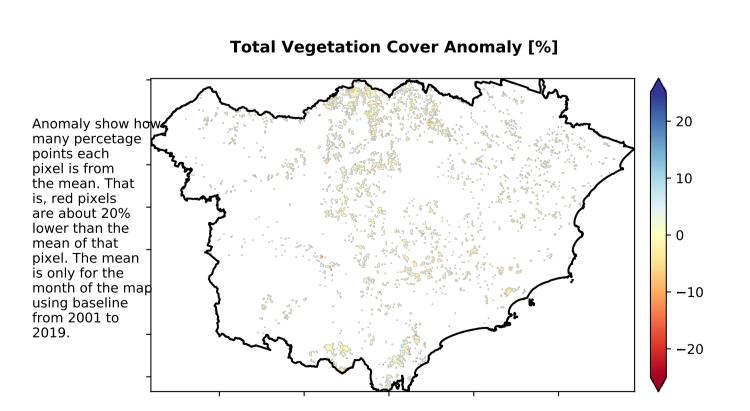


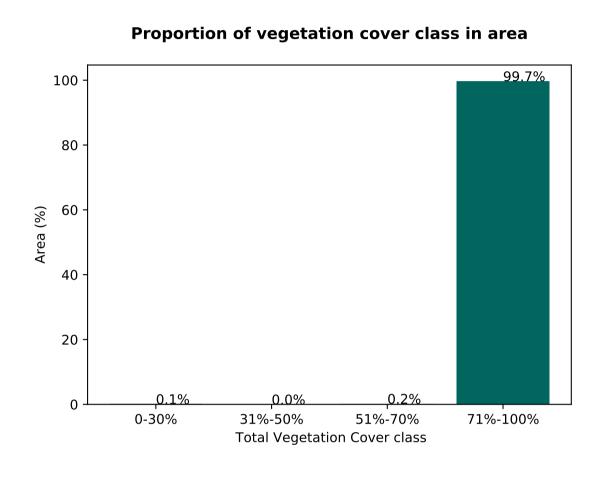
#### **Grazing - Forest (non woodland)**

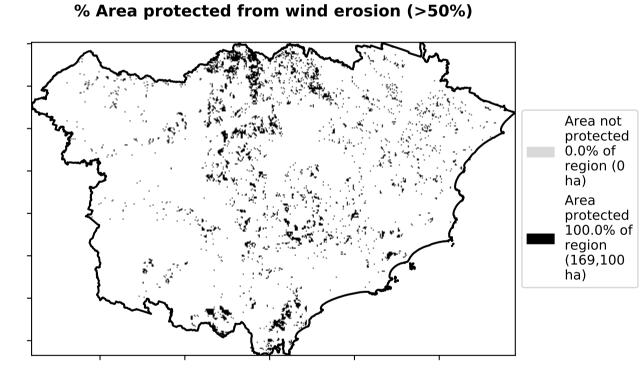
### **Land use and forest cover** Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

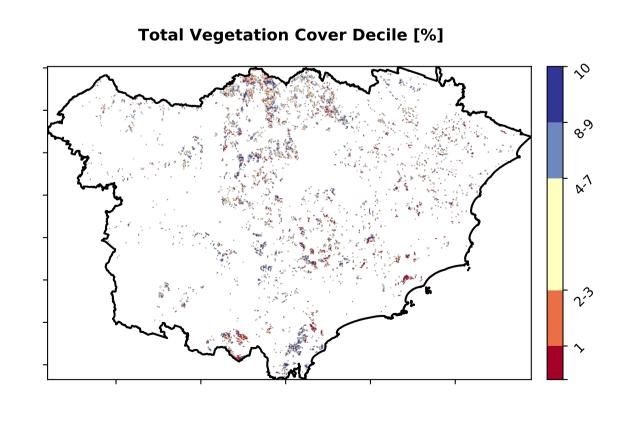
# **Total Vegetation Cover [%]**

### % Area protected from water erosion (>70%) Area not protected 0.3% of region (507 ha) Area protected 99.7% of region (168,593 ha)







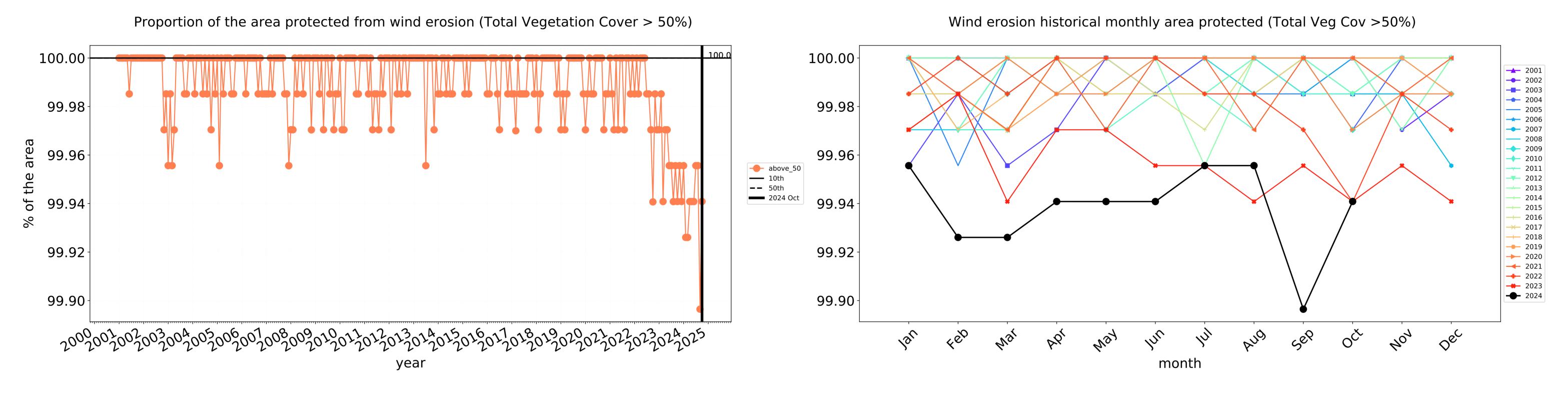


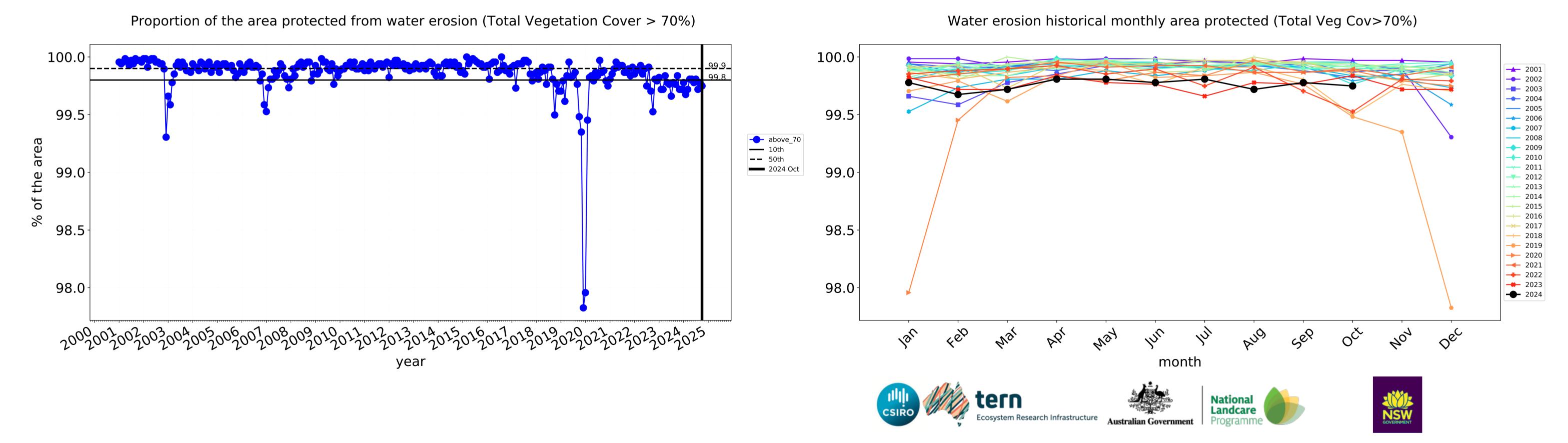


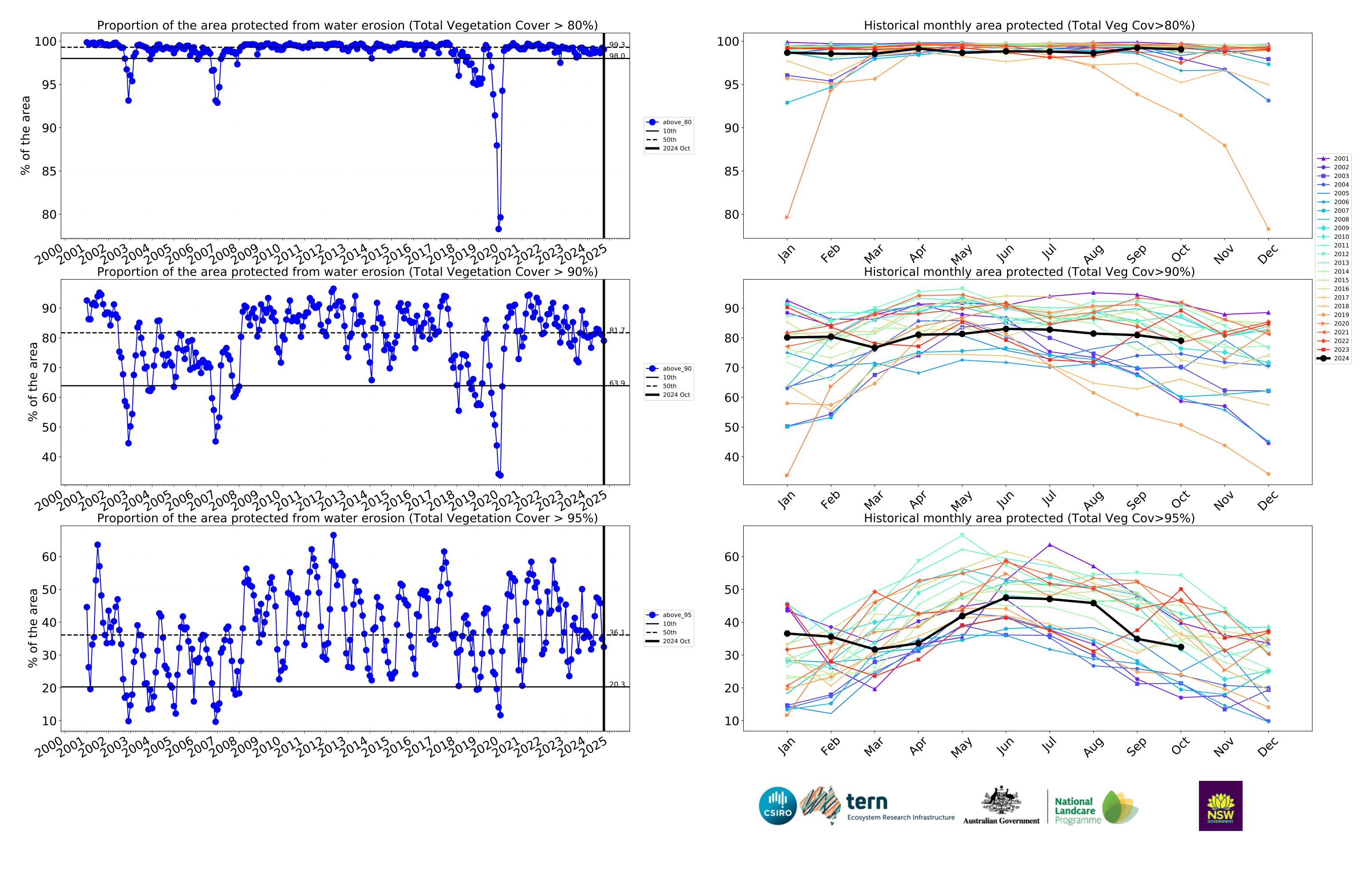






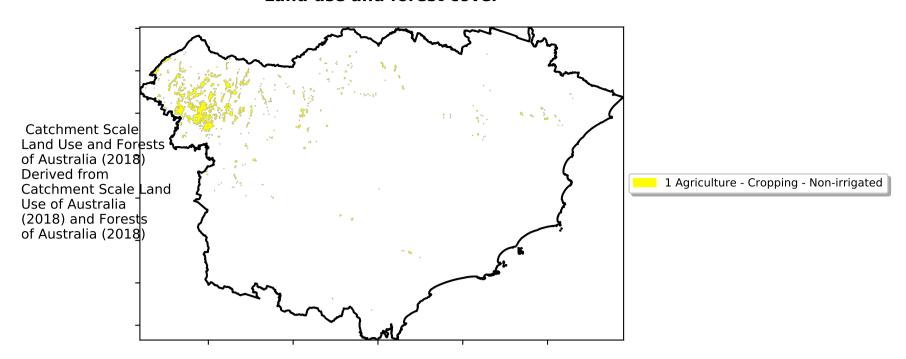




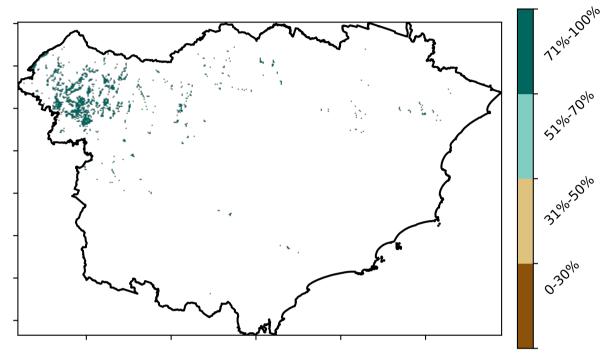


#### **Cropping**

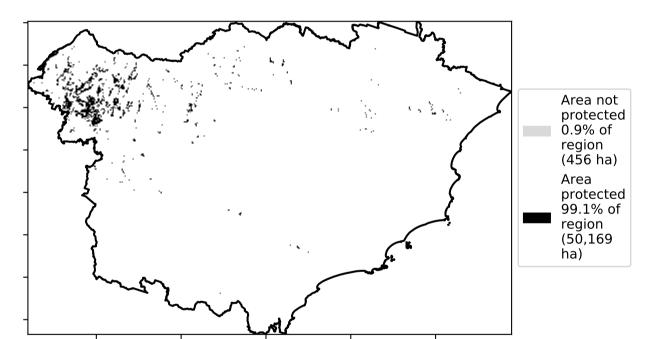
#### Land use and forest cover



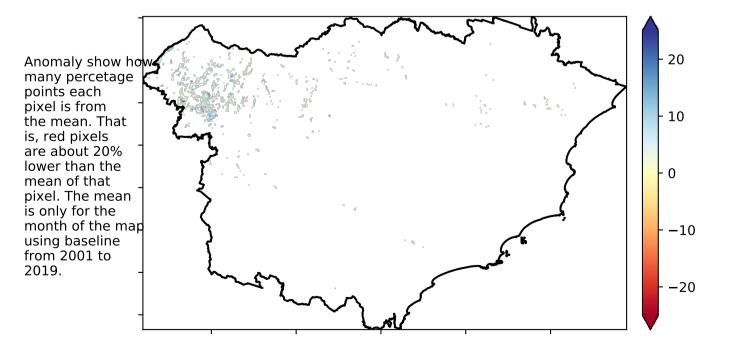
#### Total Vegetation Cover [%]



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

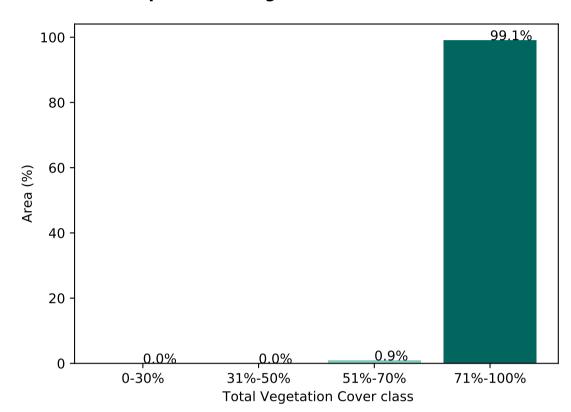


#### Total Vegetation Cover Anomaly [%]

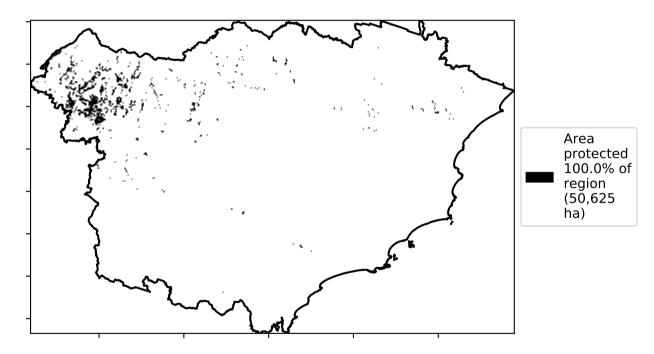


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

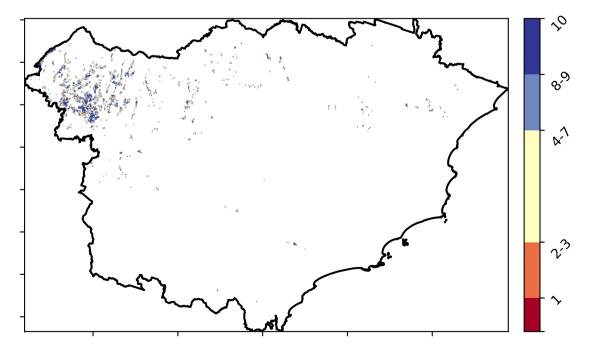
#### Proportion of vegetation cover class in area



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



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



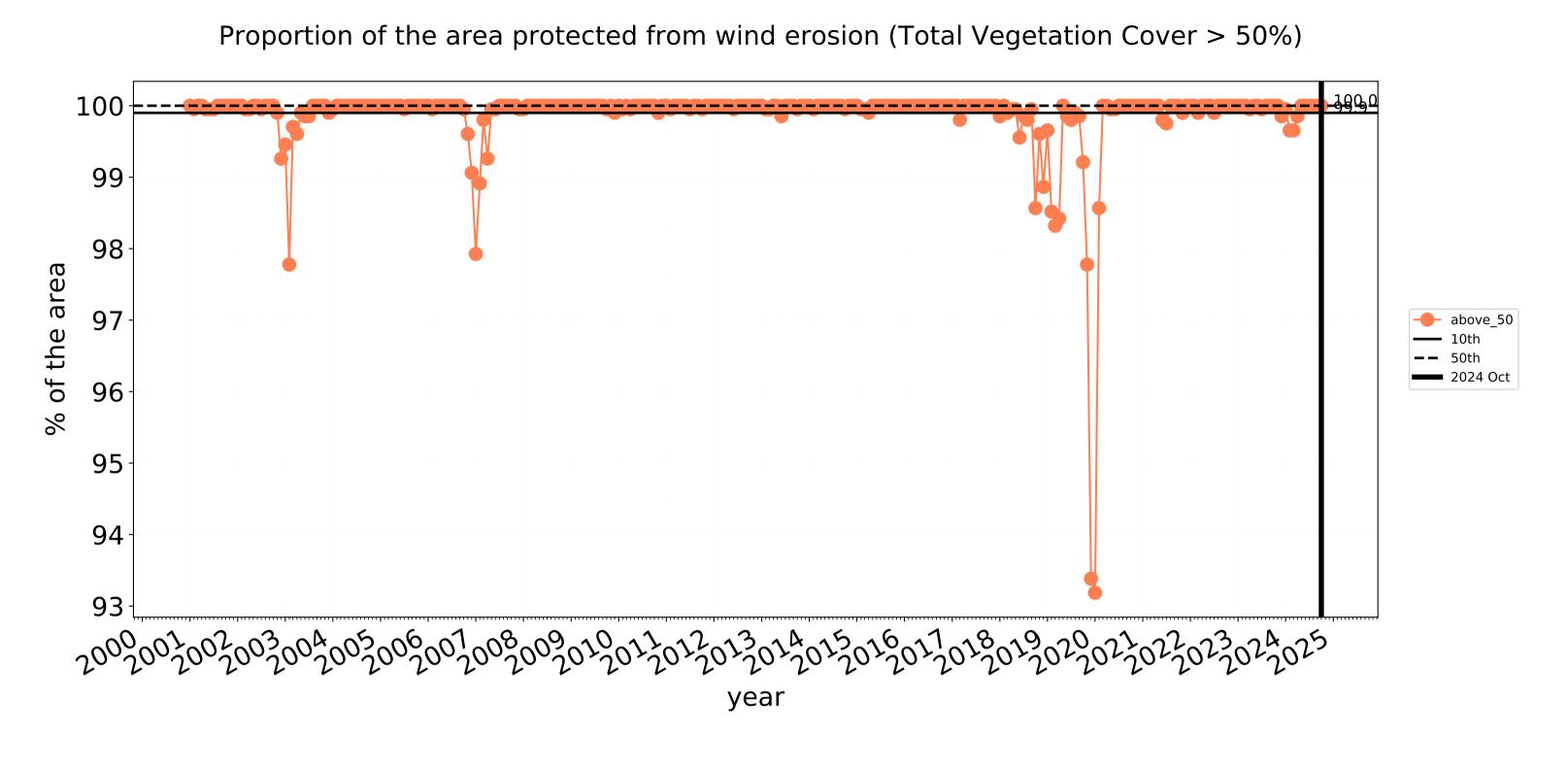


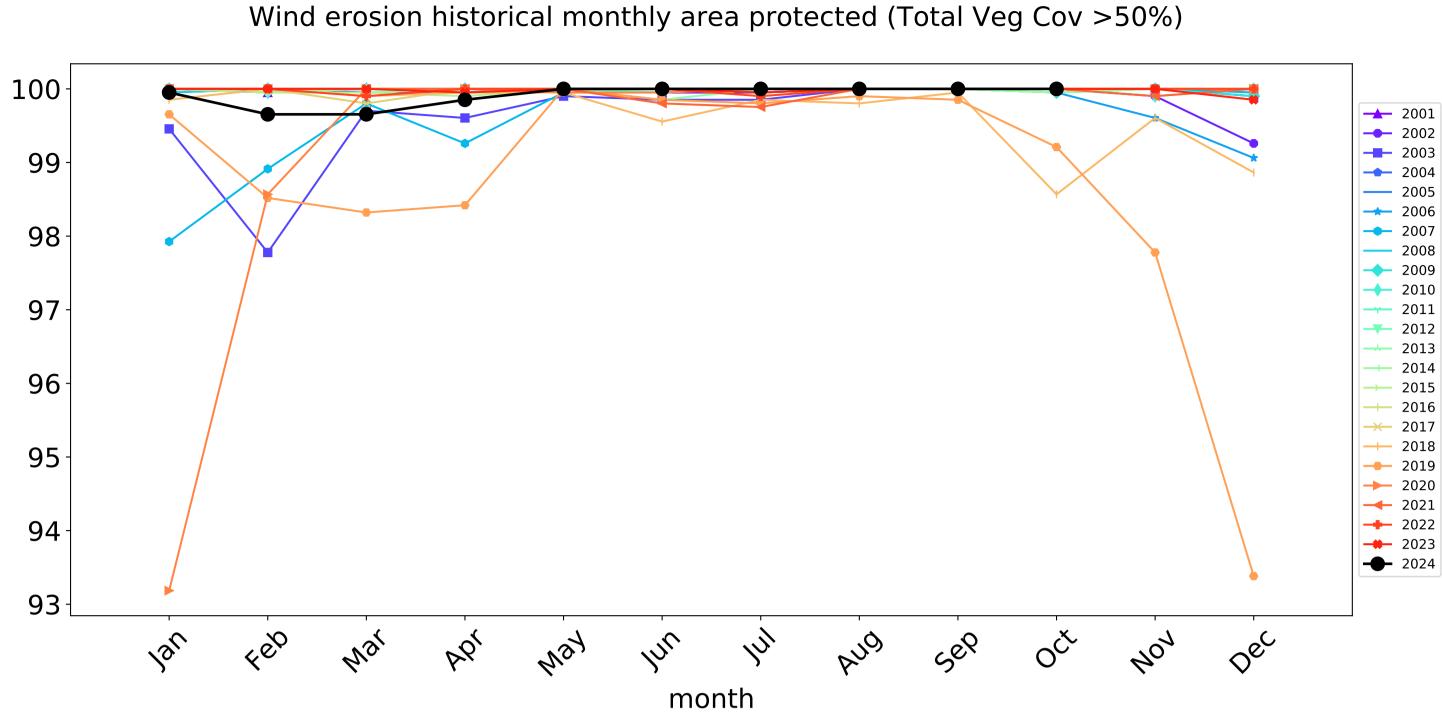


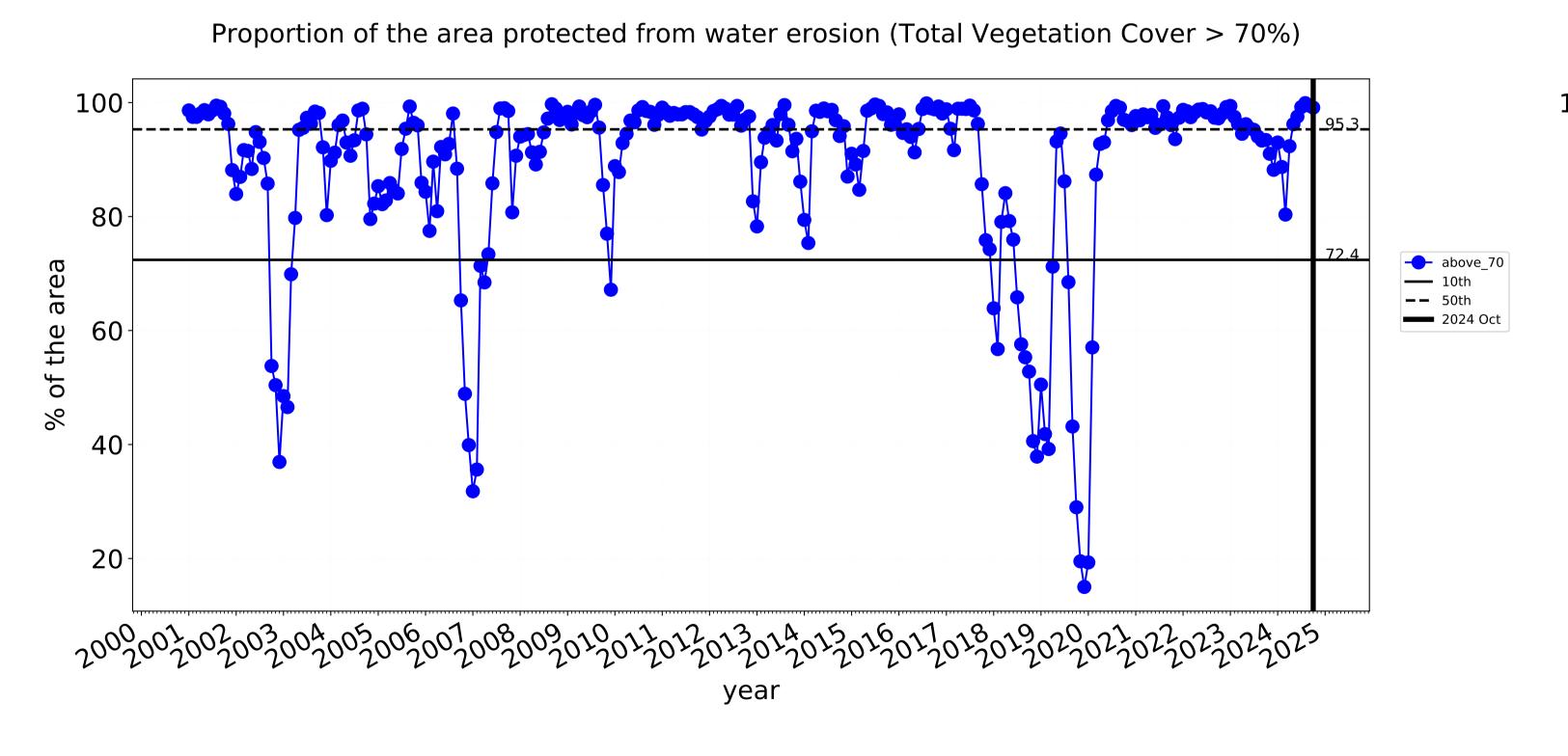


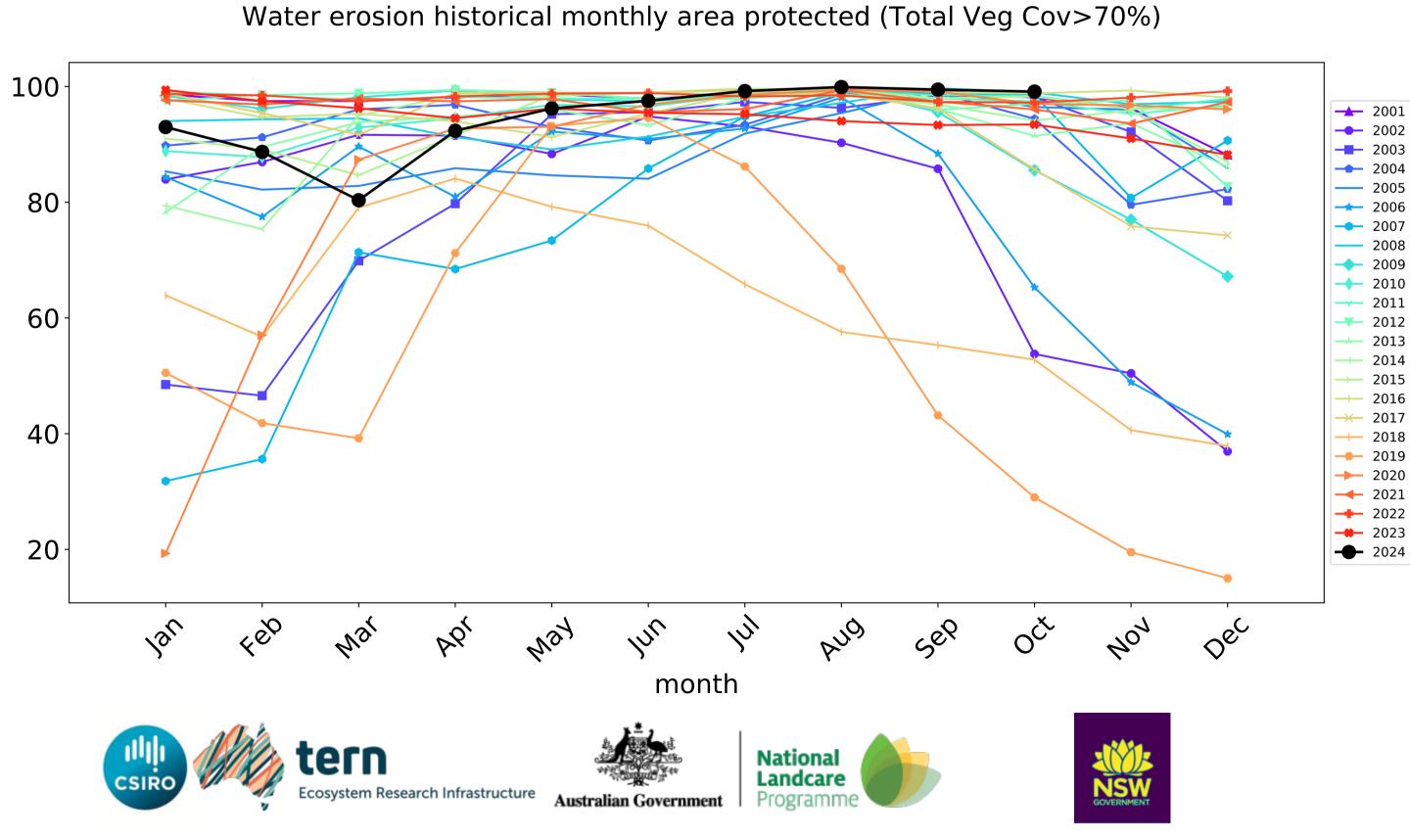


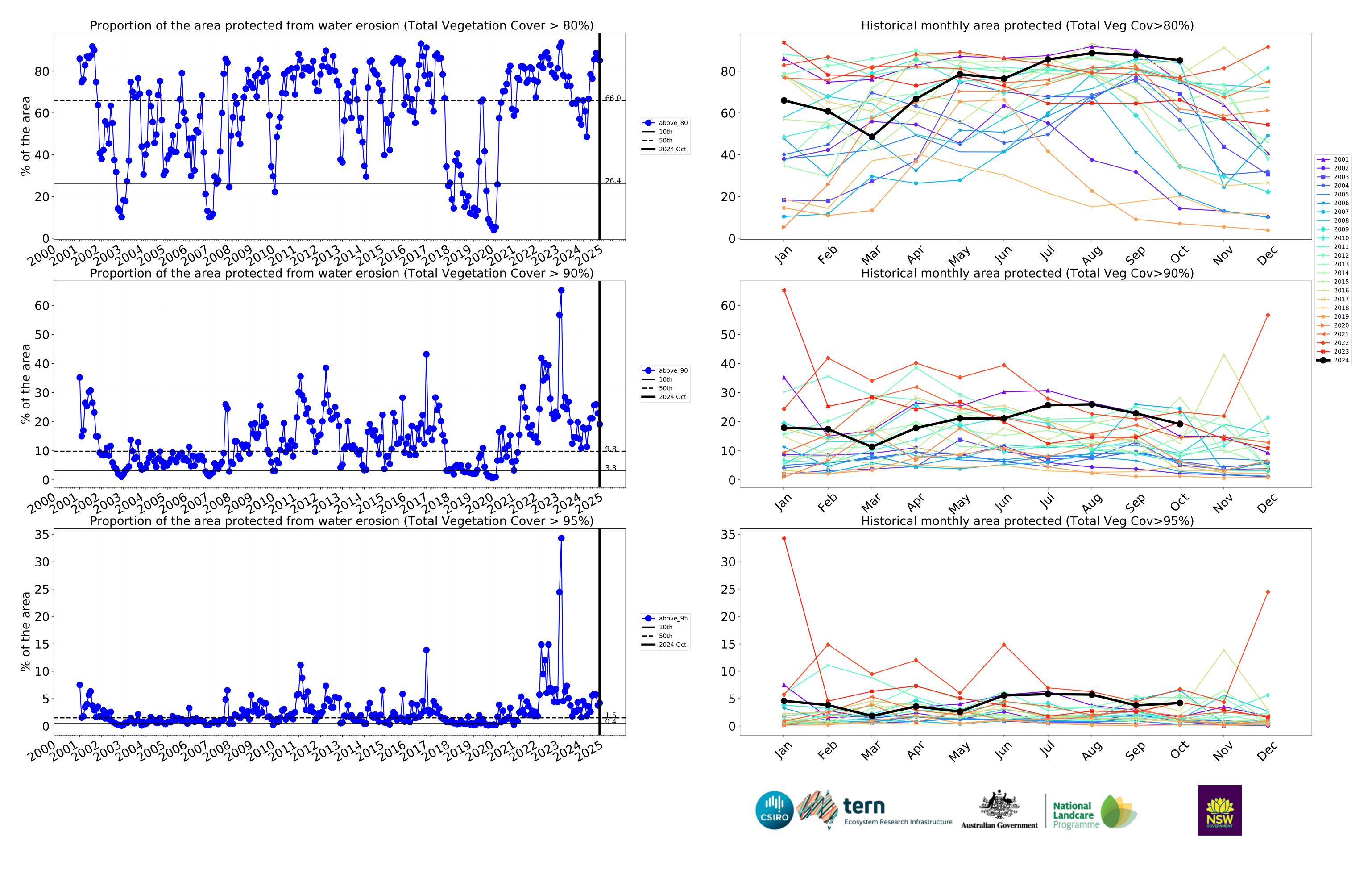
#### **Cropping timeseries**









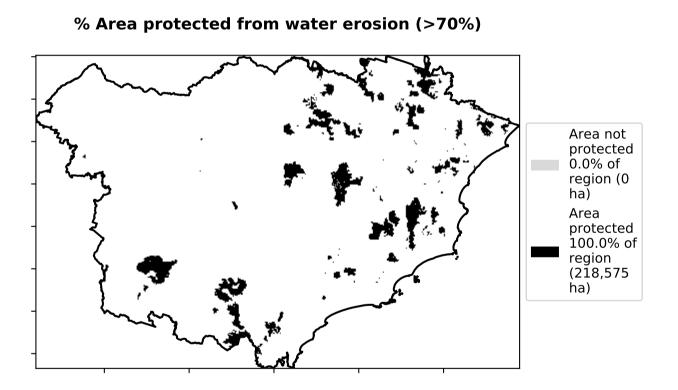


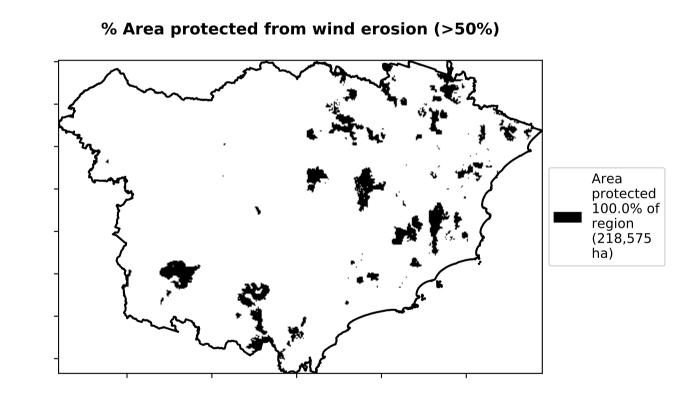
#### **Production native forests and plantation forests**

## **Land use and forest cover** Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Production native forests and plantation forests Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

# **Total Vegetation Cover [%]**

100 Area (%) 60 40 20 -0.0% 0-30% 31%-50% 51%-70% **Total Vegetation Cover class** 

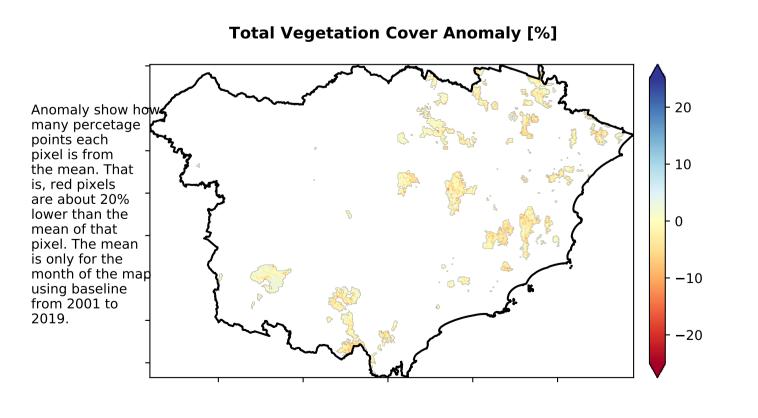


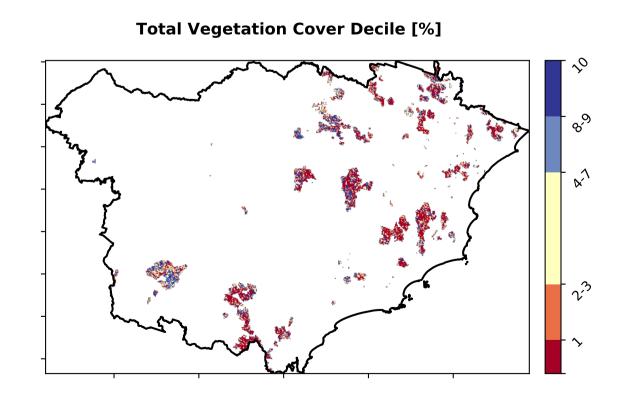


**Proportion of vegetation cover class in area** 

100.0%

71%-100%





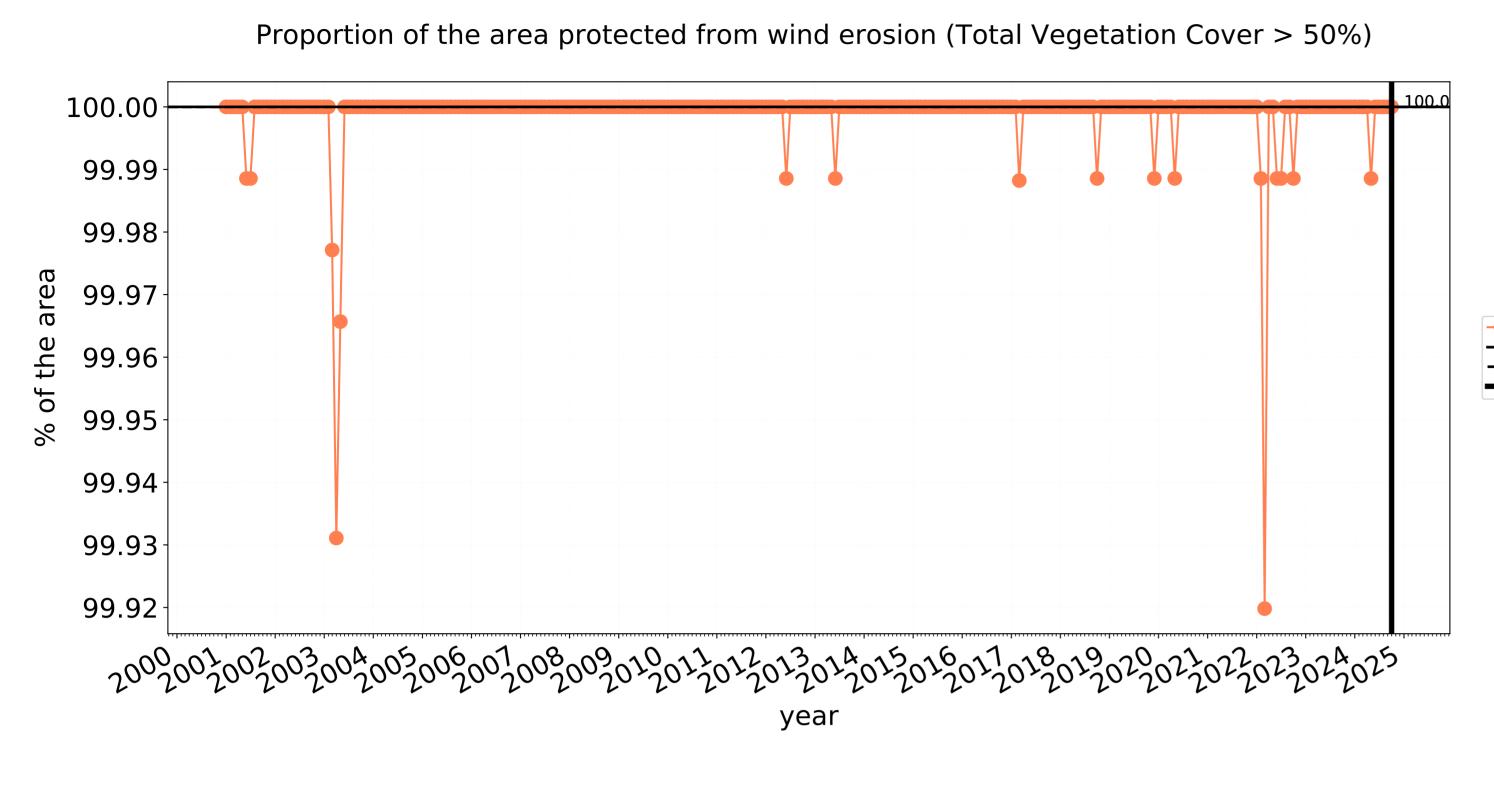


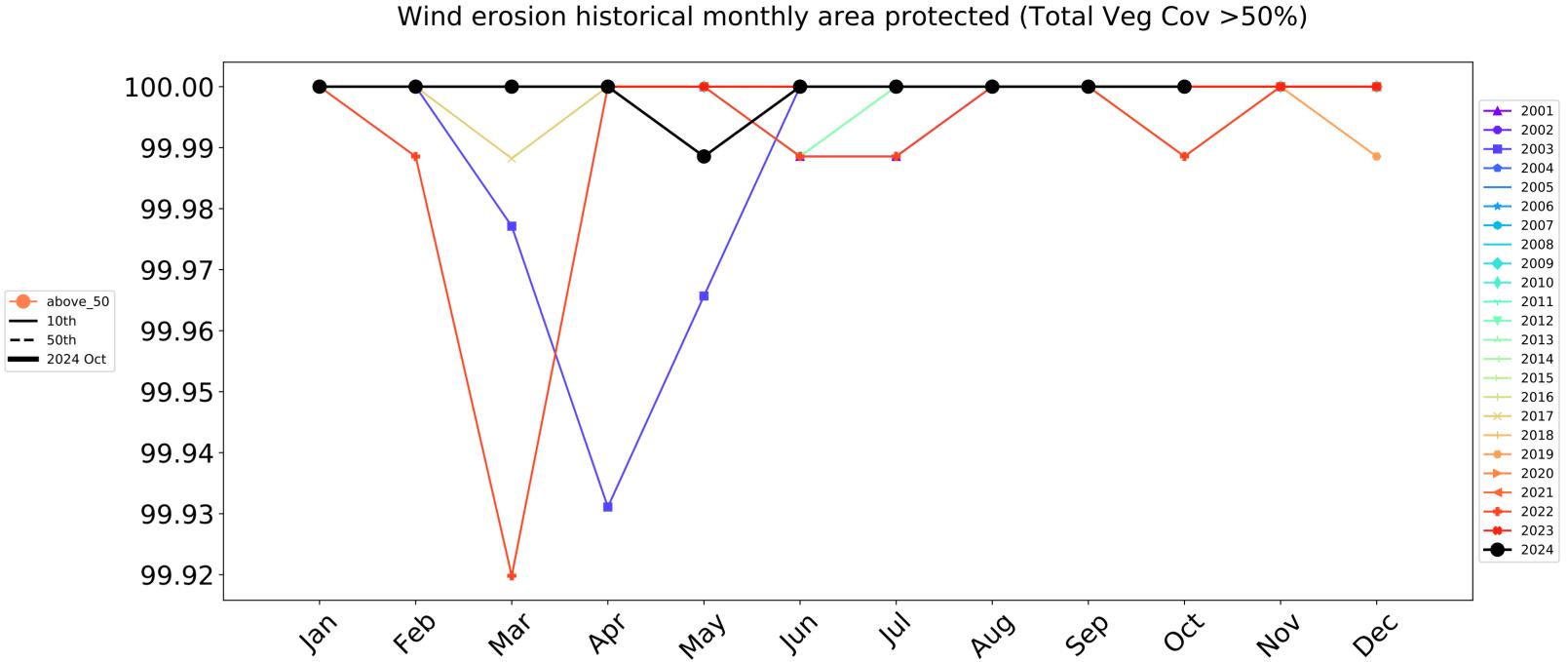




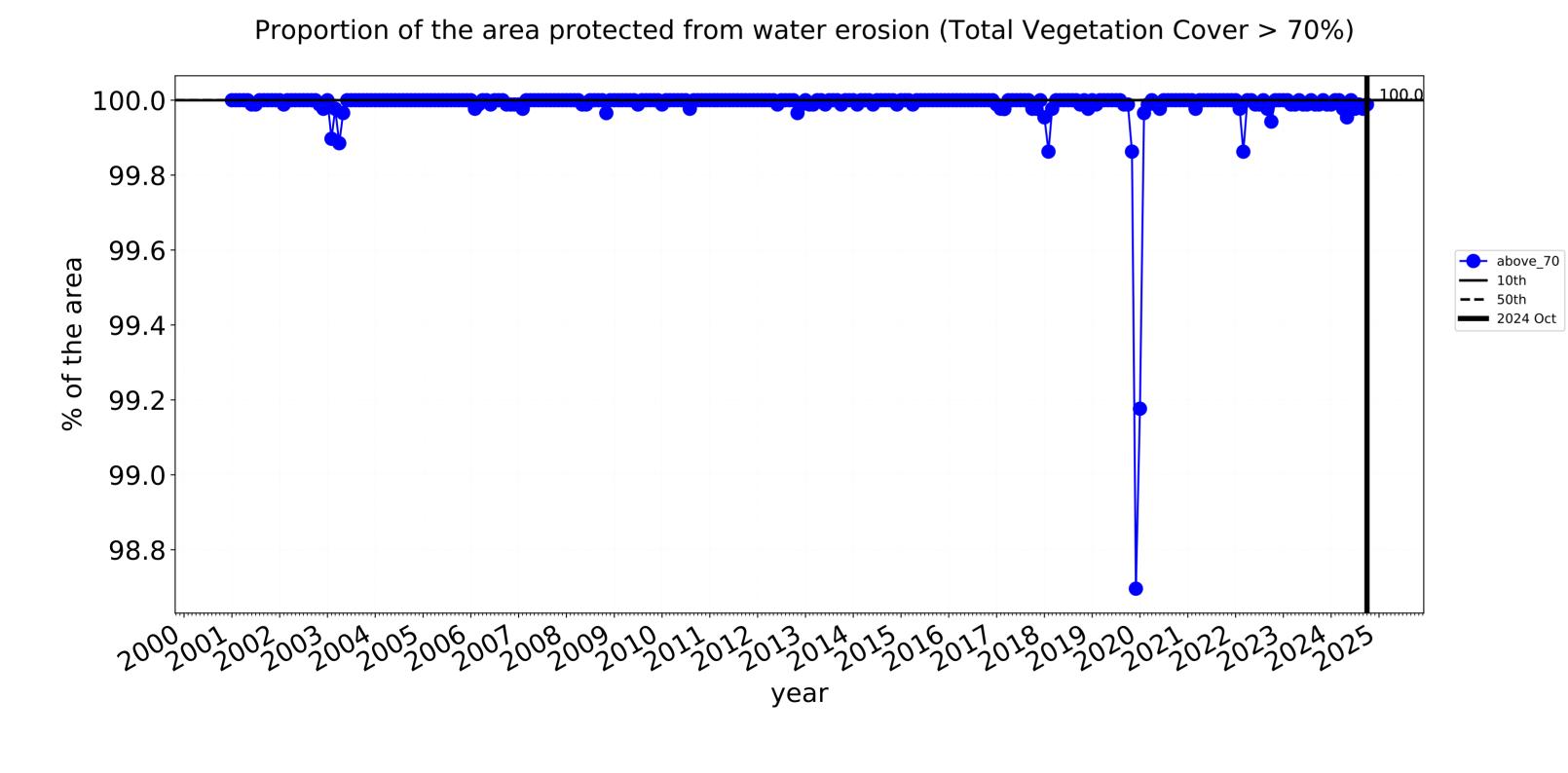


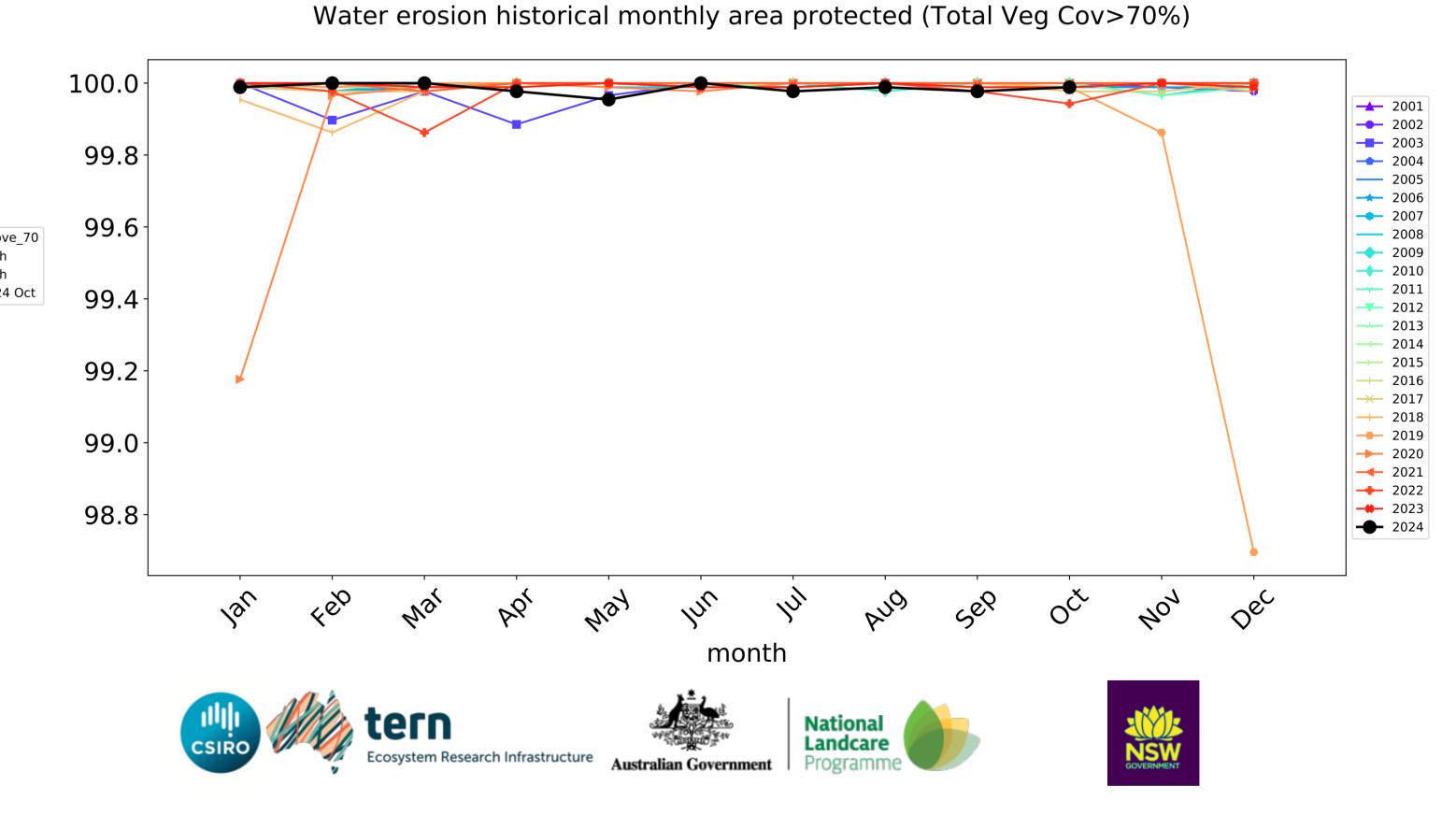
#### **Production native forests and plantation forests timeseries**

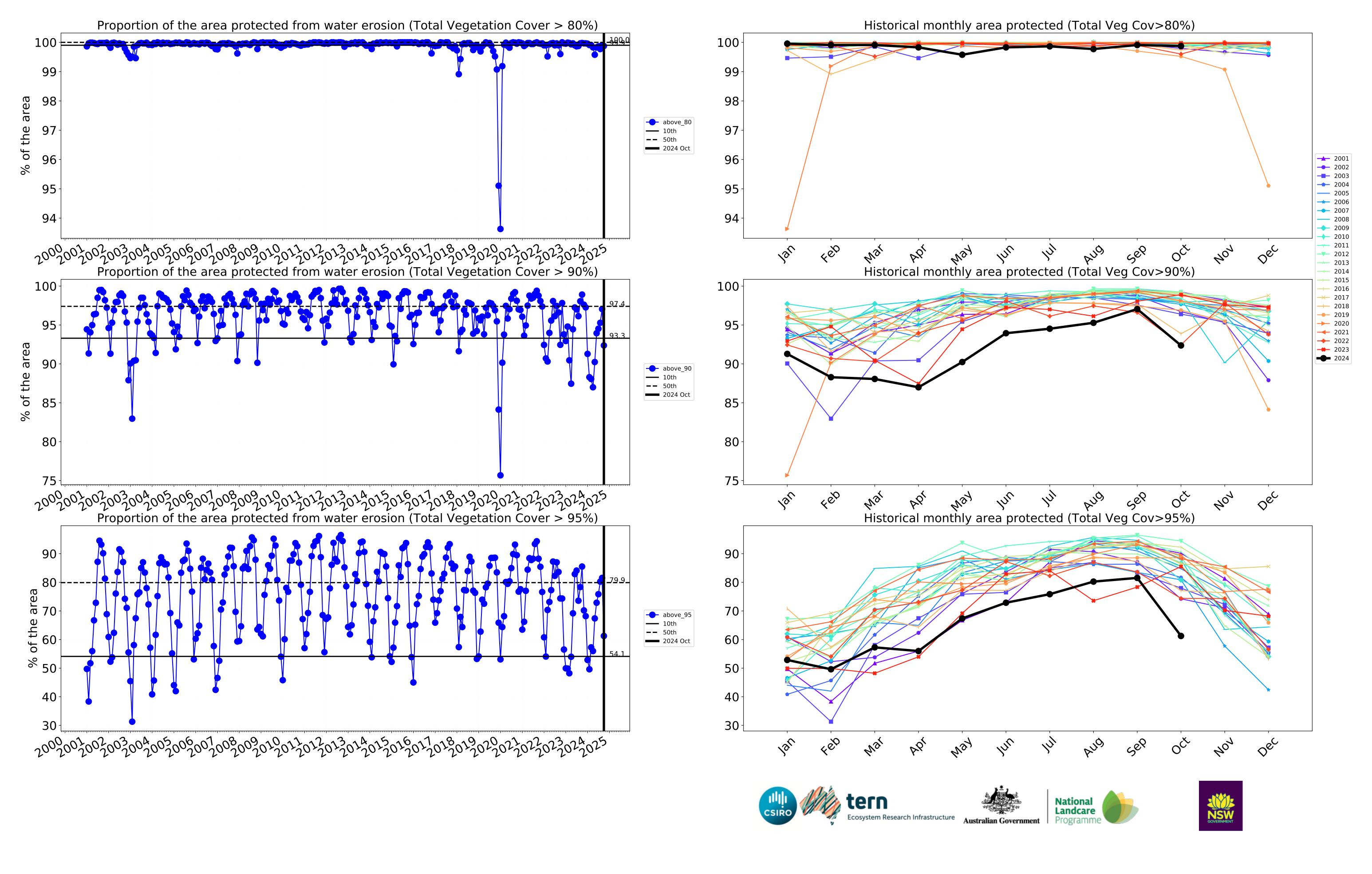




month







### Hunter (3,239,650 ha and no data 60,775 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	3,239,650	99.9% 3,234,800	99.5% 3,224,825	98.4% 3,188,325	96.2% 3,114,975	70.7% 2,291,750	34.0% 1,101,575
Conservation and natural environments	1,241,225	99.9% 1,239,825	99.8% 1,238,775	99.6% 1,236,525	99.2% 1,231,650	88.7% 1,100,375	52.3% 648,825
Conservation and natural environments non forest	30,100	95.5% 28,750	93.4% 28,100	89.6% 26,975	85.9% 25,850	70.4% 21,200	34.1% 10,250
Conservation and natural environments Woodland forest	138,925	100.0% 138,900	99.9% 138,725	99.8% 138,600	99.4% 138,050	83.7% 116,250	36.9% 51,325
natural environments Forest (non woodland)	1,072,200	100.0% 1,072,175	100.0% 1,071,950	99.9% 1,070,950	99.6% 1,067,750	89.8% 962,925	54.8% 587,250
Agriculture	1,580,500	100.0% 1,580,100	99.9% 1,578,875	99.5% 1,573,225	97.3% 1,538,050	58.8% 929,525	19.0% 299,975
Grazing	1,502,500	100.0% 1,502,100	99.9% 1,500,875	99.6% 1,496,025	97.9% 1,471,175	60.8% 913,925	19.8% 296,800
Grazing non forest	1,212,825	100.0% 1,212,475	99.9% 1,211,475	99.5% 1,207,200	97.7% 1,184,425	58.2% 706,025	18.2% 220,650
Grazing Woodland forest	120,575	100.0% 120,550	99.9% 120,400	99.6% 120,150	98.9% 119,250	61.6% 74,225	17.6% 21,275
Grazing - Forest (non woodland)	169,100	100.0% 169,075	99.9% 169,000	99.7% 168,675	99.1% 167,500	79.1% 133,675	32.5% 54,875
Cropping	50,625	100.0% 50,625	100.0% 50,625	99.1% 50,175	85.2% 43,125	19.2% 9,700	4.2% 2,125
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,550	99.9% 218,300	92.4% 201,900	61.2% 133,875







