### Total vegetation cover soil protection Region:NRM South West Region WA

This report describes vegetation protecting the soil surface from erosion during a chosen month compared to previous years. This report has been generated using MODIS fractional vegetation cover information available in Rangelands and Pasture Productivity (RAPP) map tool https://map.geo-rapp.org/#australia. The report is based on 500 metre pixel data on monthly time steps.

Land use forest cover:

Results can be shown for the whole region (polygon), and separated by land use and forest cover classes which are likely to show different cover patterns and targets. Land use is divided into four broad classes: Conservation and natural environments, Agriculture, production native forests and plantation forests (no report), and other (no report). Agriculture is divided into grazing, crops and horticulture which are sub-divided into non-irrigated and irrigated. If forest is present land use is further divided into: non-forest, woodland forest and non-woodland forest. The area of each land use and forest class are shown as a map and chart. The report content is repeated for each land use and forest cover class that covers at least 1% of the area of the chosen region. Total vegetation Cover:

The total vegetation cover indicates where soil is likely to be protected from wind and or water hillslope erosion. Total vegetation cover for this month is shown on a map and chart classified into 4 classes.

- 71-100% High cover protected from wind and usually water erosion (high rainfall, steep slopes, and erodible soils may need greater than 80, 90, 95 and up to 100% cover)
  - 51-70% Moderate cover protected from wind erosion
  - 31-50% Low cover not protected
  - 0-30% Very Low cover not protected

Erosion protection: Wind erosion 50% total vegetation cover

The vegetation cover threshold required to prevent soil erosion is usually 50% to reduce wind erosion, 70% or 80% to reduce water (hillslope) erosion depending on the steepness and rainfall. Areas protected from erosion for the month:

- Map: water erosion protection (>70% cover) percentage area and hectares.
- Map: wind erosion protection (>50% cover) percentage area and hectares.

Comparison with previous years:

- Map: anomaly comparing this month to the average cover from the same month in previous years.
- Map: deciles rank of month against the same month in previous years.

Anomalies and deciles until September 2019 are calculated comparing to the same months 2001 to 2019. Extra monthly data will be used to calculate anomalies and deciles post September 2019 as they become available. Time series monthly from January 2001 to current:

#### **Erosion protection**

- Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month (orange lines). Horizontal lines are 10th (cover target) and 50th percentiles.
- Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month (blue line). Horizontal lines are 10th (cover target) and 50th percentiles.

#### Rainfall

• Millimetres rainfall each month (black line).

Each time series is also stacked by year. The black line shows the current year of data.

Water erosion protection for higher rainfall and steeper slopes:

Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:

- the percentage area with pixels greater than 80% total cover.
- the percentage area with pixels greater than 90% total cover.
- the percentage area with pixels greater than 95% total cover.

#### **Acknowledgment of data:**

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

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









**Date: May 2025** 

#### **Vegetation Cover May 2025**

#### Land use and forest cover

Catchment Scale

Derived from

pixel is from

is, red pixels are about 20%

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

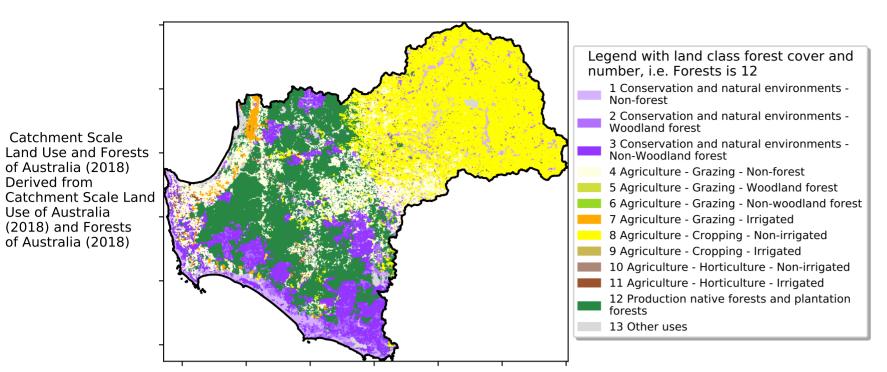
using baseline from 2001 to

2019.

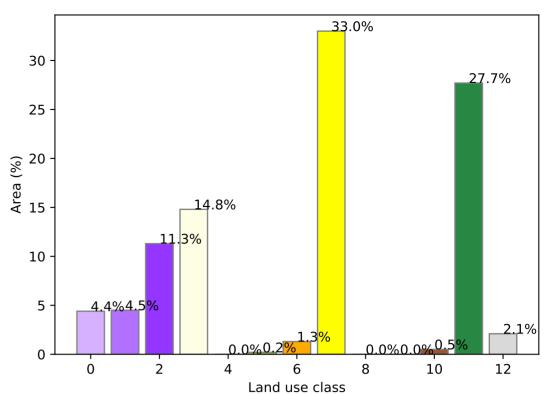
month of the map

the mean. That

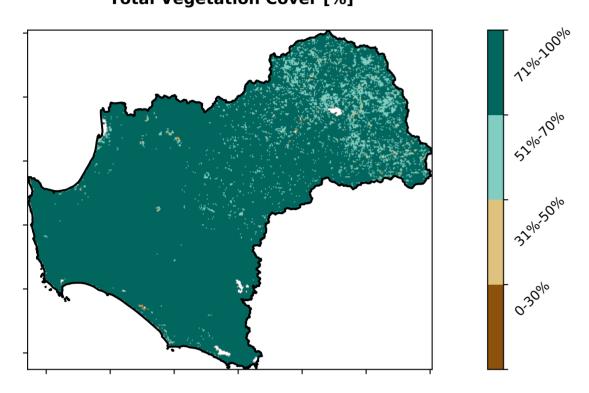
Use of Australia



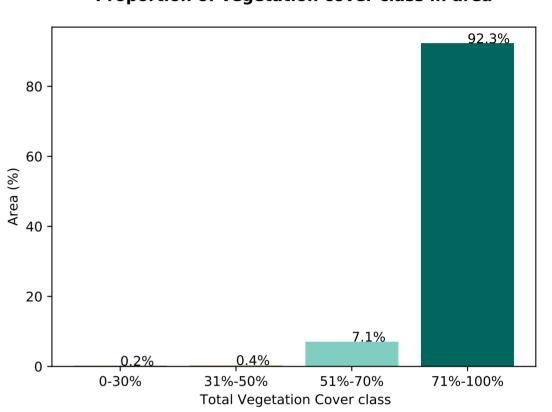
#### Proportion of each land class in area



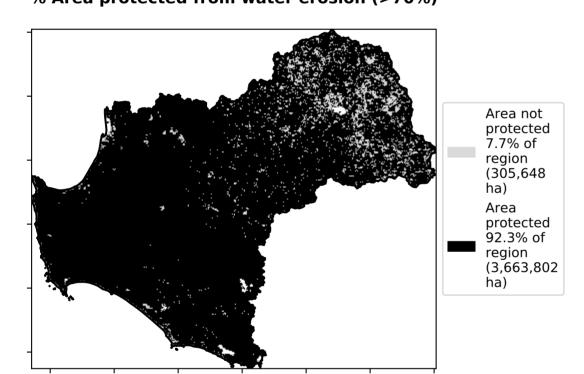
#### **Total Vegetation Cover [%]**



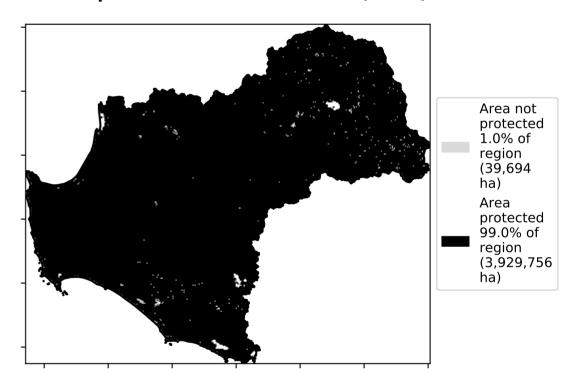
Proportion of vegetation cover class in area



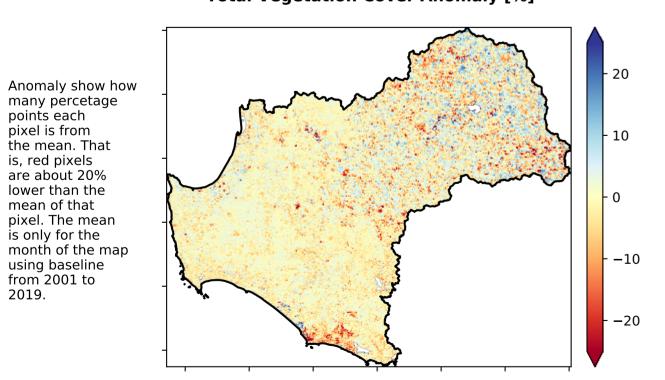
#### % Area protected from water erosion (>70%)



% 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.

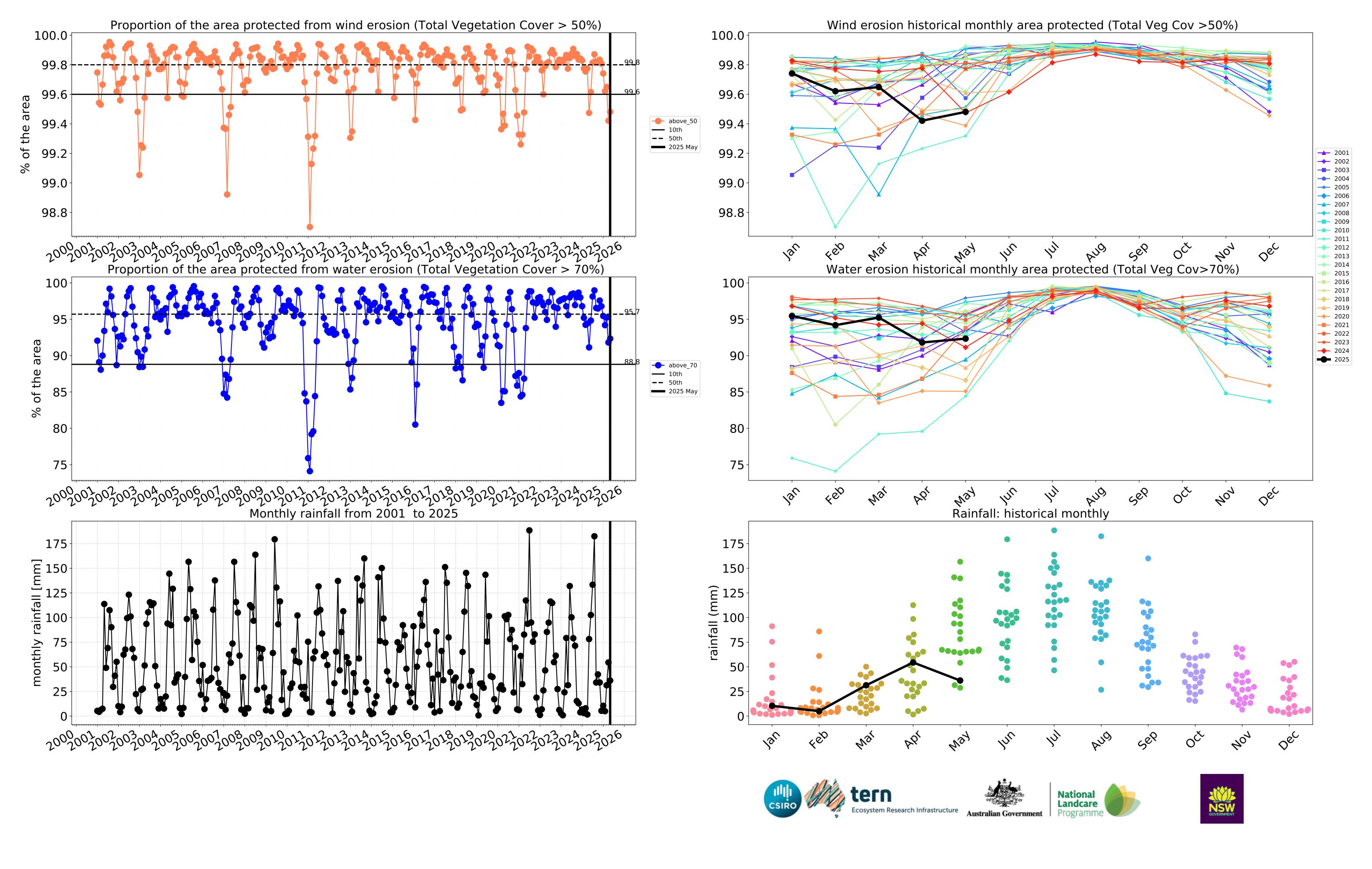
**Total Vegetation Cover Decile [%]** 

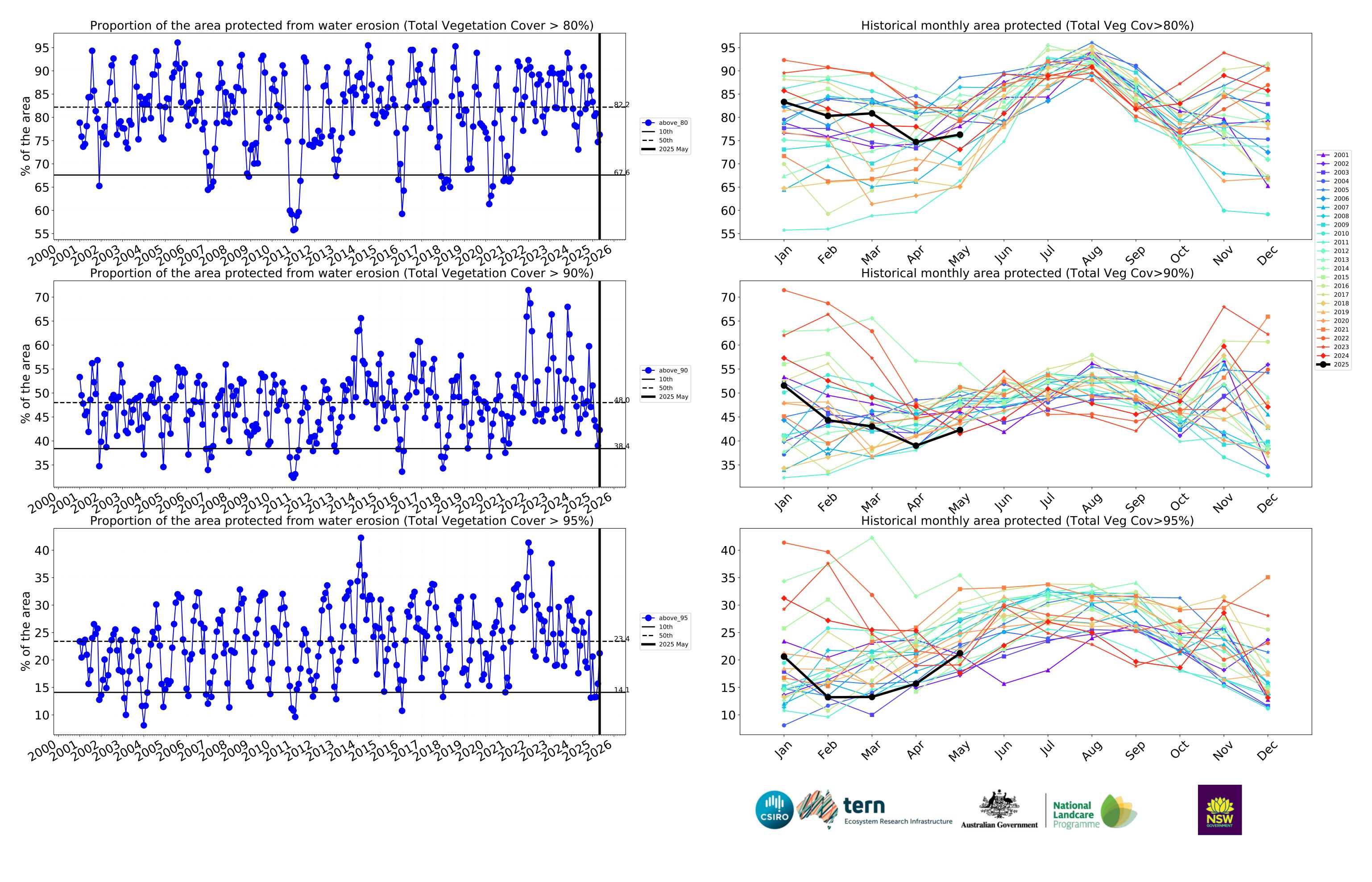
## **Ecosystem Research Infrastructure**



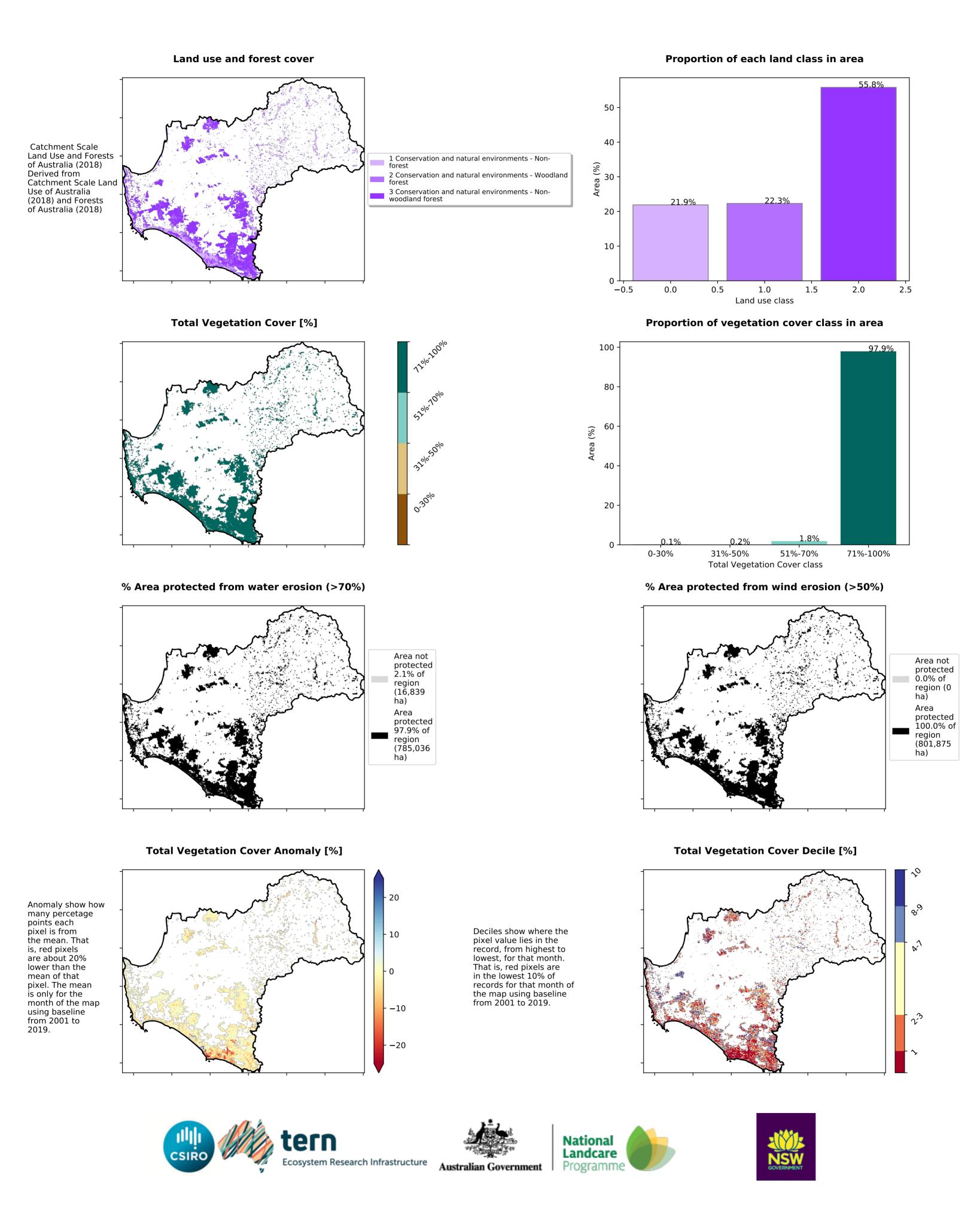




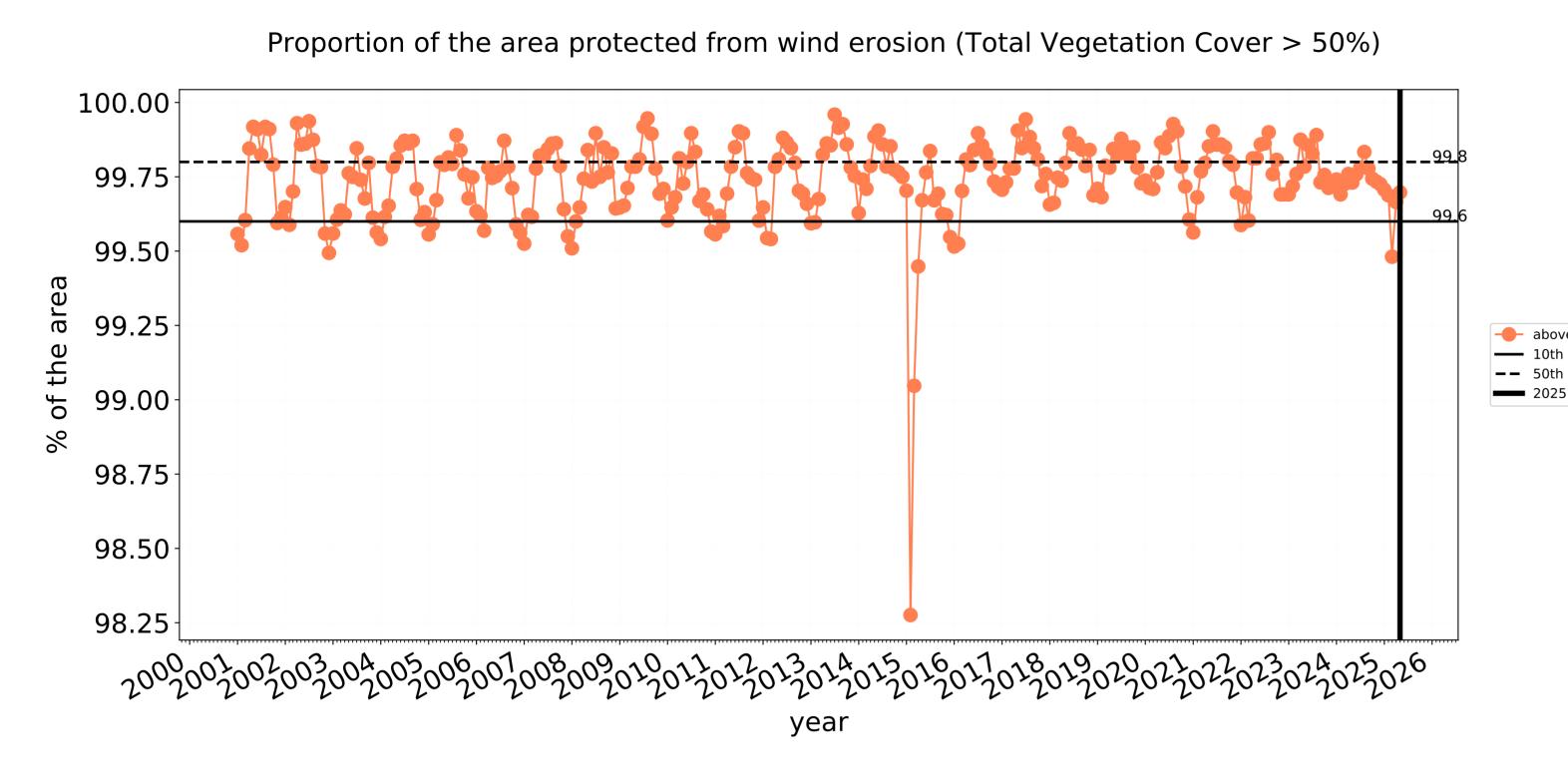




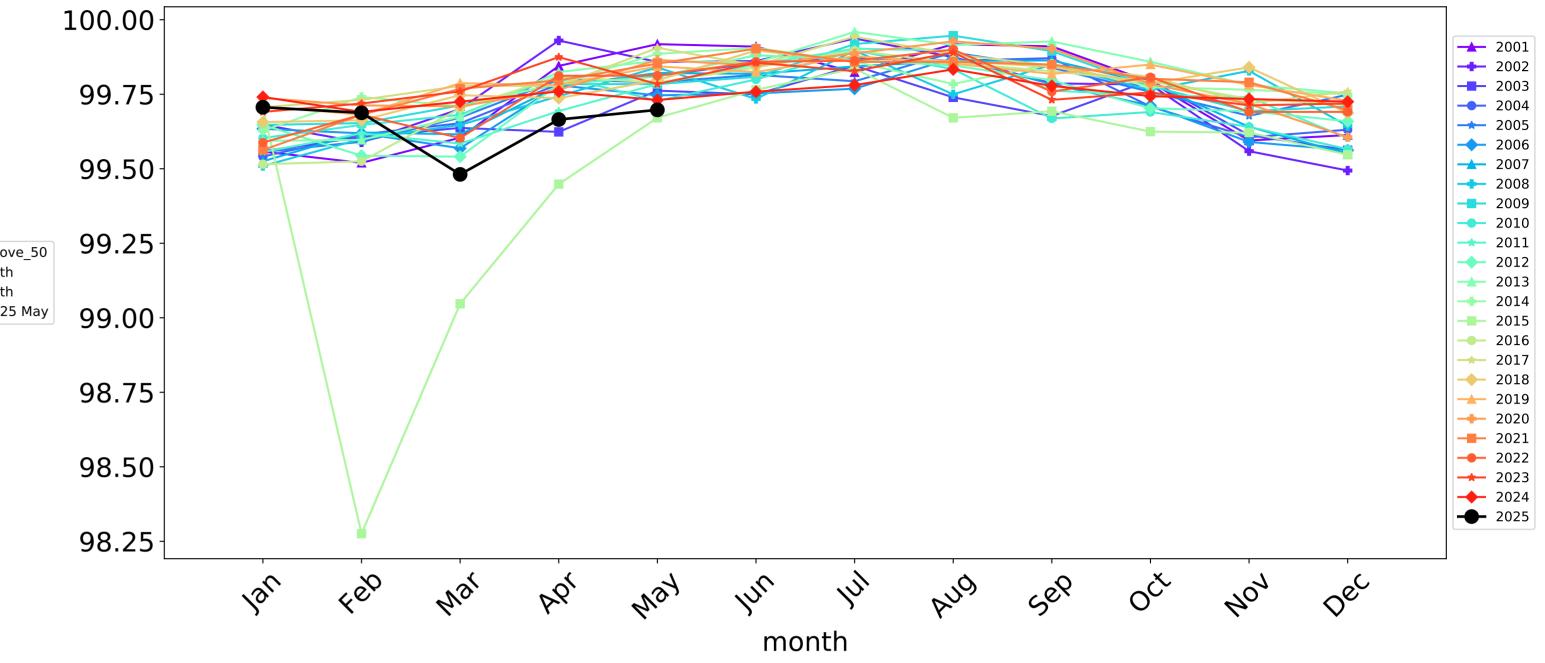
#### **Conservation and natural environments**

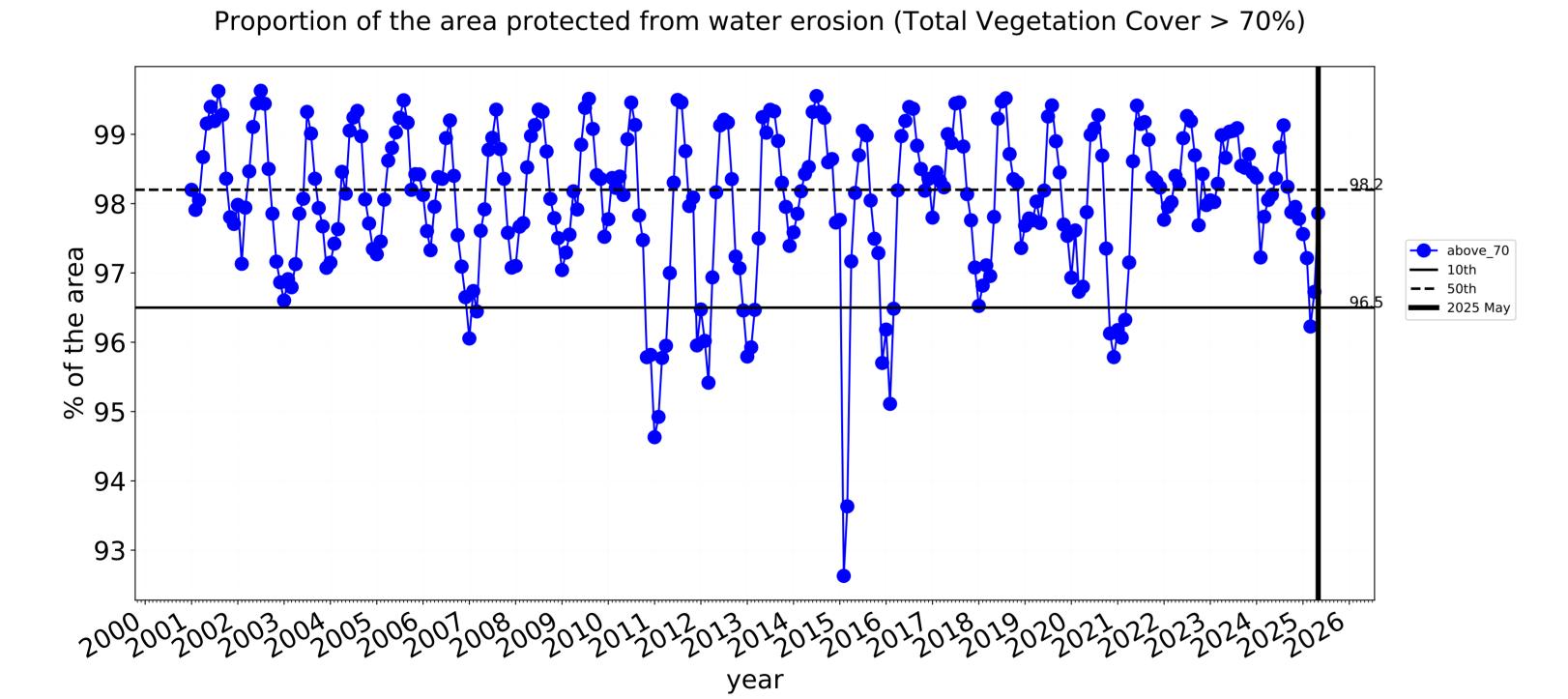


#### **Conservation and natural environments timeseries**

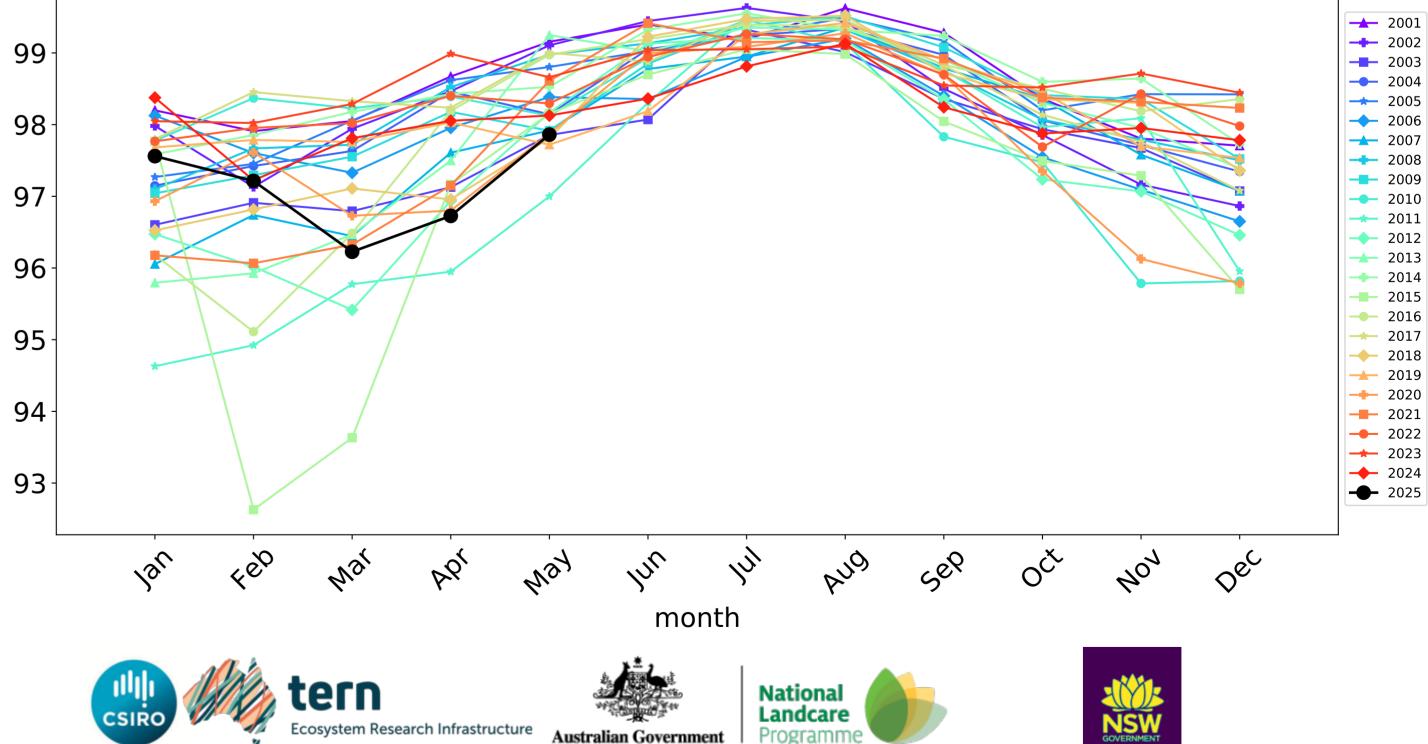


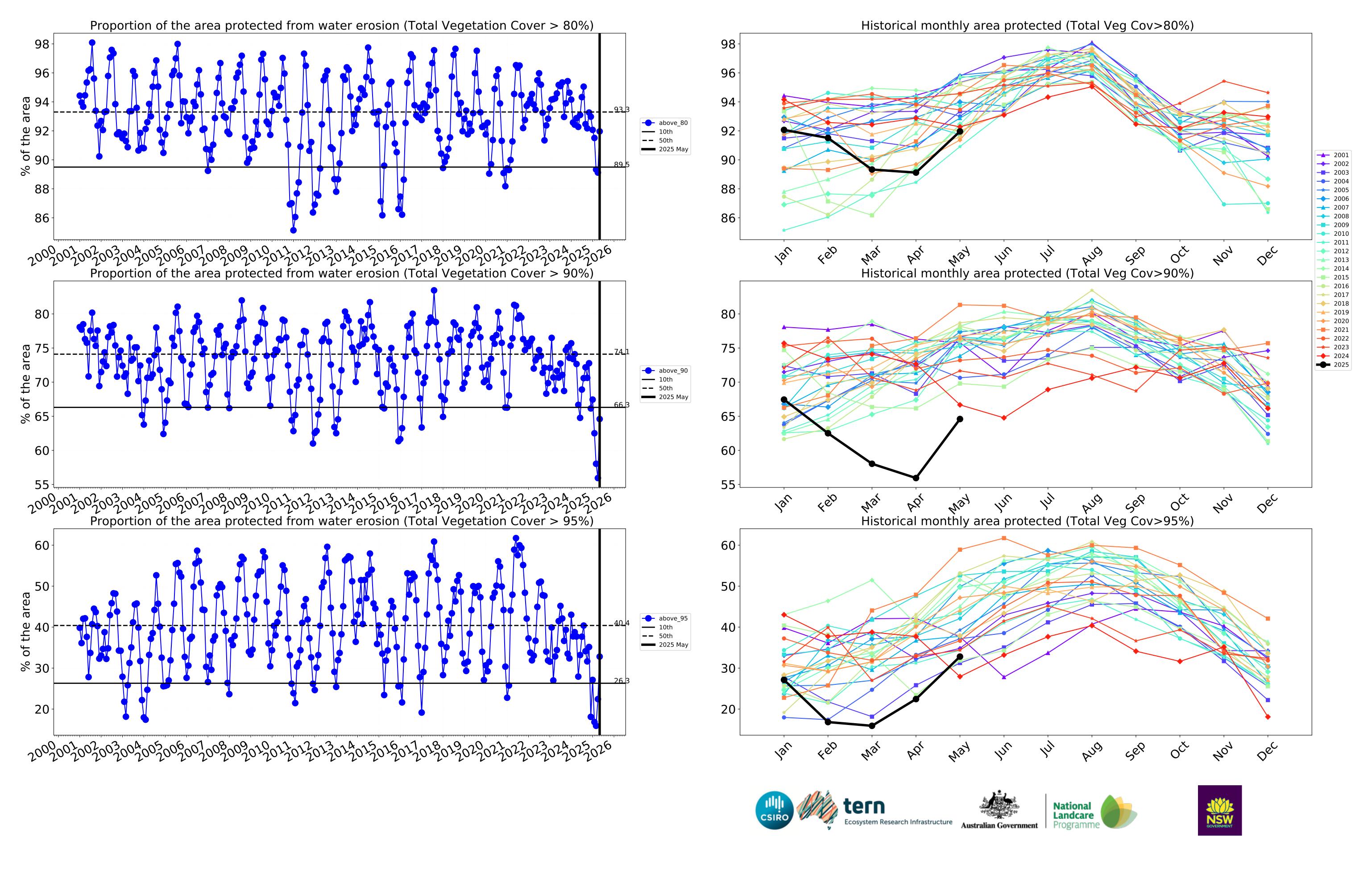
#### Wind erosion historical monthly area protected (Total Veg Cov >50%)





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



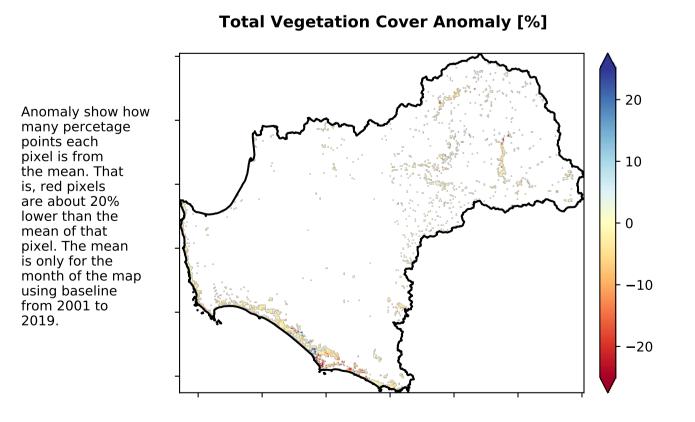


#### **Conservation and natural environments non forest**

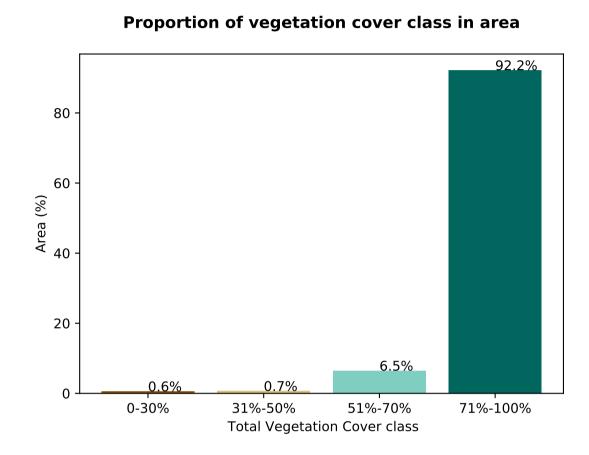
# Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 1 Conservation and natural environments - Nonforest

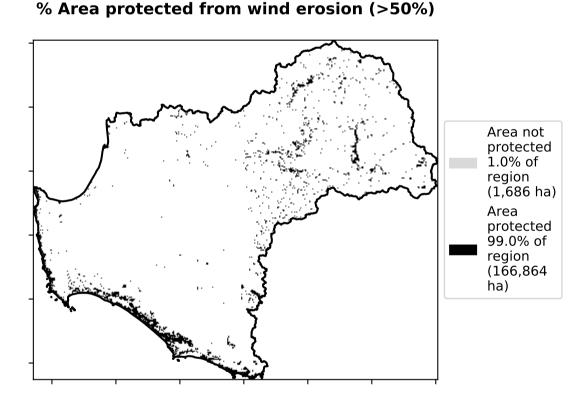
# Total Vegetation Cover [%]

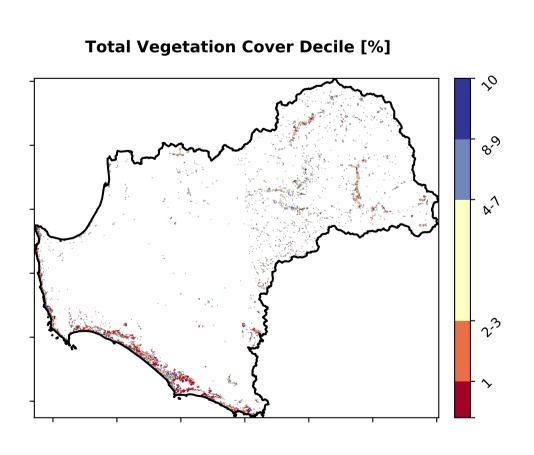
# Area not protected 7.8% of region (13,147 ha) Area protected 92.2% of region (155,403 ha)



## 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.







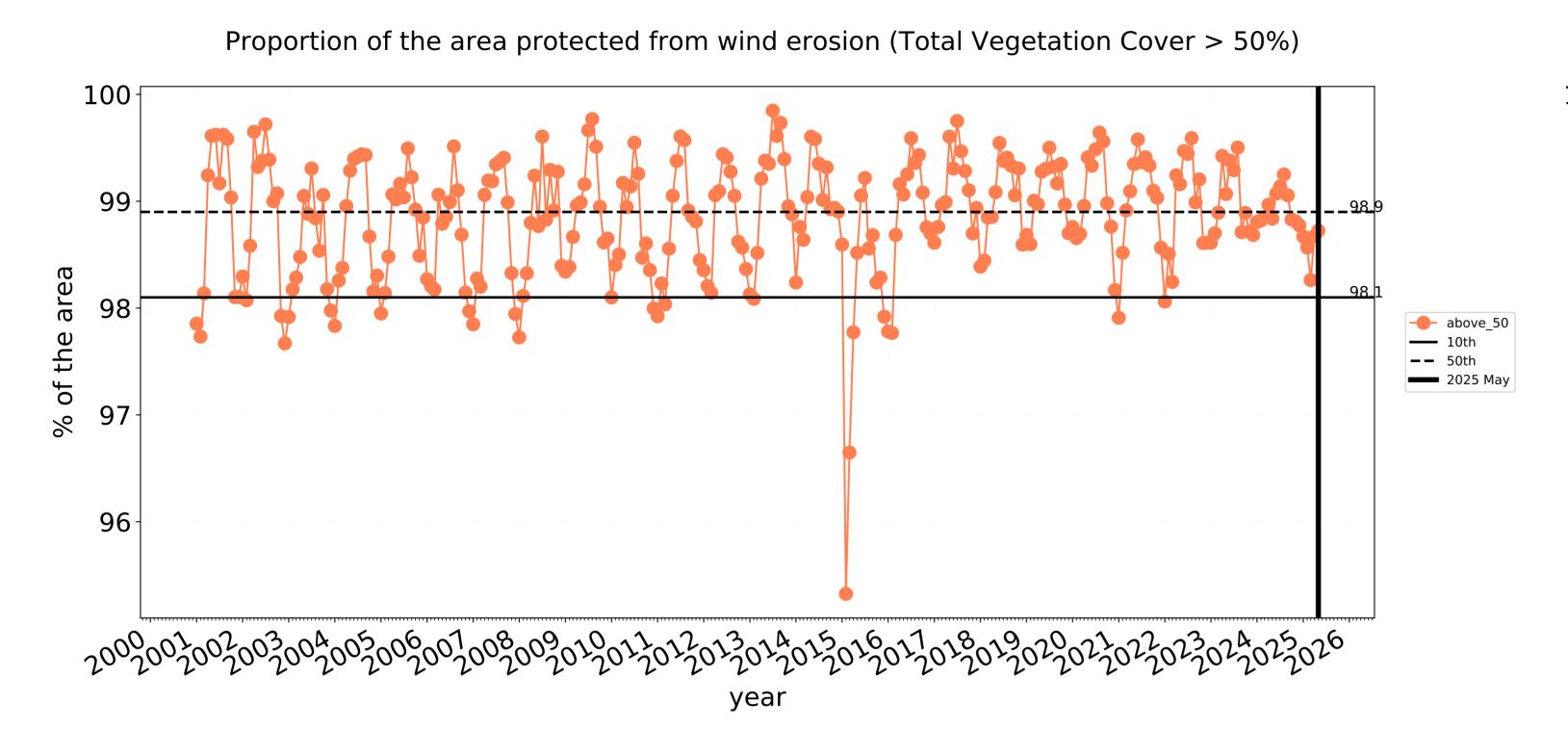


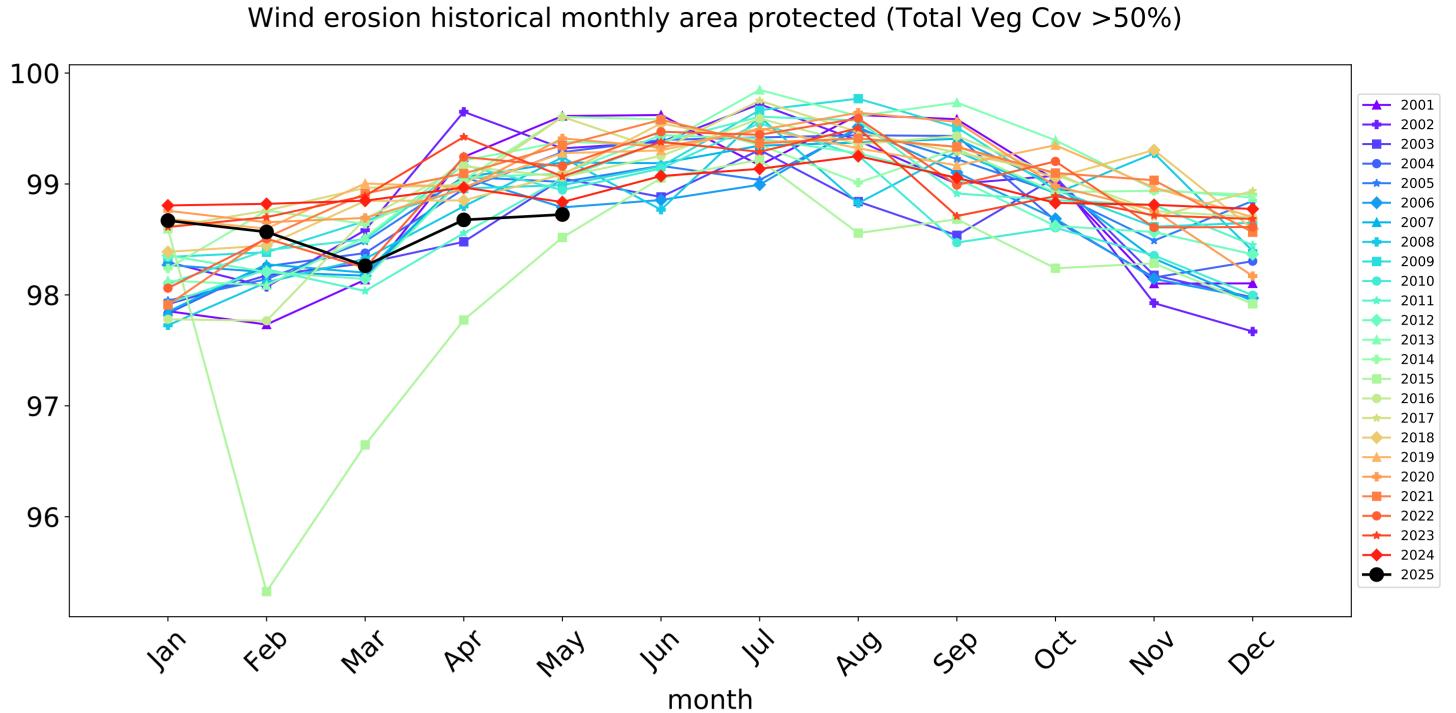


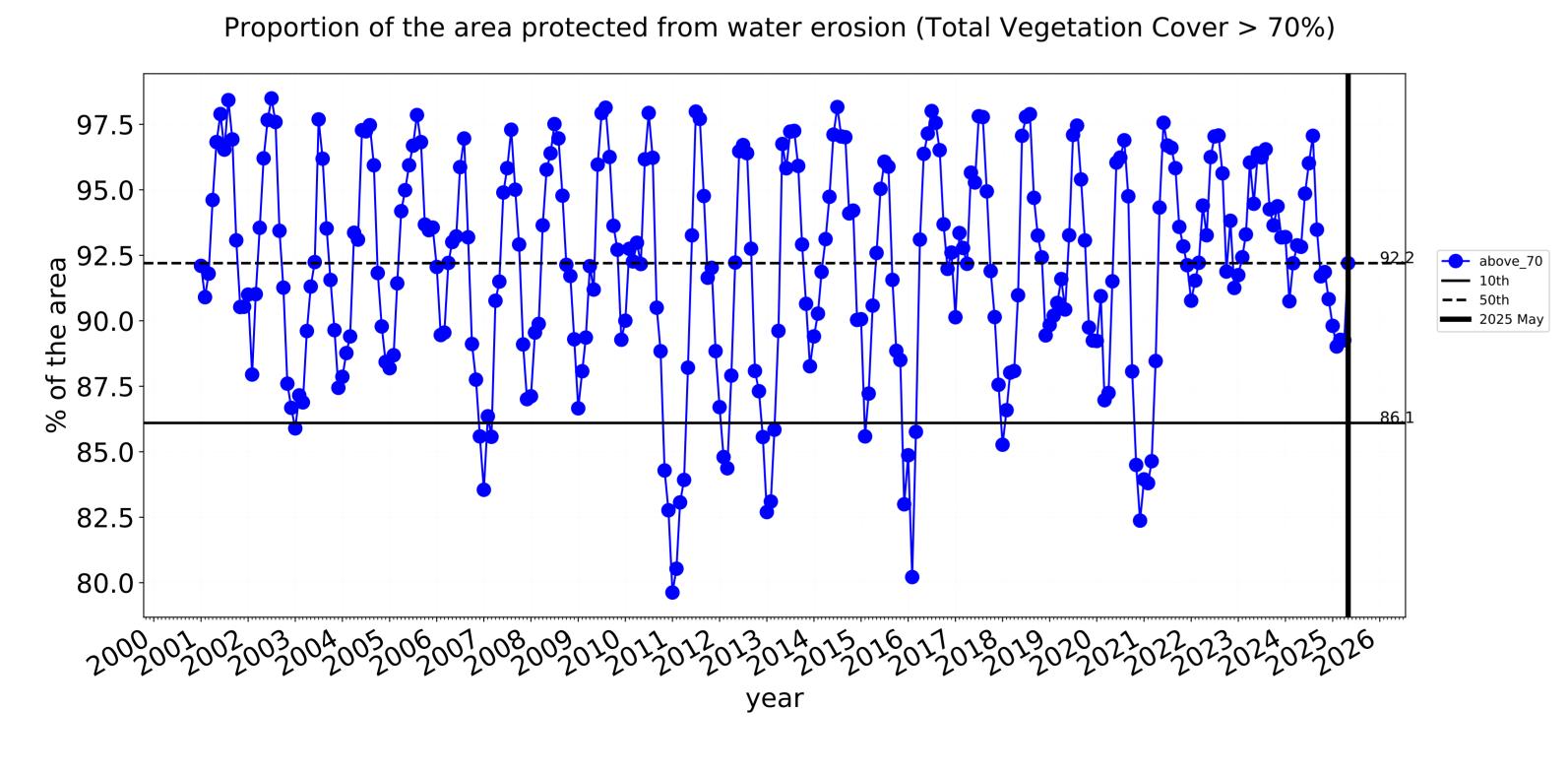


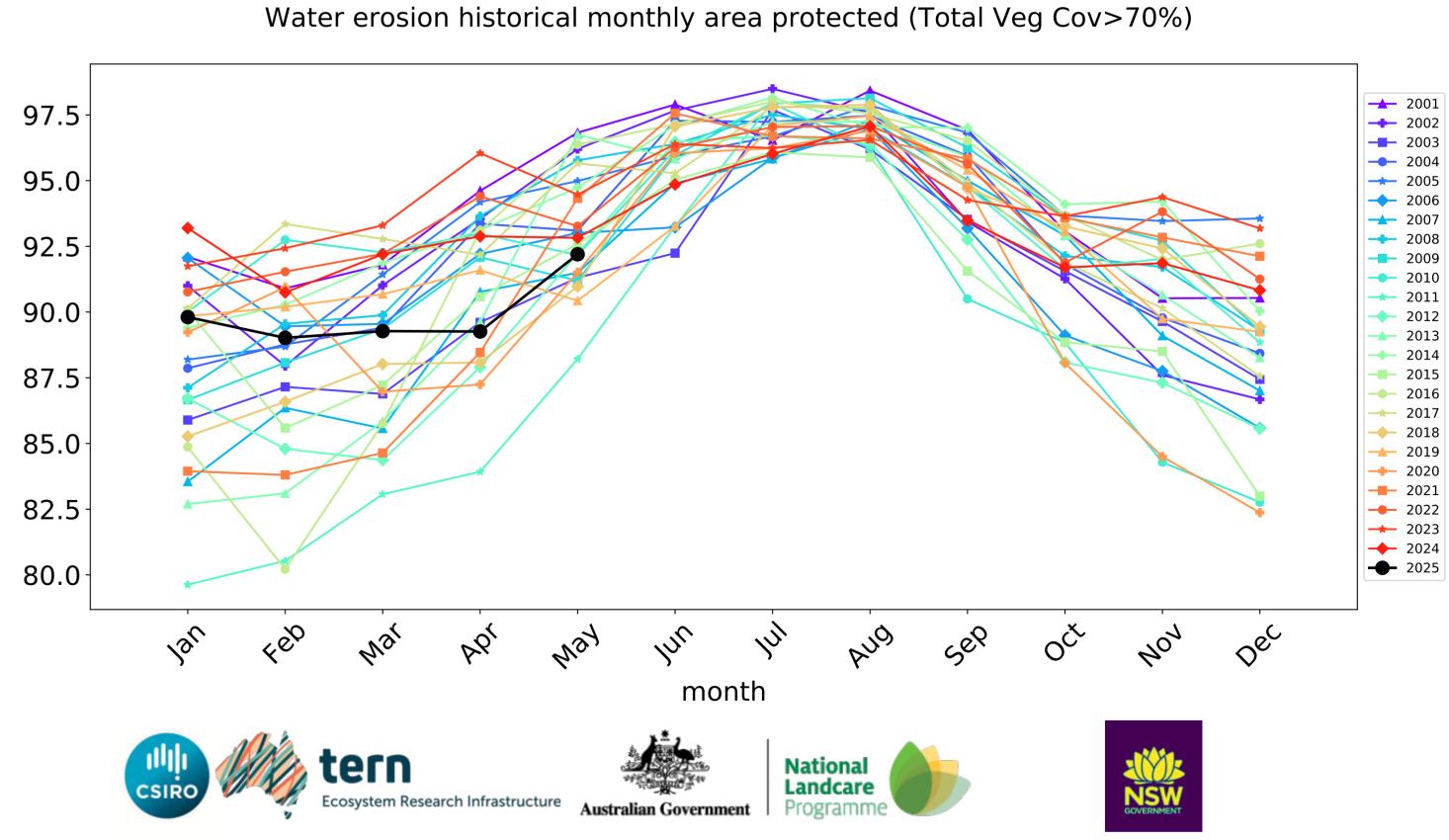


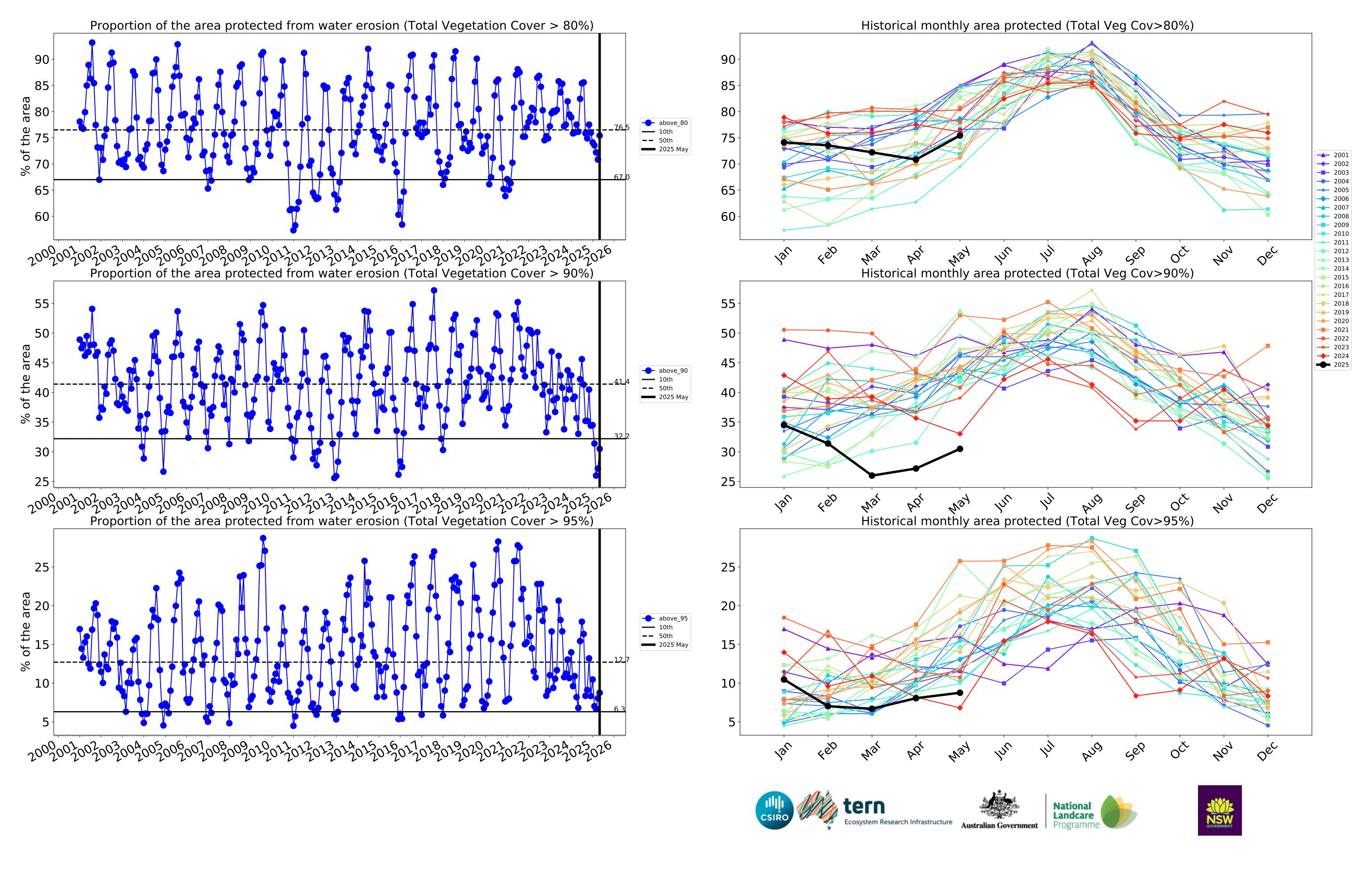
#### Conservation and natural environments non forest timeseries



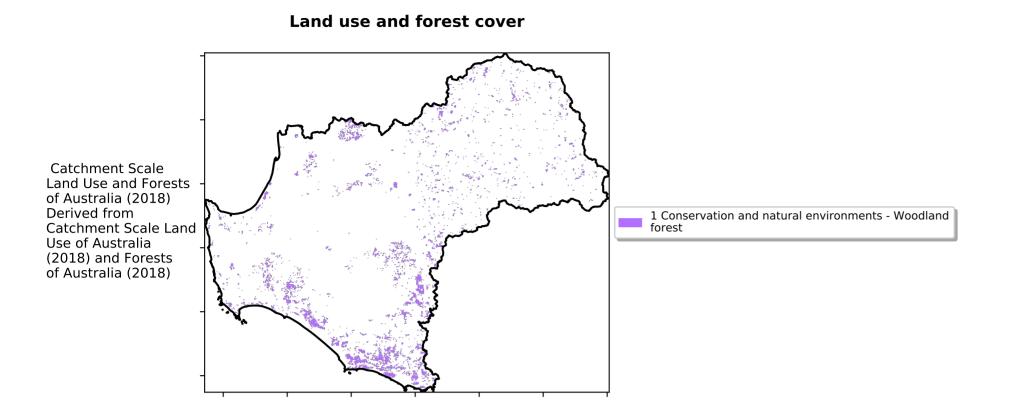


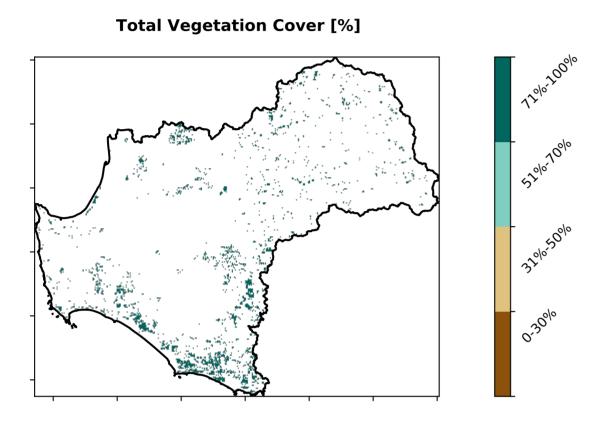


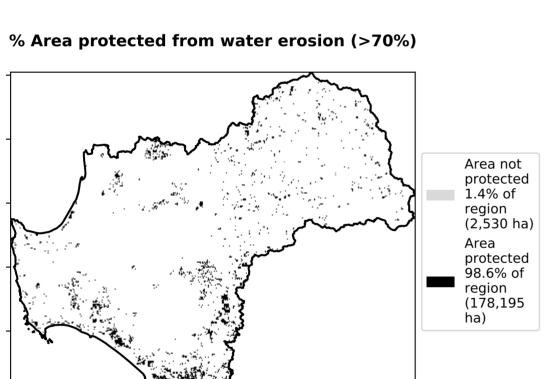


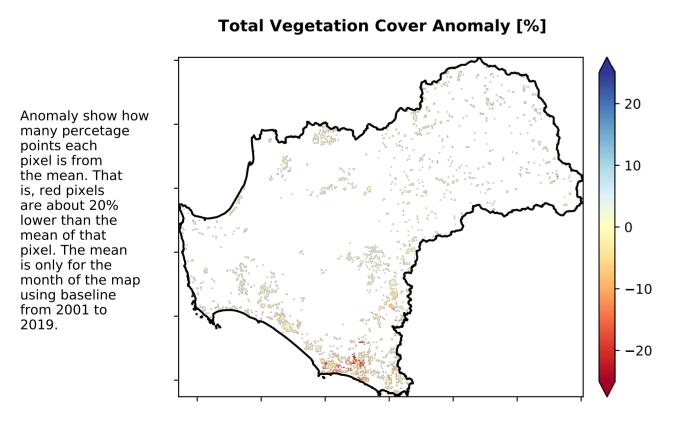


#### **Conservation and natural environments Woodland forest**

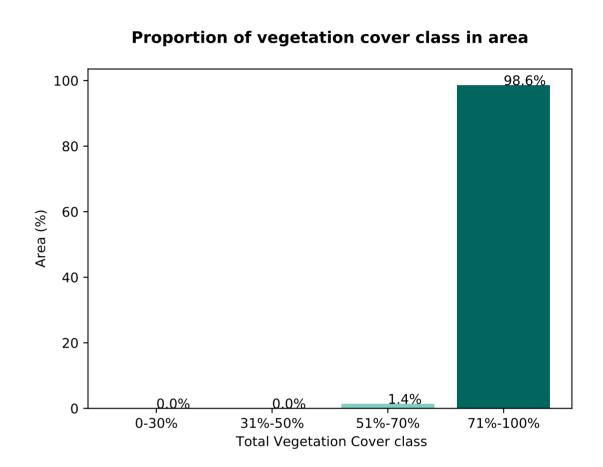


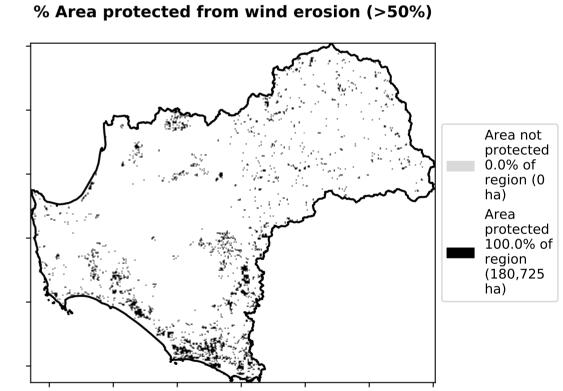


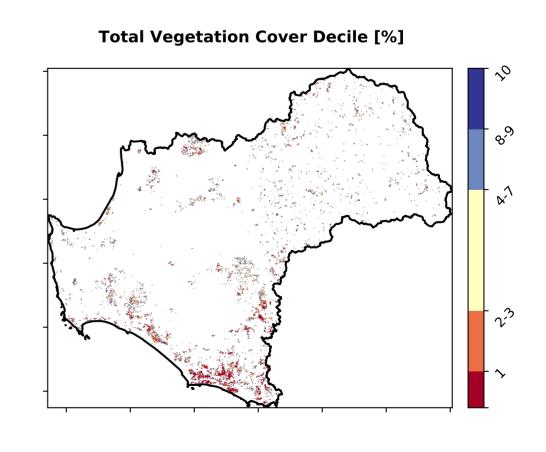




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





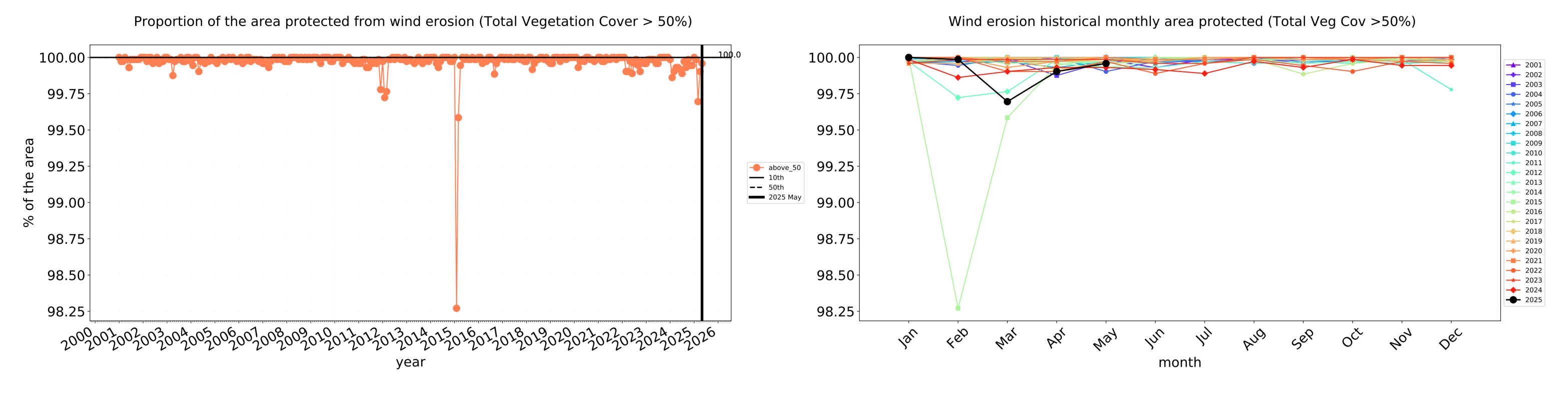


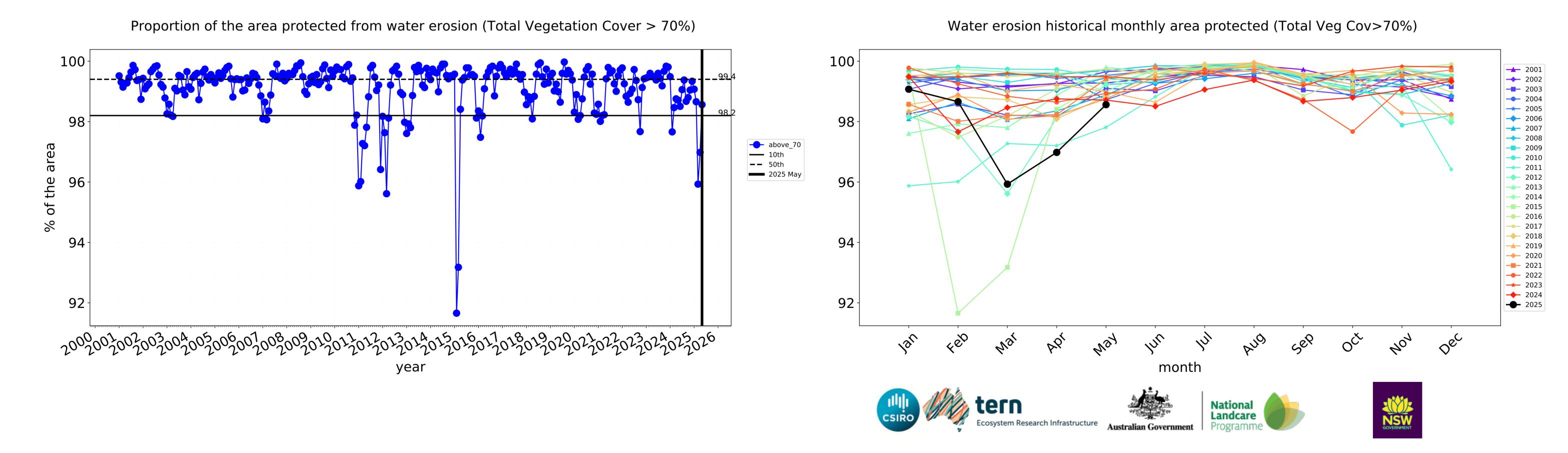


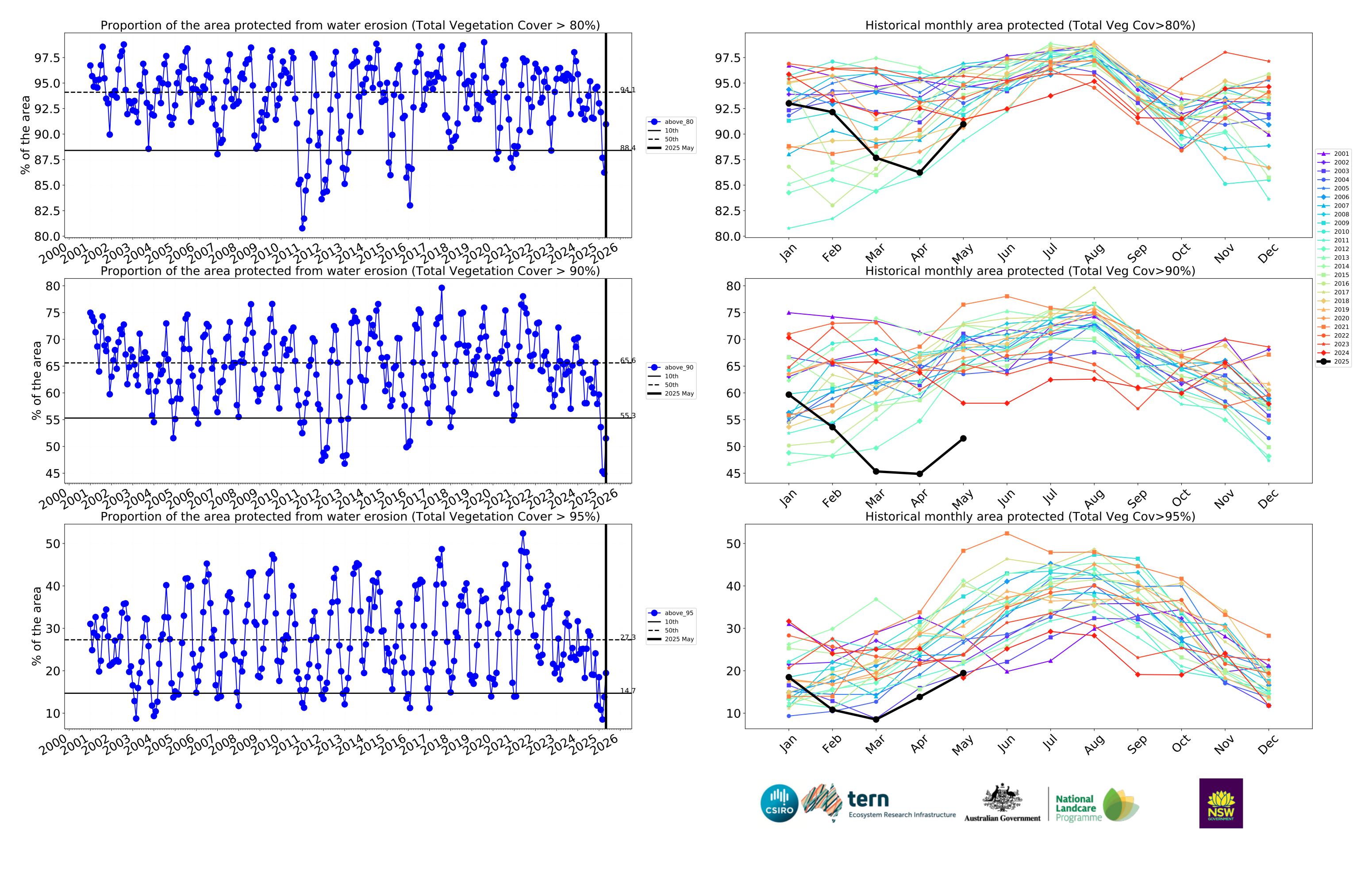






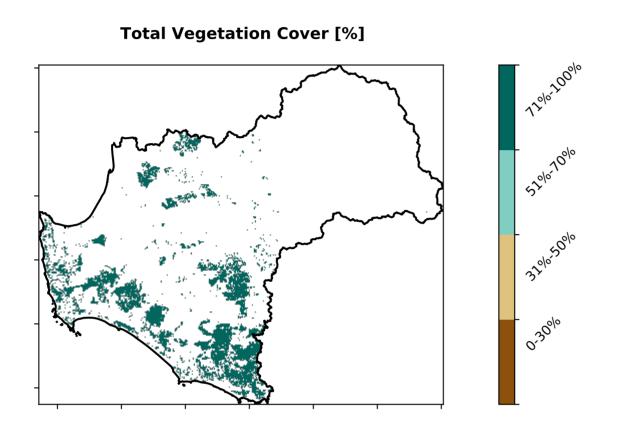


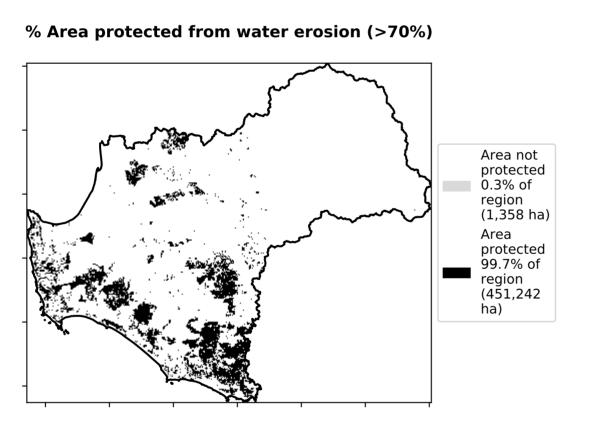


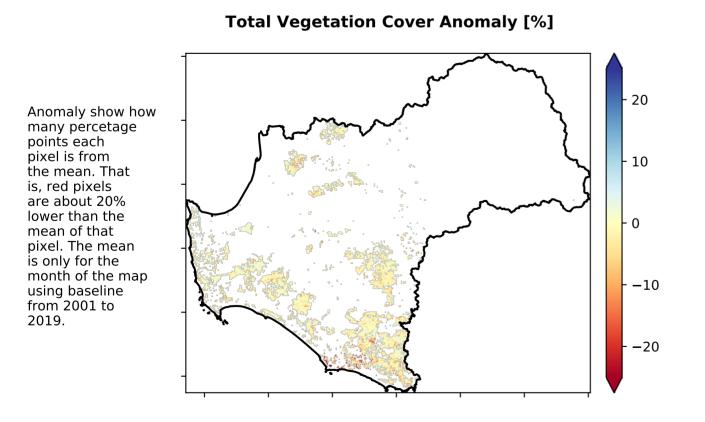


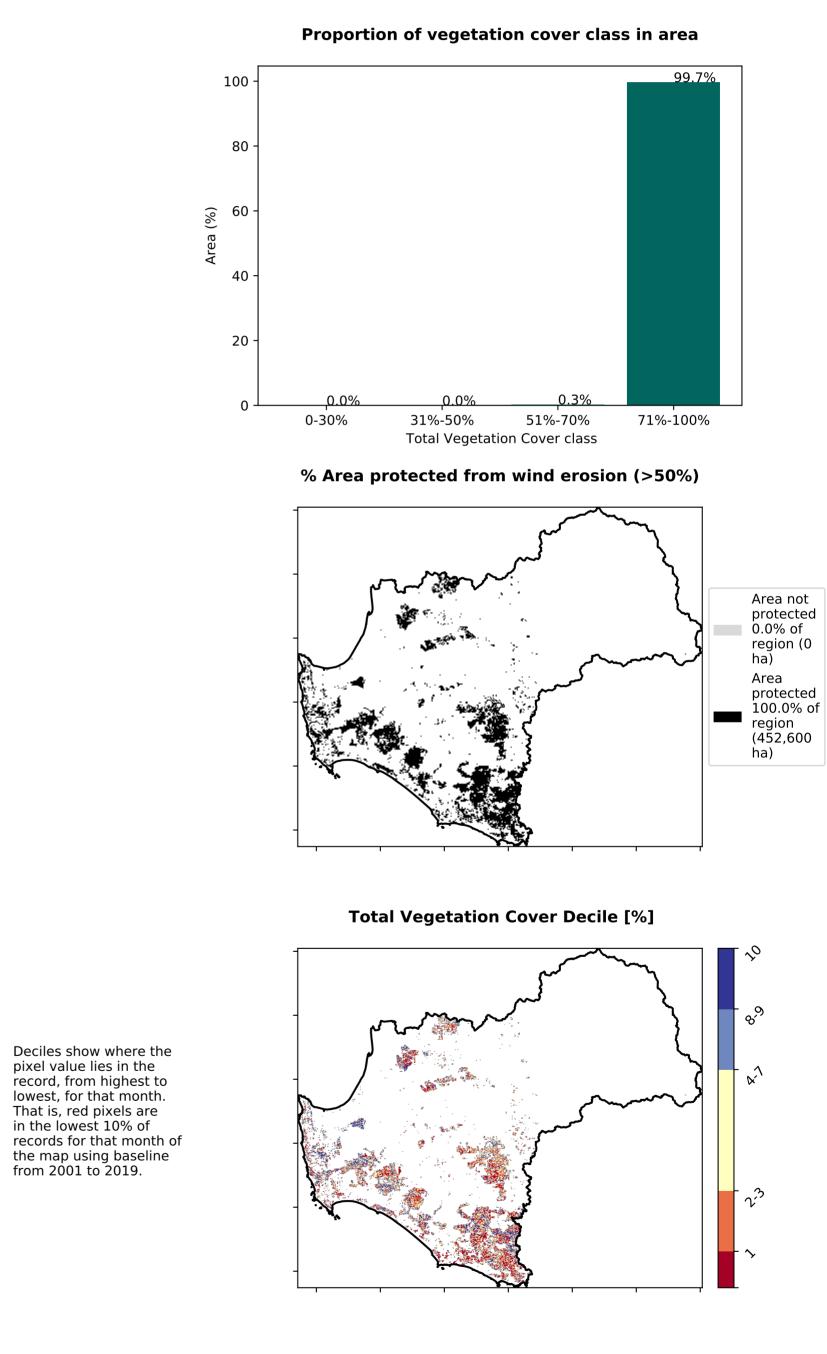
#### **Conservation and natural environments Forest (non woodland)**

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







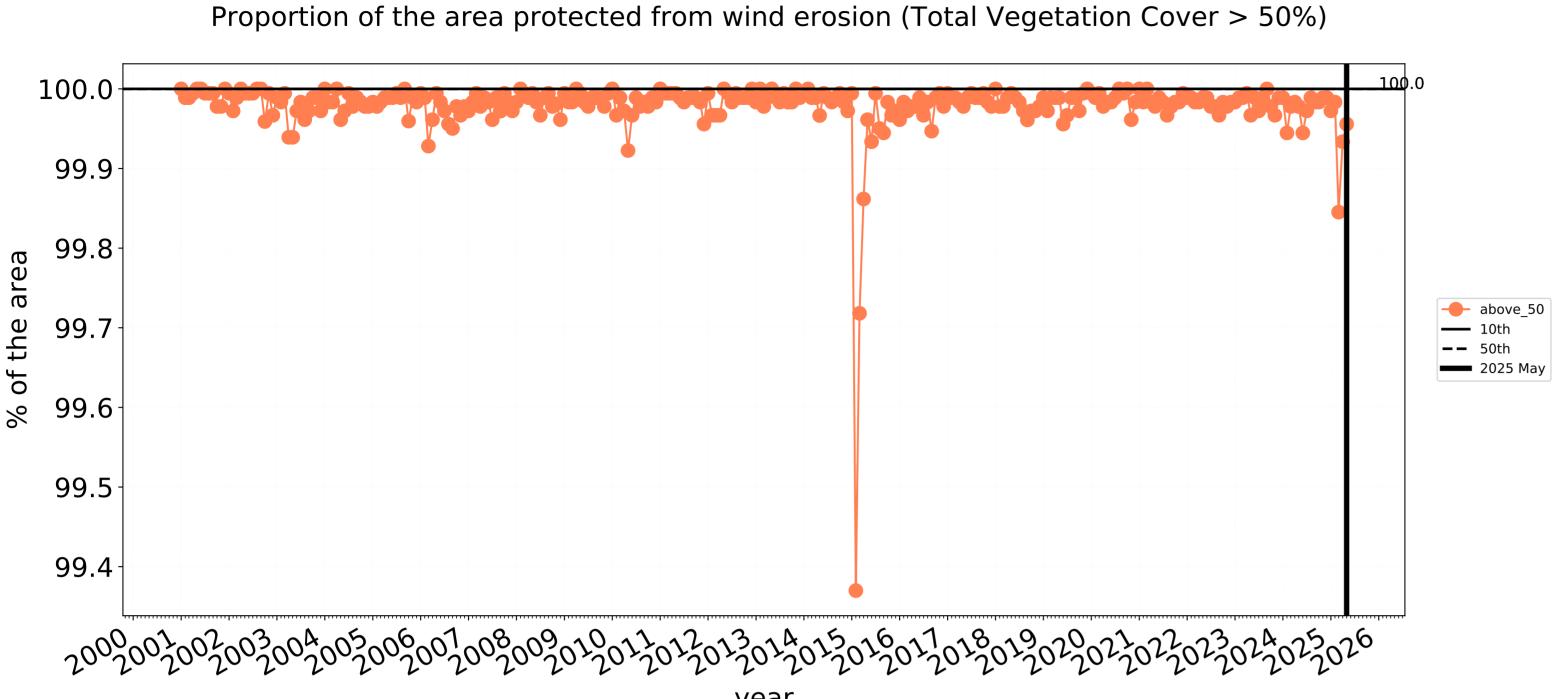


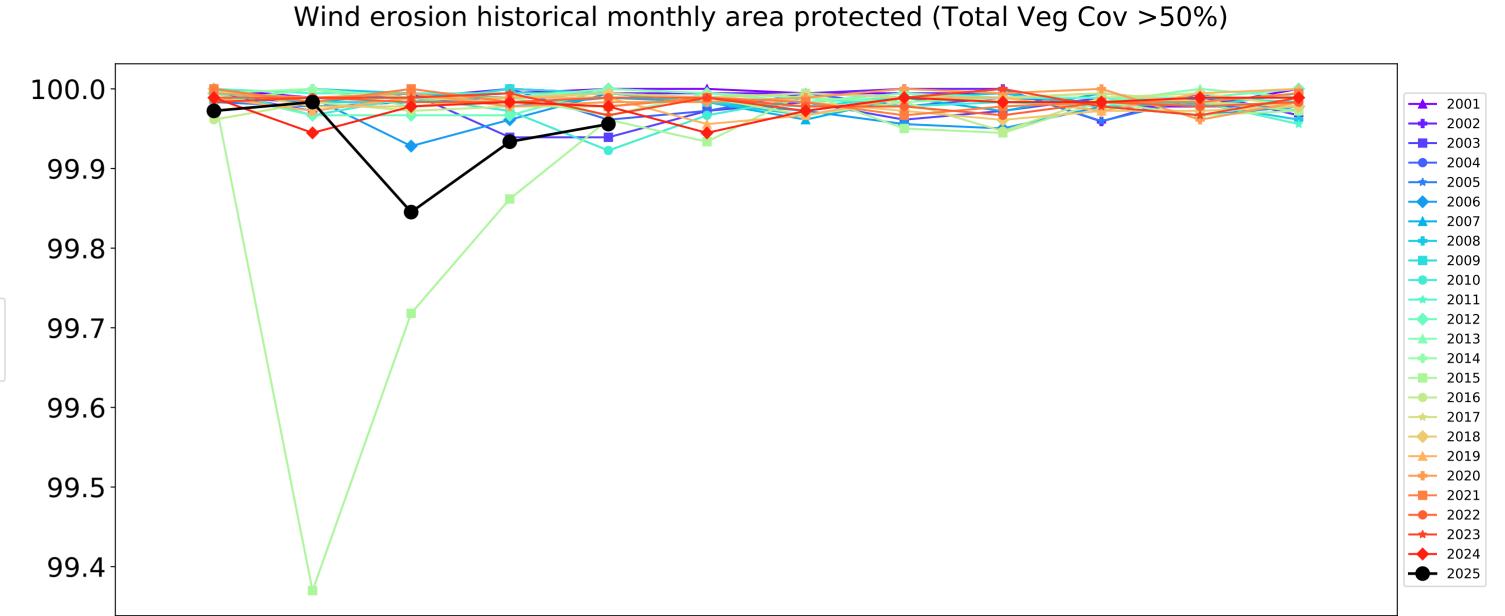




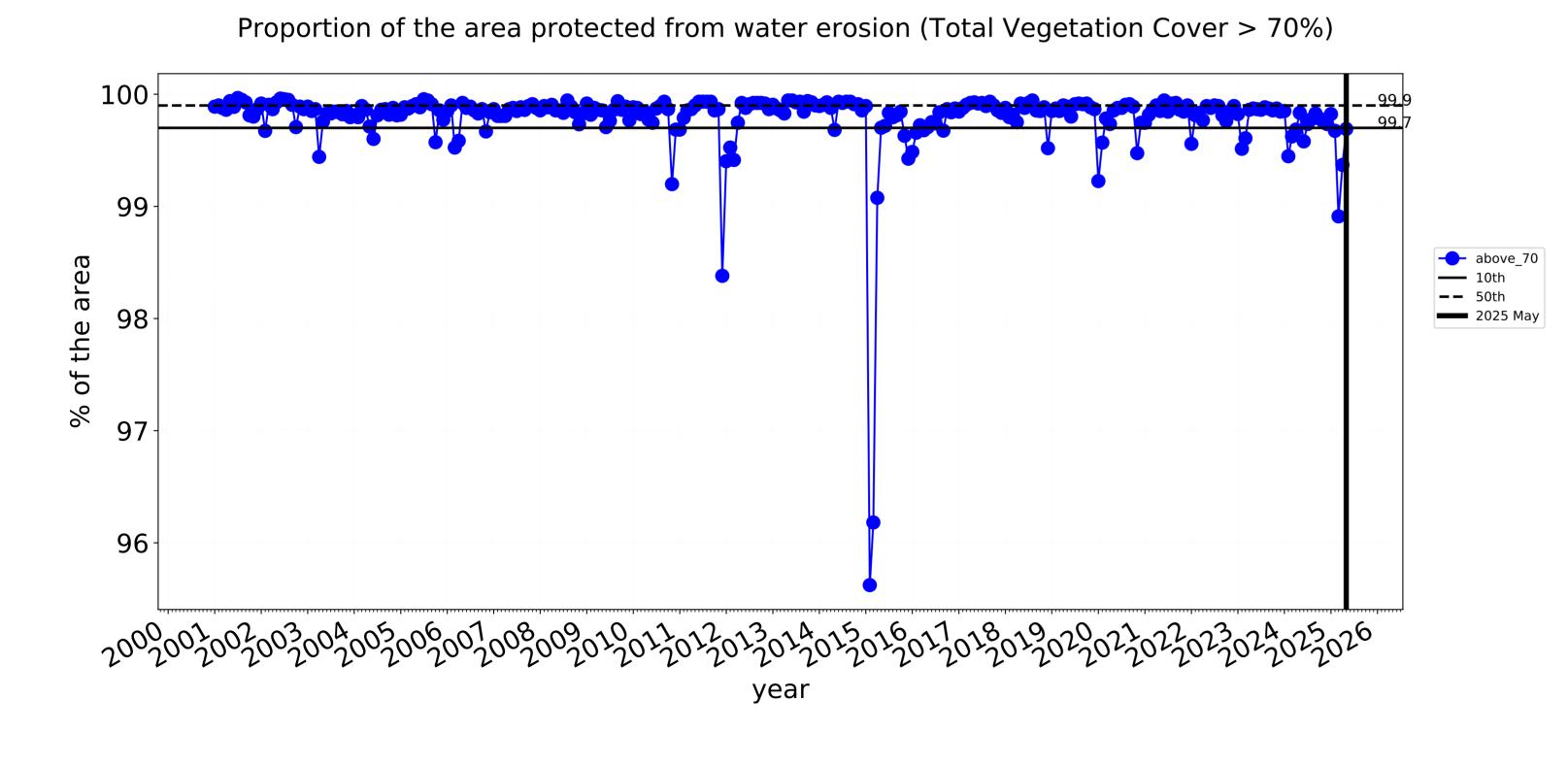


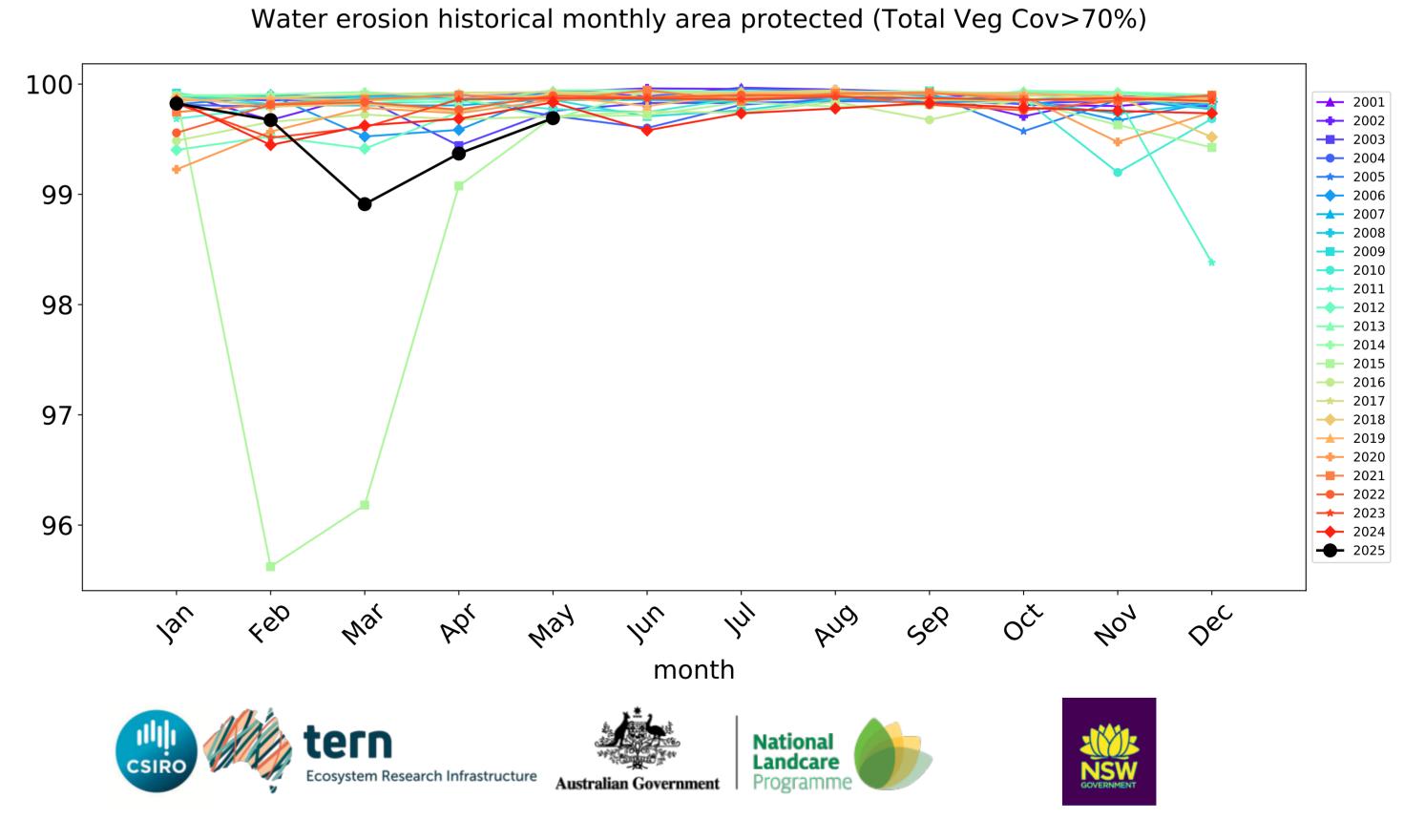


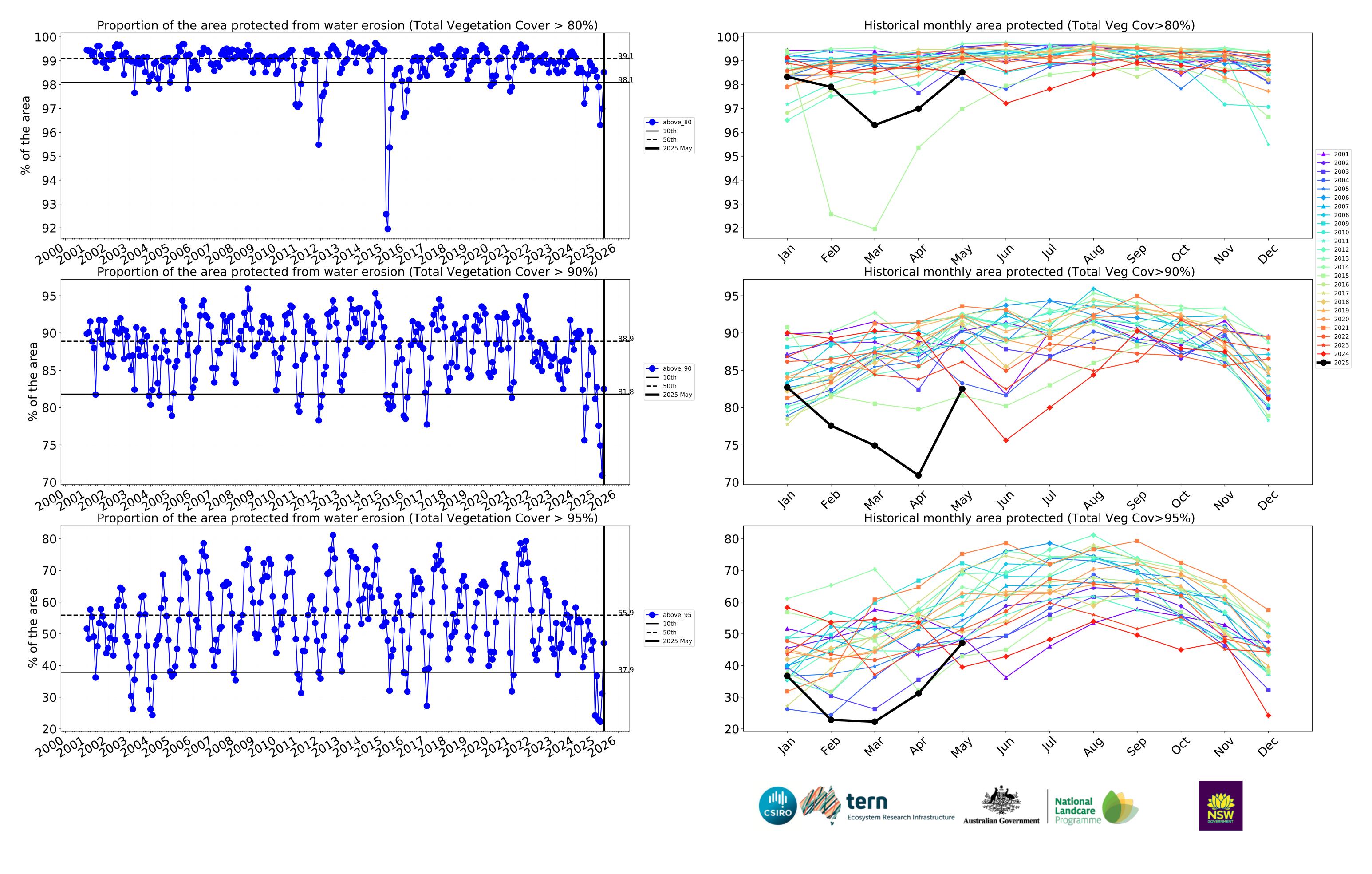




month







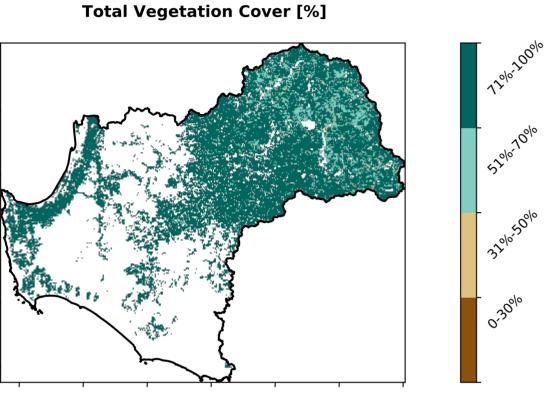
#### **Agriculture**

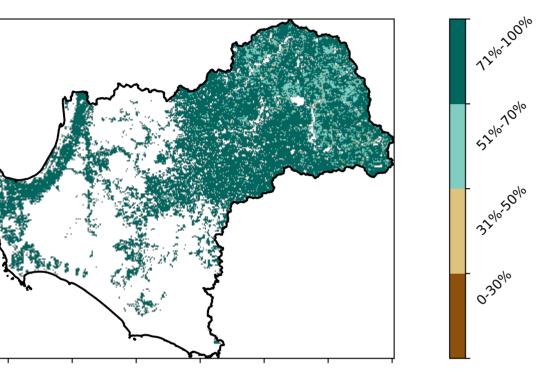
#### Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest Derived from 4 Agriculture - Grazing - Irrigated Catchment Scale Land 5 Agriculture - Cropping - Non-irrigated Use of Australia 6 Agriculture - Cropping - Irrigated (2018) and Forests of Australia (2018) 7 Agriculture - Horticulture - Non-irrigated 8 Agriculture - Horticulture - Irrigated

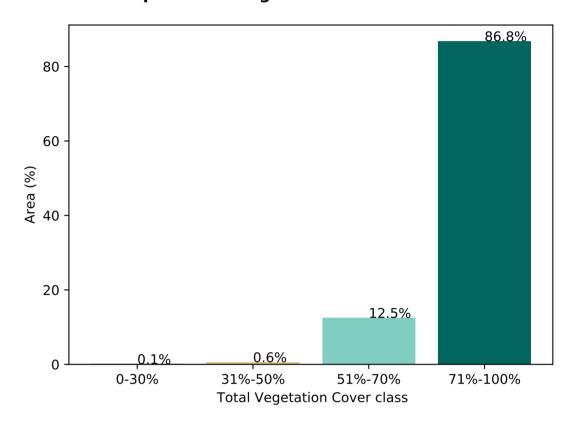
### 66.2% 60 50 -Area (%) 29.8% 20 10 Land use class

Proportion of each land class in area

Proportion of vegetation cover class in area

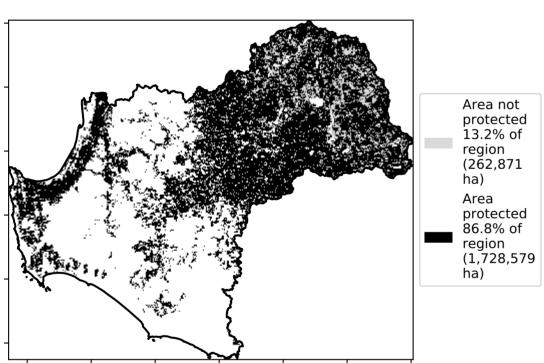


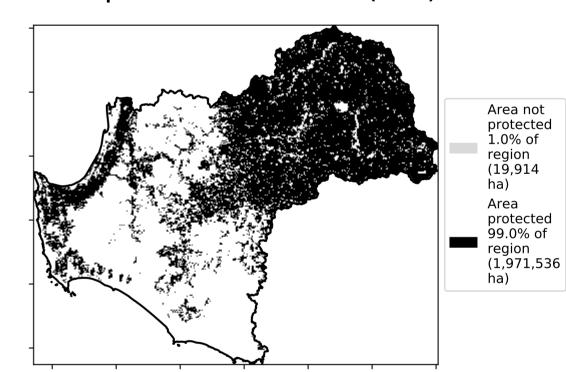




% Area protected from water erosion (>70%)

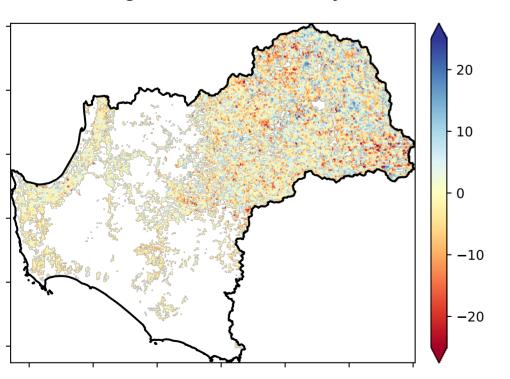
% Area protected from wind erosion (>50%)

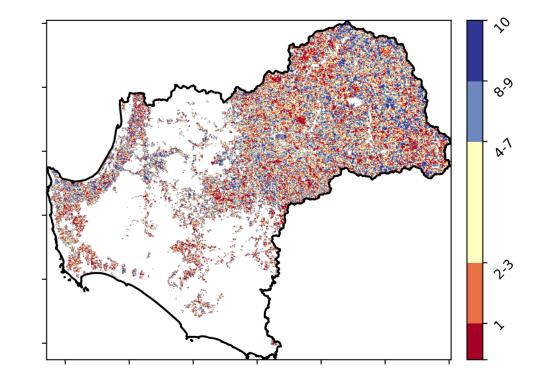




**Total Vegetation Cover Anomaly [%]** 

**Total Vegetation Cover Decile [%]** 





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



Anomaly show how many percetage points each

pixel is from

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

the mean. That

pixel. The mean

using baseline from 2001 to 2019.

is only for the month of the map



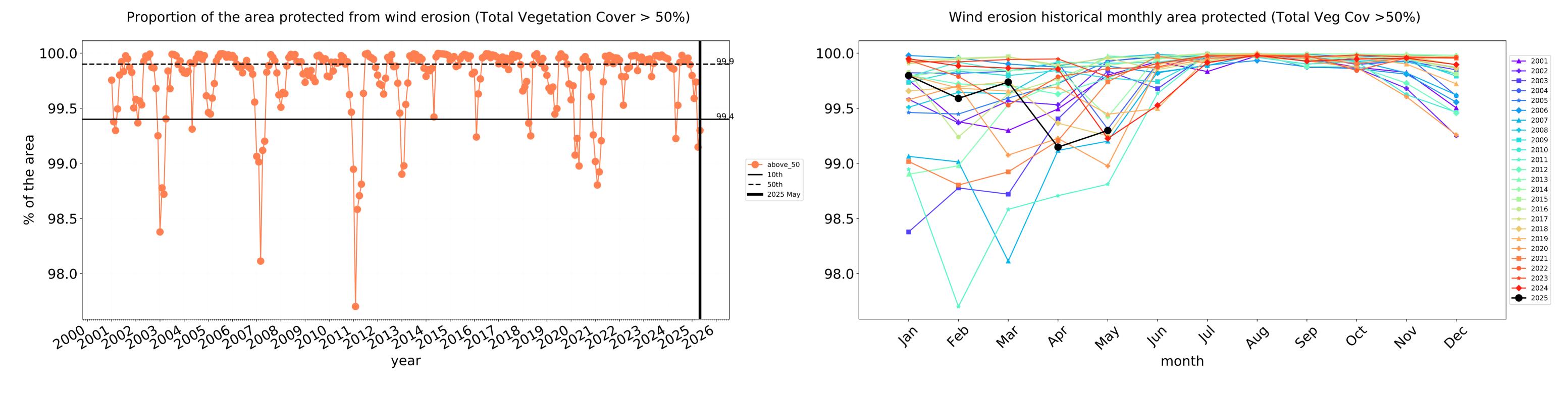


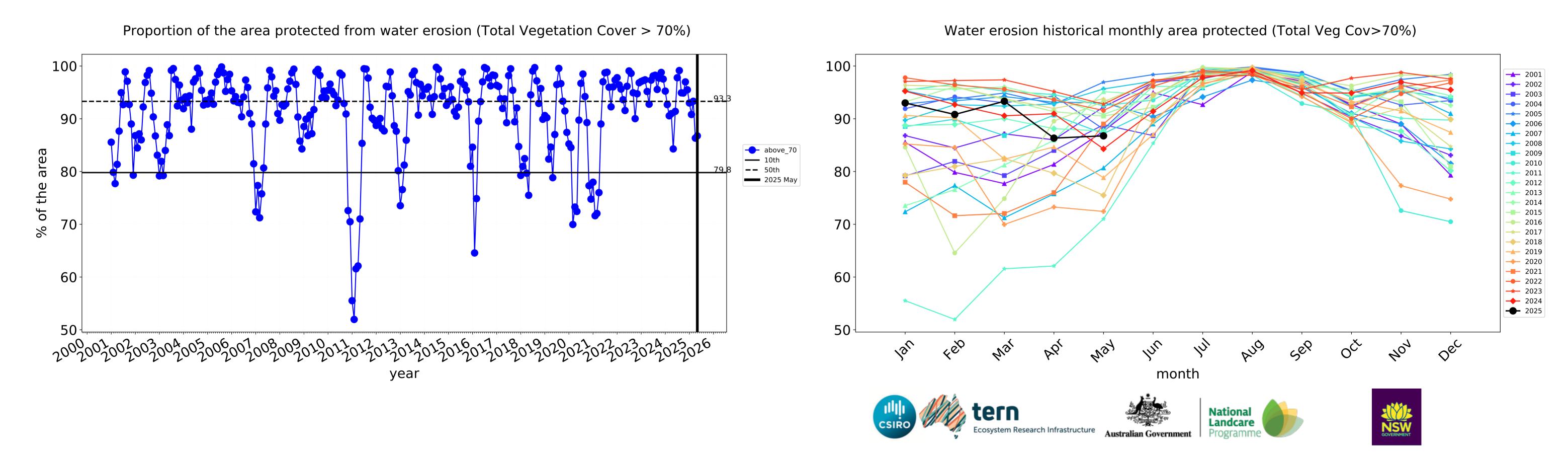


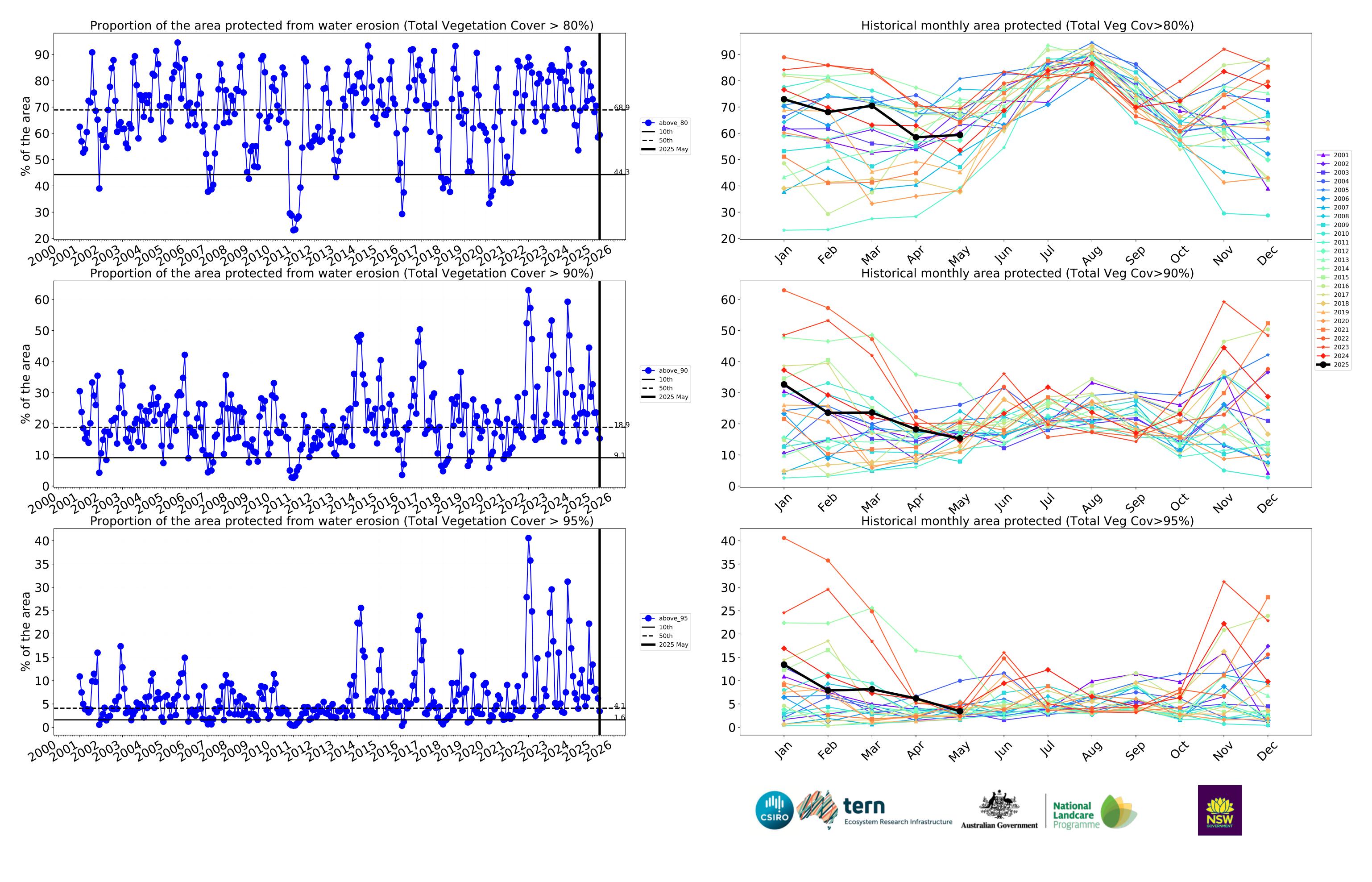




#### **Agriculture timeseries**



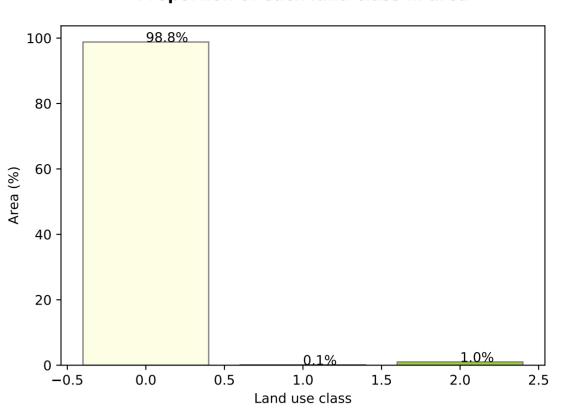




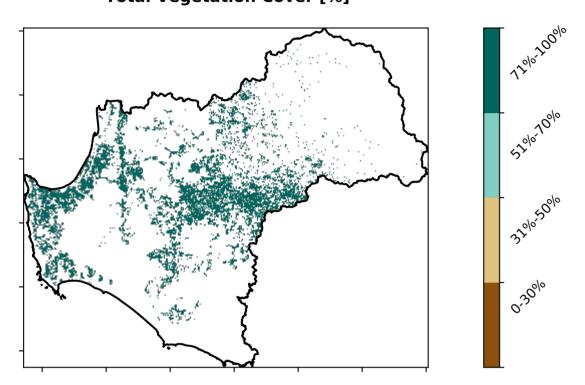
#### **Grazing**

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

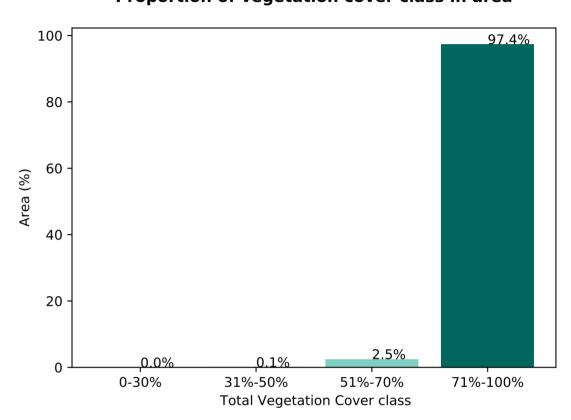
#### **Proportion of each land class in area**



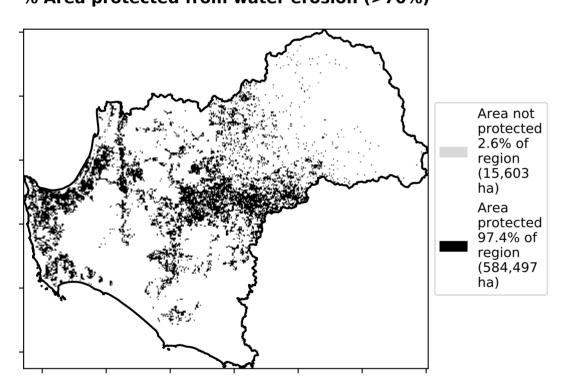
**Total Vegetation Cover [%]** 



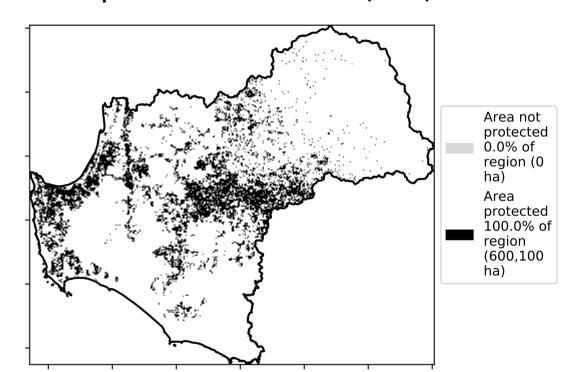
Proportion of vegetation cover class in area



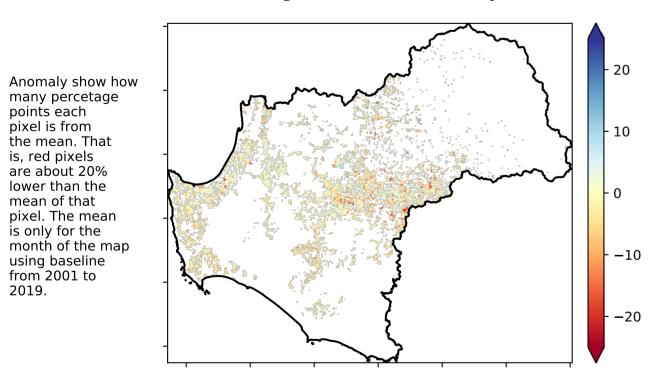
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

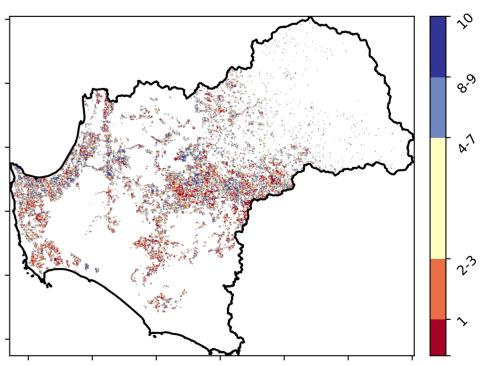


**Total Vegetation Cover Anomaly [%]** 



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

**Total Vegetation Cover Decile [%]** 





are about 20% lower than the mean of that

pixel. The mean

using baseline from 2001 to 2019.



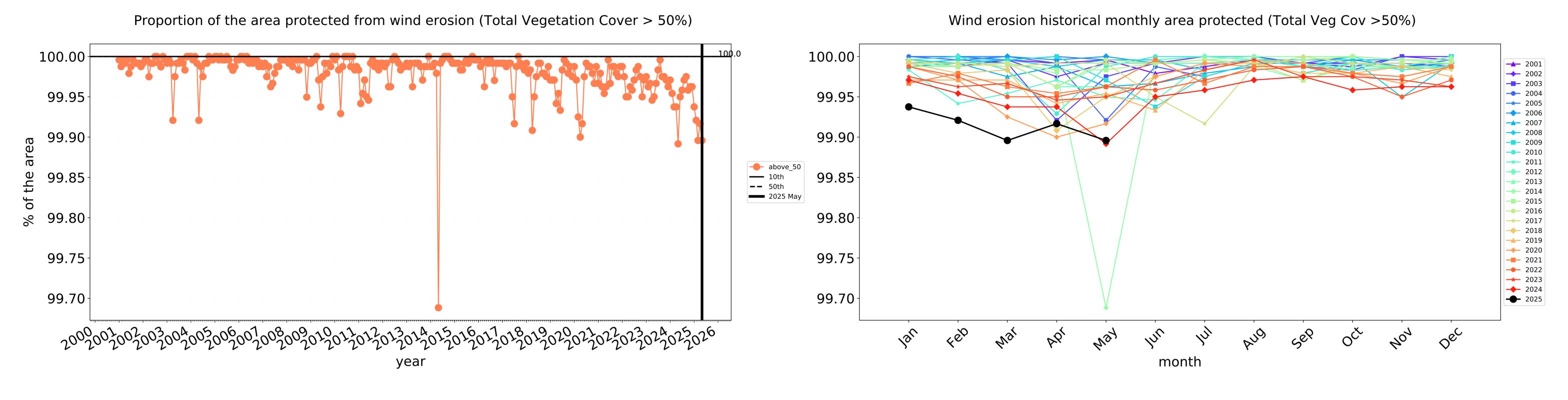


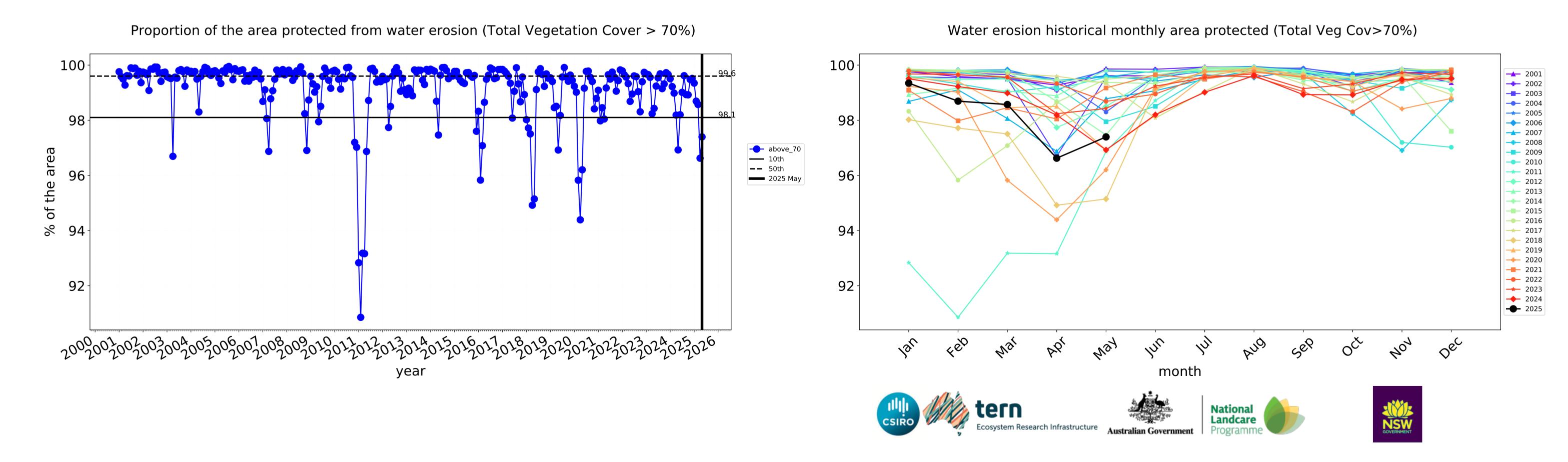


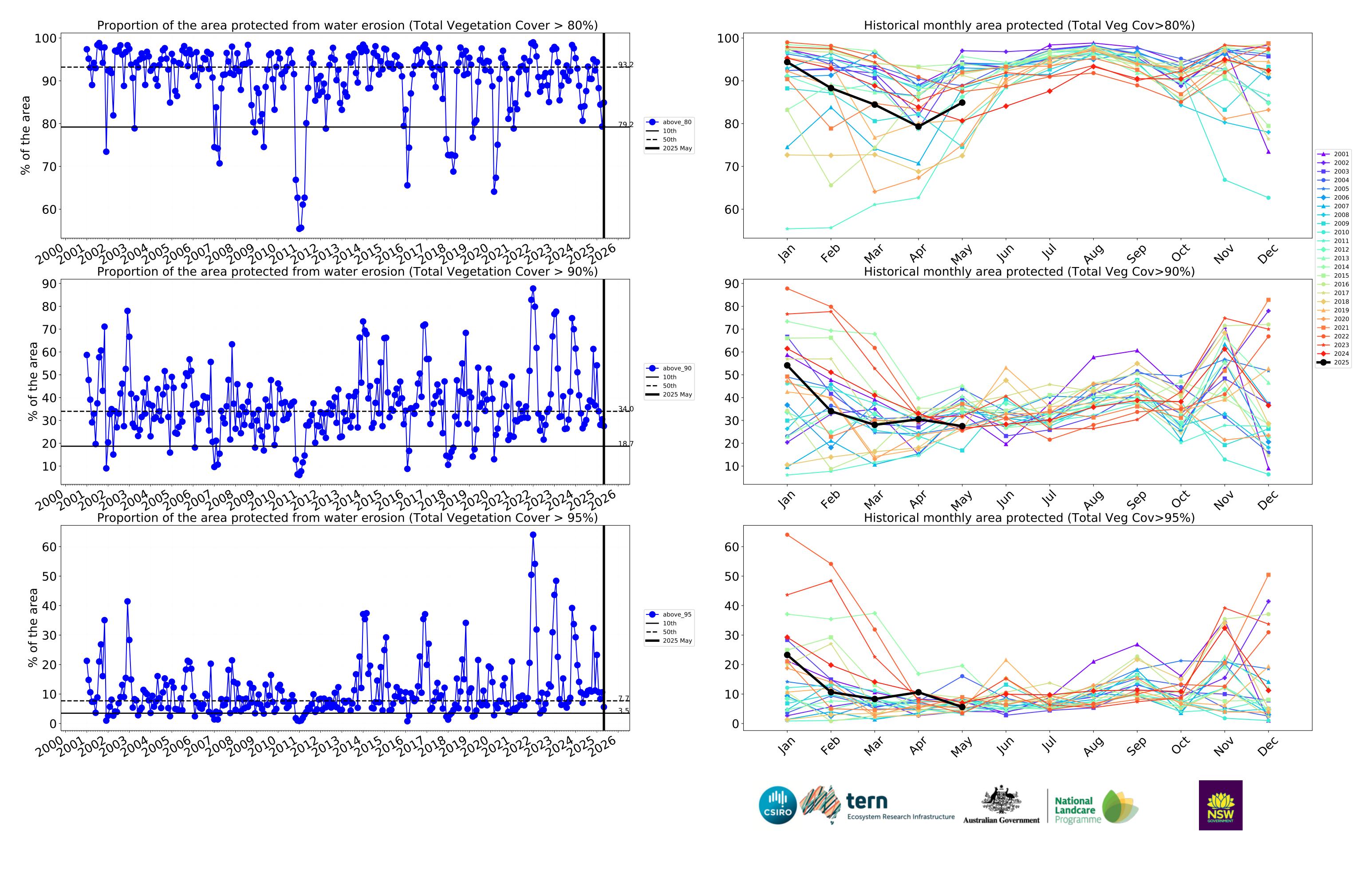




#### **Grazing timeseries**

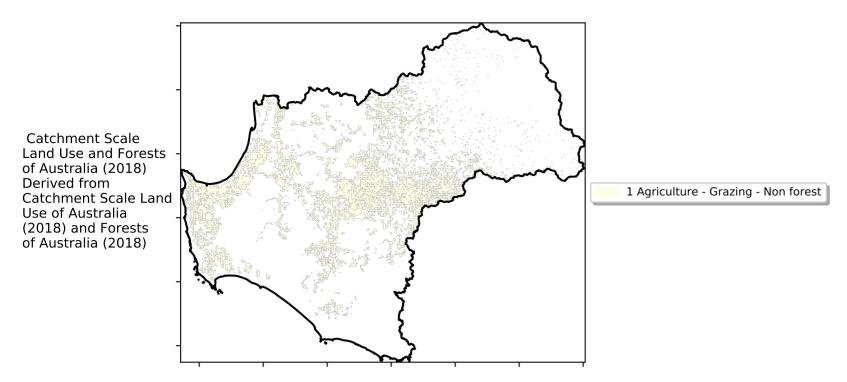




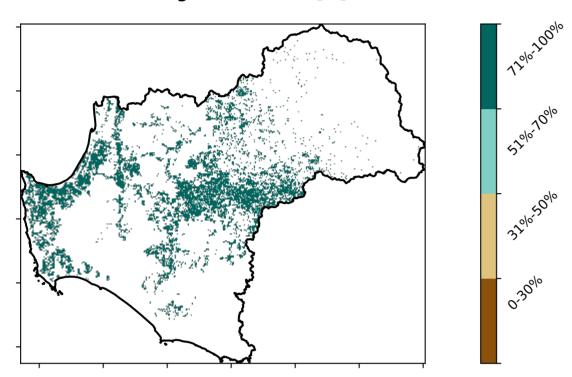


#### **Grazing non forest**

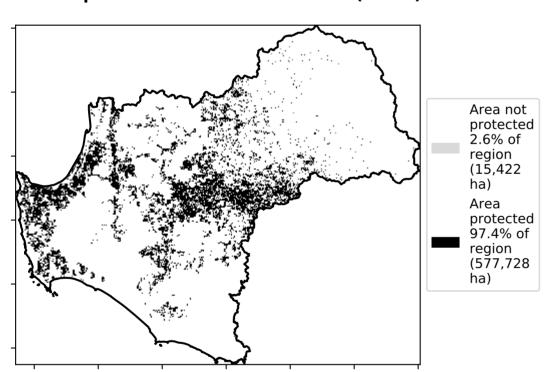
#### Land use and forest cover



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



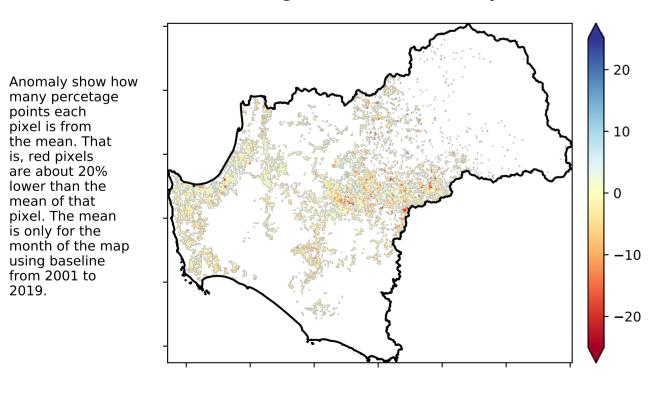
#### % Area protected from water erosion (>70%)



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

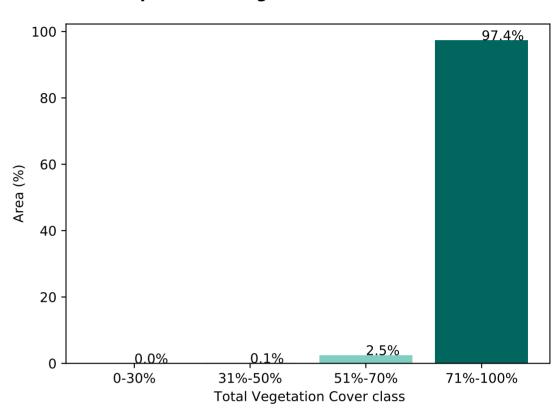
lower than the

mean of that

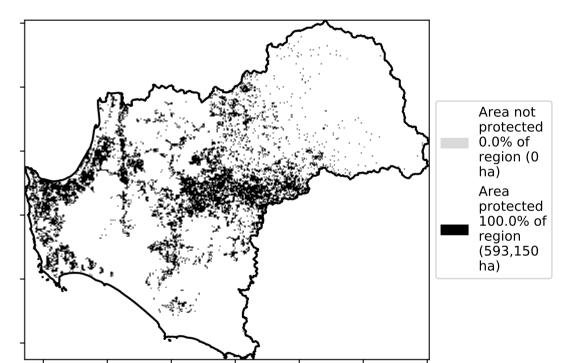


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

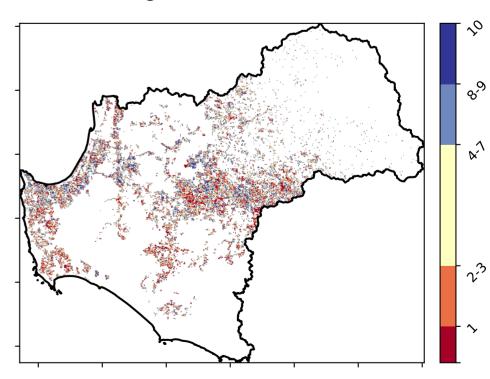
#### Proportion of vegetation cover class in area



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



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



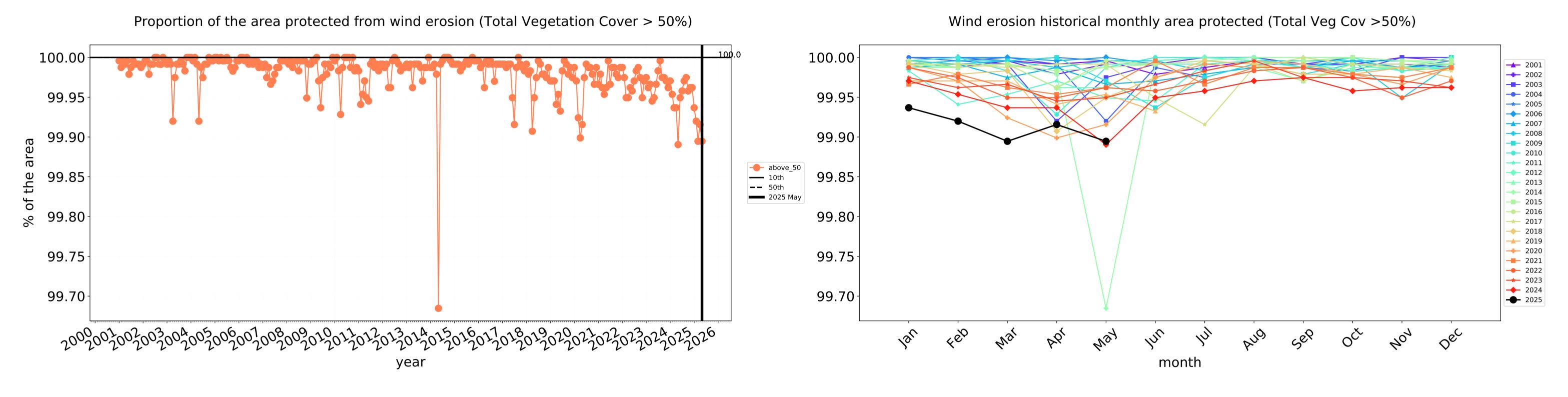


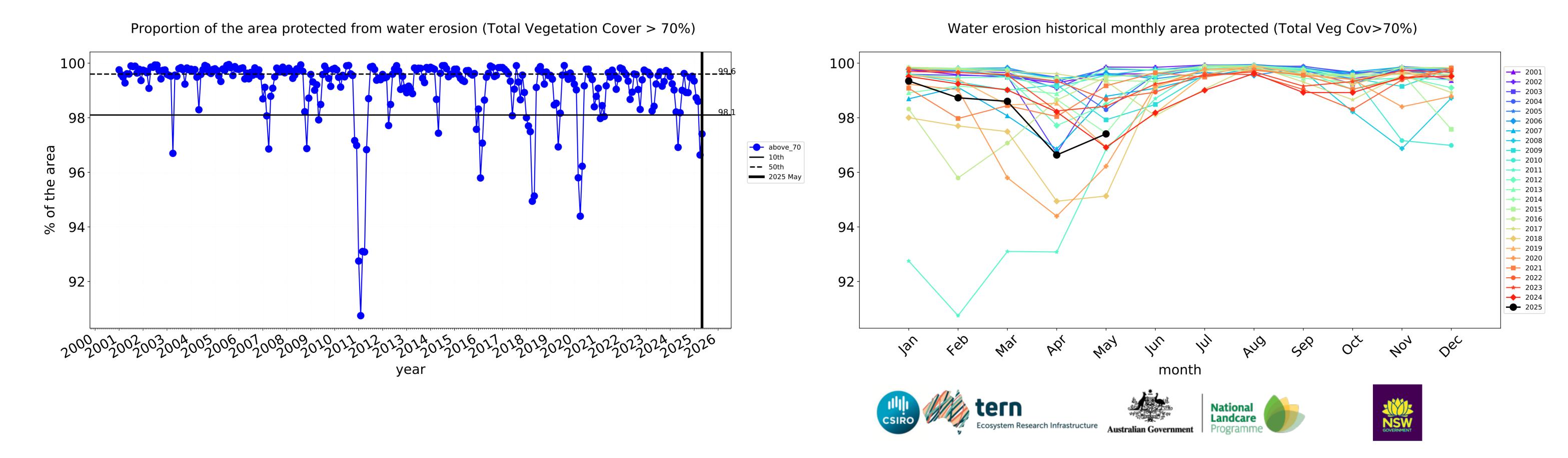


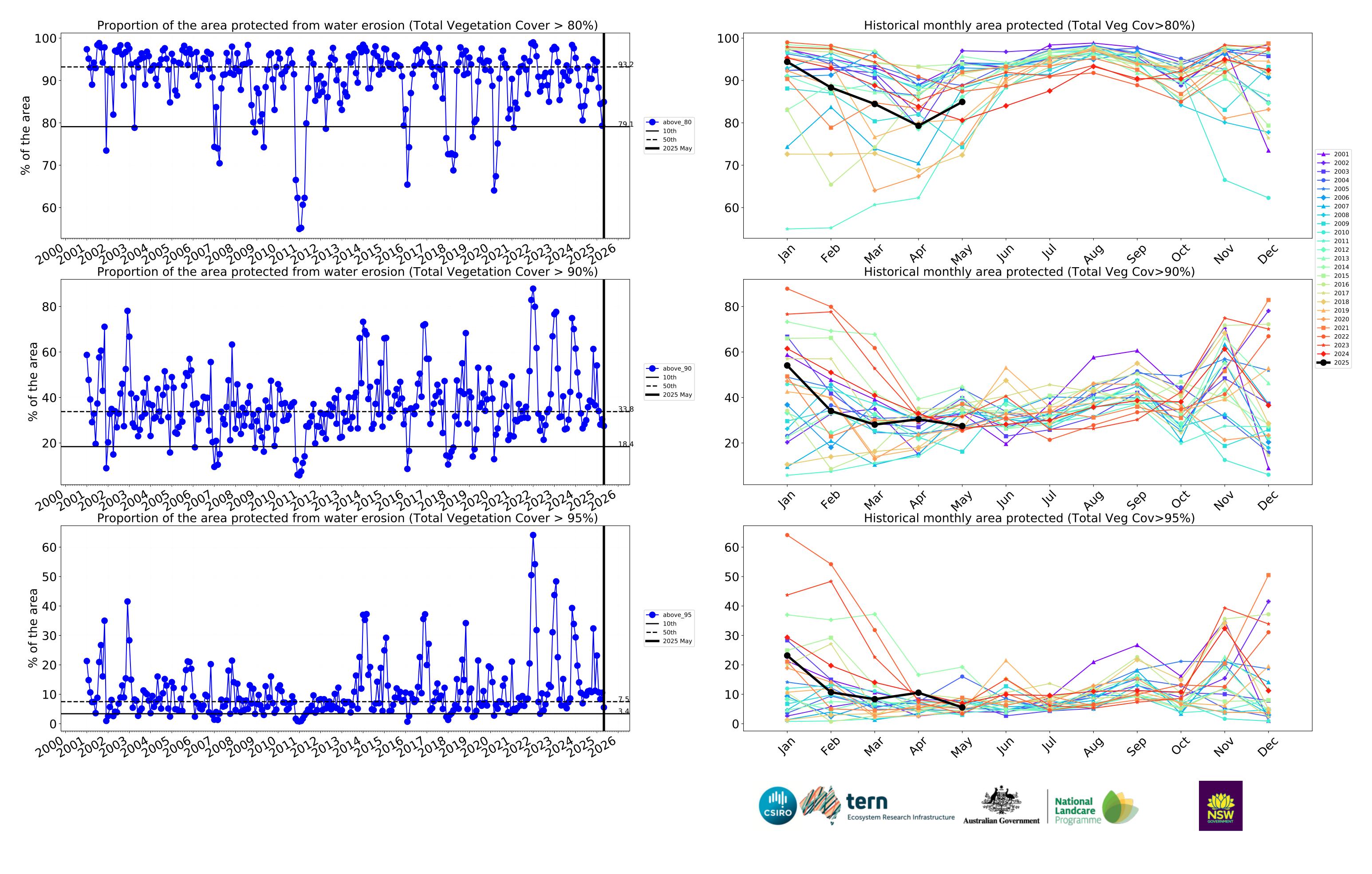




#### **Grazing non forest timeseries**

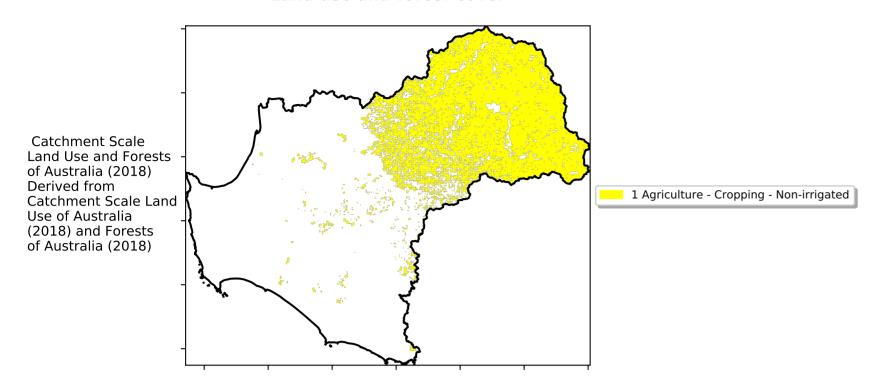




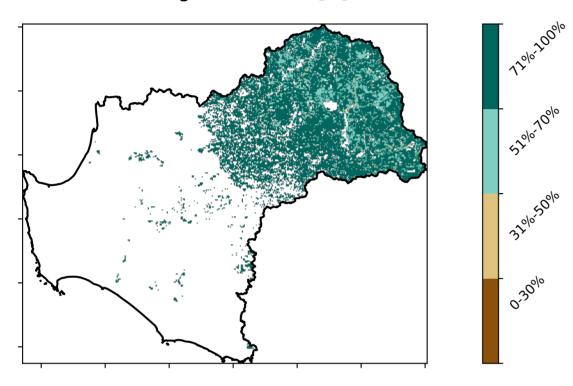


#### **Cropping**

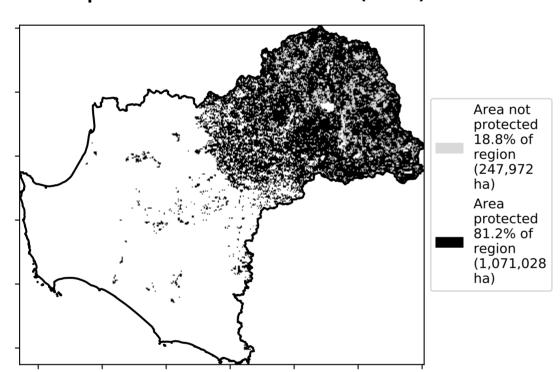
#### Land use and forest cover



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



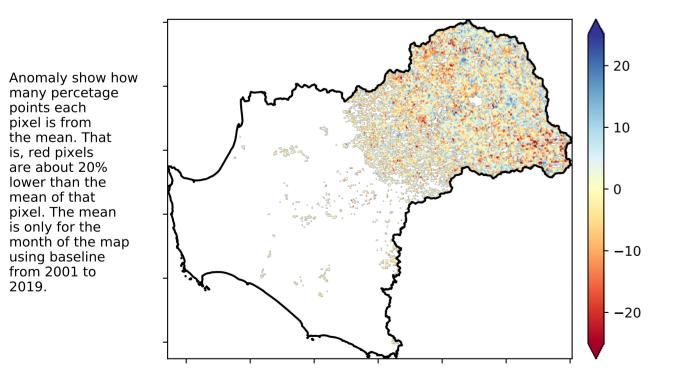
#### % Area protected from water erosion (>70%)



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

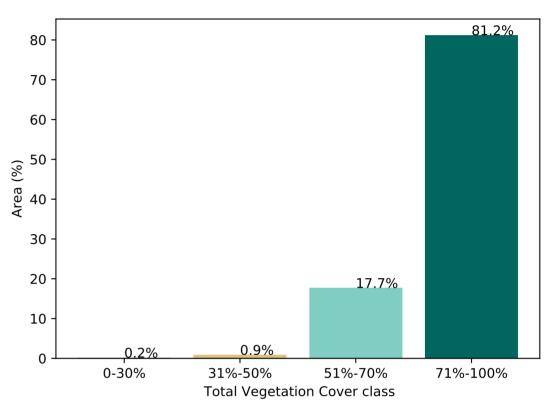
is, red pixels are about 20% lower than the mean of that pixel. The mean

using baseline from 2001 to 2019.

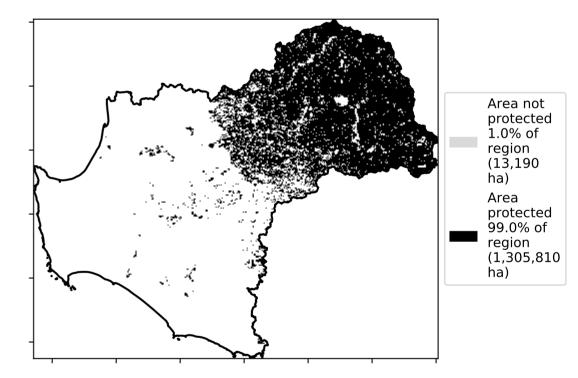


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

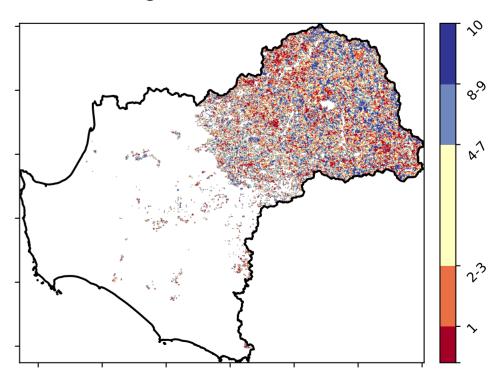
#### Proportion of vegetation cover class in area



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



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



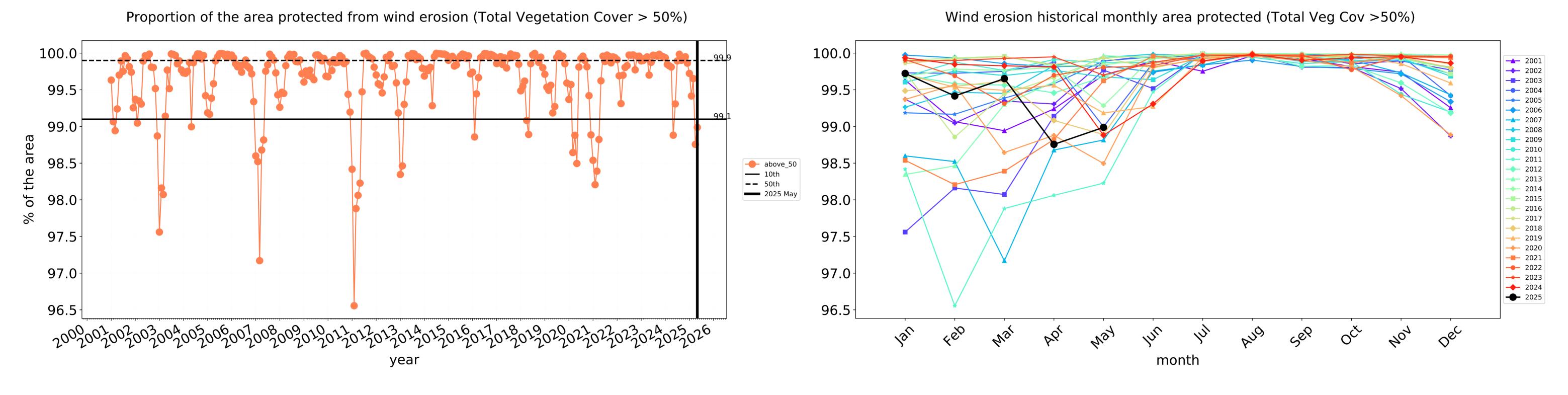


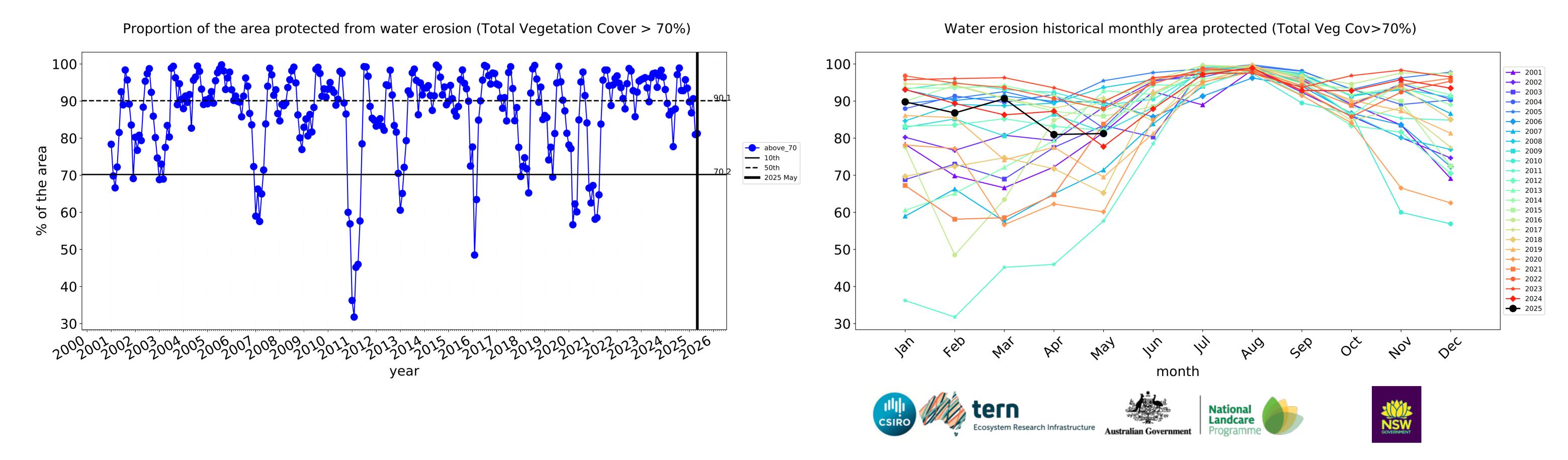


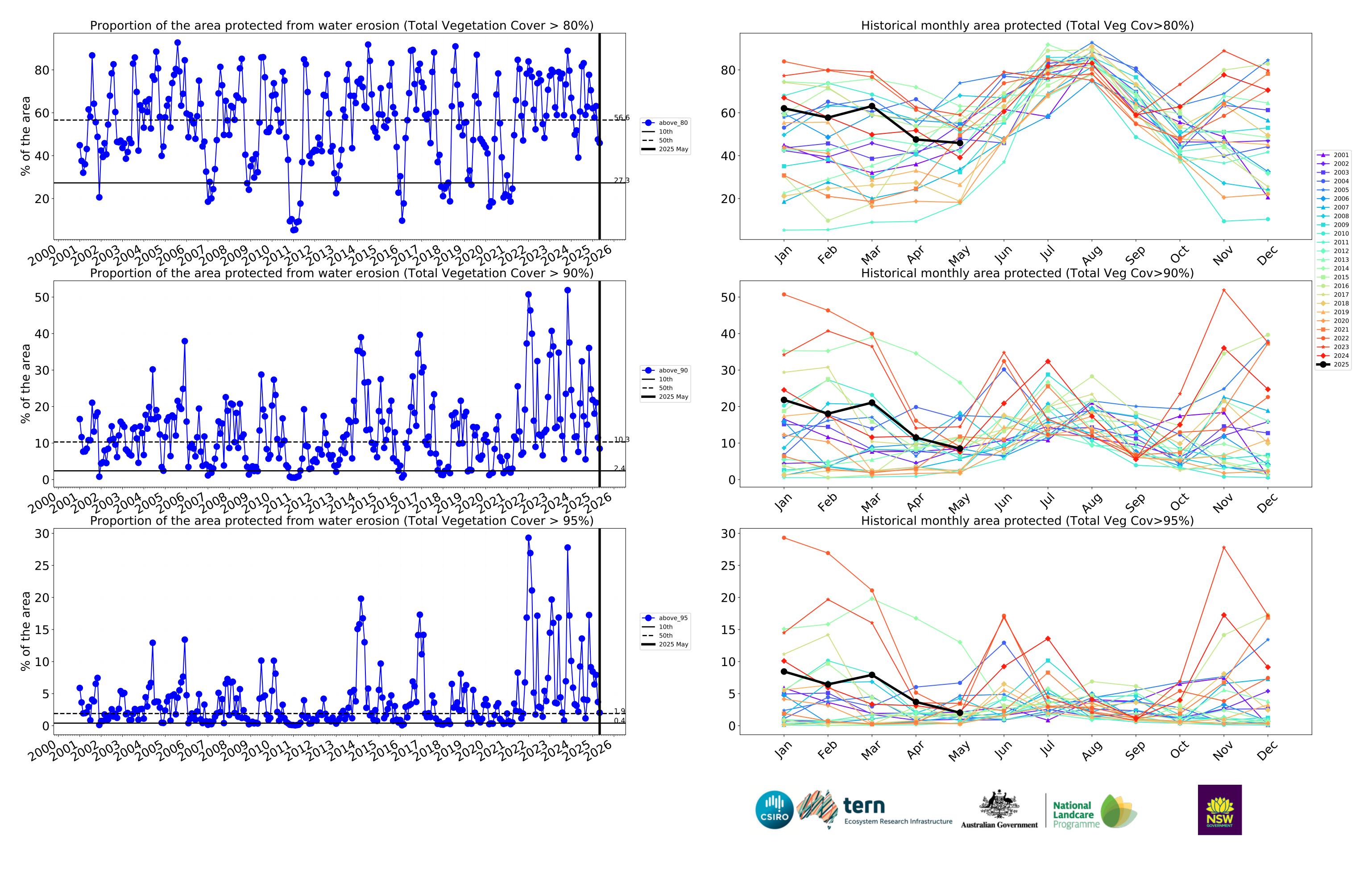




#### **Cropping timeseries**







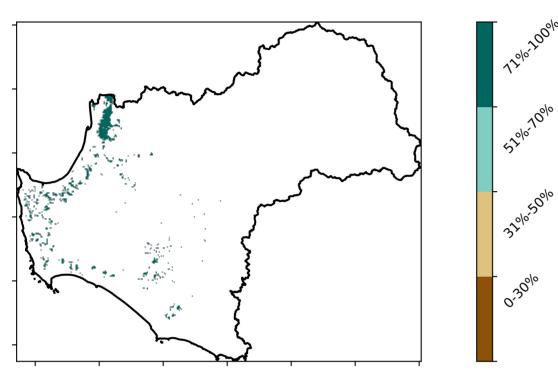
#### **Irrigation**

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

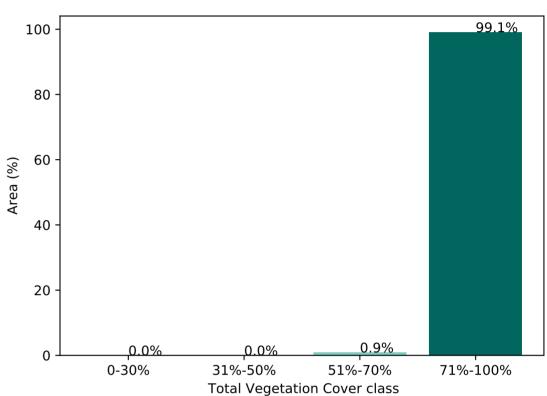
#### 71.2% 70 60 50 Area (%) 30 -28.6% 20 10 0.5 1.0 2.0 -0.5 0.0 1.5 2.5 Land use class

**Proportion of each land class in area** 

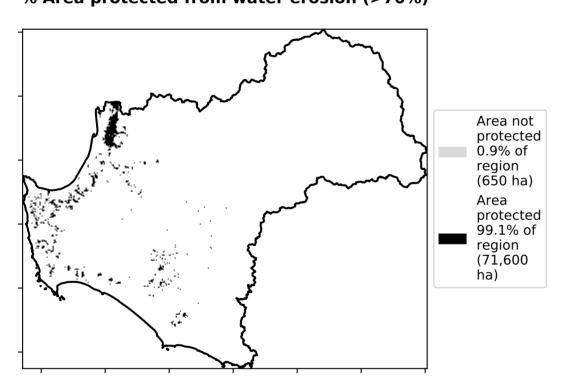




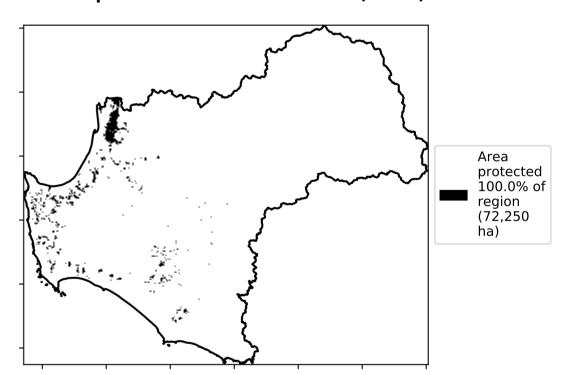
Proportion of vegetation cover class in area



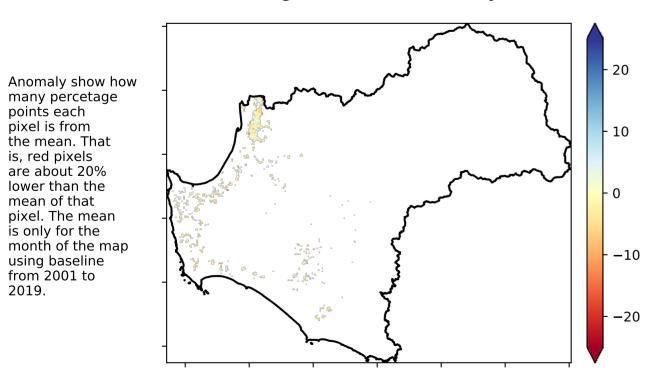
#### % Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

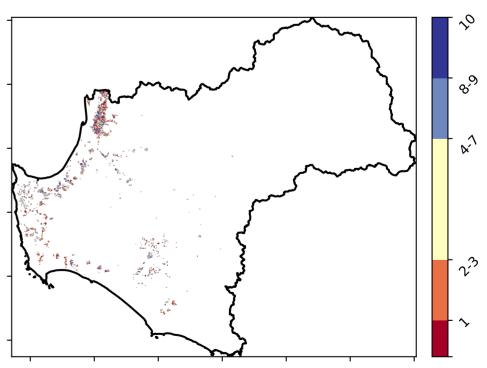


#### **Total Vegetation Cover Anomaly [%]**



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 [%]**





the mean. That

pixel. The mean

using baseline from 2001 to 2019.

is only for the month of the map

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



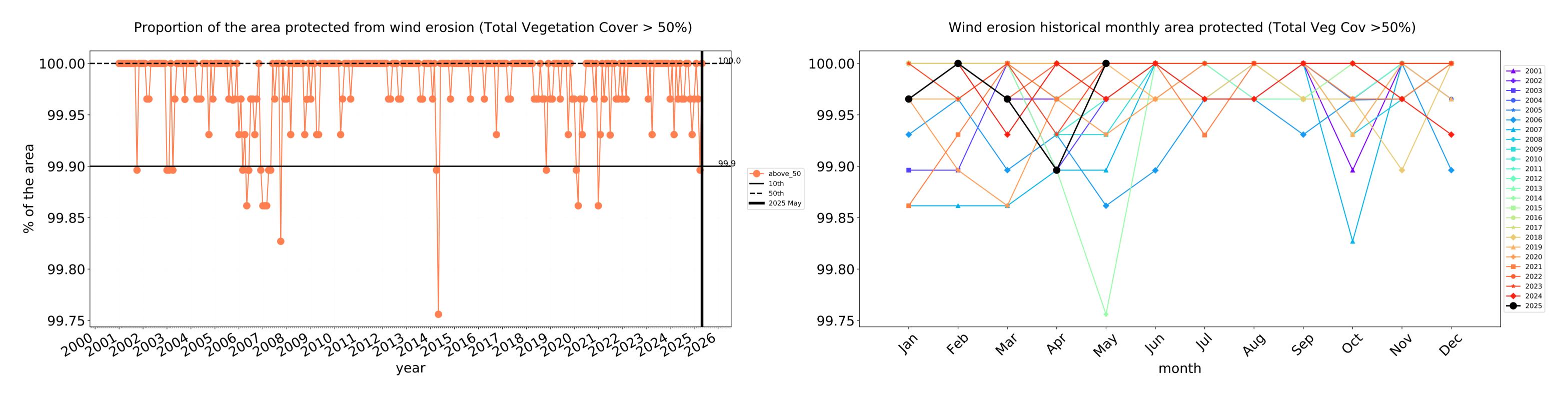


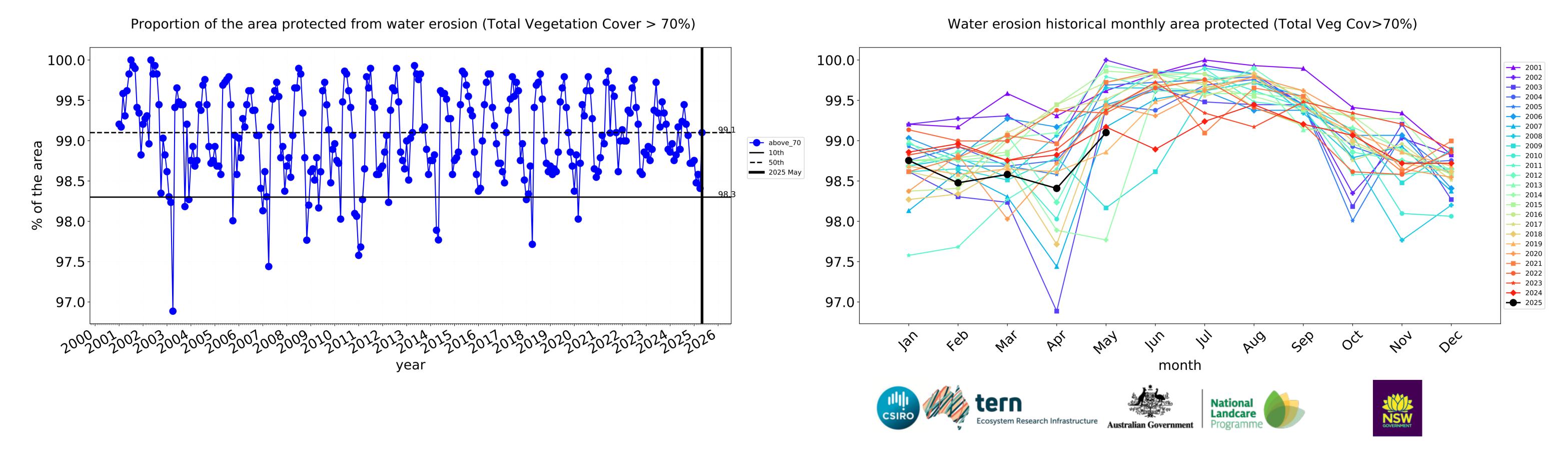


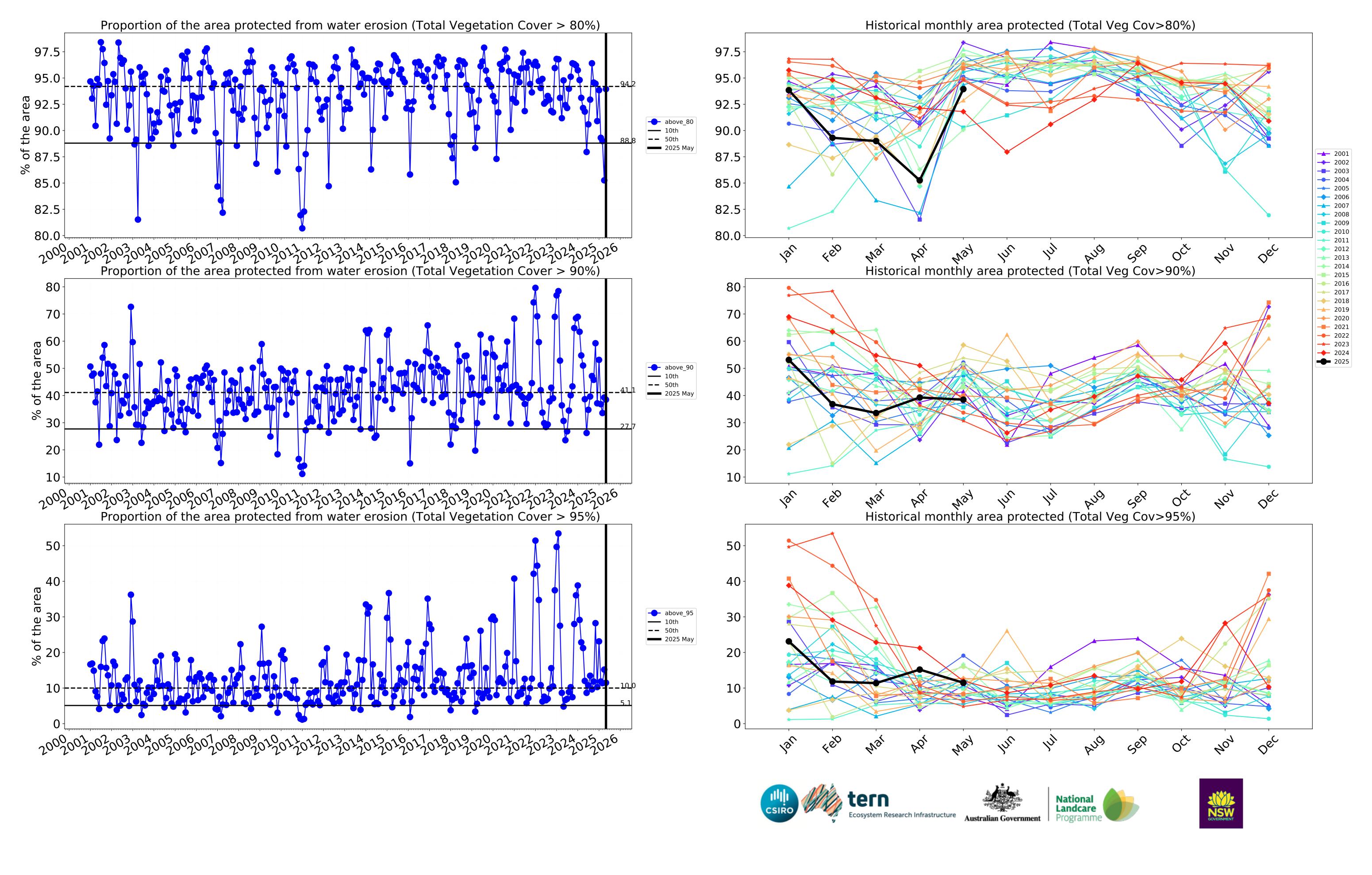




#### **Irrigation timeseries**





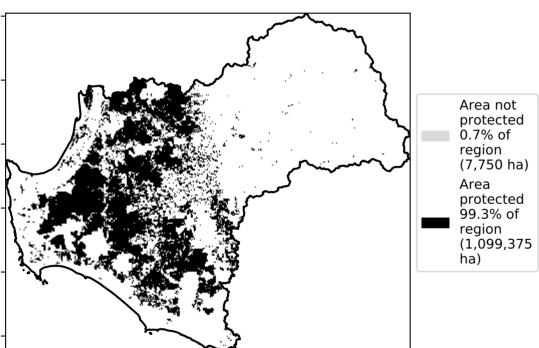


#### **Production native forests and plantation forests**

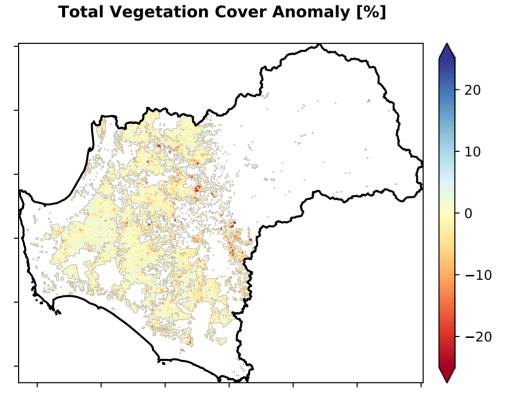
# Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

# Total Vegetation Cover [%] Tiple Judge of Stole Ju

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



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.

# 100 - 99.3% 80 - (%) 60 - 40 - 20 - 0.0% 0.1% 0.6%

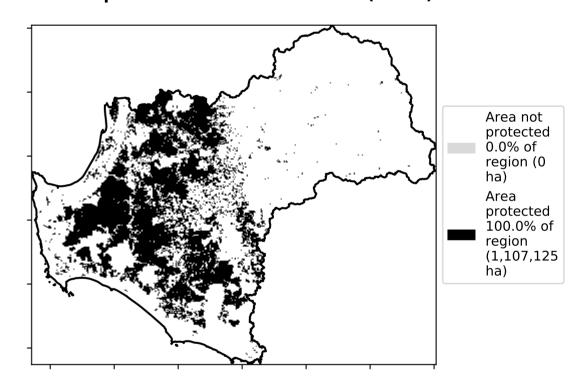
Proportion of vegetation cover class in area

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

**Total Vegetation Cover class** 

31%-50%

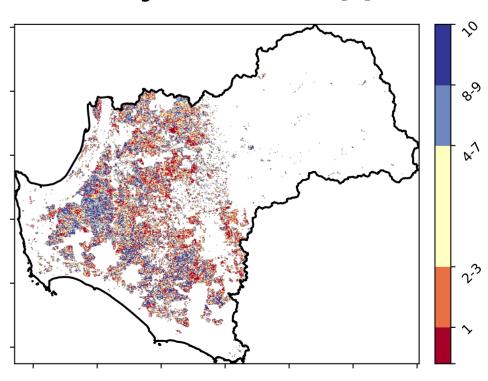
0-30%



51%-70%

71%-100%

Total Vegetation Cover Decile [%]



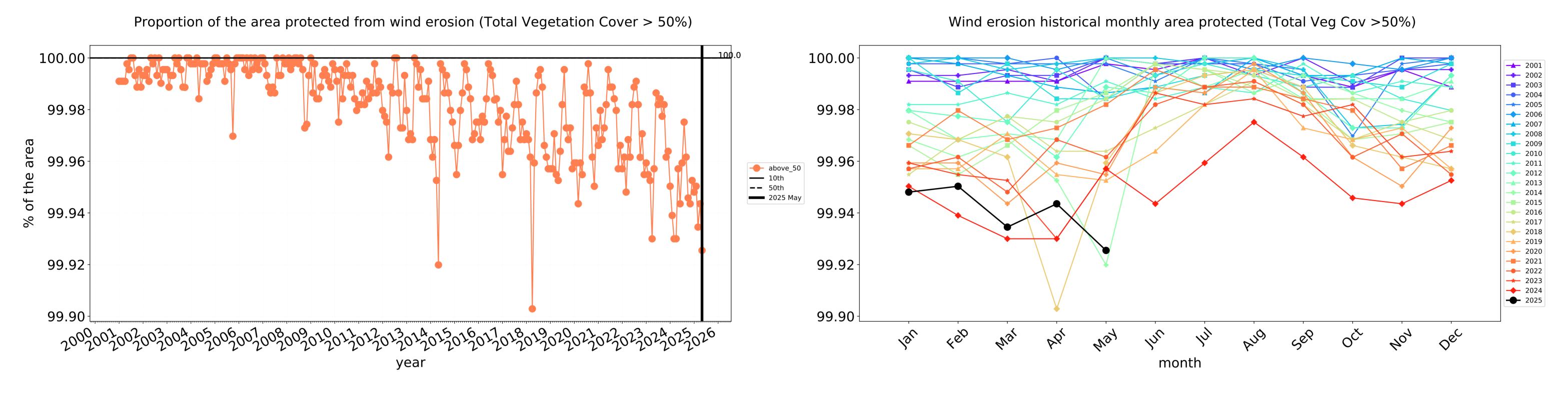


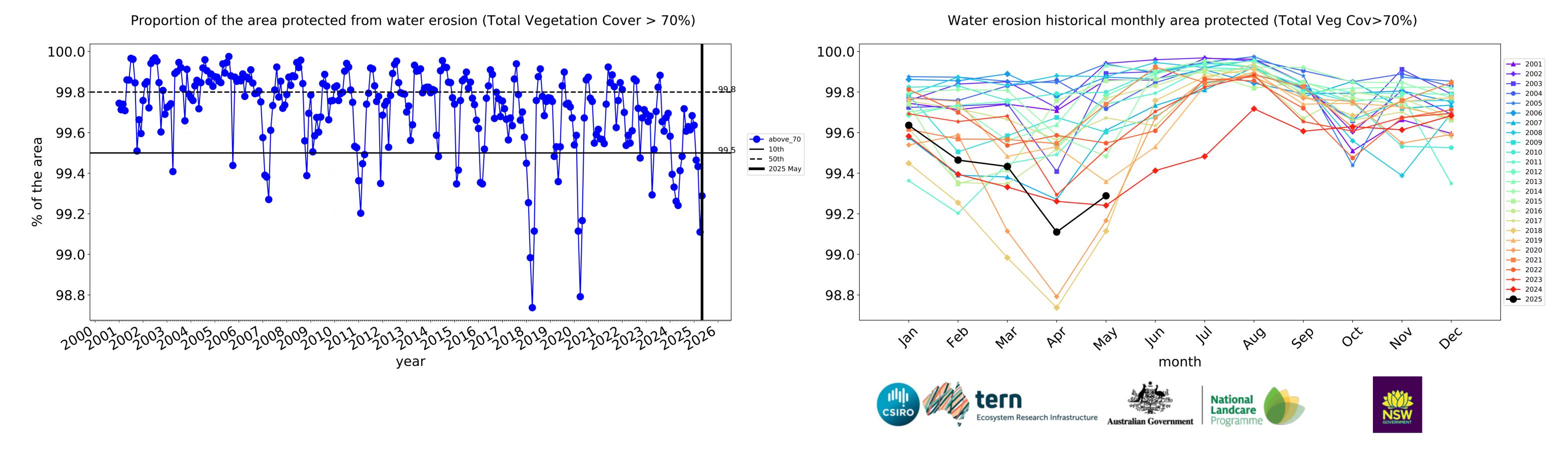


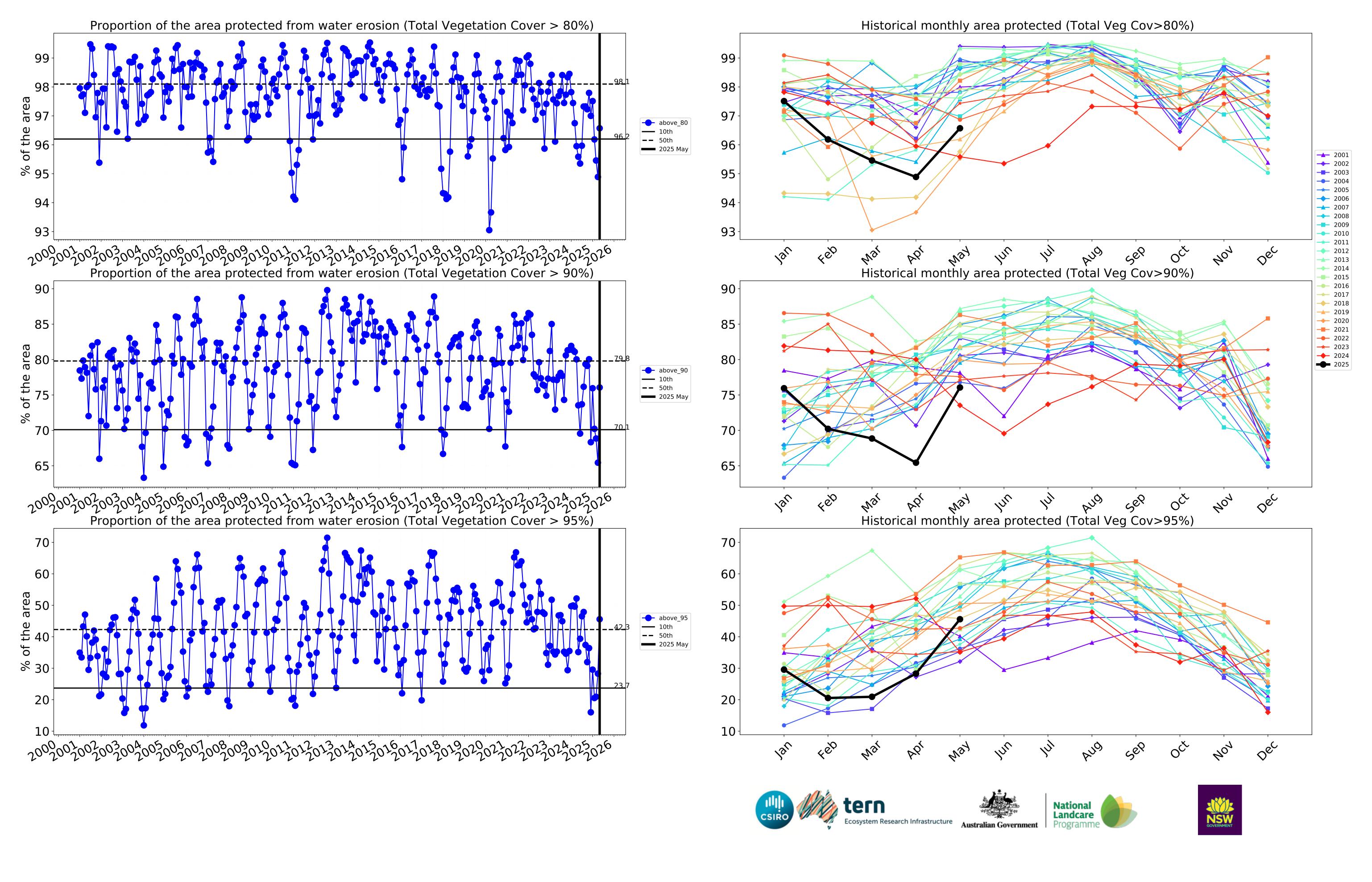




#### **Production native forests and plantation forests timeseries**







### South West Region (3,969,450 ha and no data 27,299 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	3,969,450	99.9% 3,965,950	99.5% 3,948,850	92.3% 3,665,225	76.3% 3,028,225	42.3% 1,678,675	21.2% 842,625
Conservation and natural environments	801,875	99.9% 800,950	99.7% 799,450	97.9% 784,725	92.0% 737,425	64.6% 517,950	32.8% 263,075
Conservation and natural environments non forest	168,550	99.5% 167,650	98.7% 166,400	92.2% 155,400	75.4% 127,125	30.5% 51,400	8.8% 14,750
Conservation and natural environments Woodland forest	180,725	100.0% 180,700	100.0% 180,650	98.6% 178,125	91.0% 164,400	51.5% 93,075	19.5% 35,175
Conservation and natural environments Forest (non woodland)	452,600	100.0% 452,600	100.0% 452,400	99.7% 451,200	98.5% 445,900	82.5% 373,475	47.1% 213,150
Agriculture	1,991,450	99.9% 1,990,325	99.3% 1,977,475	86.8% 1,727,850	59.4% 1,182,875	15.3% 304,850	3.4% 68,650
Grazing	600,100	100.0% 600,000	99.9% 599,475	97.4% 584,475	84.9% 509,575	27.5% 165,125	5.6% 33,600
Grazing non forest	593,150	100.0% 593,050	99.9% 592,525	97.4% 577,775	84.9% 503,850	27.5% 162,850	5.5% 32,900
Cropping	1,319,000	99.9% 1,317,975	99.0% 1,305,650	81.2% 1,071,675	45.9% 605,325	8.5% 111,900	2.0% 26,750
Irrigation	72,250	100.0% 72,250	100.0% 72,250	99.1% 71,600	93.9% 67,875	38.5% 27,800	11.5% 8,300
Production native forests and plantation forests	1,107,125	100.0% 1,107,050	99.9% 1,106,300	99.3% 1,099,250	96.6% 1,069,175	76.1% 842,050	45.6% 504,600







