# **Total vegetation cover soil protection Region:NRM Riverina 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: August 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



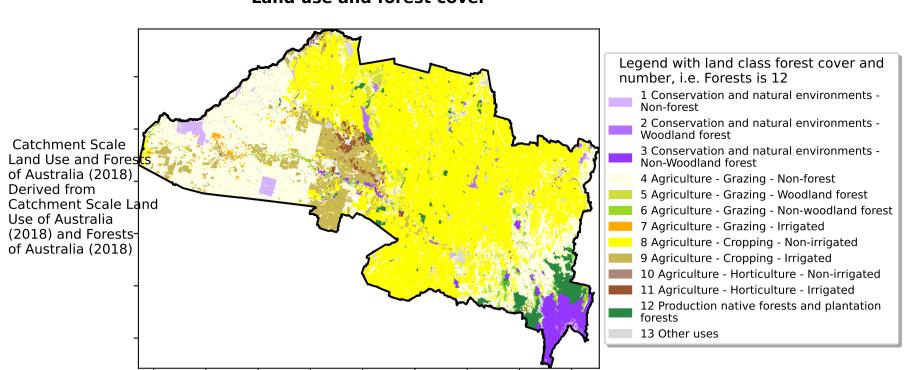




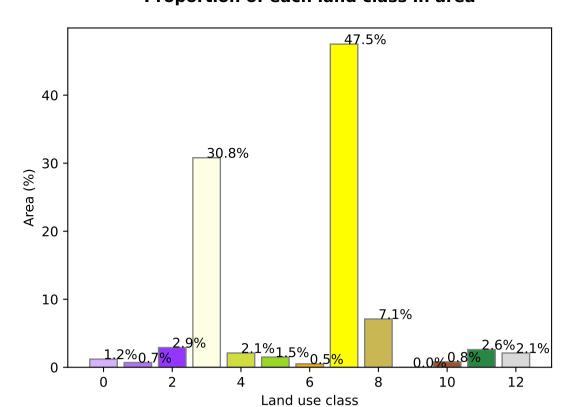


# **Vegetation Cover Aug 2025**

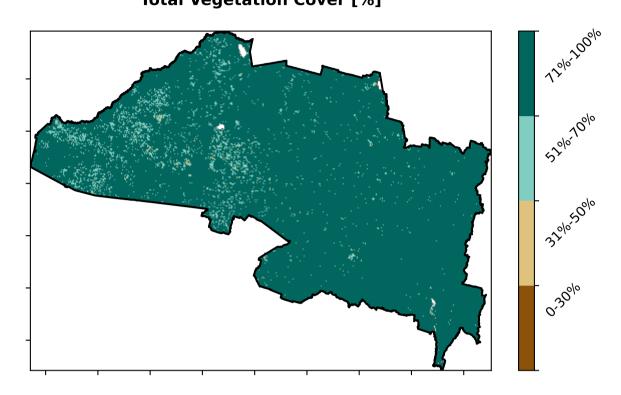
### Land use and forest cover



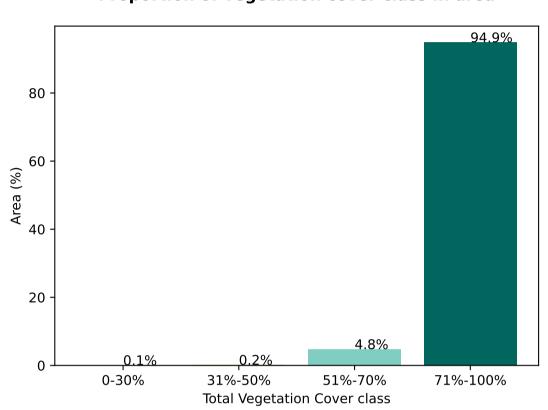
### Proportion of each land class in area



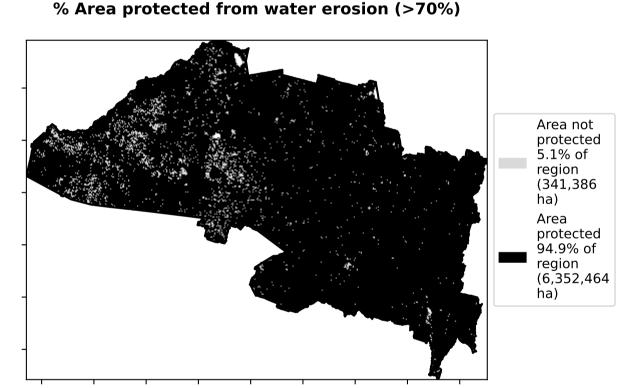
# **Total Vegetation Cover [%]**



Proportion of vegetation cover class in area



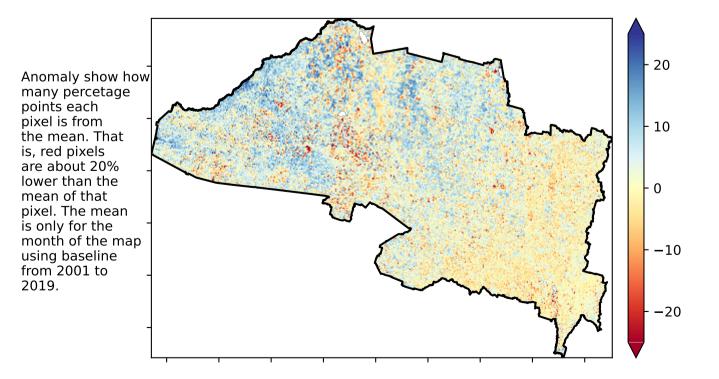
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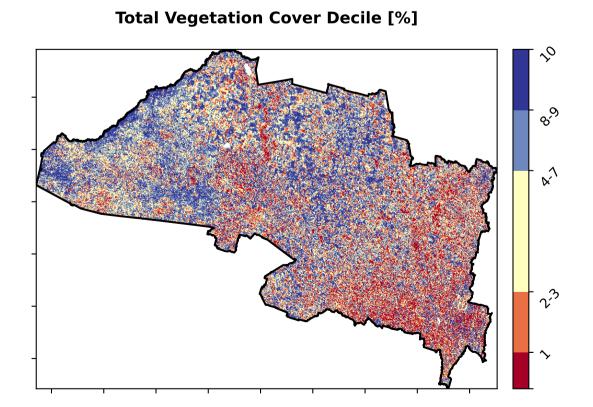
% Area protected from wind erosion (>50%)



# Total Vegetation Cover Anomaly [%]



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

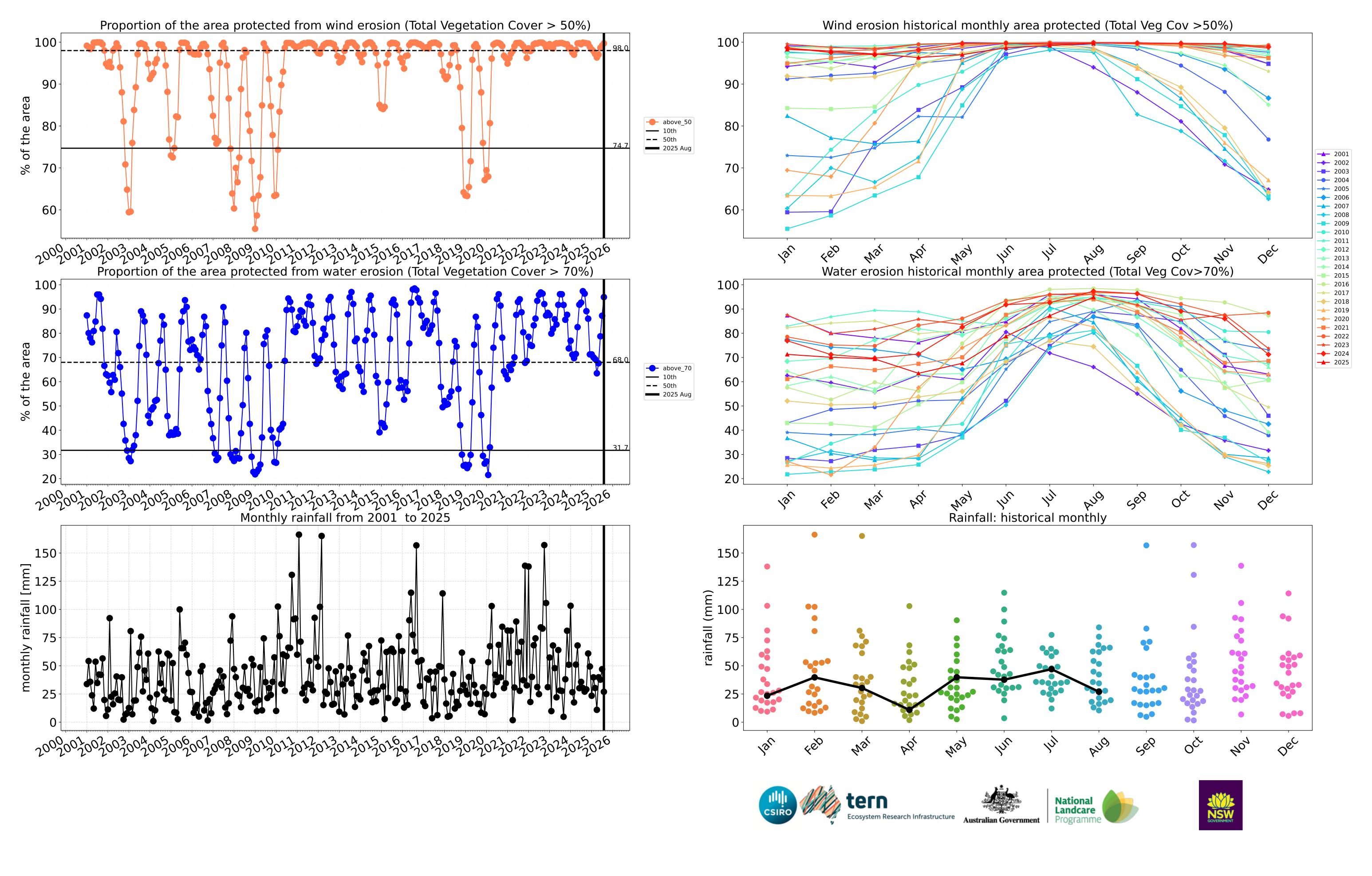




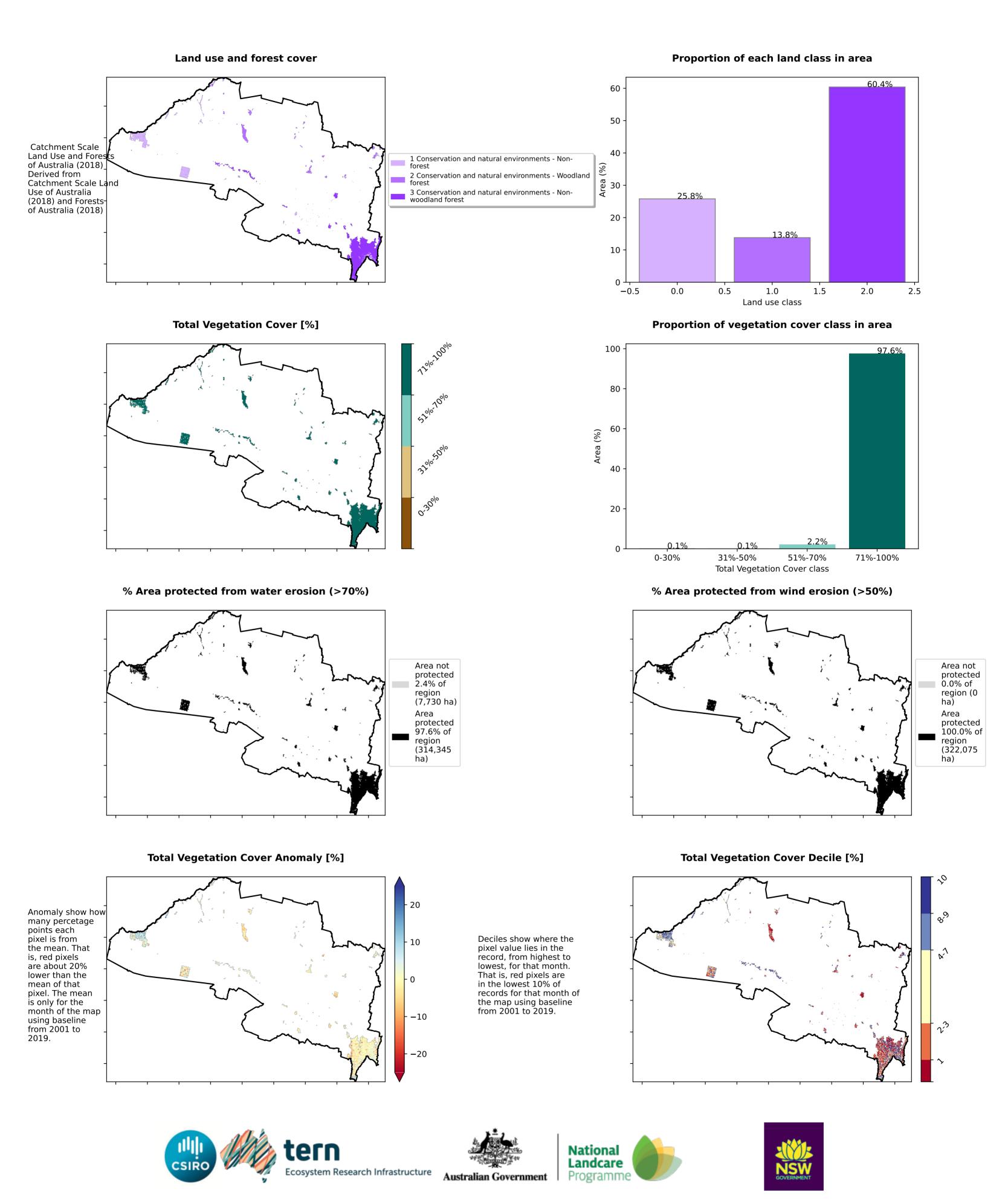




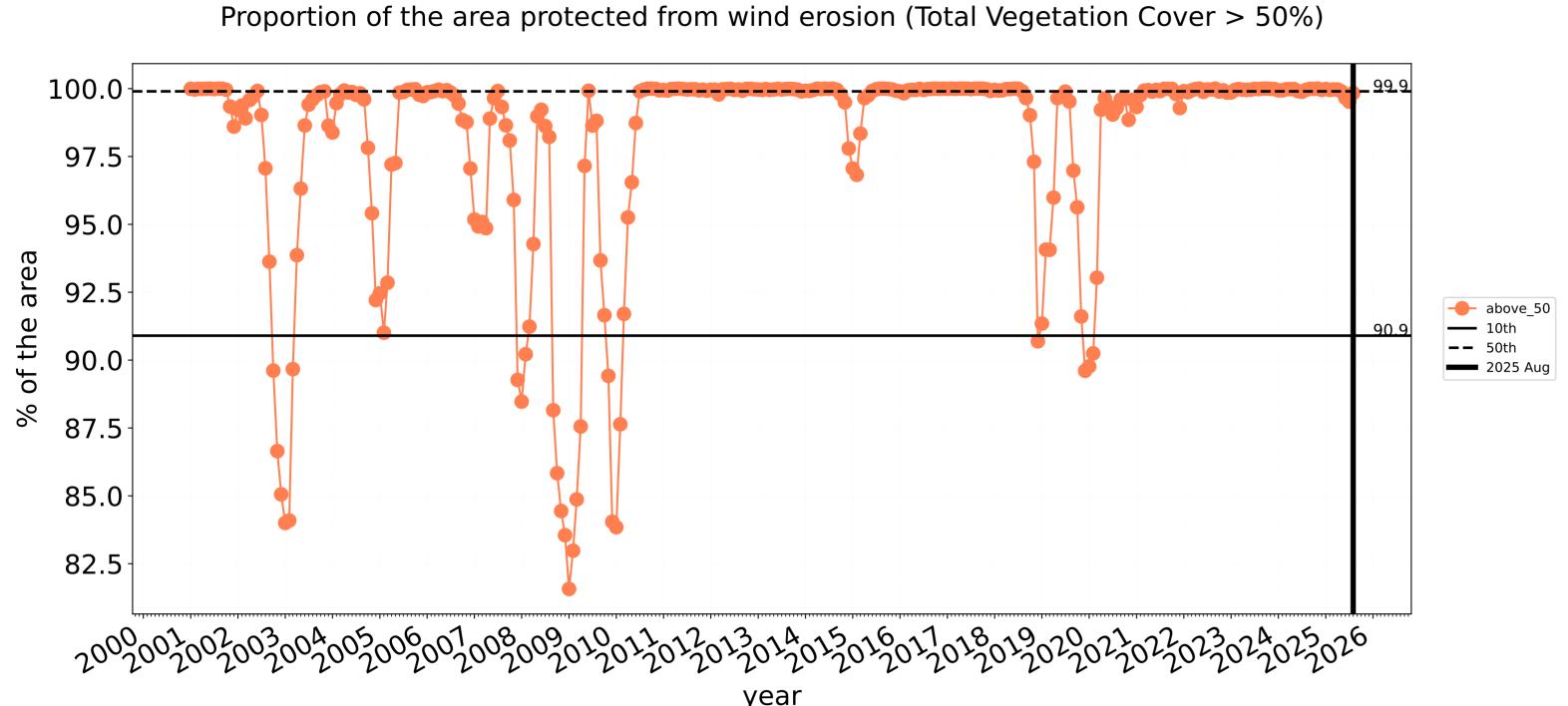


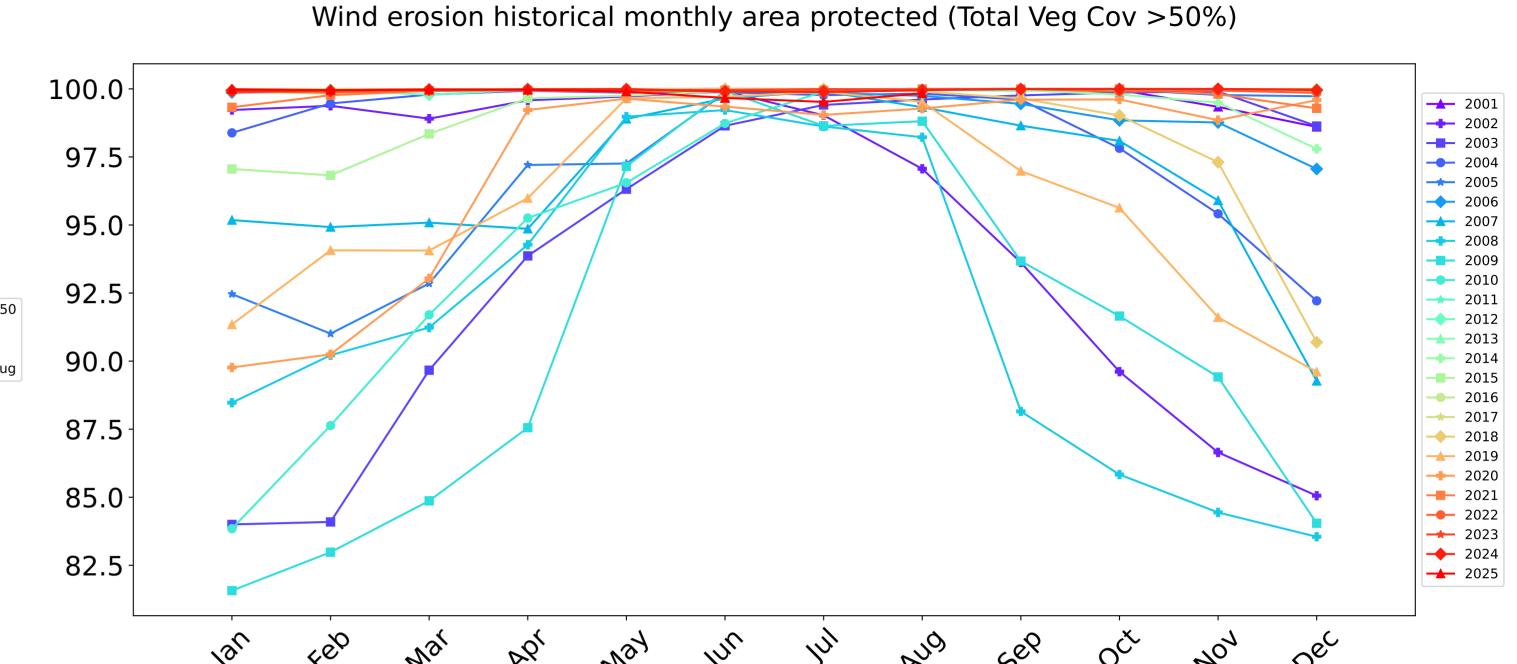


# **Conservation and natural environments**

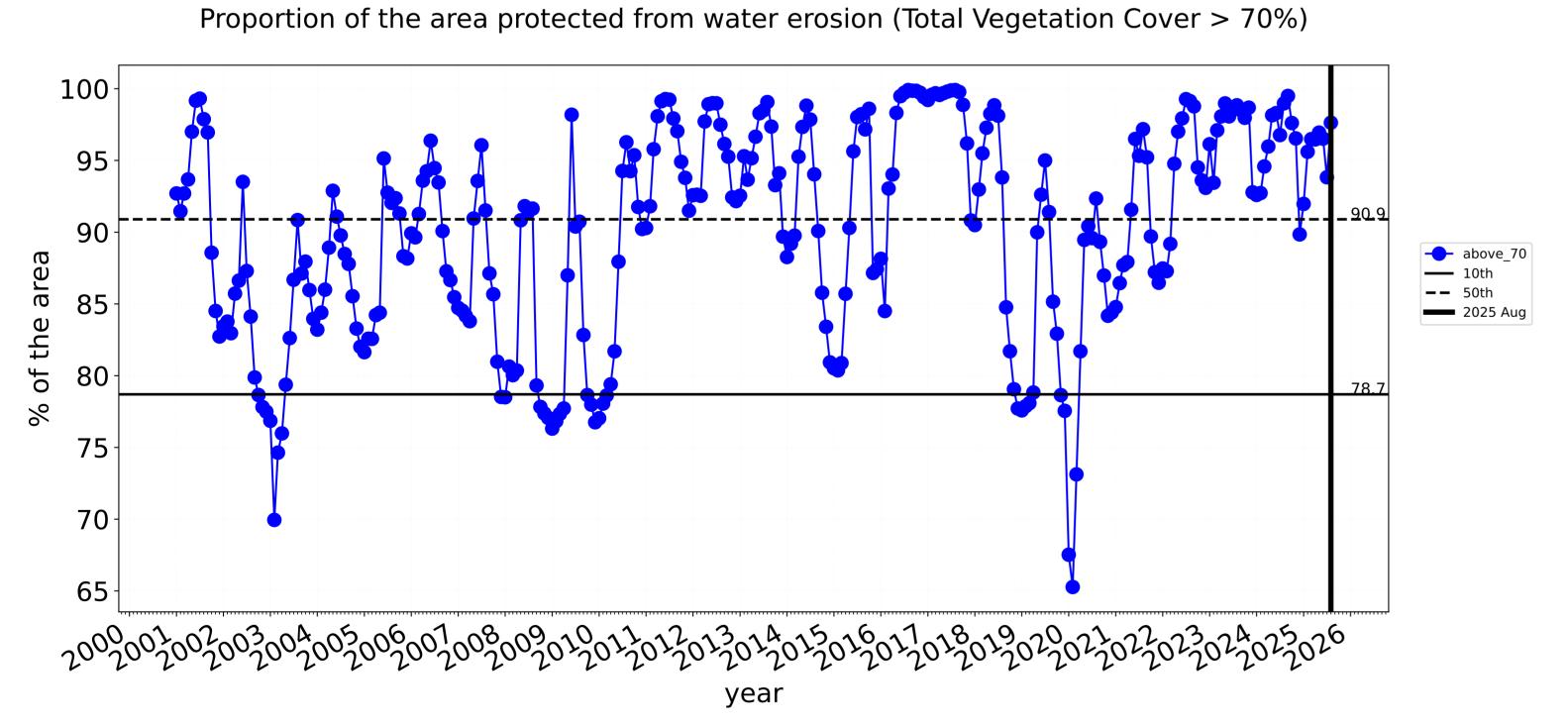


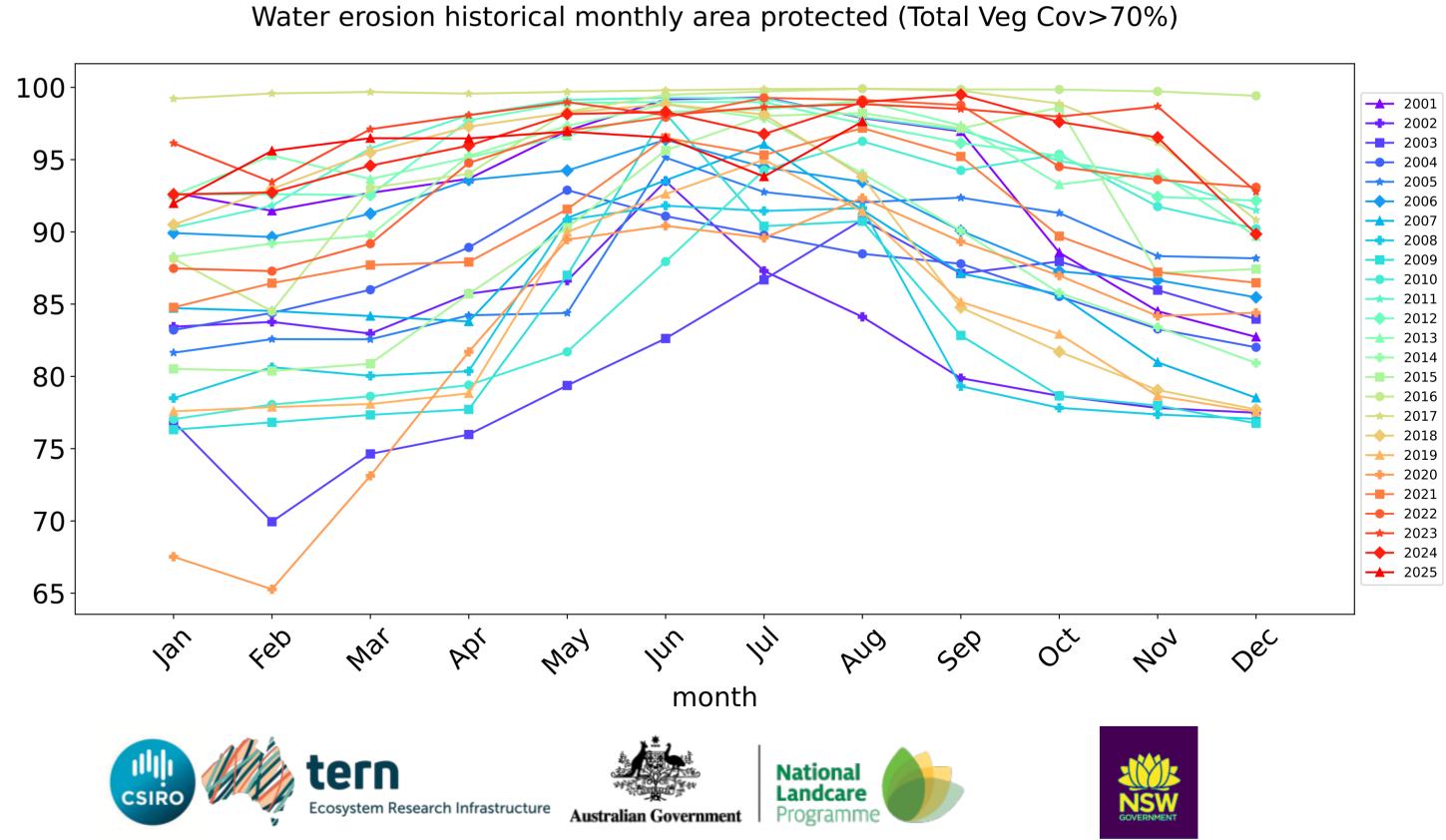
# **Conservation and natural environments timeseries**





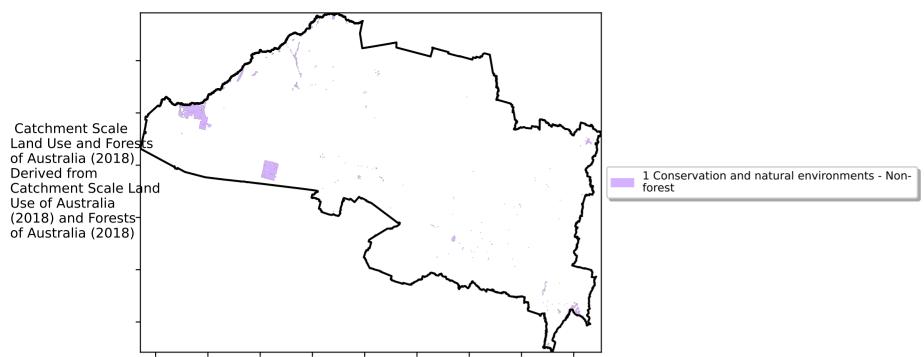
month



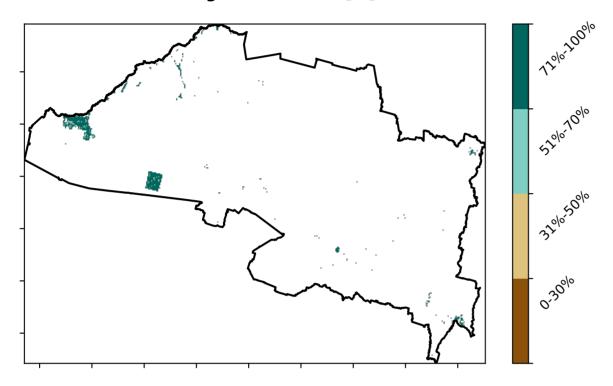


# **Conservation and natural environments non forest**

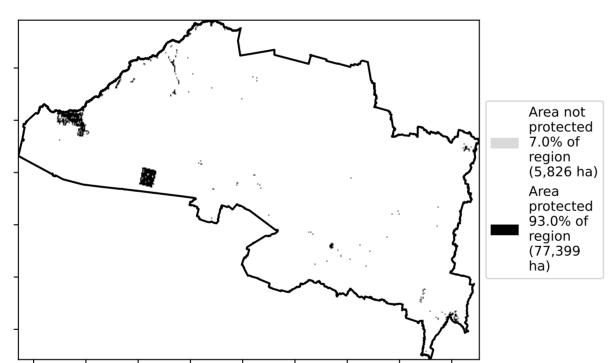
# Land use and forest cover



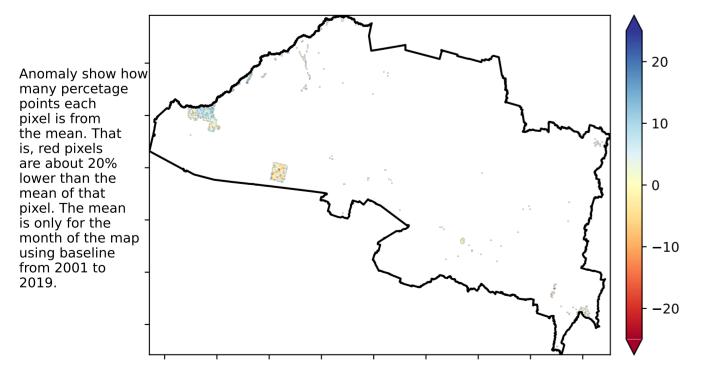
### Total Vegetation Cover [%]



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

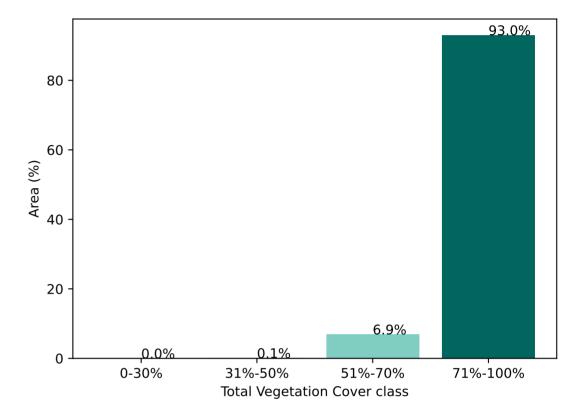


# Total Vegetation Cover Anomaly [%]

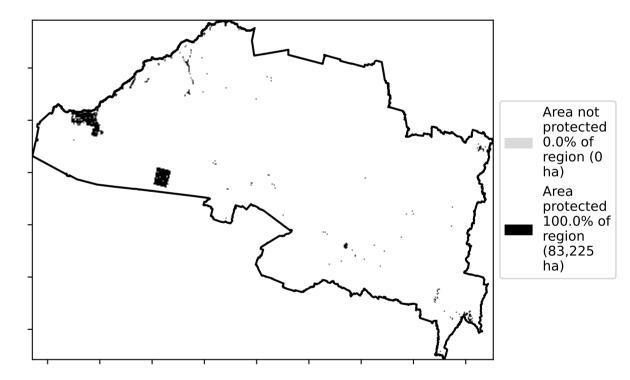


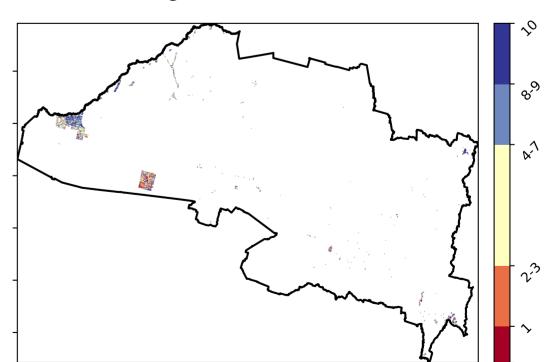
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





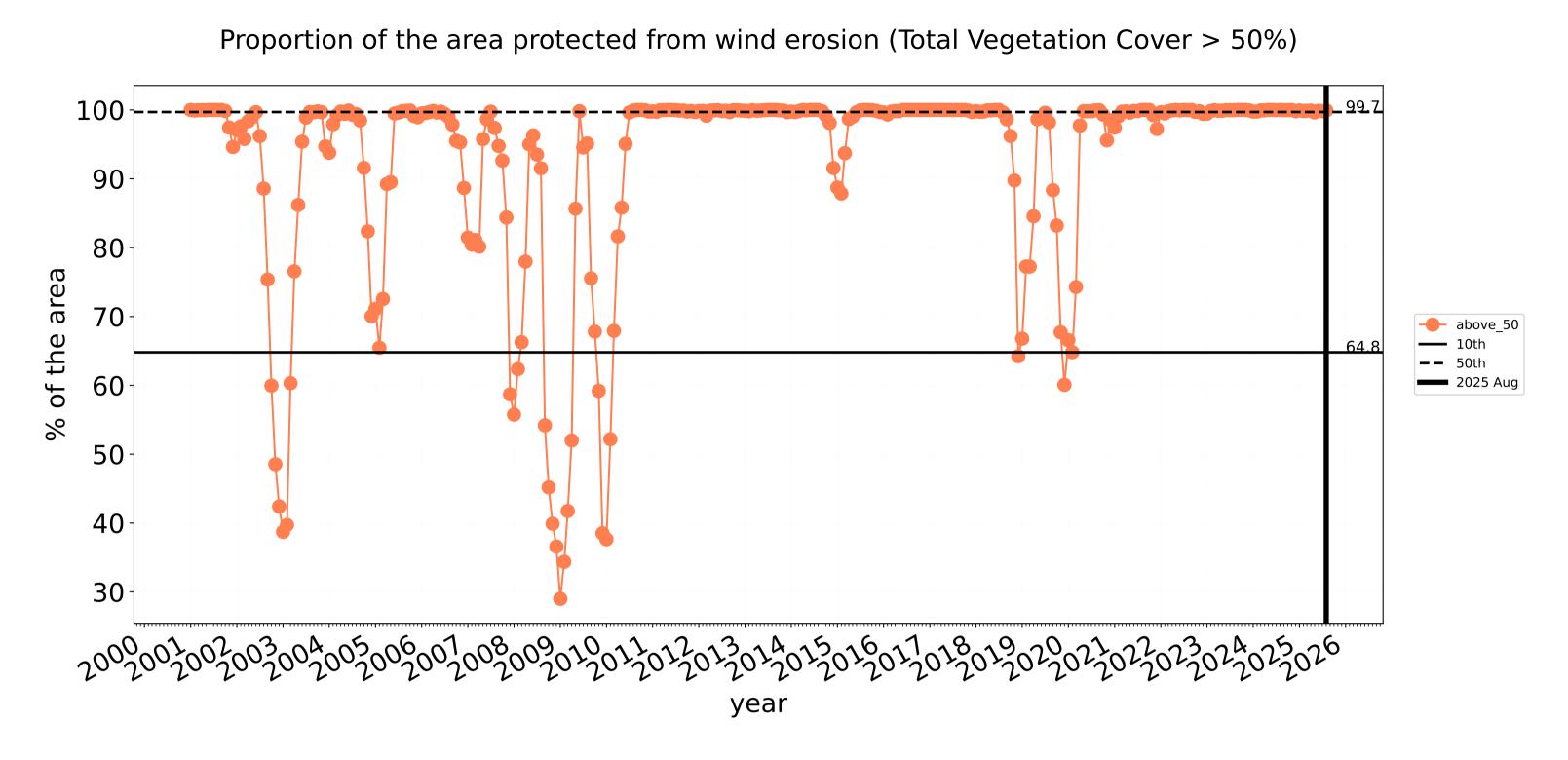


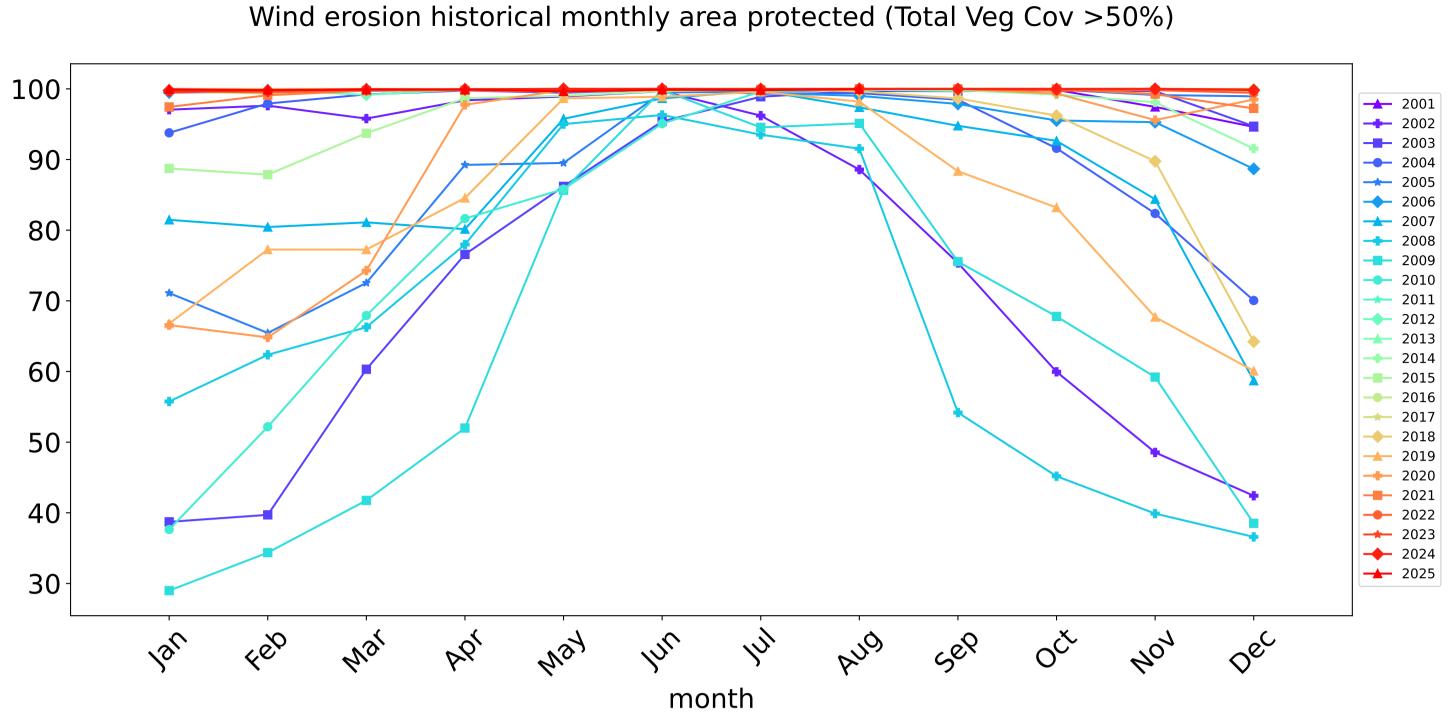


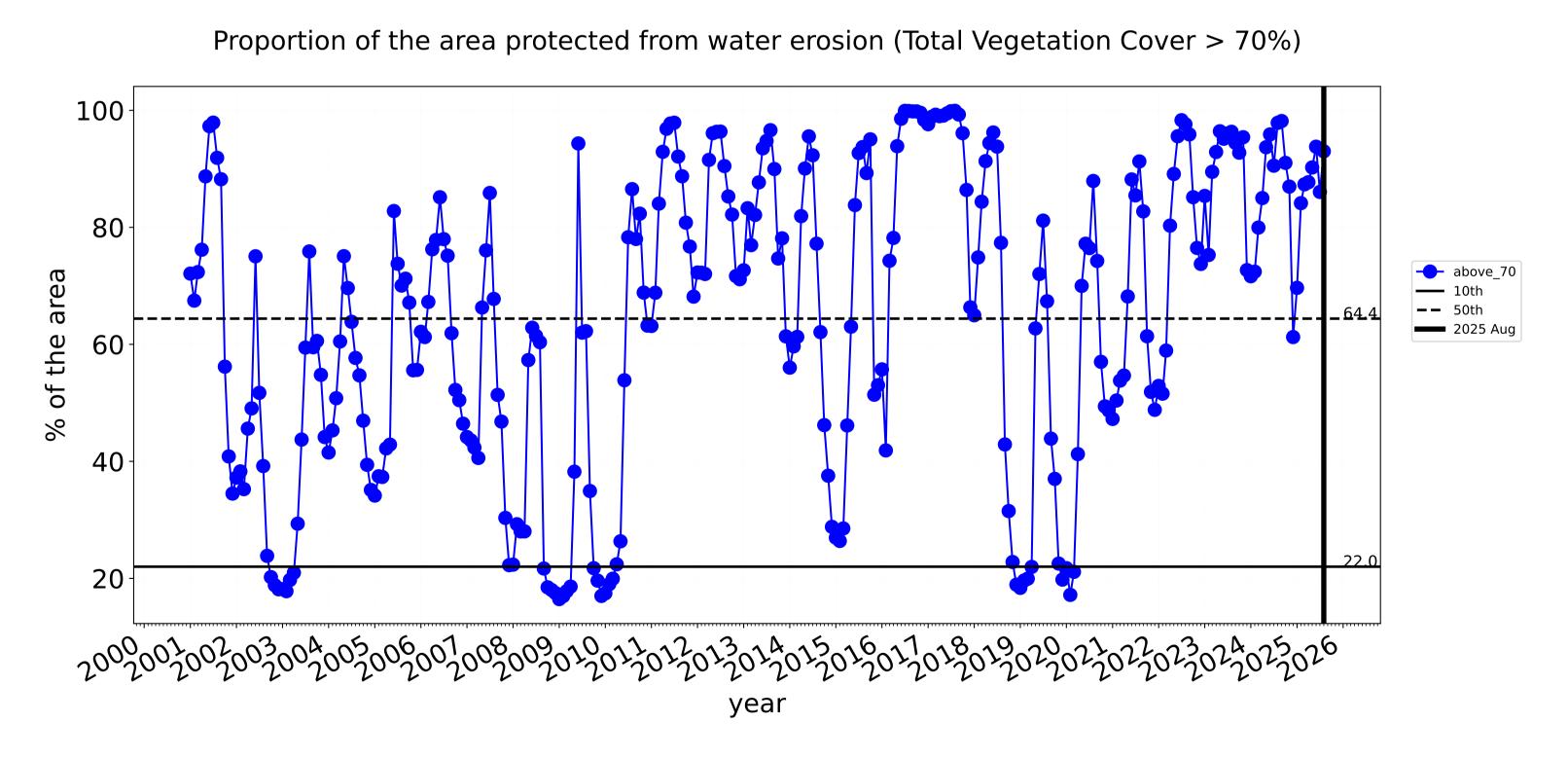


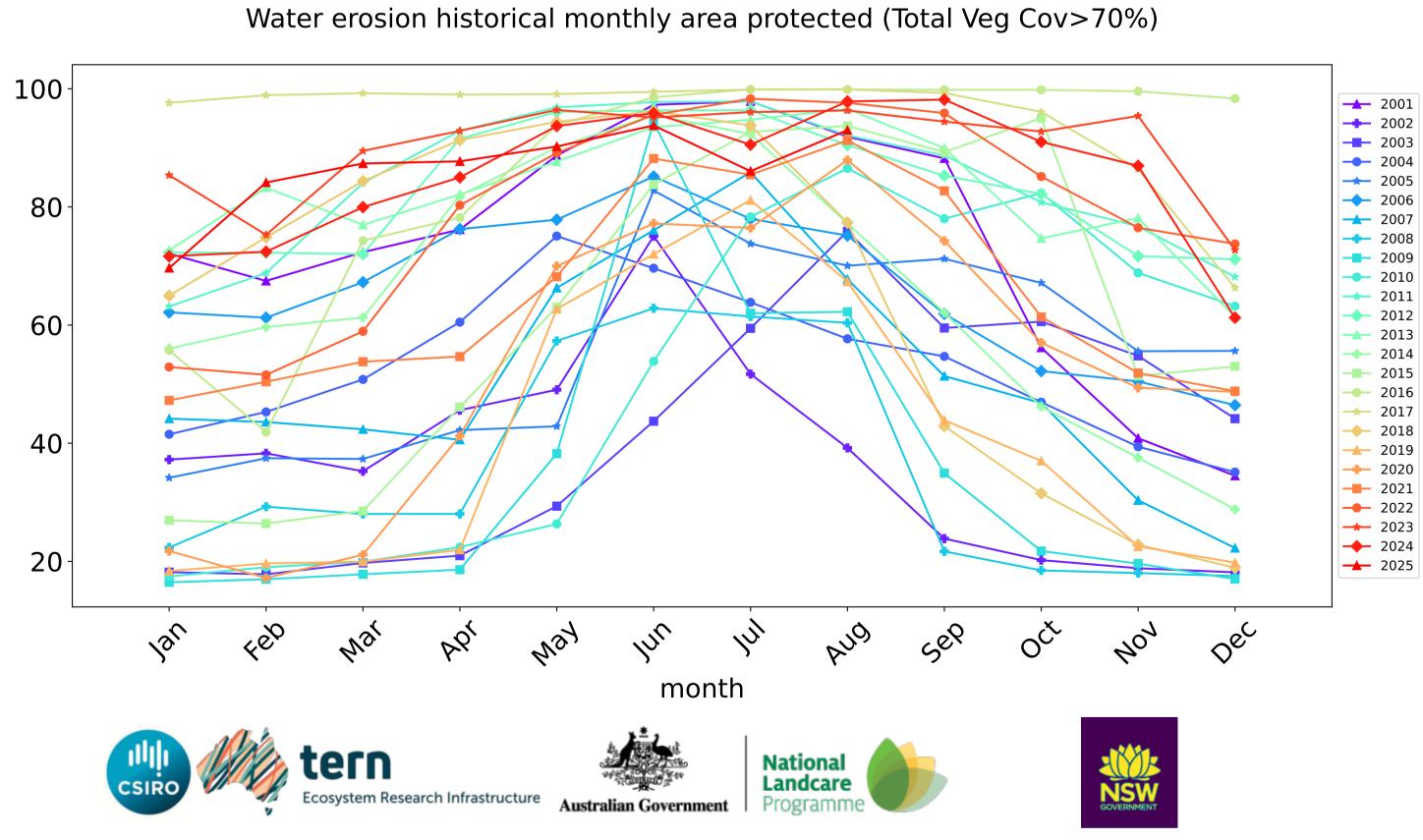


# **Conservation and natural environments non forest timeseries**

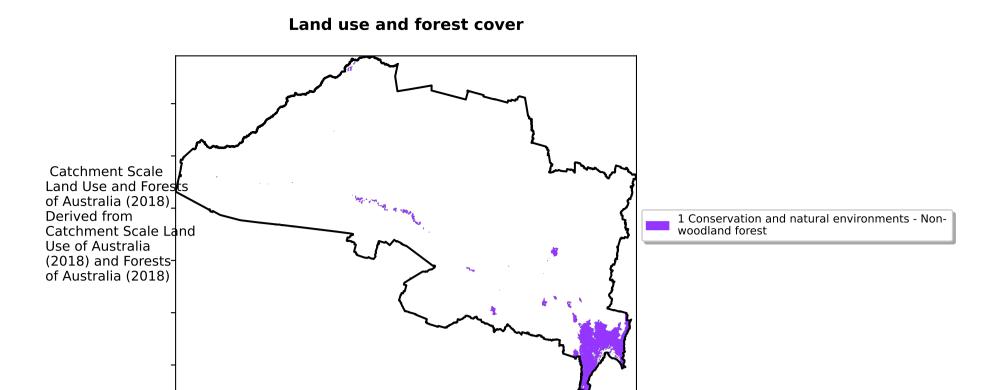




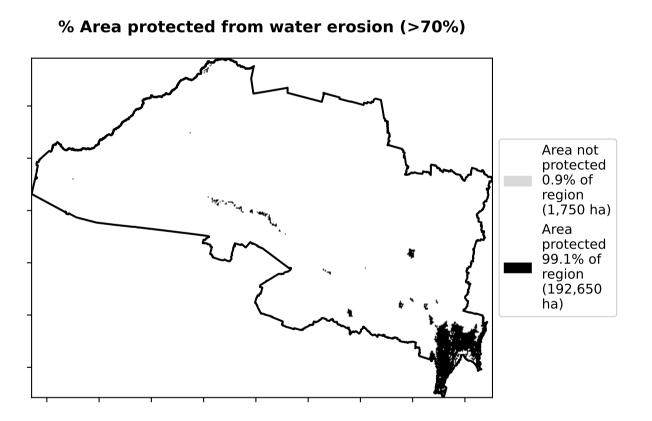


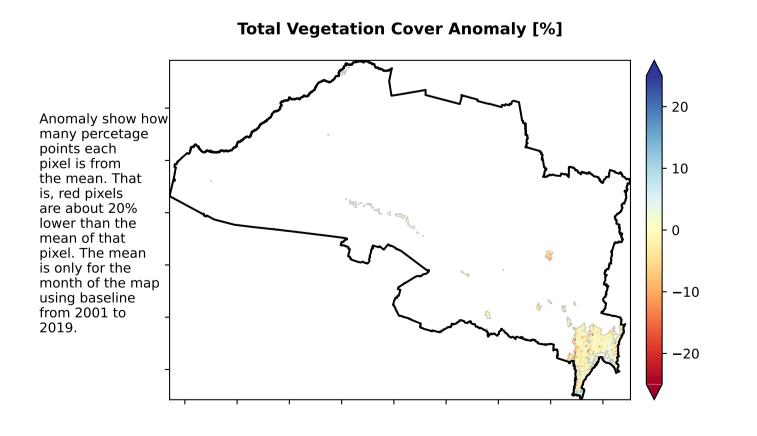


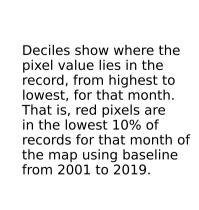
# **Conservation and natural environments Forest (non woodland)**

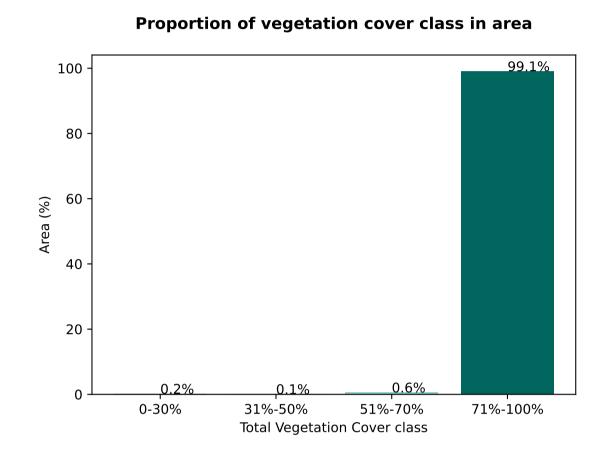


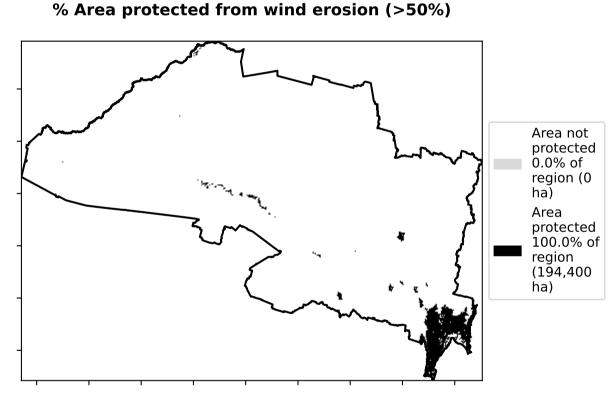
# Total Vegetation Cover [%] Trobation Troba

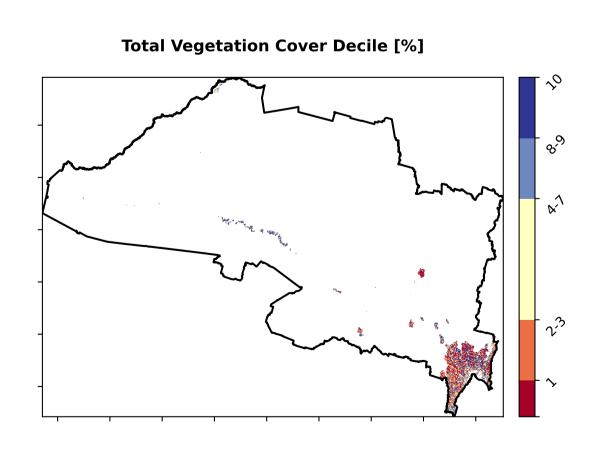










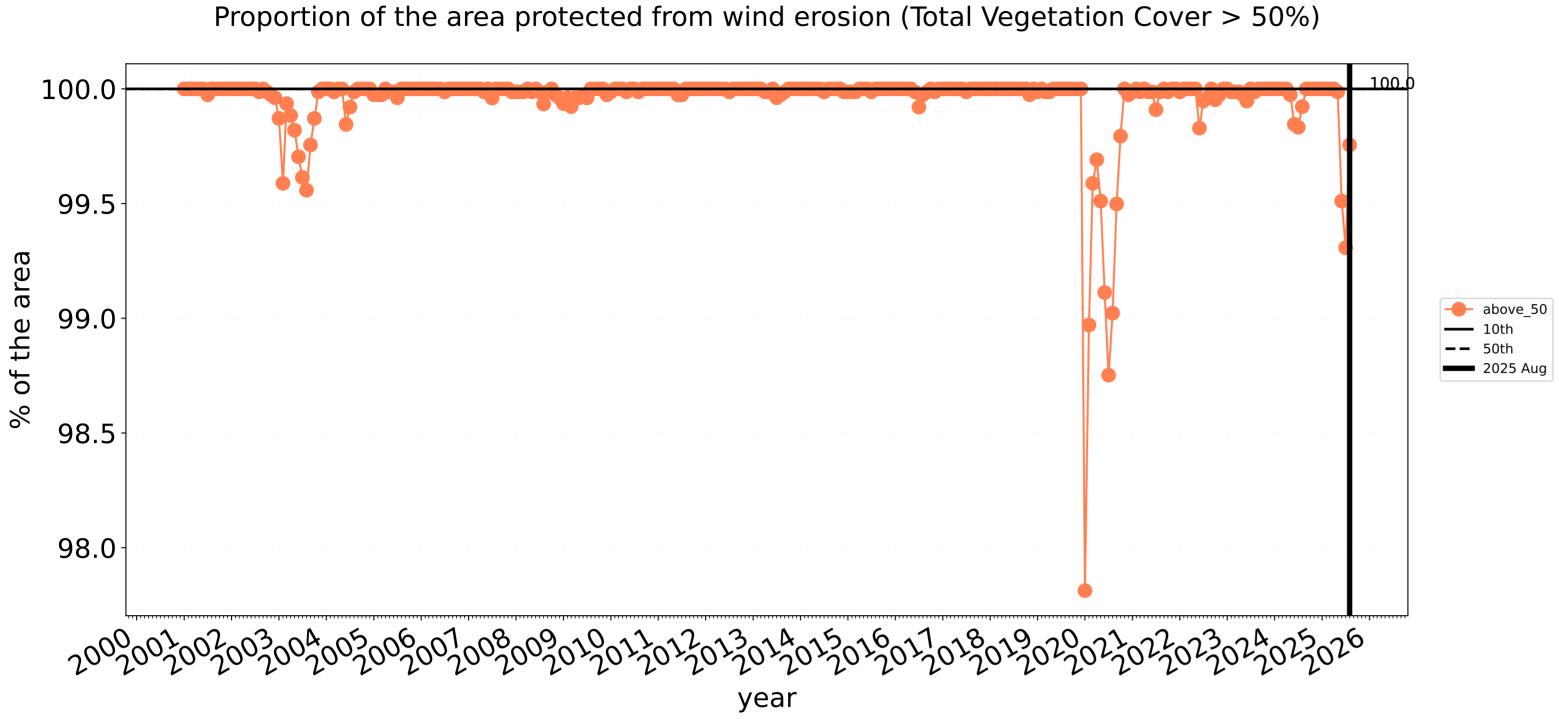


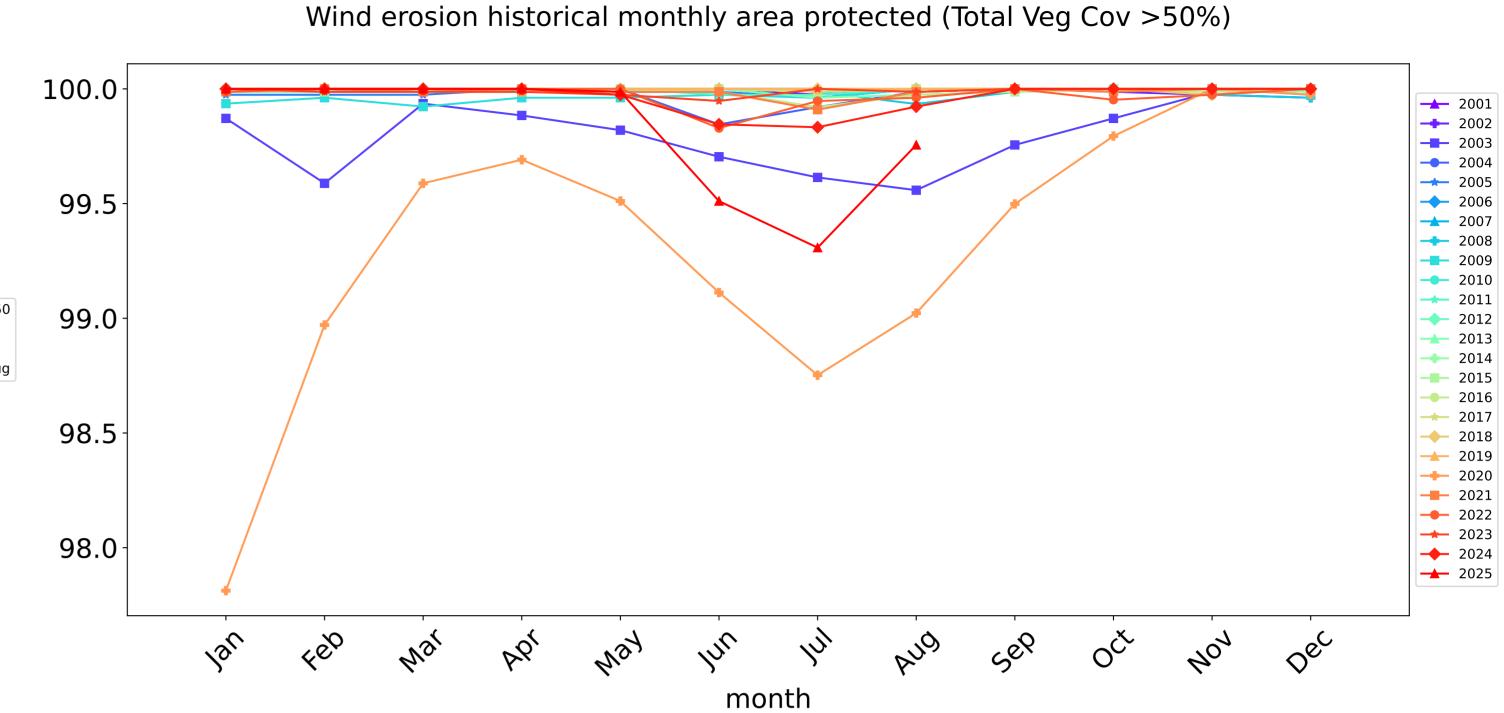


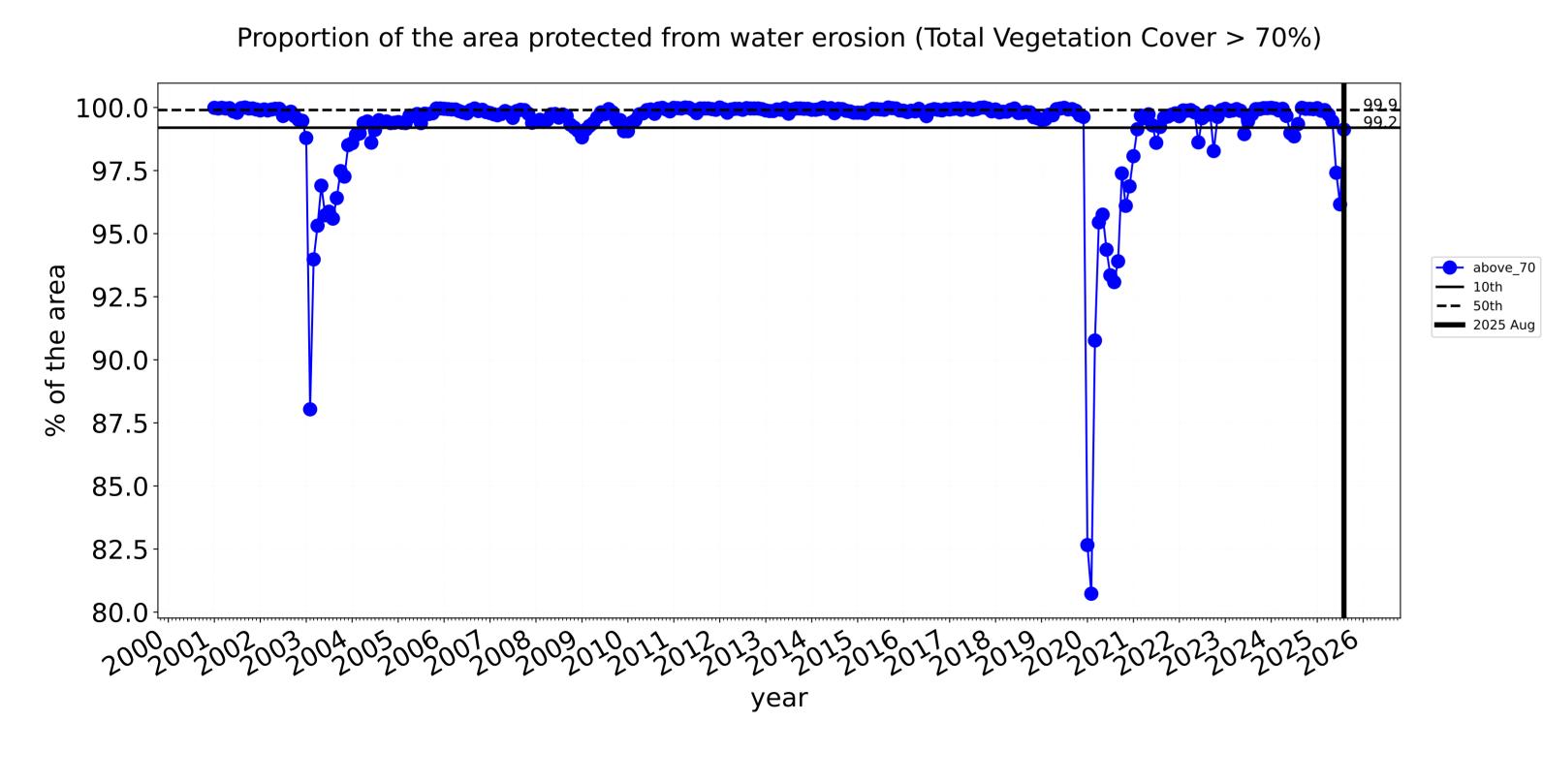


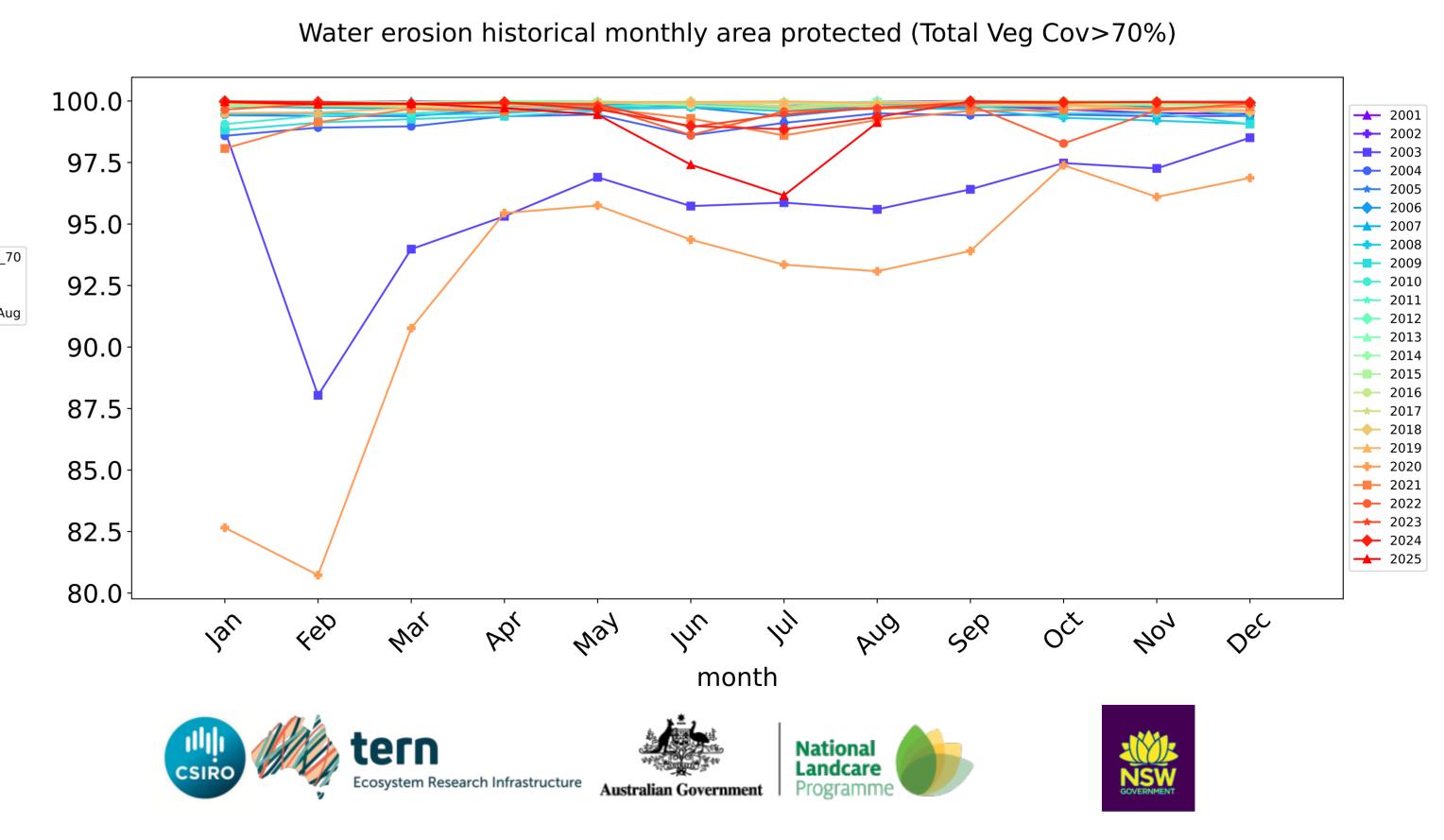








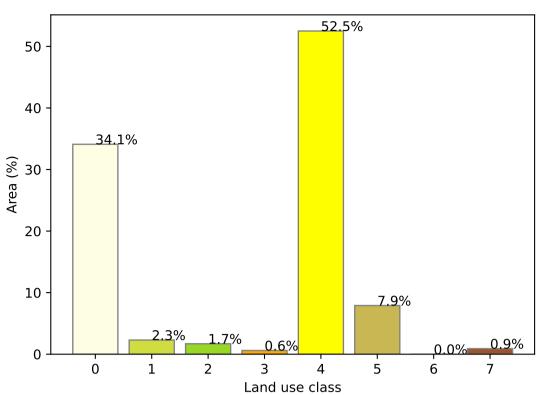




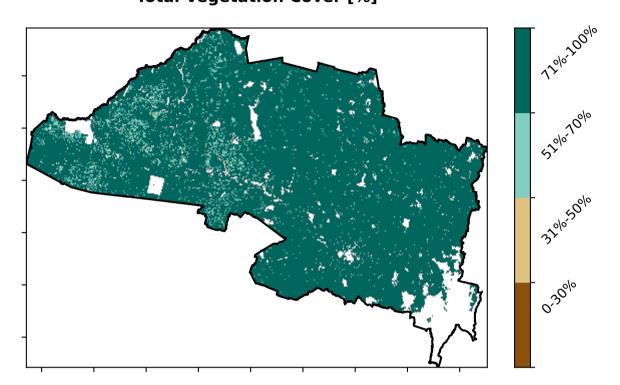
# **Agriculture**

# Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) S Agriculture - Grazing - Non-woodland forest Derived from Catchment Scale Land Use of Australia (2018) S Agriculture - Grazing - Non-woodland forest S Agriculture - Grazing - Non-woo

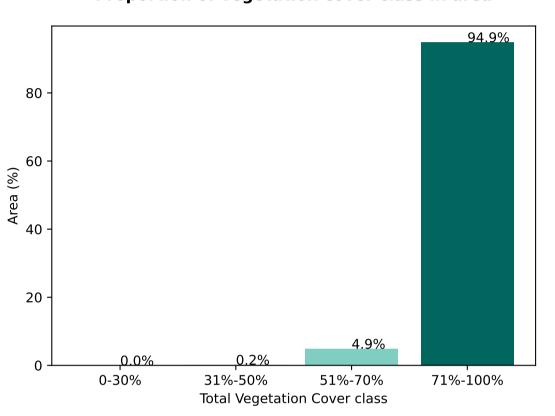
# Proportion of each land class in area



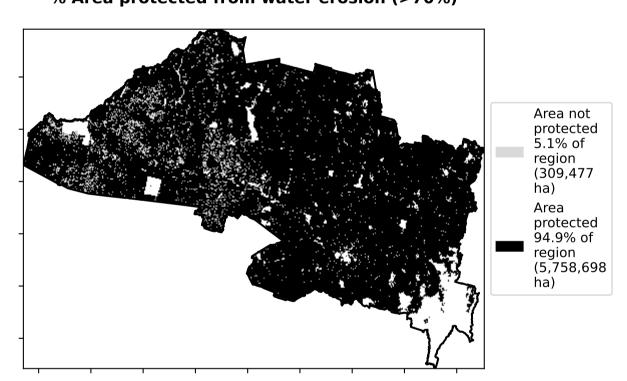
**Total Vegetation Cover [%]** 



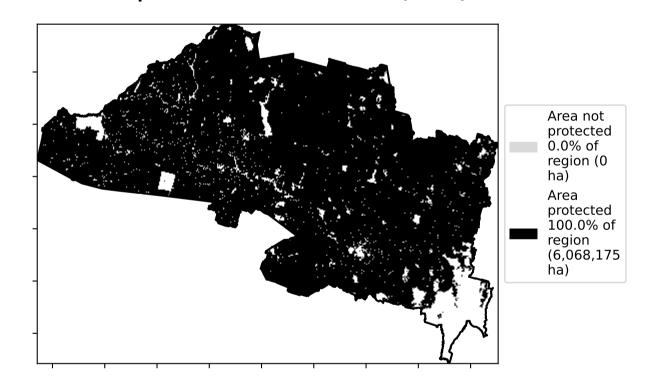
Proportion of vegetation cover class in area



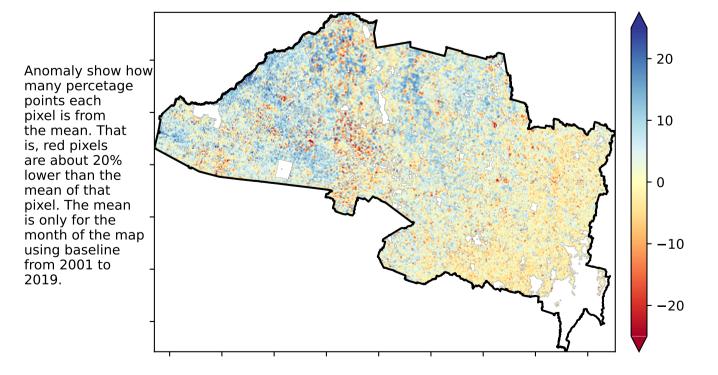
% Area protected from water erosion (>70%)



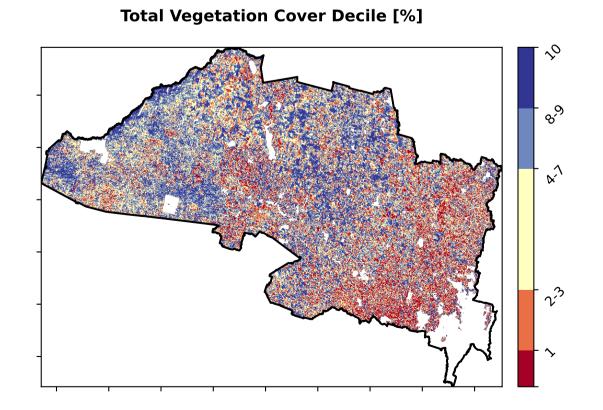
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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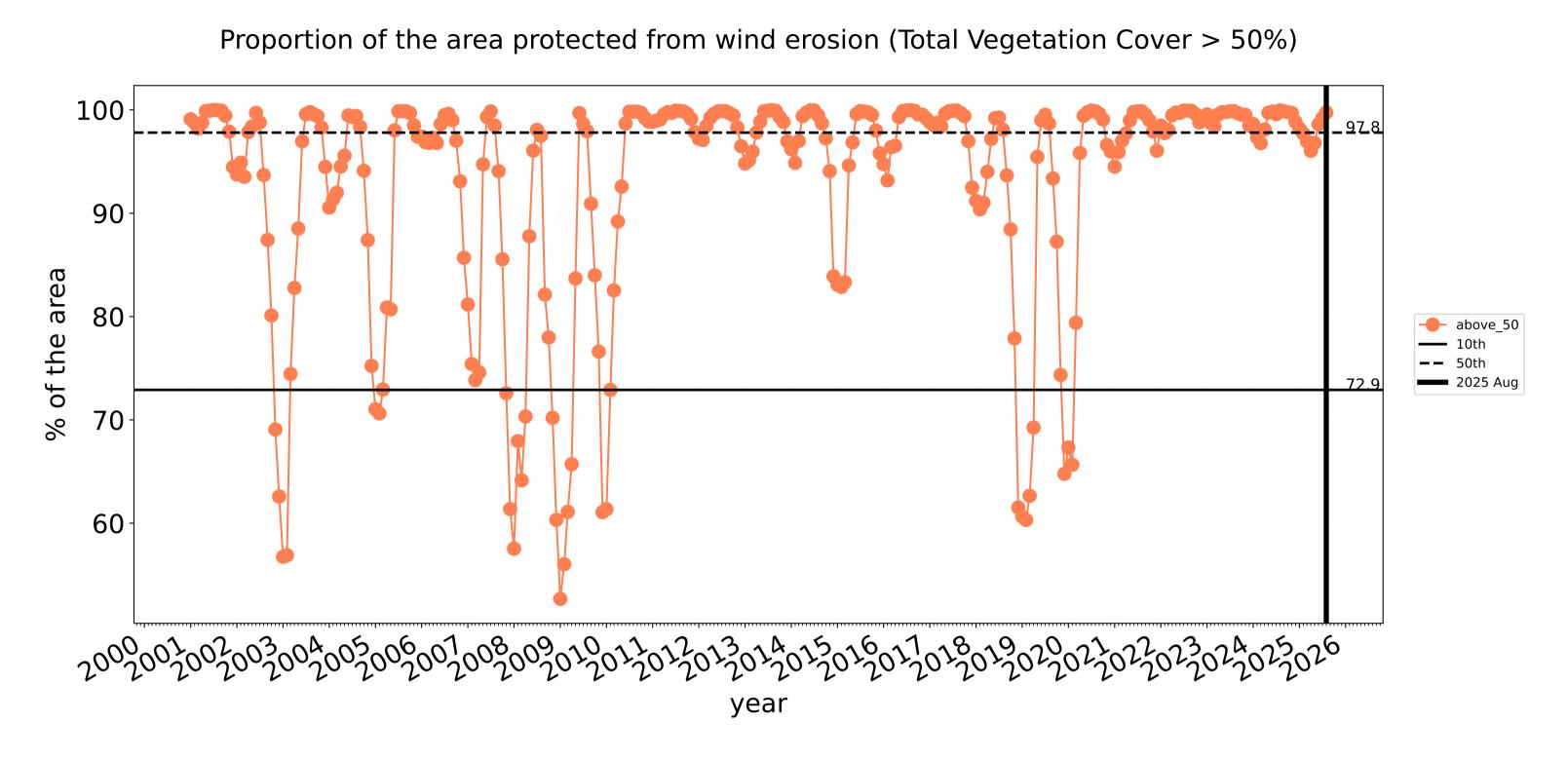


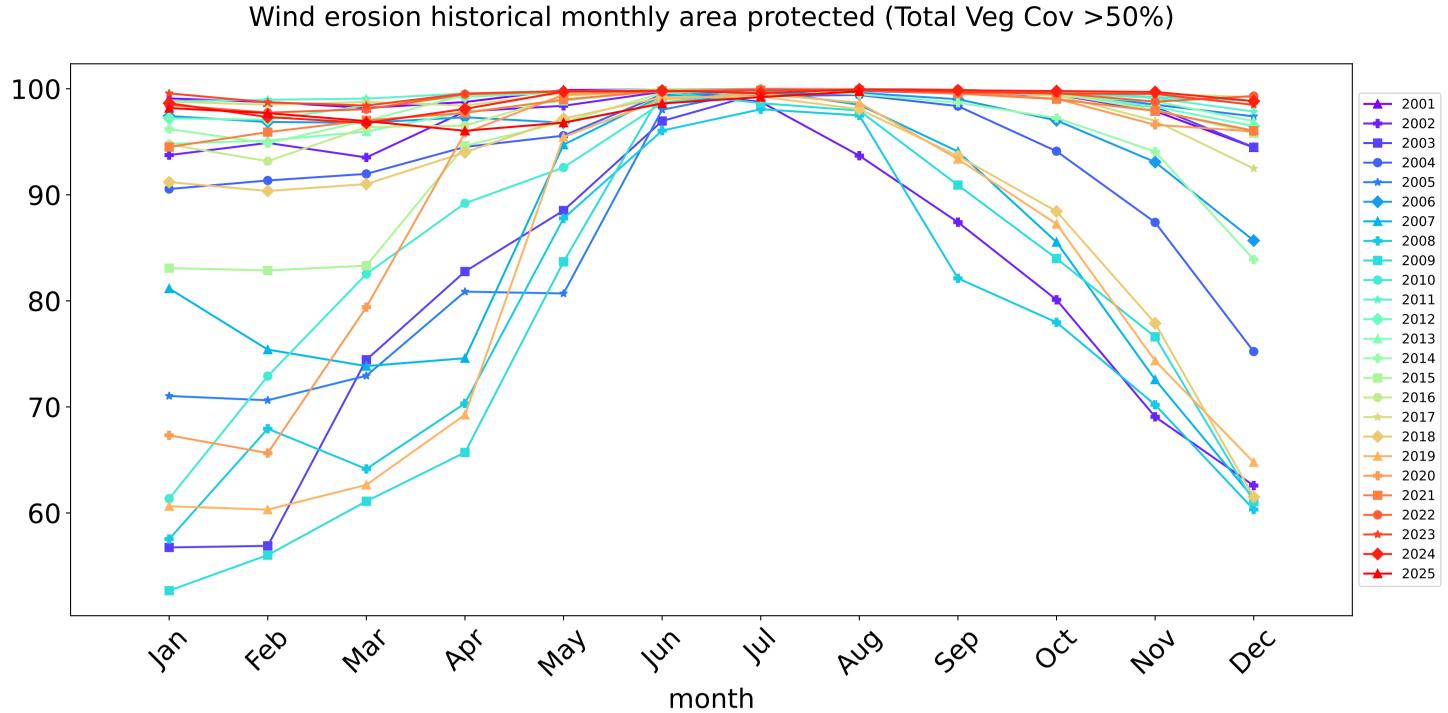


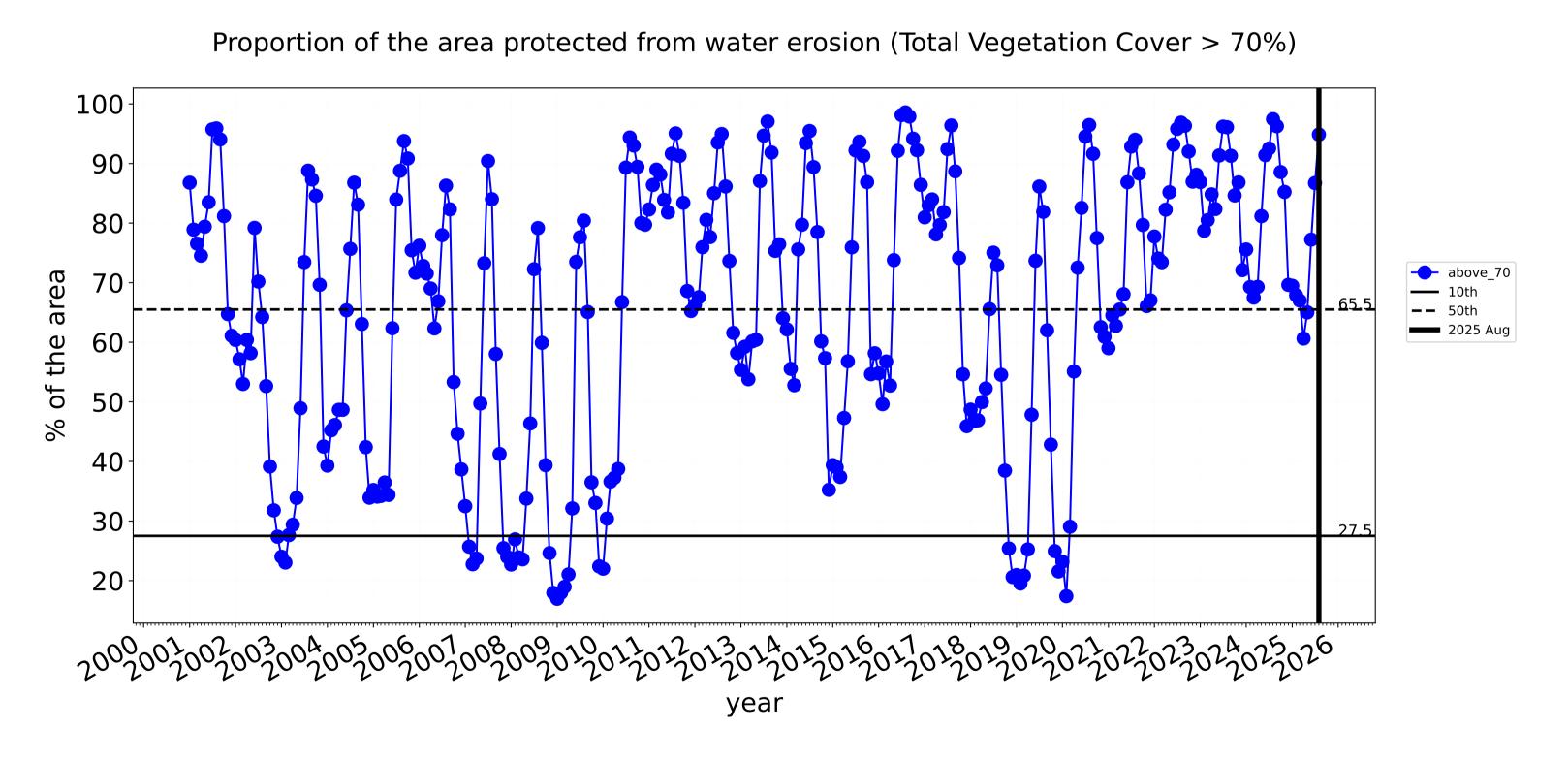


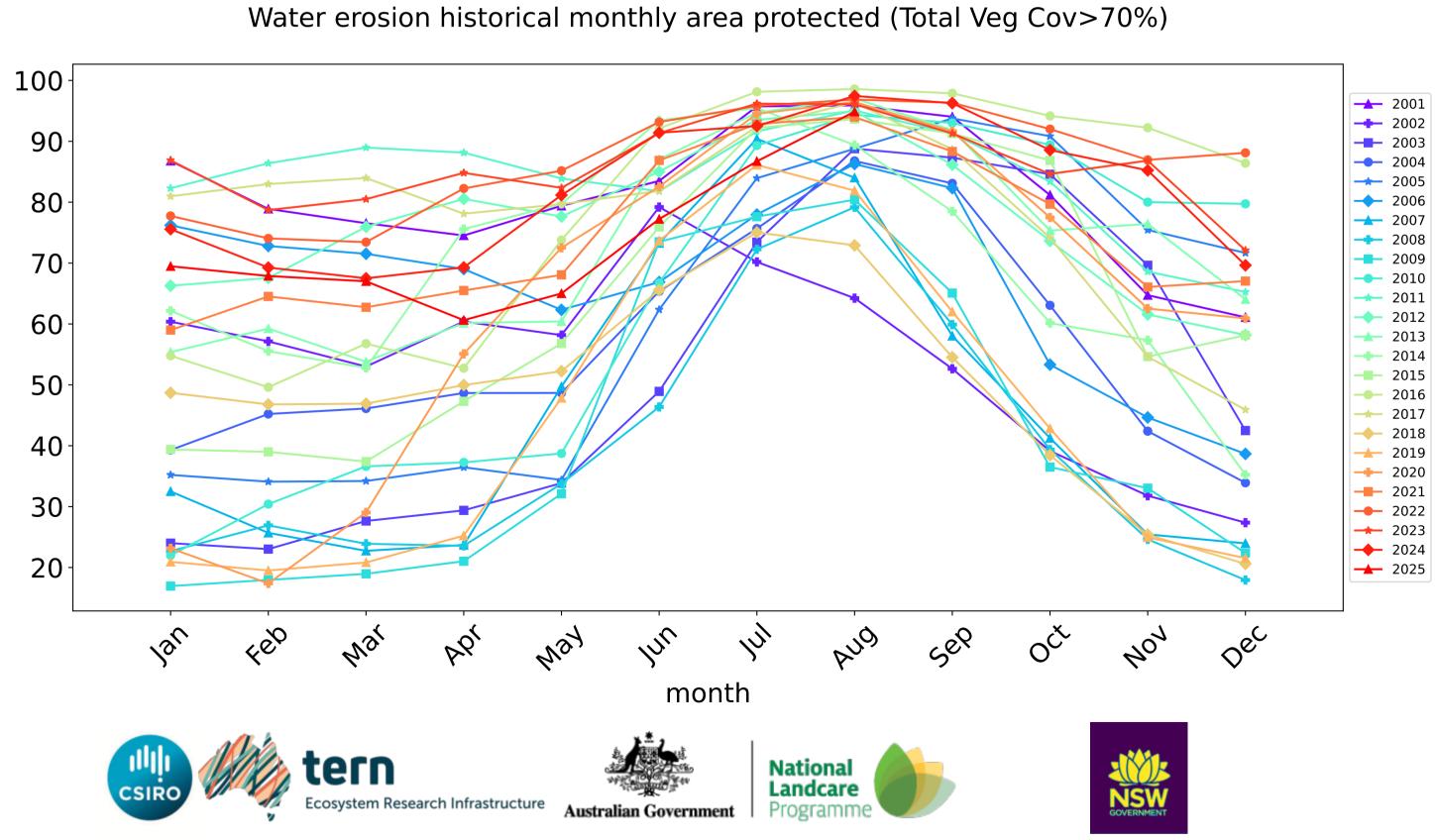


# **Agriculture timeseries**

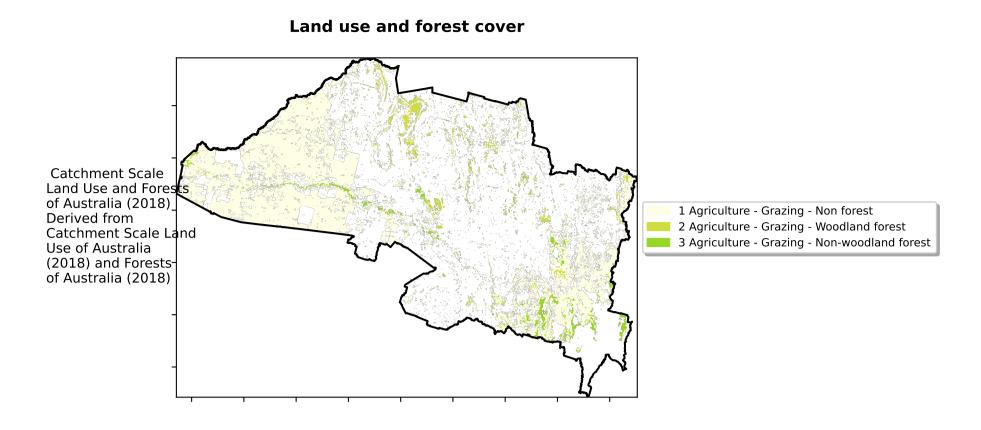




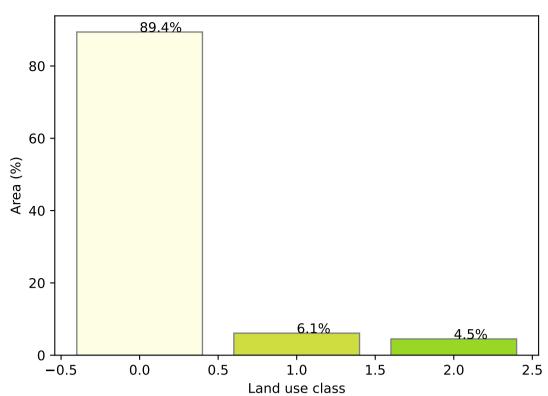




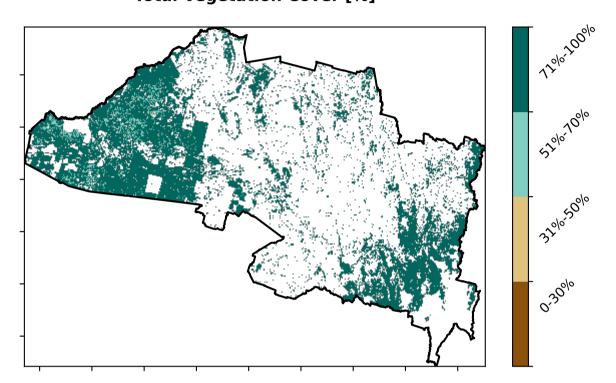
# Grazing



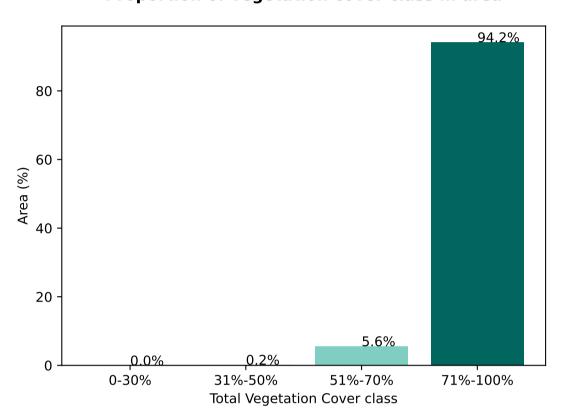
### Proportion of each land class in area



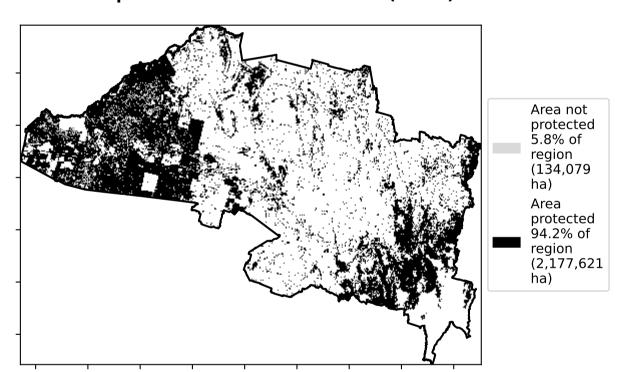
**Total Vegetation Cover [%]** 



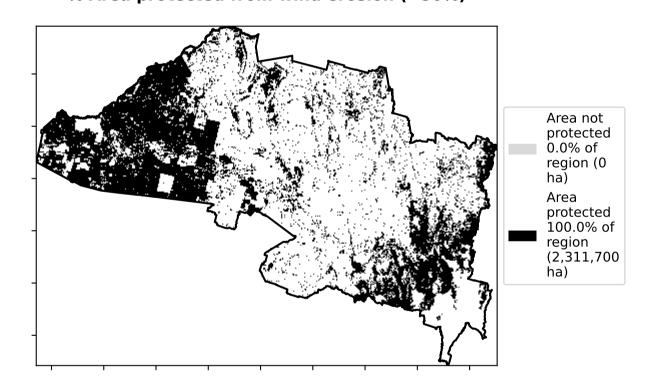
Proportion of vegetation cover class in area



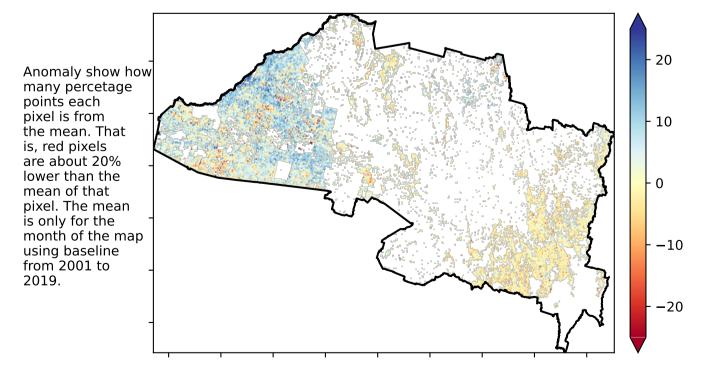
% Area protected from water erosion (>70%)



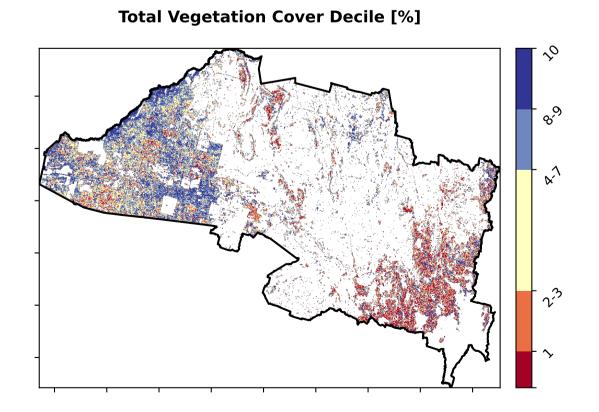
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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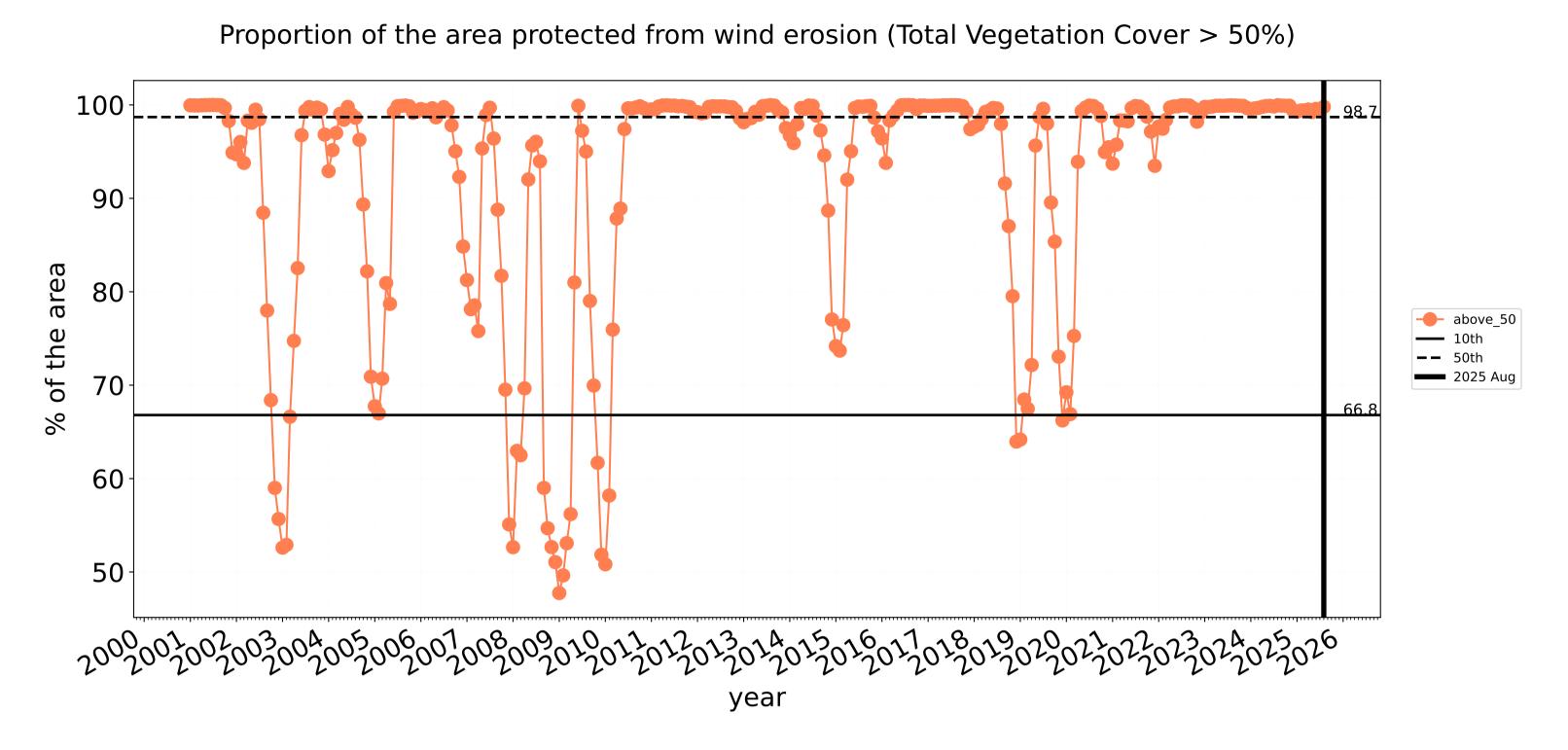


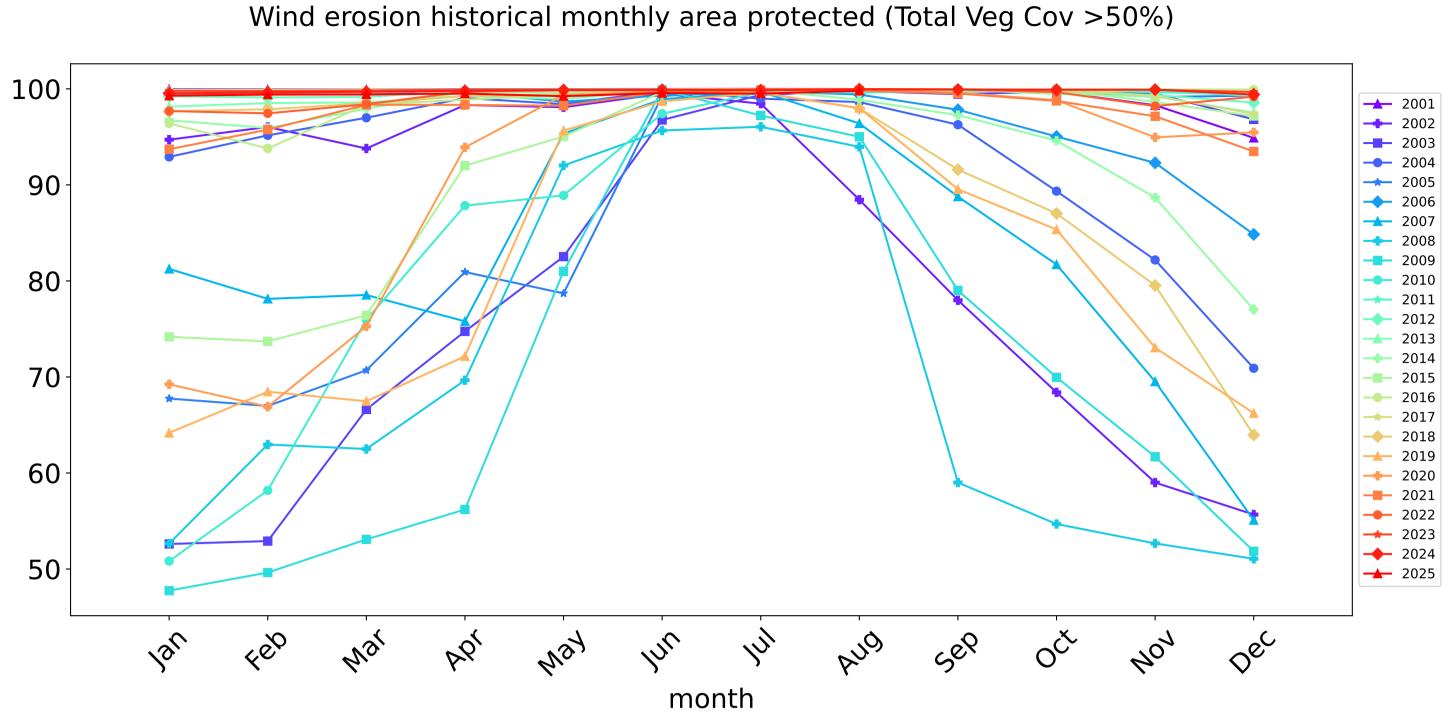


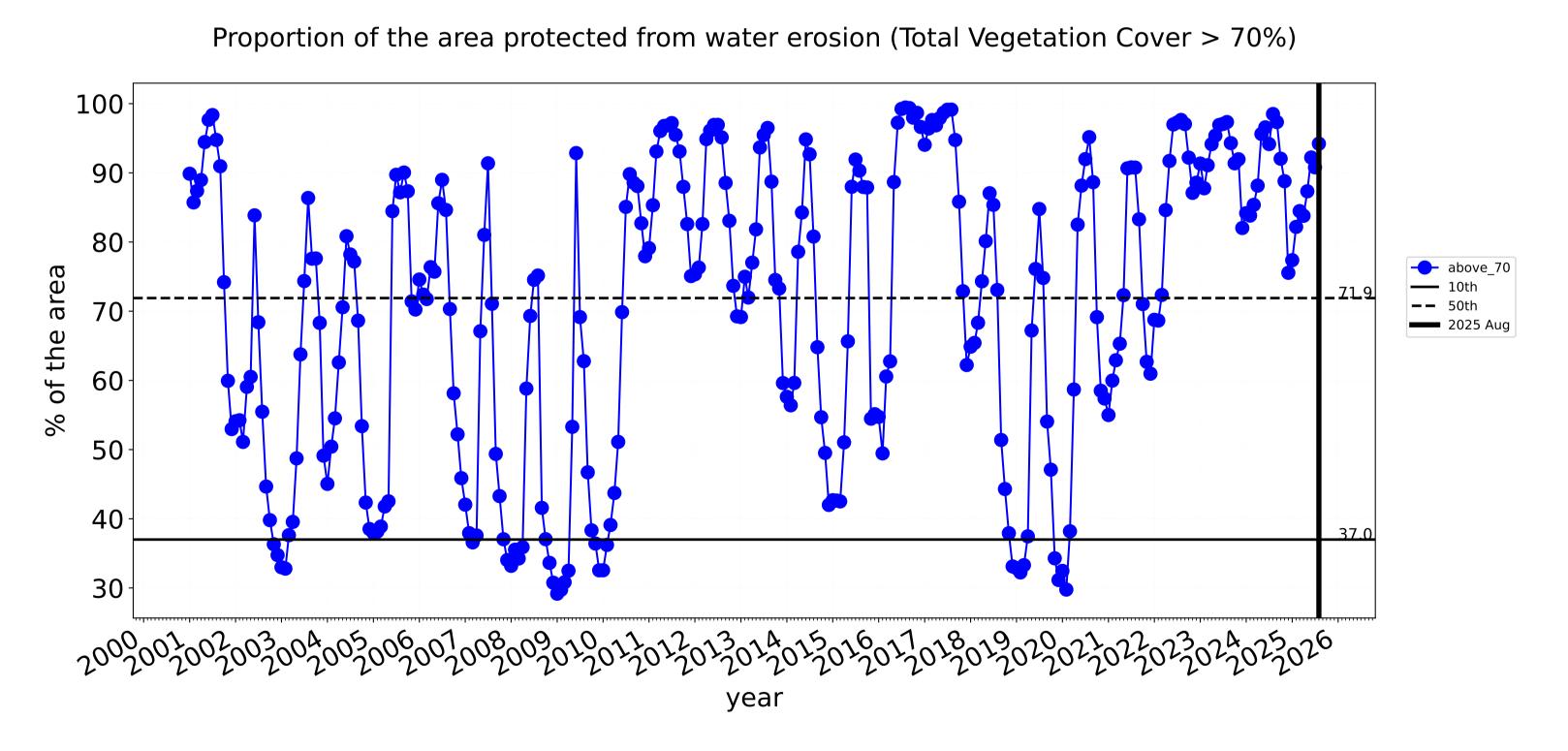


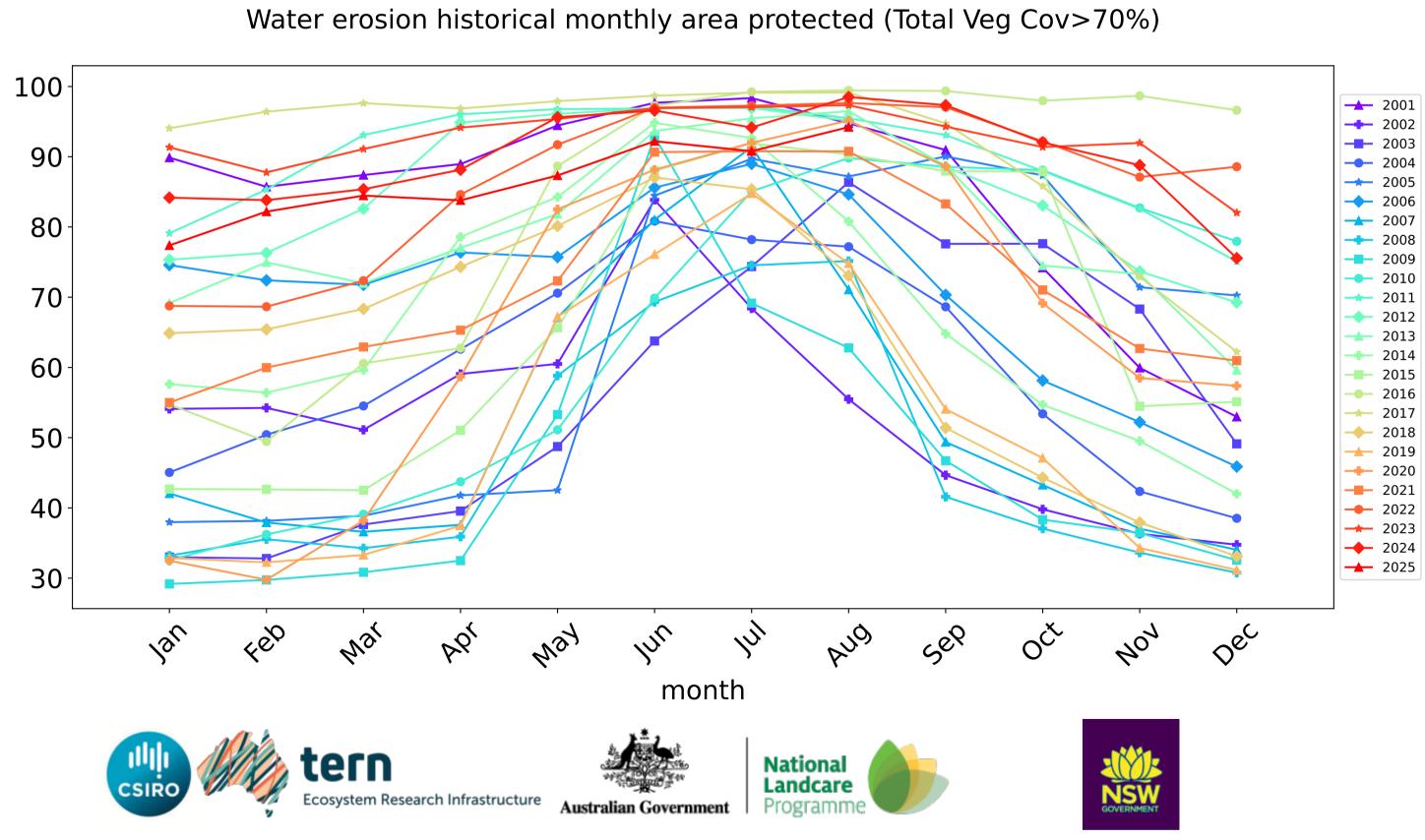


# **Grazing timeseries**



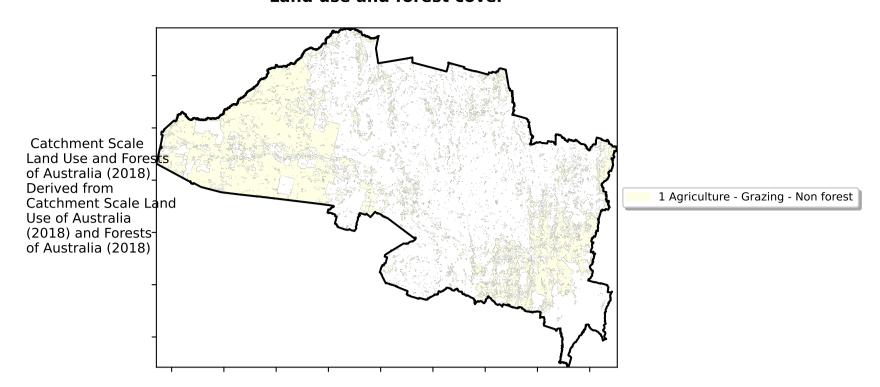




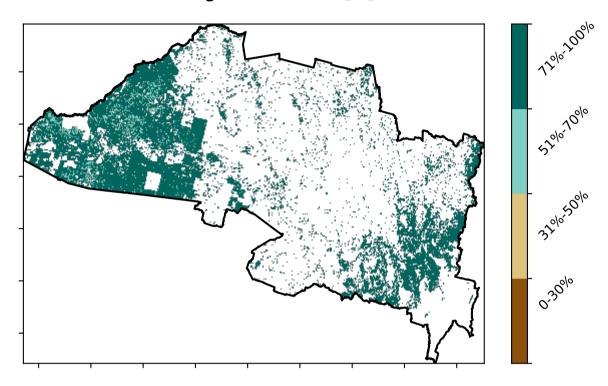


# **Grazing non forest**

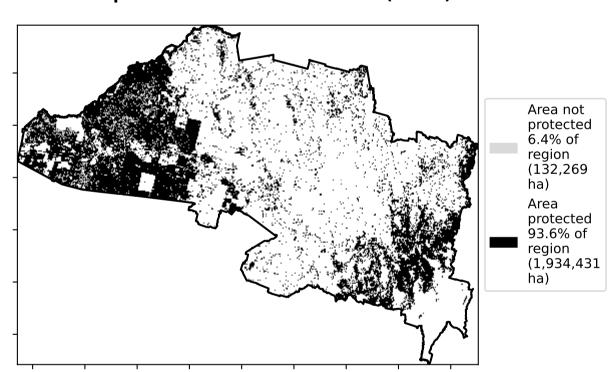
### Land use and forest cover



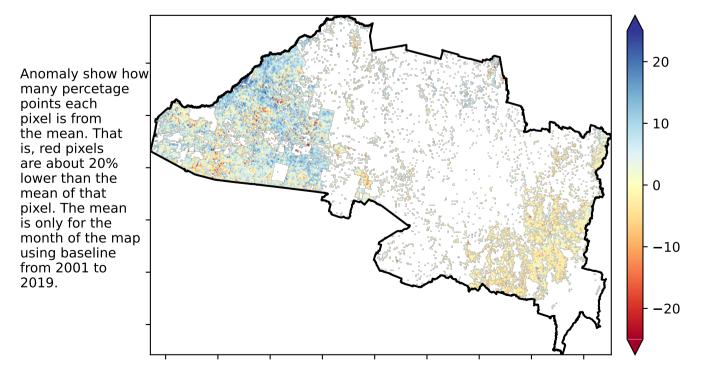
### **Total Vegetation Cover [%]**



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

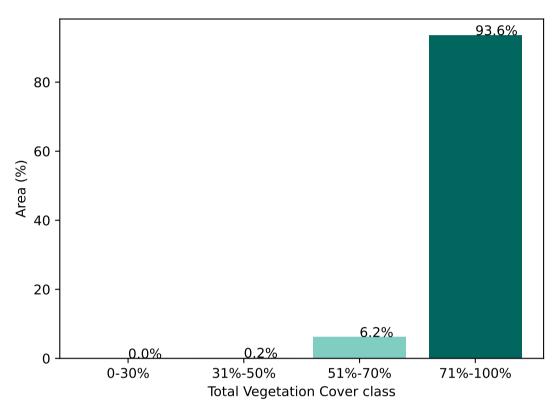


# Total Vegetation Cover Anomaly [%]

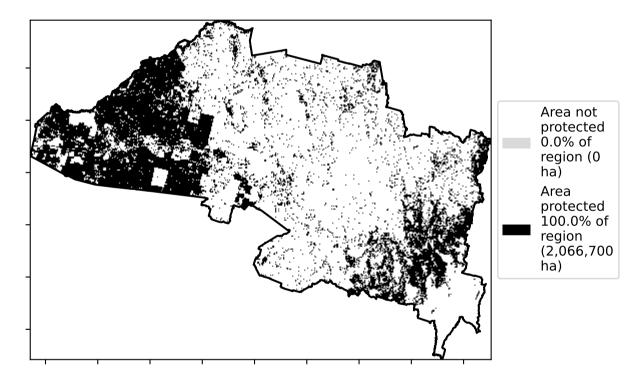


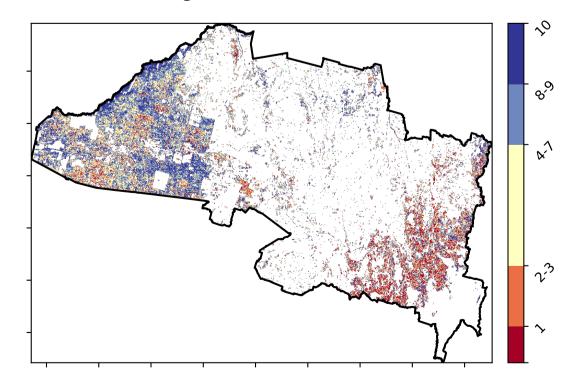
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# Proportion of vegetation cover class in area



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





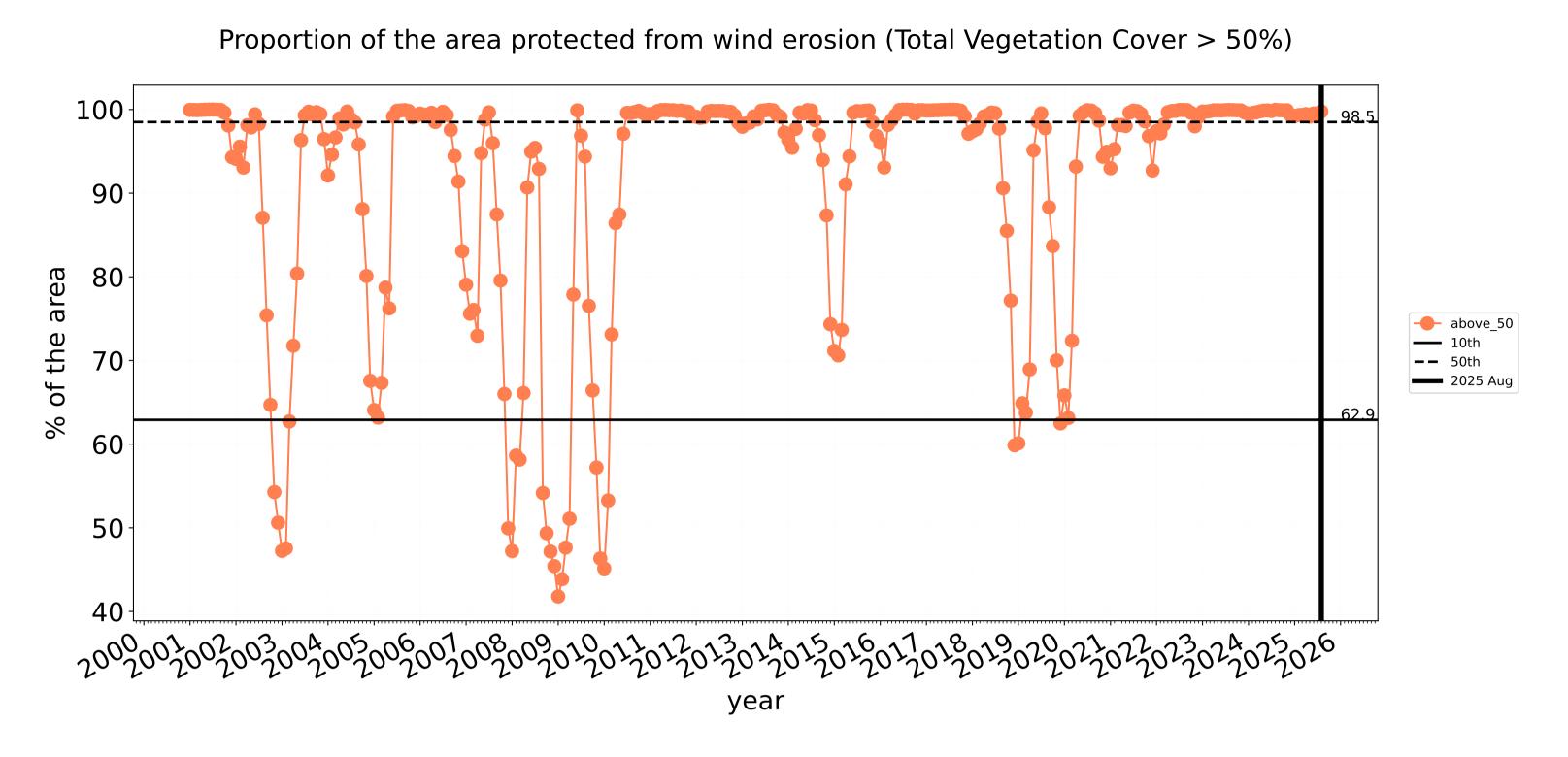


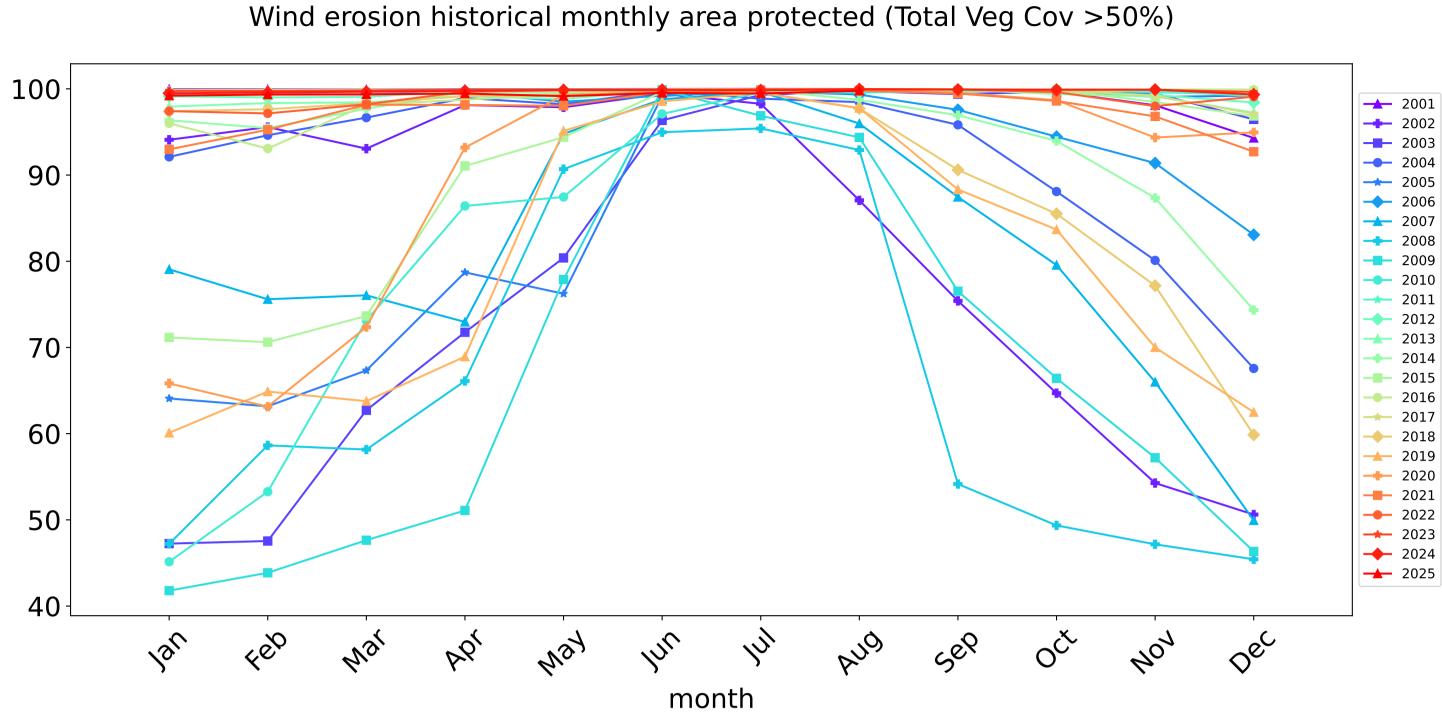


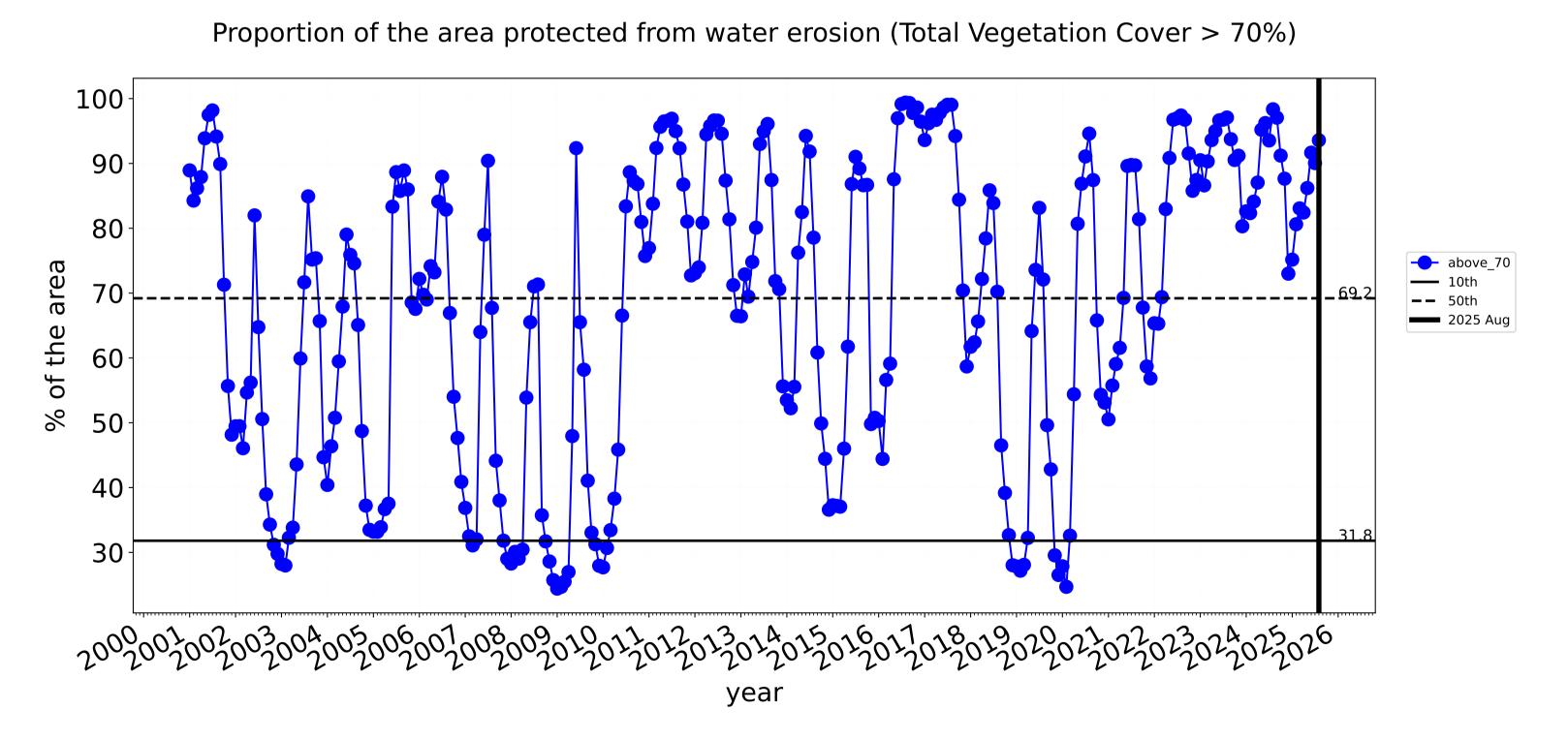


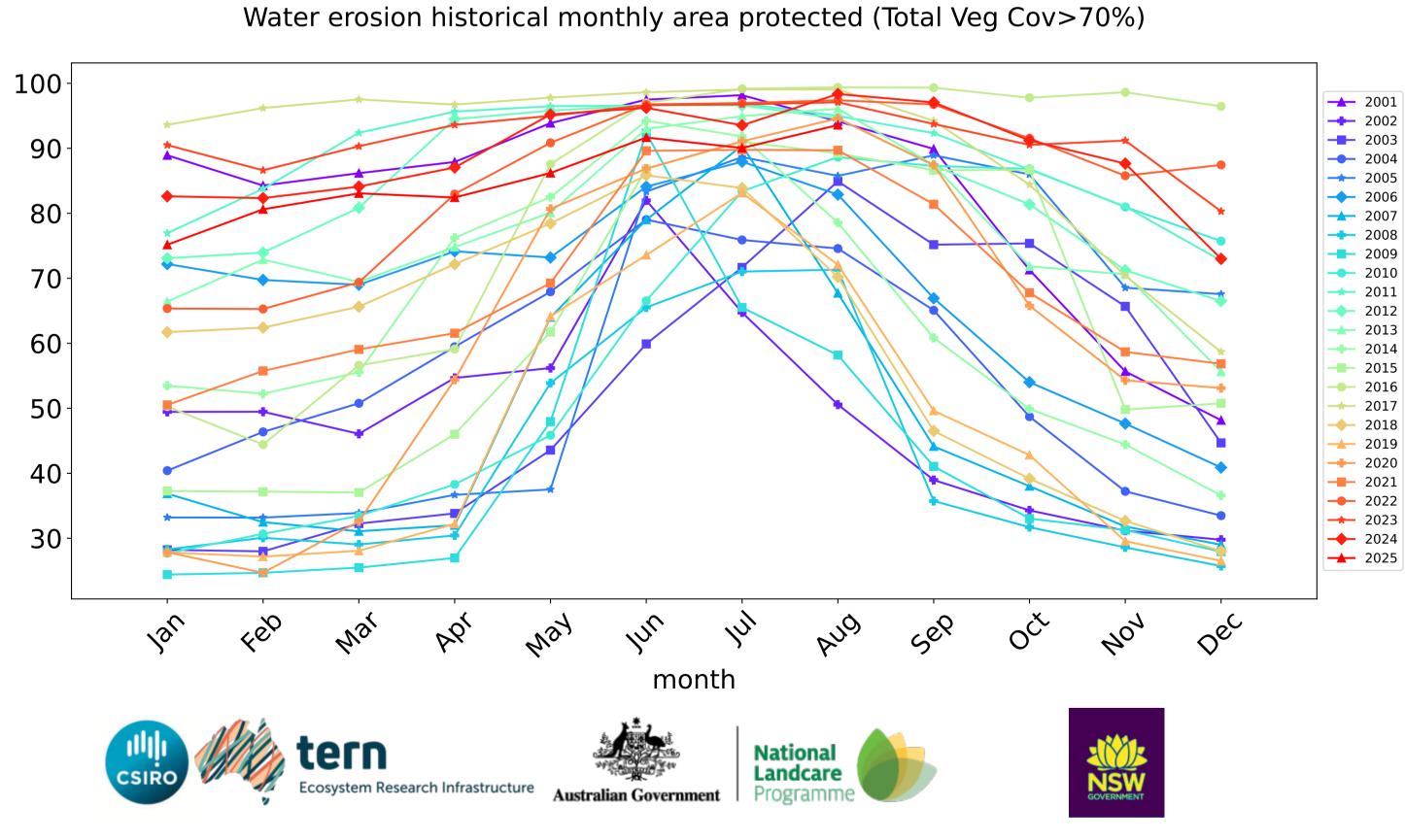


# **Grazing non forest timeseries**



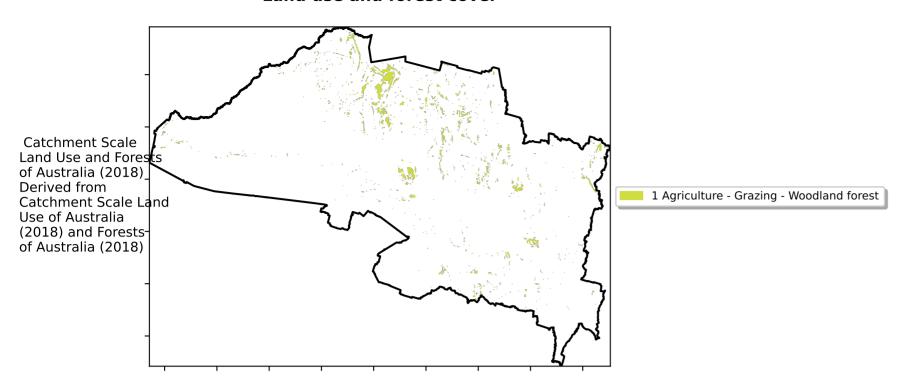




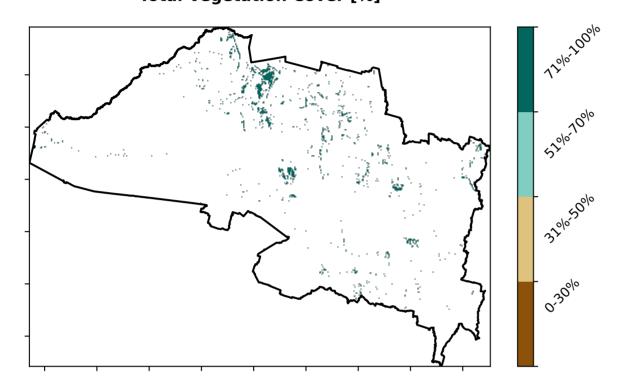


# **Grazing Woodland forest**

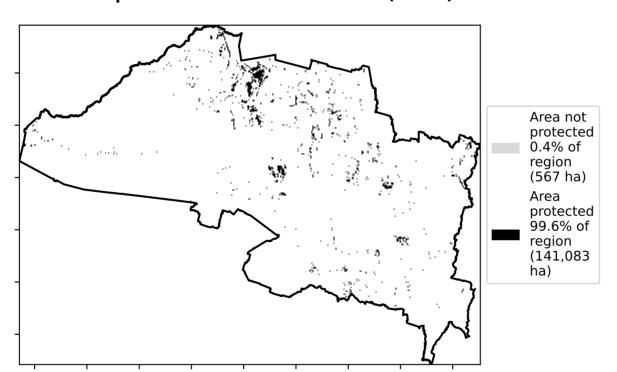
### Land use and forest cover



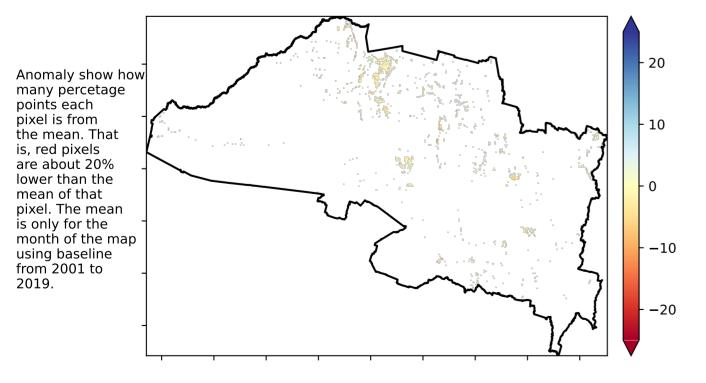
### Total Vegetation Cover [%]



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

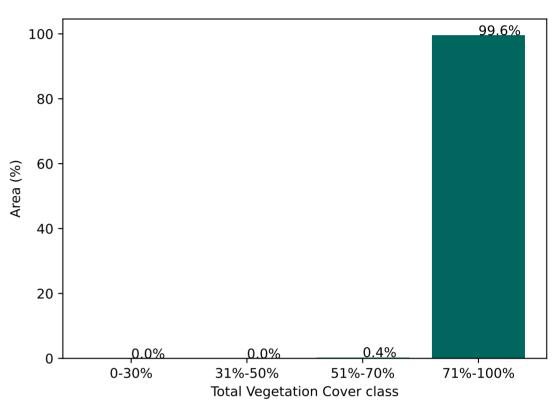


# Total Vegetation Cover Anomaly [%]

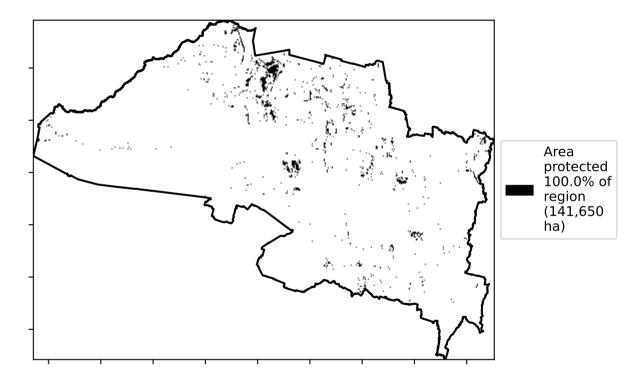


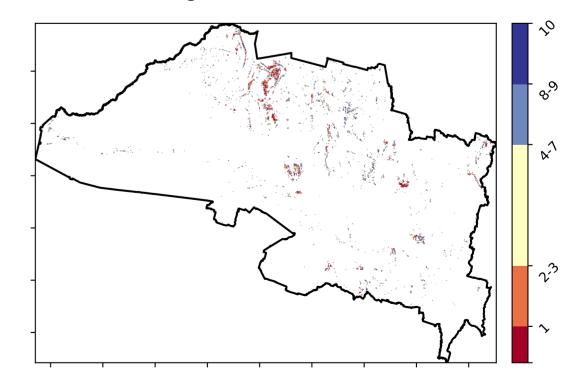
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### **Proportion of vegetation cover class in area**



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





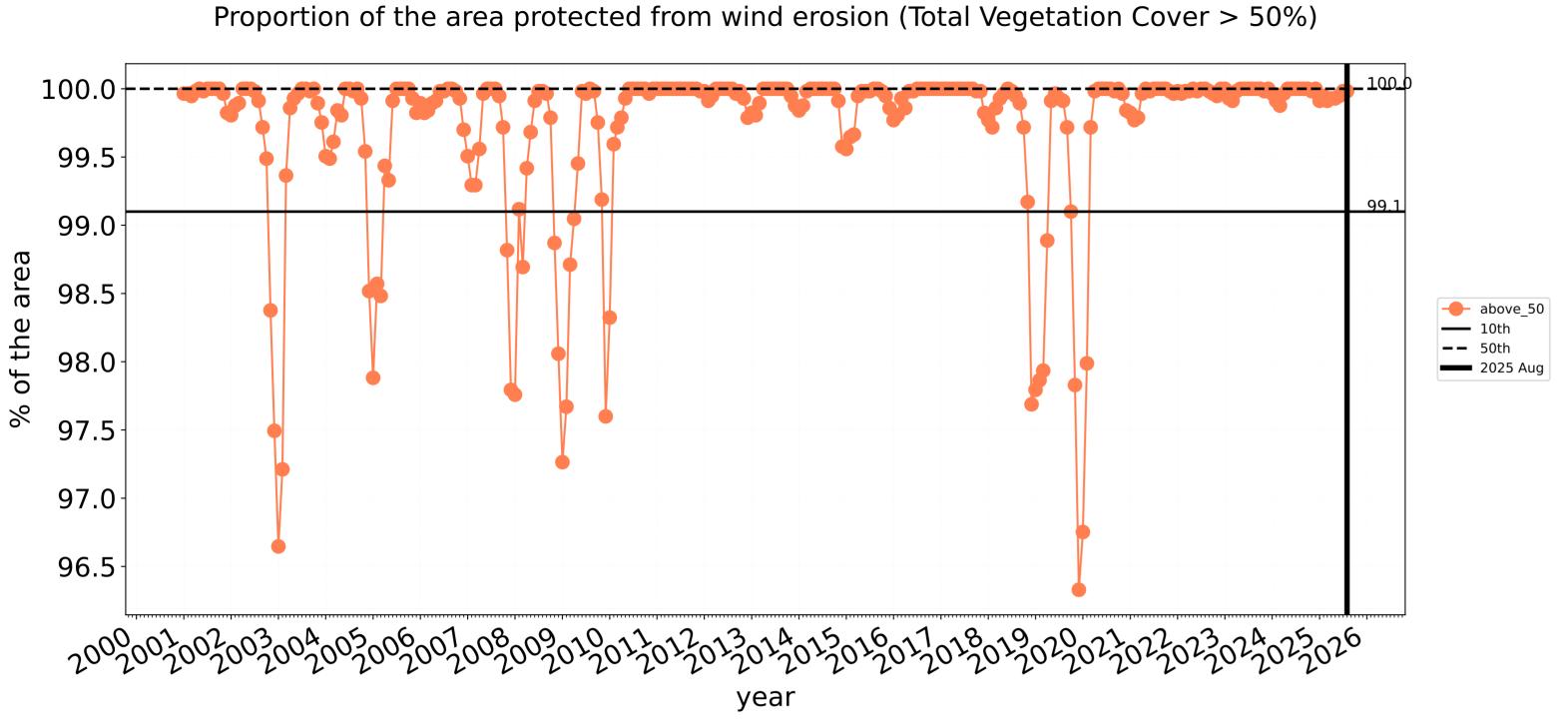


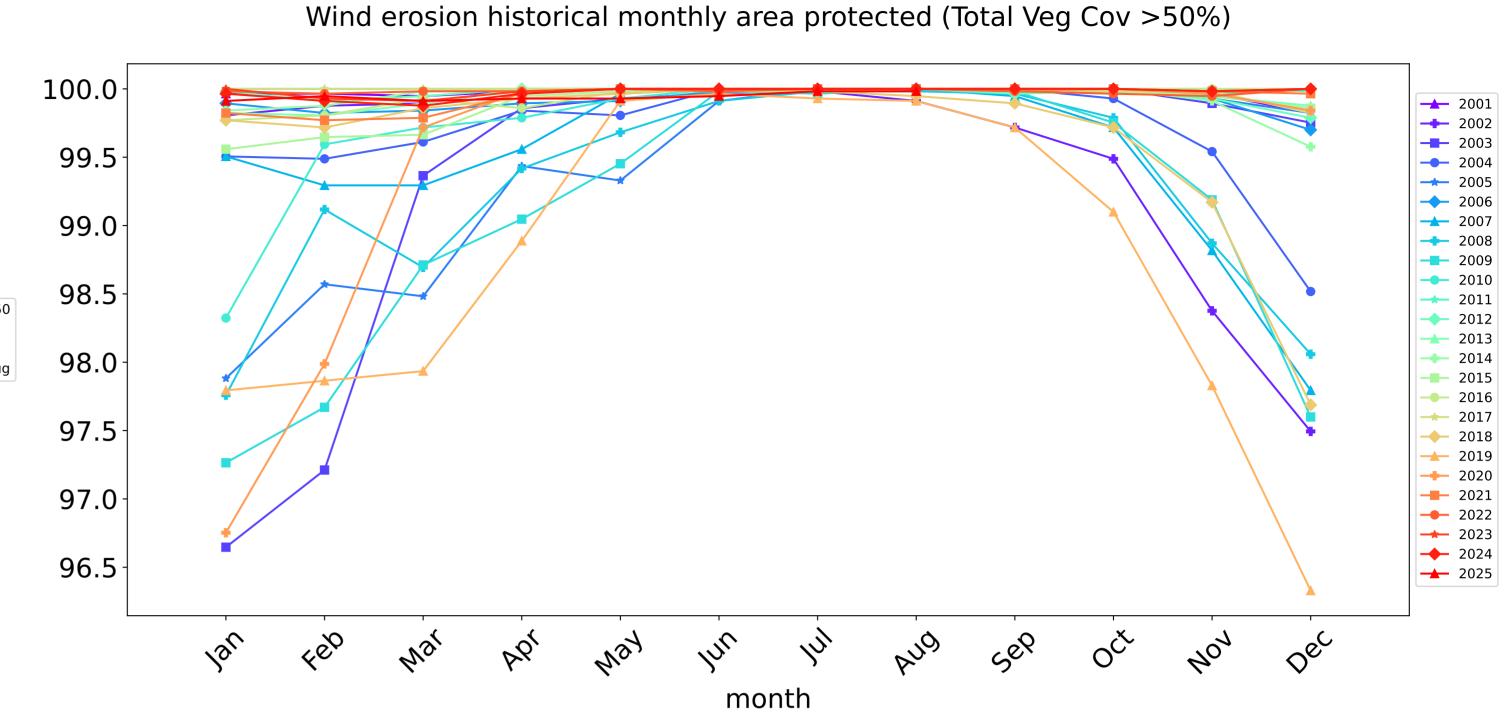


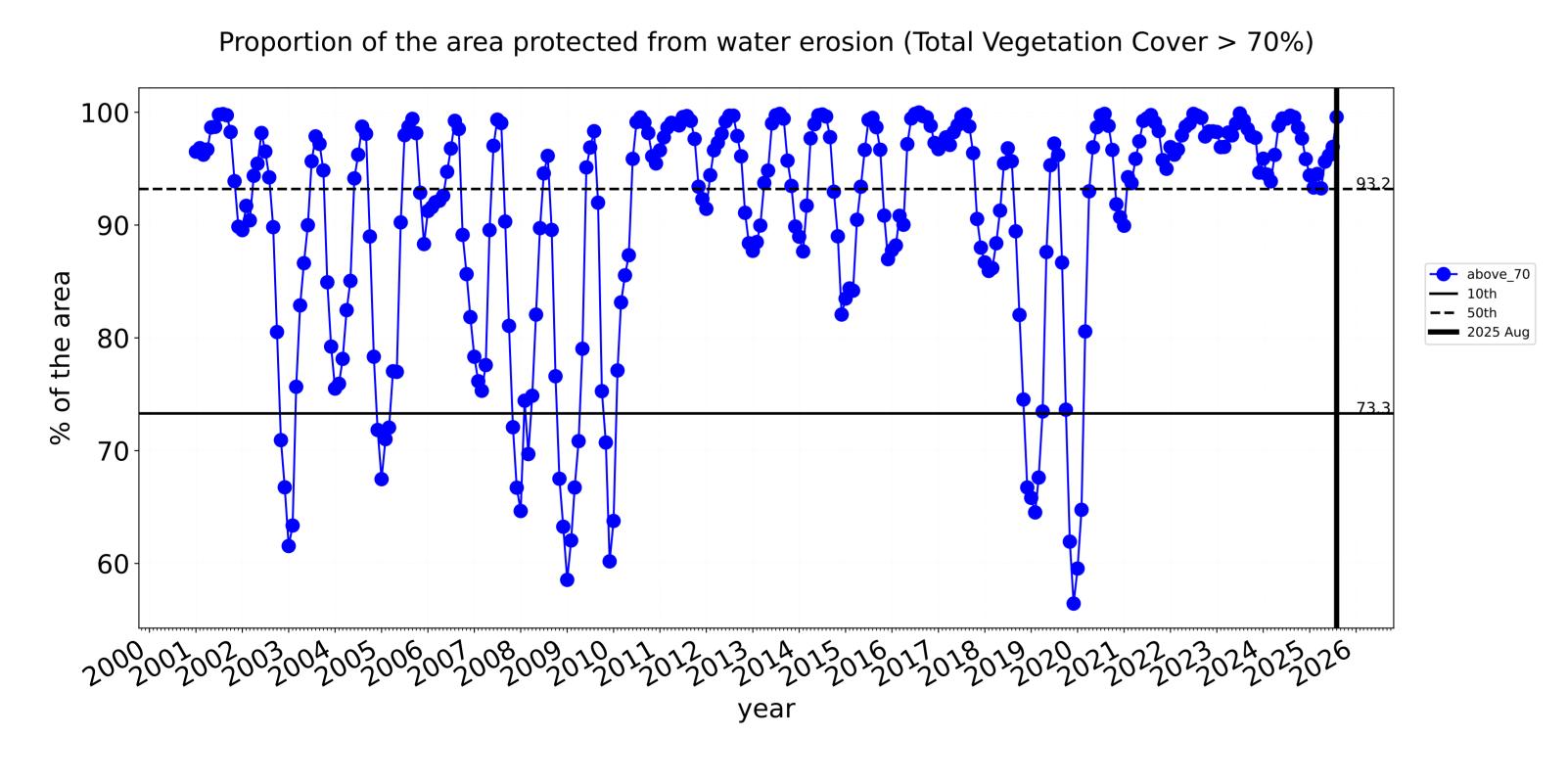


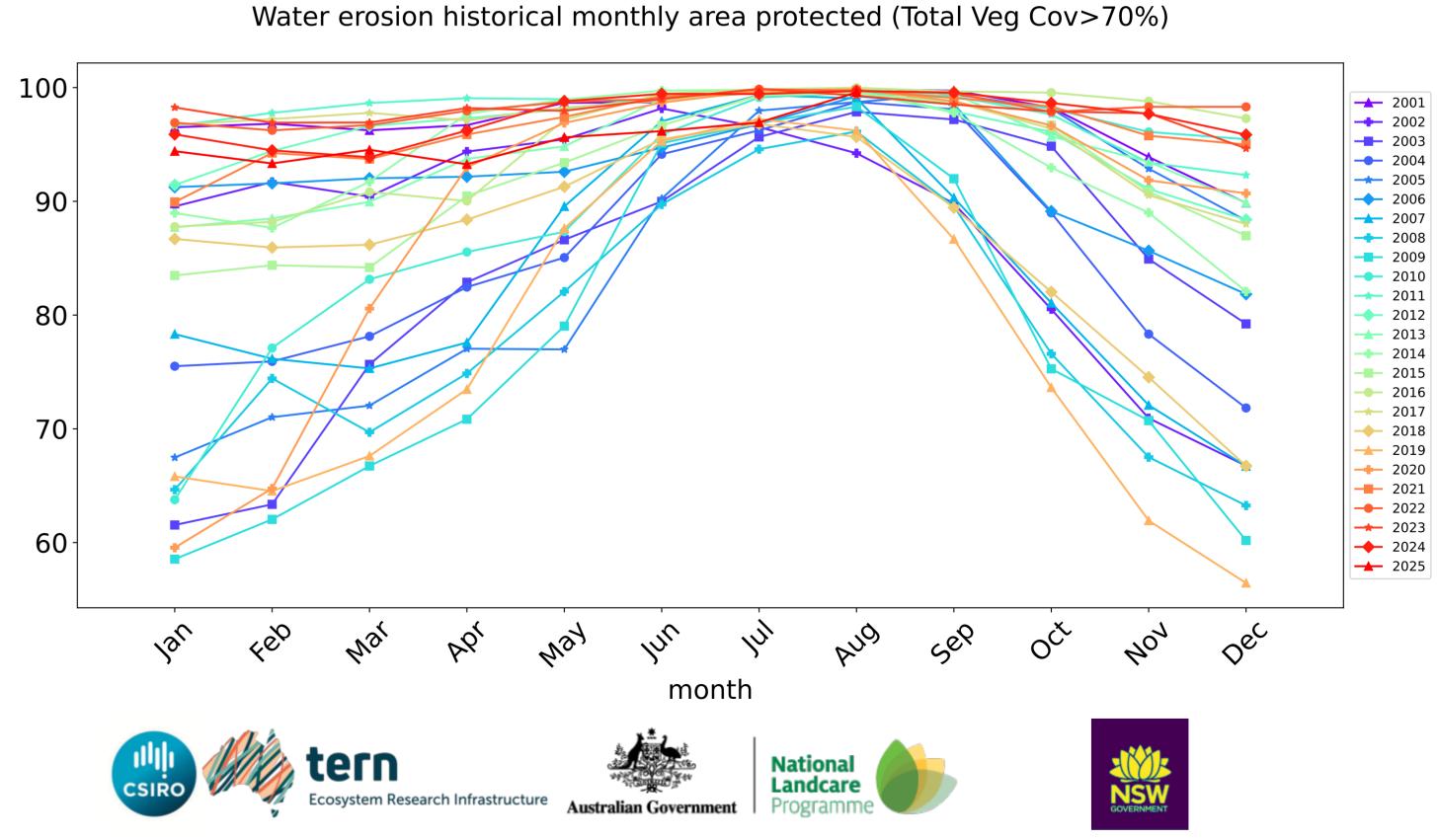


# **Grazing Woodland forest timeseries**



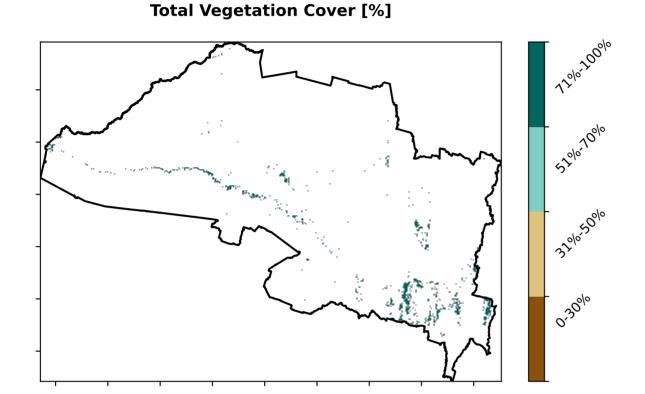




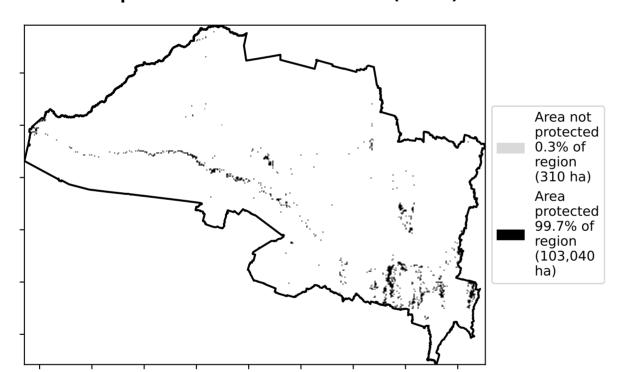


# **Grazing - Forest (non woodland)**

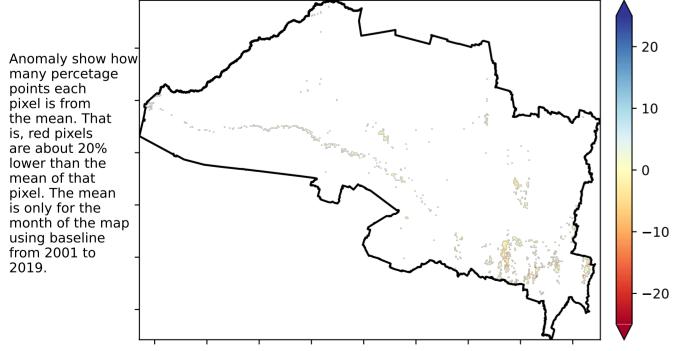
# Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Of Australia (2018) 1 Agriculture - Grazing - Non-woodland forest 1 Agriculture - Grazing - Non-woodland forest



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

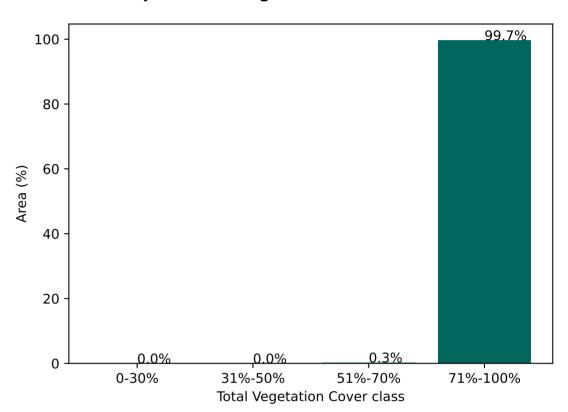


# Total Vegetation Cover Anomaly [%]

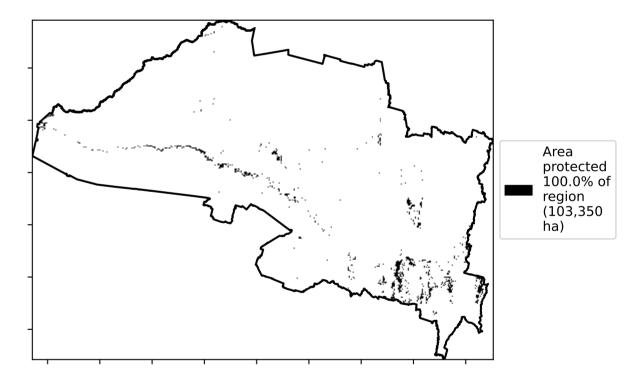


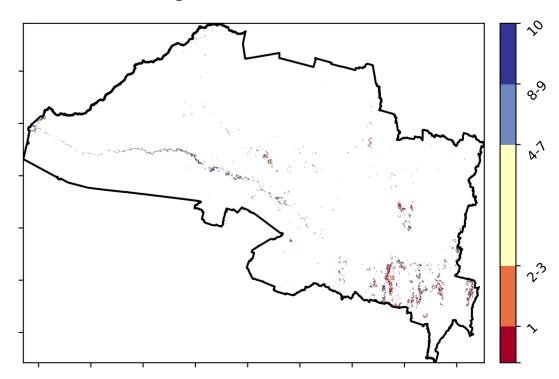
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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



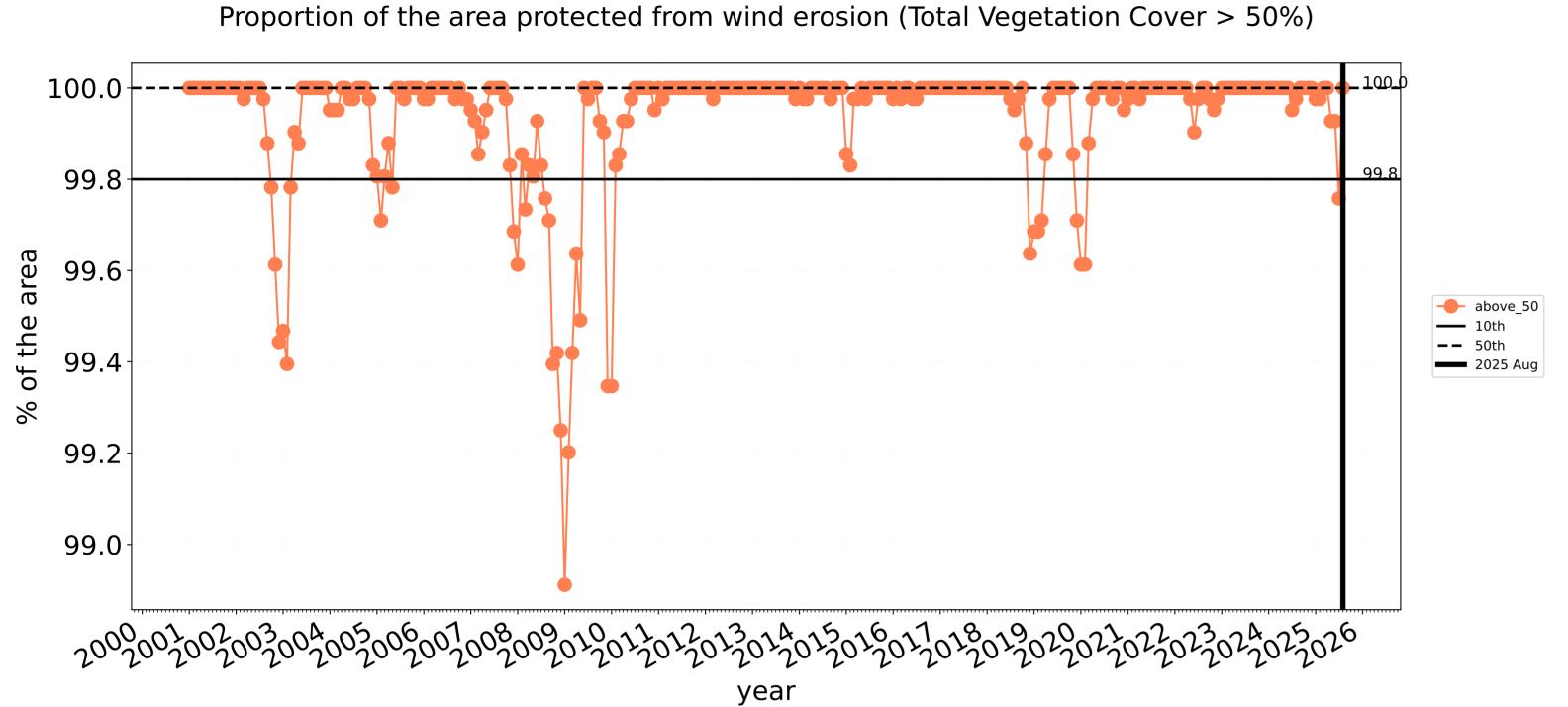


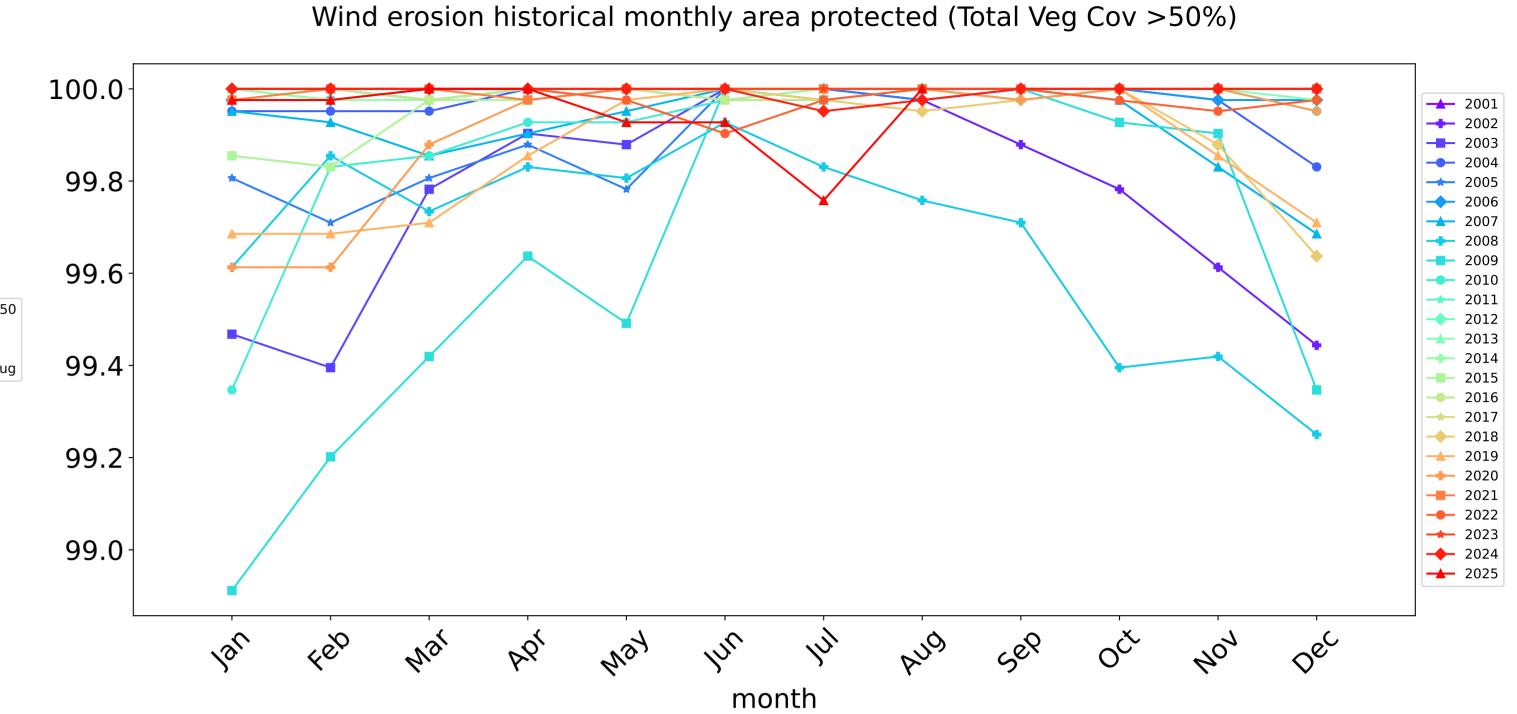


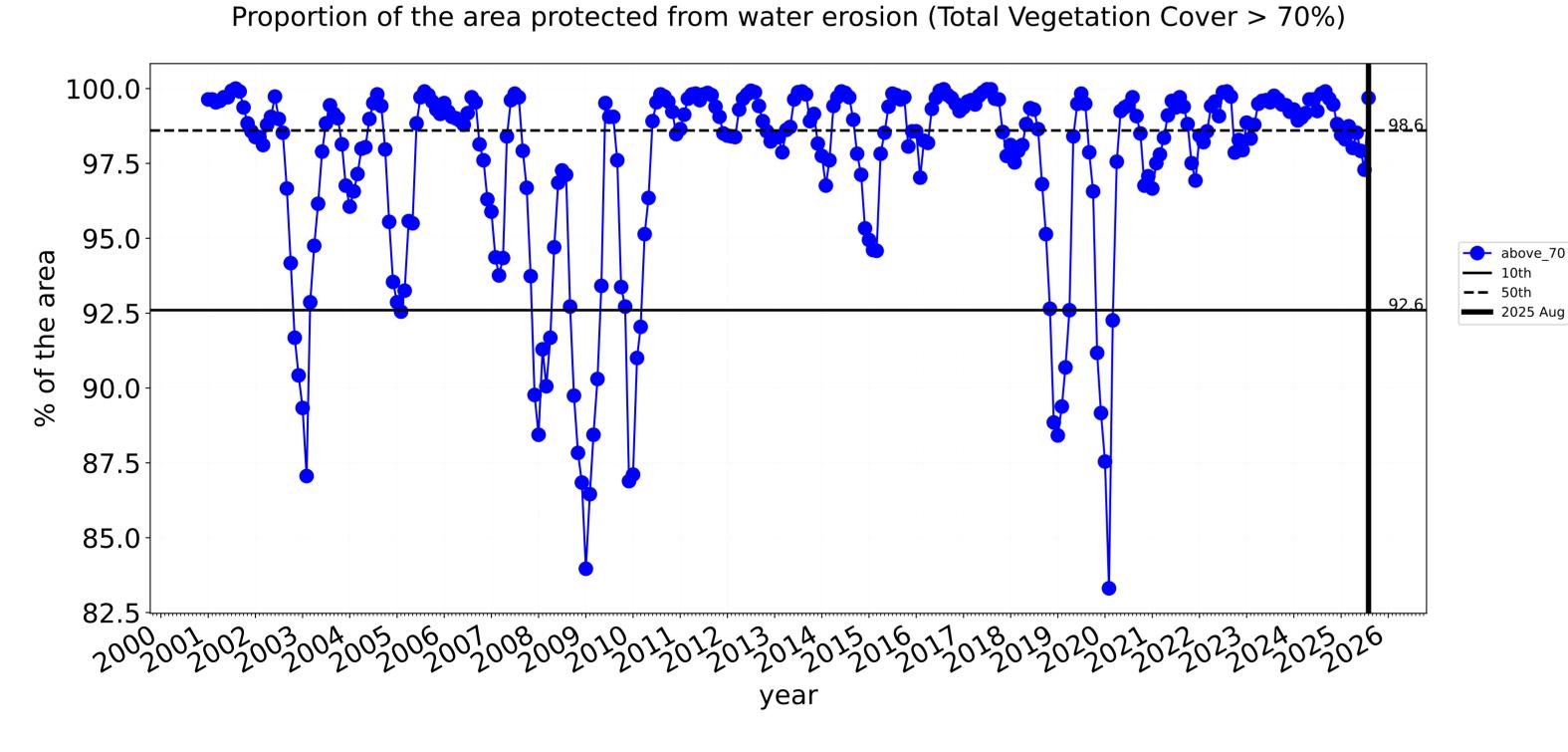


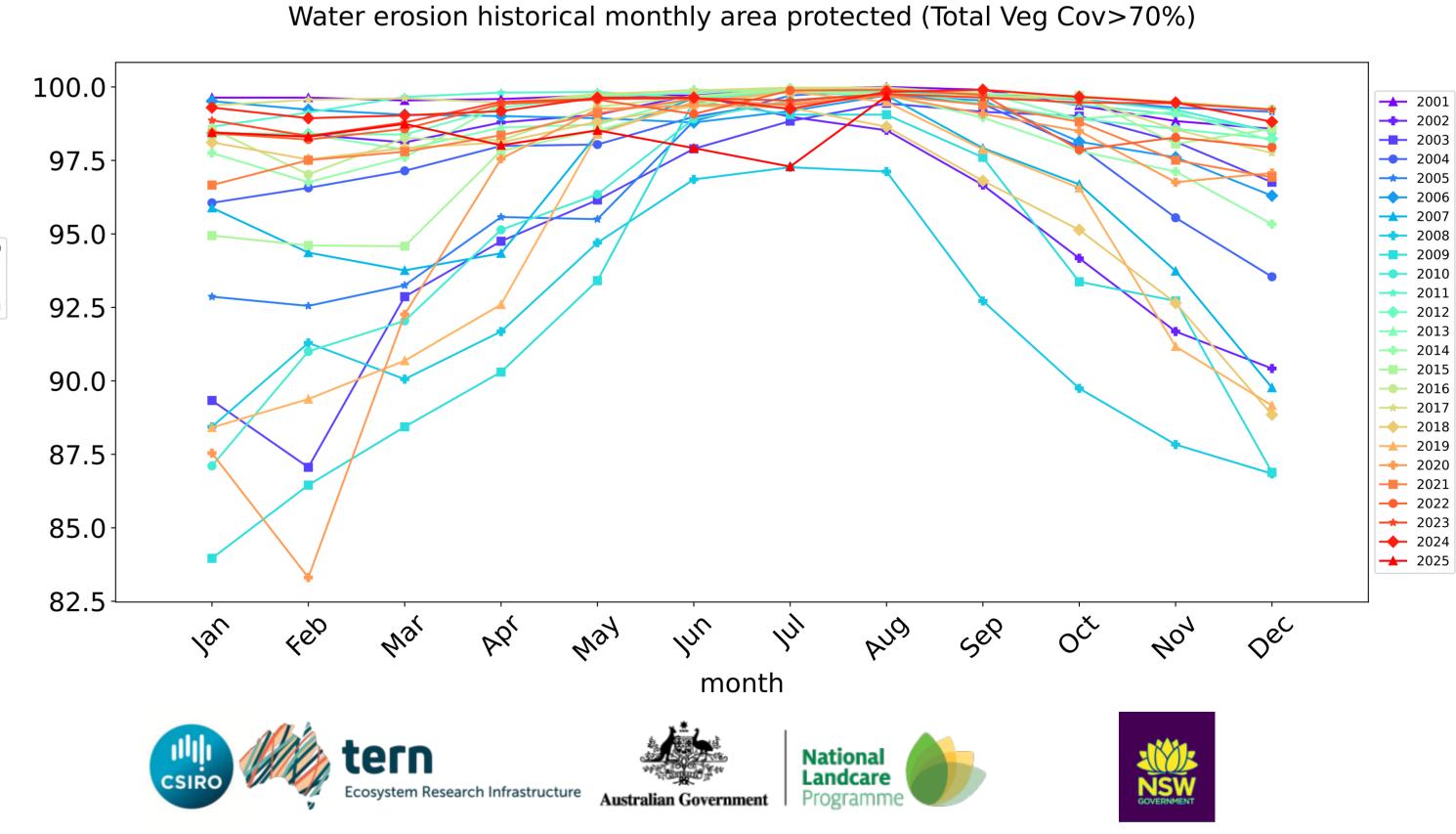






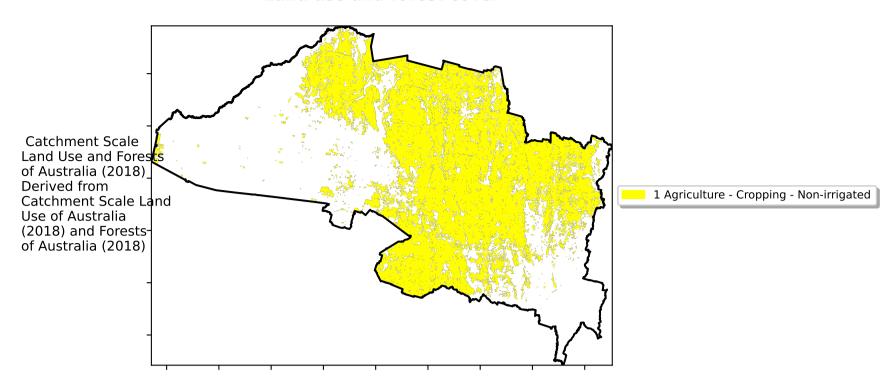




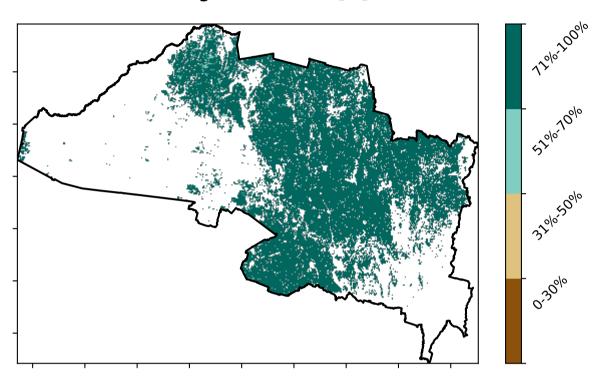


# **Cropping**

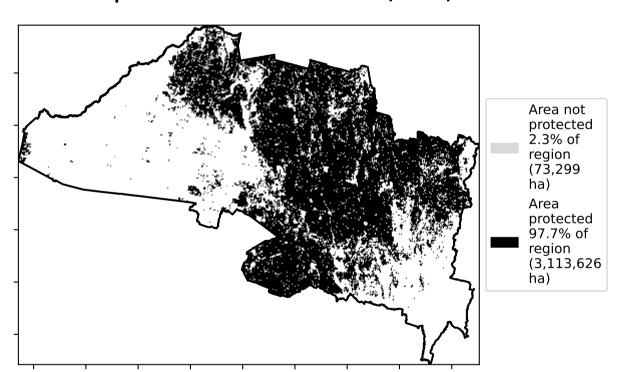
### Land use and forest cover



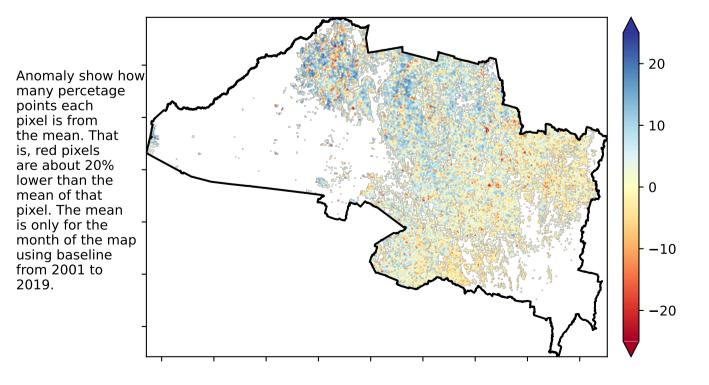
### **Total Vegetation Cover [%]**



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

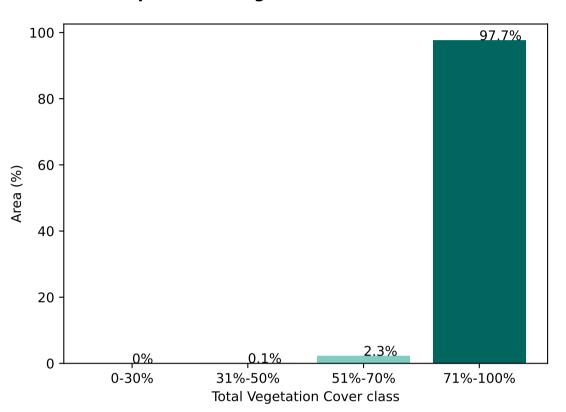


# Total Vegetation Cover Anomaly [%]

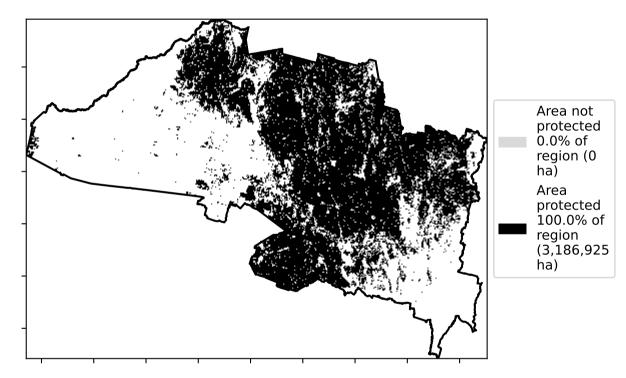


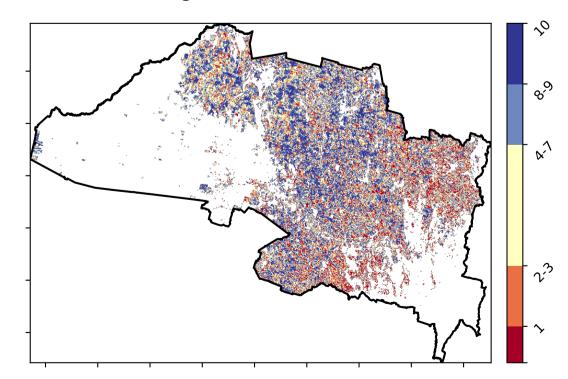
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





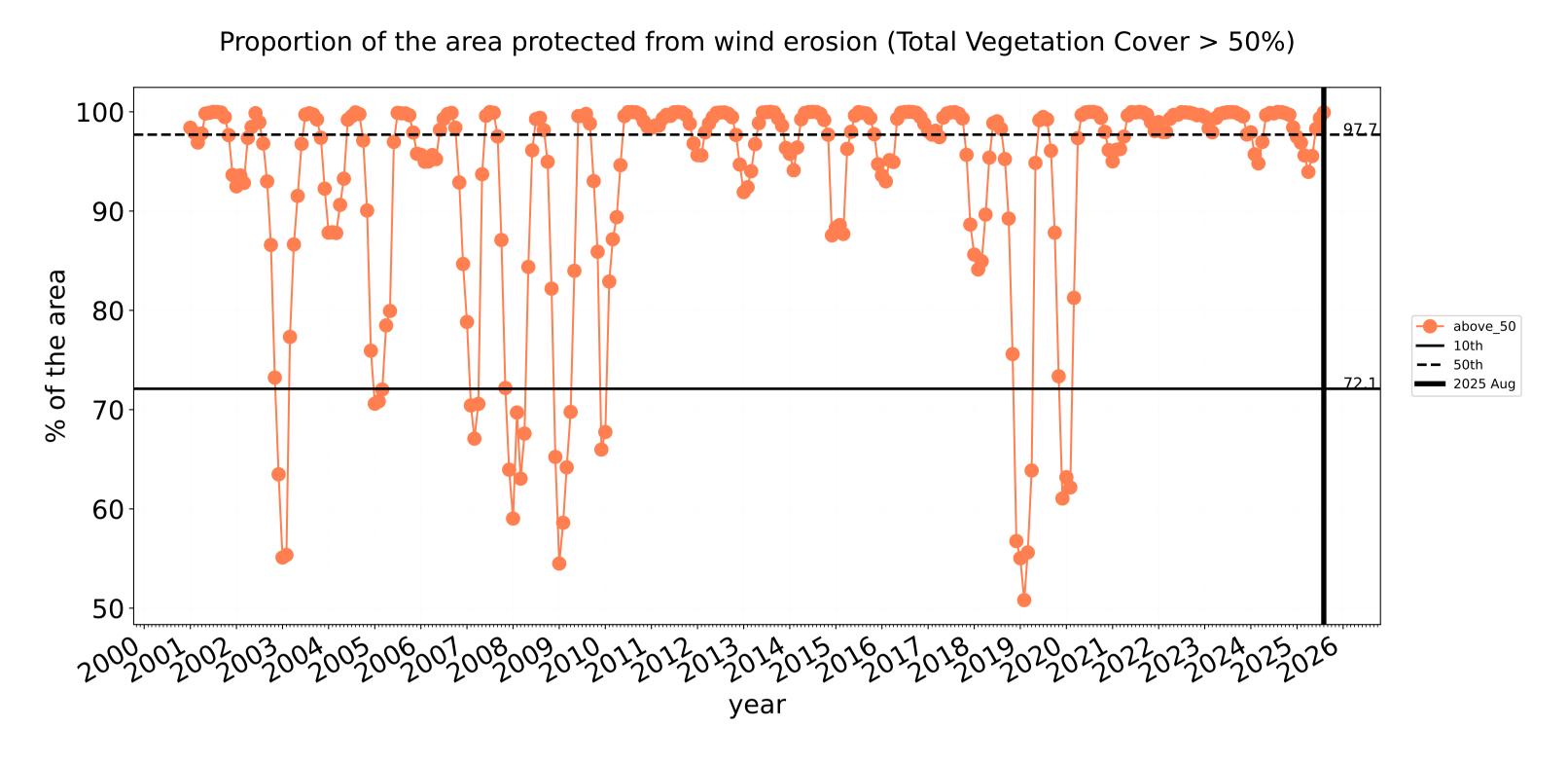


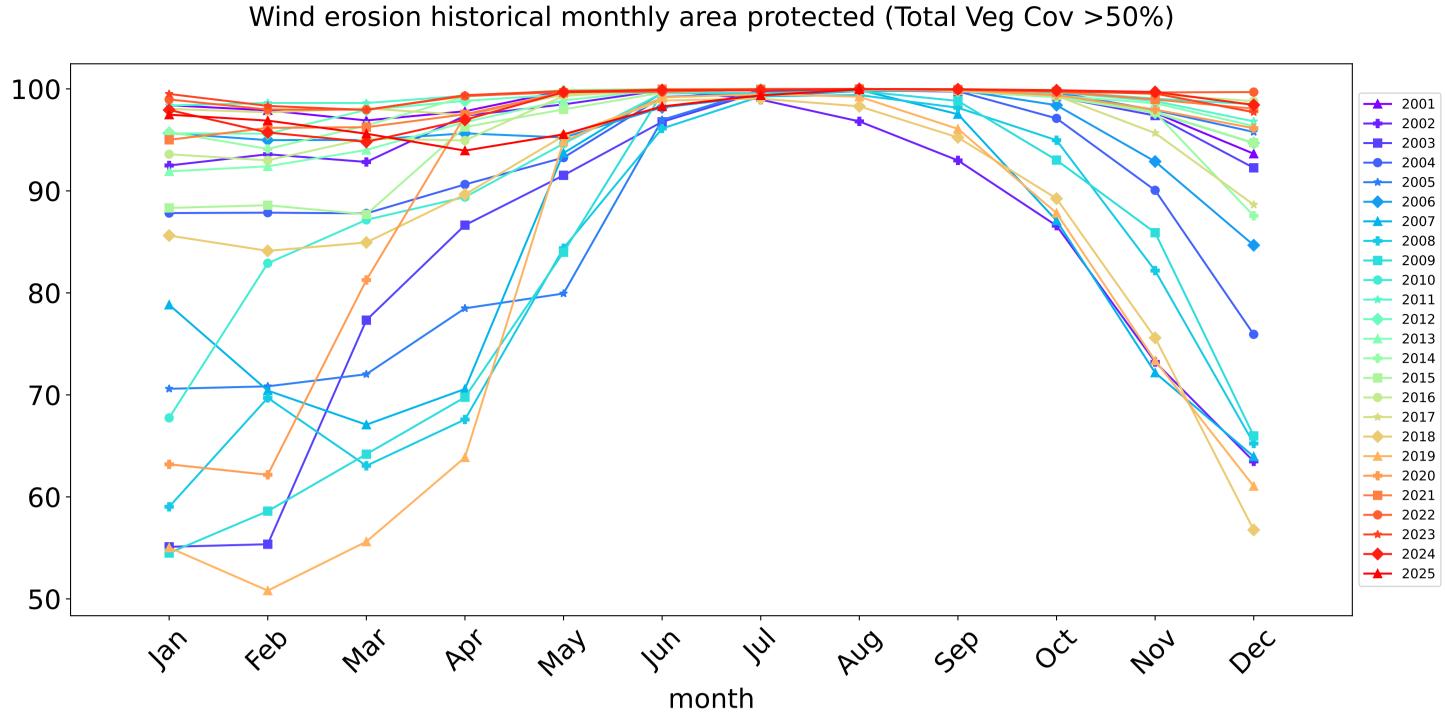


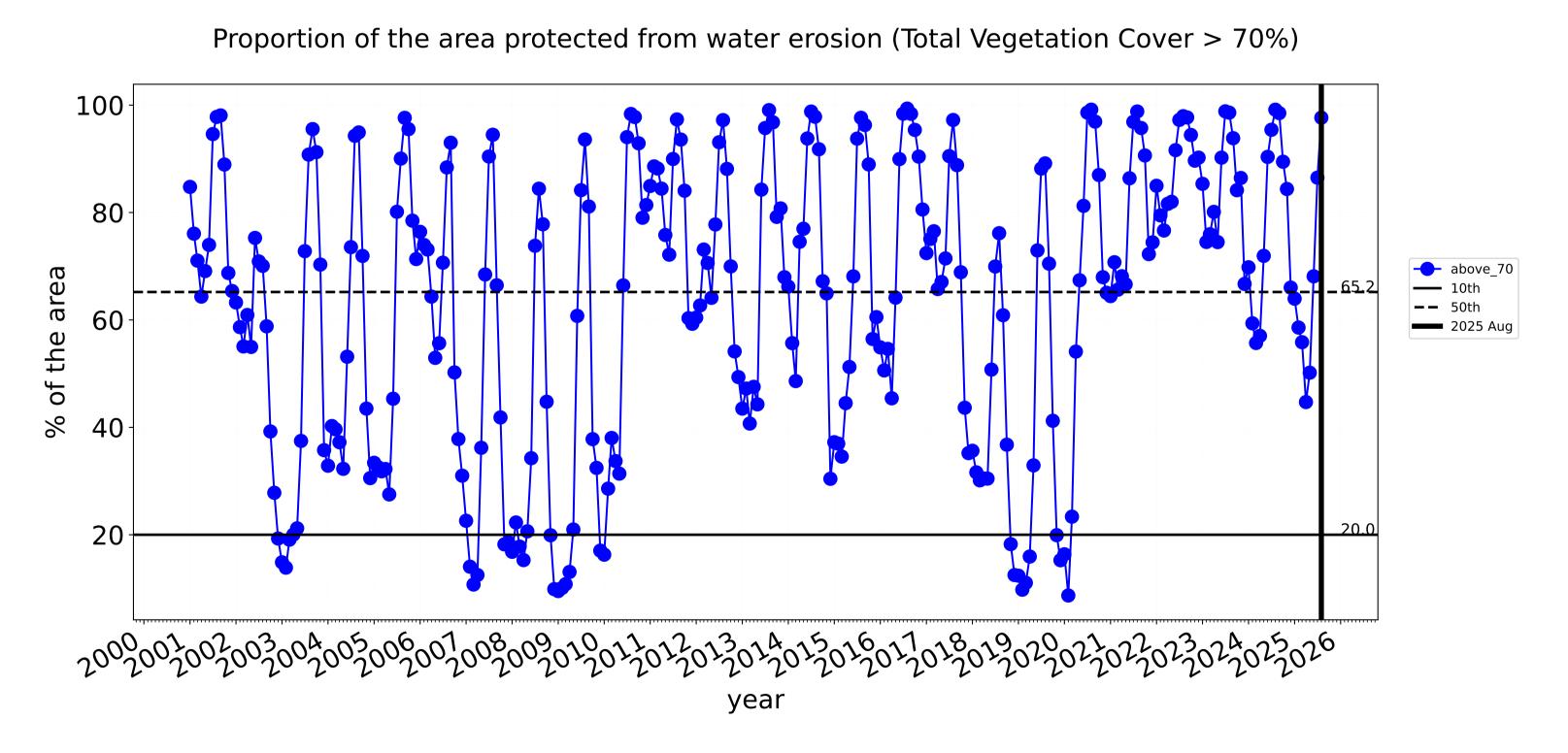


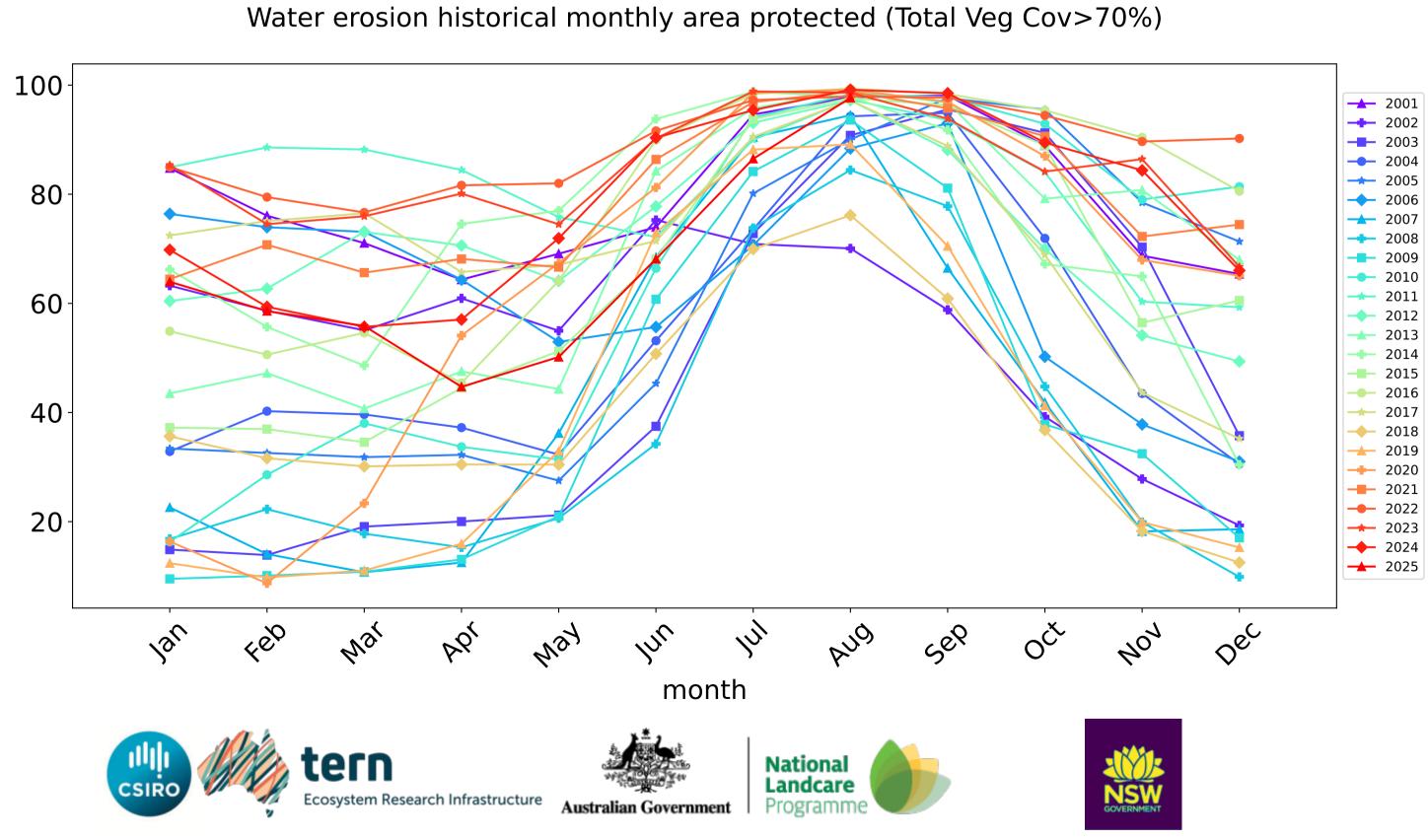


# **Cropping timeseries**

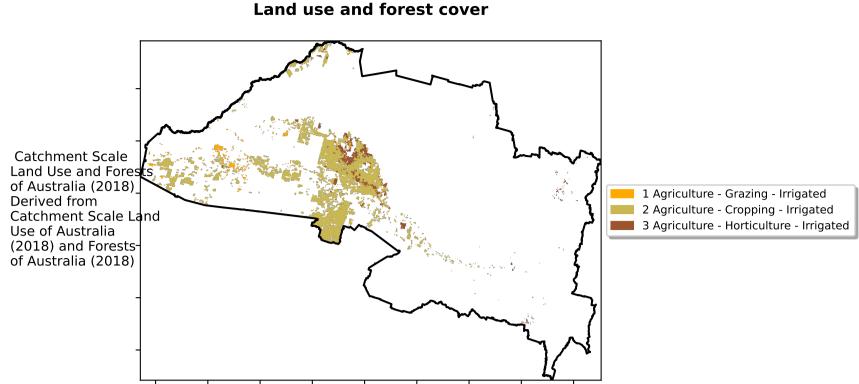


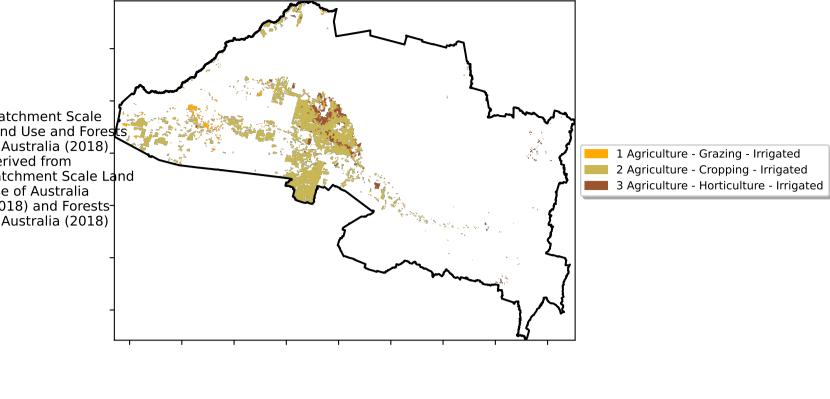


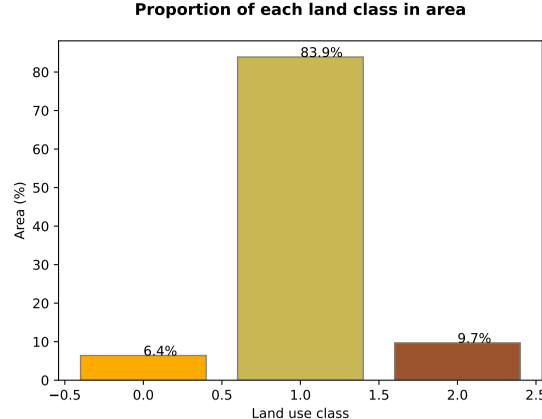


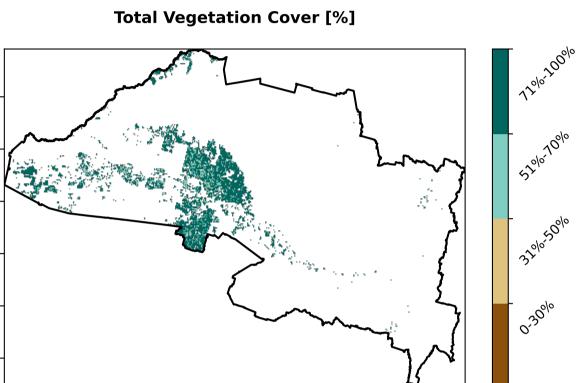


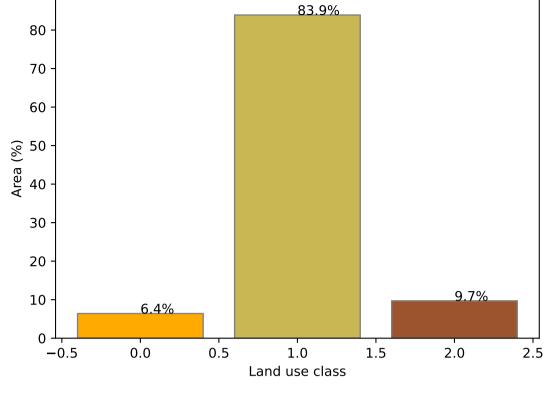
# Irrigation



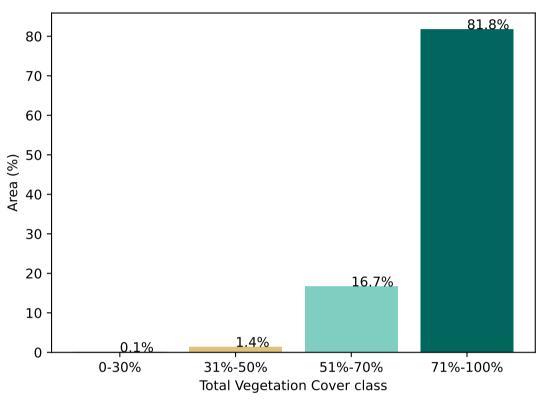


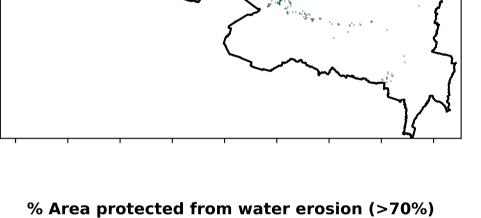




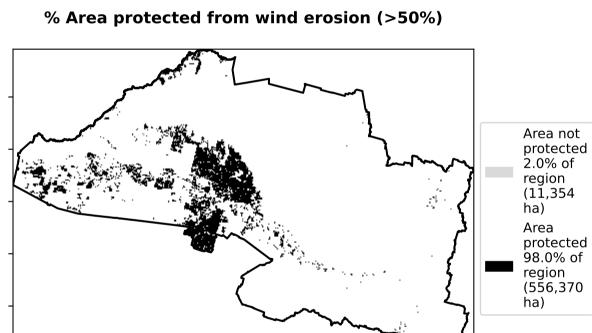


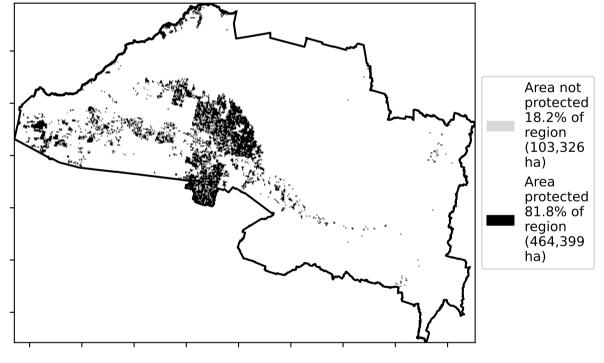
Proportion of vegetation cover class in area

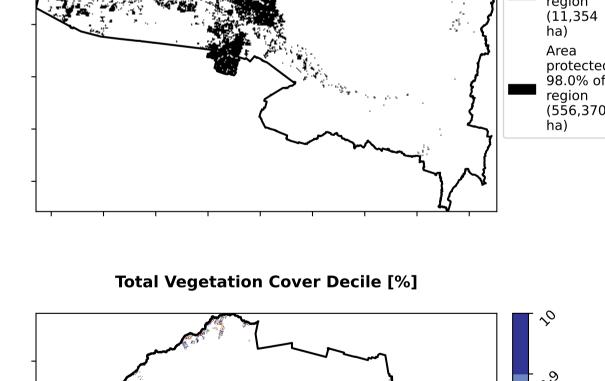


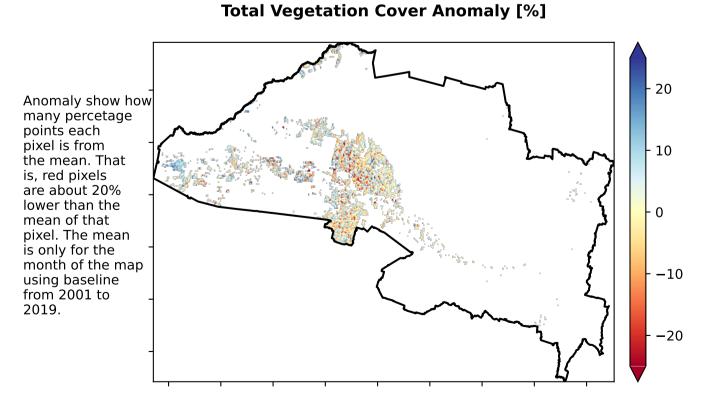


Area not protected 18.2% of region (103,326 ha) Area protected 81.8% of region (464,399 ha)

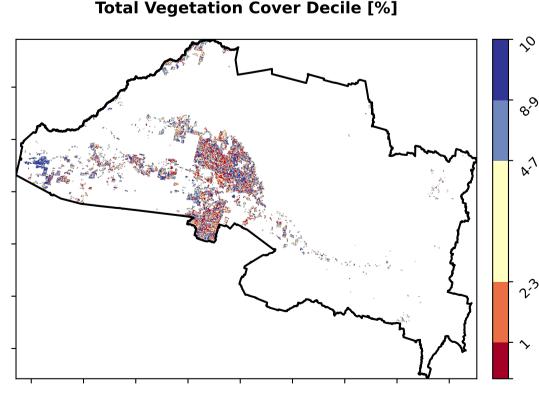








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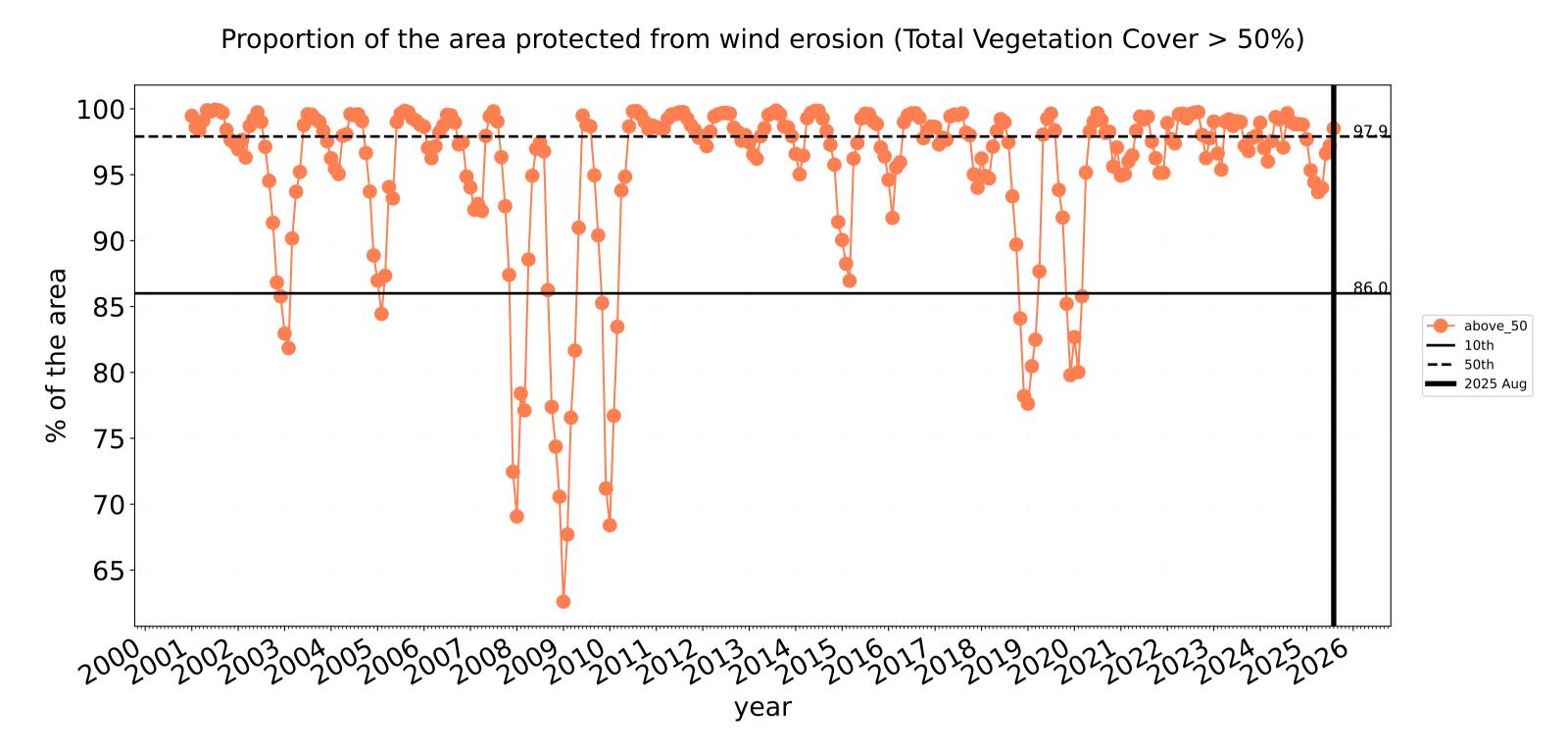


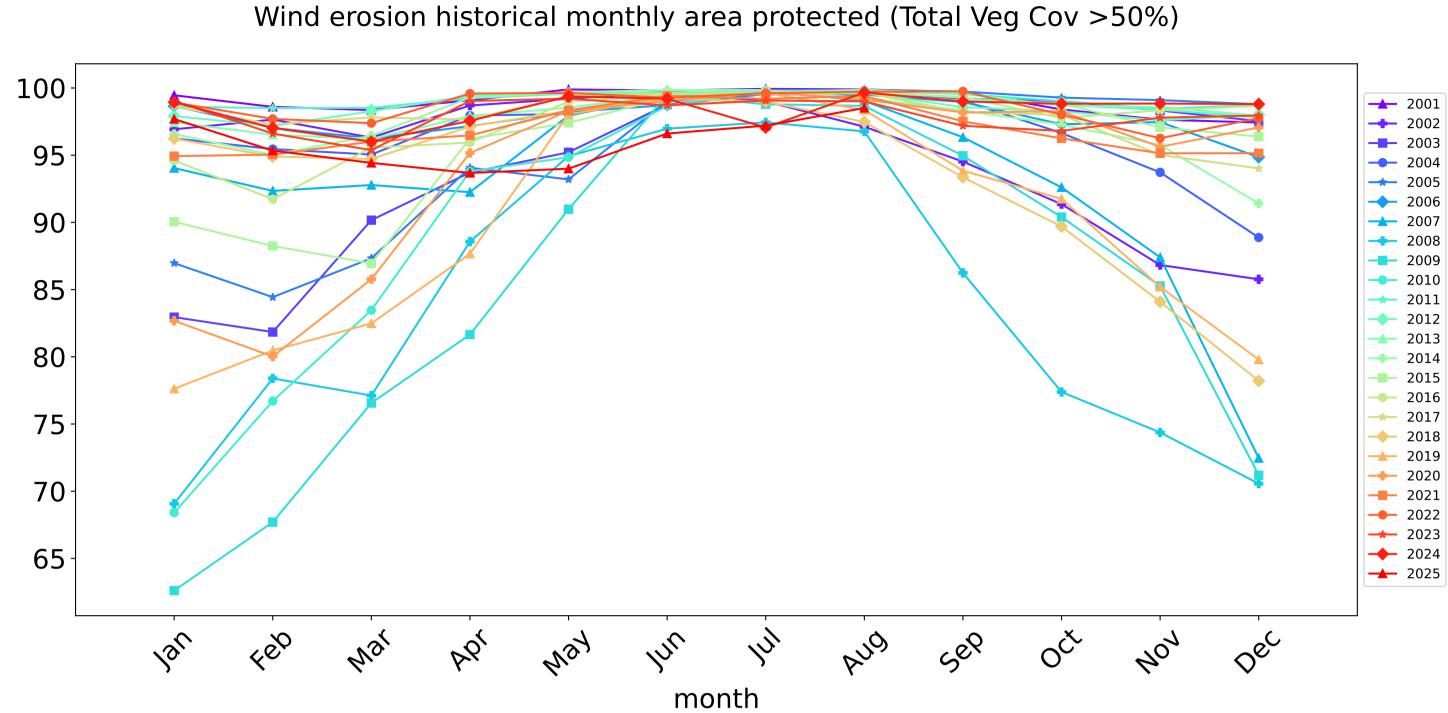


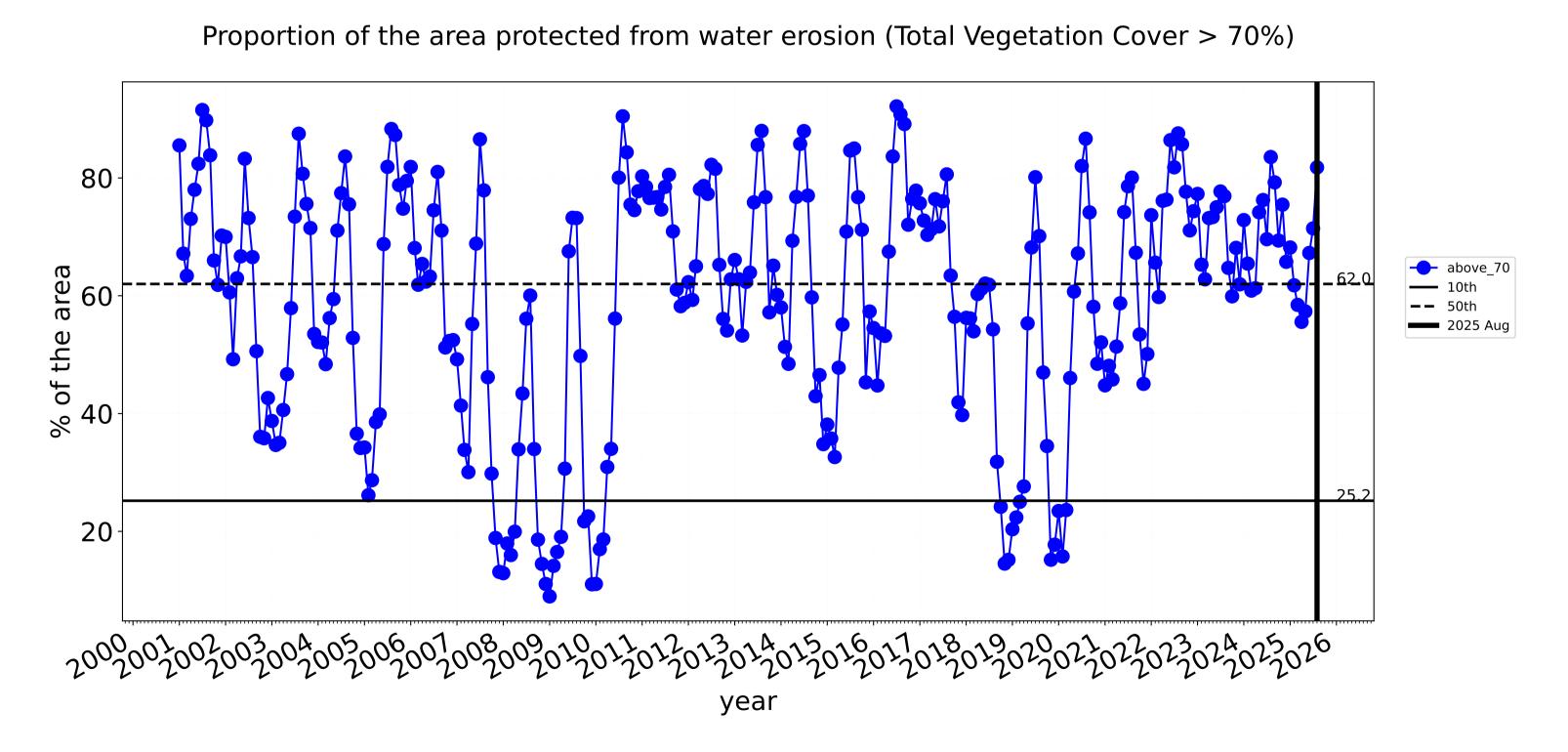


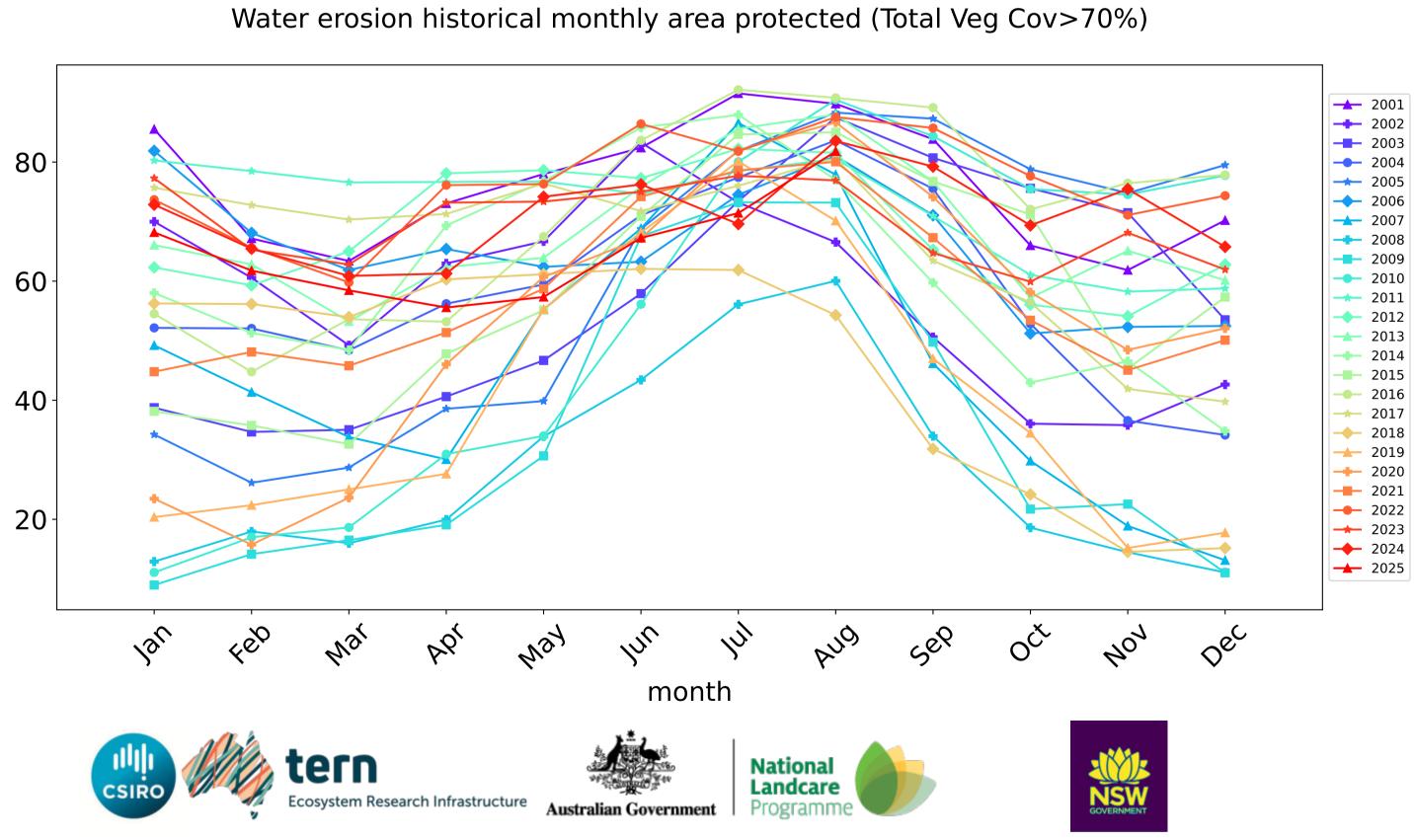








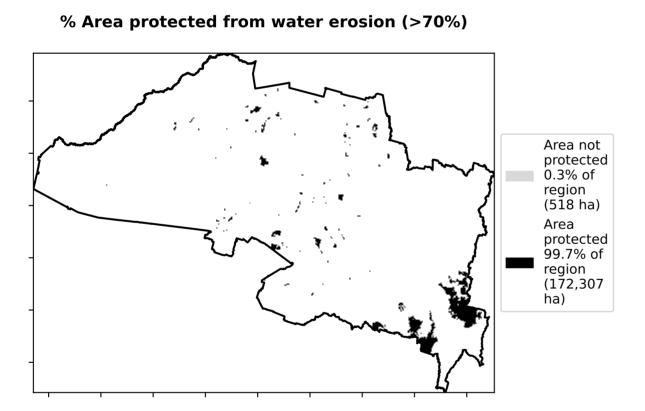


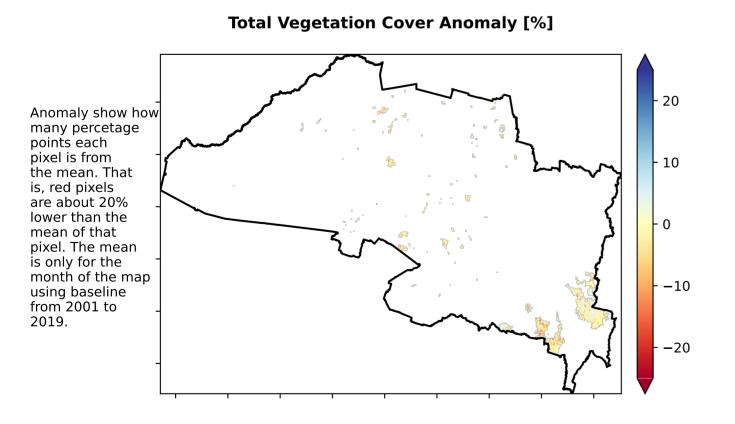


# **Production native forests and plantation forests**

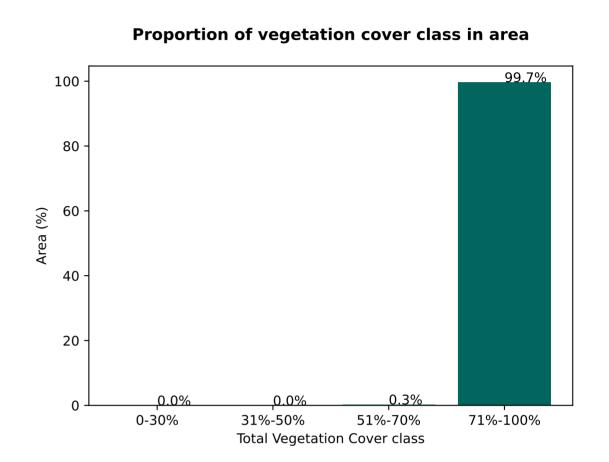
# Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) Of Australia (2018)

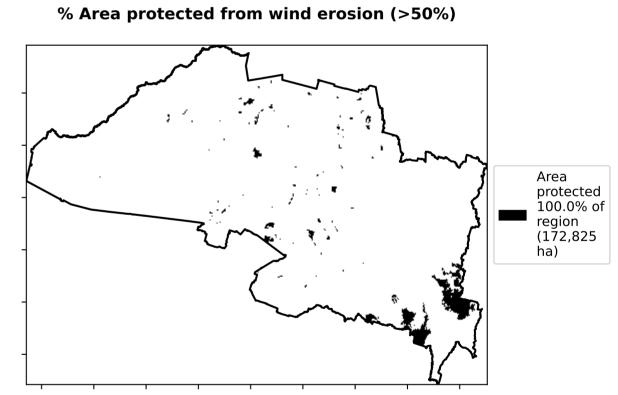
# Total Vegetation Cover [%] Total Vegetation Cover [%] Tiple Tipl

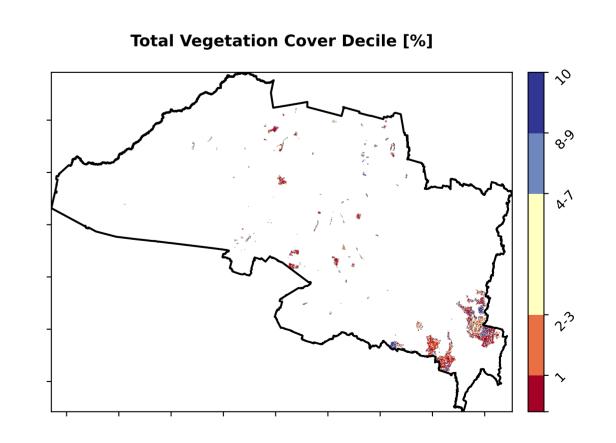




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.







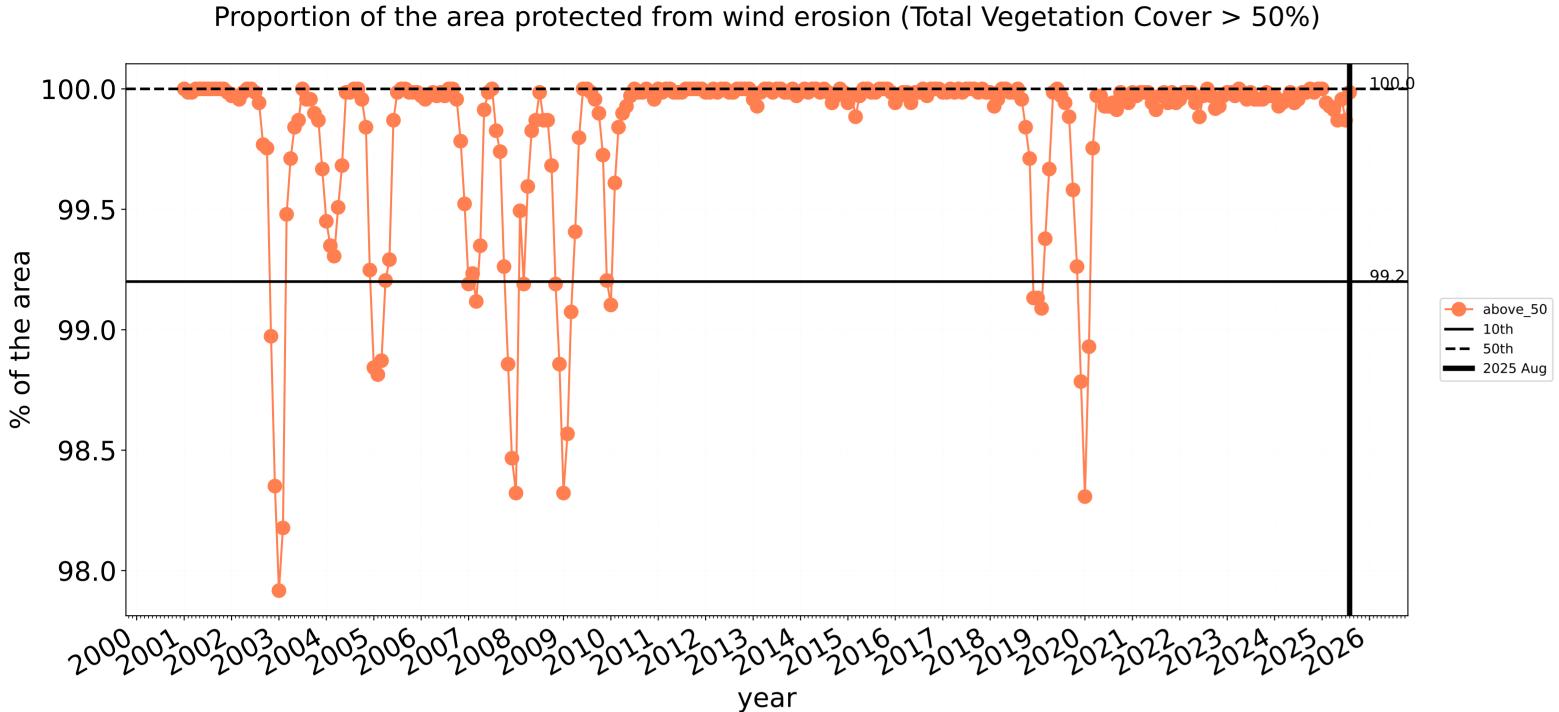


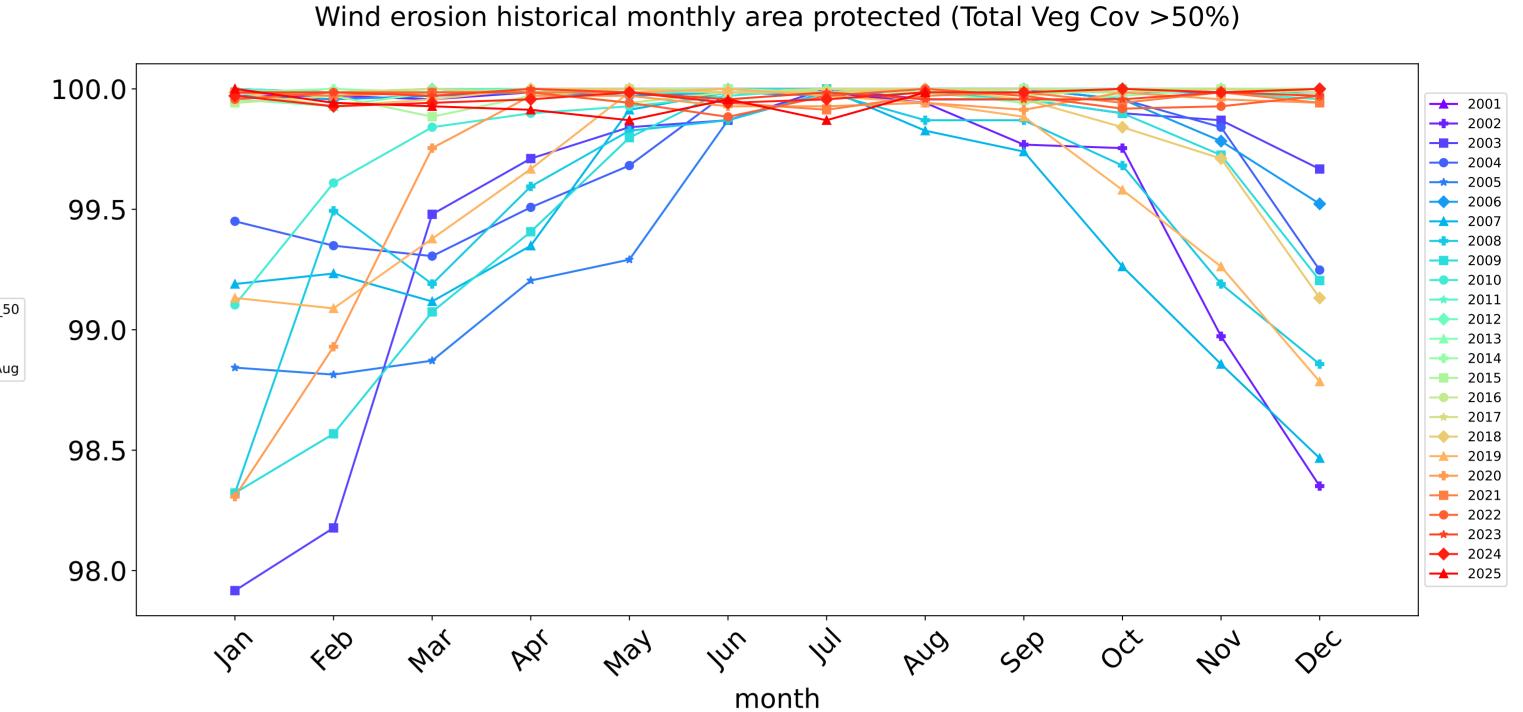


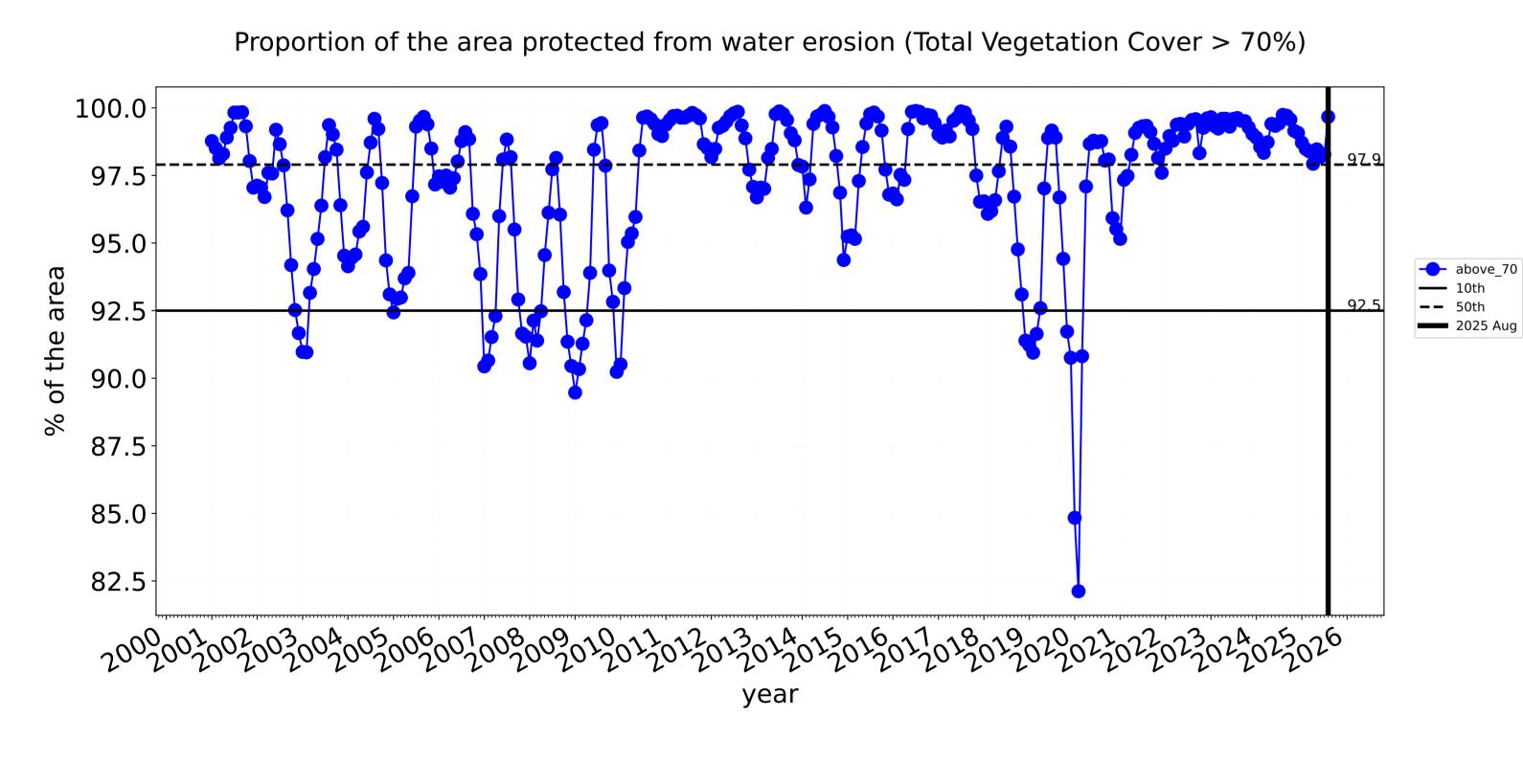


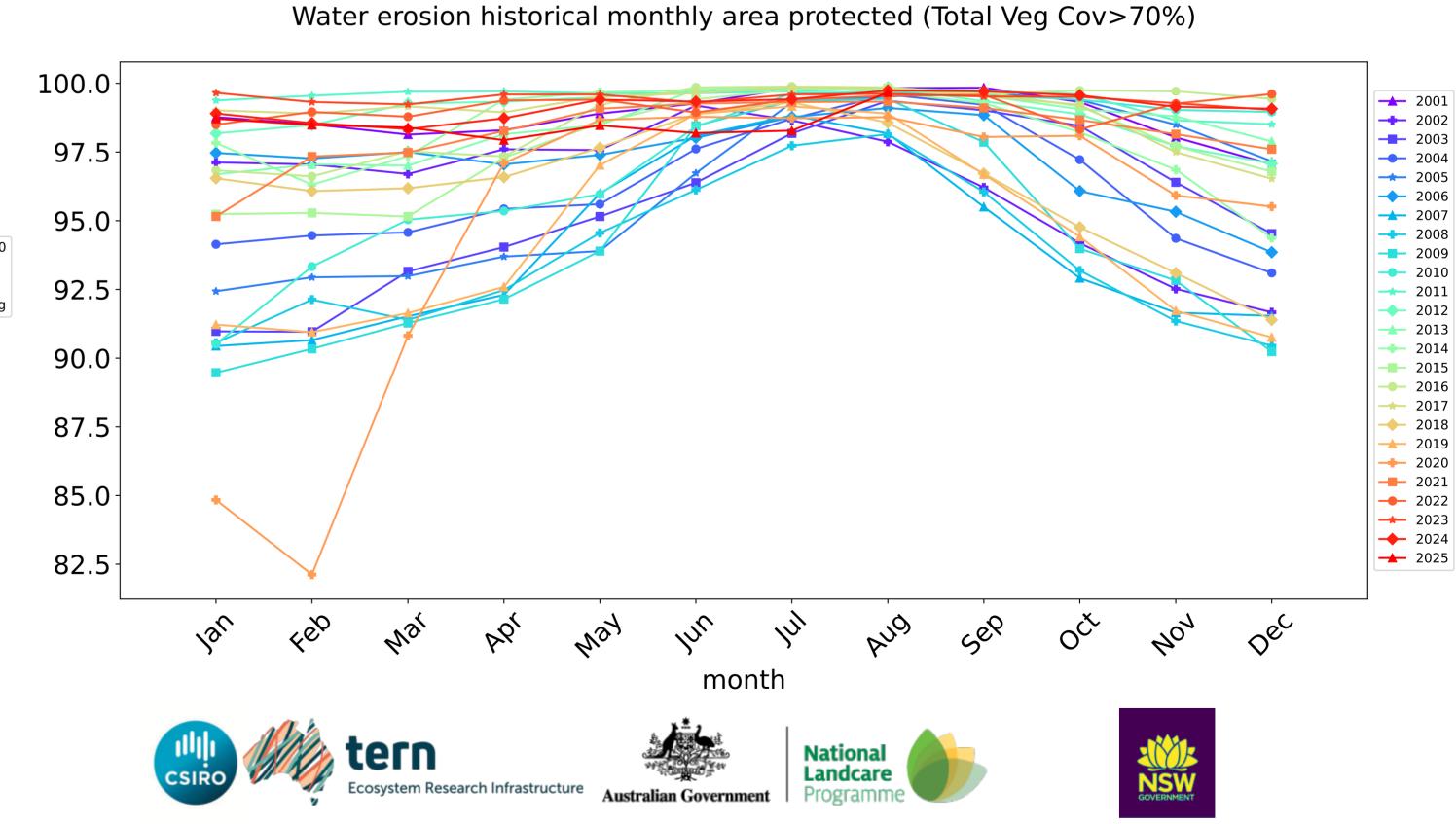


# **Production native forests and plantation forests timeseries**









# Riverina (6,693,850 ha and no data 14,485 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	6,693,850	100.0% 6,691,300	99.7% 6,674,625	94.9% 6,353,400	78.6% 5,260,475	29.5% 1,977,775	10.2% 685,750
Conservation and natural environments	322,075	99.9% 321,875	99.8% 321,550	97.6% 314,450	87.8% 282,925	57.8% 186,025	27.1% 87,375
Conservation and natural environments non forest	83,225	100.0% 83,225	99.9% 83,175	93.0% 77,400	64.4% 53,600	23.7% 19,750	11.8% 9,800
Conservation and natural environments Forest (non woodland)	194,400	99.9% 194,200	99.8% 193,925	99.1% 192,700	96.2% 187,075	75.1% 146,000	36.9% 71,650
Agriculture	6,068,175	100.0% 6,066,925	99.8% 6,053,325	94.9% 5,756,550	78.0% 4,735,475	27.5% 1,667,225	8.9% 541,100
Grazing	2,311,700	100.0% 2,311,075	99.8% 2,307,025	94.2% 2,177,975	76.5% 1,768,500	26.7% 617,425	7.3% 169,600
Grazing non forest	2,066,700	100.0% 2,066,075	99.8% 2,062,050	93.6% 1,933,900	74.5% 1,538,900	24.6% 509,175	6.7% 137,475
Grazing Woodland forest	141,650	100.0% 141,650	100.0% 141,625	99.6% 141,050	92.3% 130,750	36.1% 51,200	8.1% 11,450
Grazing - Forest (non woodland)	103,350	100.0% 103,350	100.0% 103,350	99.7% 103,025	95.6% 98,850	55.2% 57,050	20.0% 20,675
Cropping	3,186,925	100.0% 3,186,850	99.9% 3,185,200	97.7% 3,112,475	84.0% 2,676,025	31.0% 986,975	11.1% 353,925
Irrigation	567,725	99.9% 567,175	98.5% 559,275	81.8% 464,325	51.1% 289,850	11.0% 62,575	3.1% 17,475
Production native forests and plantation forests	172,825	100.0% 172,825	100.0% 172,800	99.7% 172,250	96.6% 166,900	62.4% 107,925	31.0% 53,625







