# Total vegetation cover soil protection Region:NRM Murray 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: April 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



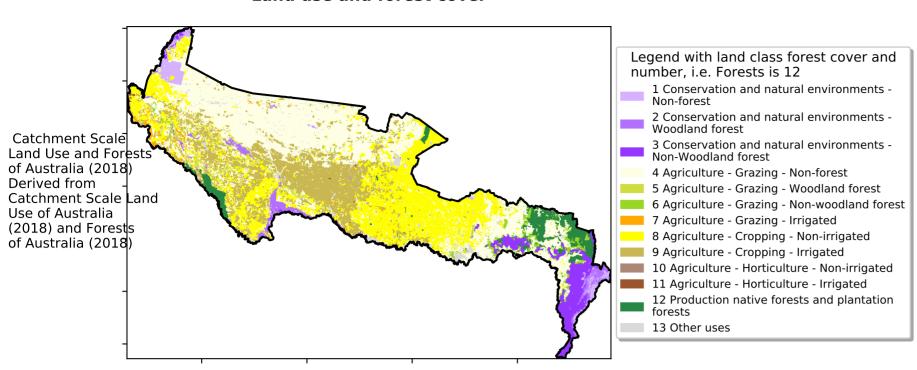




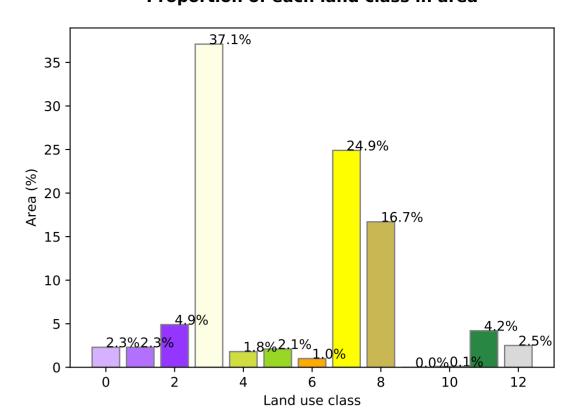


# **Vegetation Cover Apr 2025**

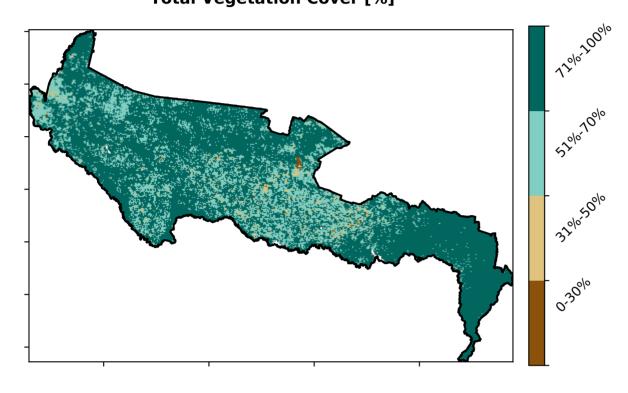
### Land use and forest cover



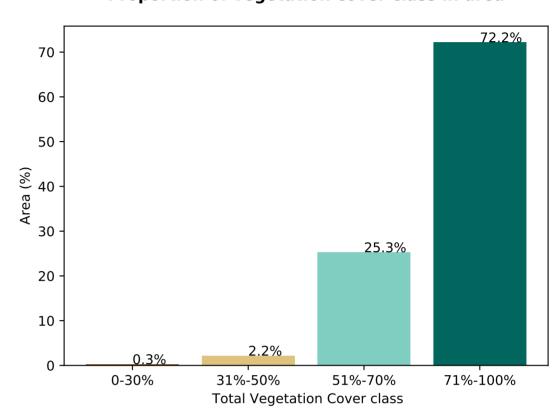
# Proportion of each land class in area



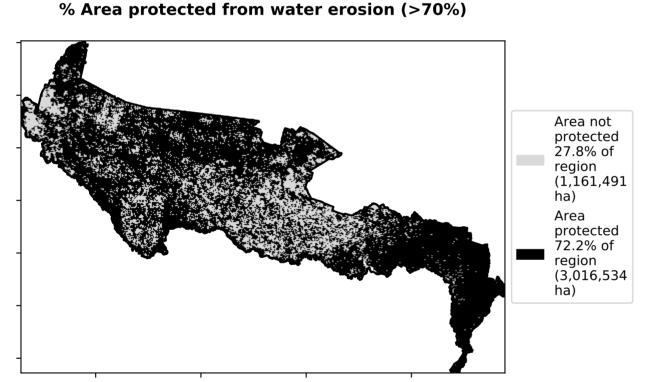
# Total Vegetation Cover [%]



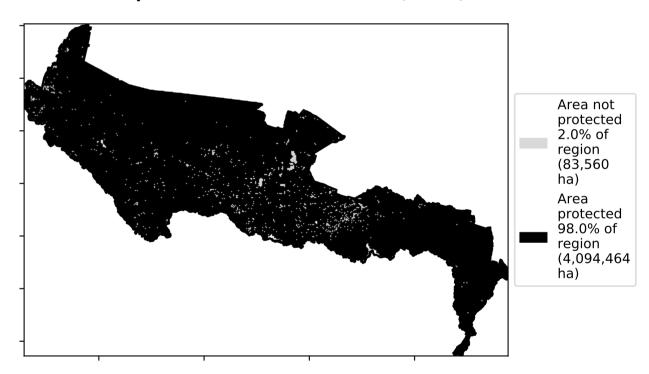
Proportion of vegetation cover class in area



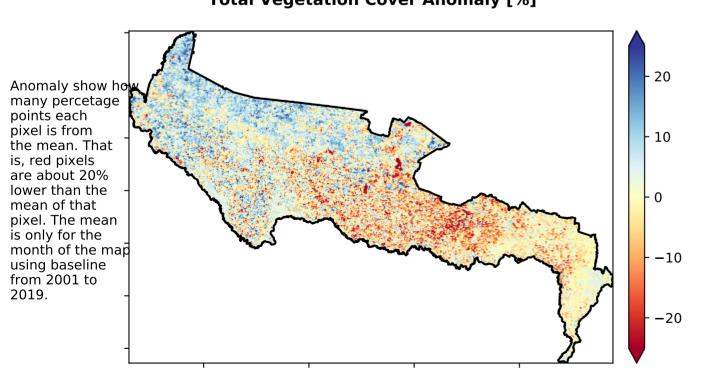
### O/ Aven mystested from water eresion (> 700/)



% Area protected from wind erosion (>50%)



# Total Vegetation Cover Anomaly [%]



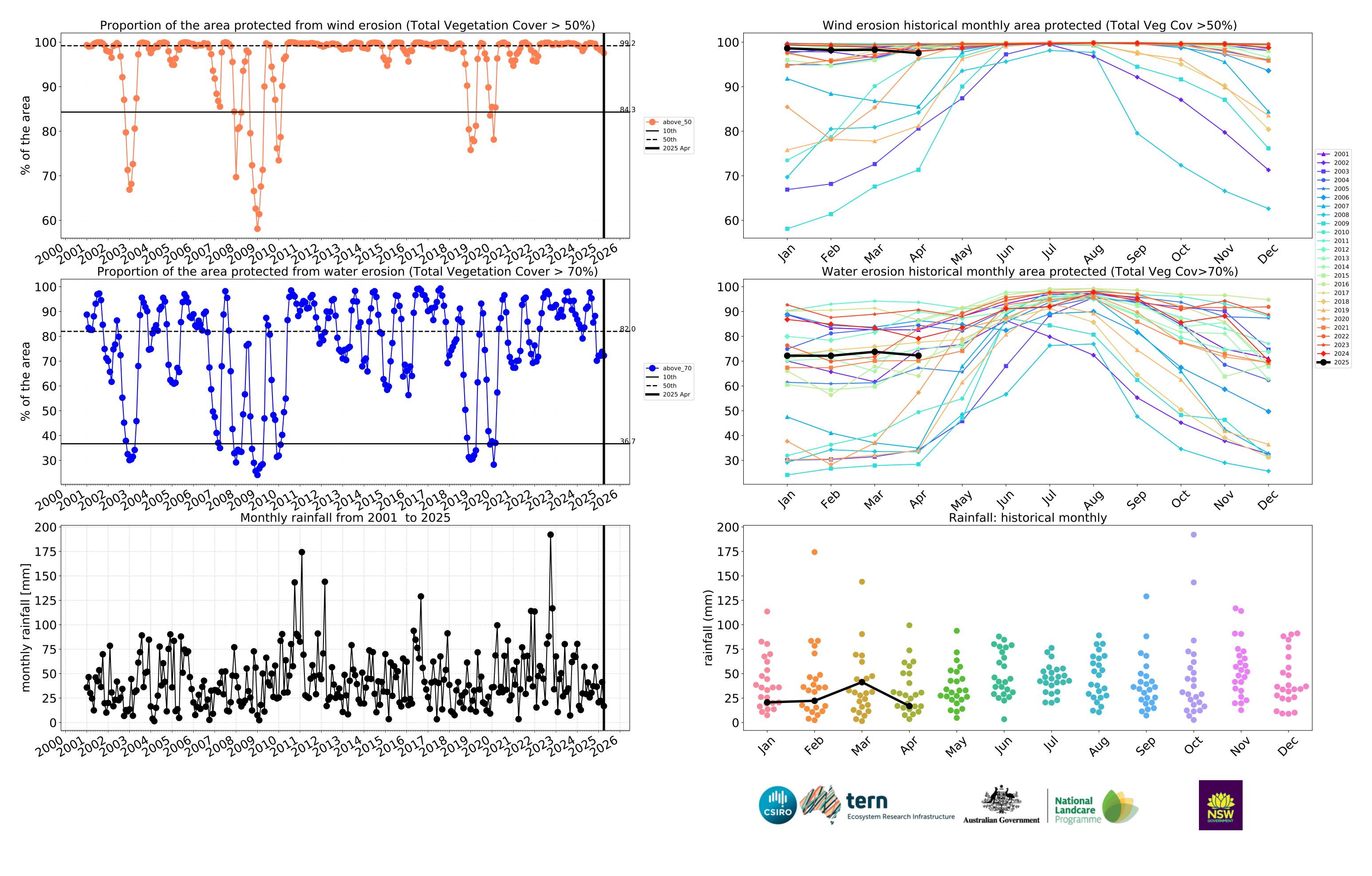
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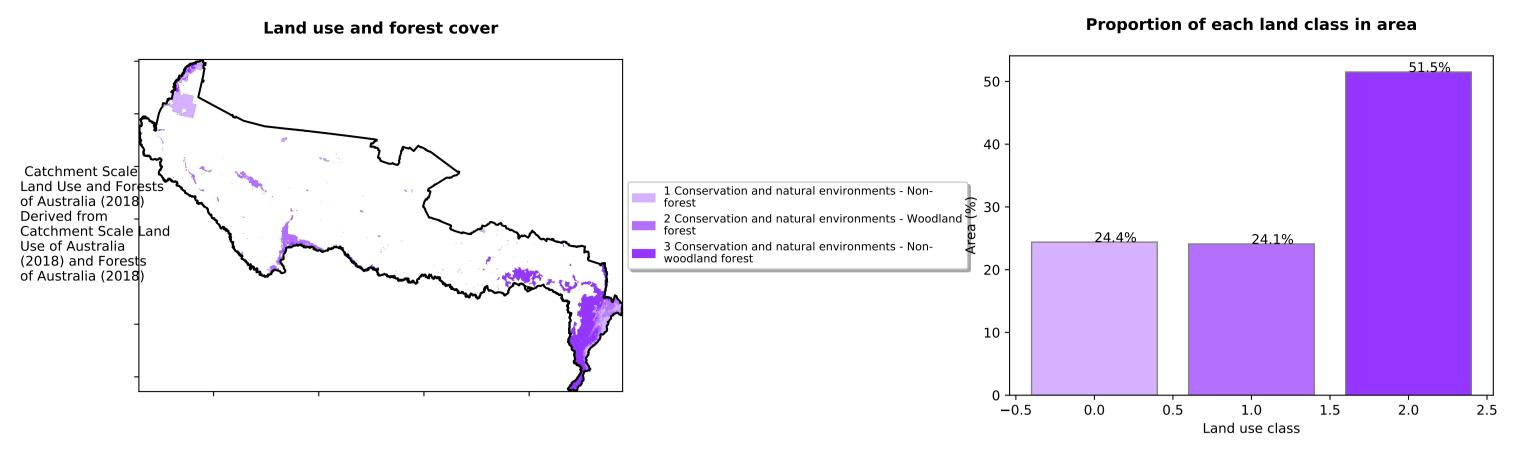




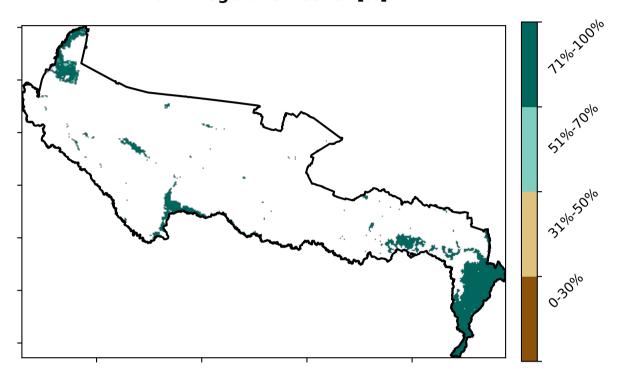




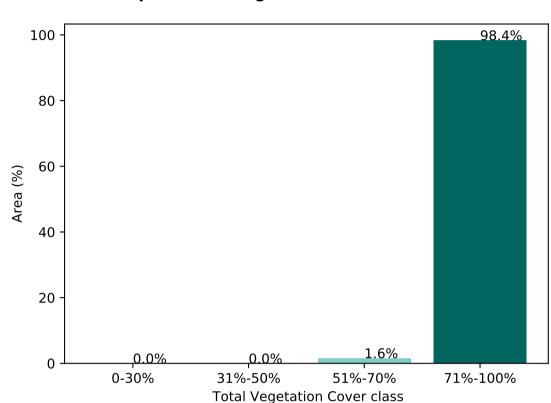
# **Conservation and natural environments**



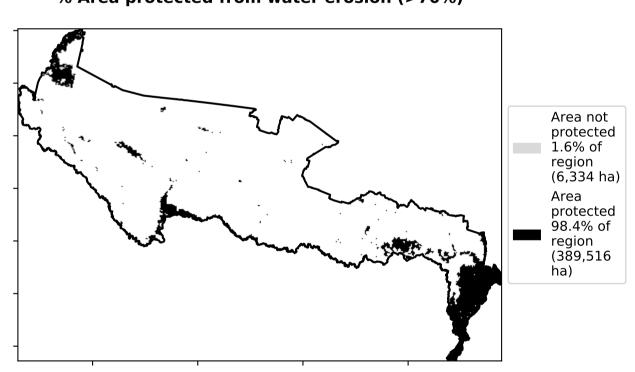




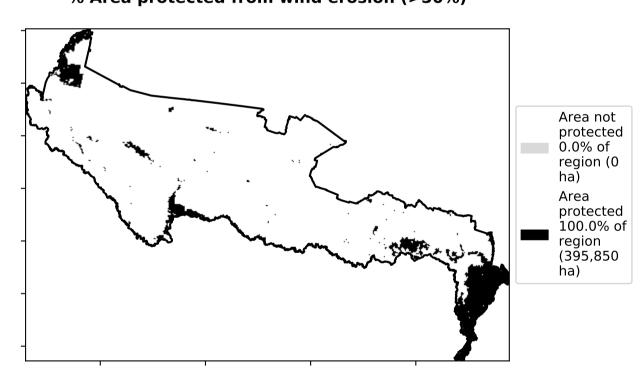
Proportion of vegetation cover class in area



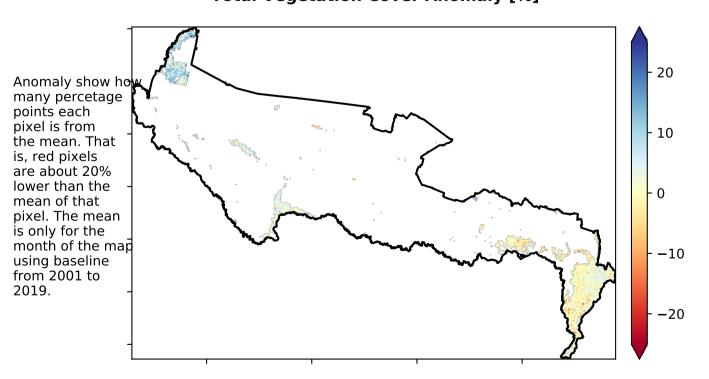
# % Area protected from water erosion (>70%)



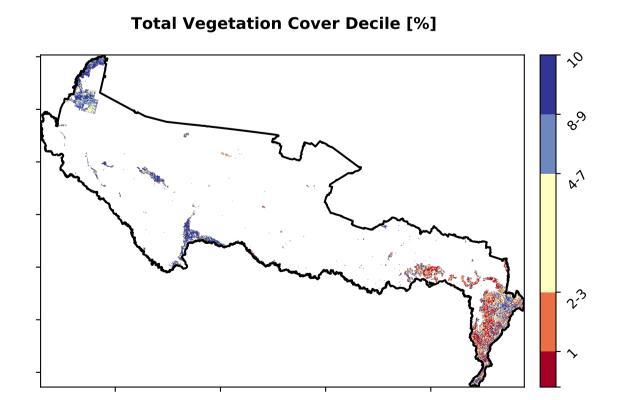
% Area protected from wind erosion (>50%)



# 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.





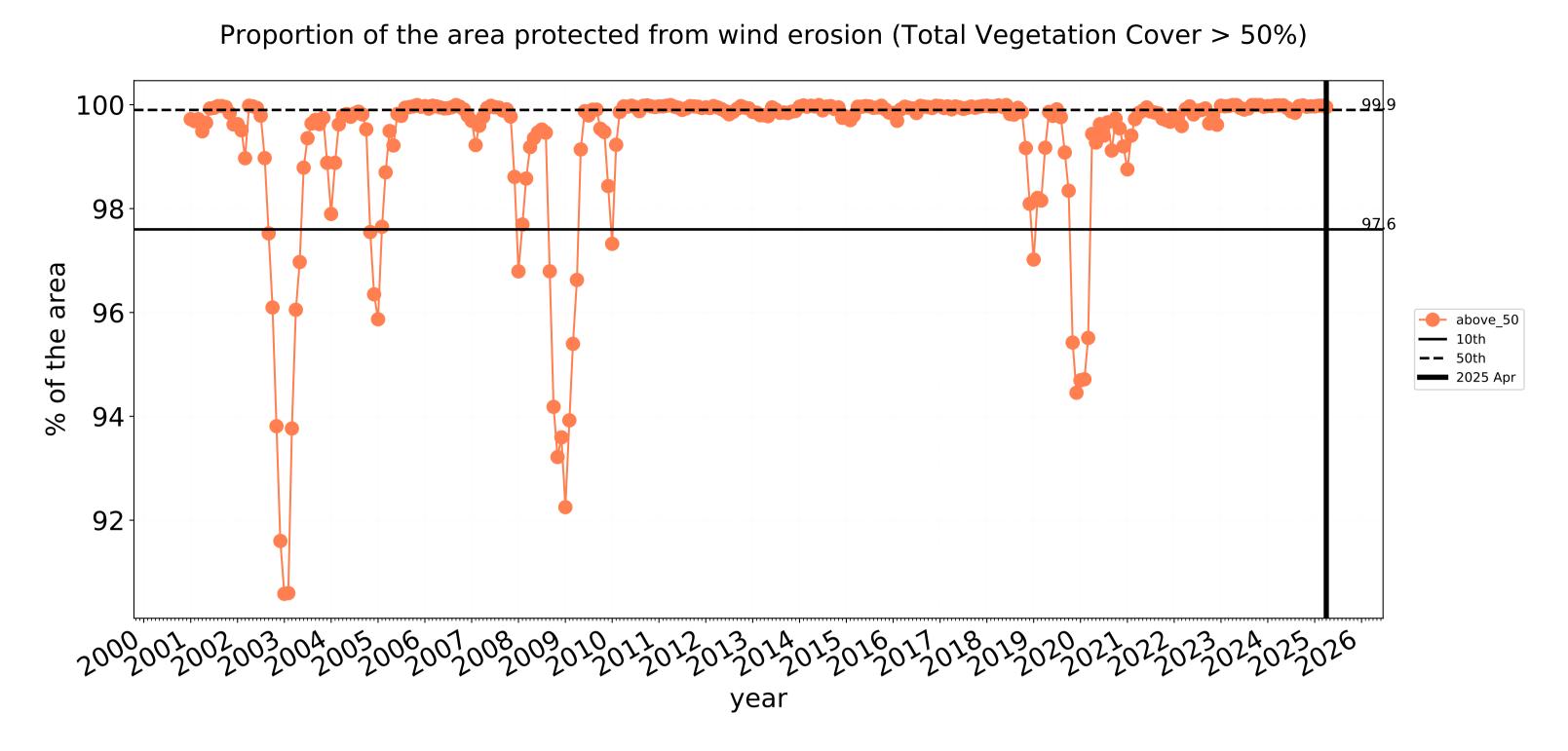


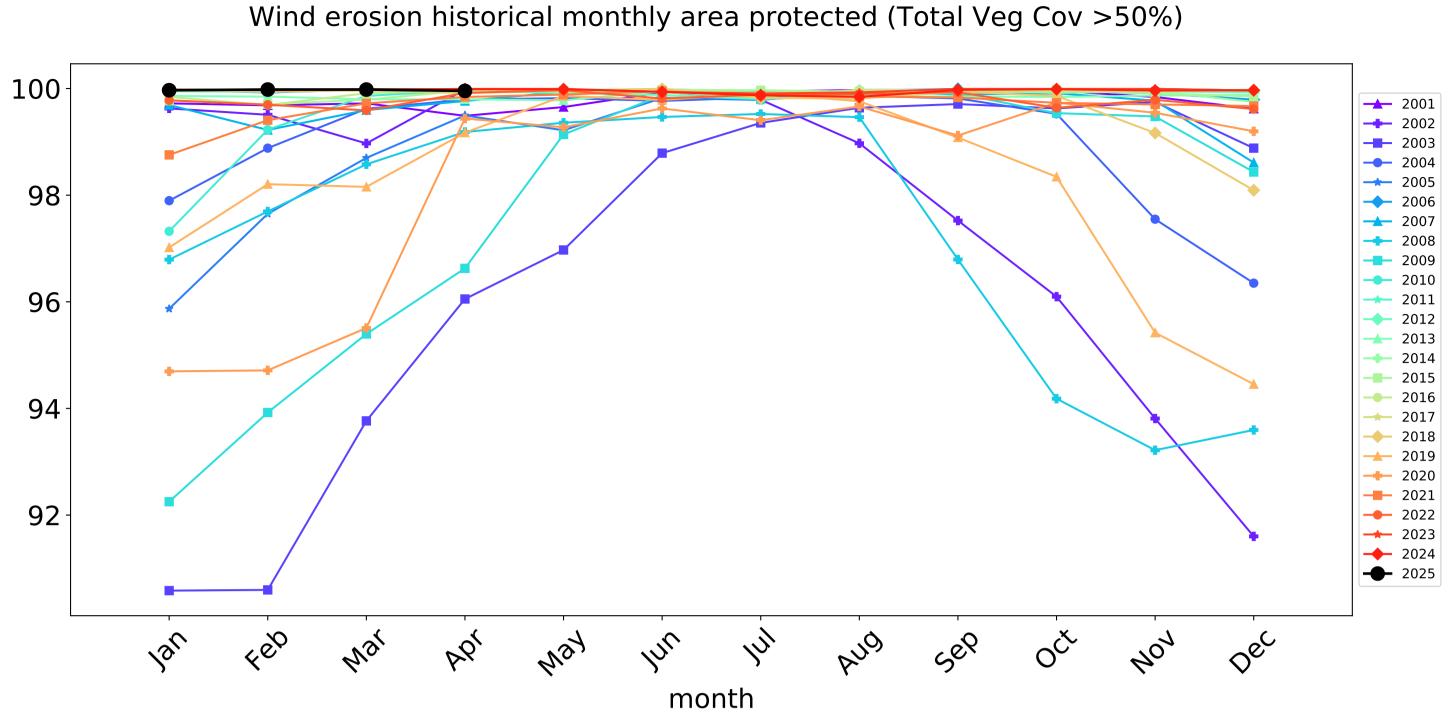


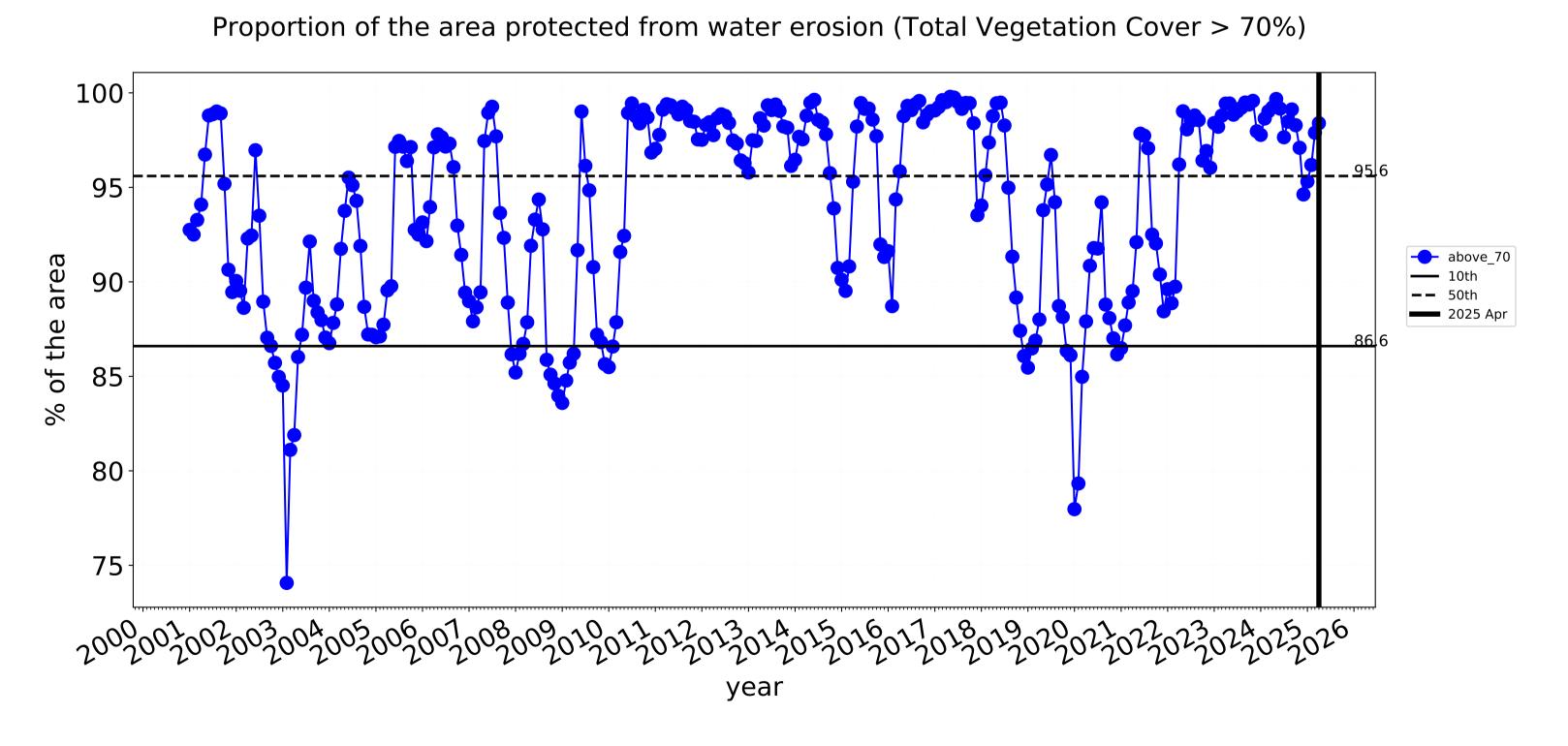


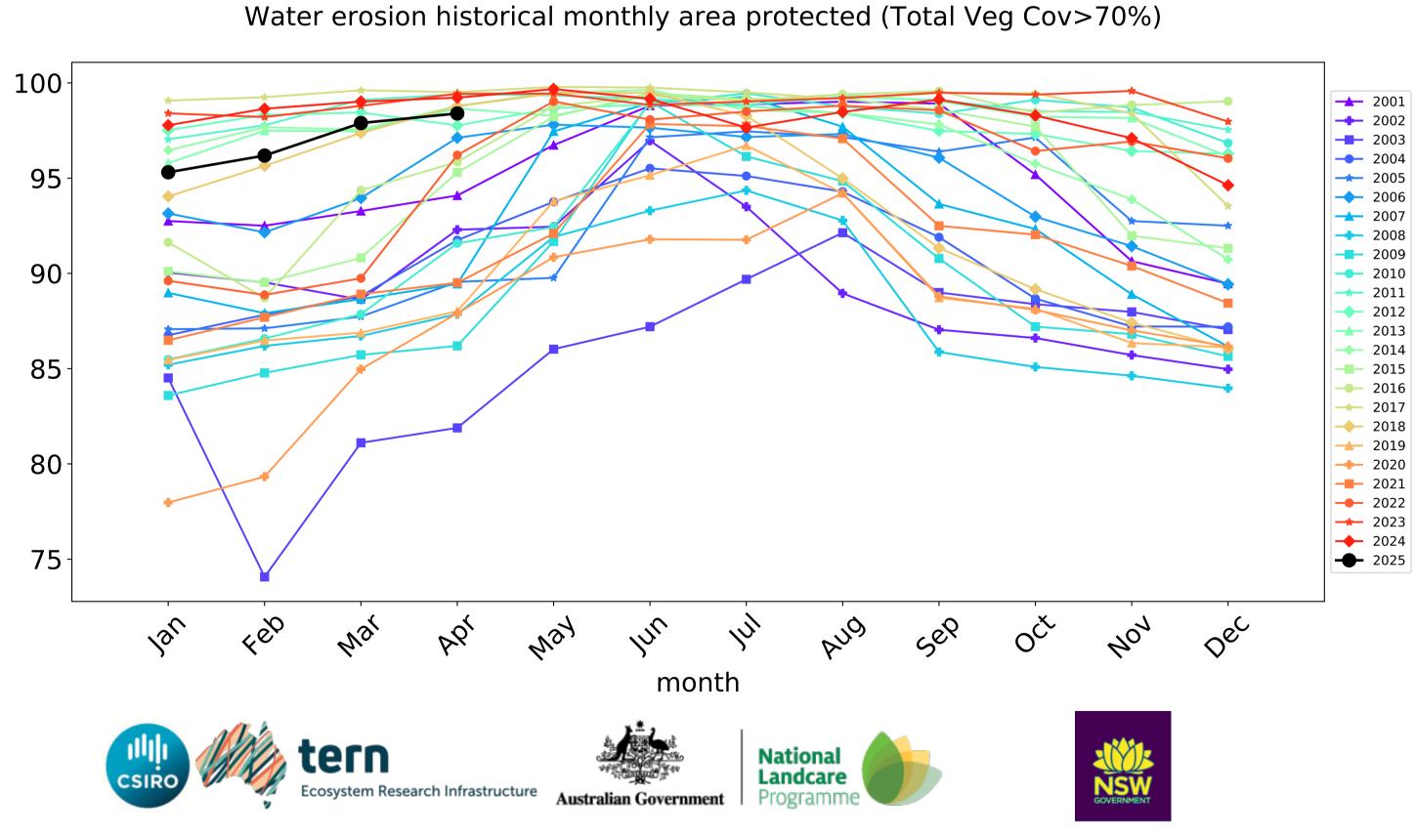


# **Conservation and natural environments timeseries**



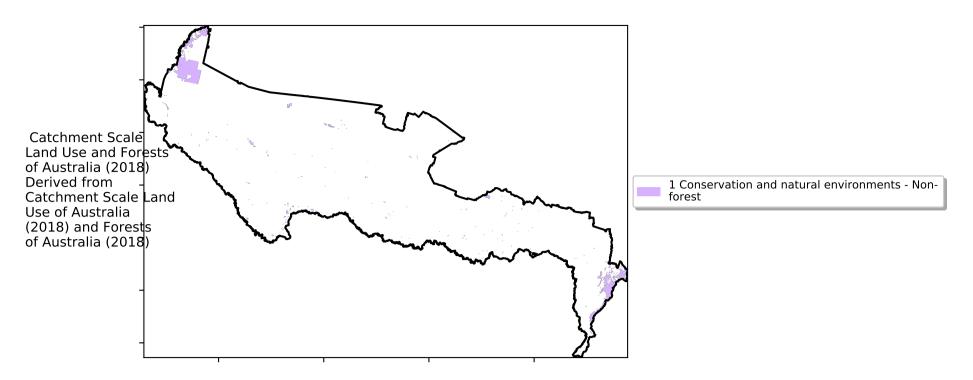




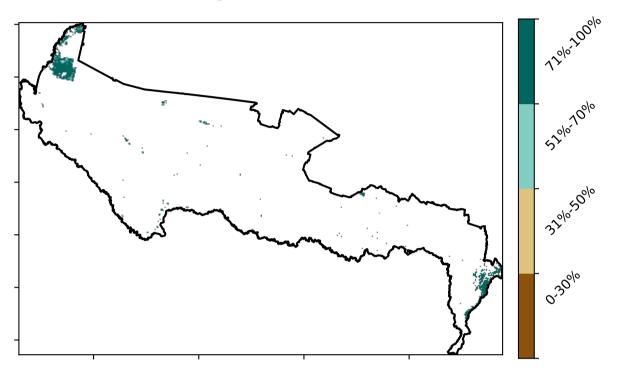


# **Conservation and natural environments non forest**

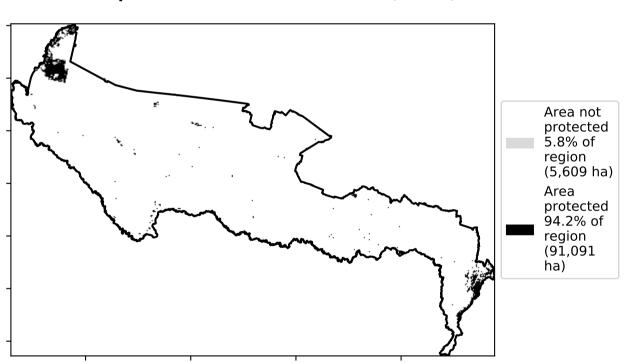
### Land use and forest cover



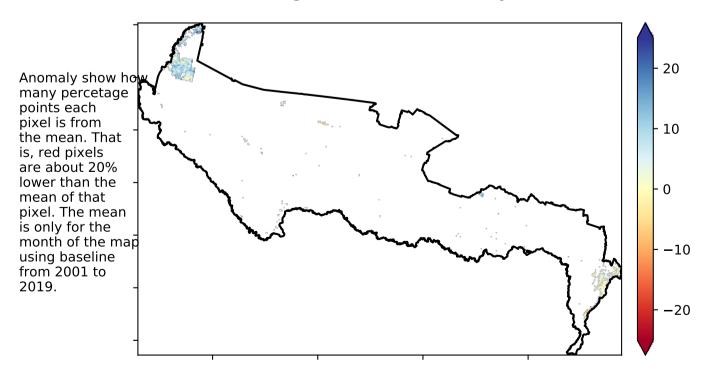
## **Total Vegetation Cover [%]**



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

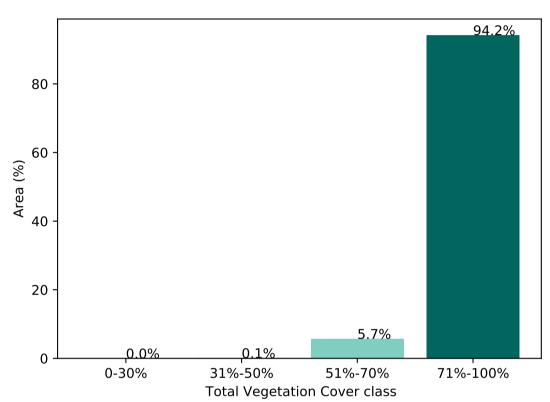


# Total Vegetation Cover Anomaly [%]

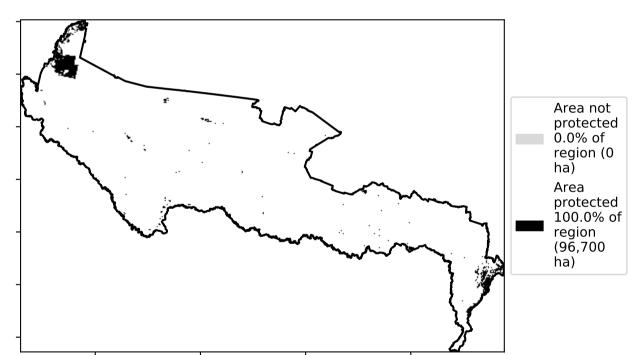


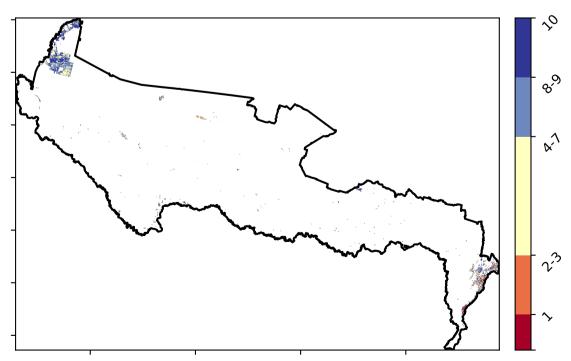
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

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



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





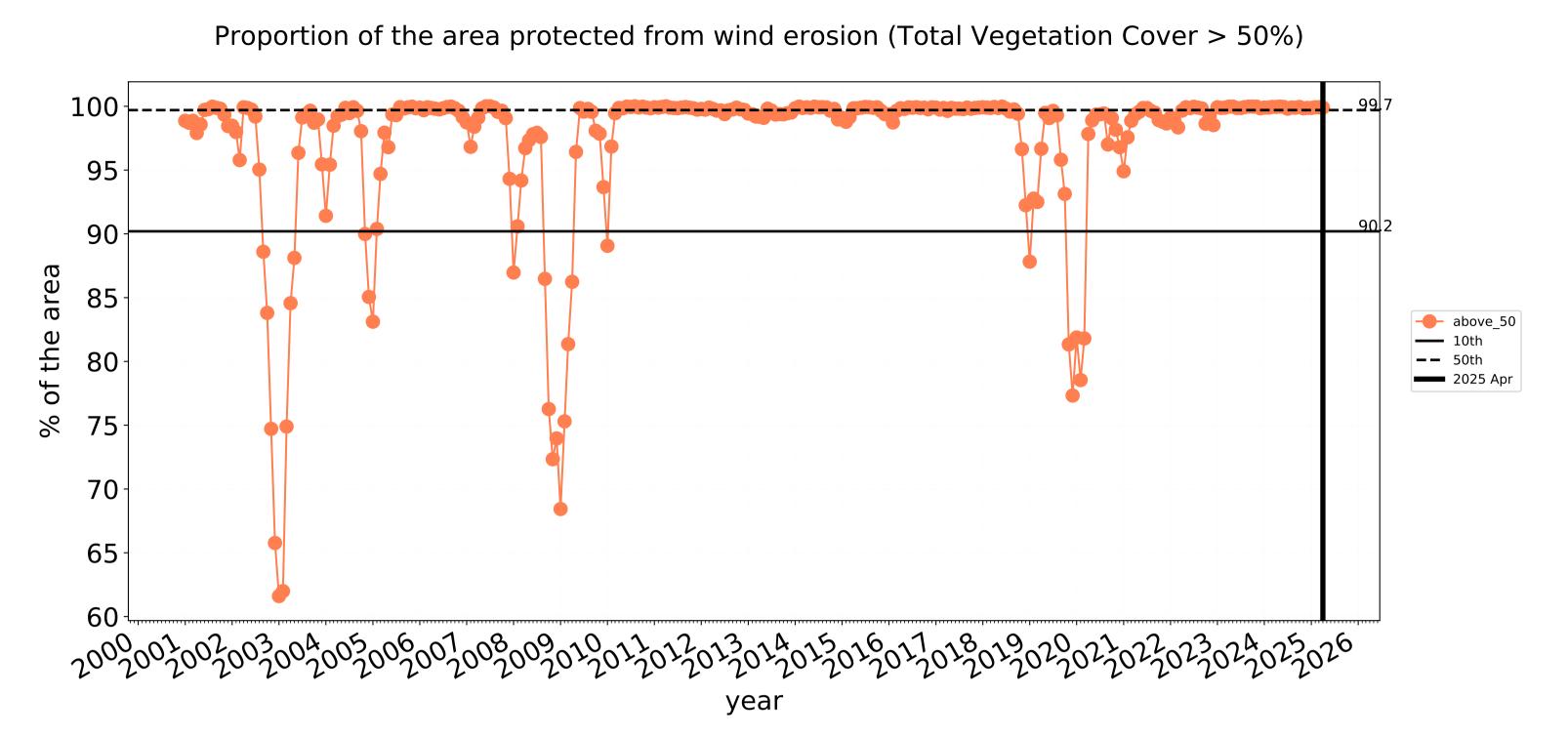


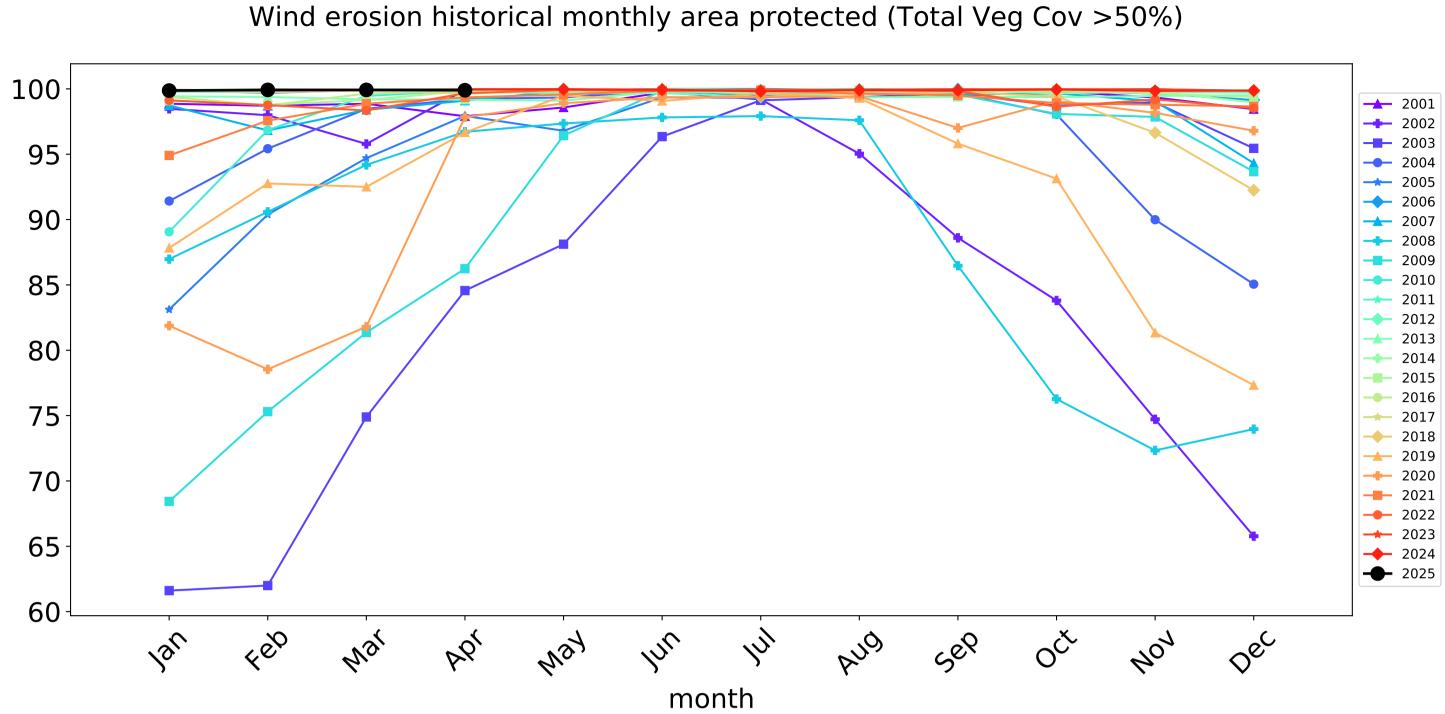


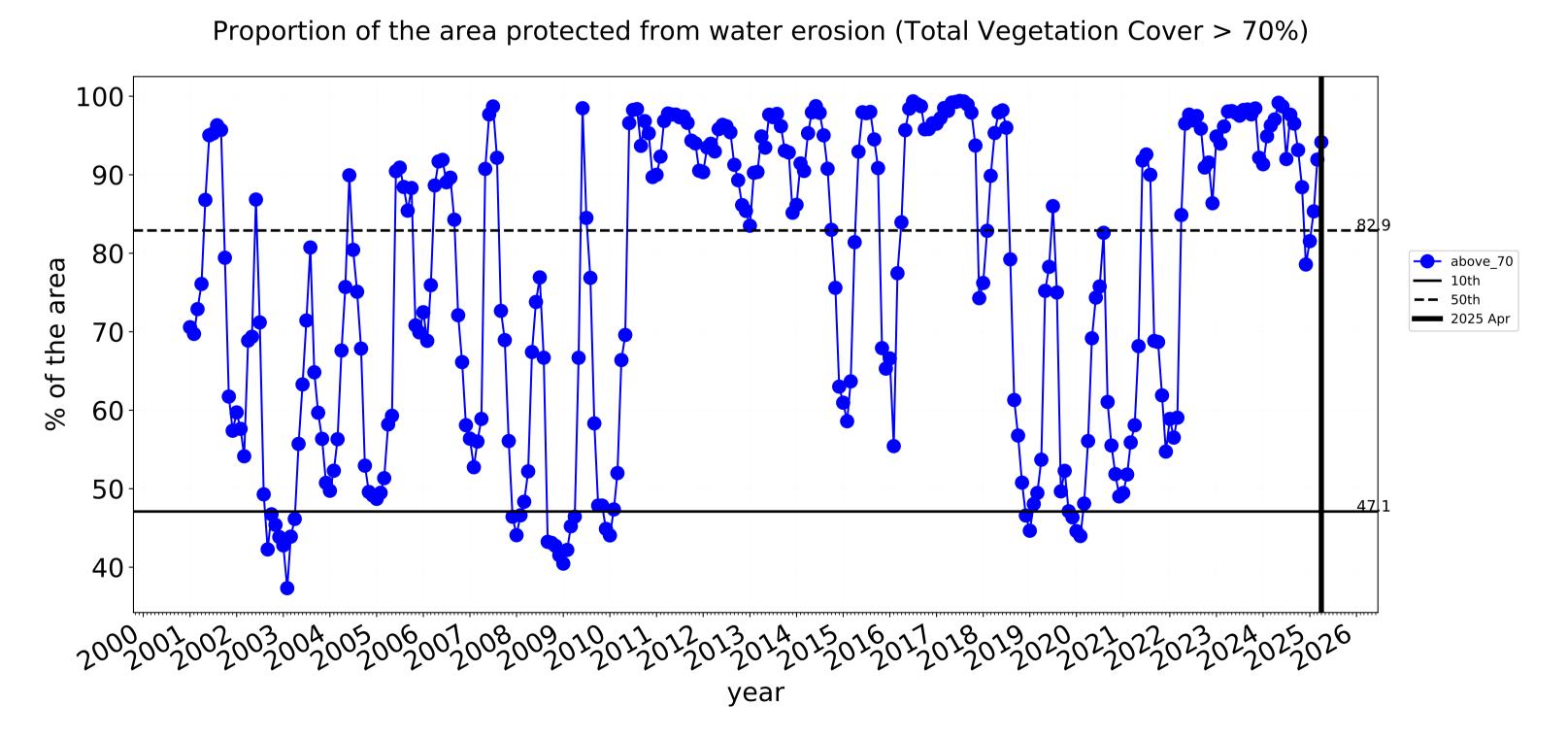


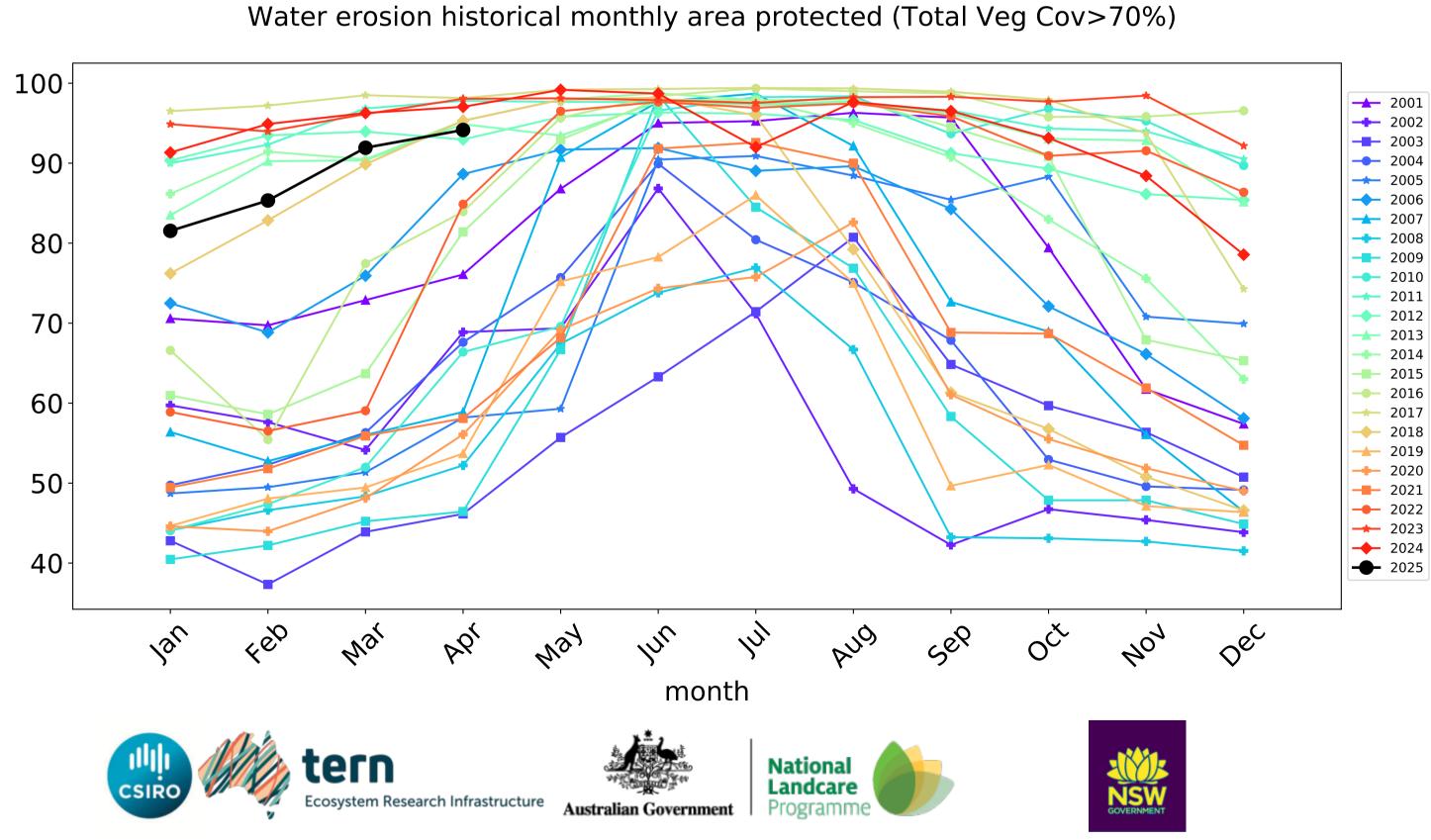


# **Conservation and natural environments non forest timeseries**



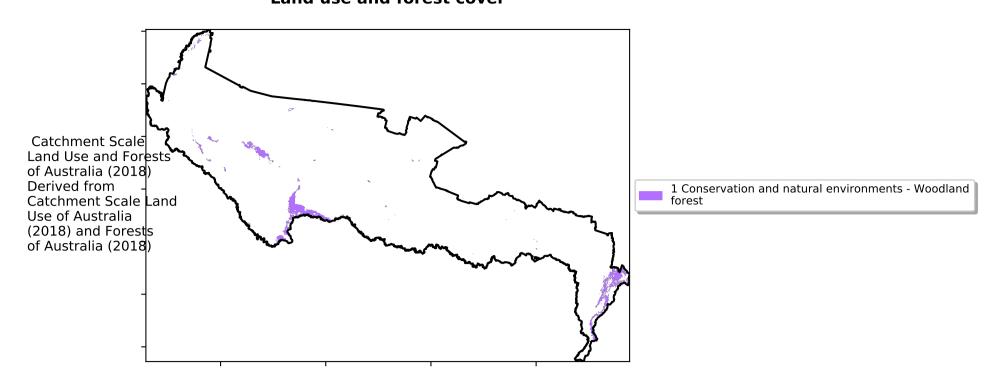




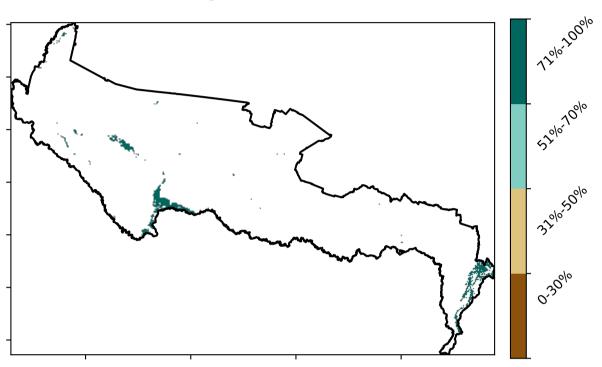


# **Conservation and natural environments Woodland forest**

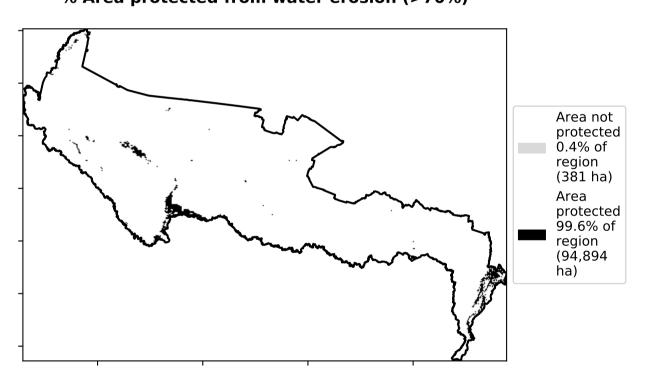
### Land use and forest cover



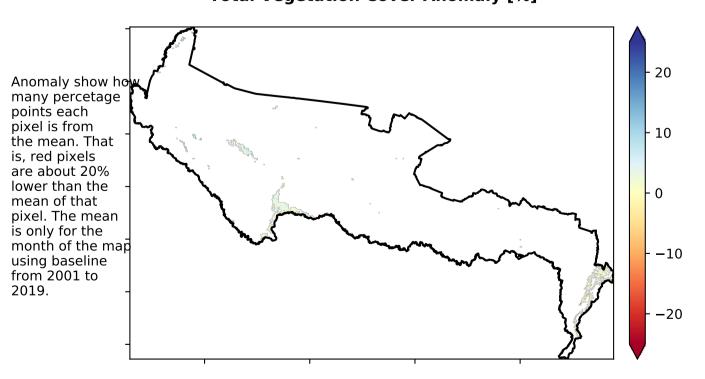
## **Total Vegetation Cover [%]**



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

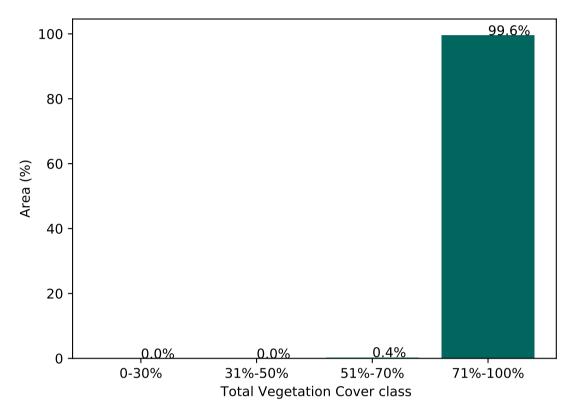


# Total Vegetation Cover Anomaly [%]

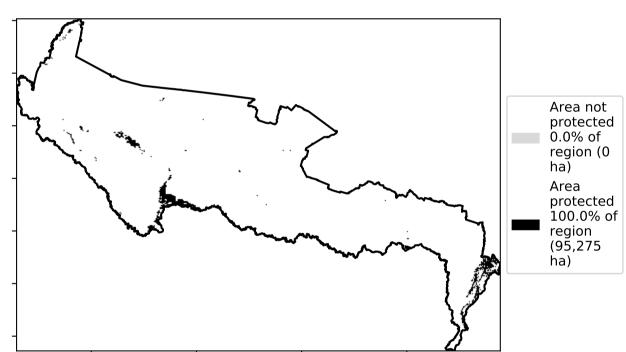


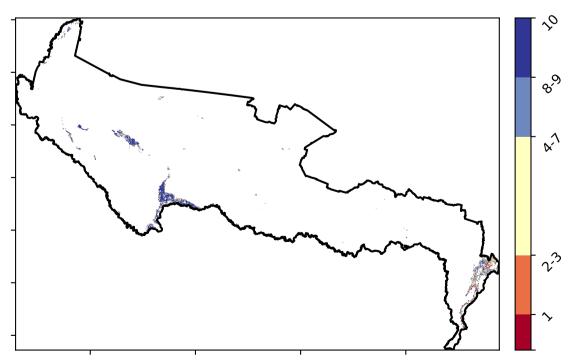
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# **Proportion of vegetation cover class in area**



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



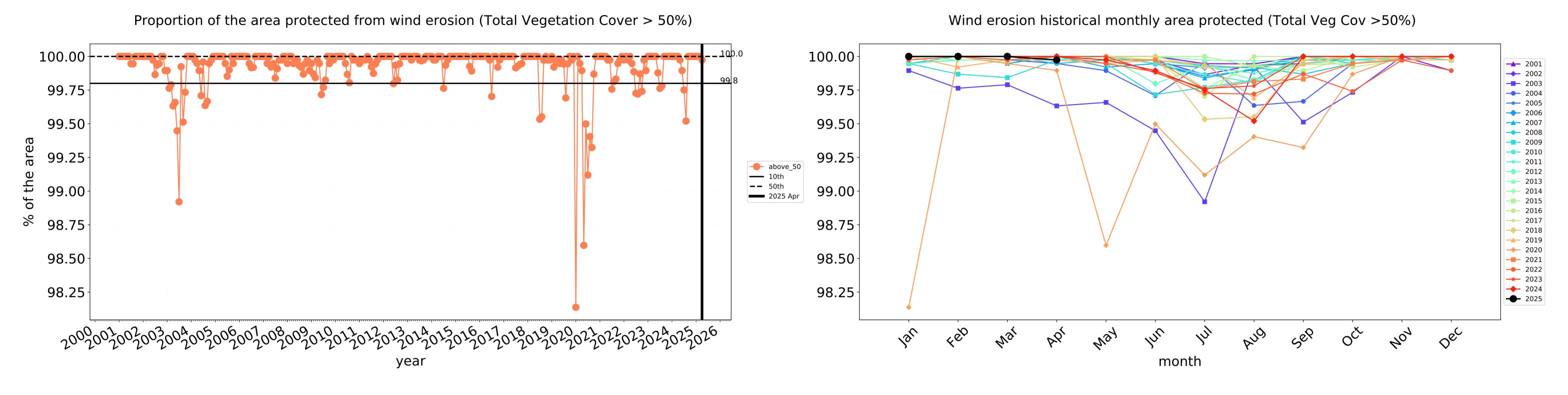


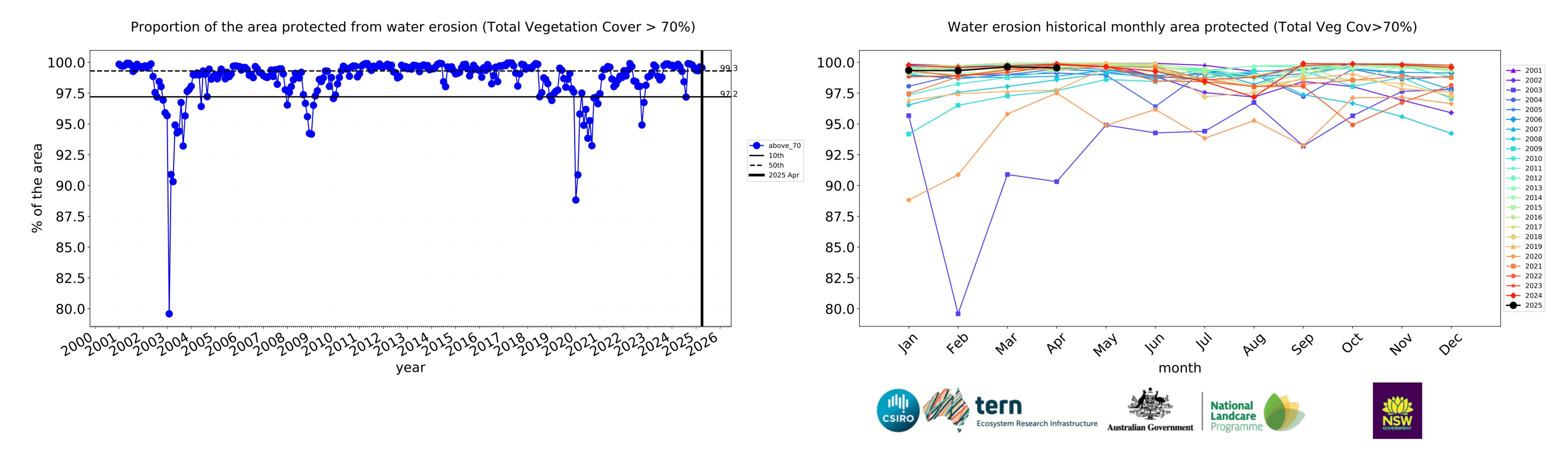








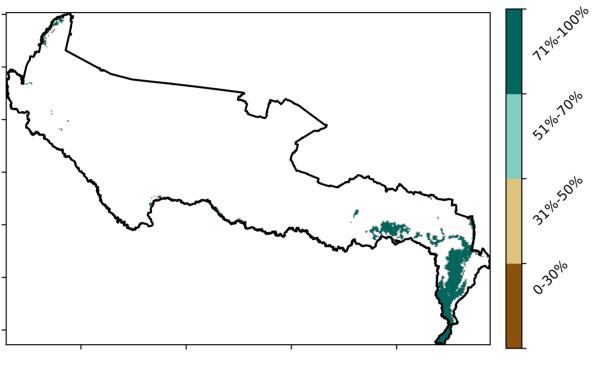


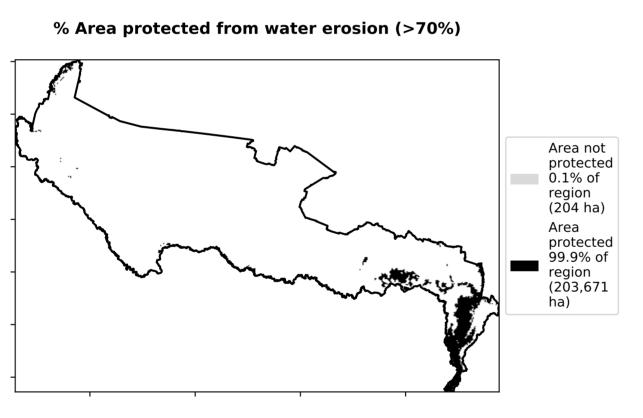


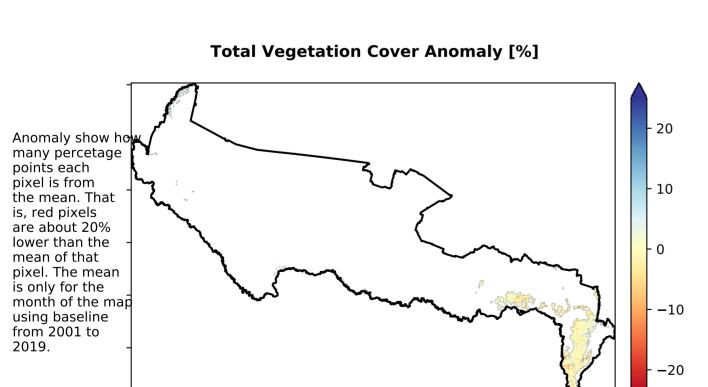
# **Conservation and natural environments Forest (non woodland)**

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

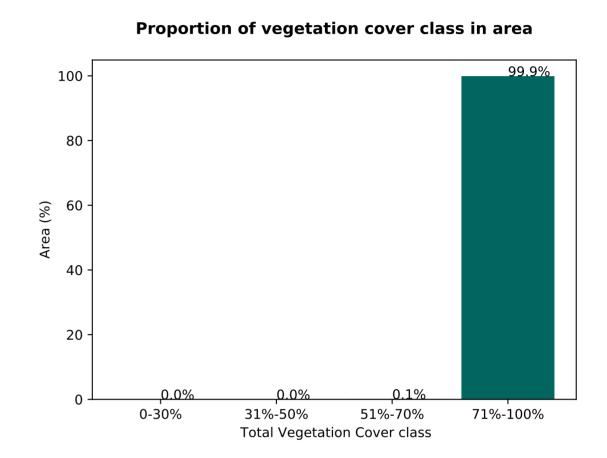
# **Total Vegetation Cover [%]**

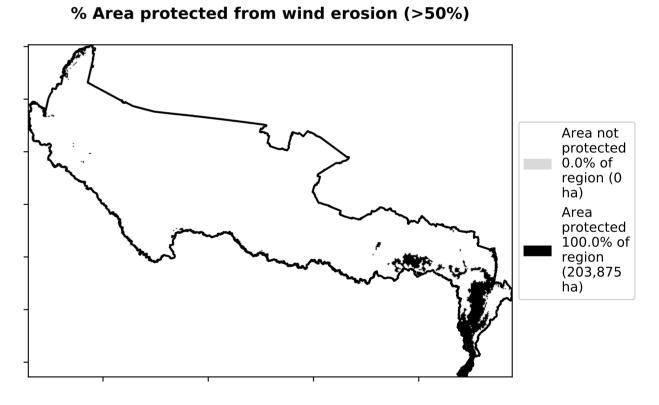


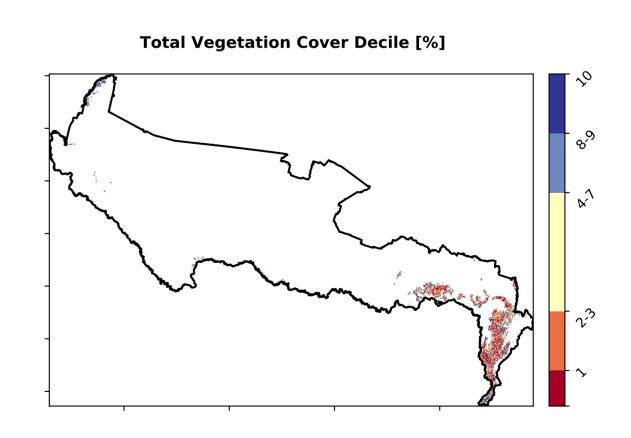




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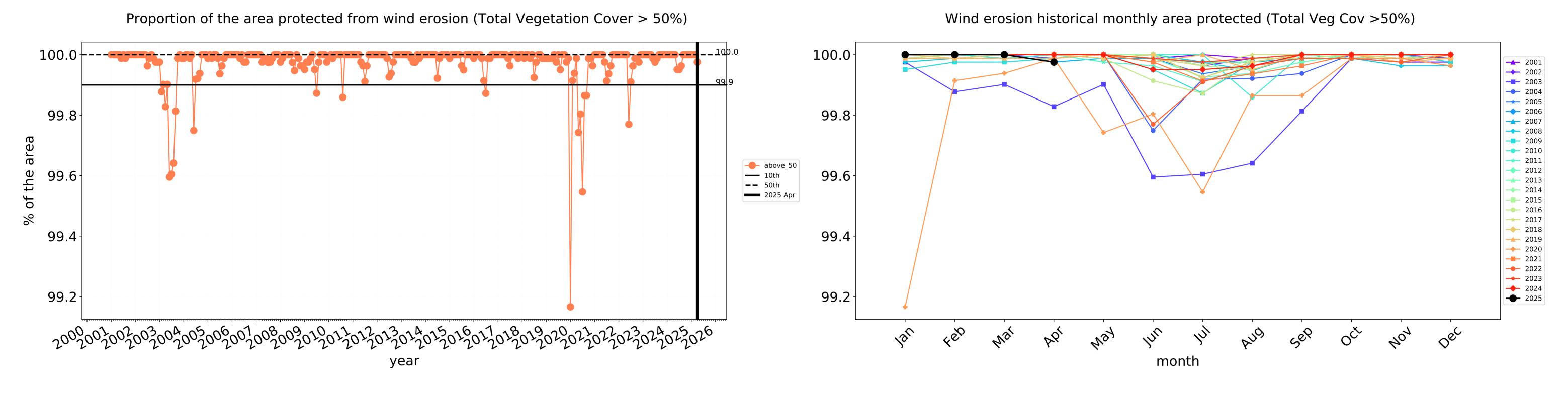


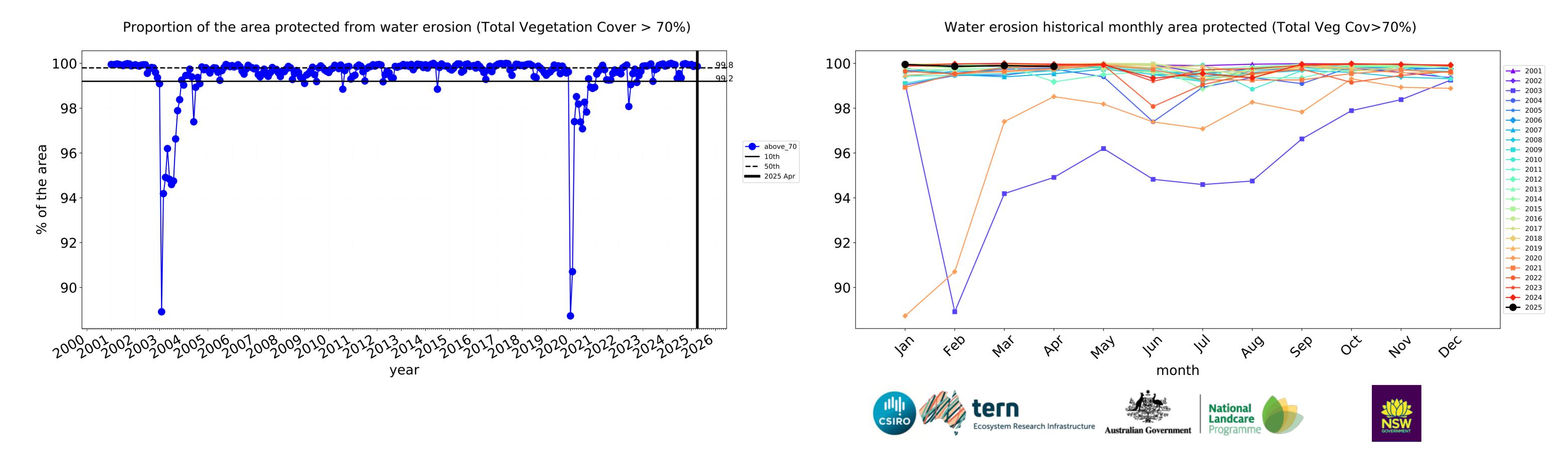








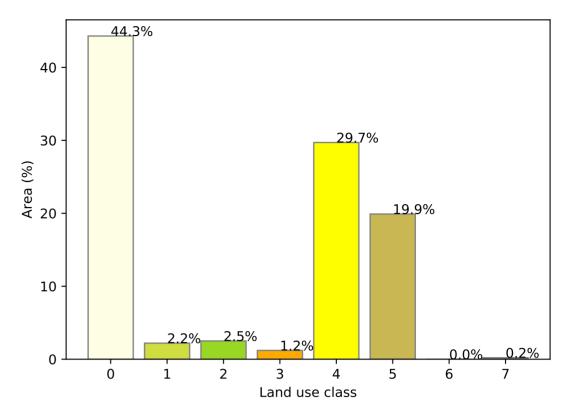




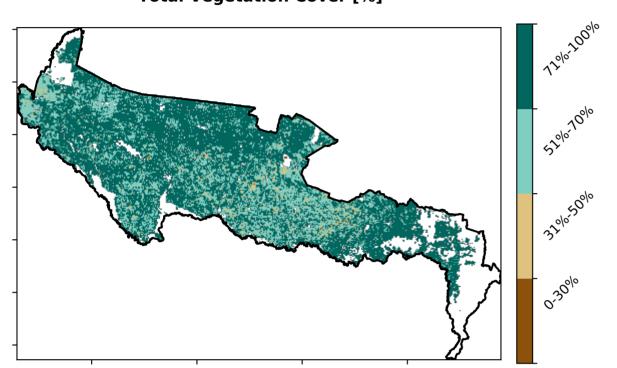
# **Agriculture**

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

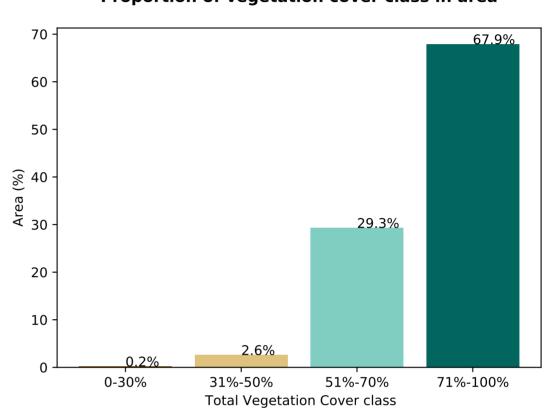
## Proportion of each land class in area



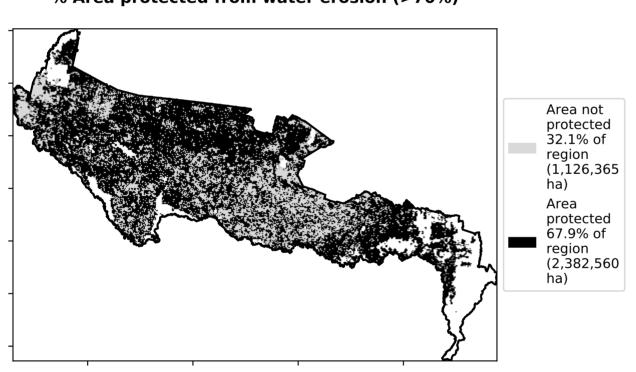
**Total Vegetation Cover [%]** 



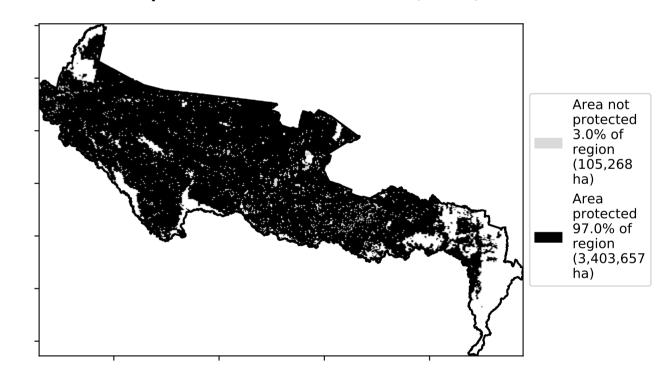
Proportion of vegetation cover class in area



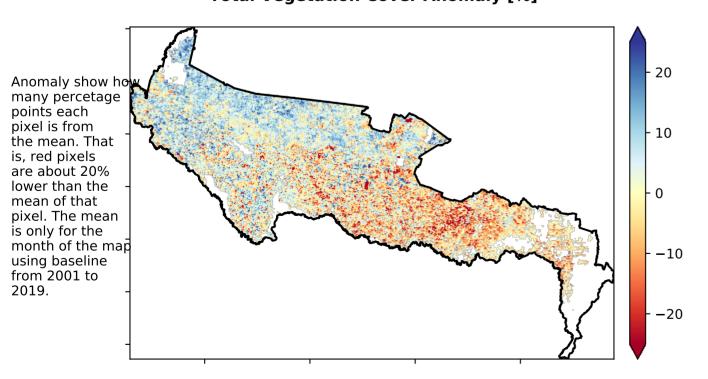
% Area protected from water erosion (>70%)



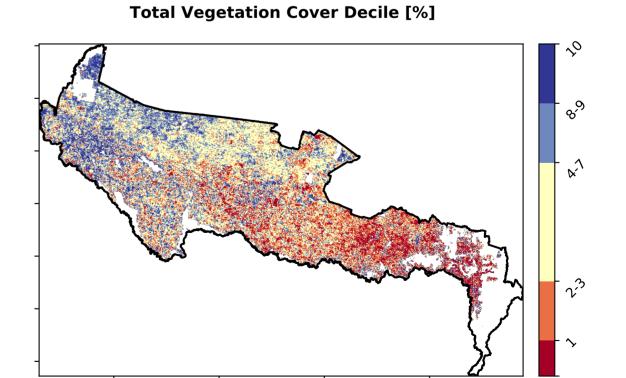
% Area protected from wind erosion (>50%)



**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.





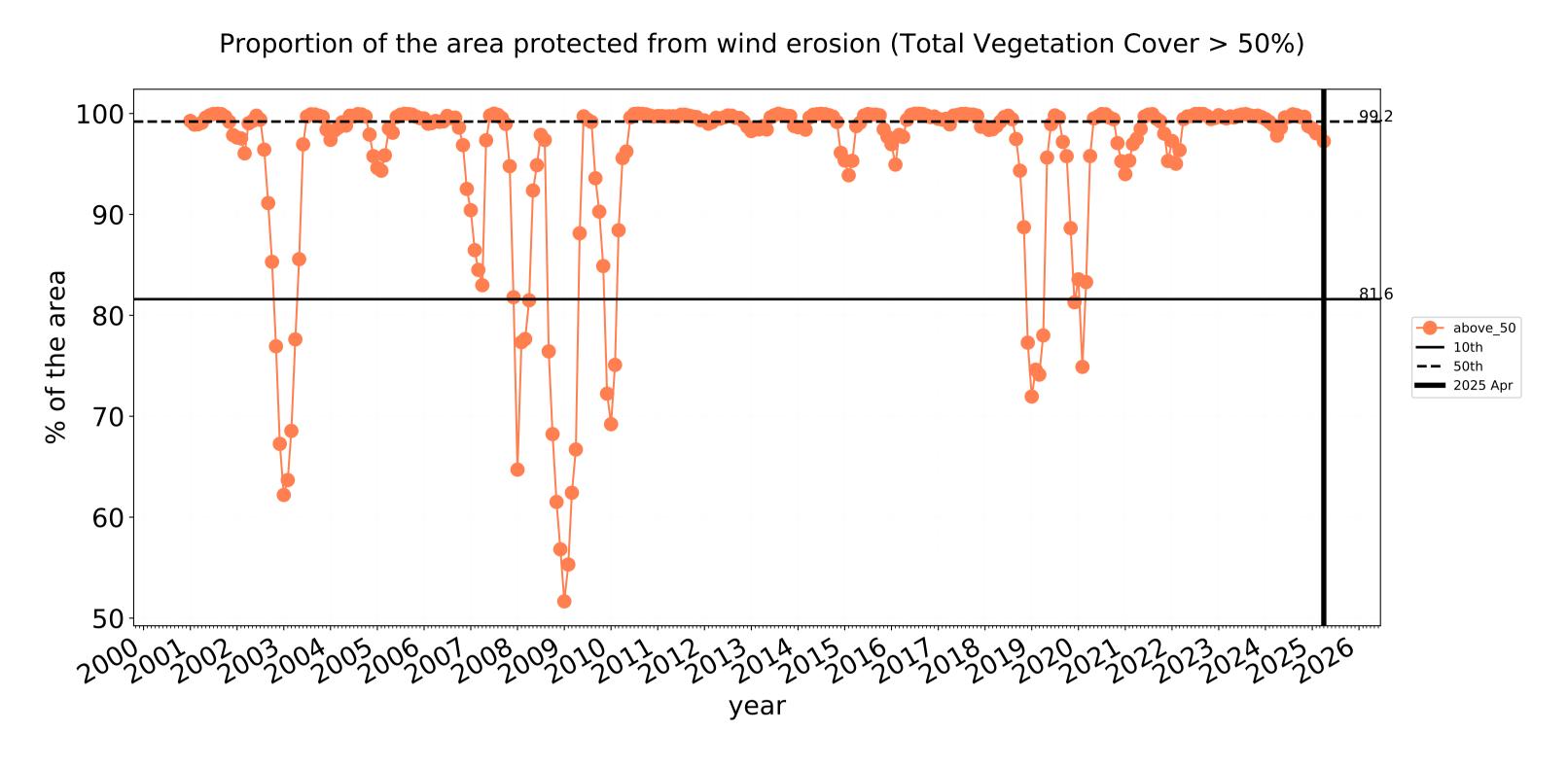


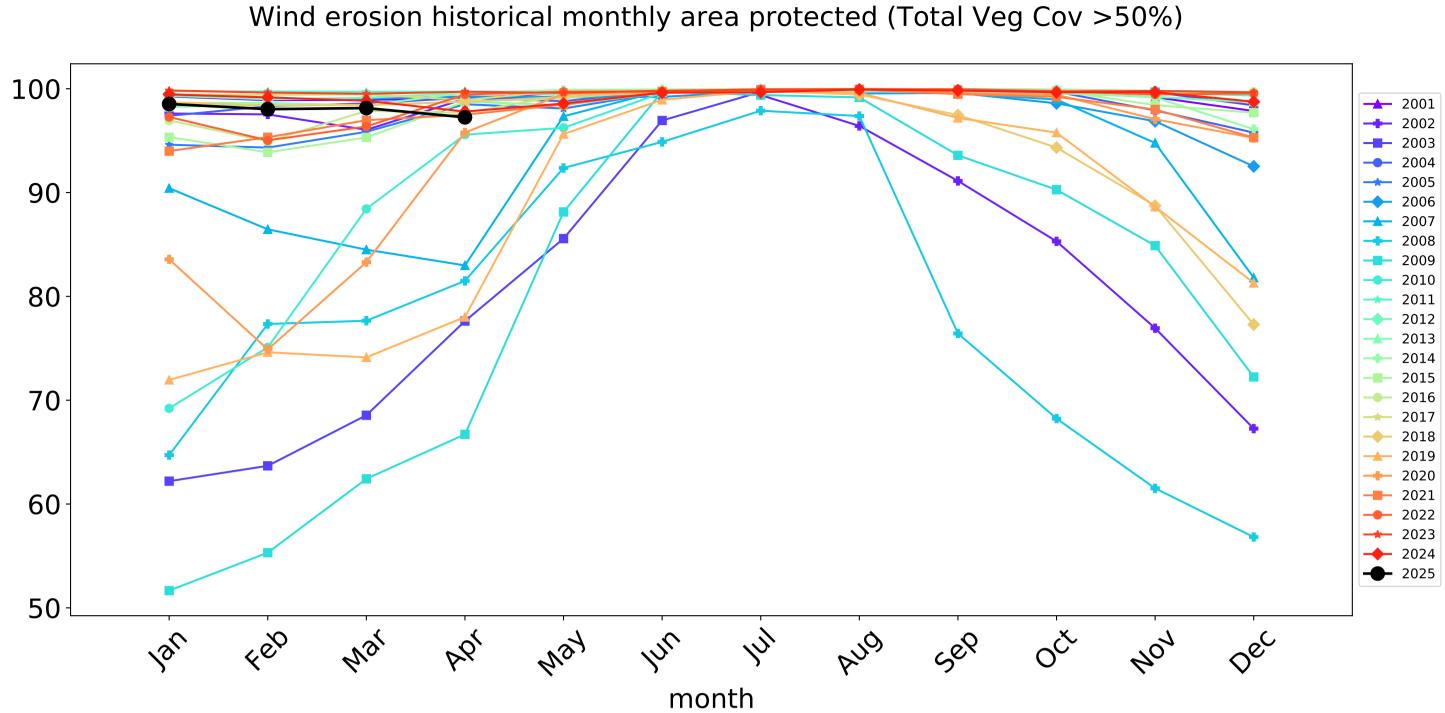


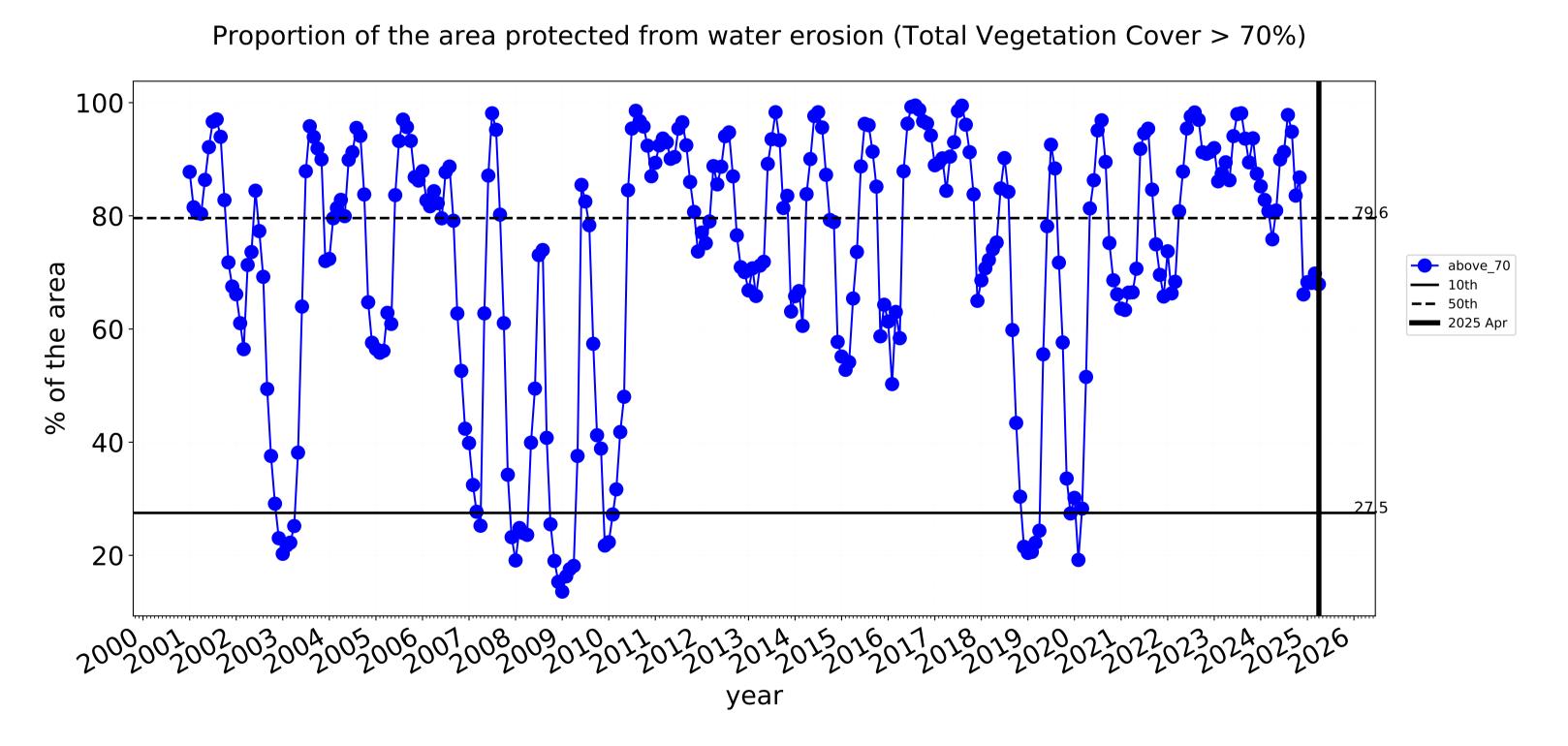


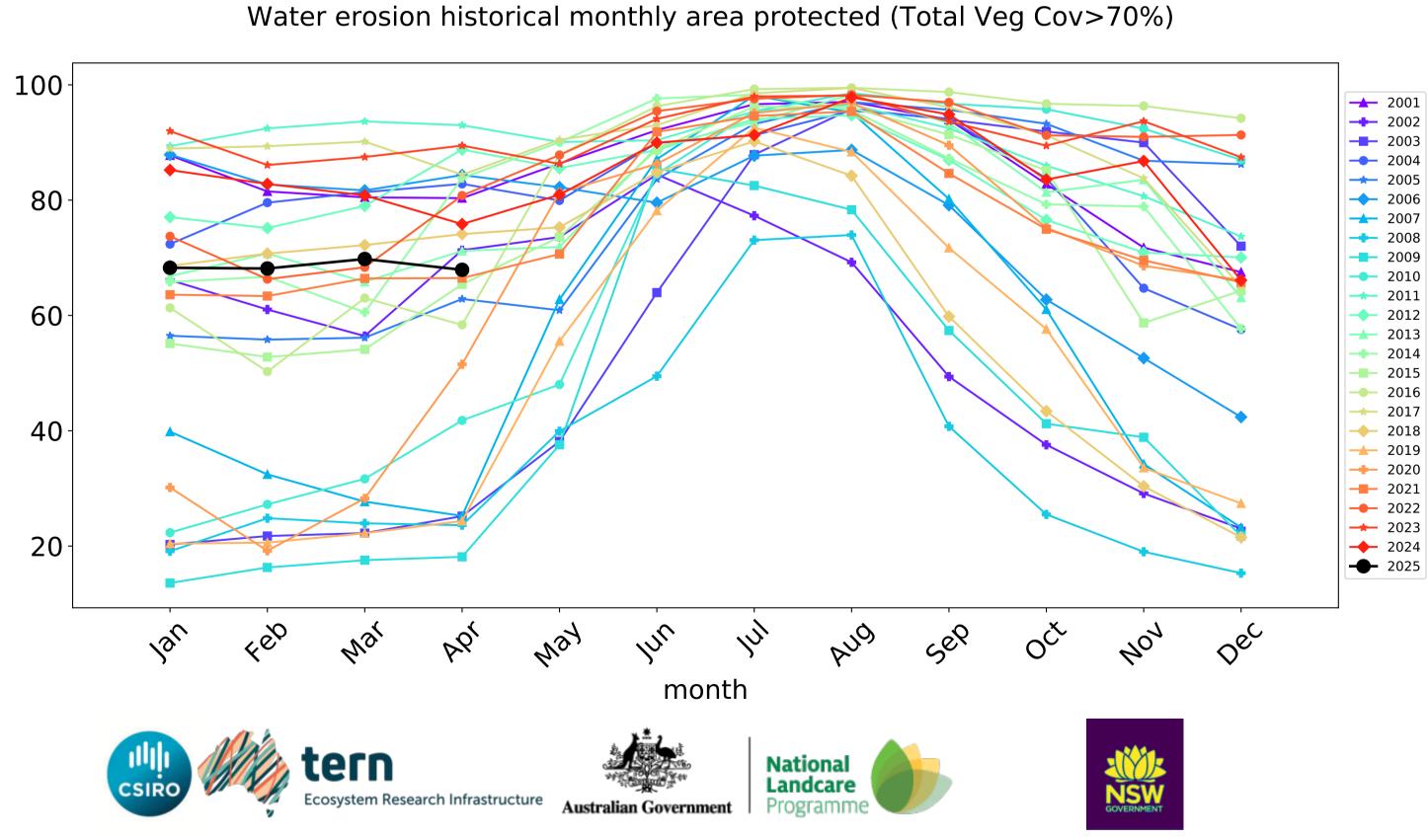


# **Agriculture timeseries**





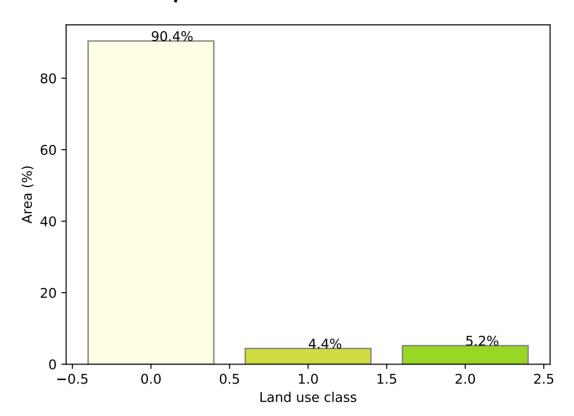




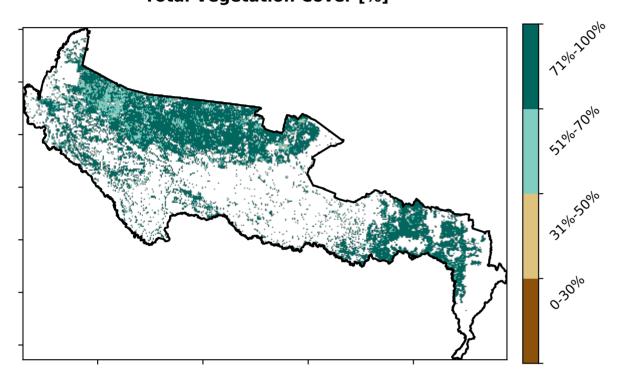
# **Grazing**

# Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest 4 Agriculture - Grazing - Non-woodland forest 5 Agriculture - Grazing - Non-woodland forest 6 Australia (2018)

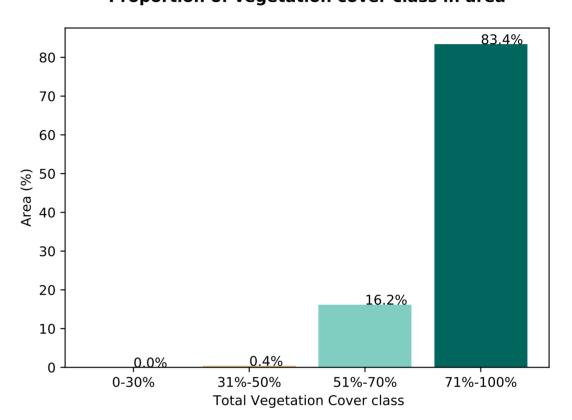
### Proportion of each land class in area



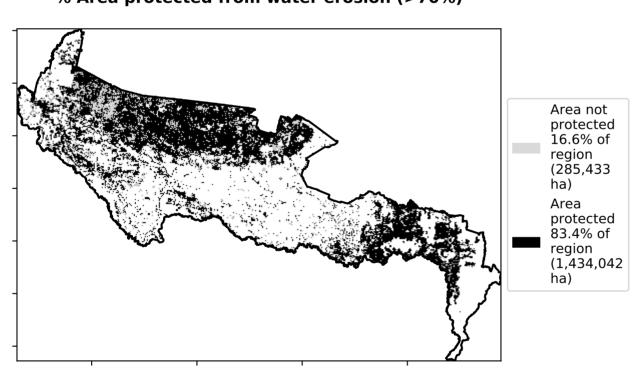
**Total Vegetation Cover [%]** 



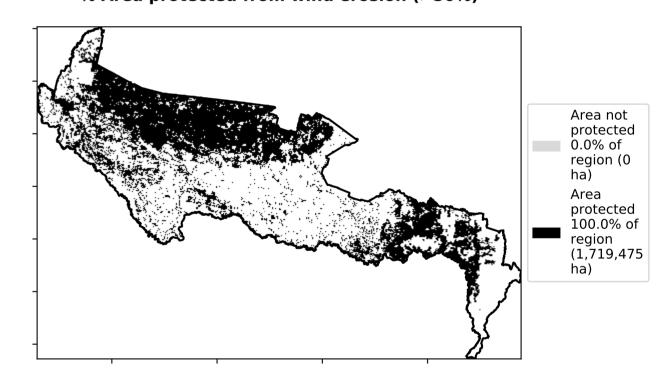
Proportion of vegetation cover class in area



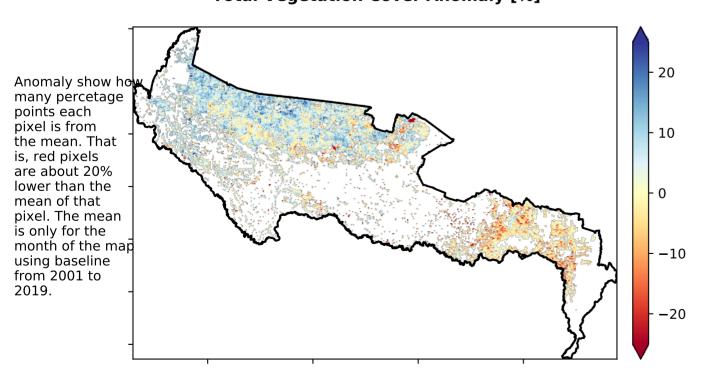
# % Area protected from water erosion (>70%)



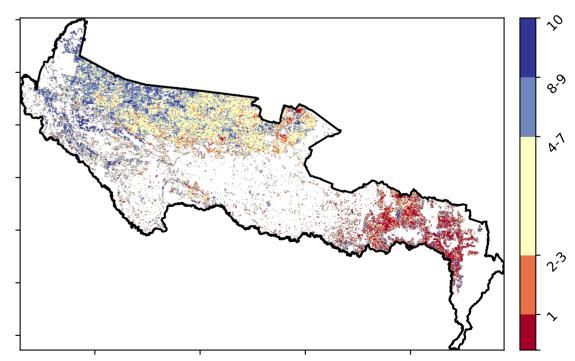
% Area protected from wind erosion (>50%)



# **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.





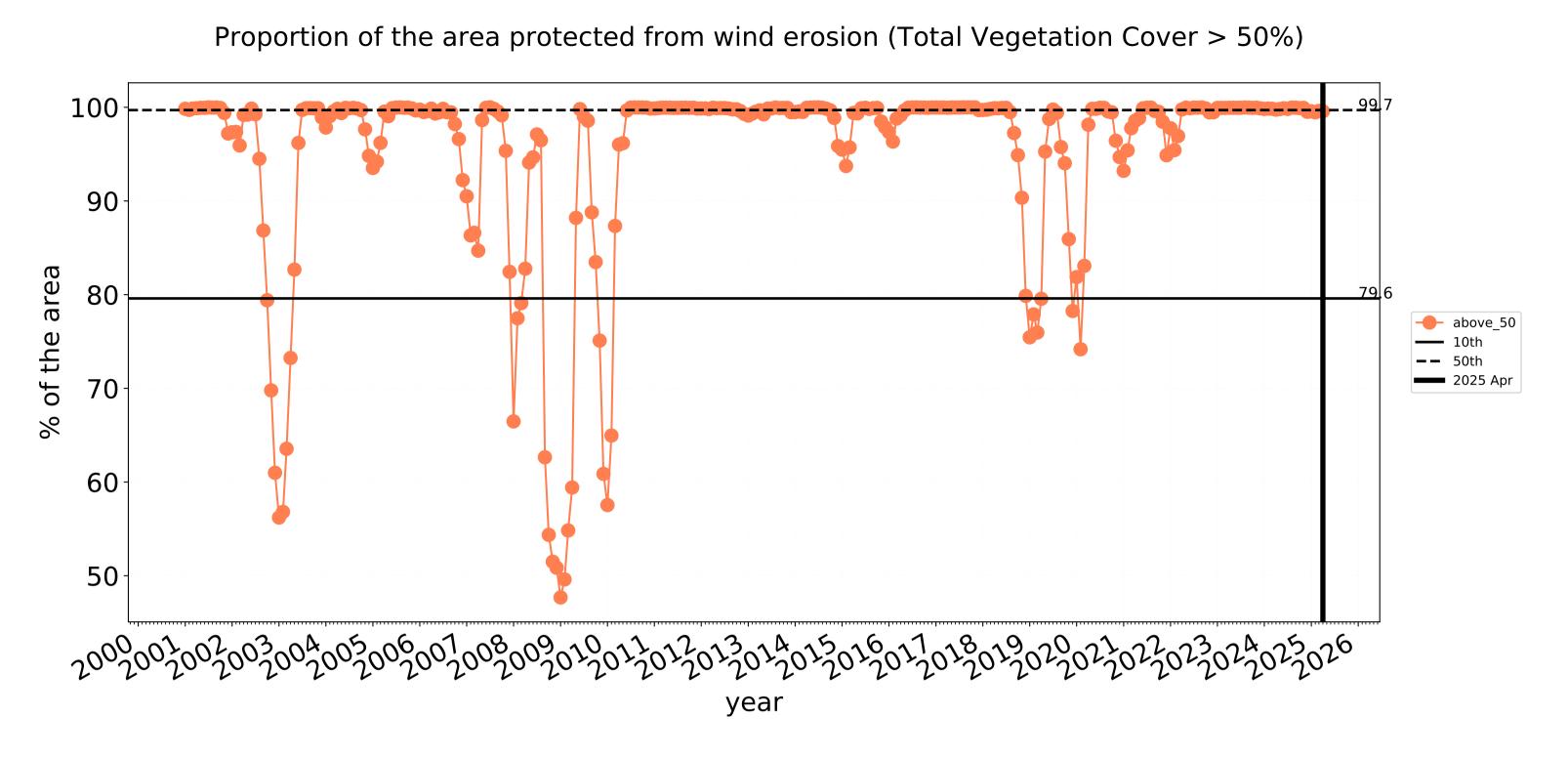


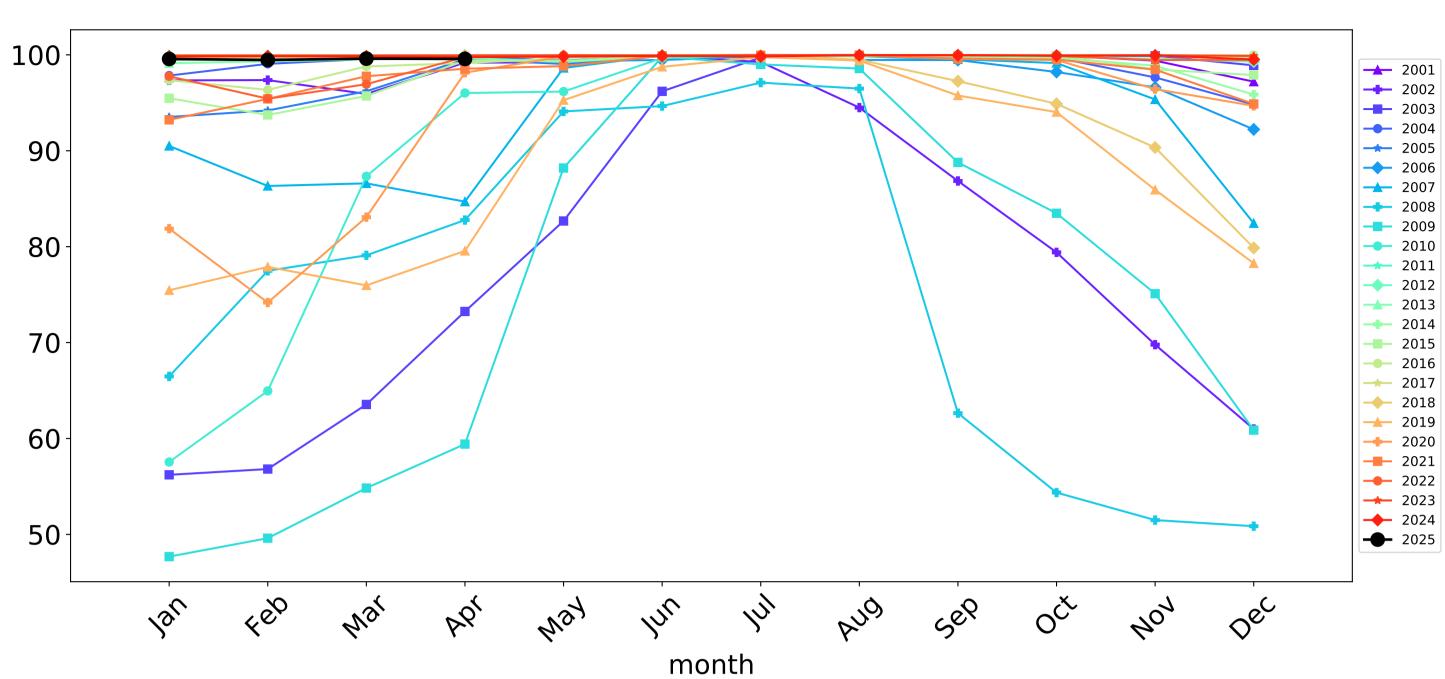




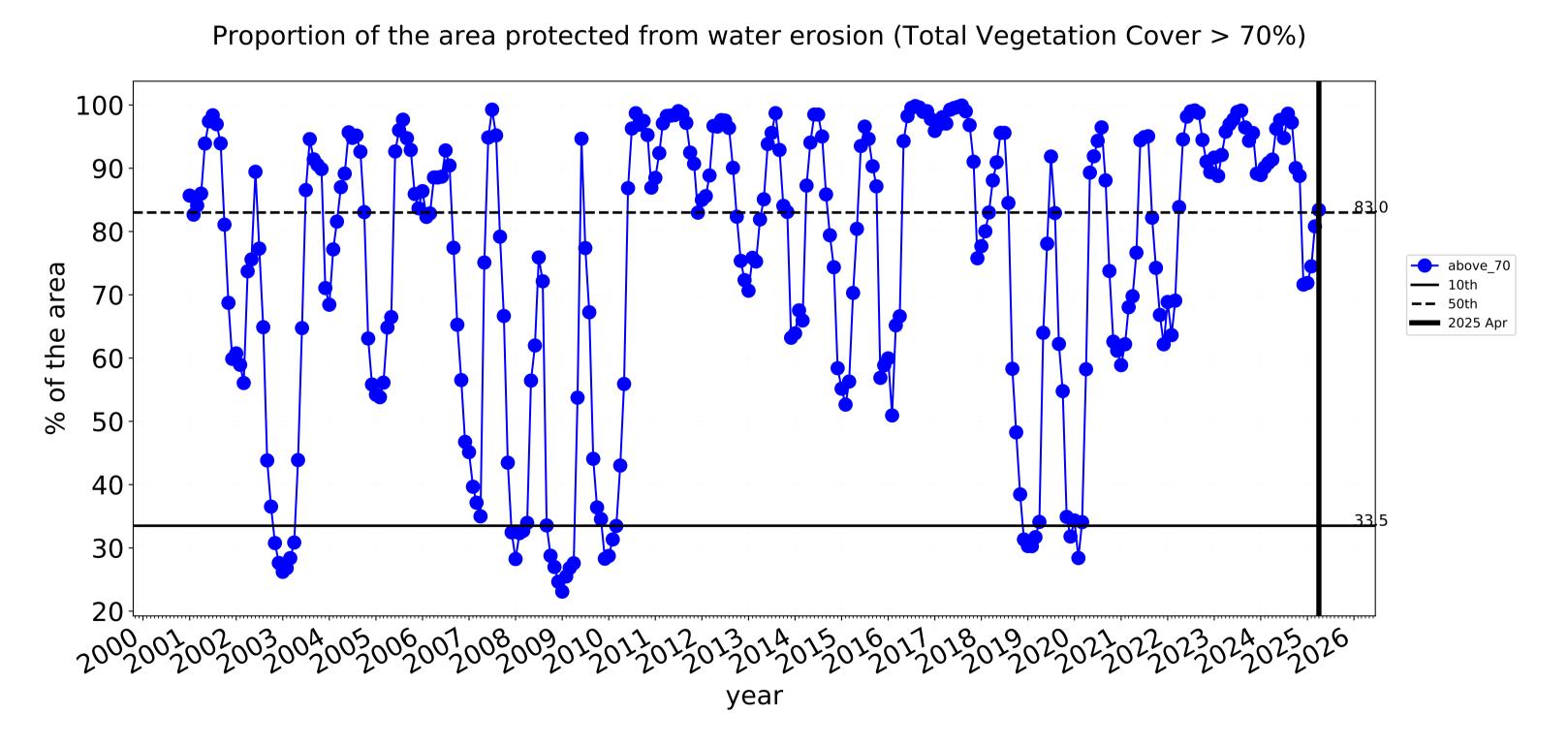


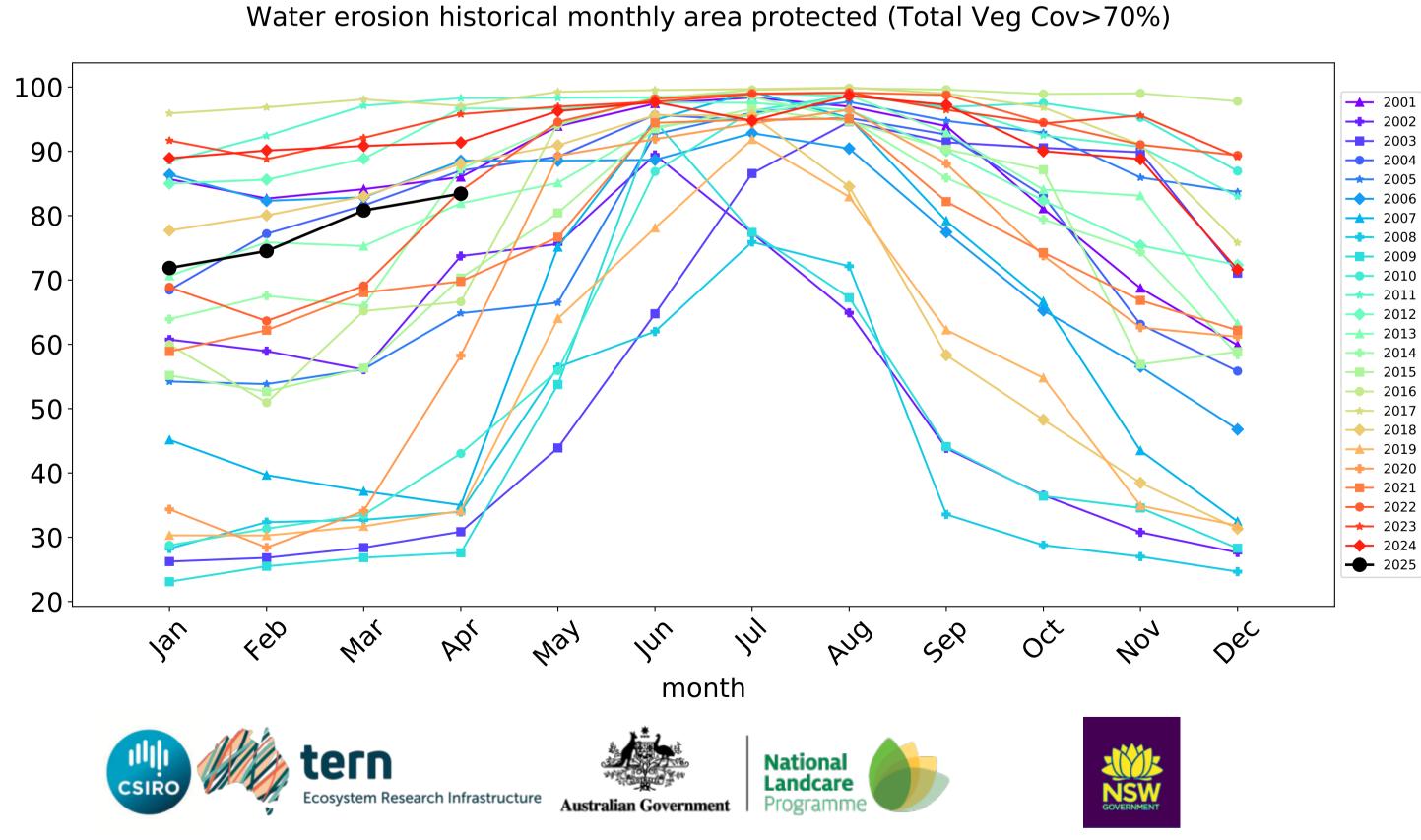
# **Grazing timeseries**





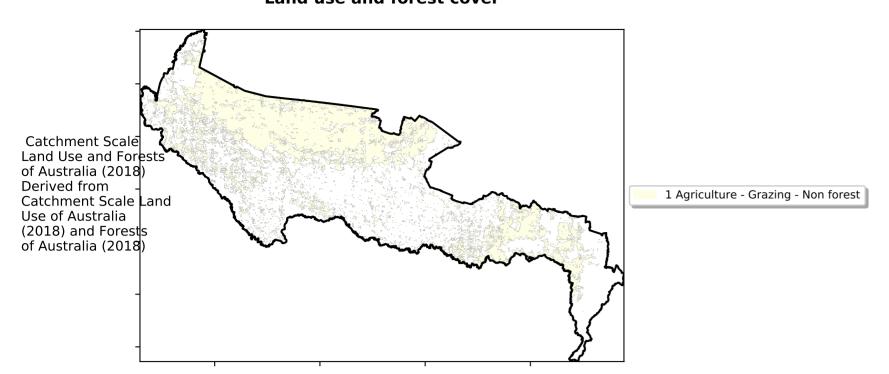
Wind erosion historical monthly area protected (Total Veg Cov >50%)



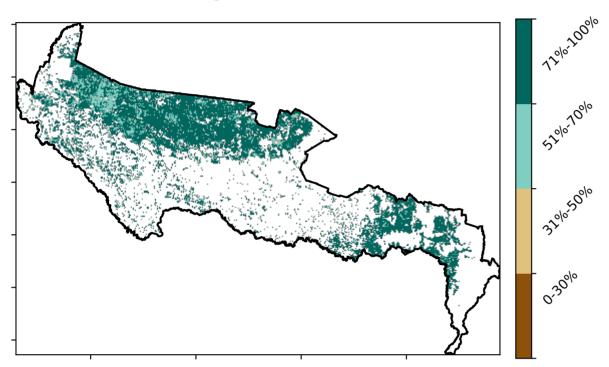


# **Grazing non forest**

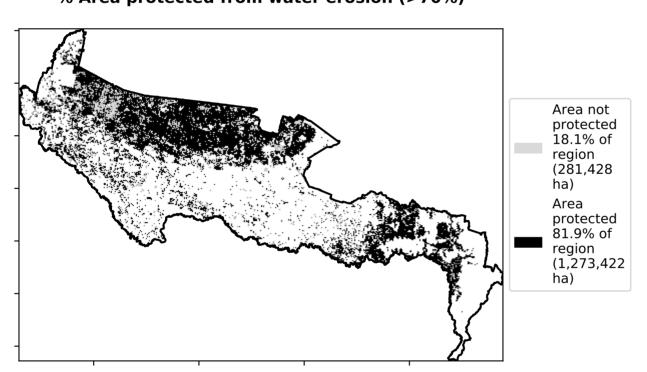
### Land use and forest cover



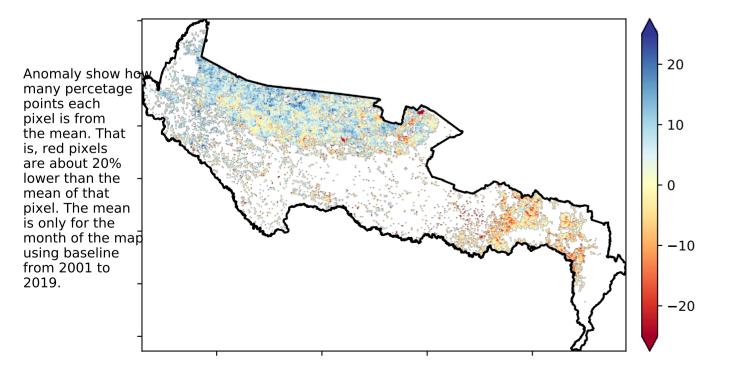
## **Total Vegetation Cover [%]**



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

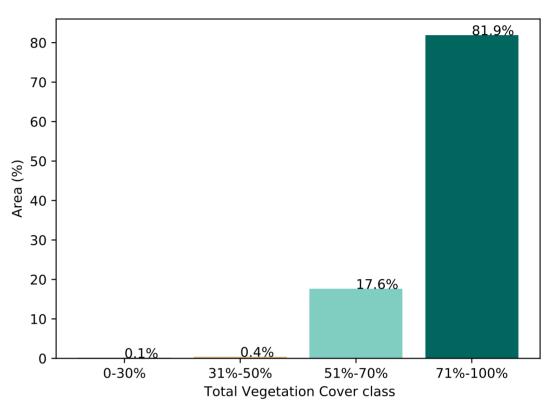


# Total Vegetation Cover Anomaly [%]

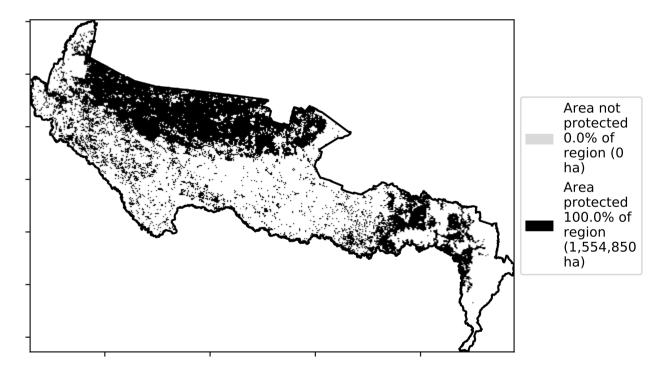


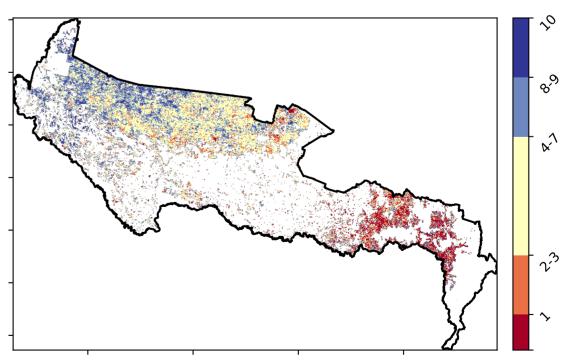
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

# Proportion of vegetation cover class in area



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





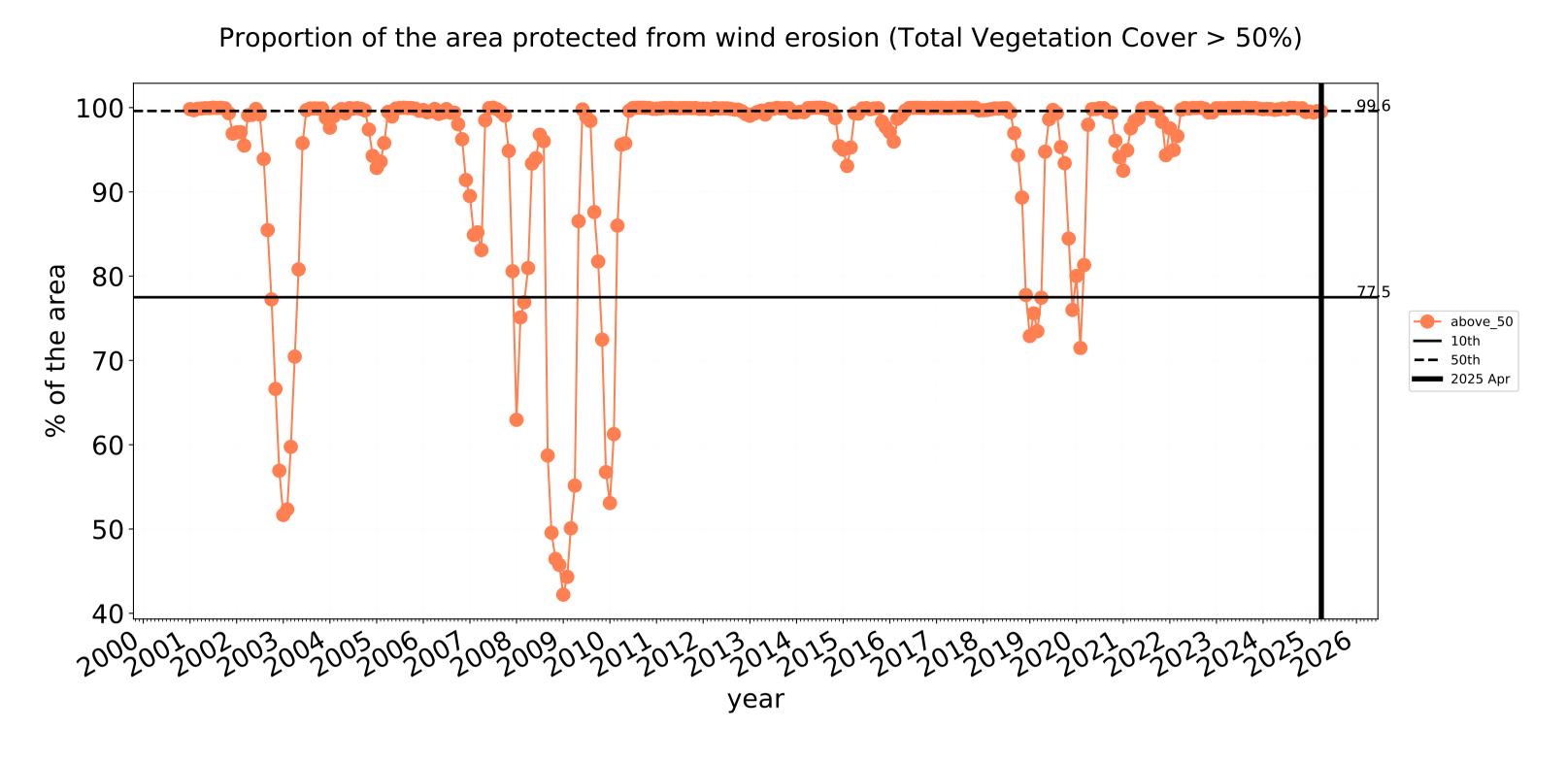


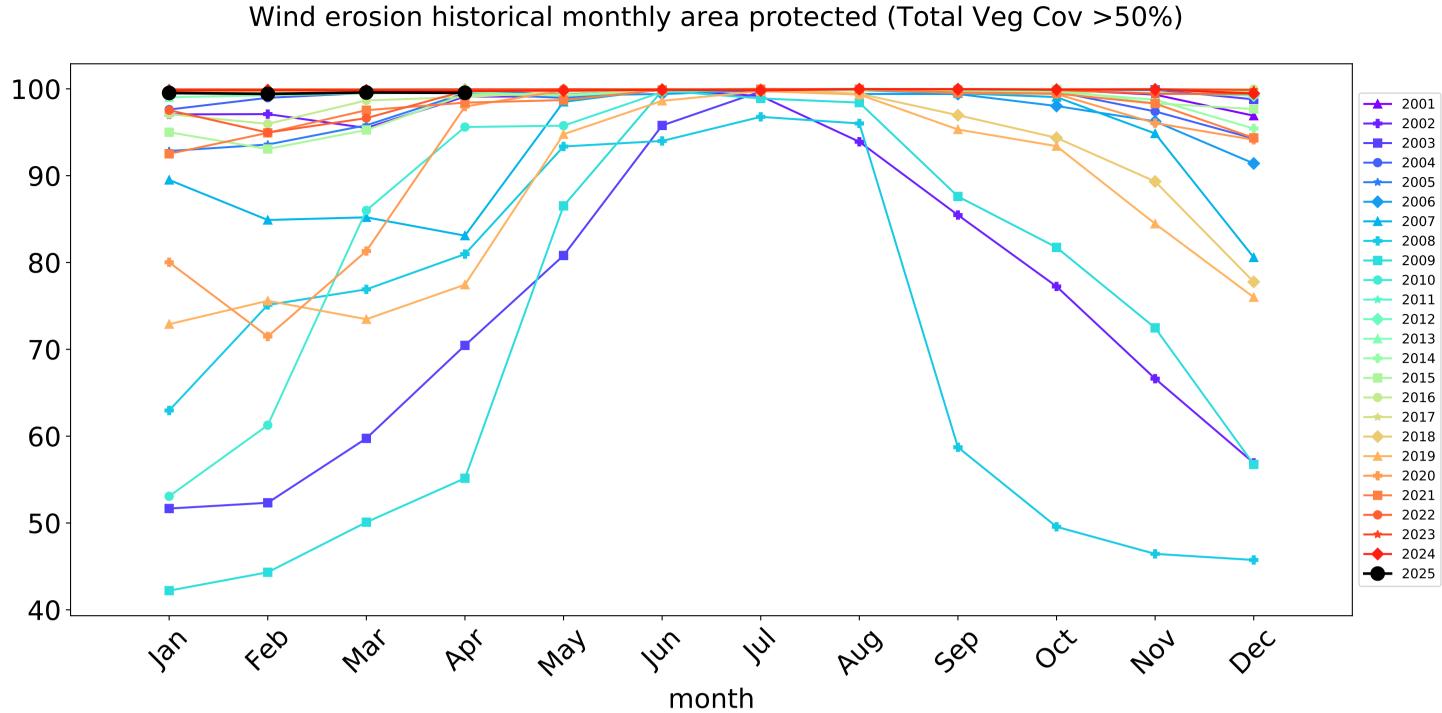


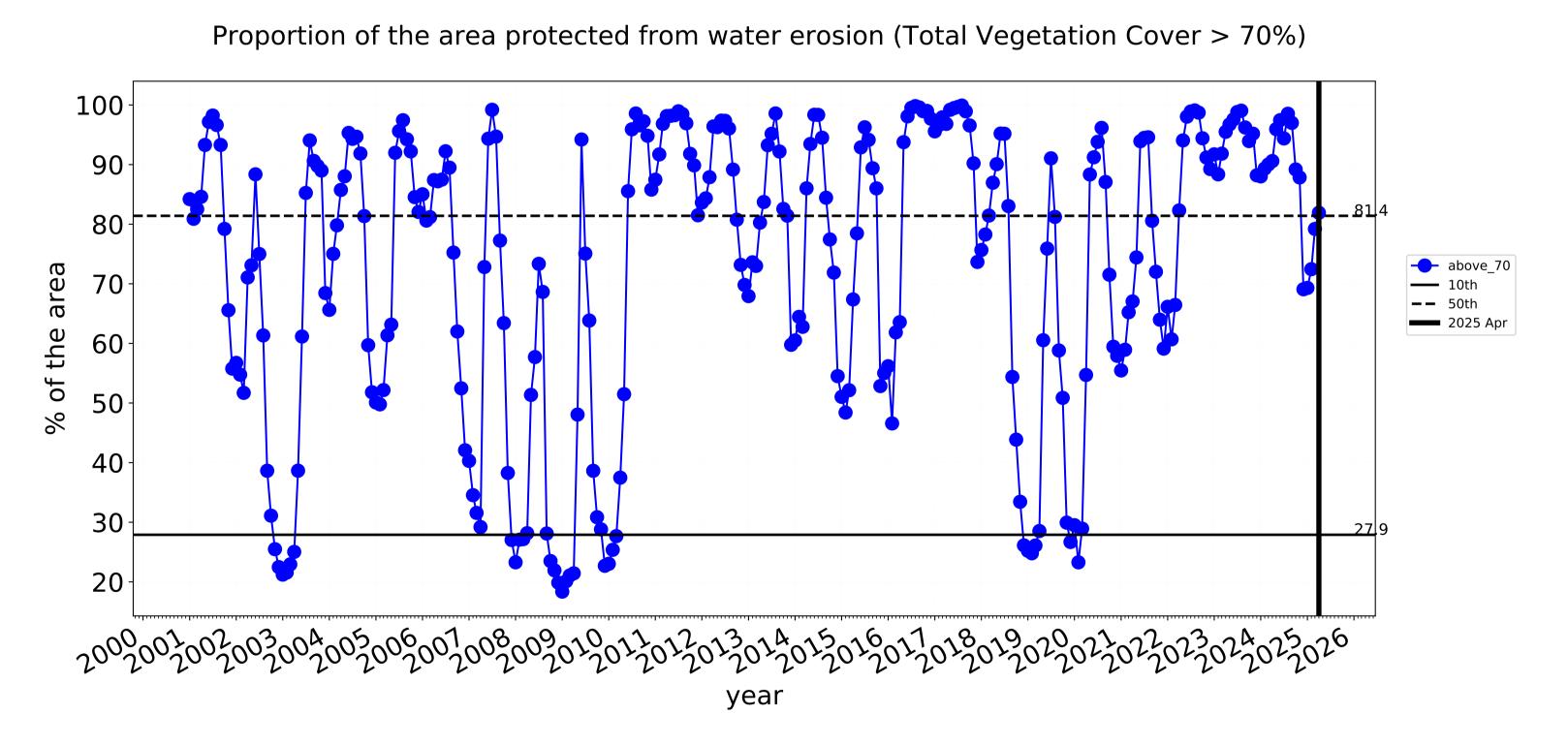


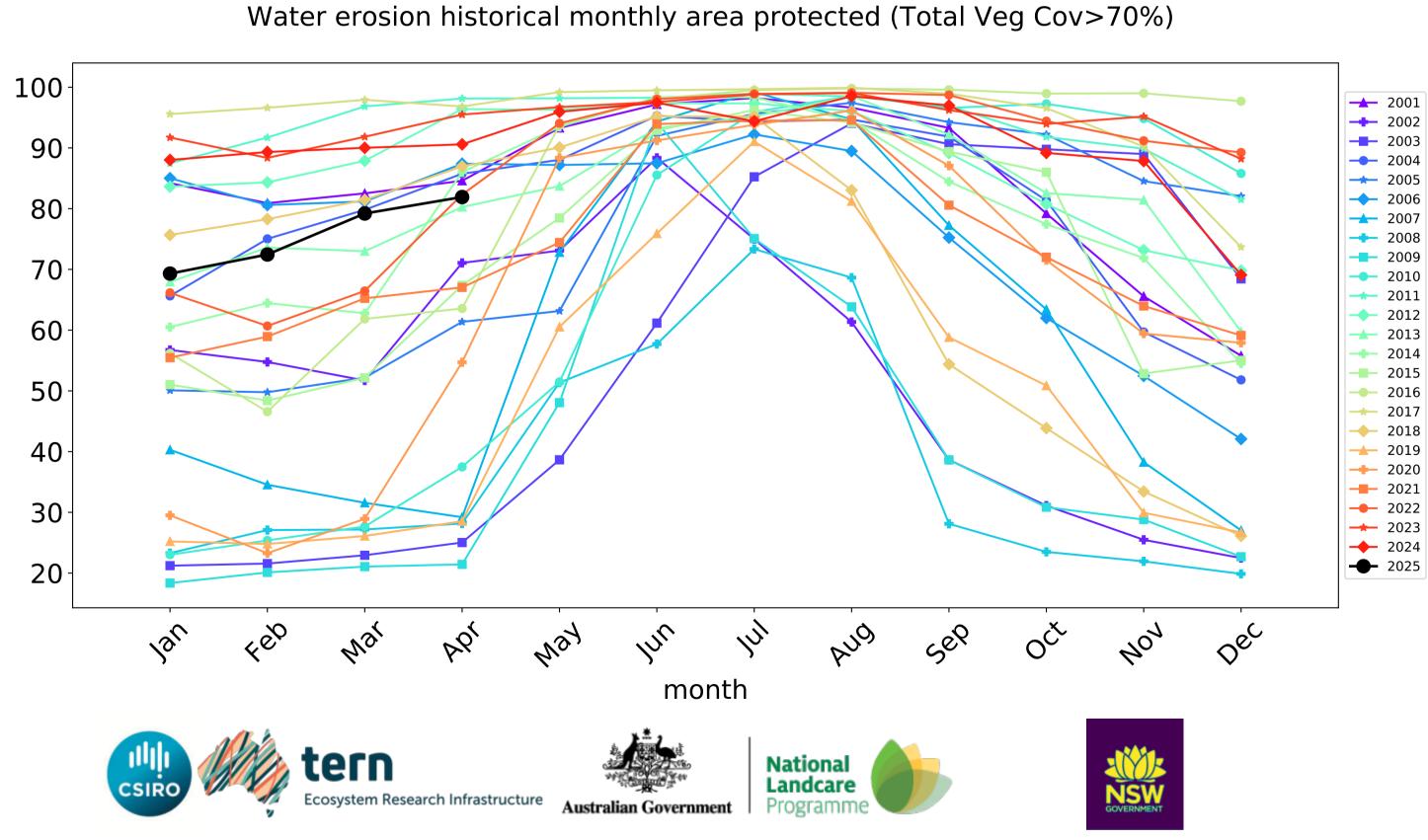


# **Grazing non forest timeseries**



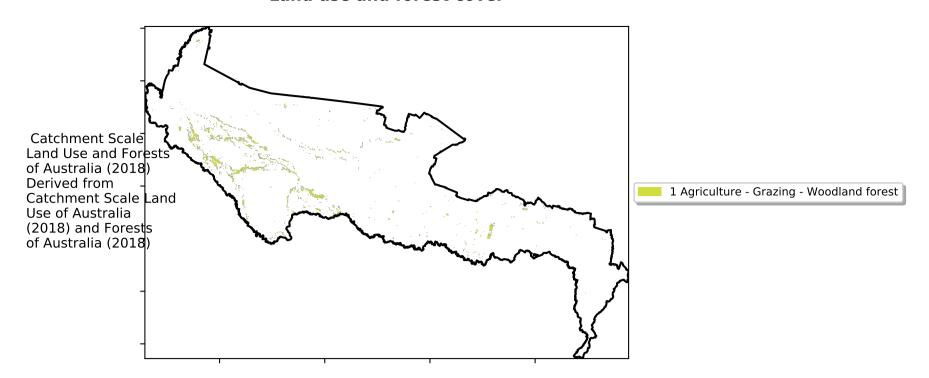




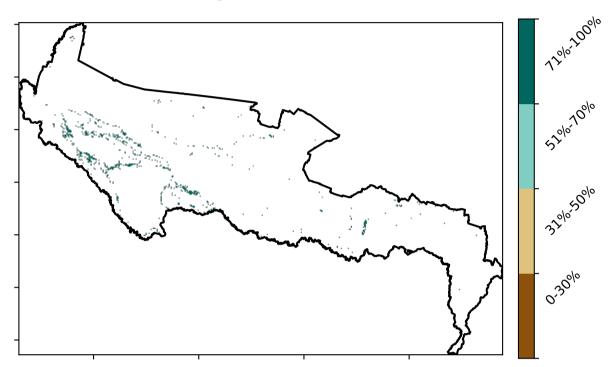


# **Grazing Woodland forest**

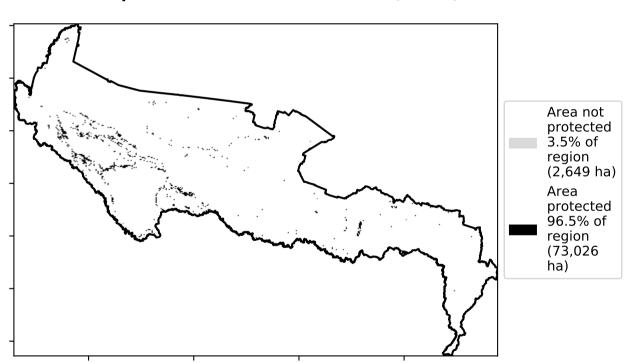
### Land use and forest cover



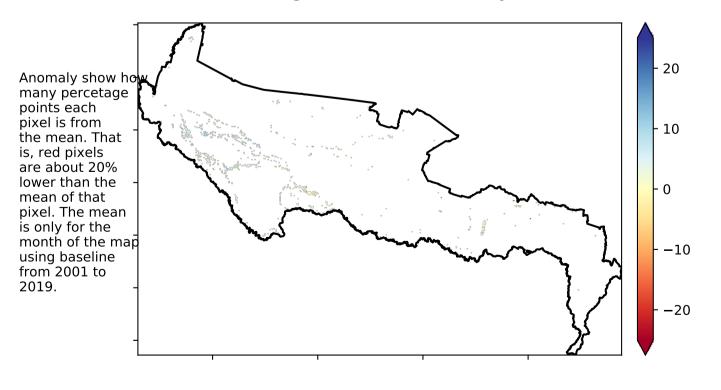
## Total Vegetation Cover [%]



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

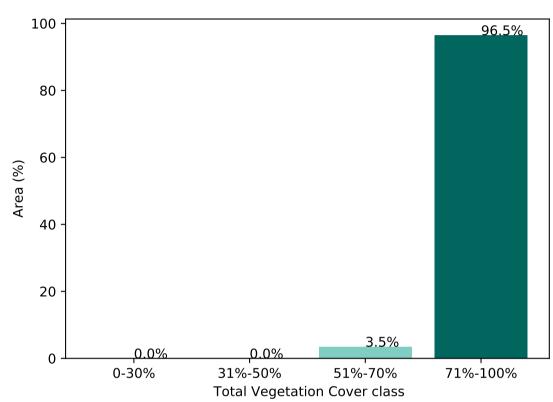


# Total Vegetation Cover Anomaly [%]

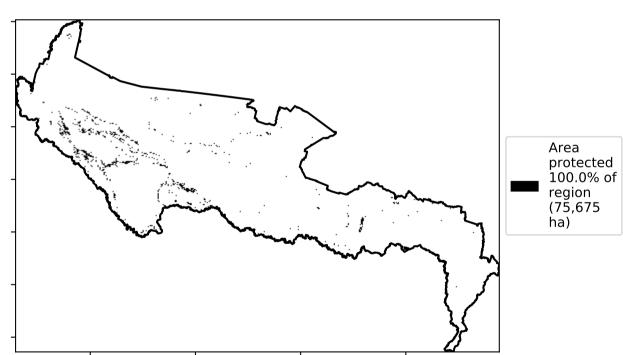


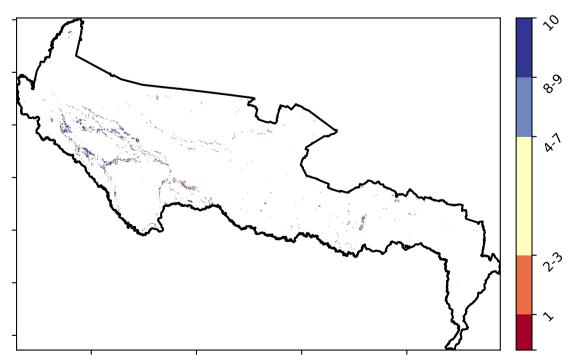
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

# Proportion of vegetation cover class in area



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





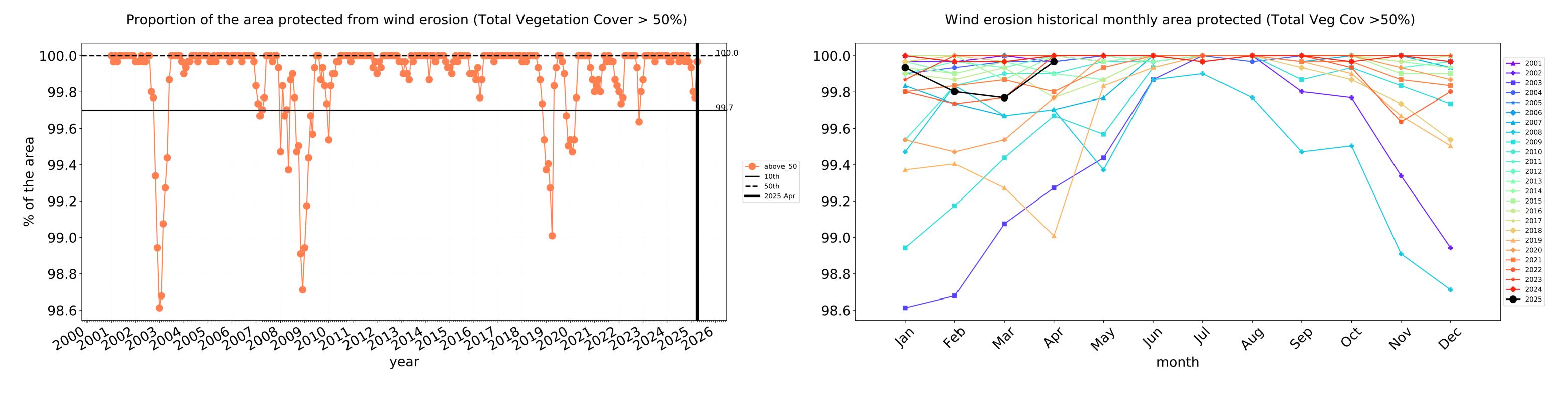


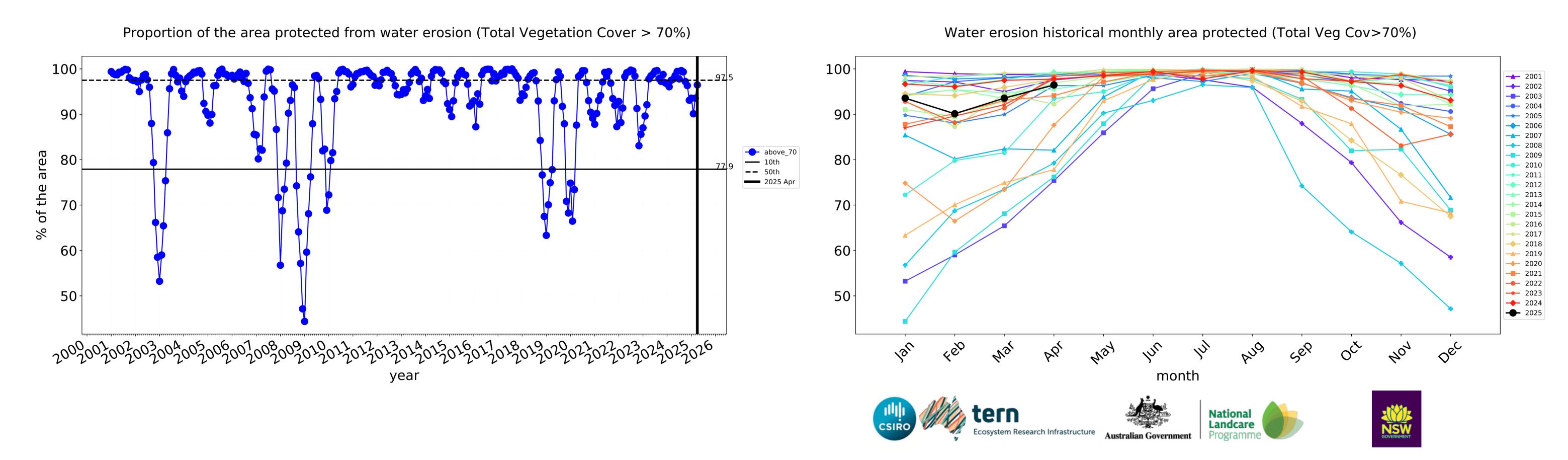






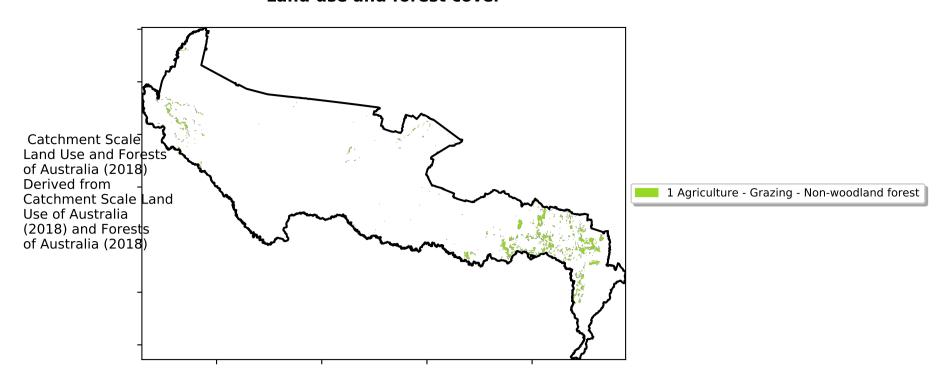
# **Grazing Woodland forest timeseries**



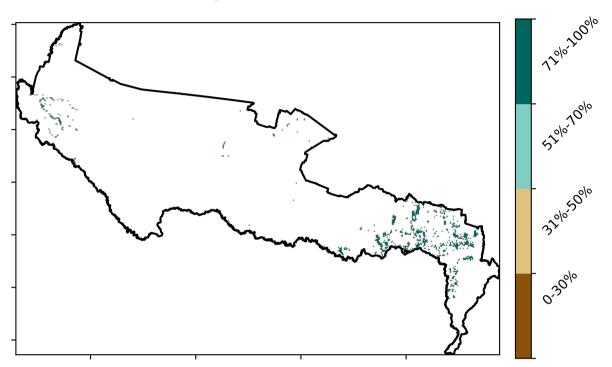


# **Grazing - Forest (non woodland)**

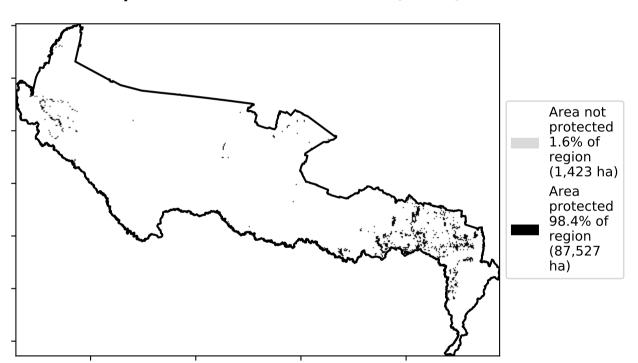
### Land use and forest cover



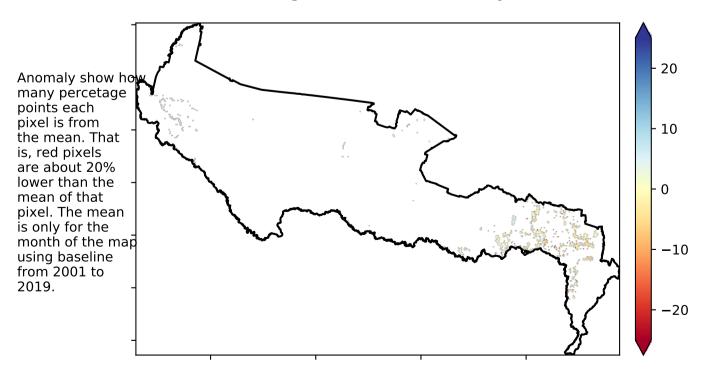
## Total Vegetation Cover [%]



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

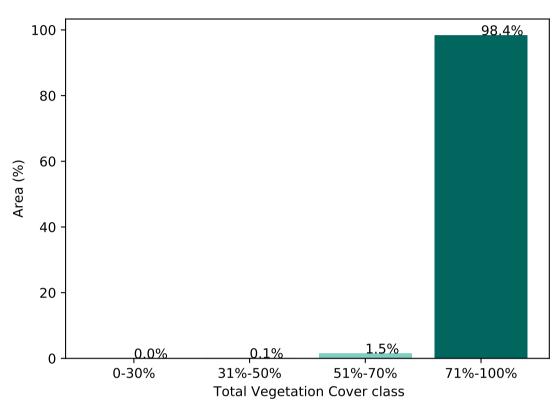


# Total Vegetation Cover Anomaly [%]

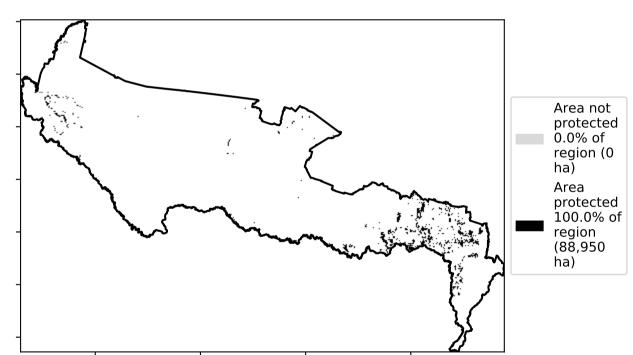


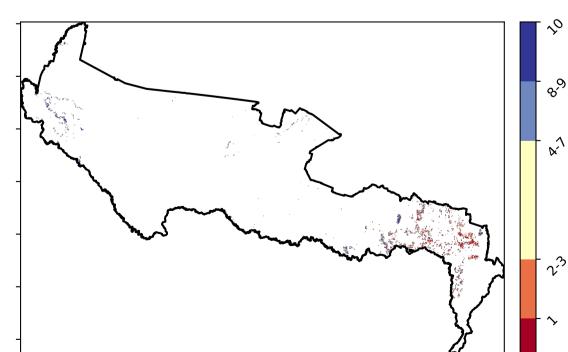
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

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



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



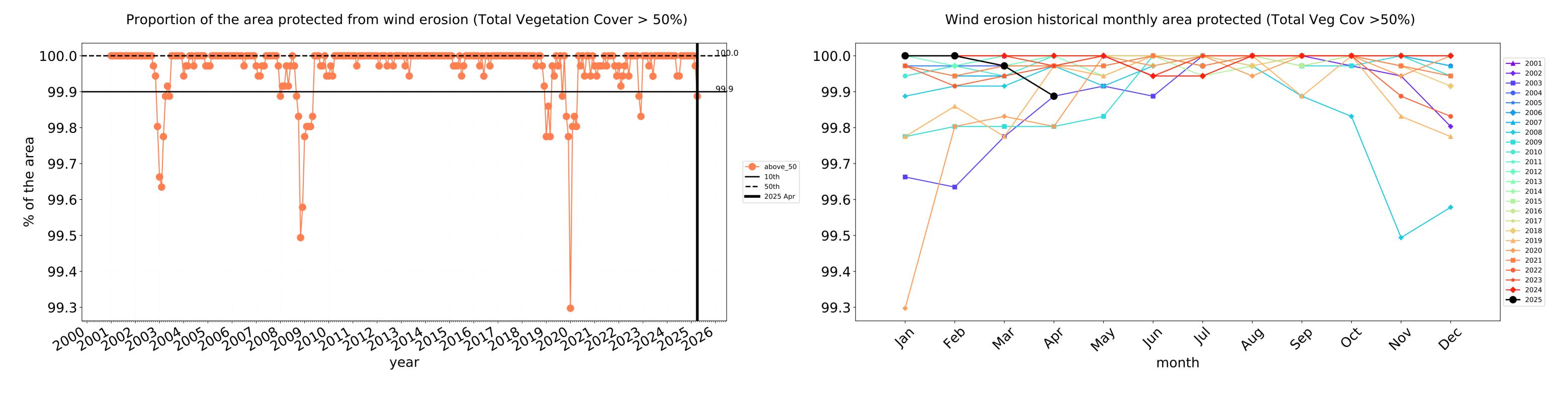


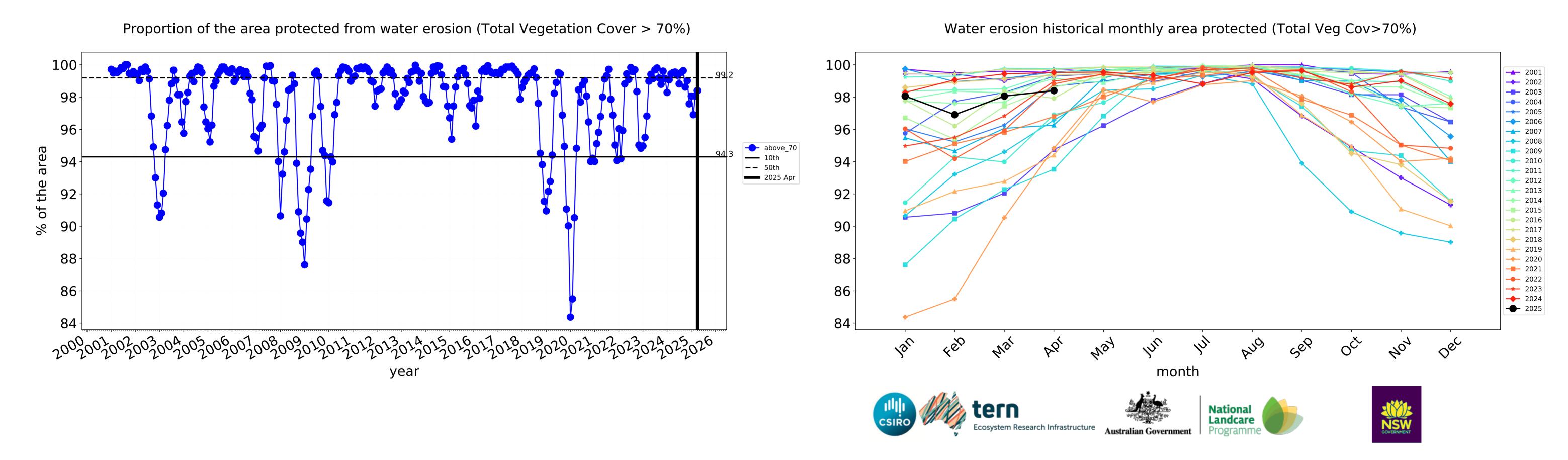






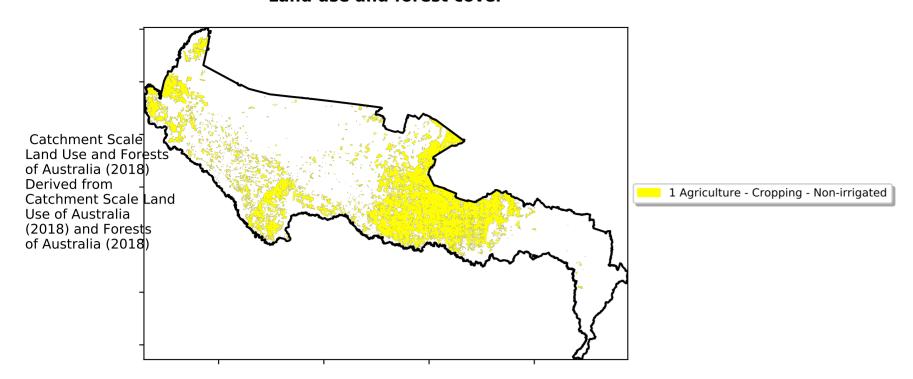




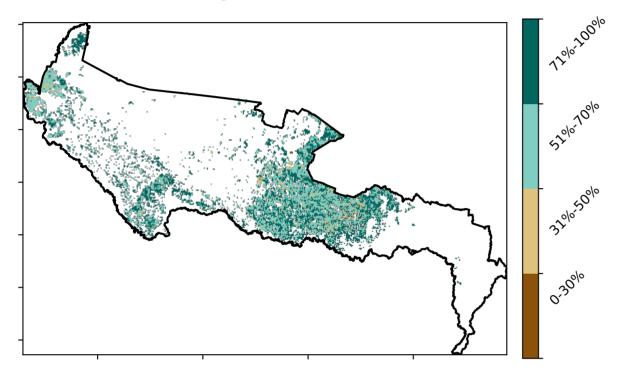


# **Cropping**

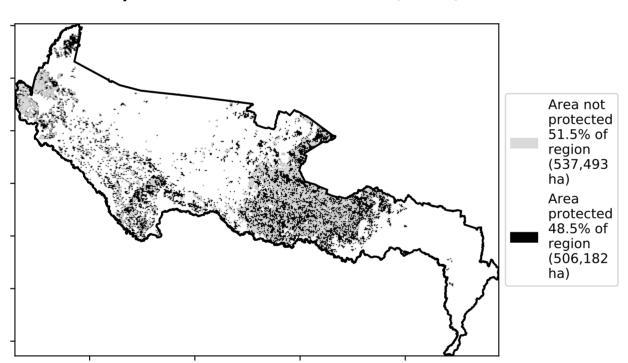
### Land use and forest cover



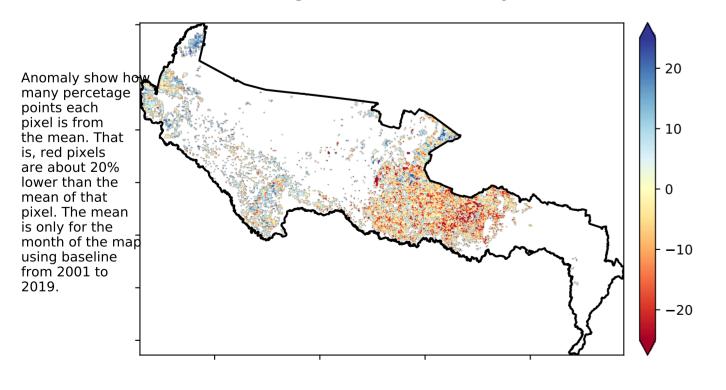
## Total Vegetation Cover [%]



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

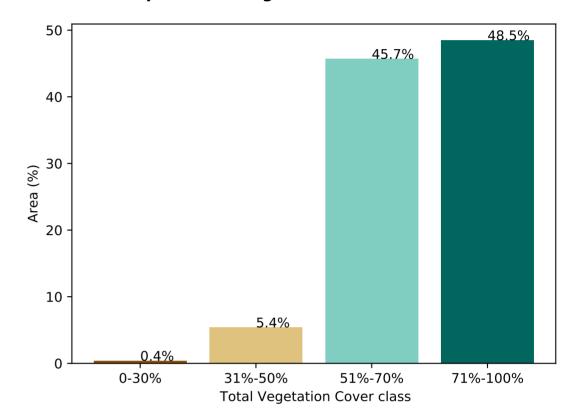


# Total Vegetation Cover Anomaly [%]

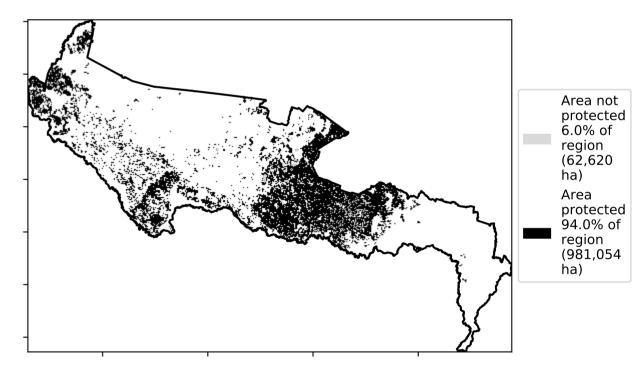


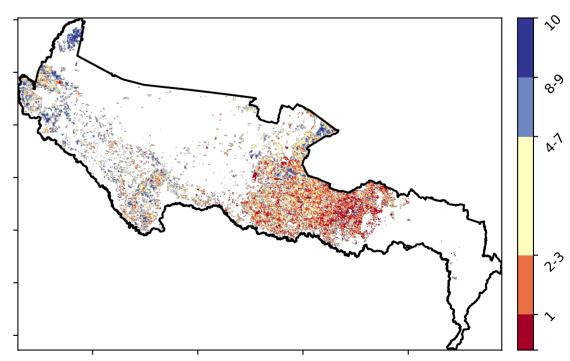
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





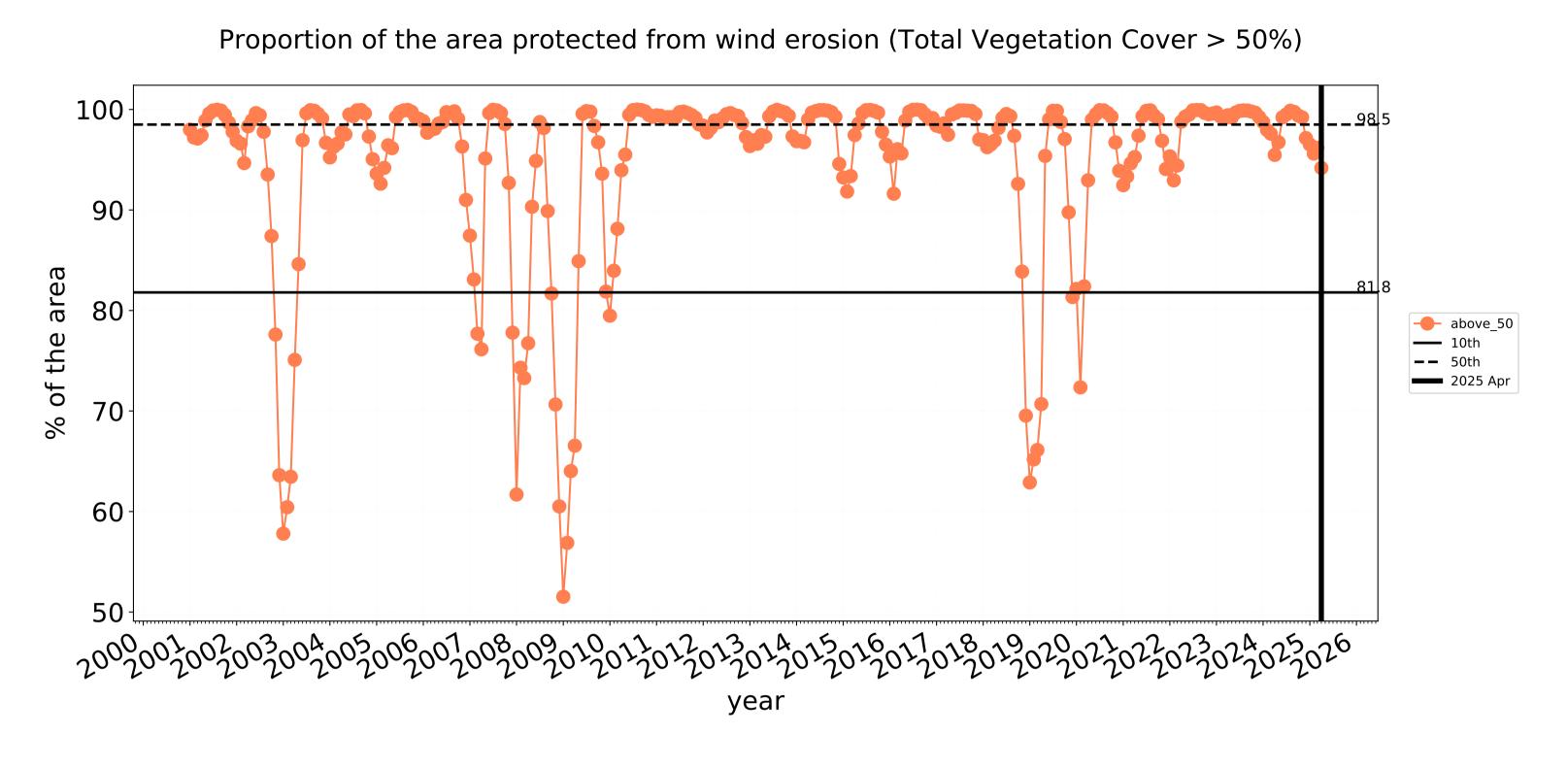


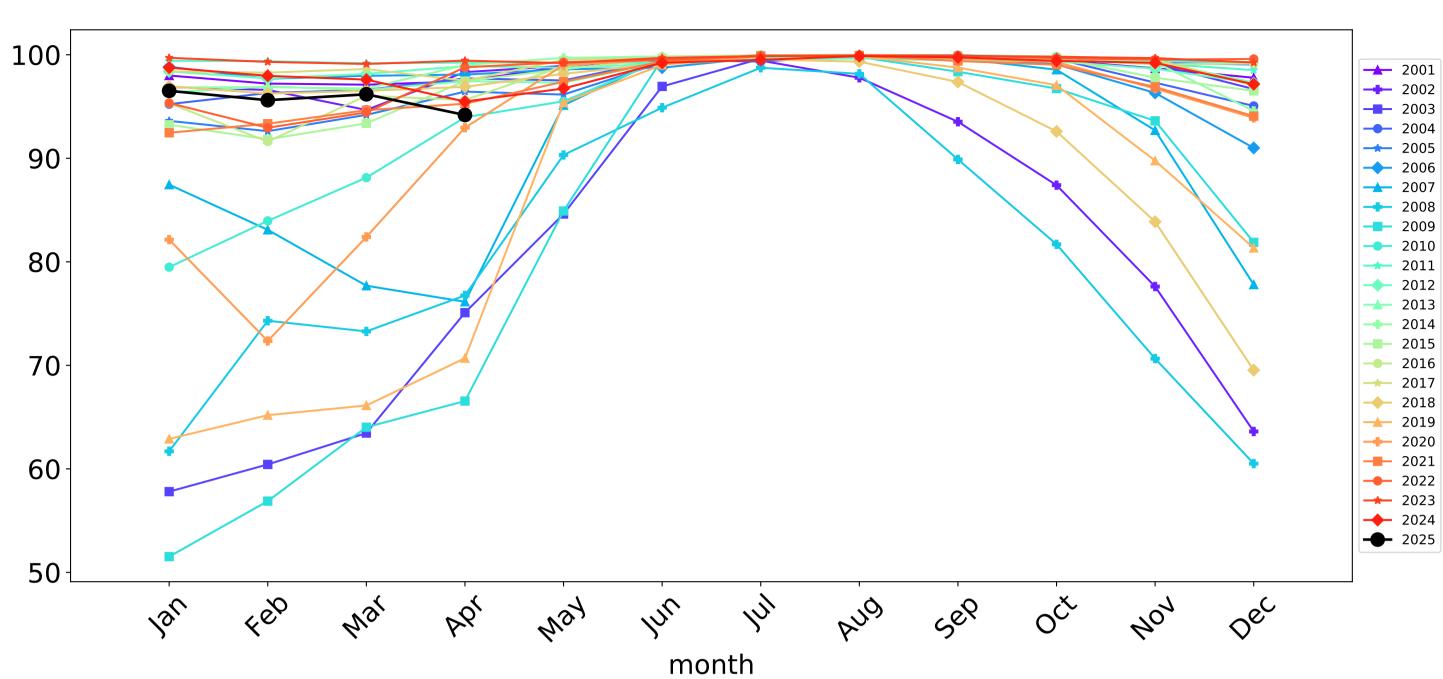




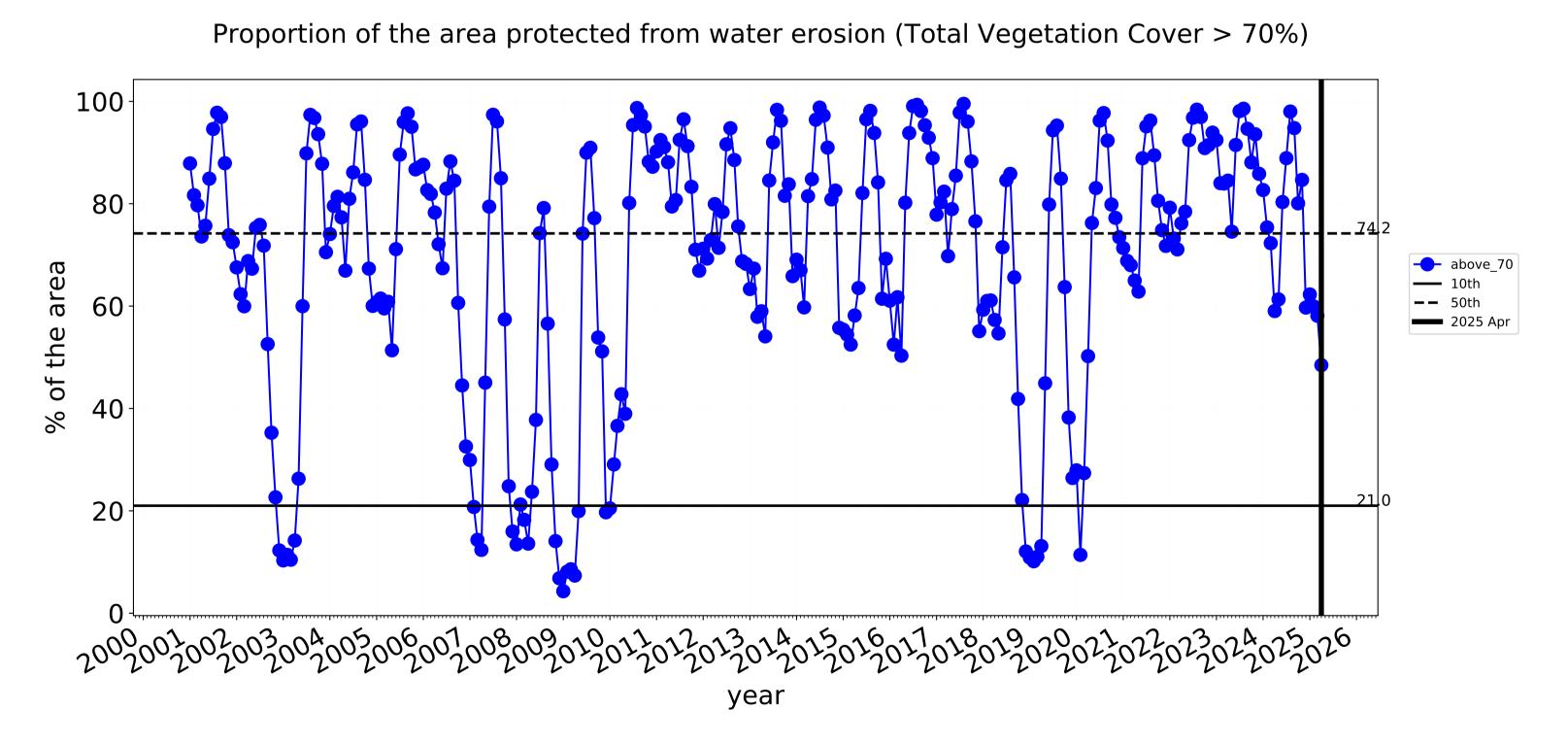


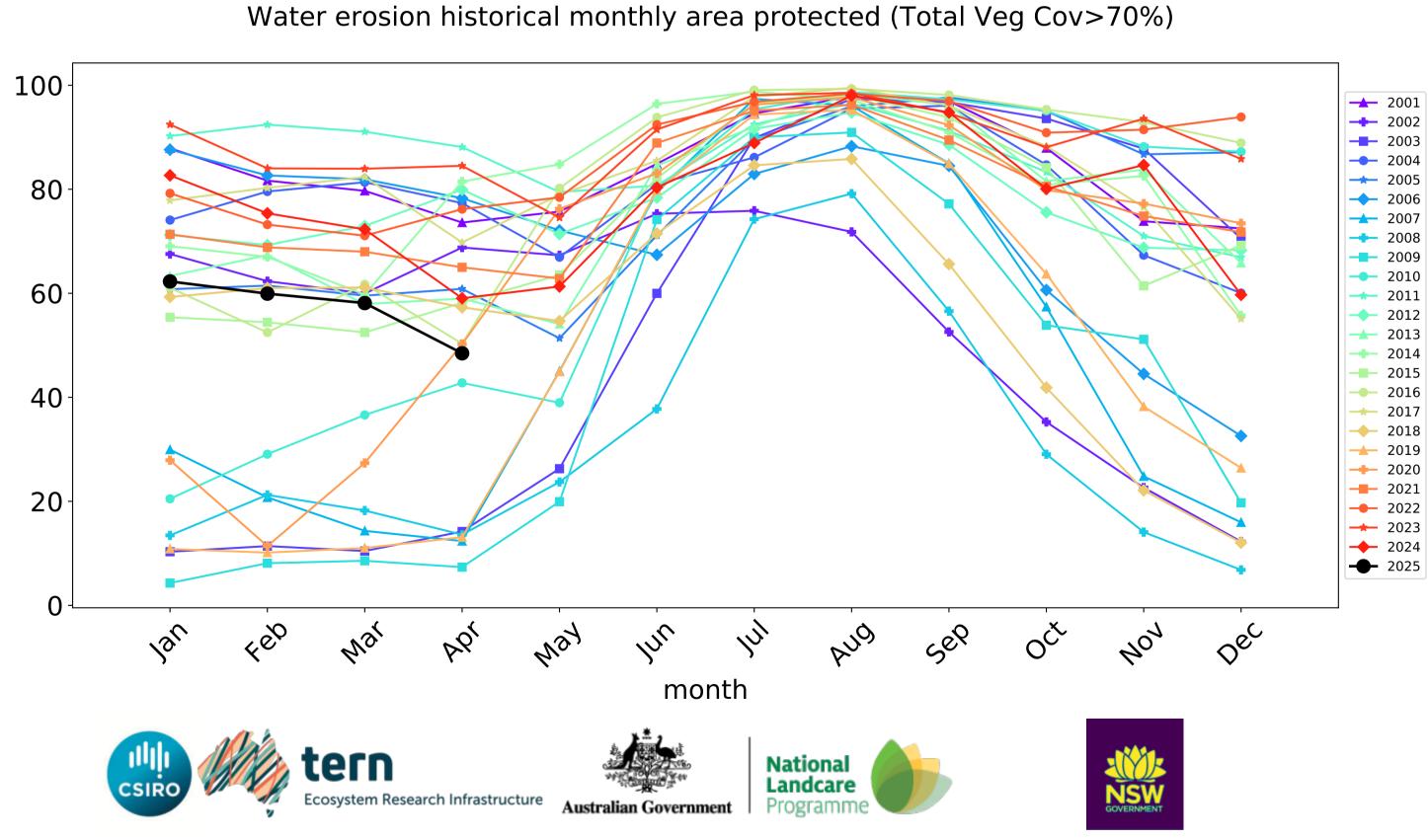
# **Cropping timeseries**





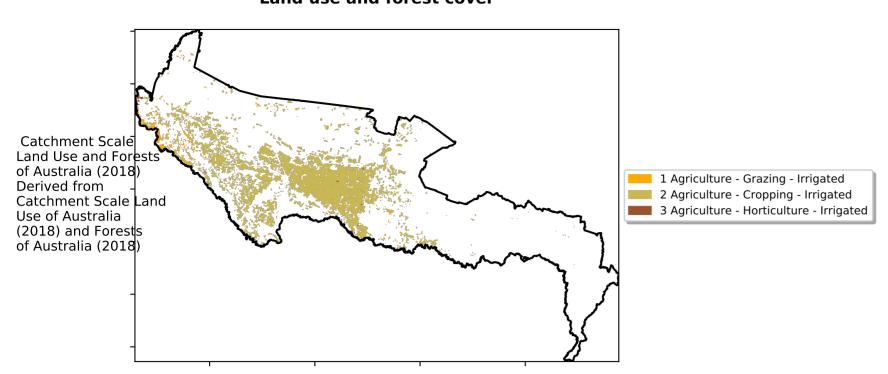
Wind erosion historical monthly area protected (Total Veg Cov >50%)



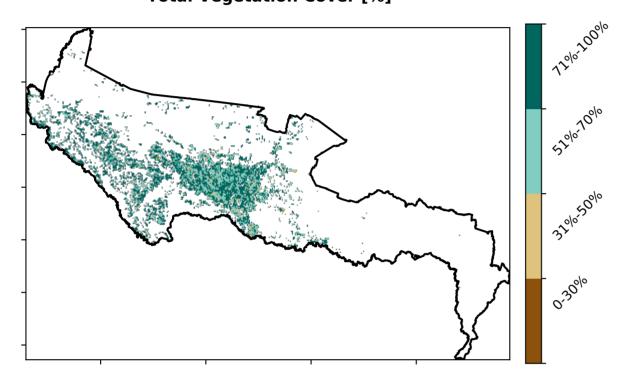


# Irrigation

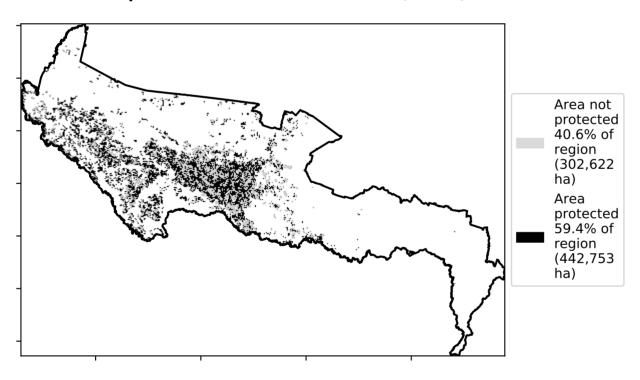
### Land use and forest cover



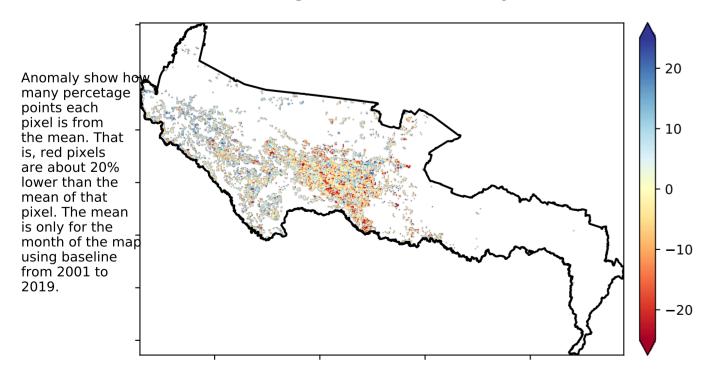
### **Total Vegetation Cover [%]**



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

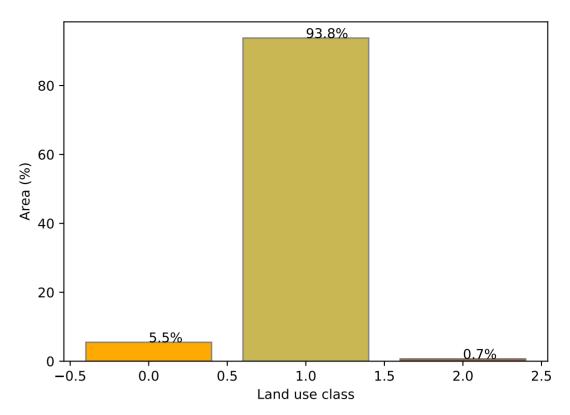


# Total Vegetation Cover Anomaly [%]

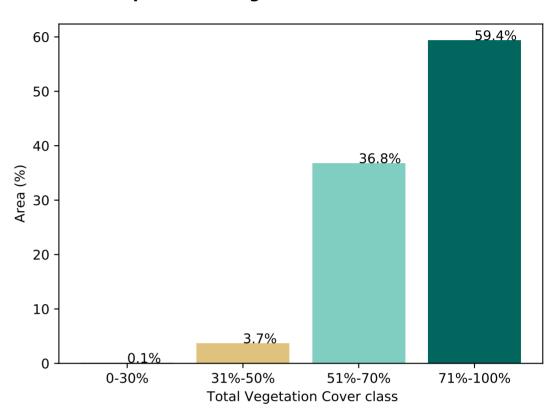


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

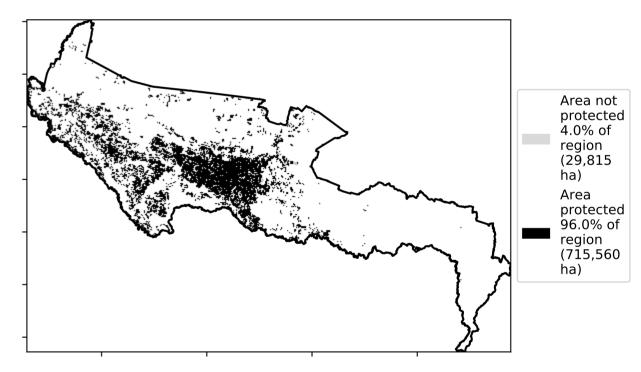
### Proportion of each land class in area

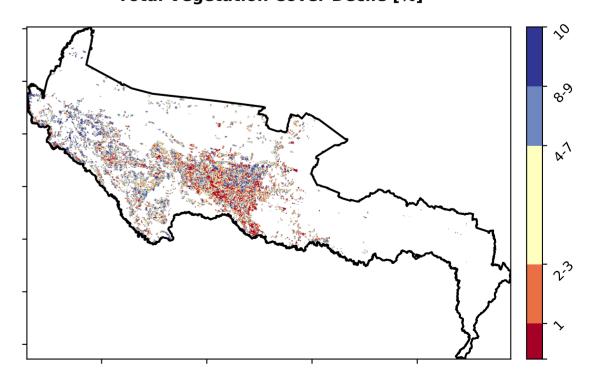


### Proportion of vegetation cover class in area



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





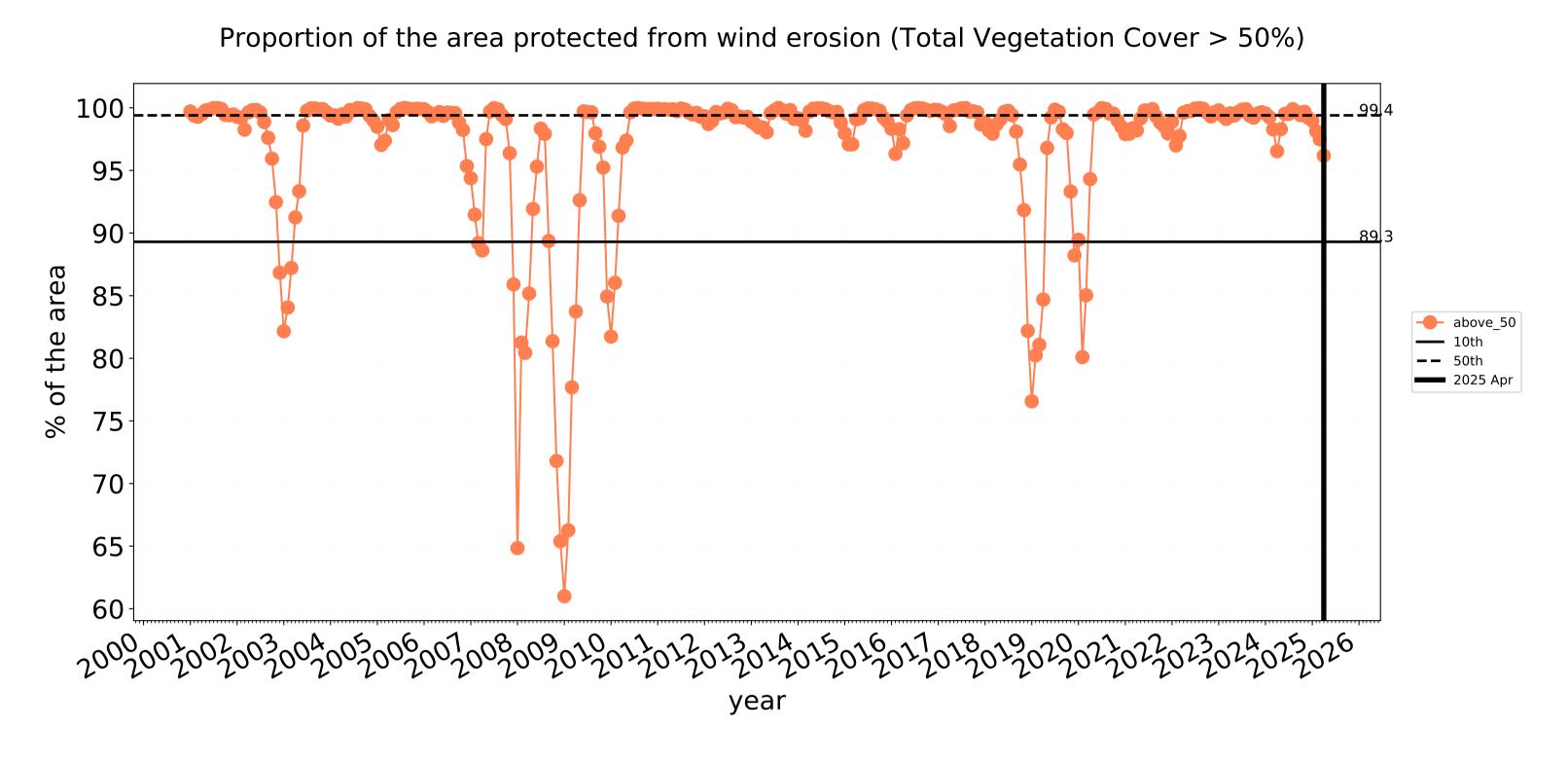


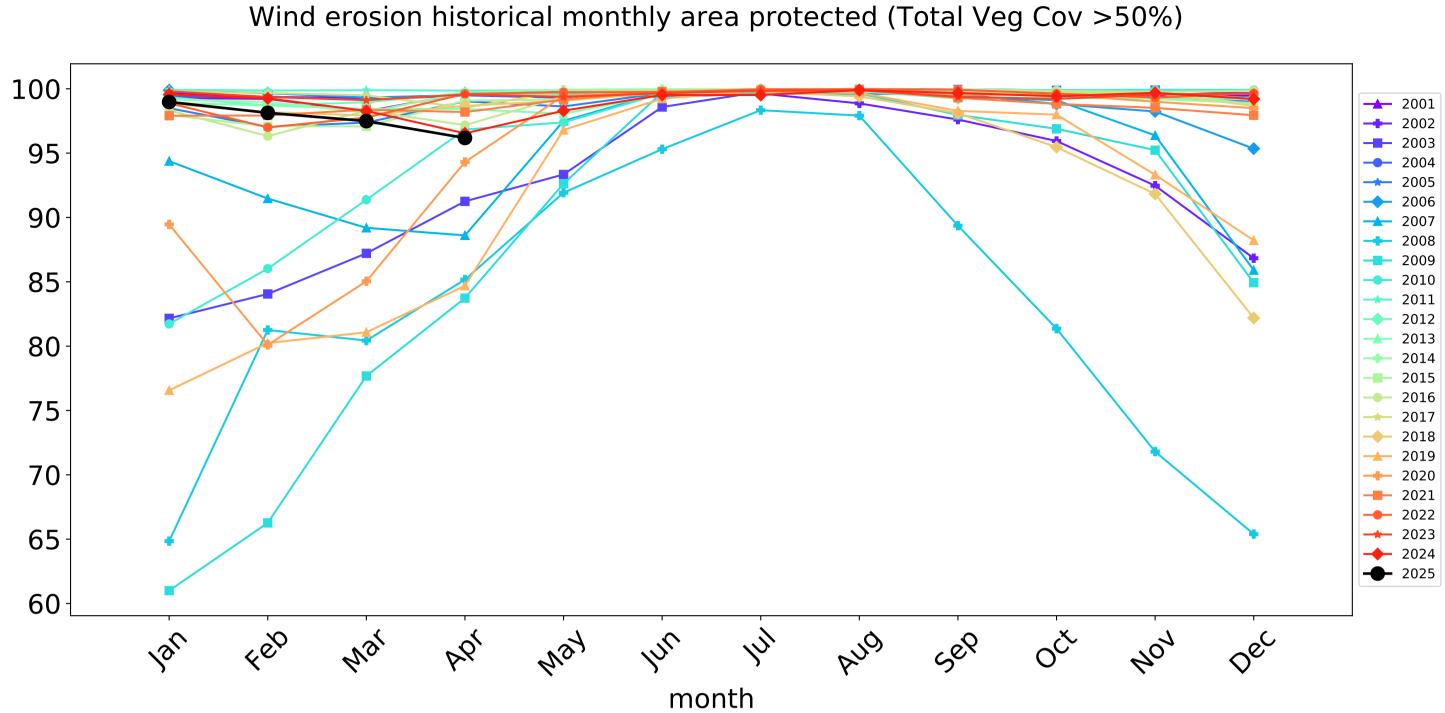


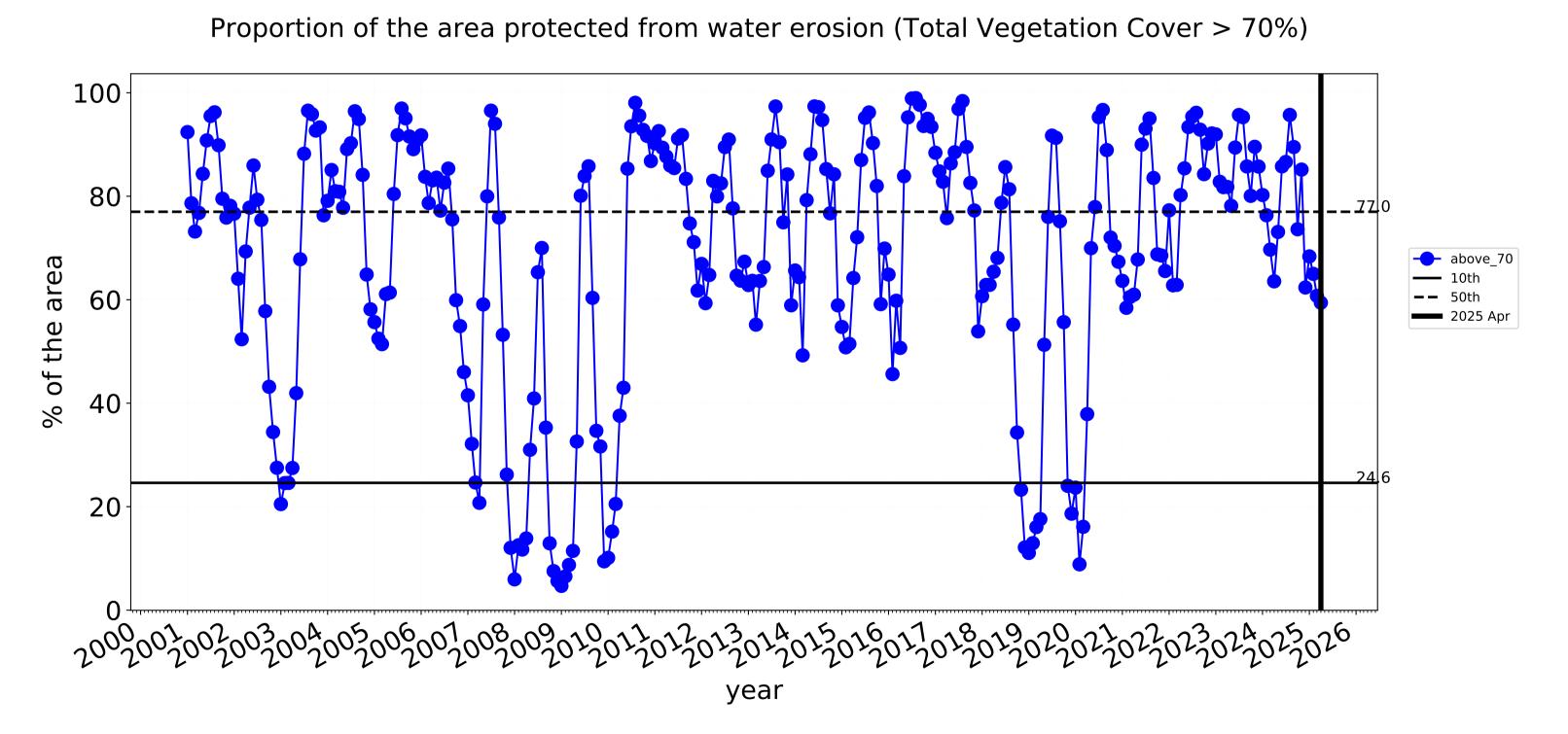


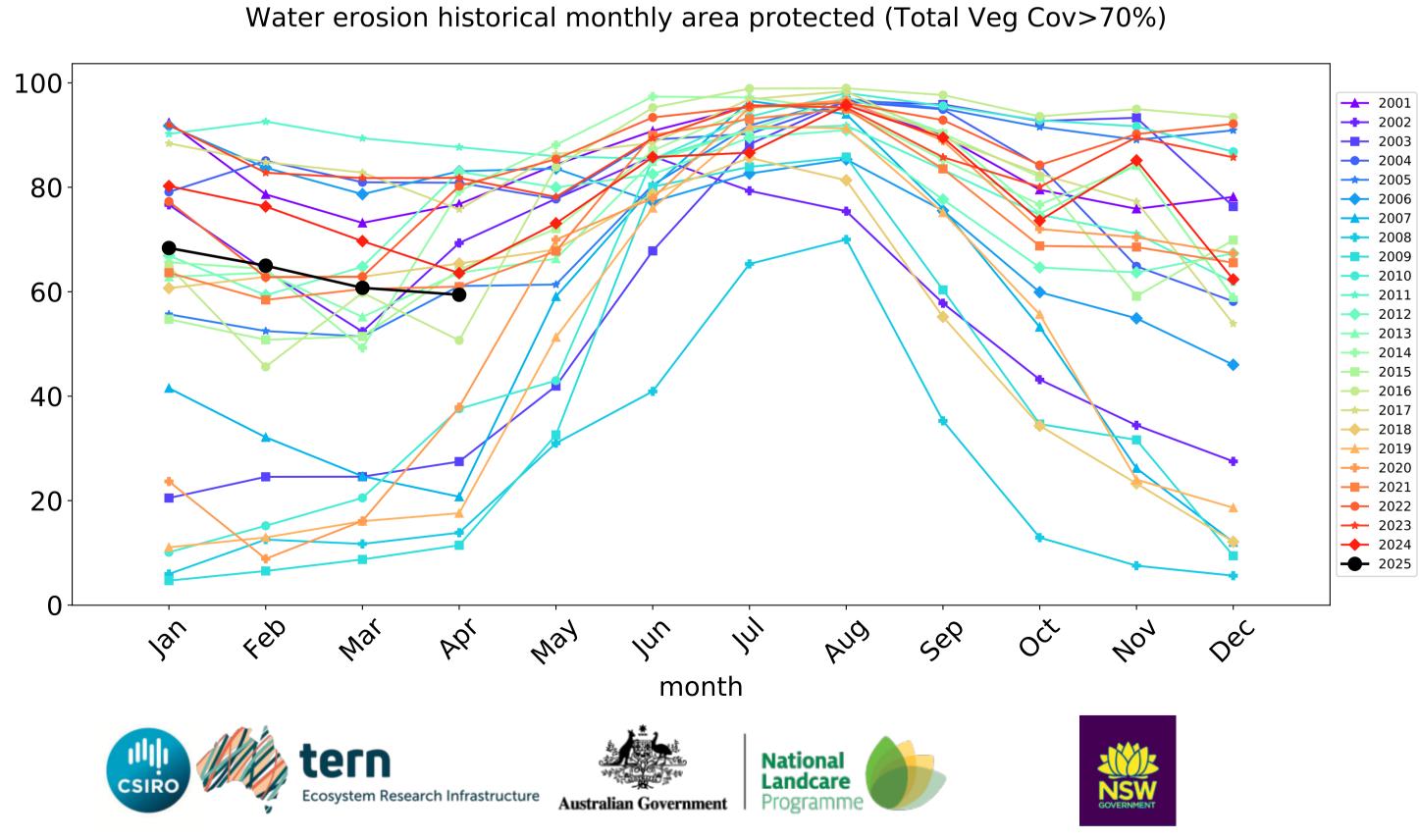






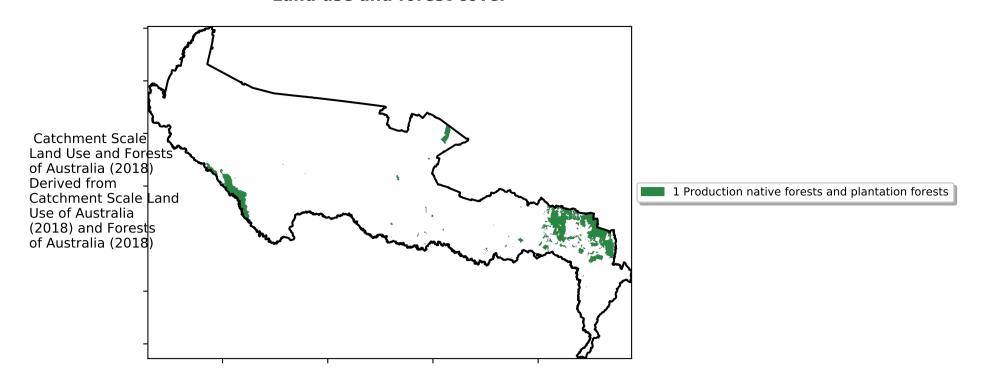




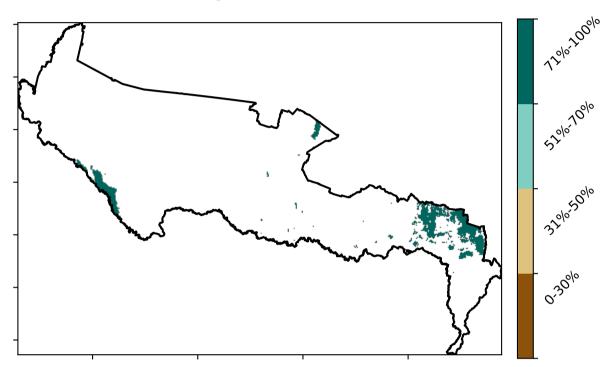


# **Production native forests and plantation forests**

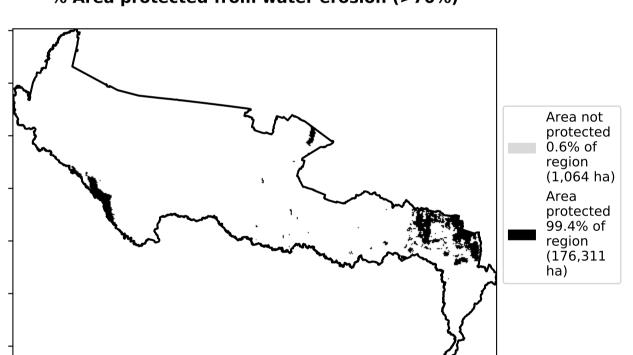
### Land use and forest cover



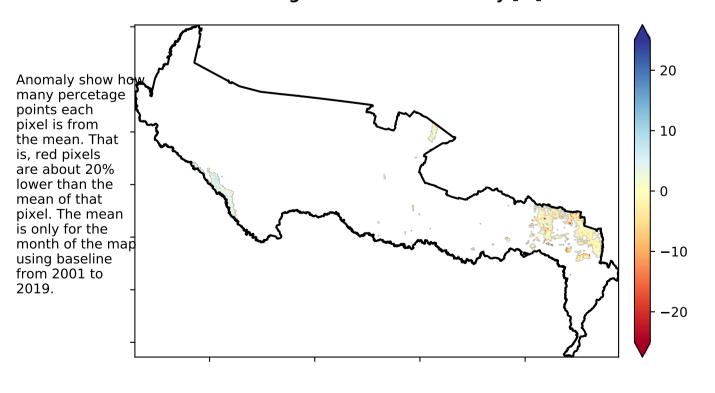
## **Total Vegetation Cover [%]**



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

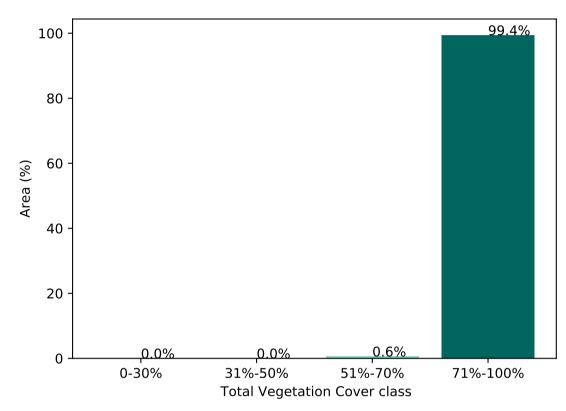


# Total Vegetation Cover Anomaly [%]

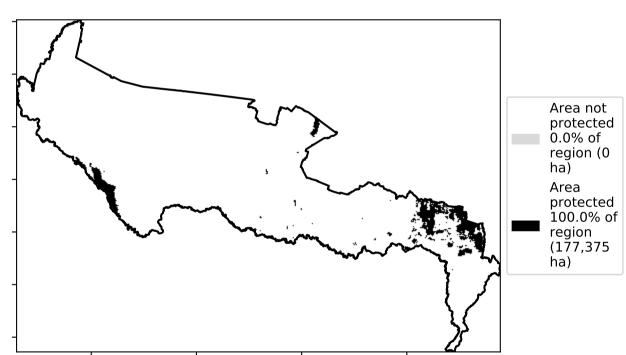


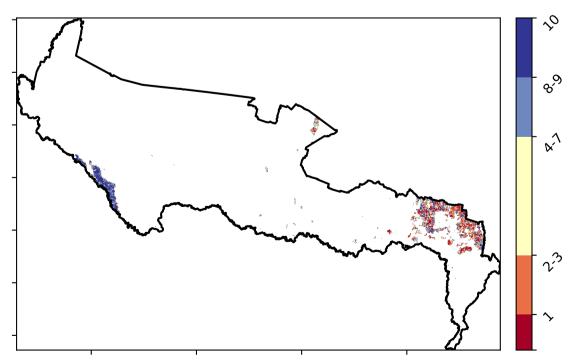
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

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



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





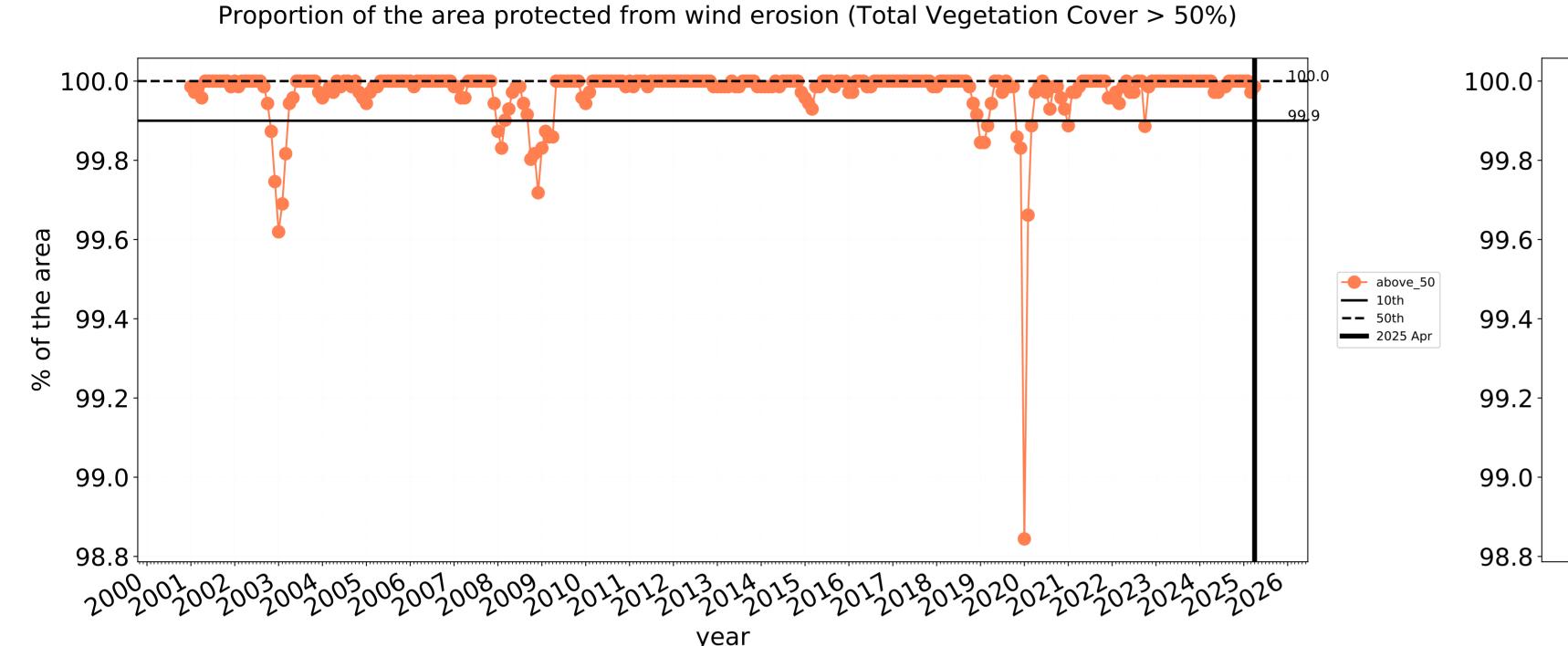


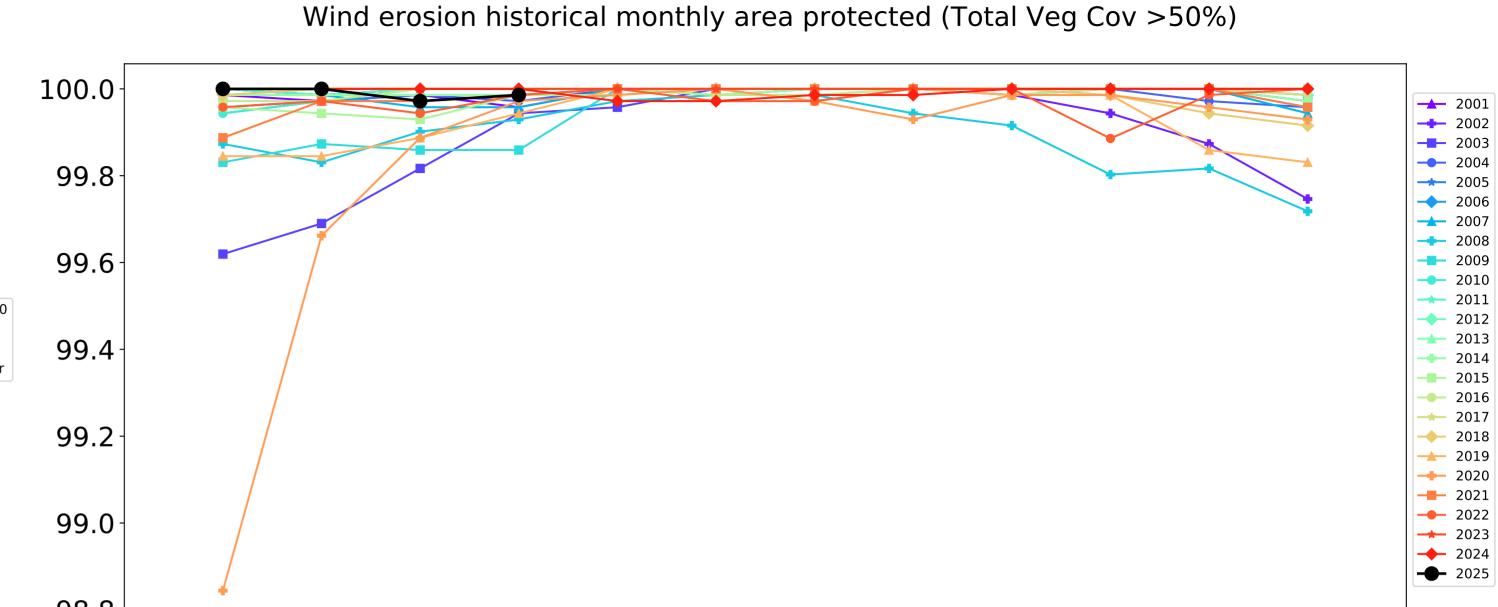






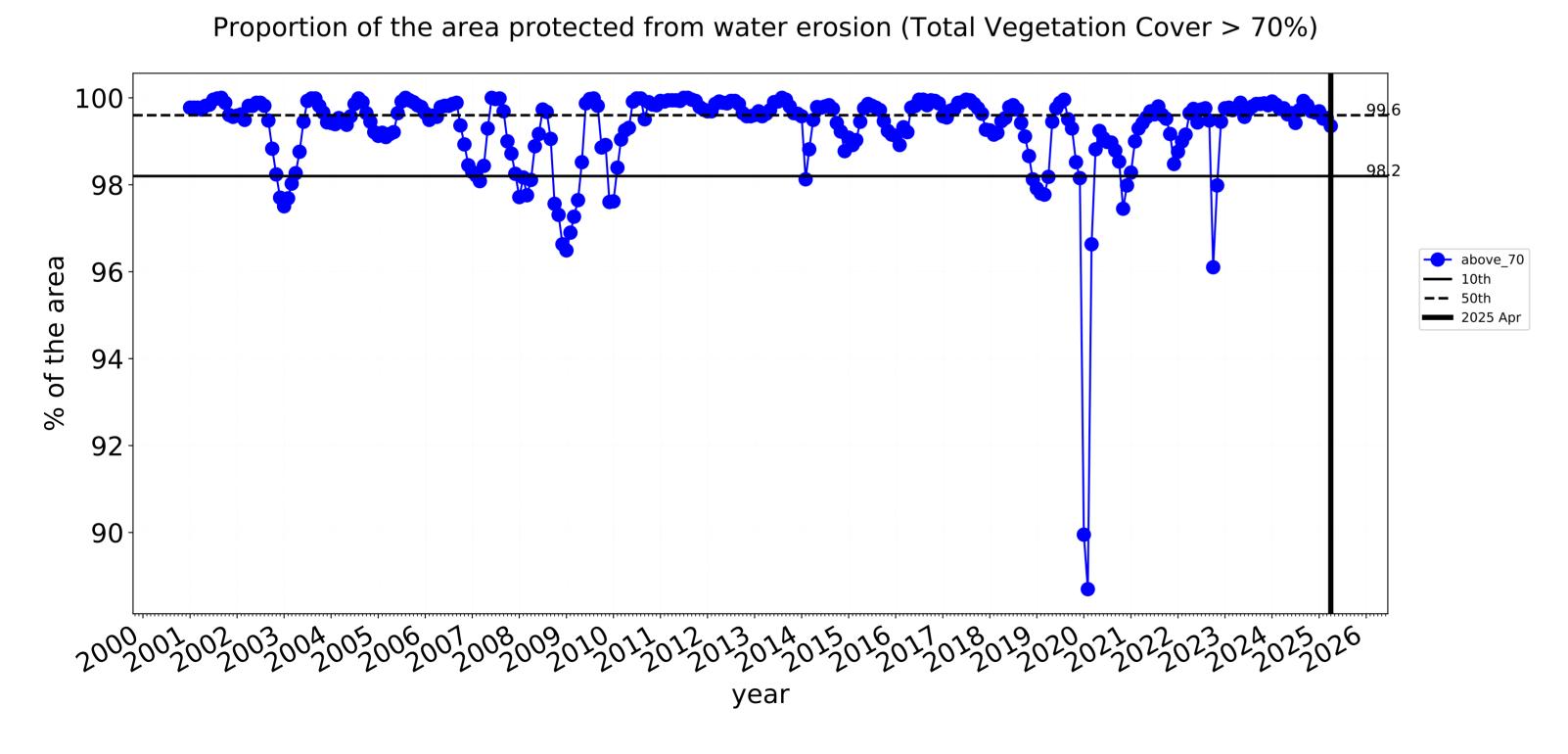
# **Production native forests and plantation forests timeseries**

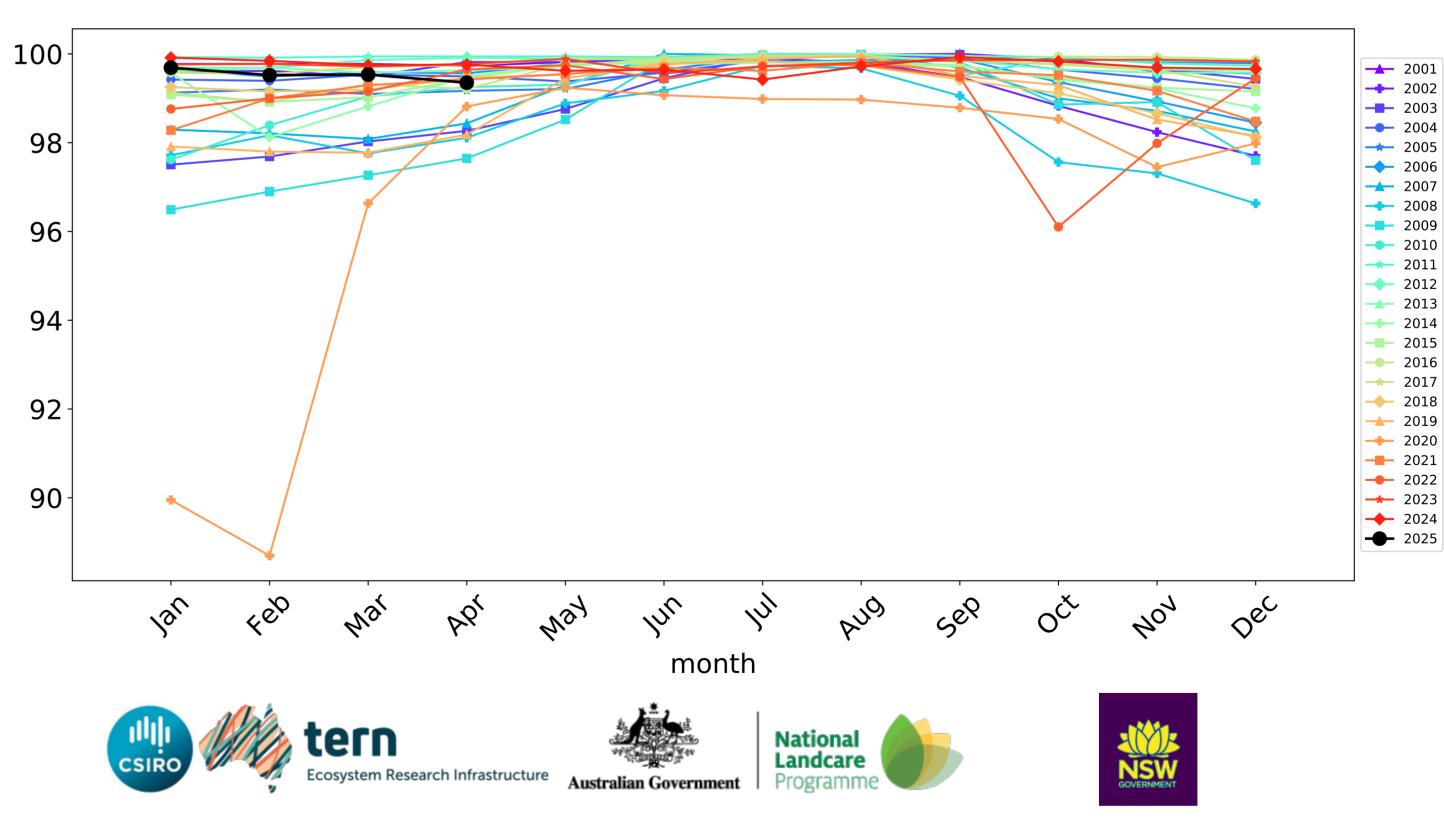




month

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





# Murray (4,178,025 ha and no data 11,658 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	4,178,025	99.8% 4,168,350	97.5% 4,075,450	72.2% 3,018,425	42.8% 1,786,975	17.5% 732,825	8.3% 348,325
Conservation and natural environments	395,850	100.0% 395,825	100.0% 395,675	98.4% 389,500	91.3% 361,525	71.8% 284,300	42.8% 169,300
Conservation and natural environments non forest	96,700	100.0% 96,700	99.9% 96,600	94.2% 91,050	70.8% 68,425	38.3% 37,025	22.5% 21,800
Conservation and natural environments Woodland forest	95,275	100.0% 95,275	100.0% 95,250	99.6% 94,850	97.0% 92,450	79.4% 75,675	47.6% 45,375
Conservation and natural environments Forest (non woodland)	203,875	100.0% 203,850	100.0% 203,825	99.9% 203,600	98.4% 200,650	84.2% 171,600	50.1% 102,125
Agriculture	3,508,925	99.8% 3,503,500	97.2% 3,412,425	67.9% 2,383,175	34.7% 1,216,925	8.8% 310,325	2.9% 103,300
Grazing	1,719,475	100.0% 1,719,000	99.6% 1,712,175	83.4% 1,434,175	48.5% 833,200	14.3% 245,750	4.8% 82,825
Grazing non forest	1,554,850	100.0% 1,554,375	99.5% 1,547,675	81.9% 1,273,650	44.7% 695,475	11.5% 178,525	3.5% 54,975
Grazing Woodland forest	75,675	100.0% 75,675	100.0% 75,650	96.5% 73,000	75.9% 57,425	20.9% 15,850	5.9% 4,475
Grazing - Forest (non woodland)	88,950	100.0% 88,950	99.9% 88,850	98.4% 87,525	90.3% 80,300	57.8% 51,375	26.3% 23,375
Cropping	1,043,675	99.6% 1,039,775	94.2% 982,950	48.5% 505,850	18.6% 194,275	3.0% 31,825	1.0% 10,050
Irrigation	745,375	99.9% 744,325	96.2% 716,900	59.4% 442,875	25.4% 189,350	4.4% 32,700	1.4% 10,400
Production native forests and plantation forests	177,375	100.0% 177,375	100.0% 177,350	99.4% 176,225	96.7% 171,450	72.8% 129,100	41.2% 73,150







