### Total vegetation cover soil protection Region:LGA Hepburn\_(S) VIC

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: February 2025** 

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



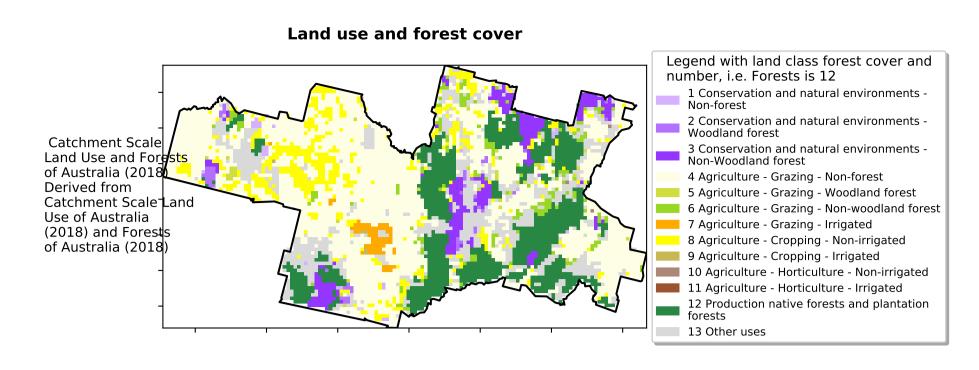


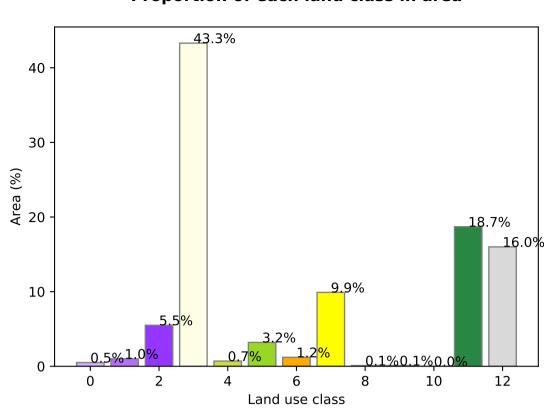




### **Vegetation Cover Feb 2025**

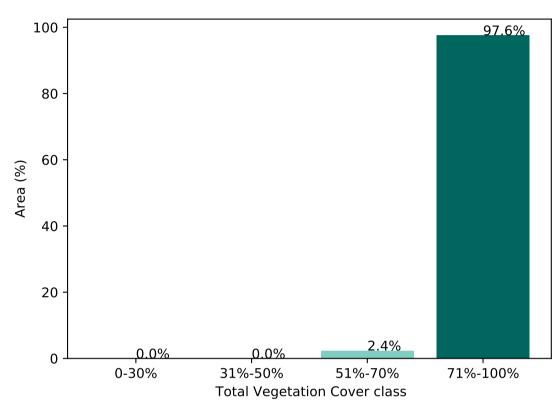
### **Proportion of each land class in area**



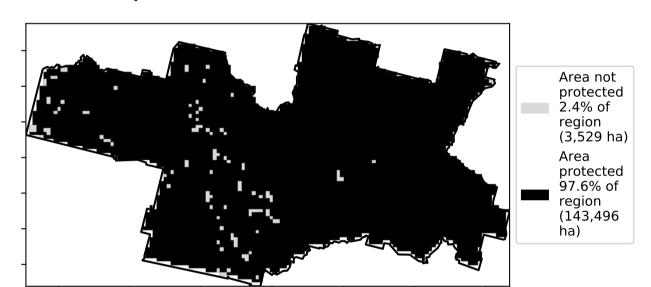


### **Total Vegetation Cover [%]**

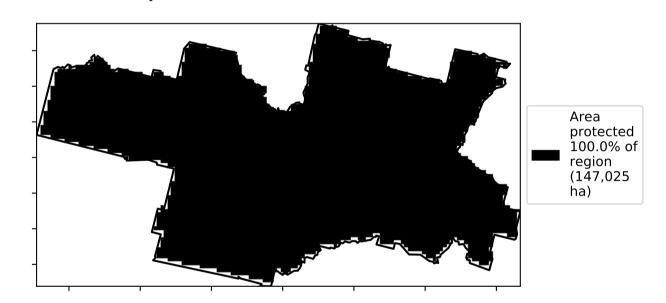




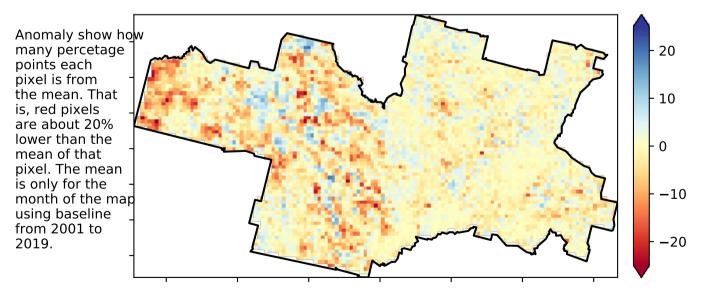




### % Area protected from wind erosion (>50%)

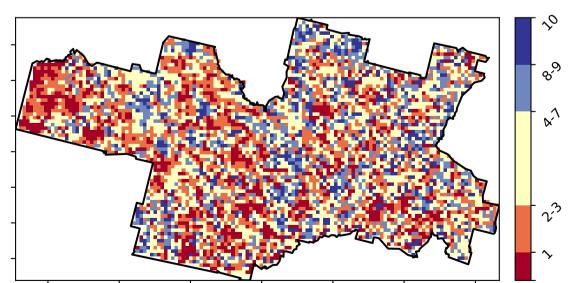


### **Total Vegetation Cover Anomaly [%]**



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

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

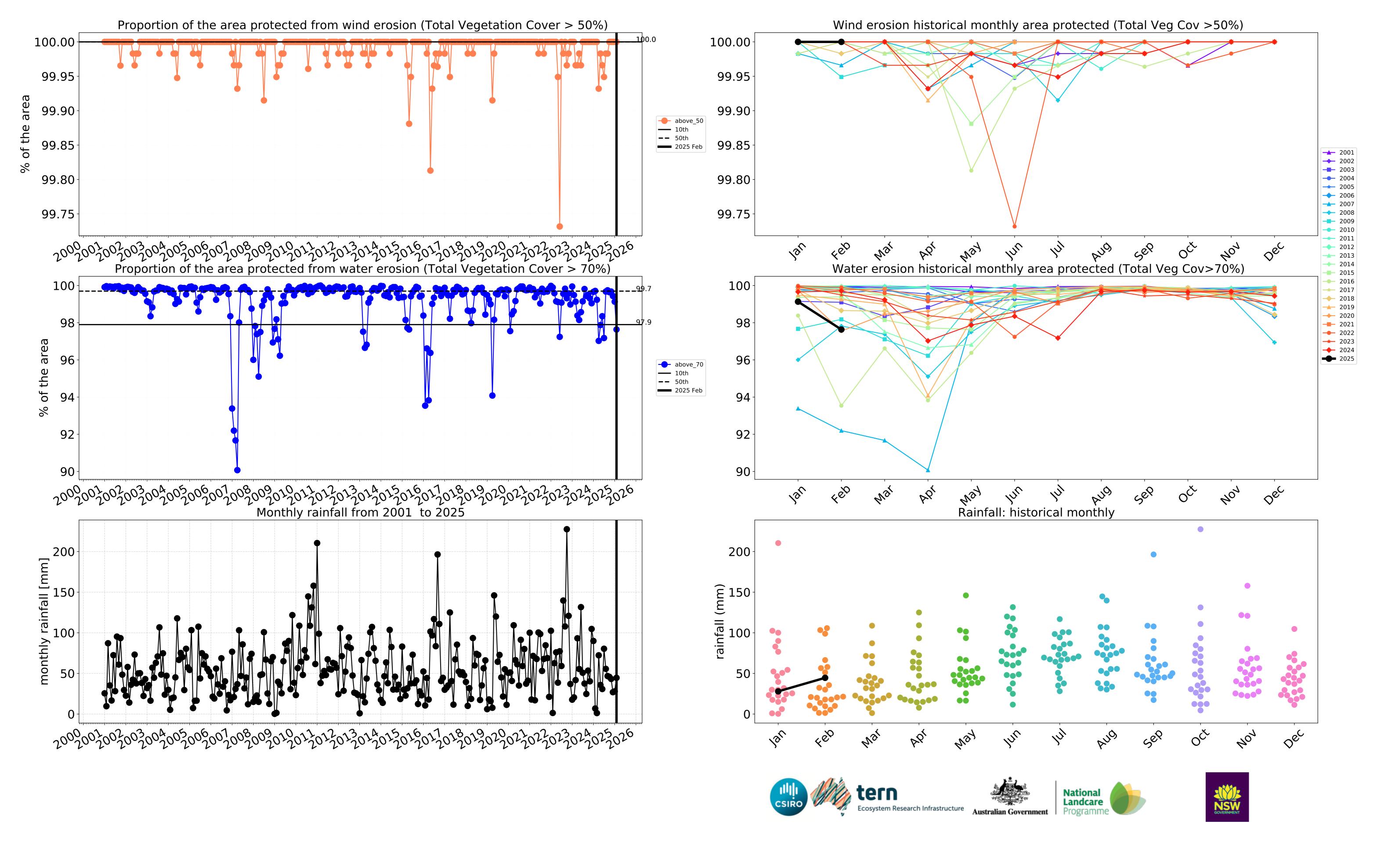


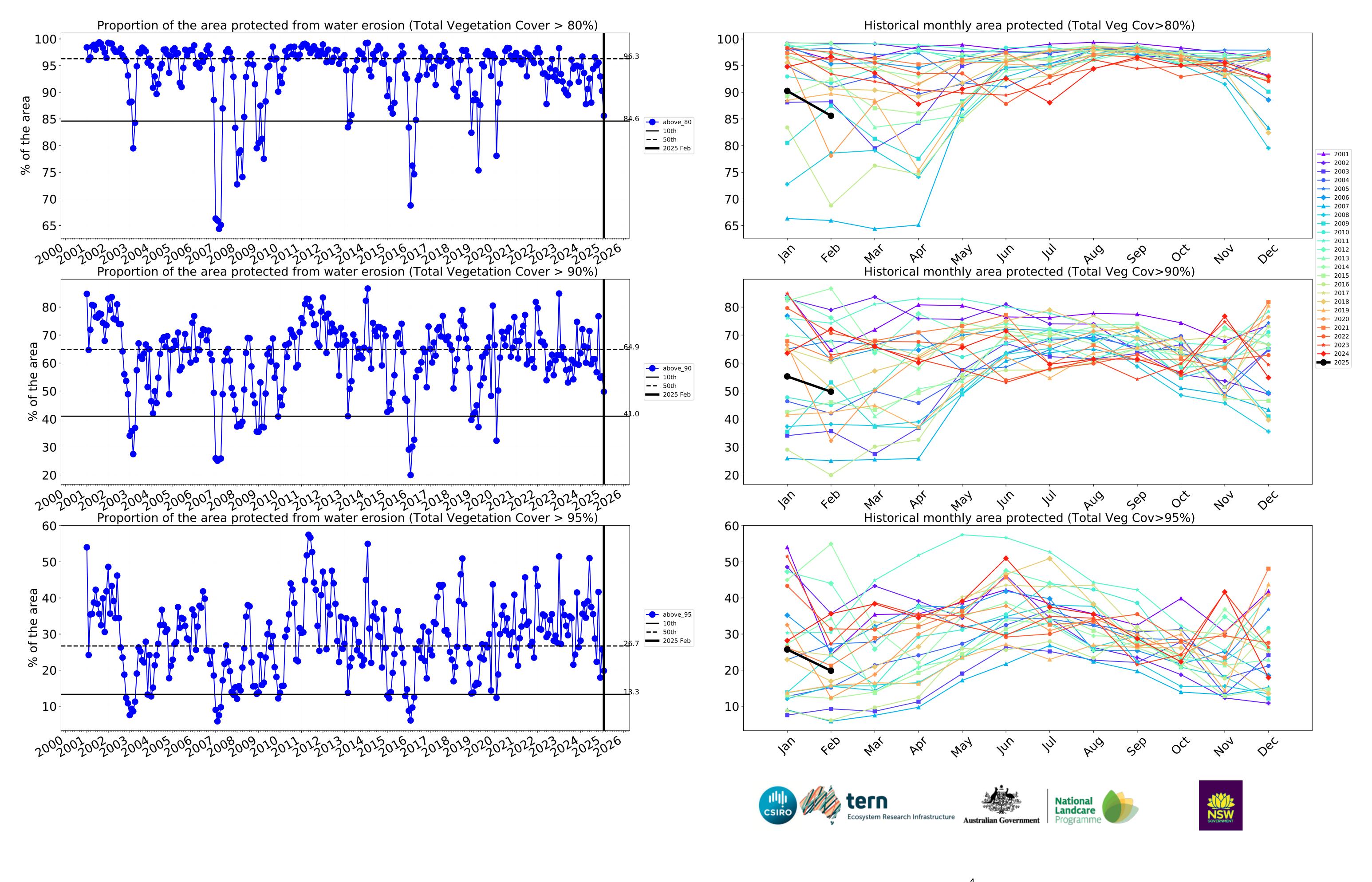






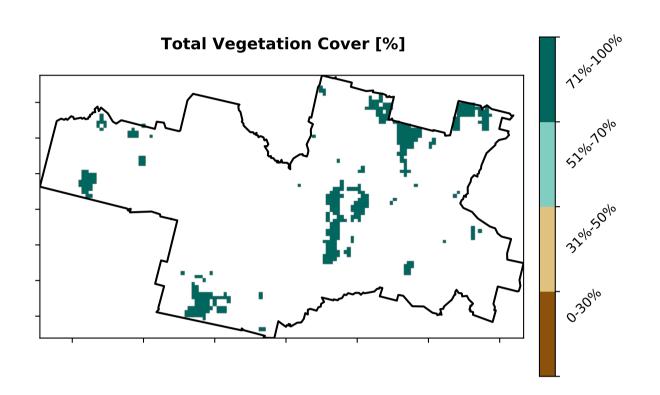


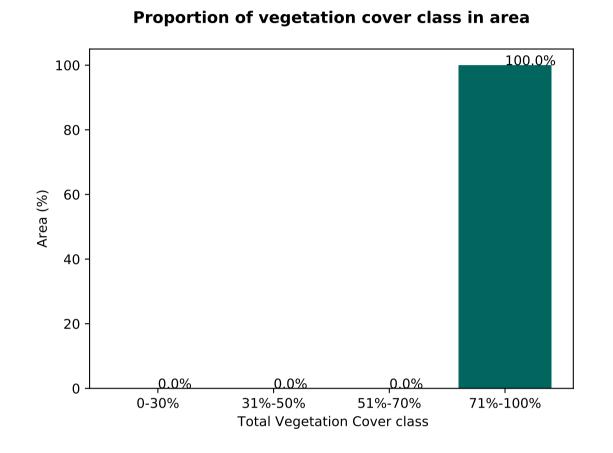




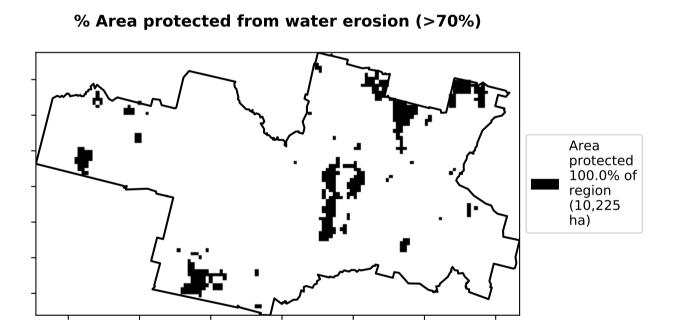
### **Conservation and natural environments**

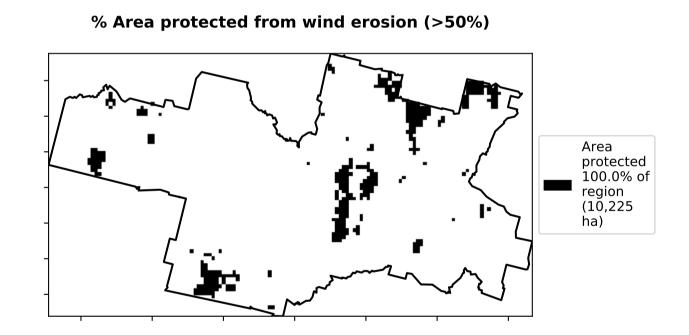
### Land use and forest cover 78.5% 70 · 60 · Catchment Scale Land Use and Forests of Australia (2018) 1 Conservation and natural environments - Non-forest 50 2 Conservation and natural environments - Woodland forest 3 Conservation and natural environments - Non-Derived from Catchment Scale Land 40 -Use of Australia (2018) and Forests of Australia (2018) 3 Conservation and natural environments - Non-woodland forest 30 20 13.9% 10 · 7.6% 1.5 -0.50.0 0.5 1.0 2.0 Land use class

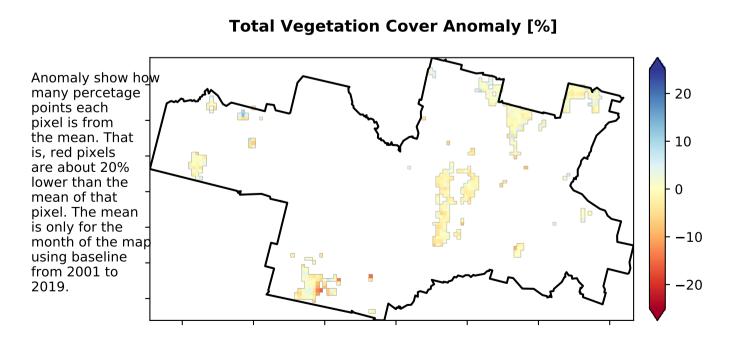


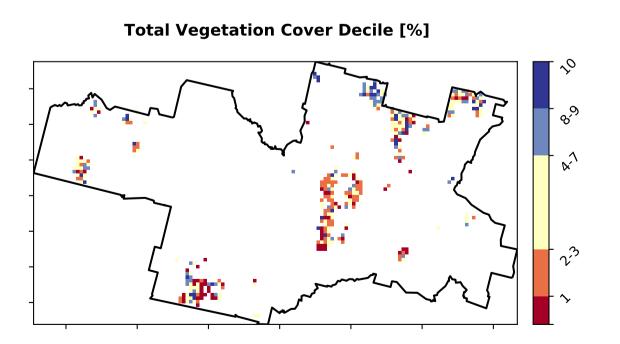


**Proportion of each land class in area** 









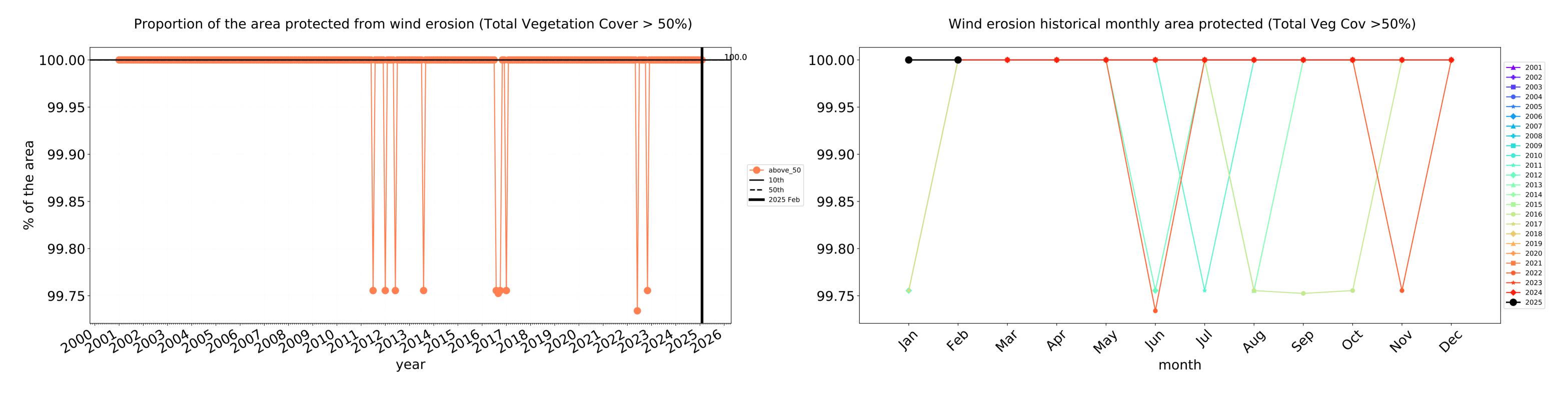


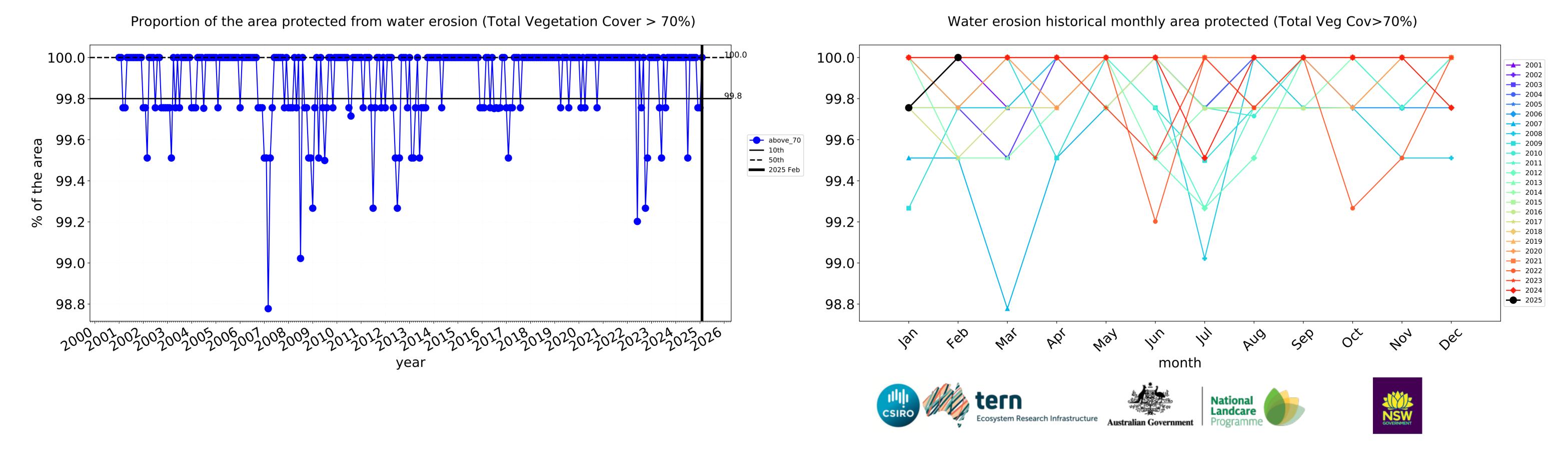


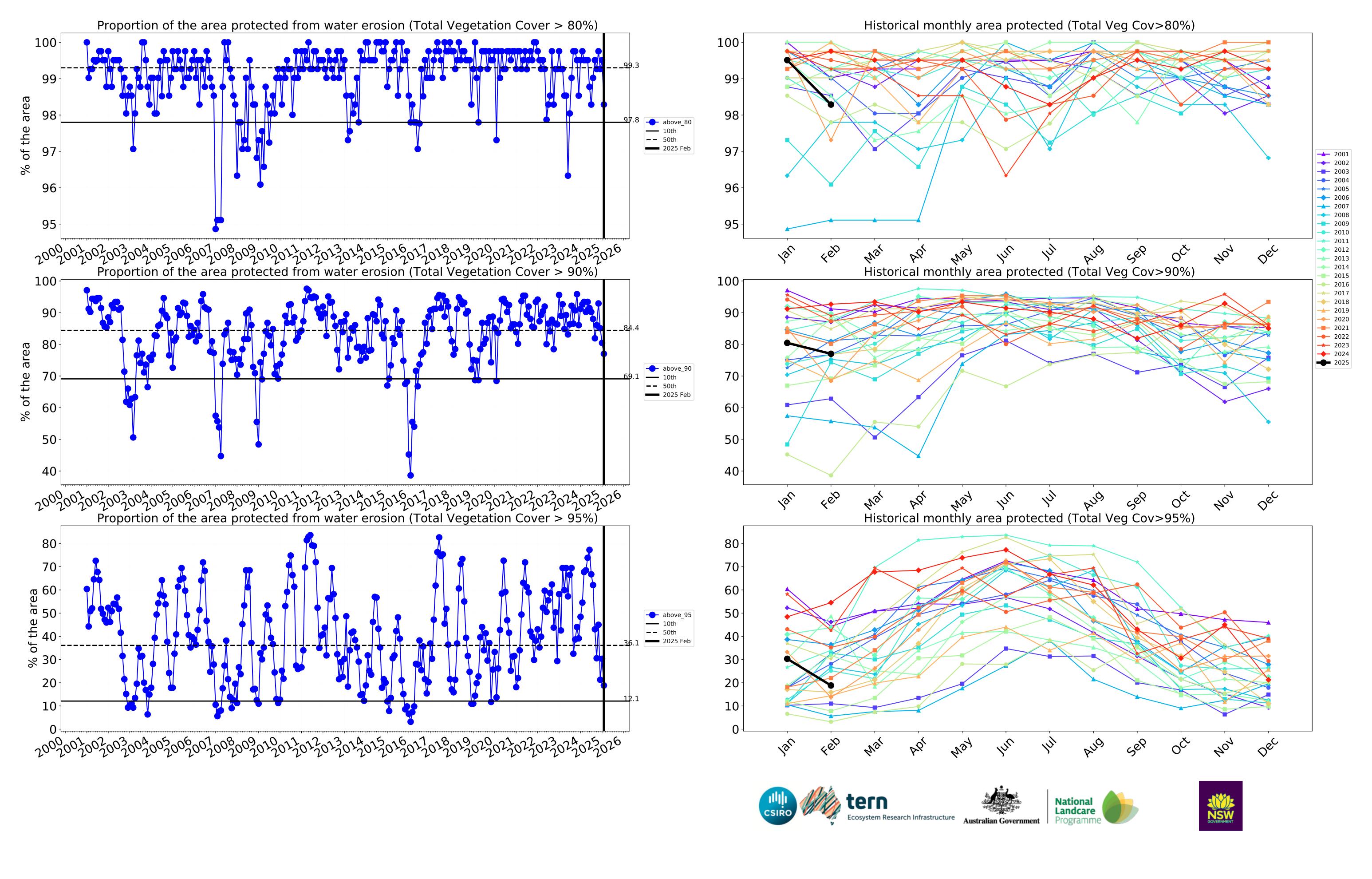




### **Conservation and natural environments timeseries**





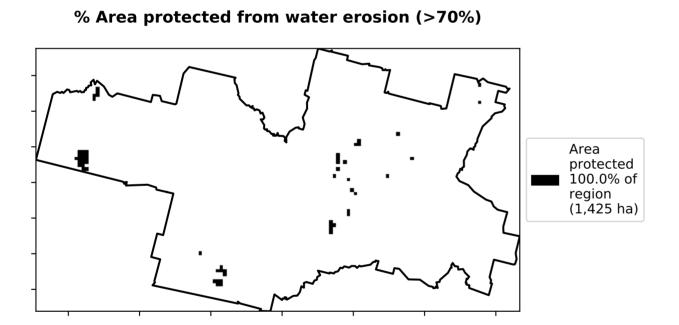


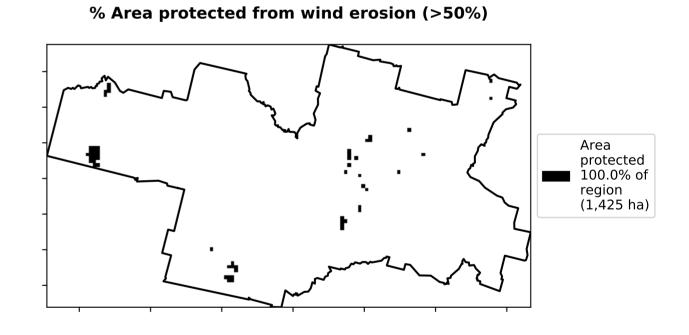
### **Conservation and natural environments Woodland forest**

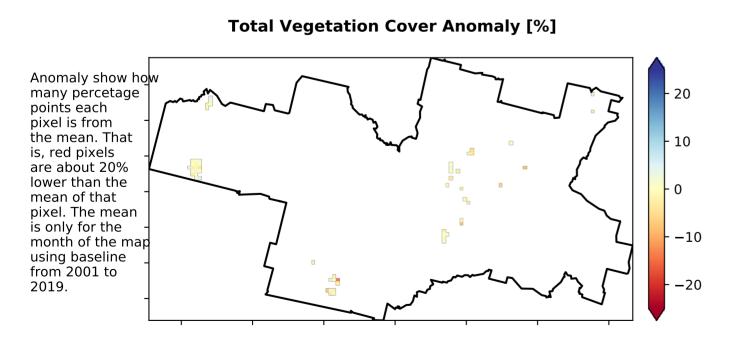
### Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 1 Conservation and natural environments - Woodland forest of Australia (2018)

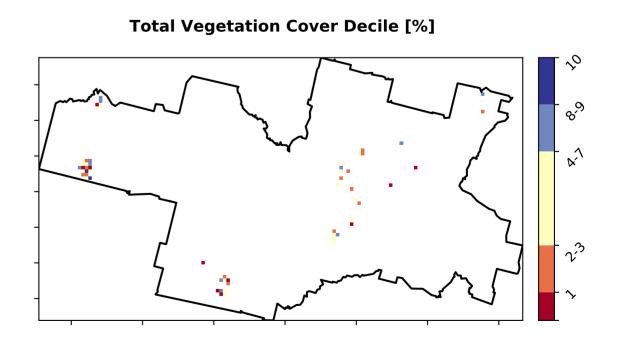
## Total Vegetation Cover [%] Total Vegetation Cover [%] Talestage Talestage

# Proportion of vegetation cover class in area 100 - 100.0% 80 - 100.0% 40 - 20 - 100.0% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class









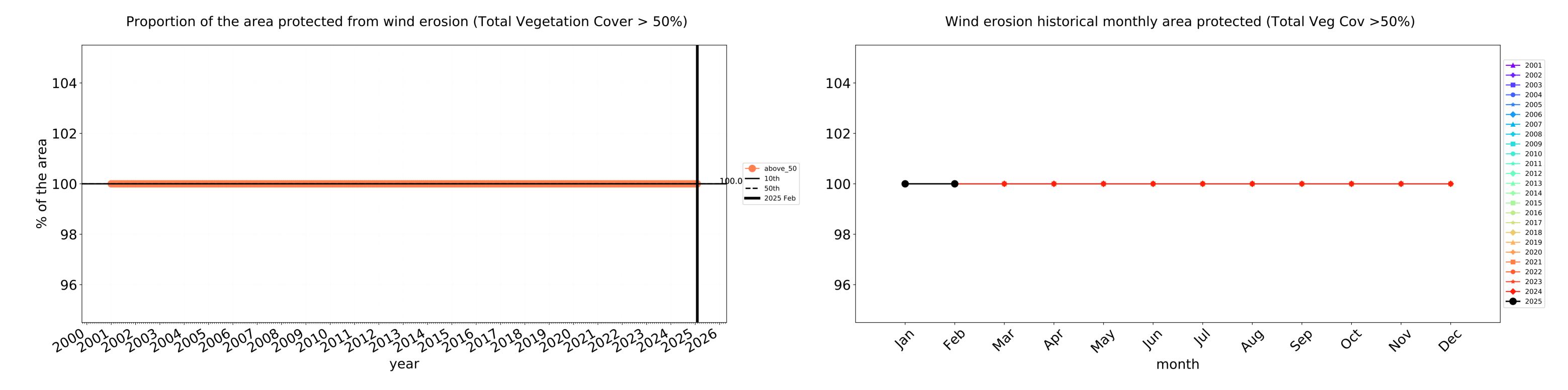


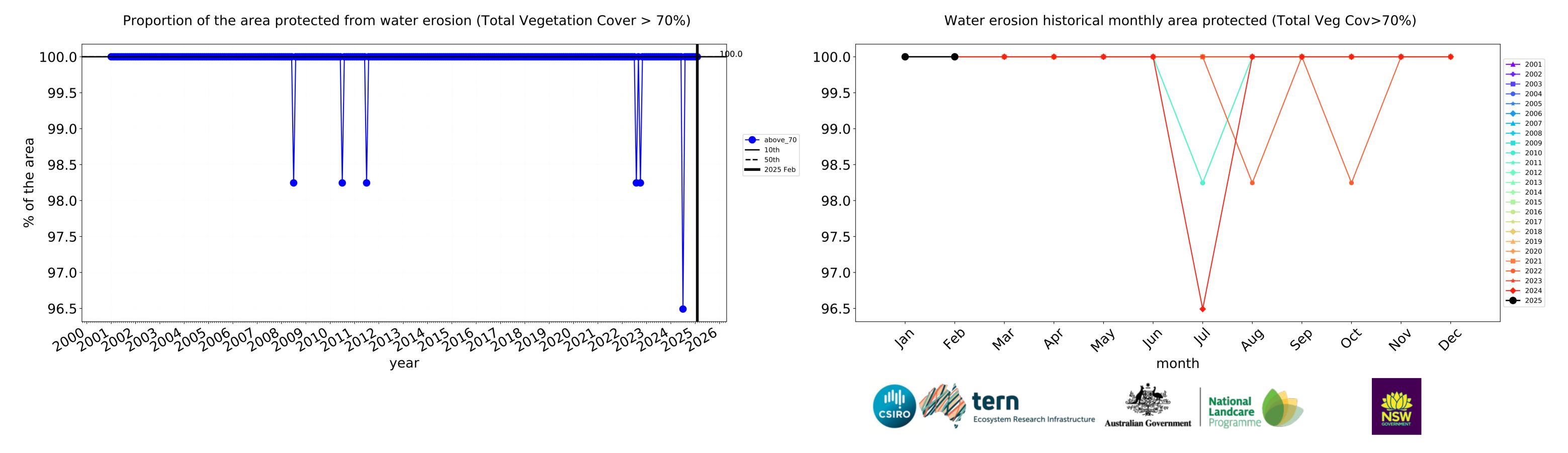


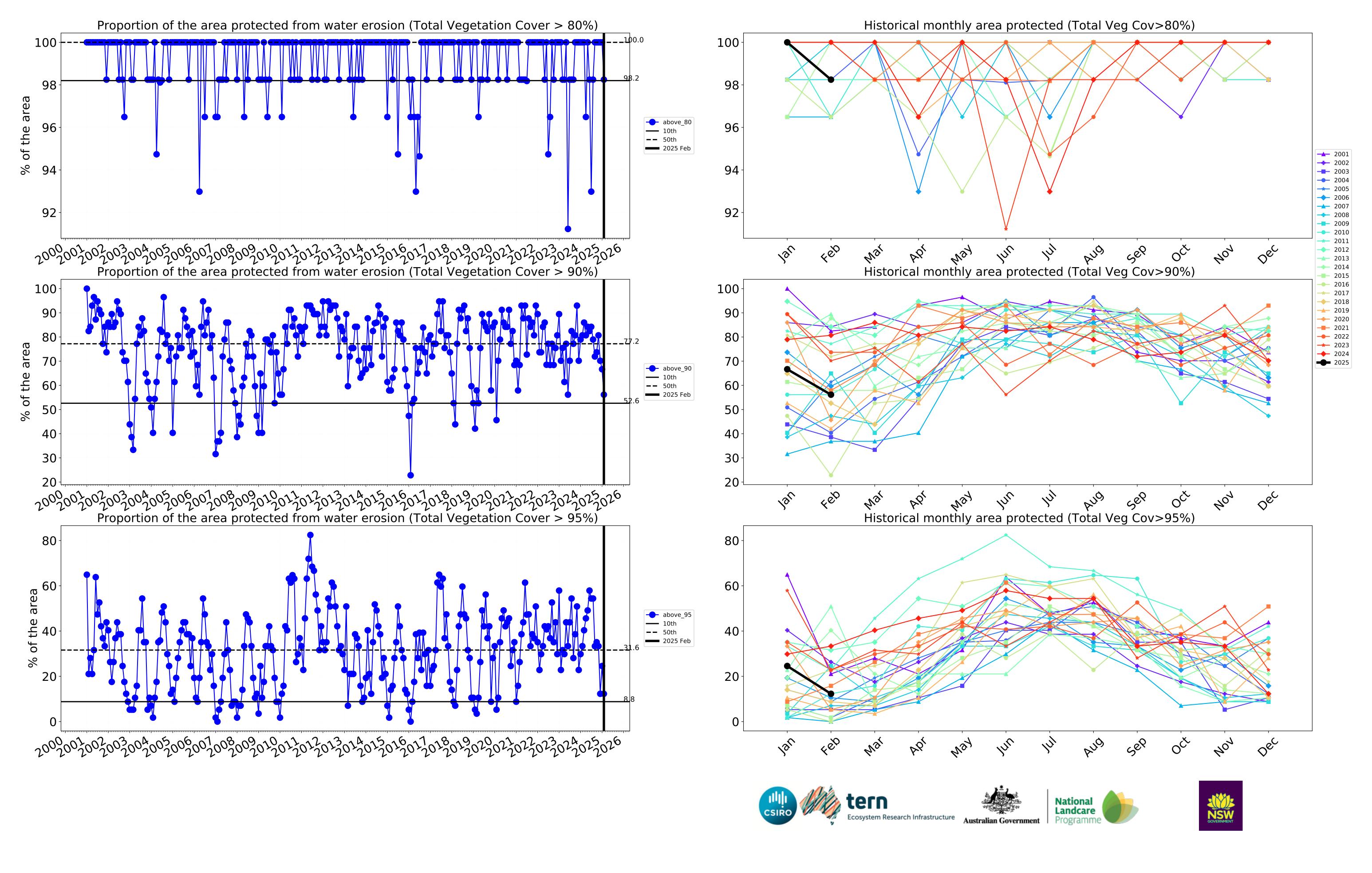




### **Conservation and natural environments Woodland forest timeseries**





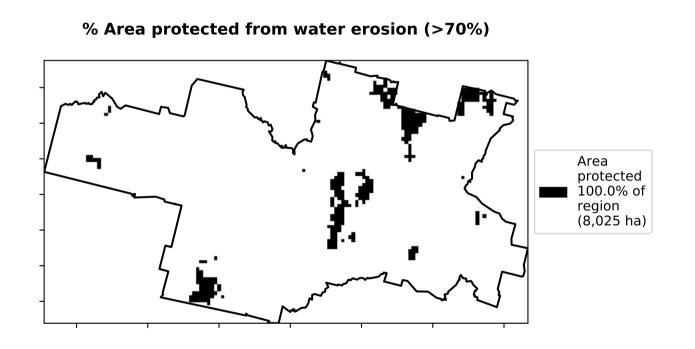


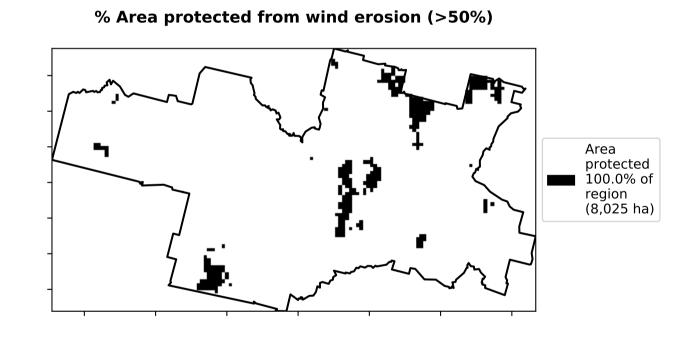
### **Conservation and natural environments Forest (non woodland)**

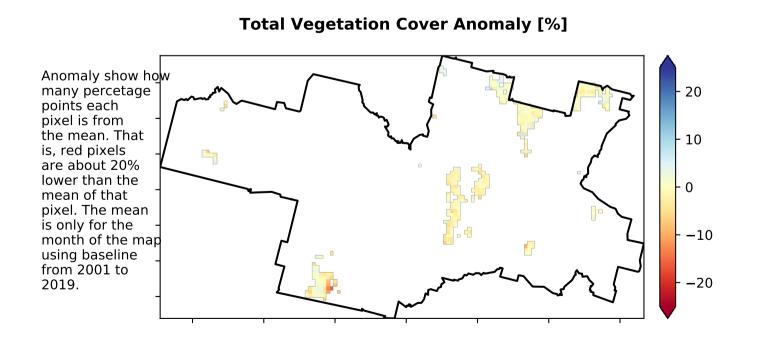
### Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 1 Conservation and natural environments - Non-woodland forest 1 Conservation and natural environments - Non-woodland forest

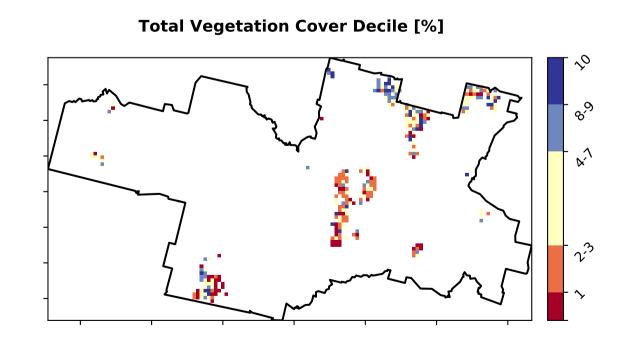
## Total Vegetation Cover [%] Trelo Toolo Spelo Toolo Spe

# Proportion of vegetation cover class in area 100 - 100.0% 80 - 60 - 40 - 40 - 20 - 0.0% 0.0% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class









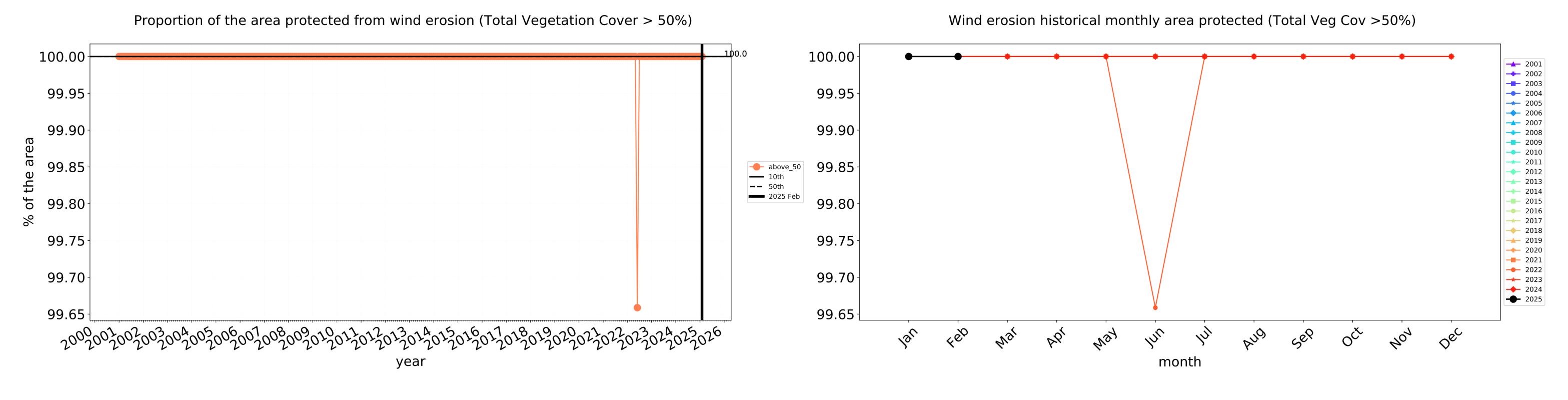


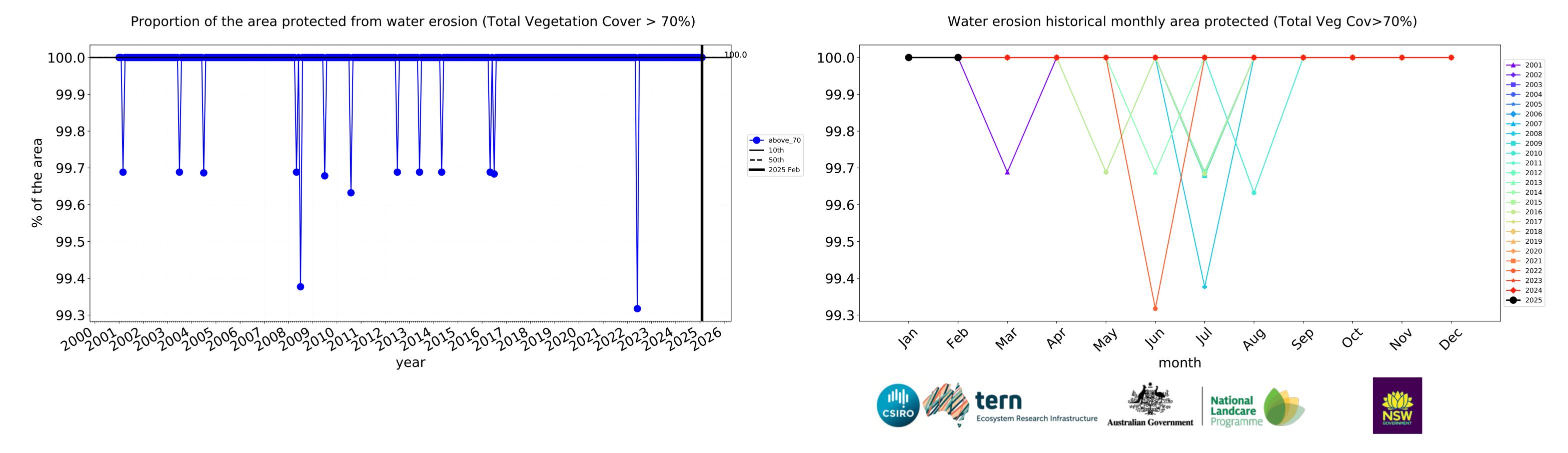


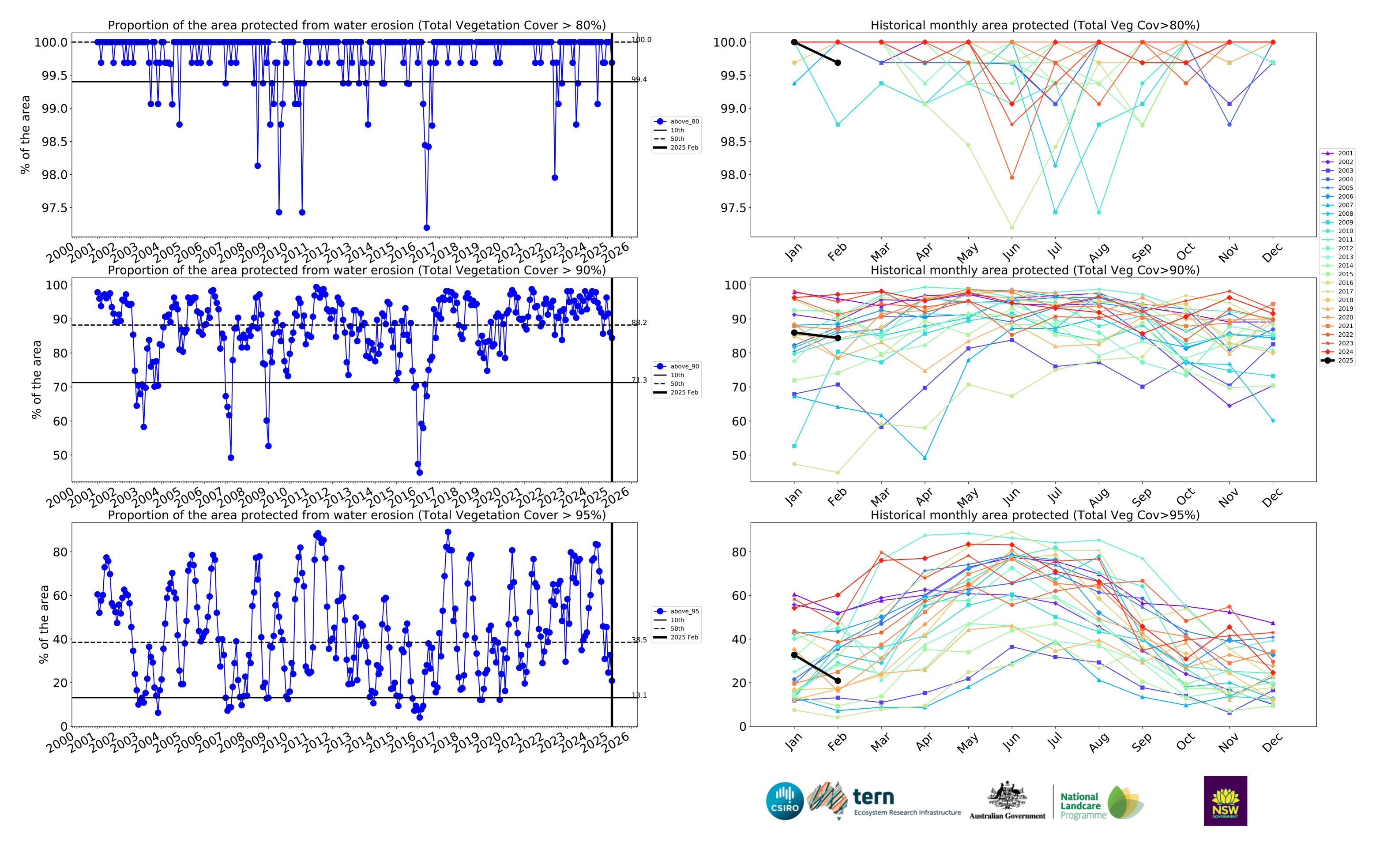




### Conservation and natural environments Forest (non woodland) timeseries



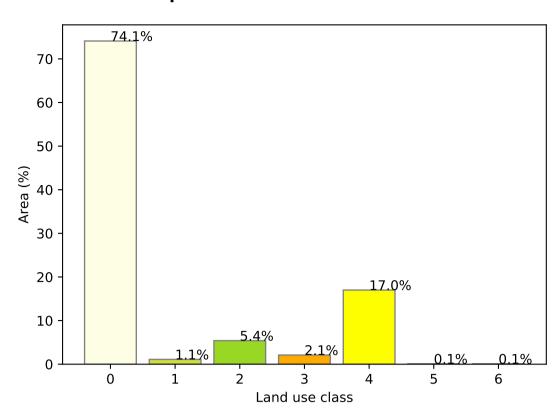




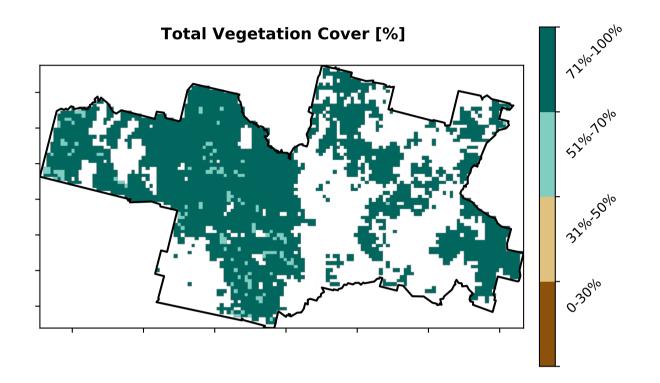
### **Agriculture**

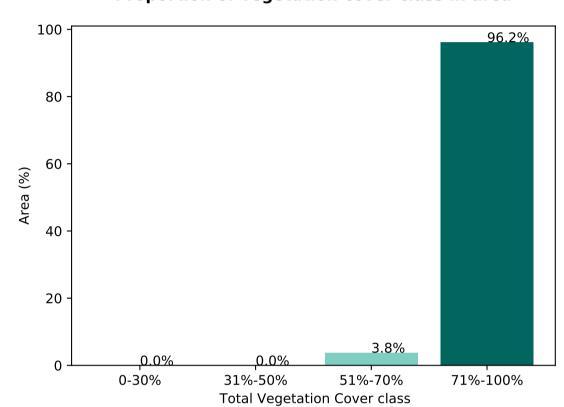
### Catchment Scale Land Use and Forests Of Australia (2018) Derived from Catchment Scale Use of Australia (2018) Of Australia (2018) Australia (2018) Australia (2018) Australia (2018) Australia (2018)

### Proportion of each land class in area

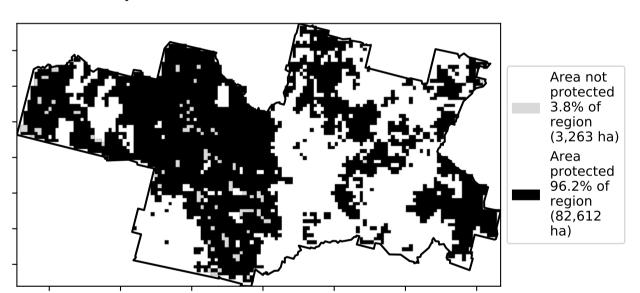




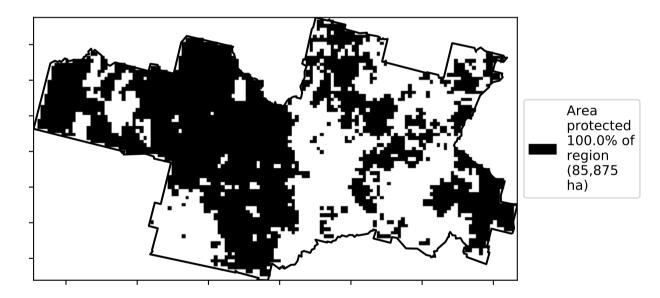




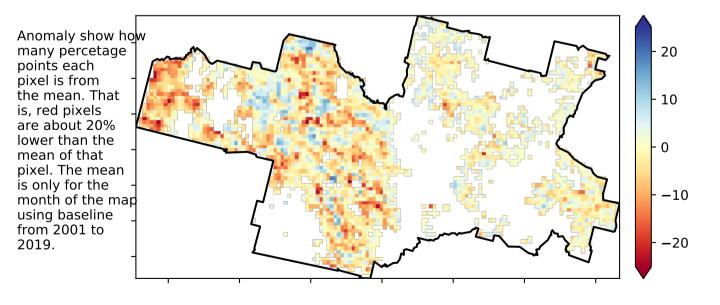
### % Area protected from water erosion (>70%)

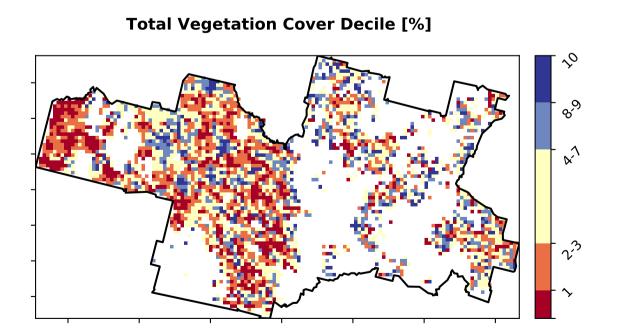


% Area protected from wind erosion (>50%)



### Total Vegetation Cover Anomaly [%]





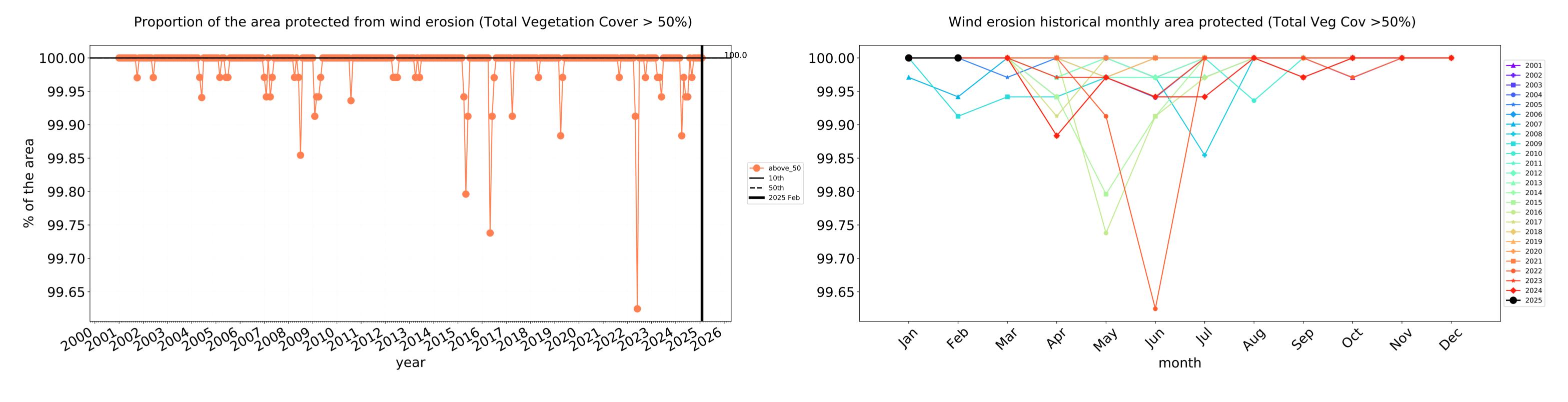


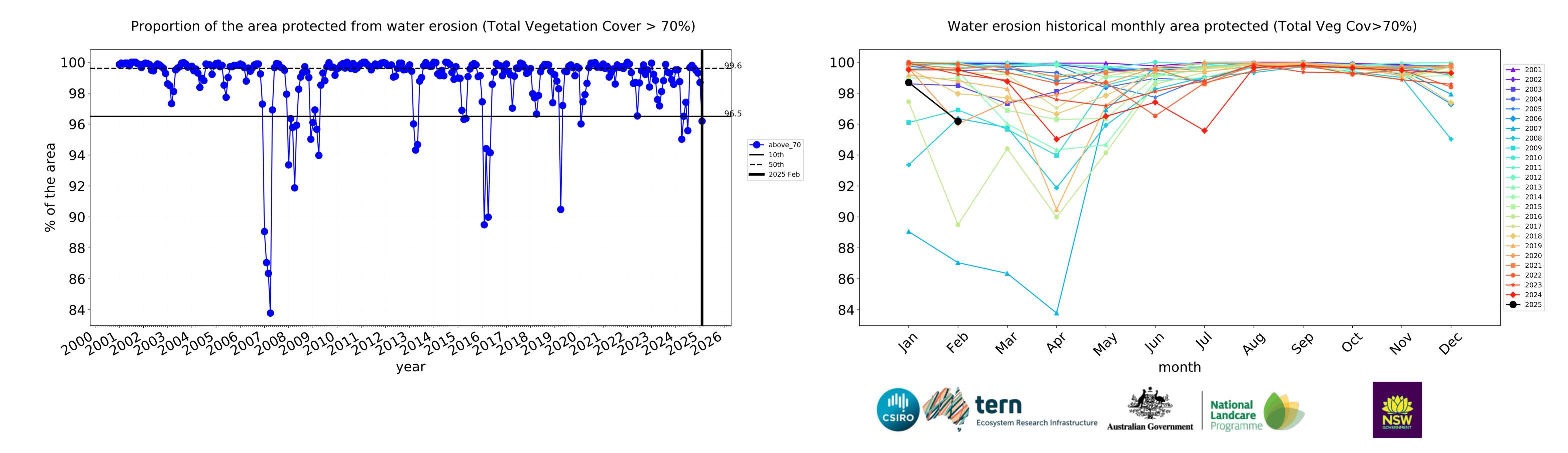


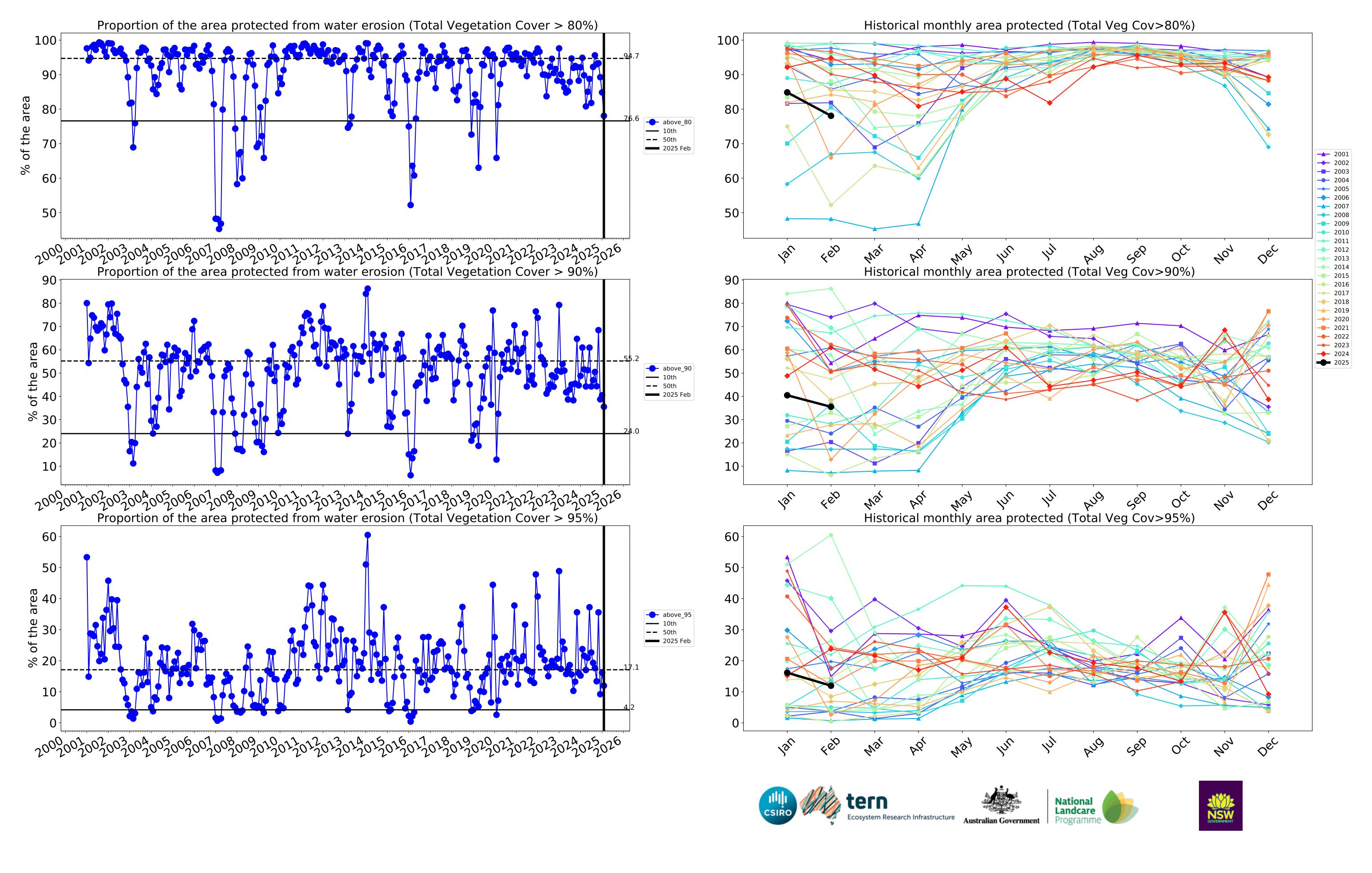




### **Agriculture timeseries**



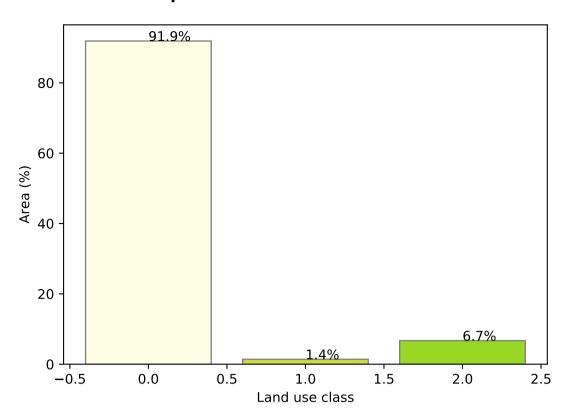




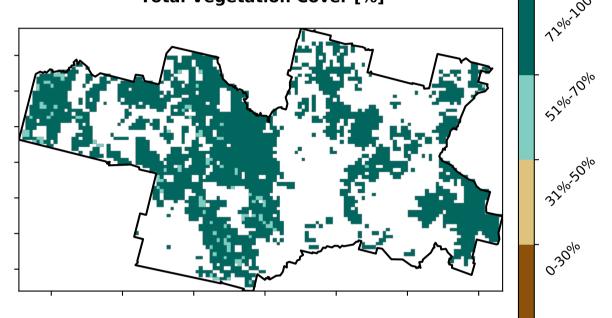
### Grazing

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

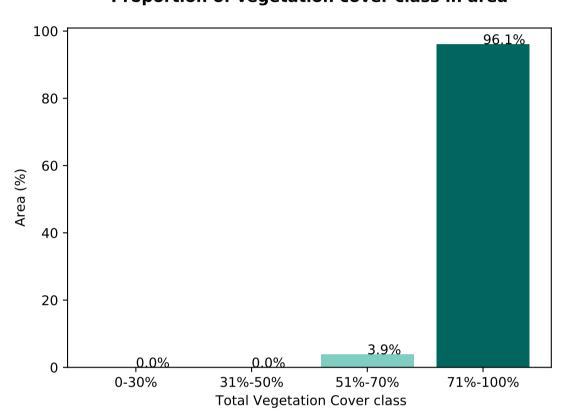
### Proportion of each land class in area



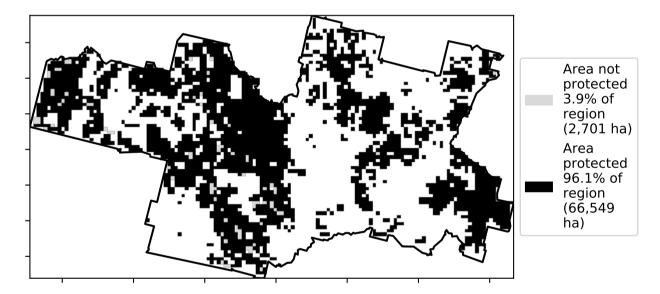




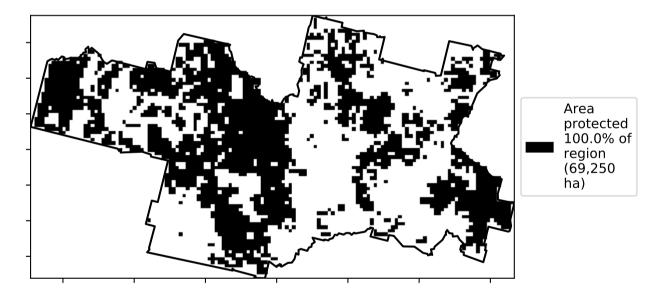
### Proportion of vegetation cover class in area



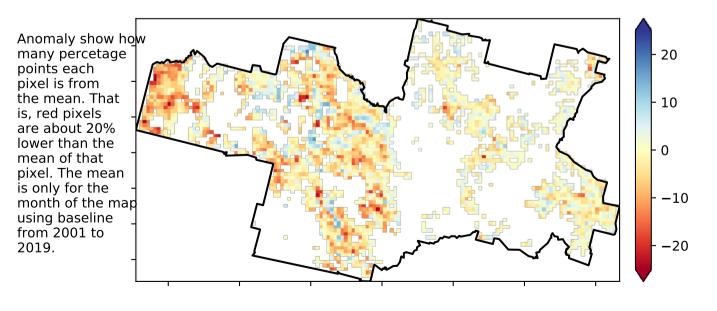
### % Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



### Total Vegetation Cover Anomaly [%]



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### Total Vegetation Cover Decile [%]

### CSIRO

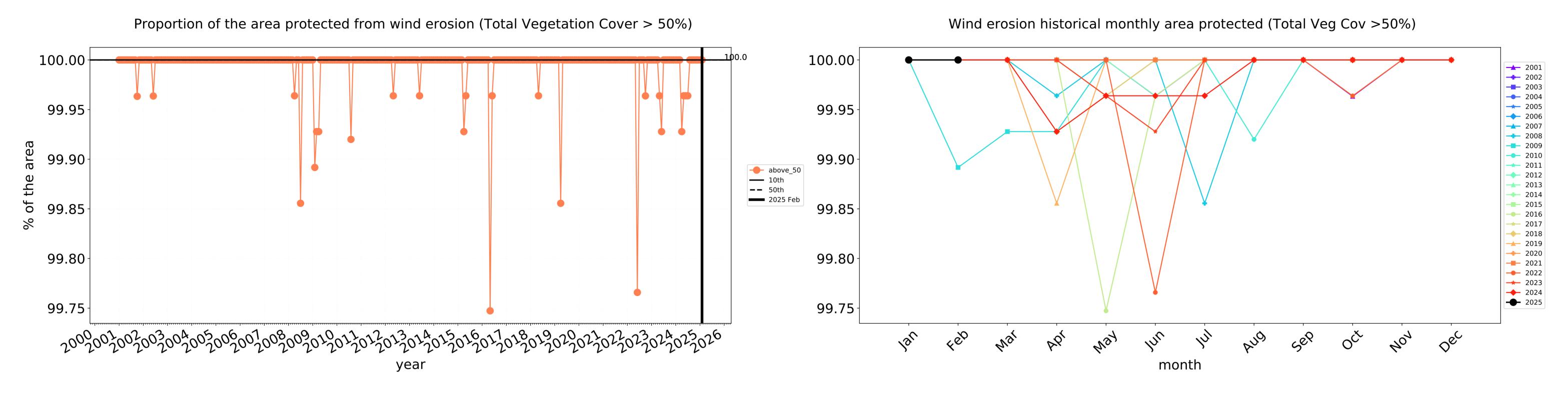


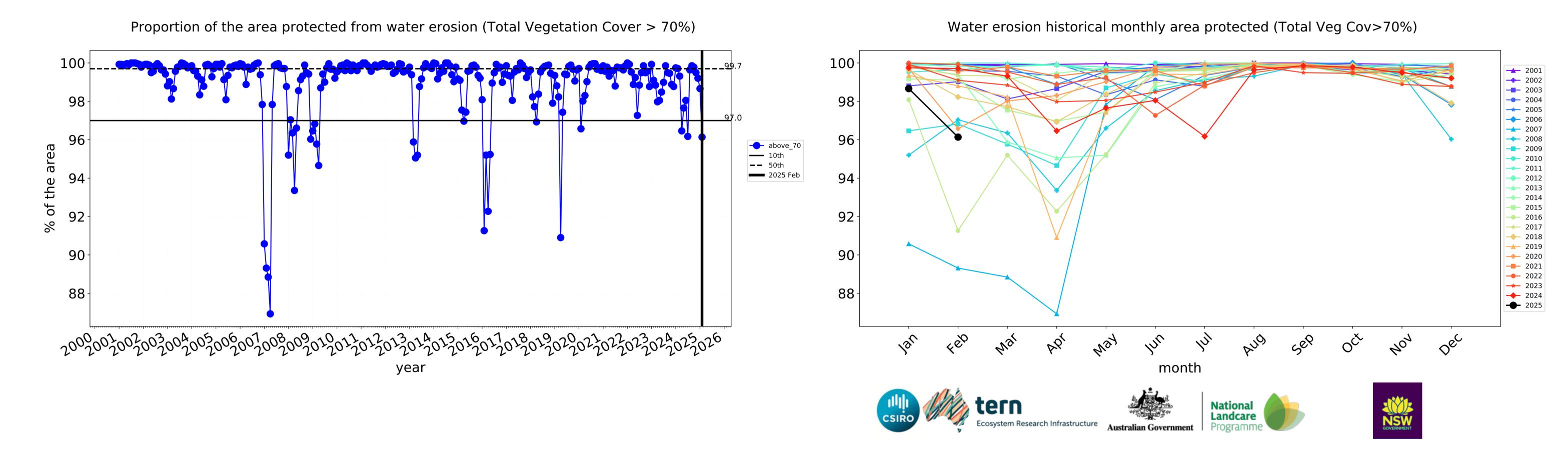


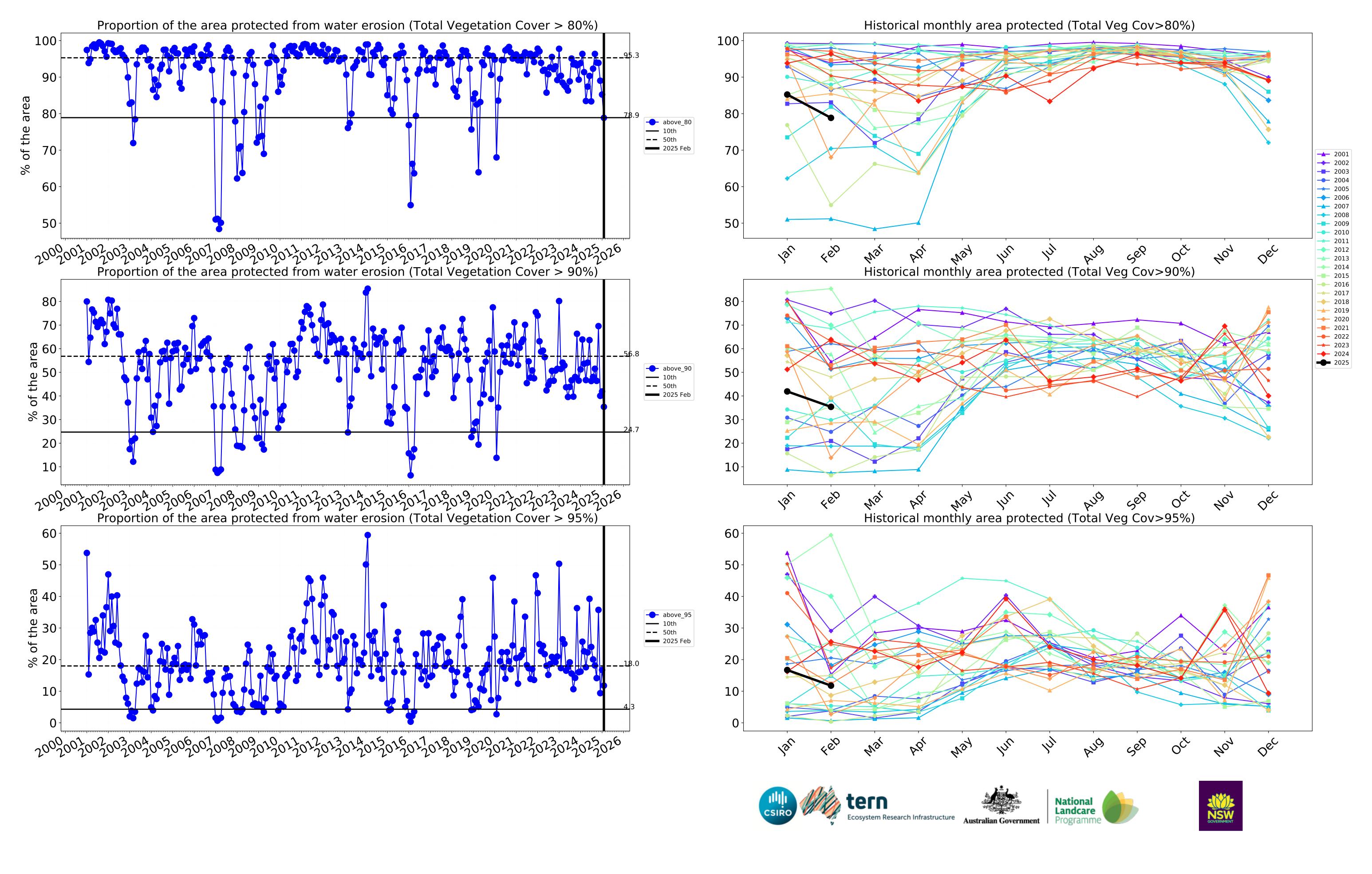




### **Grazing timeseries**

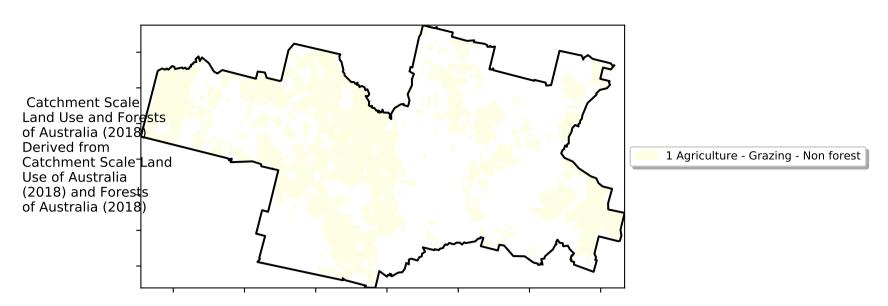






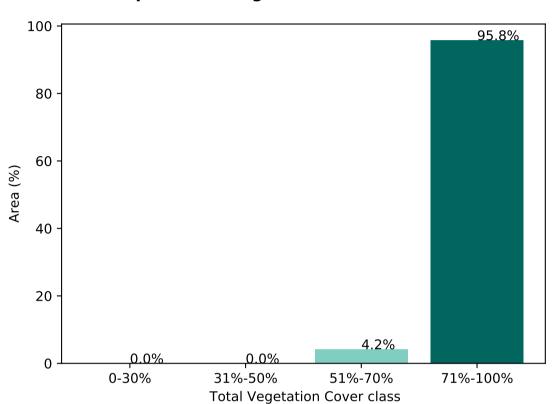
### **Grazing non forest**

### Land use and forest cover

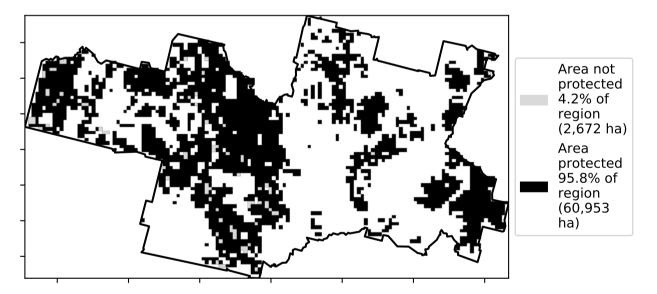


### **Total Vegetation Cover [%]**

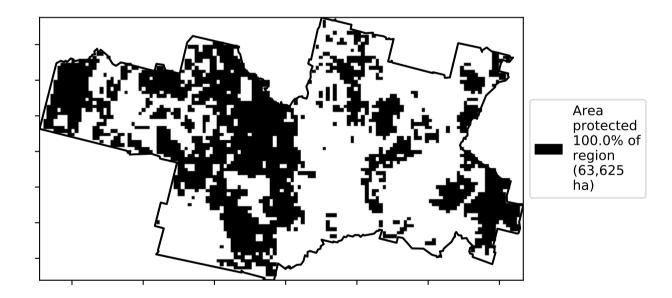
### **Proportion of vegetation cover class in area**



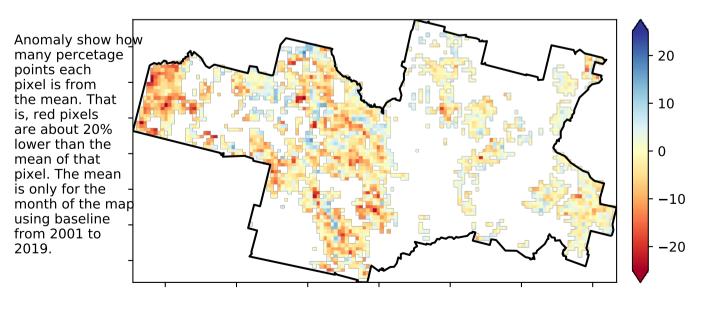
### % Area protected from water erosion (>70%)



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

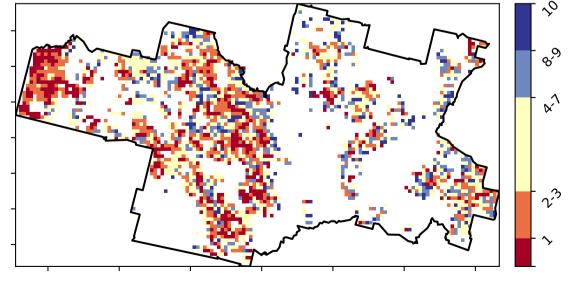


### **Total Vegetation Cover Anomaly [%]**



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**Total Vegetation Cover Decile [%]** 



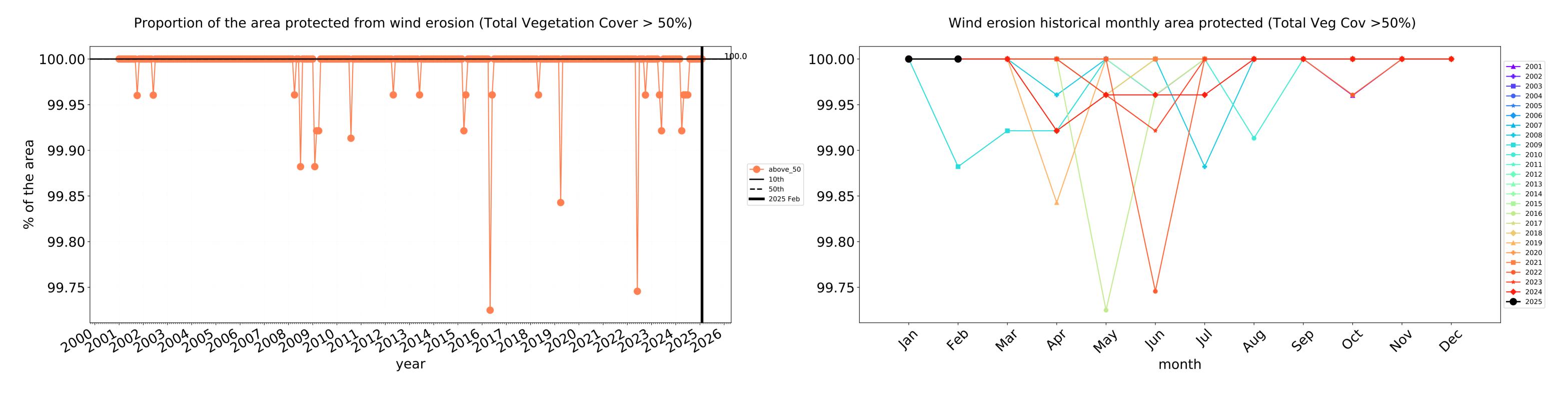


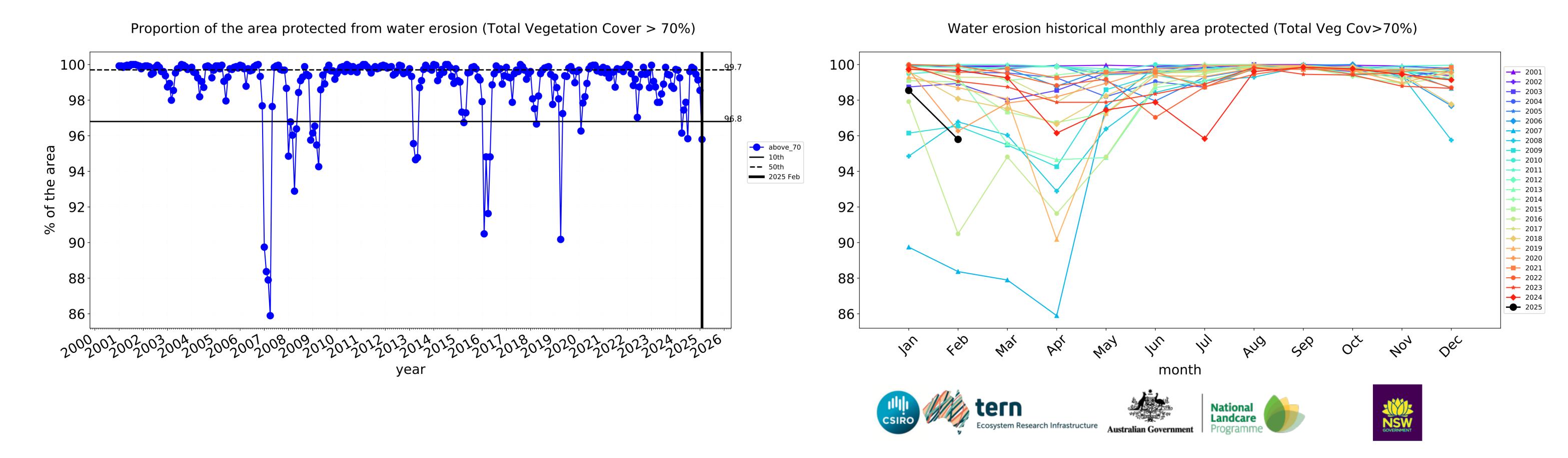


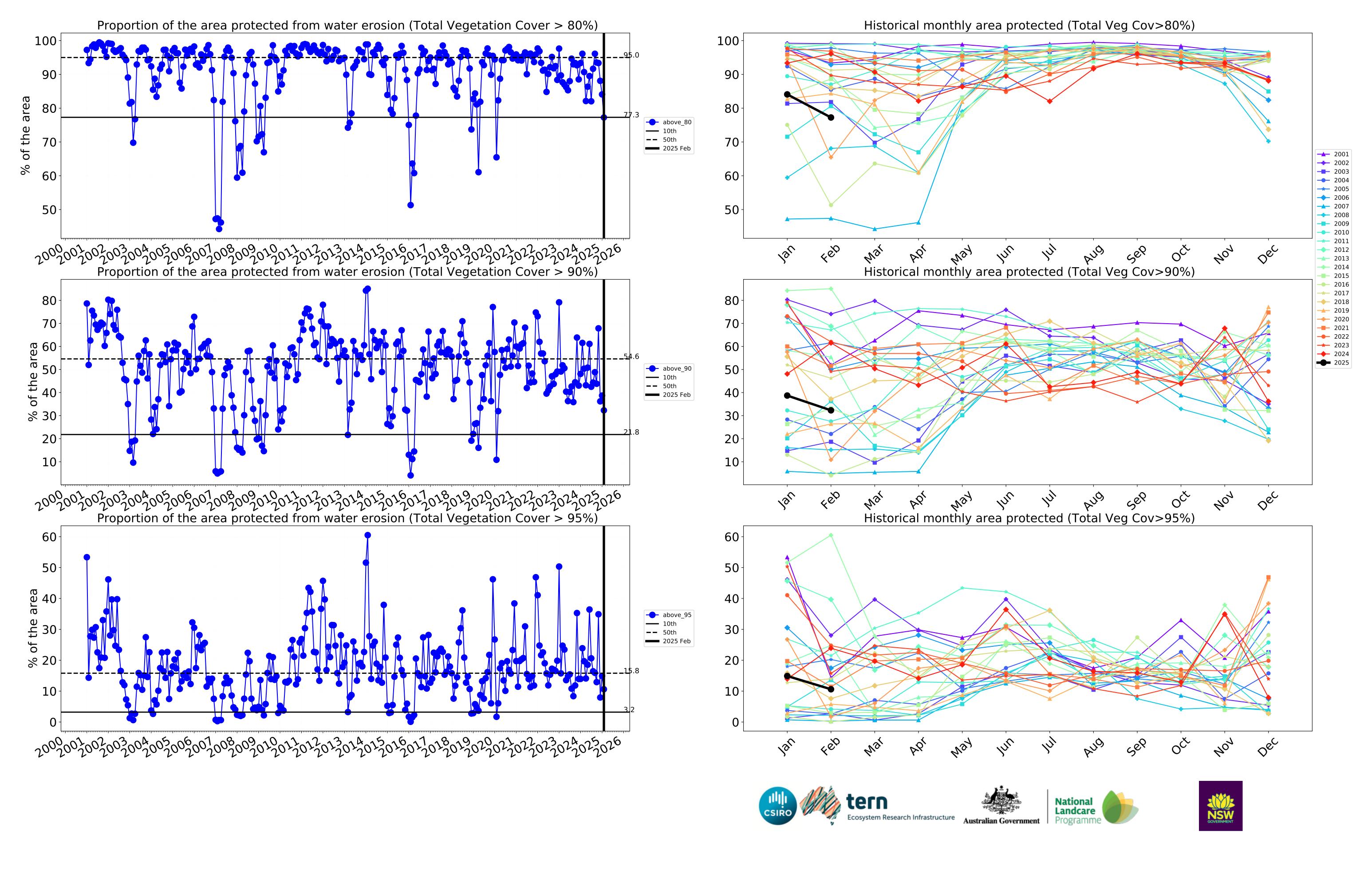




### **Grazing non forest timeseries**







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

### Land use and forest cover 1 Agriculture - Grazing - Non-woodland forest

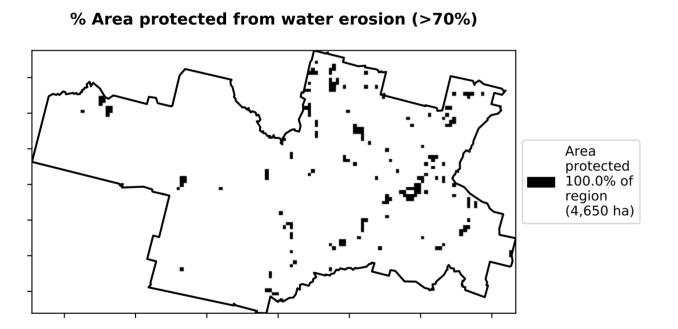
## Total Vegetation Cover [%] Typertupolo Strokeriolo Str

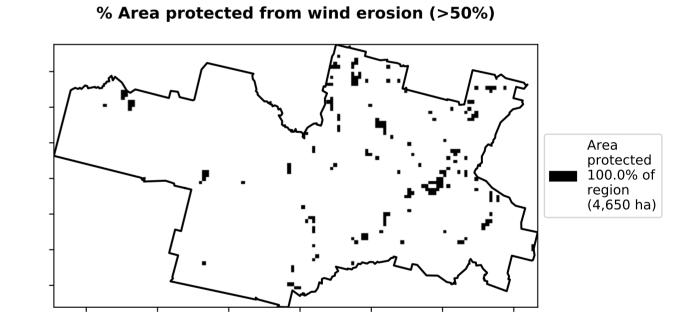
Catchment Scale Land Use and Forests of Australia (2018) Derived from

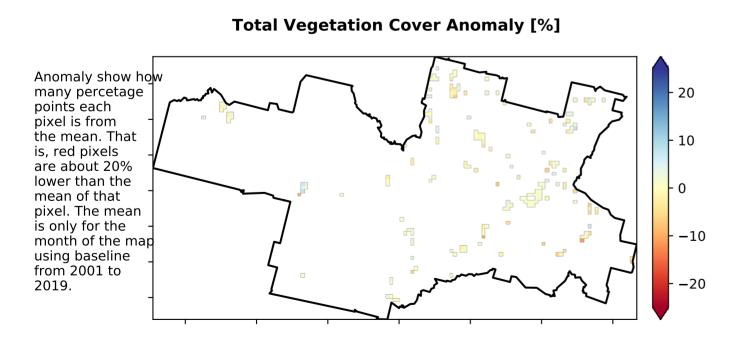
Catchment Scale Land

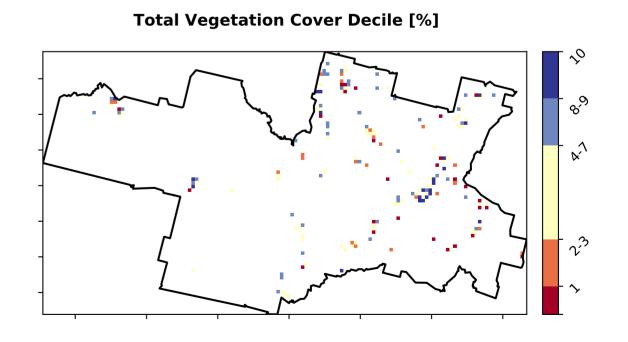
Use of Australia (2018) and Forests of Australia (2018)

# Proportion of vegetation cover class in area 100 - 100.0% 80 - 20 - 20 - 0.0% 0-30% 31%-50% Total Vegetation Cover class 100.0% 71%-100% 71%-100%







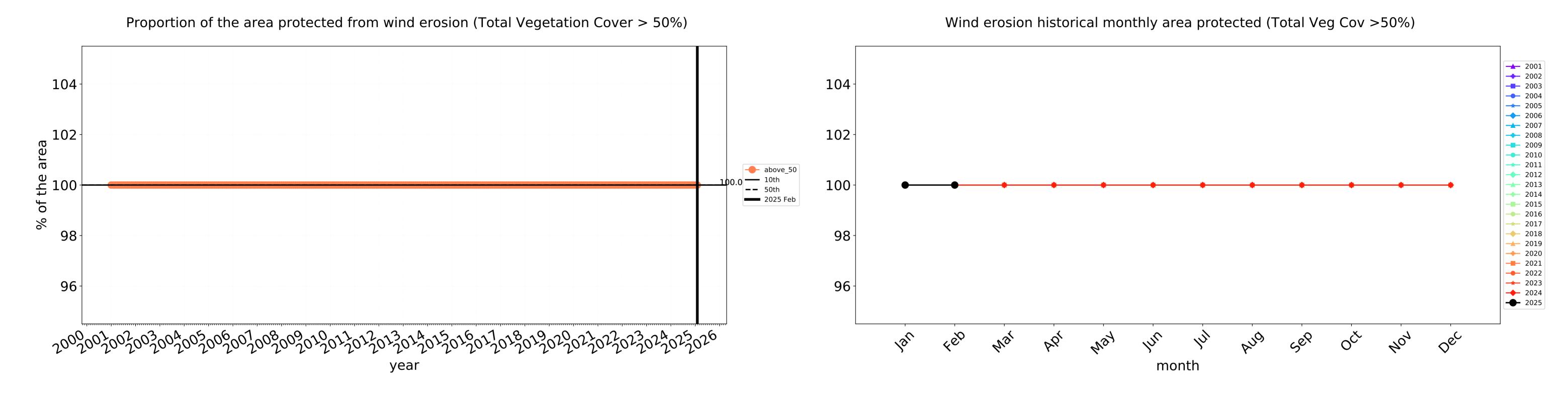


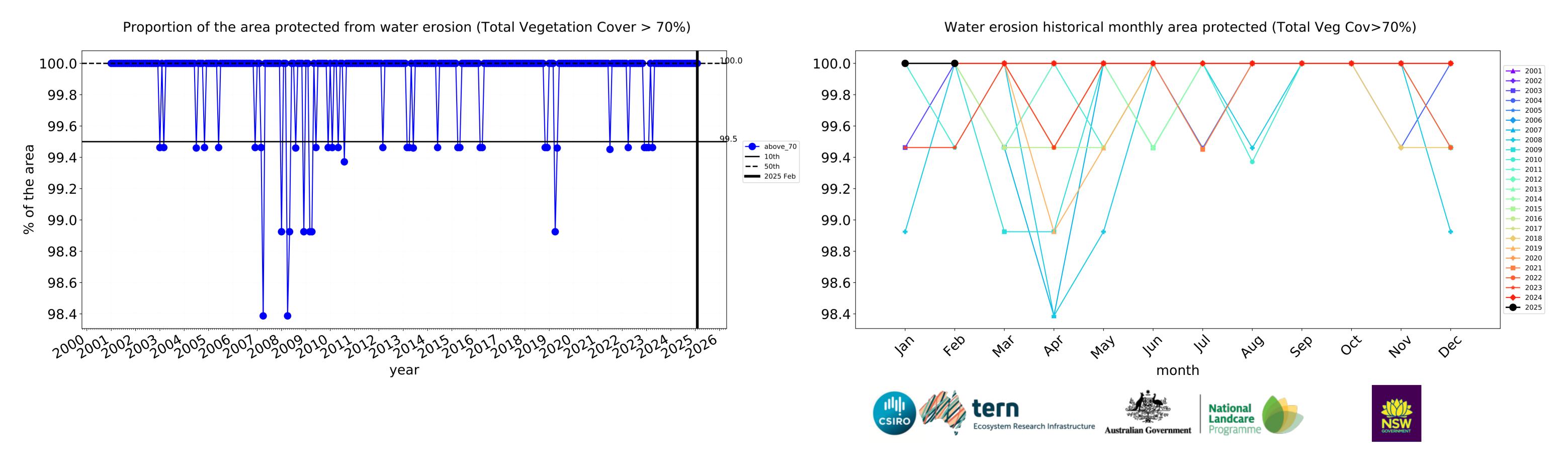


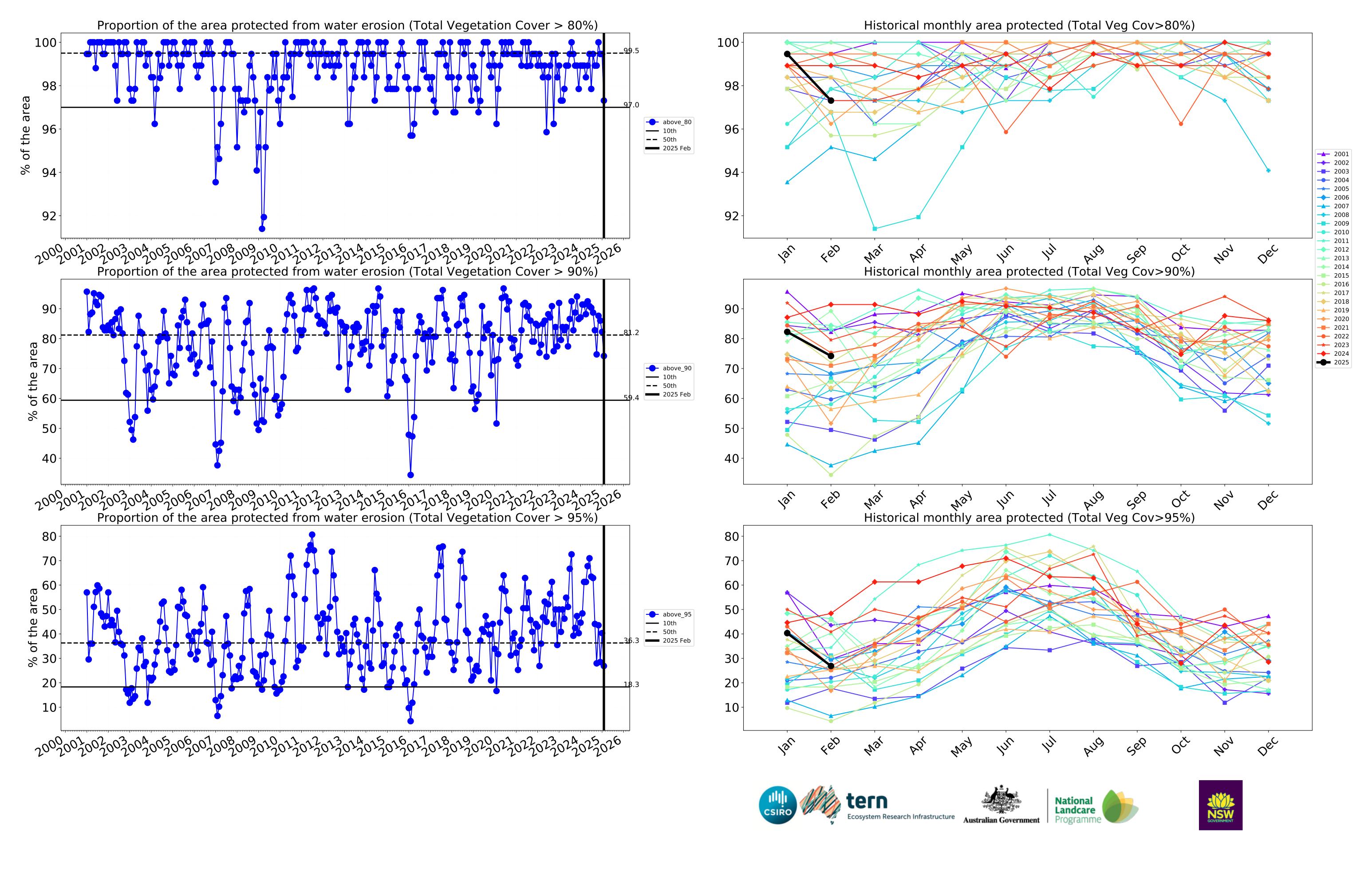






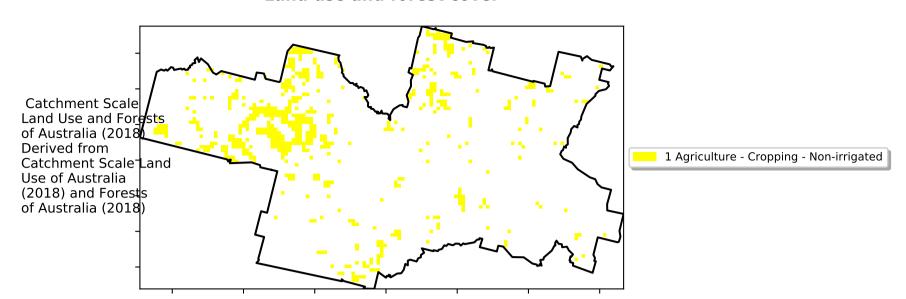






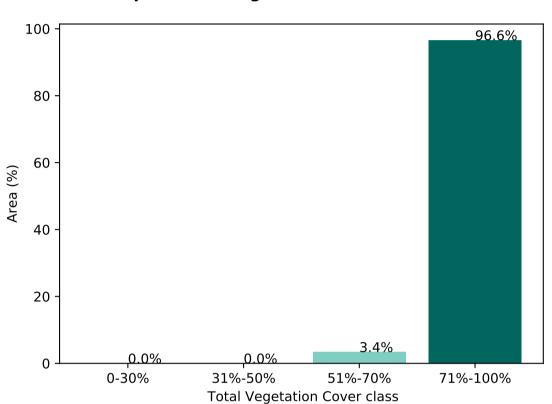
### **Cropping**

### Land use and forest cover

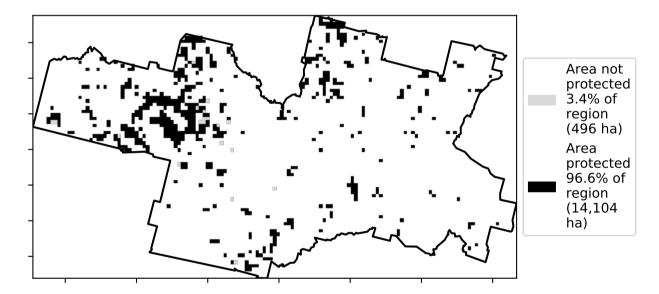


### Total Vegetation Cover [%] Total Vegetation Cover [%] Trele Indele Tr

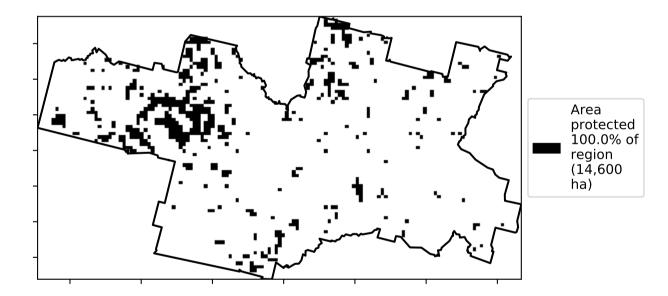
### **Proportion of vegetation cover class in area**



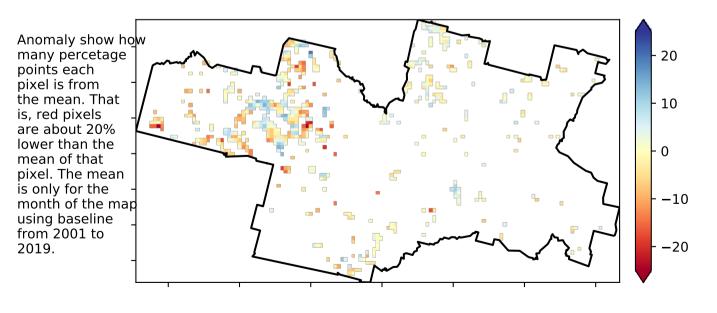
### % Area protected from water erosion (>70%)



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



### Total Vegetation Cover Anomaly [%]



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### Total Vegetation Cover Decile [%]

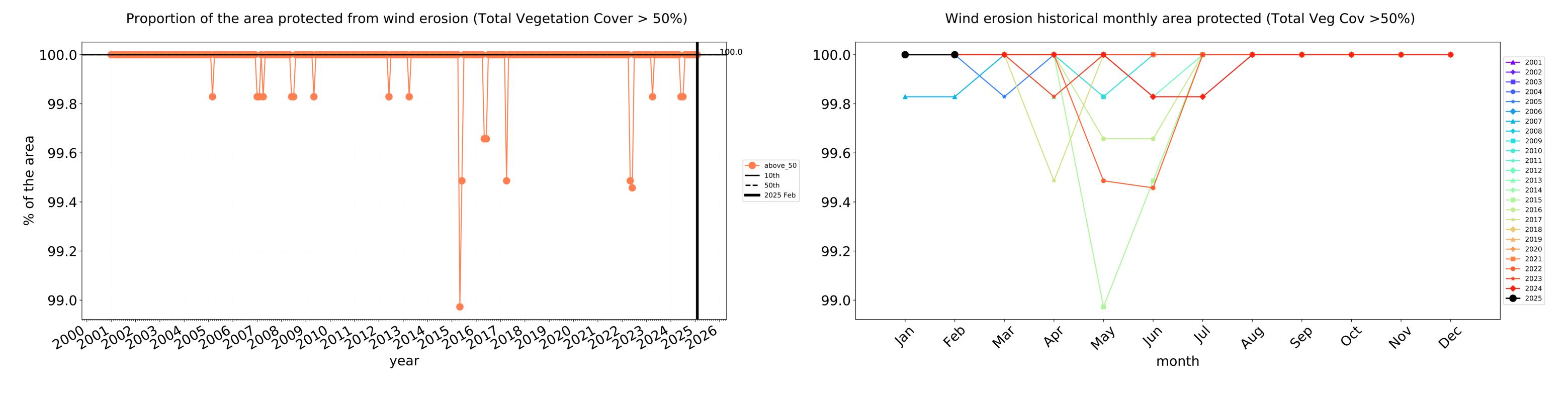


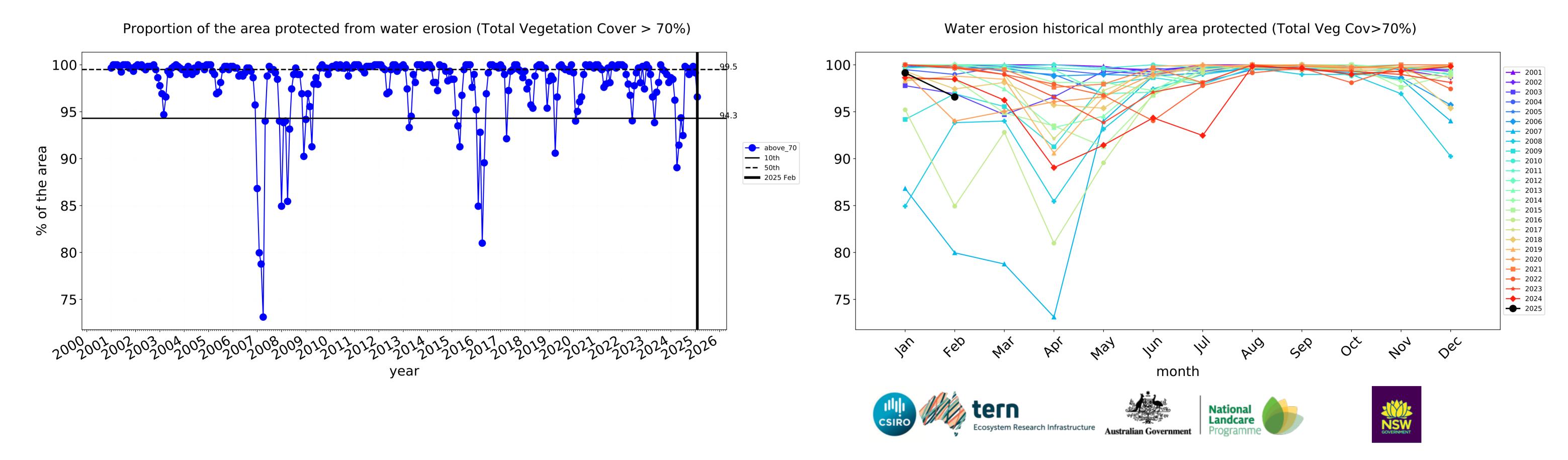


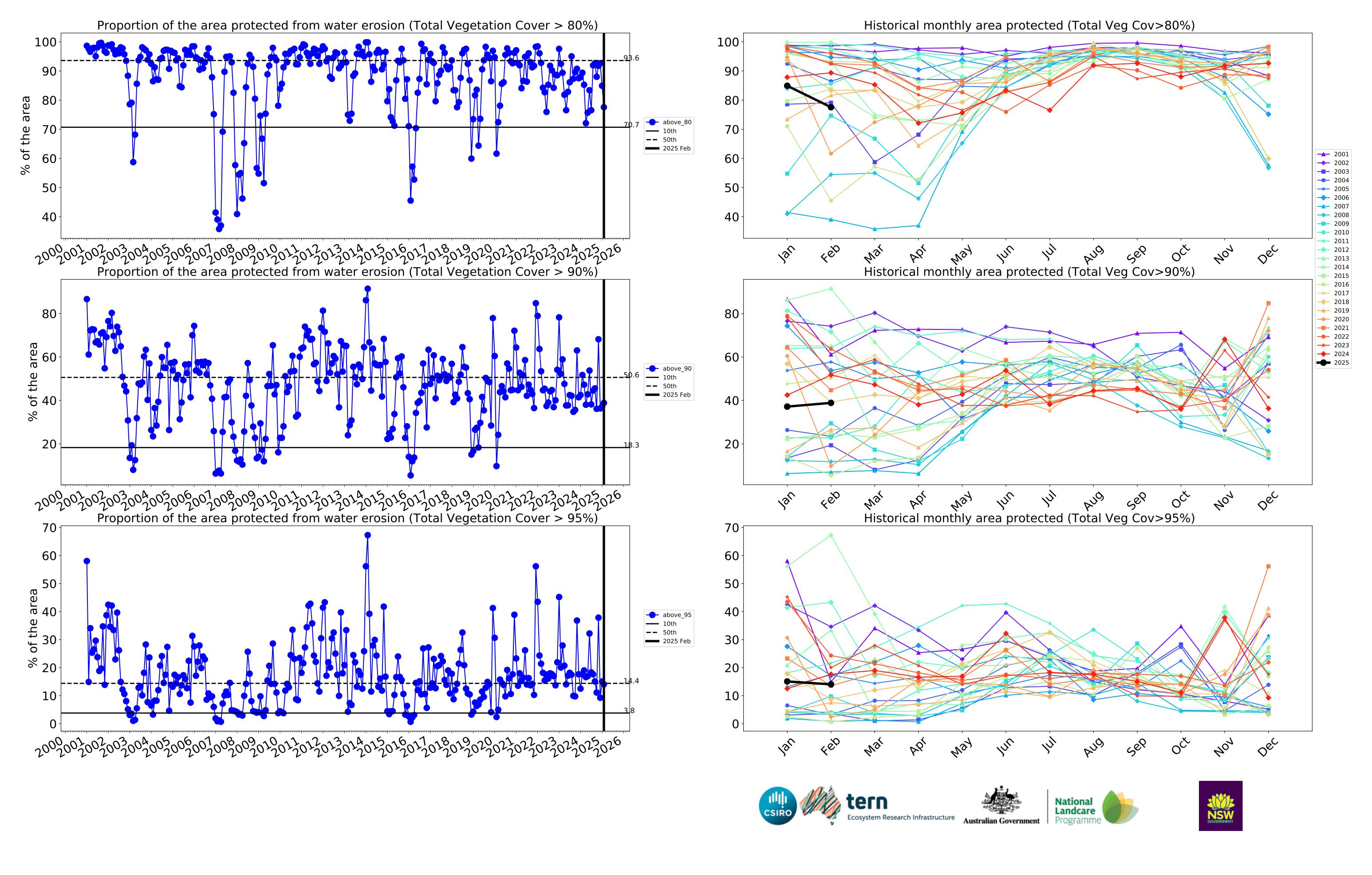




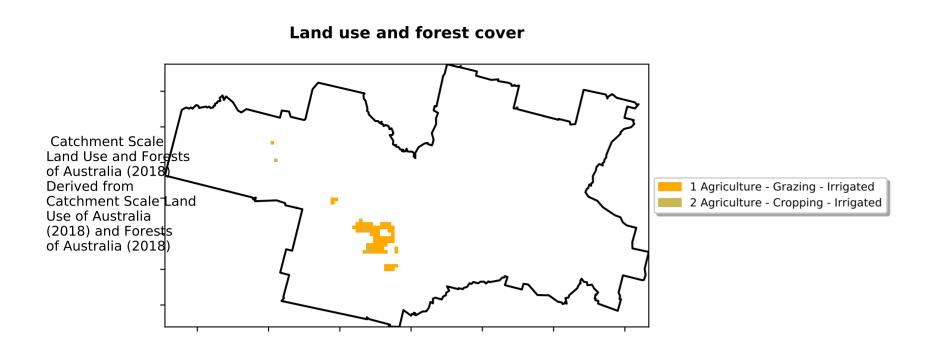
### **Cropping timeseries**

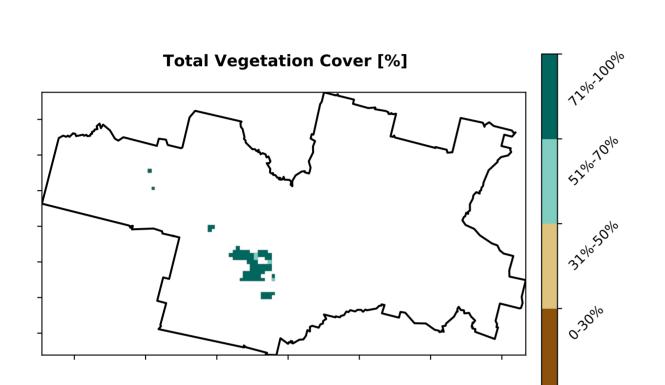






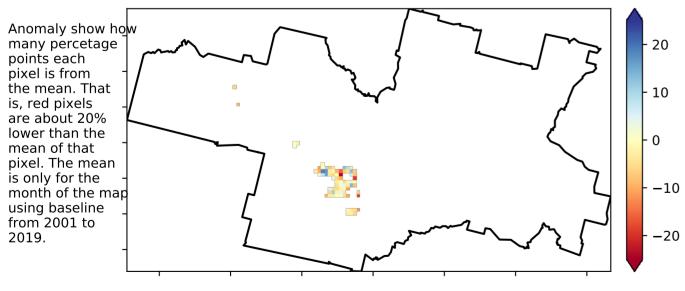
### Irrigation





### Area not protected 5.1% of region (99 ha) Area protected 94.9% of region (1,851 ha)

### Total Vegetation Cover Anomaly [%] maly show how how py percetage has each el is from mean. That ed pixels about 20% er than the

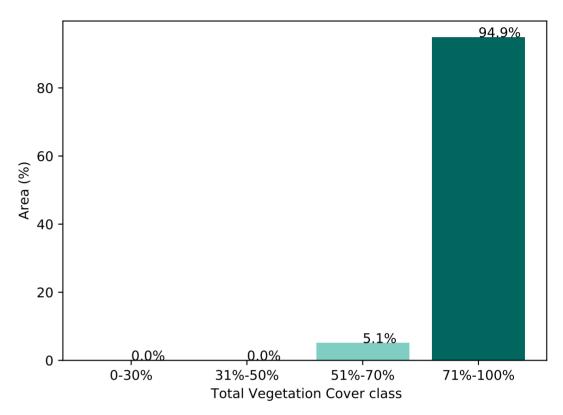


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

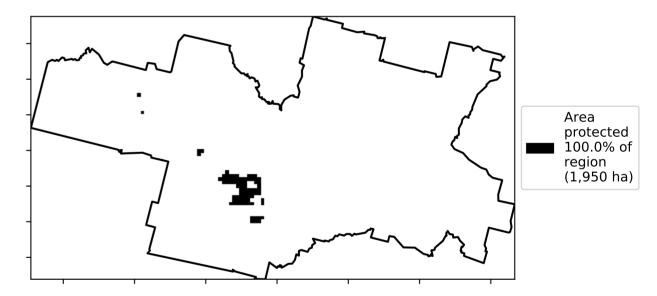
### 93.6% 80 - (%) 80 - (2) (20 - (20 - (20 - (20 - (2) (20 - (20 - (20 - (2) (20 - (2) (20 - (20 - (20 - (2) (20 - (20 - (2) (20 - (2) (20 - (2) (20 - (2) (2) (20 - (2) (20 - (2) (20 - (2) (20 - (2) (2) (2

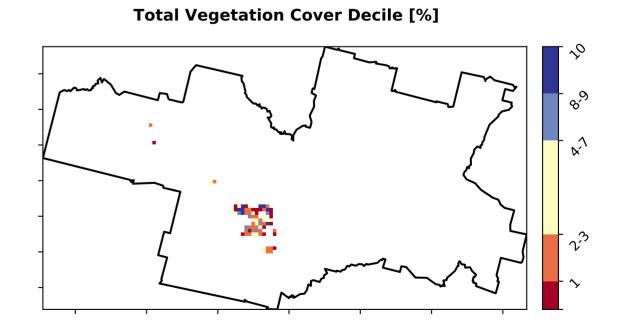
Proportion of each land class in area

### Proportion of vegetation cover class in area



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





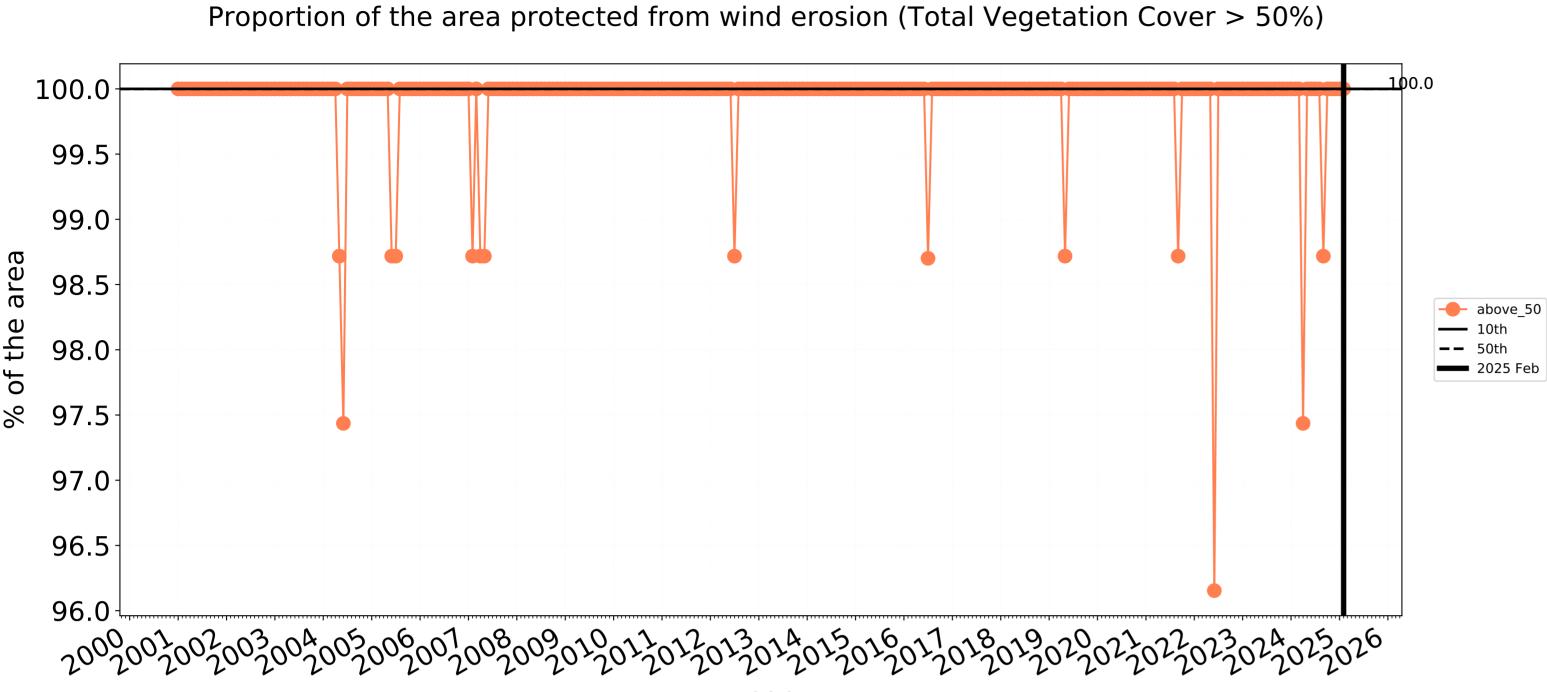


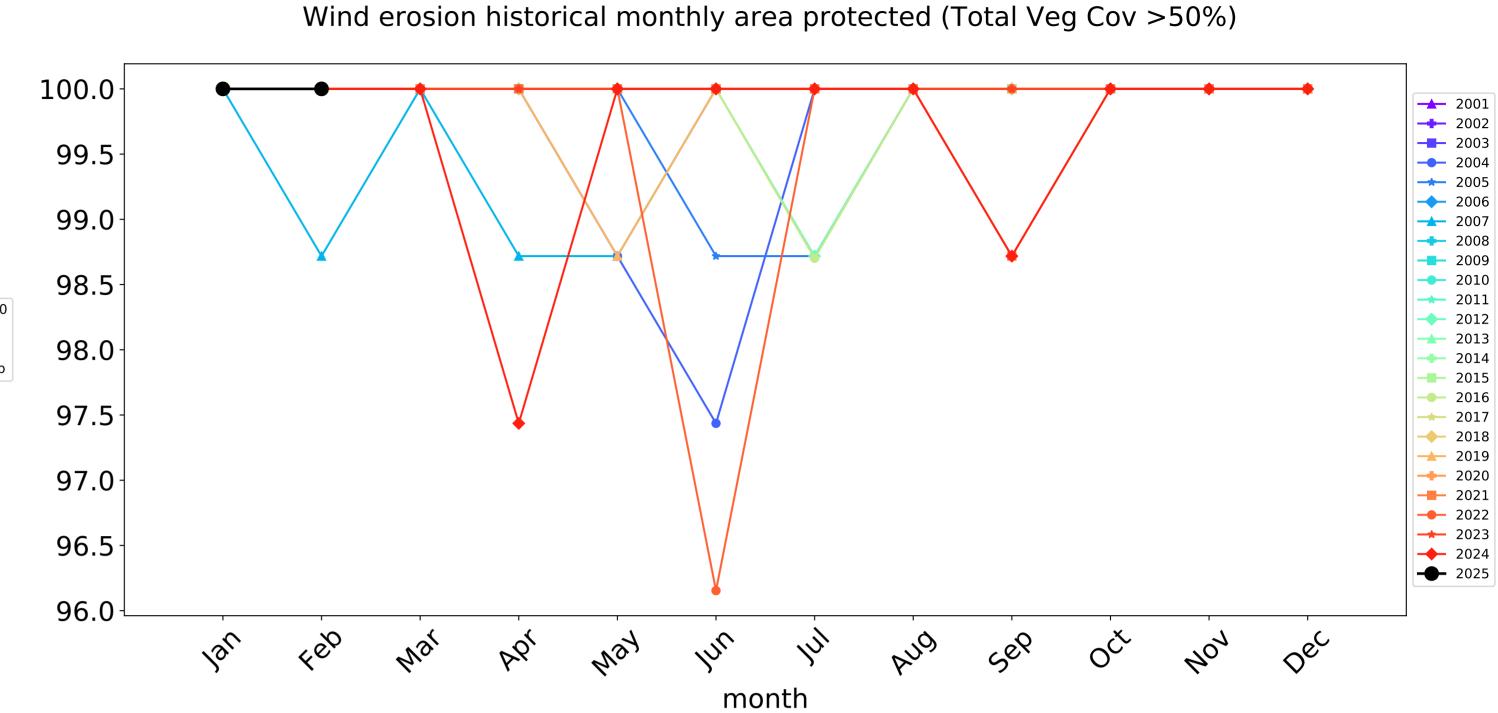


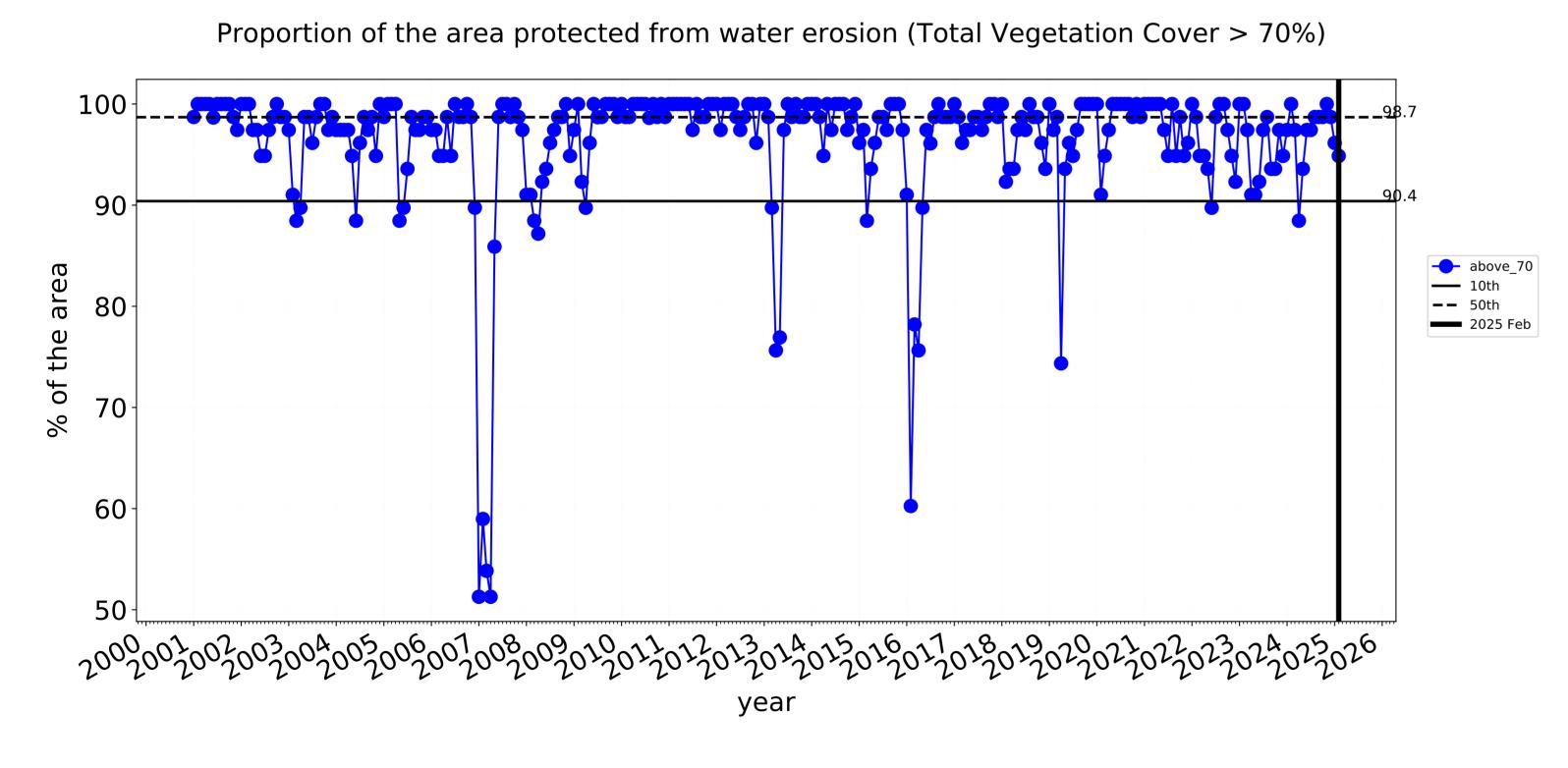


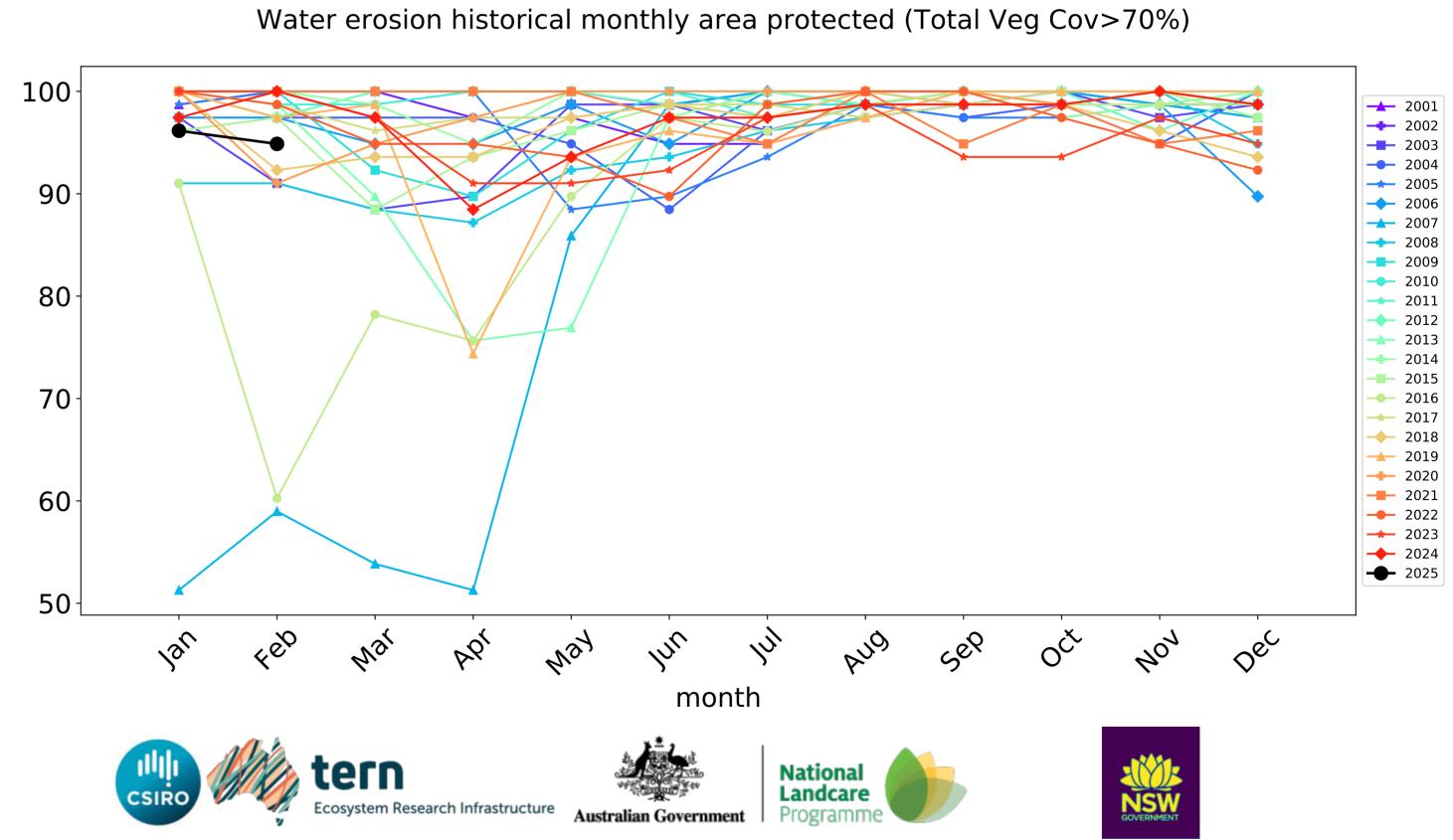


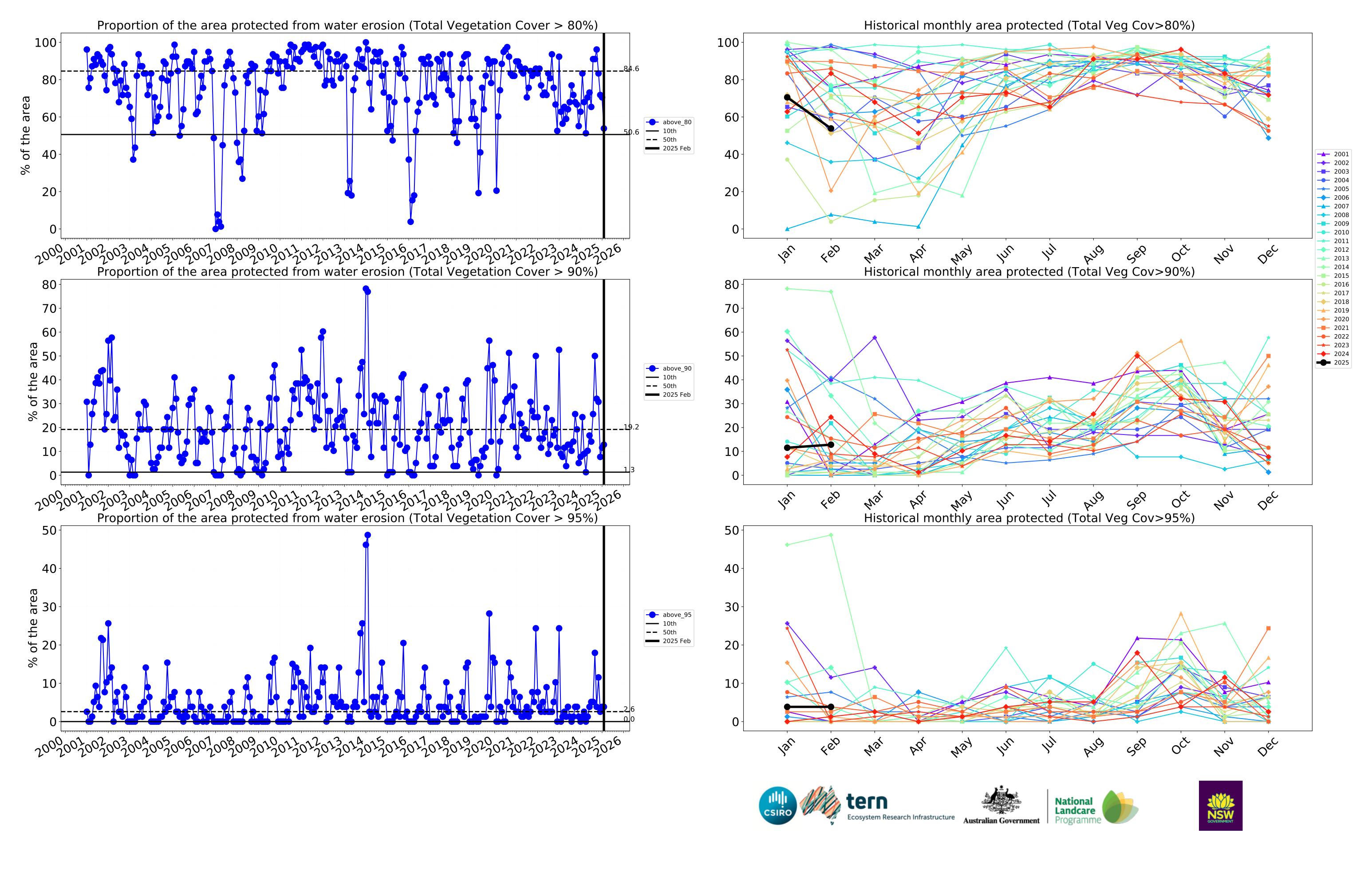
### Irrigation timeseries





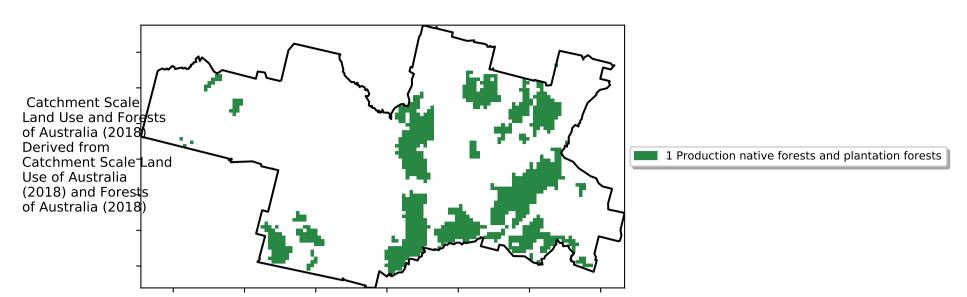






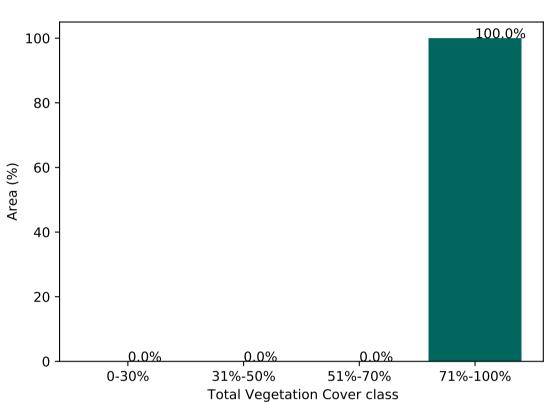
### **Production native forests and plantation forests**

### Land use and forest cover

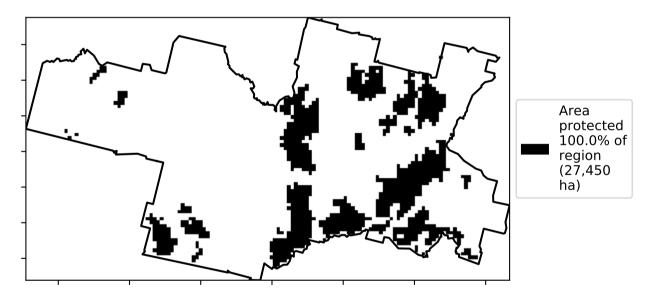


### Total Vegetation Cover [%] Tolographic Trolographic Trolographic

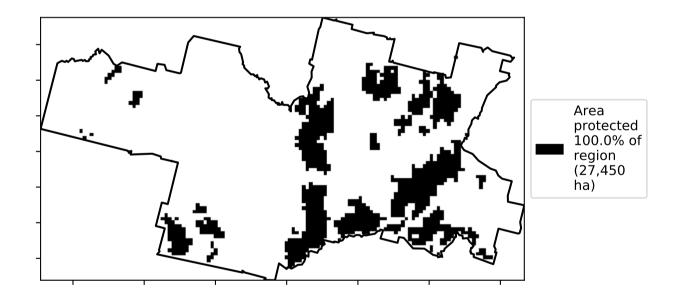
### Proportion of vegetation cover class in area



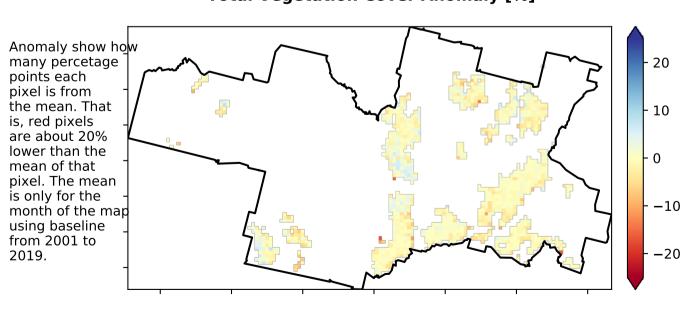
### % Area protected from water erosion (>70%)



### % 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 [%]

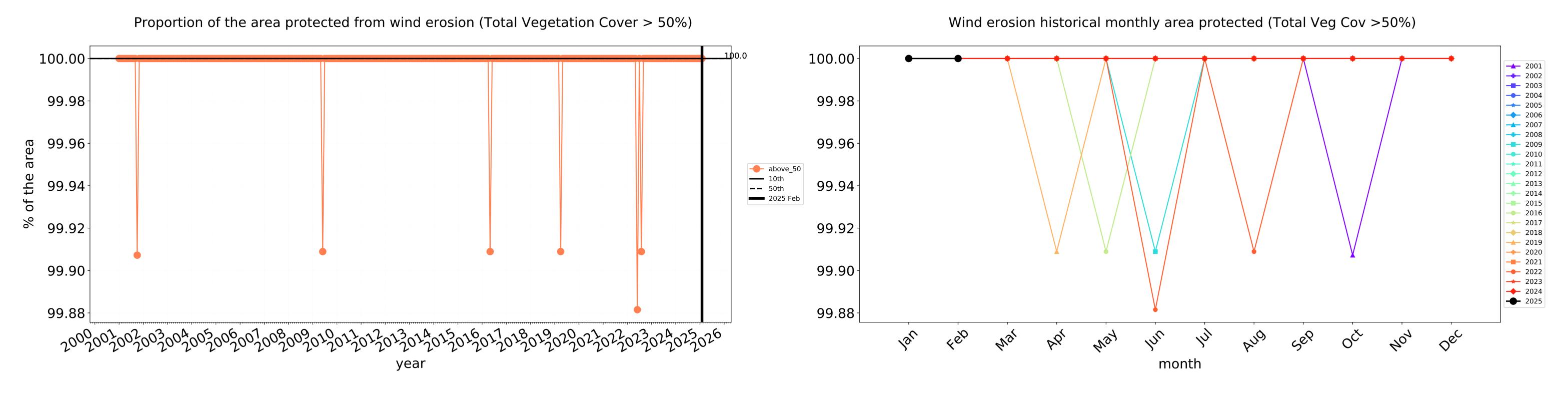


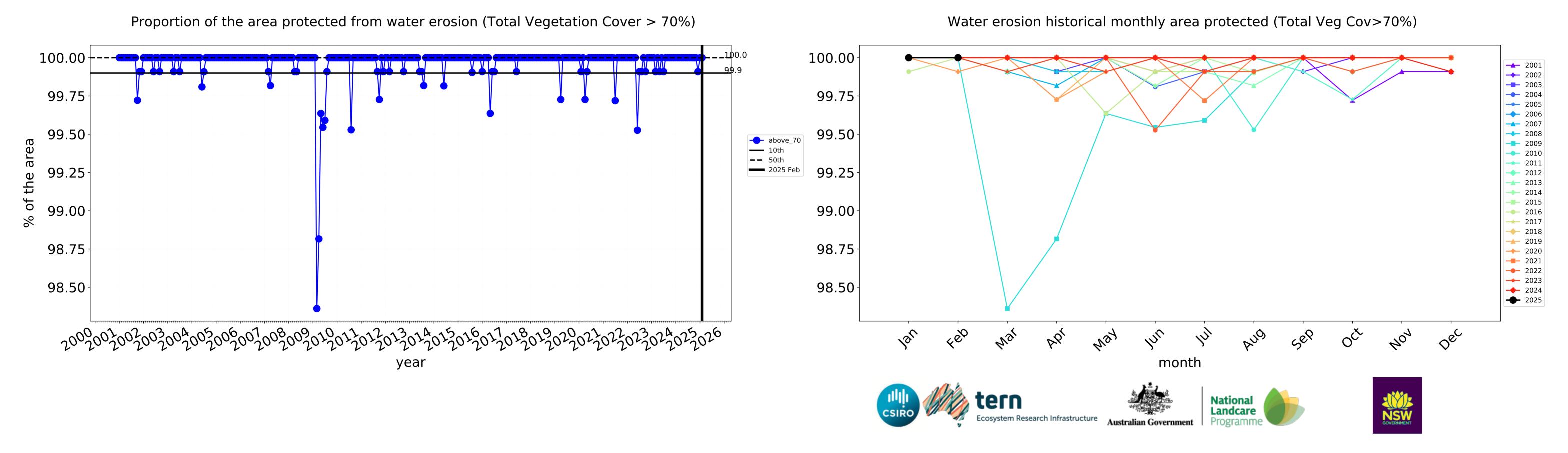


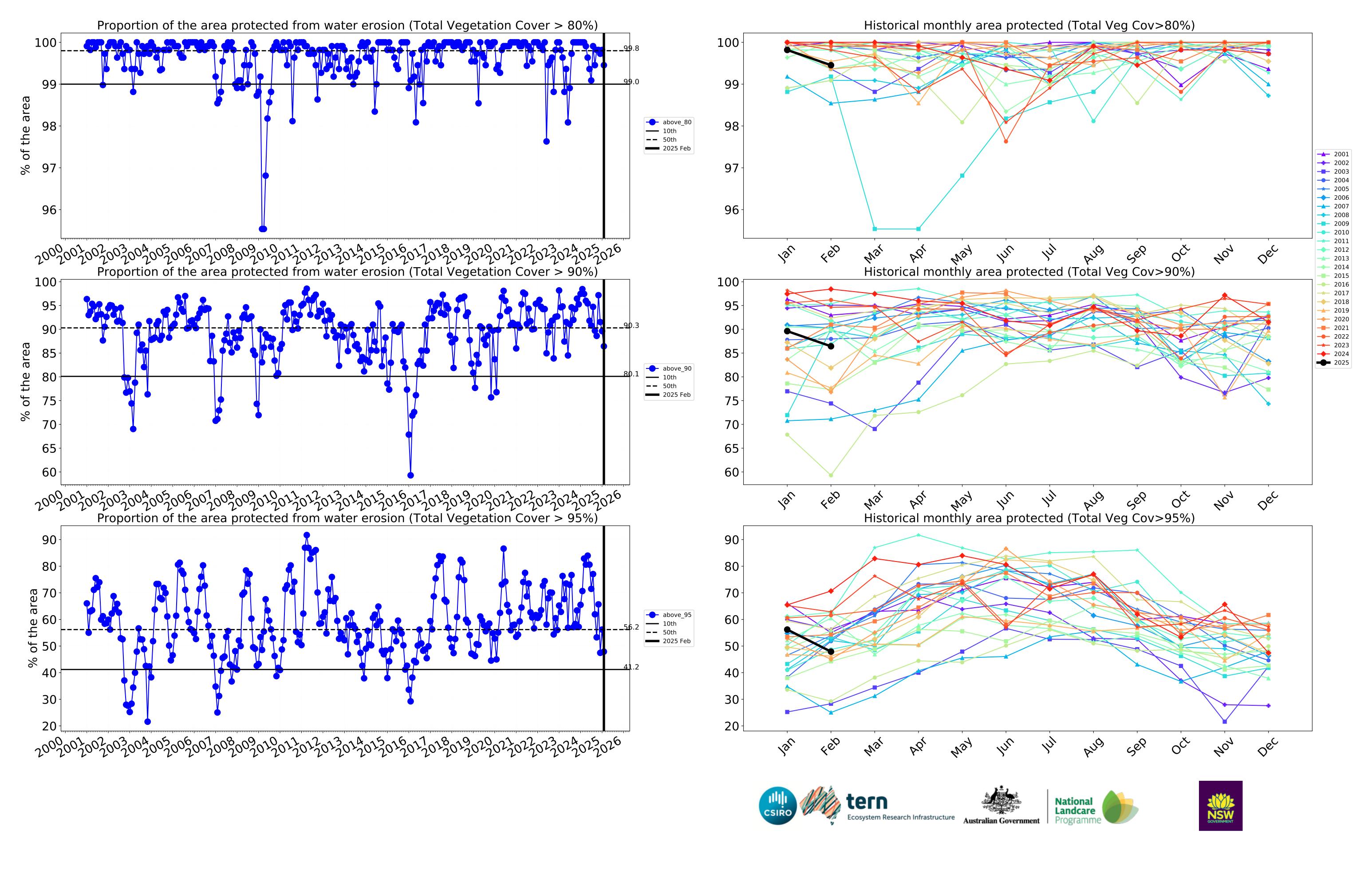




### **Production native forests and plantation forests timeseries**







### Hepburn\_(S) (147,025 ha and no data 142 ha) Percentage area and hectares protected with TVC threshold 30,50,70,80,90 and 95%

| Land use and<br>forest cover<br>Class                          | area(ha) | above_30          | above_50          | above_70         | above_80         | above_90        | above_95        |
|--|----------|-------------------|-------------------|------------------|------------------|-----------------|-----------------|
| Entire region  | 147,025  | 100.0%<br>147,025 | 100.0%<br>147,025 | 97.6%<br>143,550 | 85.6%<br>125,850 | 49.8%<br>73,175 | 19.8%<br>29,175 |
| Conservation and natural environments                          | 10,225   | 100.0%<br>10,225  | 100.0%<br>10,225  | 100.0%<br>10,225 | 98.3%<br>10,050  | 77.0%<br>7,875  | 18.8%<br>1,925  |
| Conservation and<br>natural<br>environments<br>Woodland forest | 1,425    | 100.0%<br>1,425   | 100.0%<br>1,425   | 100.0%<br>1,425  | 98.2%<br>1,400   | 56.1%<br>800    | 12.3%<br>175    |
| Conservation and natural environments Forest (non woodland)    | 8,025    | 100.0%<br>8,025   | 100.0%<br>8,025   | 100.0%<br>8,025  | 99.7%<br>8,000   | 84.4%<br>6,775  | 20.9%<br>1,675  |
| Agriculture  | 85,875   | 100.0%<br>85,875  | 100.0%<br>85,875  | 96.2%<br>82,600  | 78.1%<br>67,050  | 35.5%<br>30,500 | 12.0%<br>10,275 |
| Grazing  | 69,250   | 100.0%<br>69,250  | 100.0%<br>69,250  | 96.1%<br>66,575  | 78.8%<br>54,600  | 35.4%<br>24,500 | 11.8%<br>8,150  |
| Grazing non<br>forest  | 63,625   | 100.0%<br>63,625  | 100.0%<br>63,625  | 95.8%<br>60,950  | 77.2%<br>49,150  | 32.3%<br>20,550 | 10.6%<br>6,750  |
| Grazing - Forest<br>(non woodland)                             | 4,650    | 100.0%<br>4,650   | 100.0%<br>4,650   | 100.0%<br>4,650  | 97.3%<br>4,525   | 74.2%<br>3,450  | 26.9%<br>1,250  |
| Cropping   | 14,600   | 100.0%<br>14,600  | 100.0%<br>14,600  | 96.6%<br>14,100  | 77.6%<br>11,325  | 38.9%<br>5,675  | 14.0%<br>2,050  |
| Irrigation   | 1,950    | 100.0%<br>1,950   | 100.0%<br>1,950   | 94.9%<br>1,850   | 53.8%<br>1,050   | 12.8%<br>250    | 3.8%<br>75      |
| Production native forests and plantation forests               | 27,450   | 100.0%<br>27,450  | 100.0%<br>27,450  | 100.0%<br>27,450 | 99.5%<br>27,300  | 86.4%<br>23,725 | 47.9%<br>13,150 |







