Total vegetation cover soil protection Region:LGA Indigo_(S) VIC

Date: October 2024

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

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

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

• 71-100% High cover - protected from wind and usually water erosion (high rainfall, steep slopes, and erodible soils may need greater than 80, 90, 95 and up to 100% cover)

- 51-70% Moderate cover protected from wind erosion
- 31-50% Low cover not protected
- 0-30% Very Low cover not protected

Erosion protection: Wind erosion 50% total vegetation cover

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

- Map: water erosion protection (>70% cover) percentage area and hectares.
- Map: wind erosion protection (>50% cover) percentage area and hectares. Comparison with previous years:
 - Map: anomaly comparing this month to the average cover from the same month in previous years.
 - Map: deciles rank of month against the same month in previous years.

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

Erosion protection

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

Rainfall

• Millimetres rainfall each month (black line).

Each time series is also stacked by year. The black line shows the current year of data. Water erosion protection for higher rainfall and steeper slopes:

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

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

Acknowledgment of data:

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

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

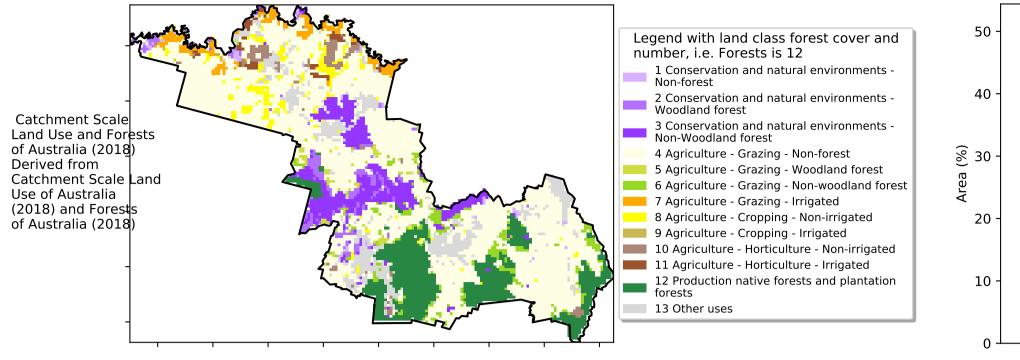


Vegetation Cover Oct 2024

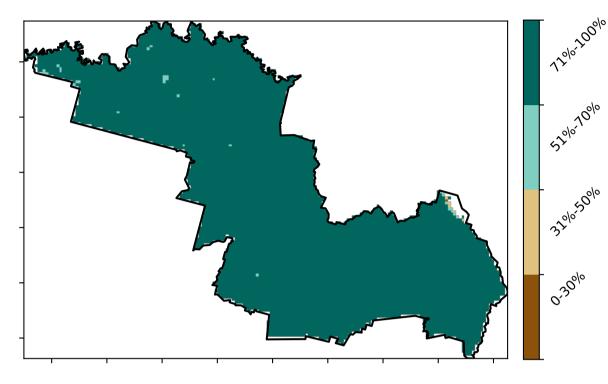
Land use and forest cover

Proportion of each land class in area

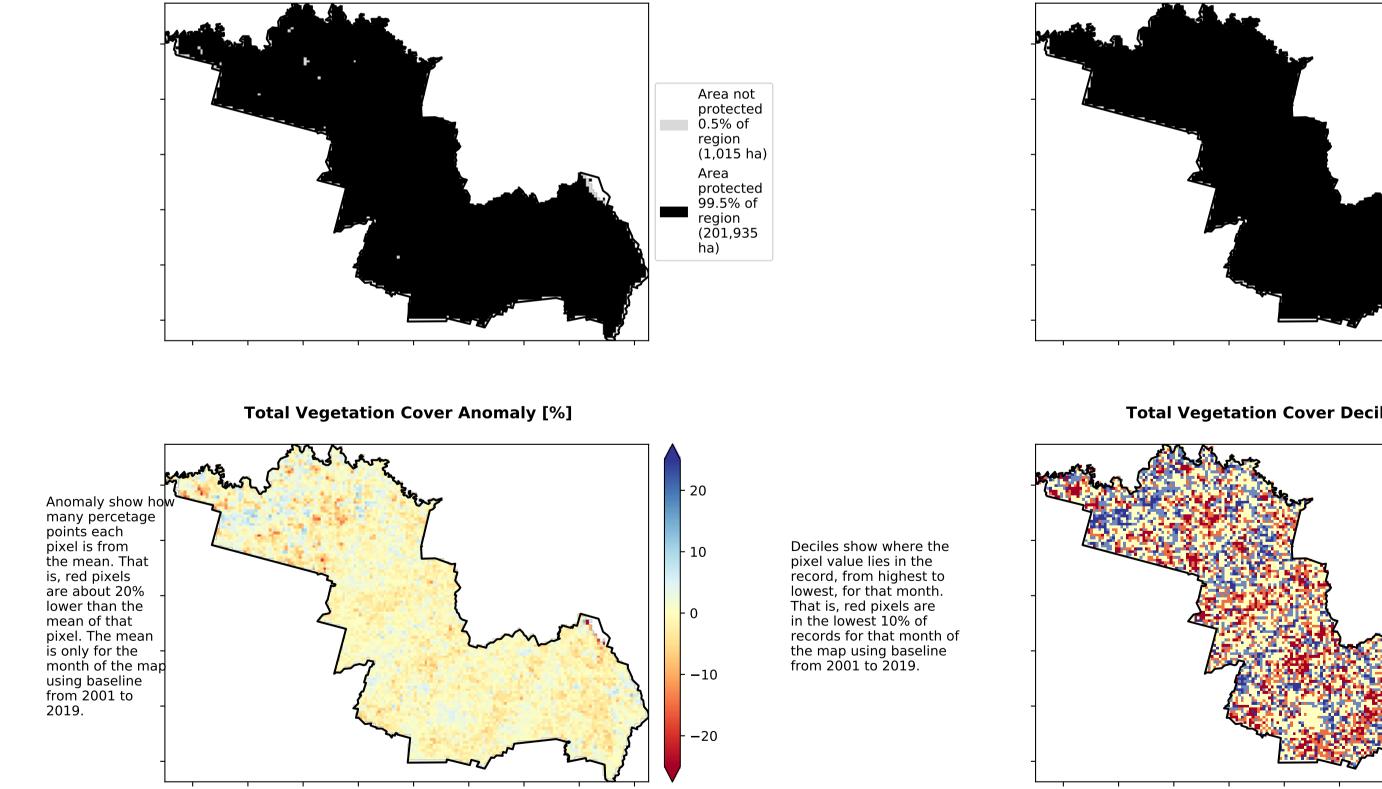
51.8%

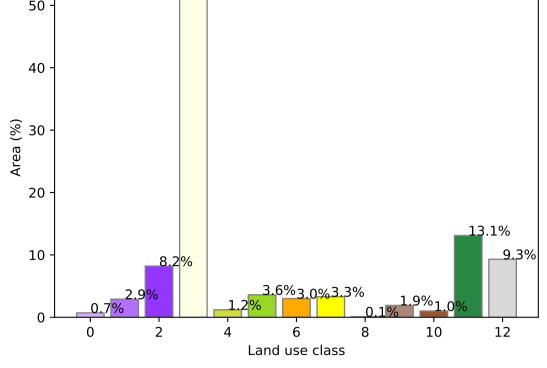


Total Vegetation Cover [%]

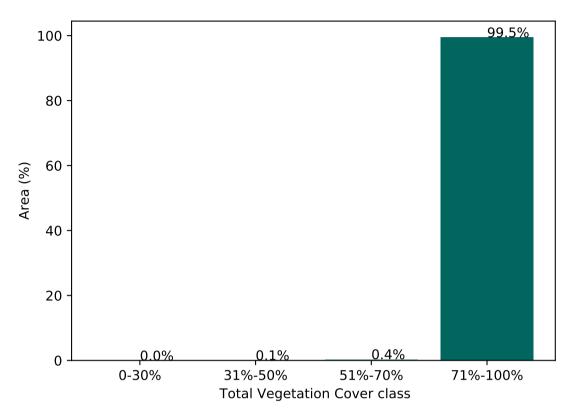


% Area protected from water erosion (>70%)

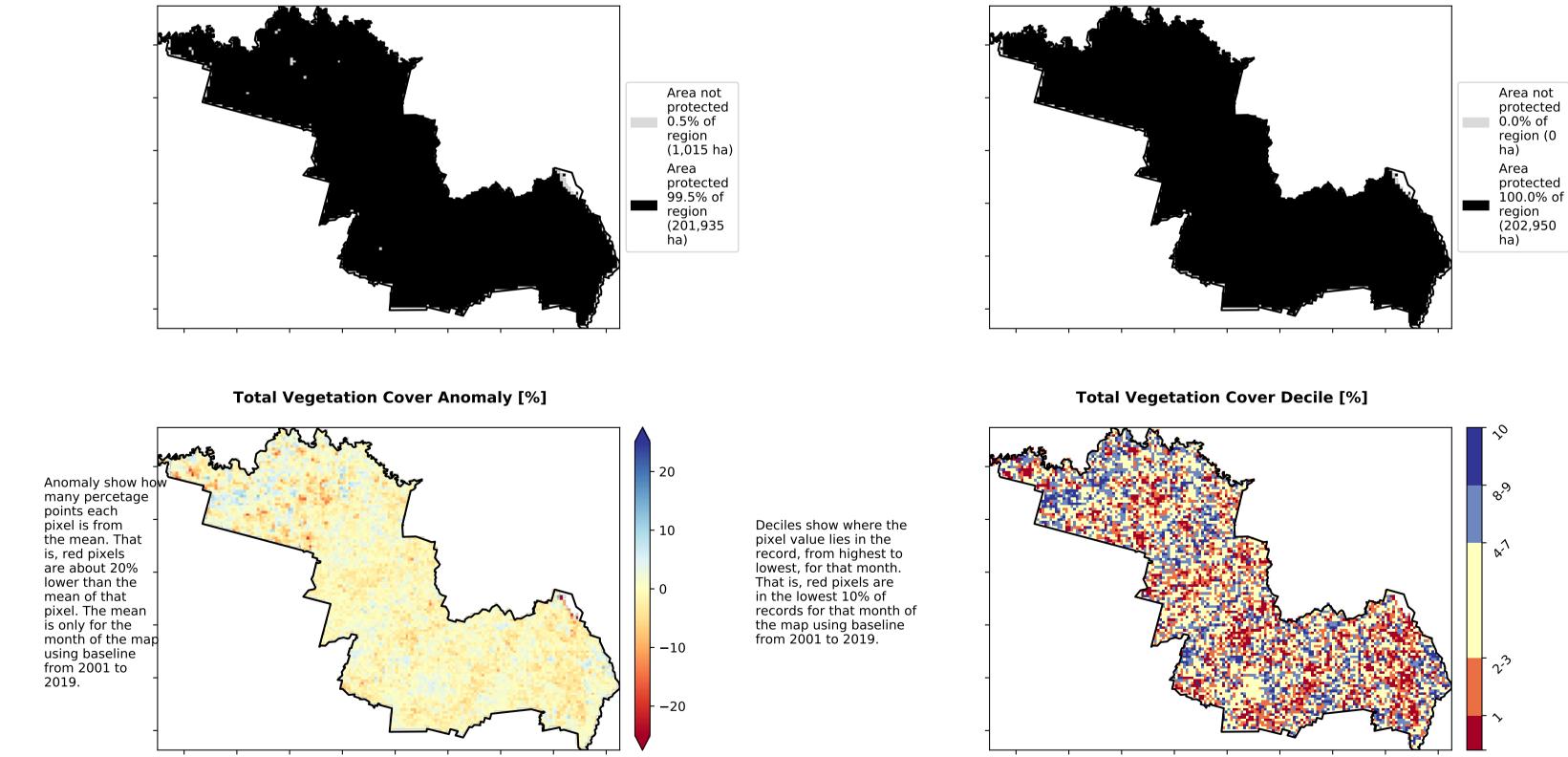




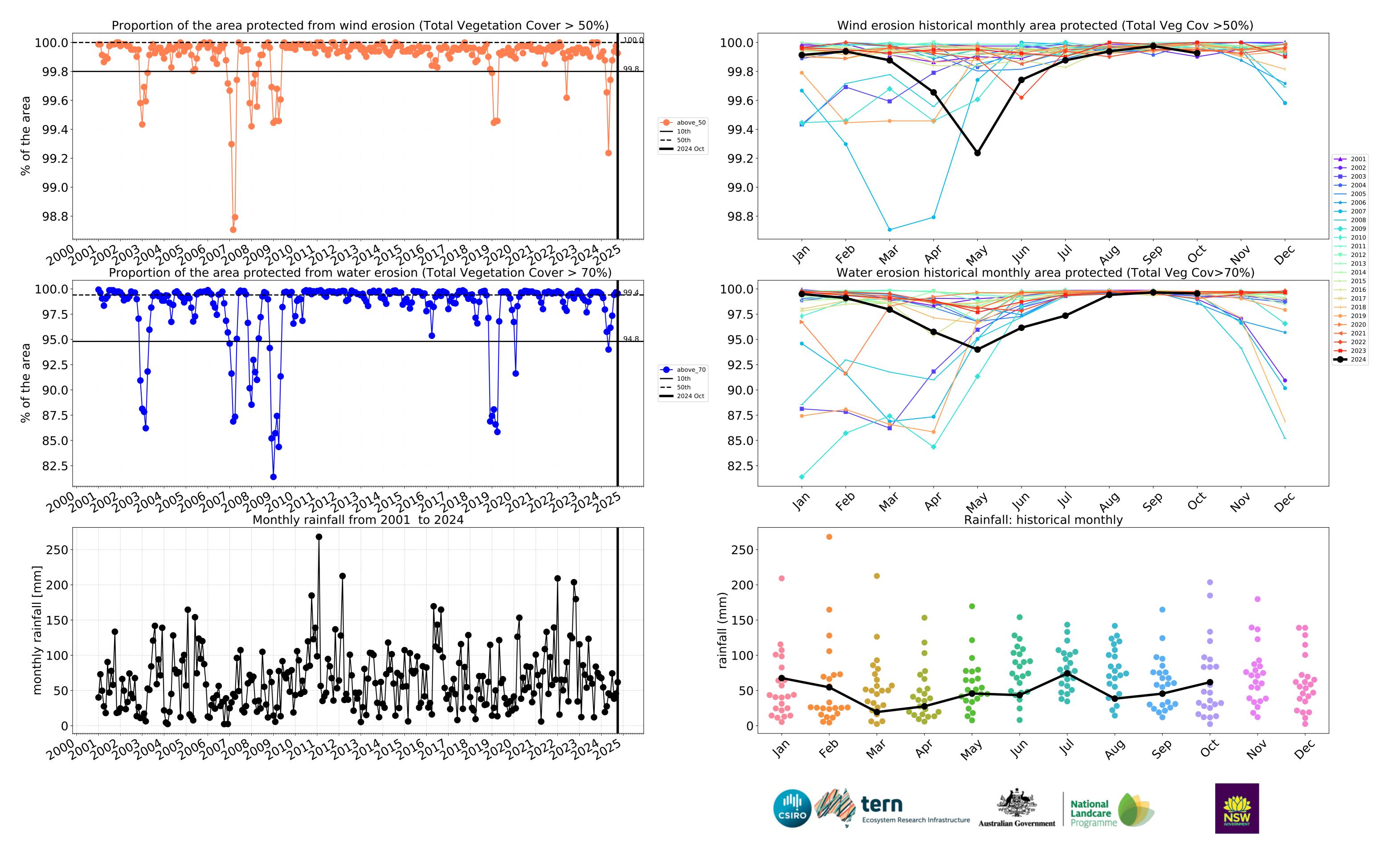
Proportion of vegetation cover class in area

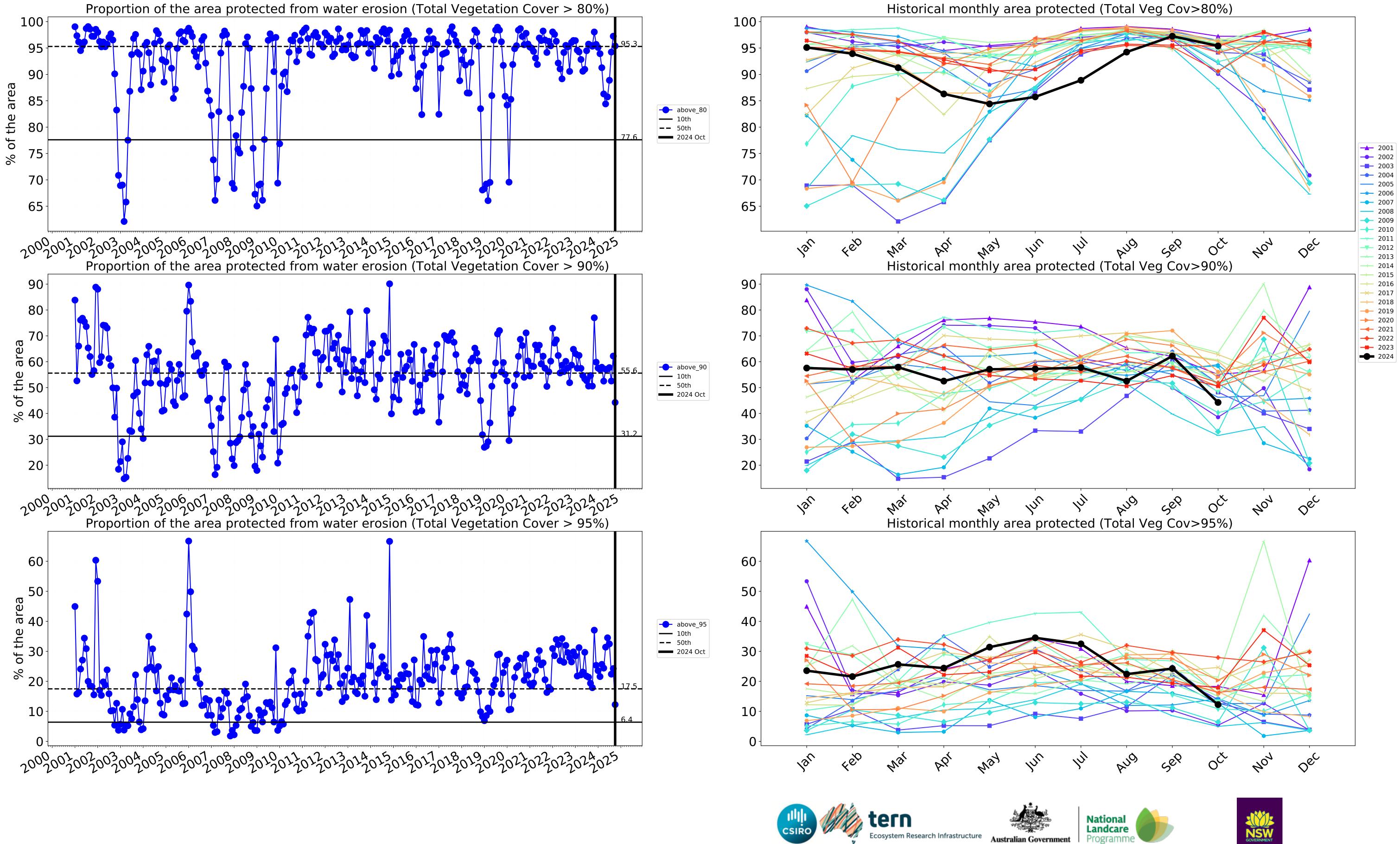


% Area protected from wind erosion (>50%)







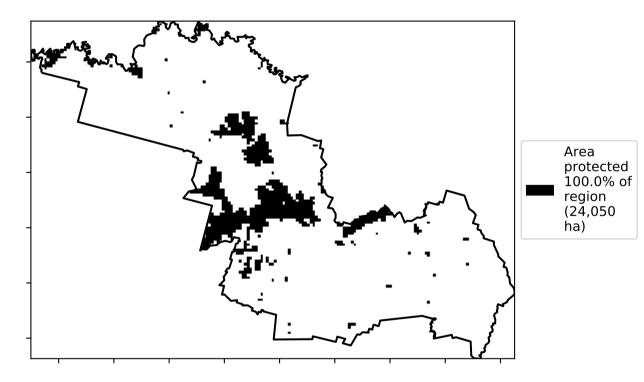




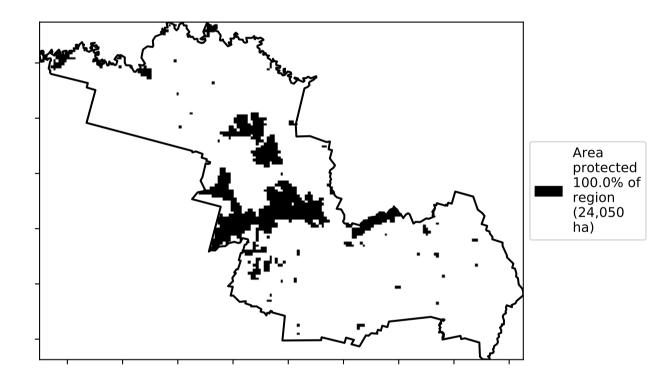
Conservation and natural environments

Proportion of each land class in area Land use and forest cover 69.3% 70 60 · 50 · Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Non-forest 2 Conservation and natural environments - Woodland 40 ea Catchment Scale Land forest Use of Australia (2018) and Forests of Australia (2018) 3 Conservation and natural environments - Non-woodland forest 30 24.5% 20 · 10 6.1% 0 1.5 -0.5 0.0 0.5 1.02.0 2.5 Land use class Proportion of vegetation cover class in area **Total Vegetation Cover [%]** 12%200% 100.0% 100 80 52°10'10°1 Area (%) 60 · 32005001 40 1 0.30% 20 · 0.0% 0.0% 0.0% 0 51%-70% 0-30% 31%-50% 71%-100% Total Vegetation Cover class

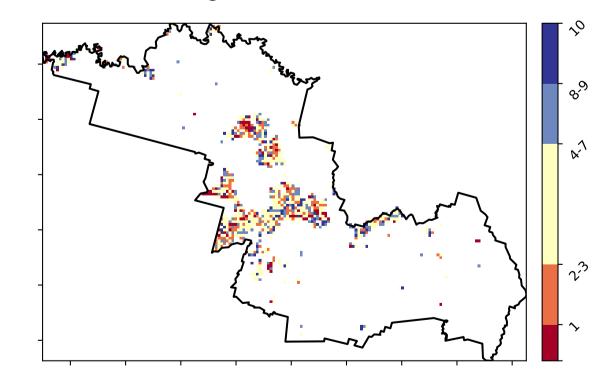
% Area protected from water erosion (>70%)



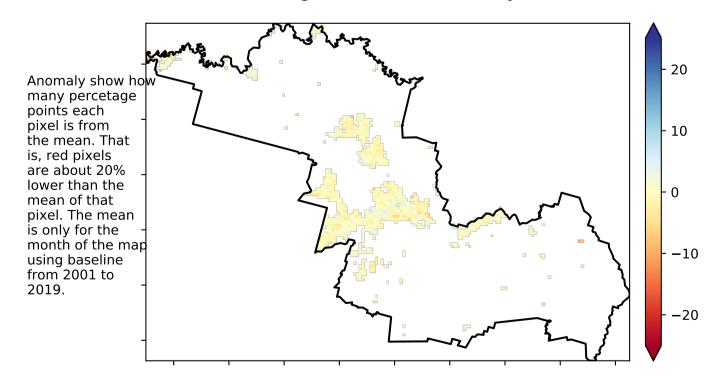




Total Vegetation Cover Decile [%]



Total Vegetation Cover Anomaly [%]





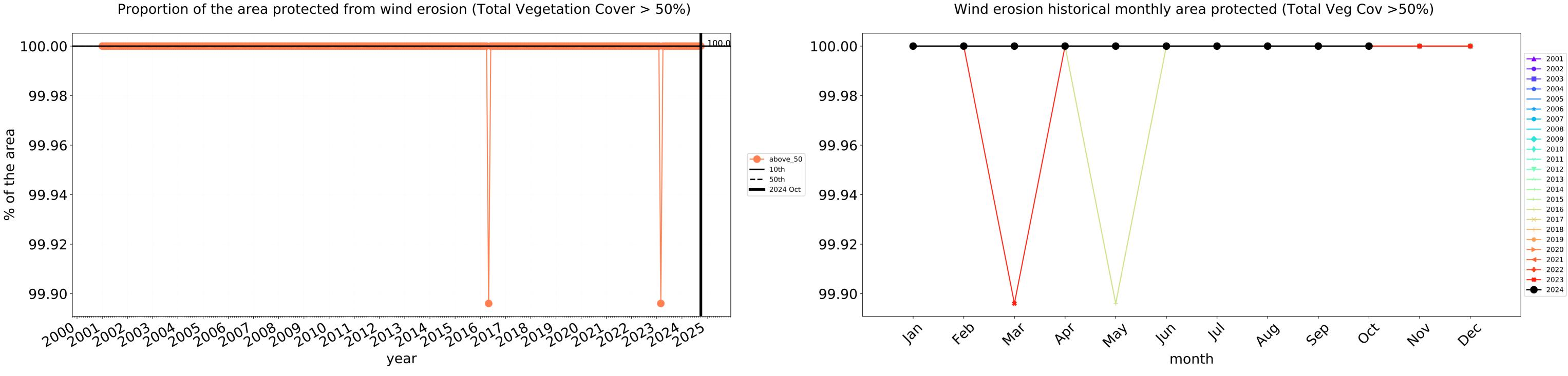
Deciles show where the pixel value lies in the

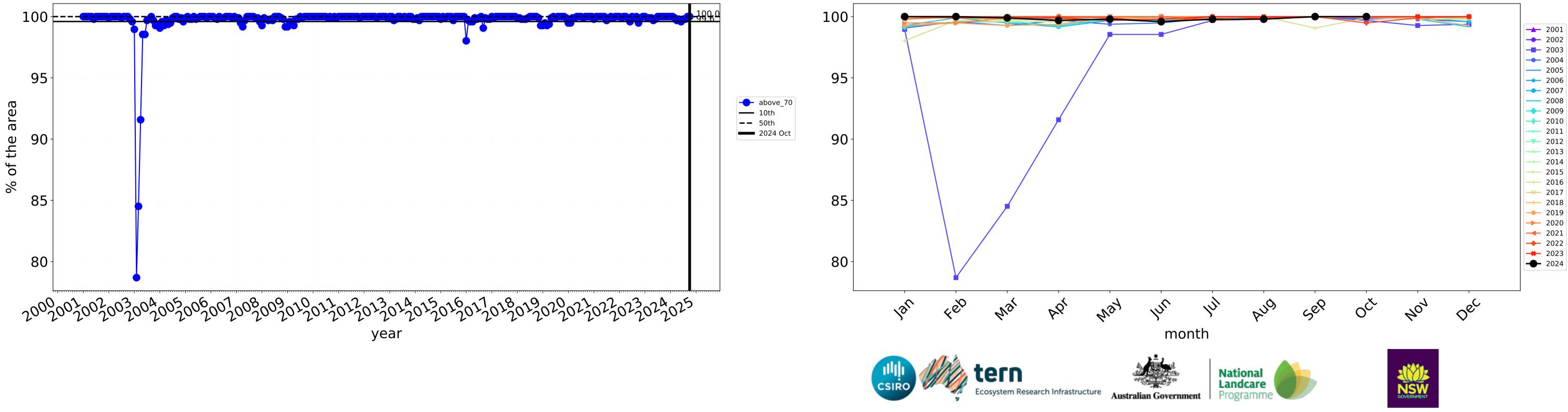
record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of

records for that month of

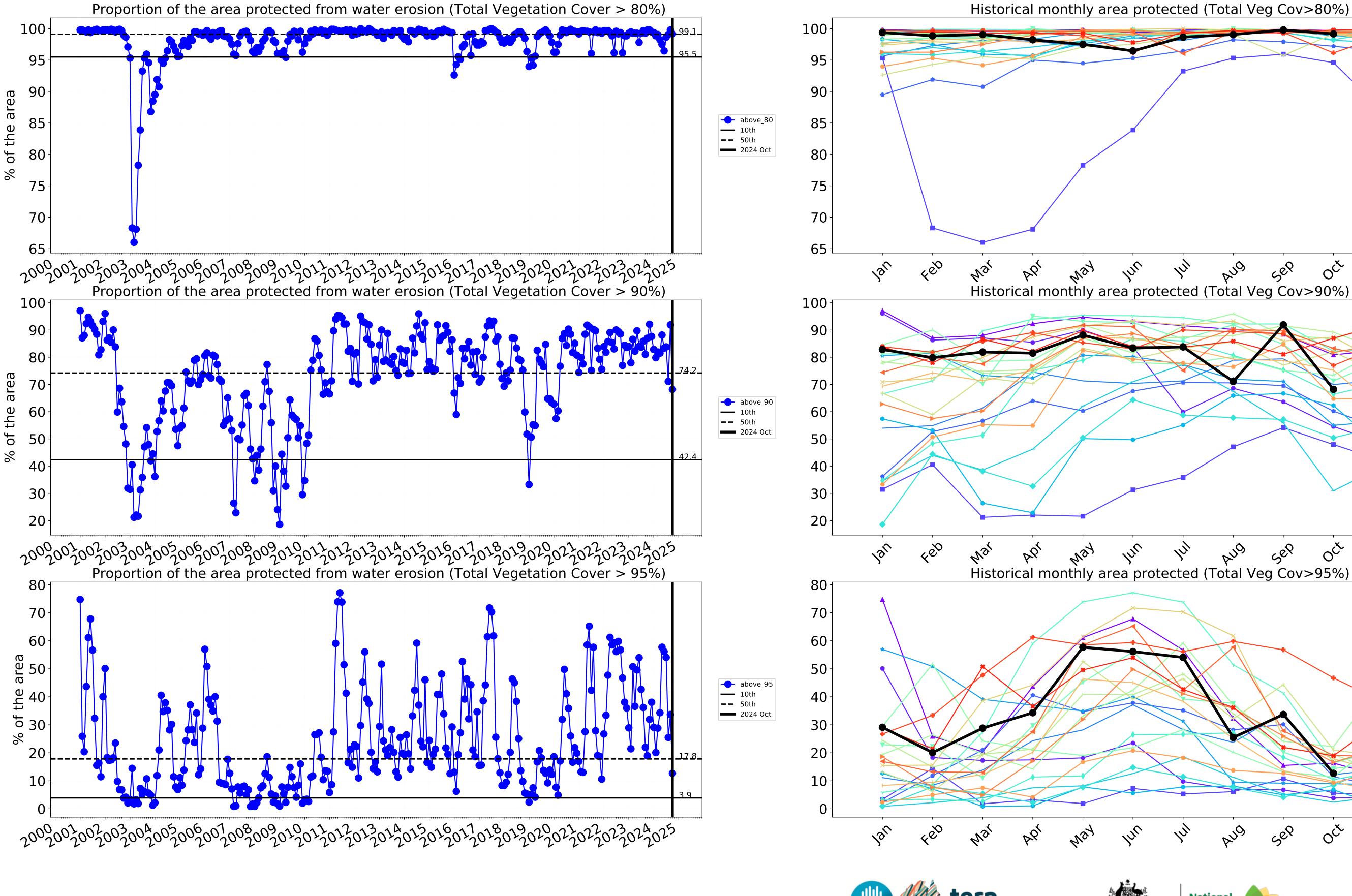
the map using baseline from 2001 to 2019.

3

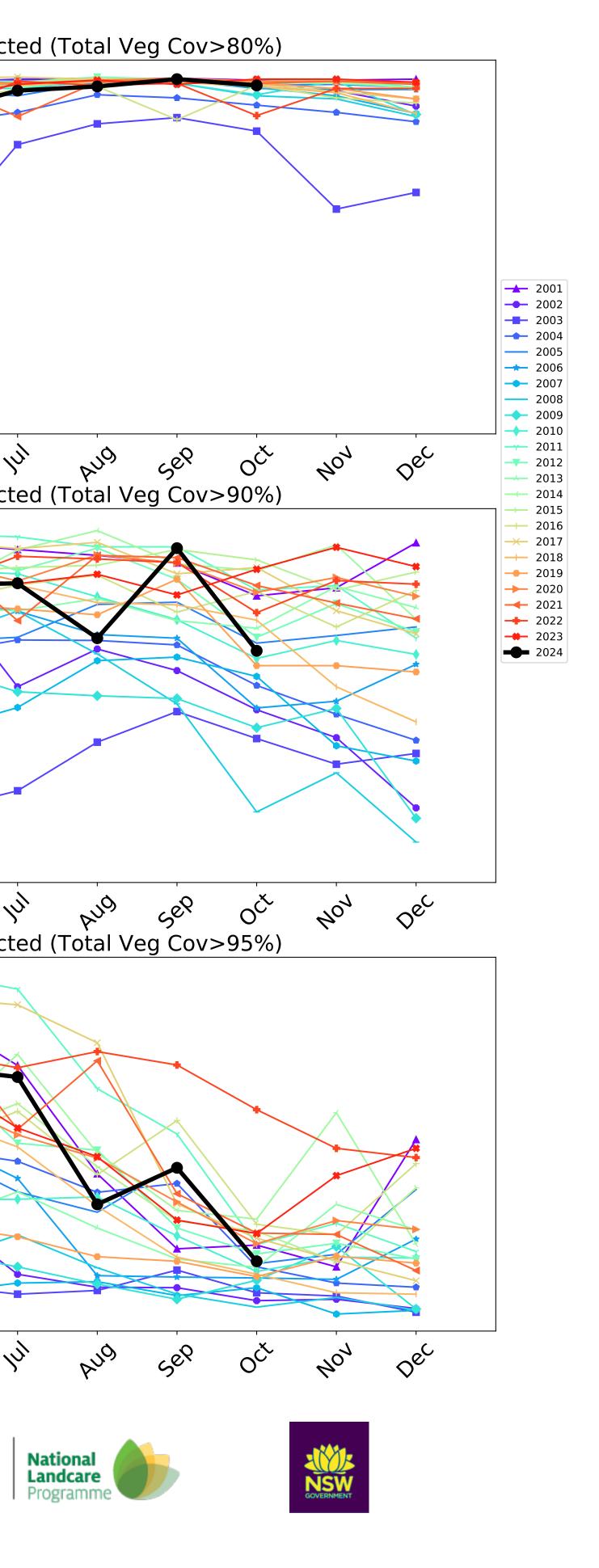




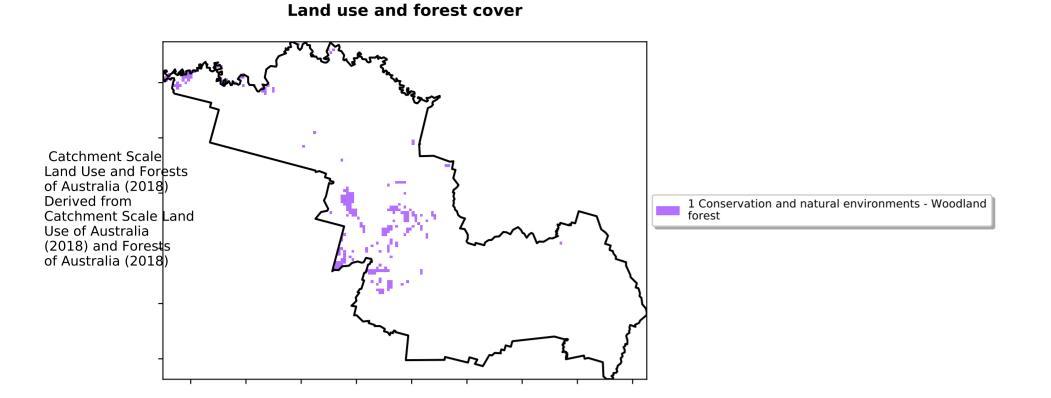
Water erosion historical monthly area protected (Total Veg Cov>70%)



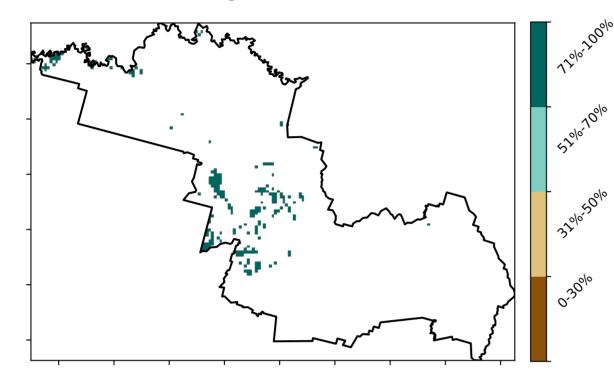




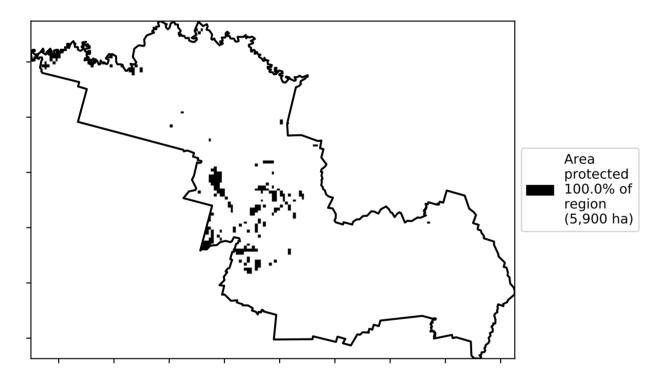
Conservation and natural environments Woodland forest



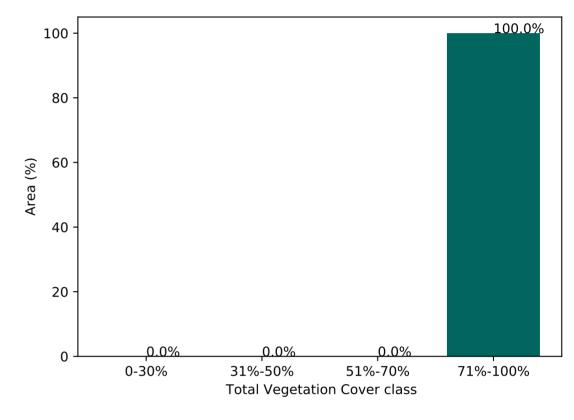
Total Vegetation Cover [%]



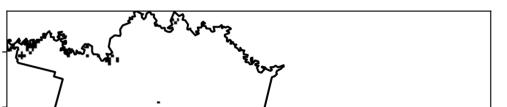
% Area protected from water erosion (>70%)



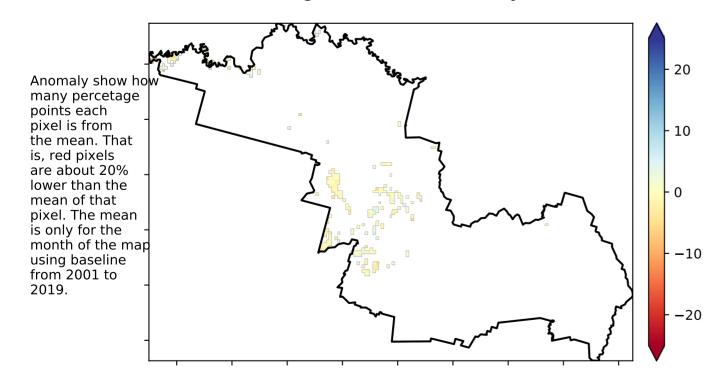
Proportion of vegetation cover class in area



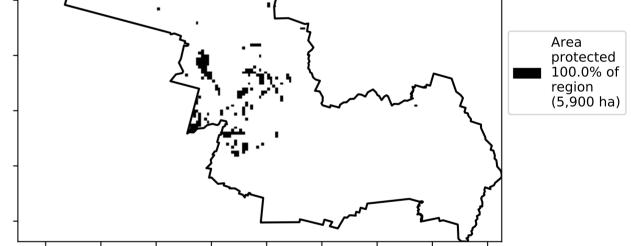
% Area protected from wind erosion (>50%)



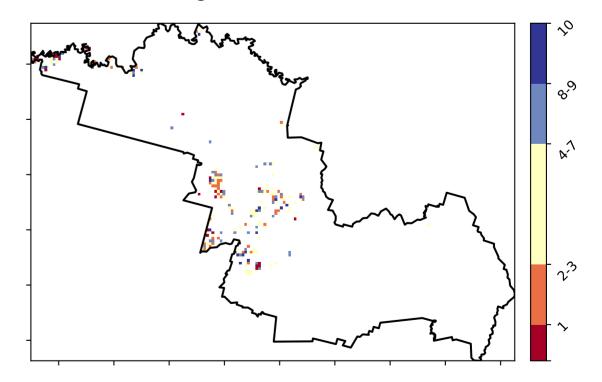
Total Vegetation Cover Anomaly [%]



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.

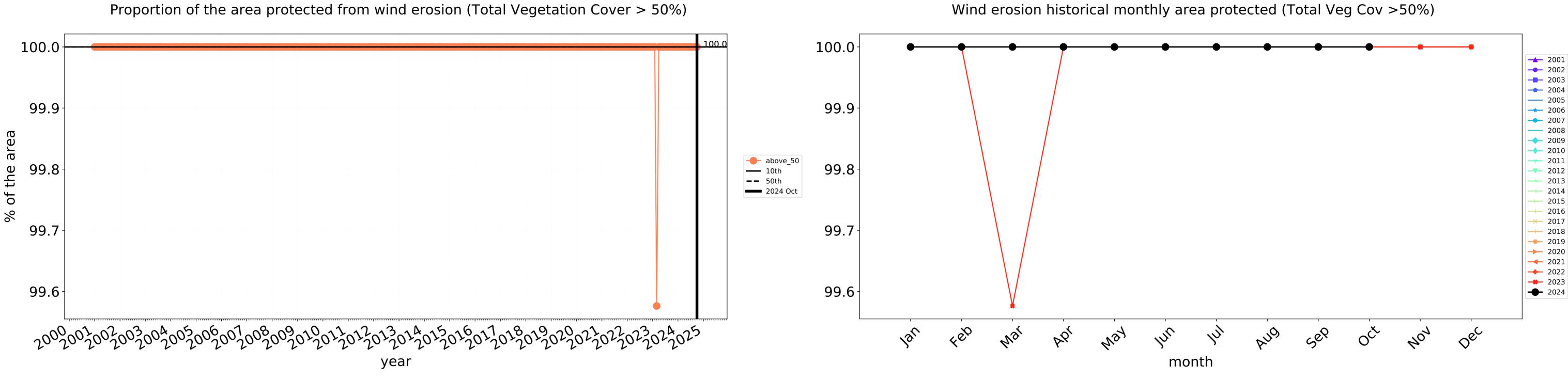


Total Vegetation Cover Decile [%]

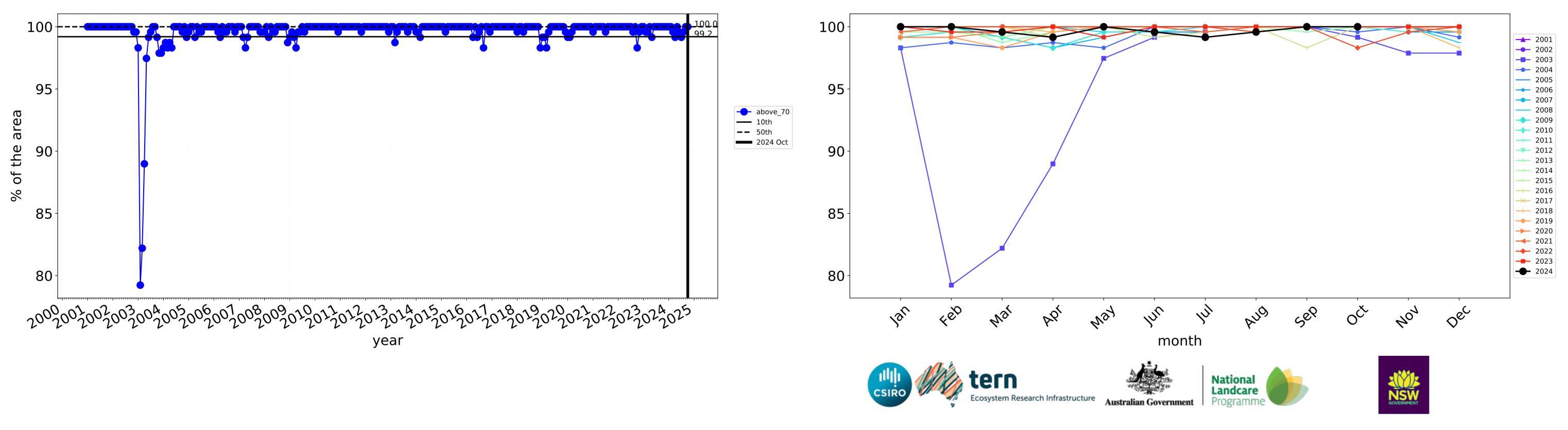




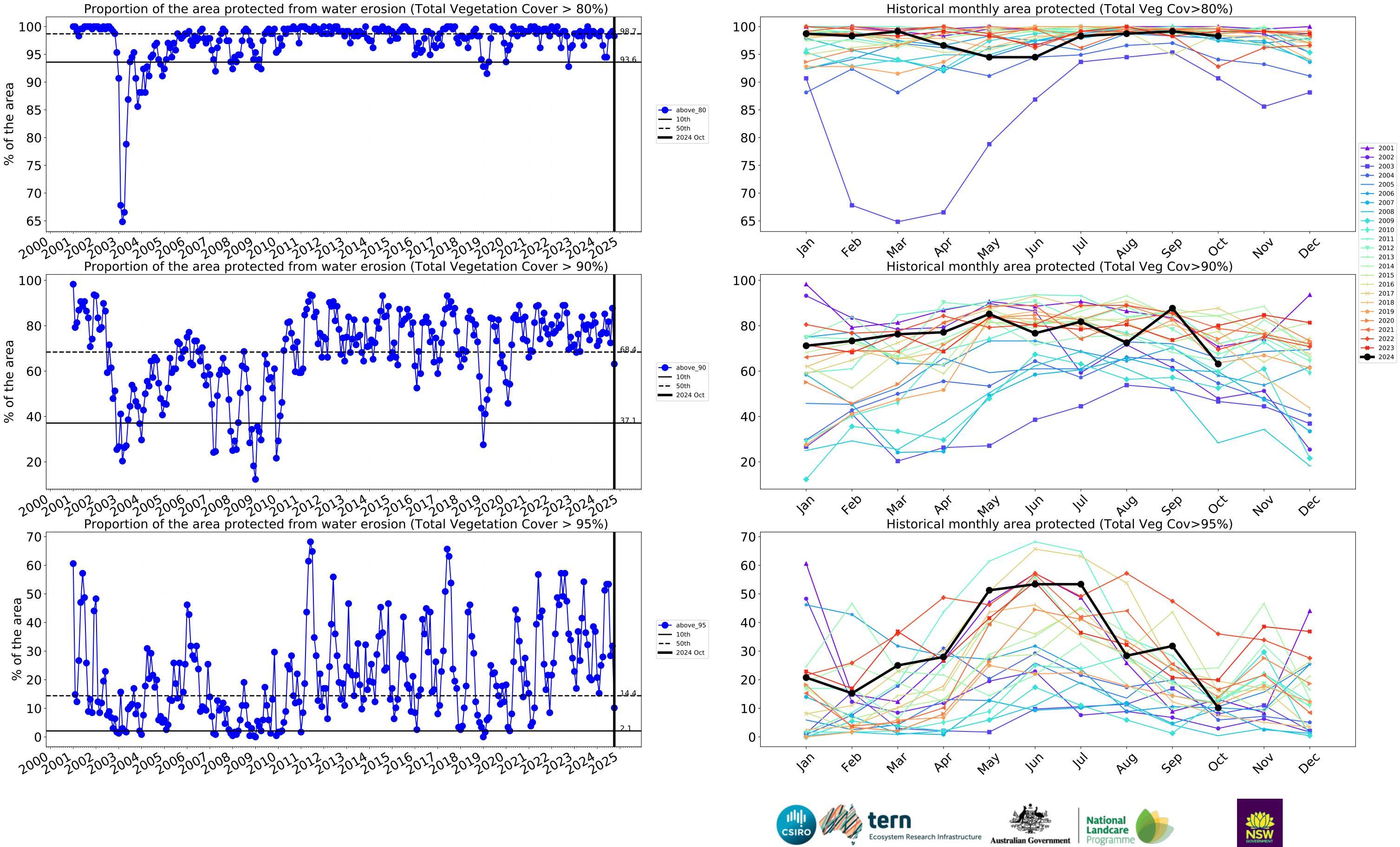
Conservation and natural environments Woodland forest timeseries



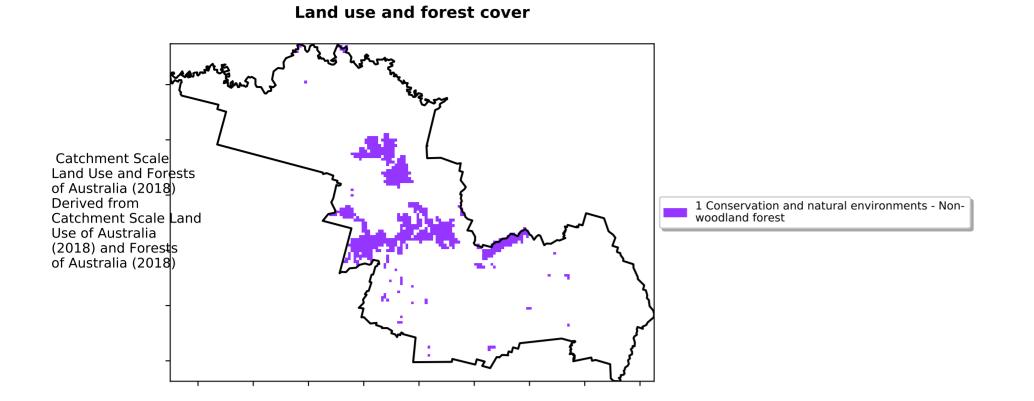
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



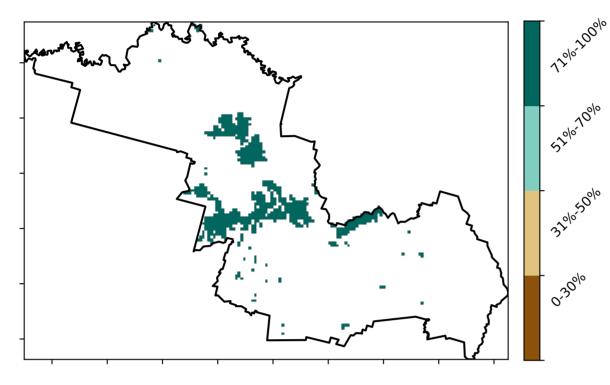
Water erosion historical monthly area protected (Total Veg Cov>70%)



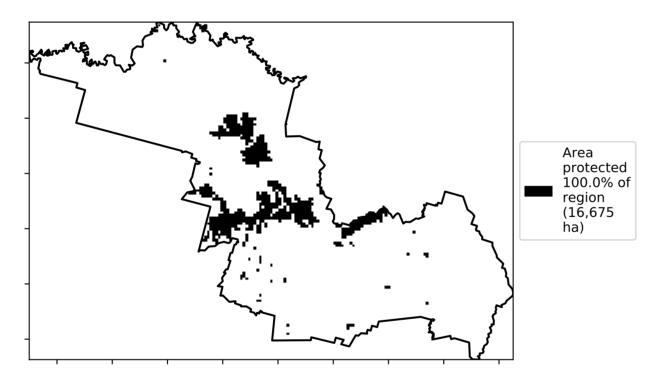
Conservation and natural environments Forest (non woodland)



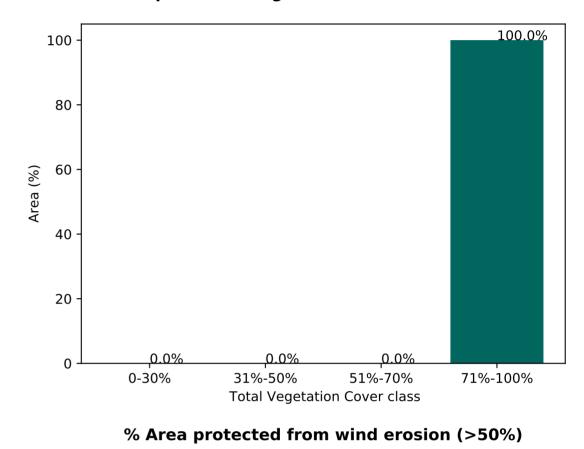
Total Vegetation Cover [%]

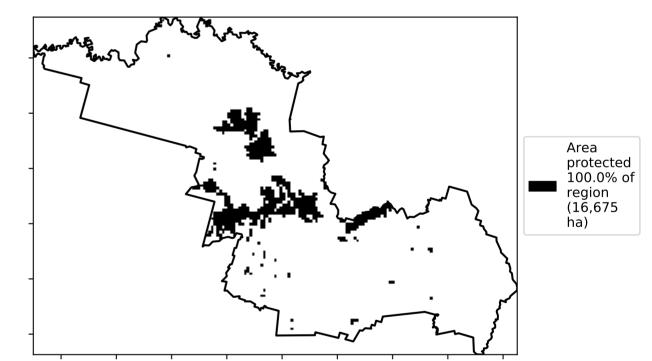


% Area protected from water erosion (>70%)

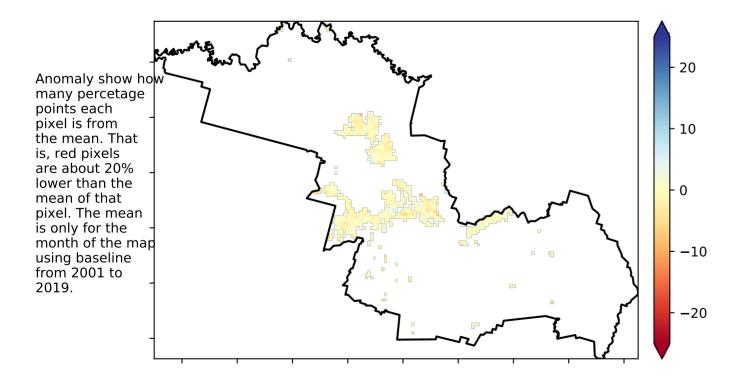


Proportion of vegetation cover class in area

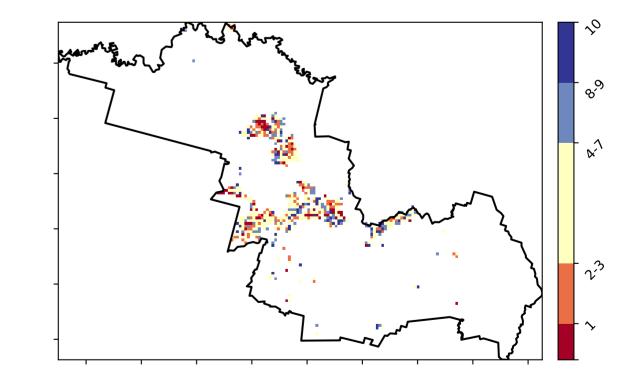




Total Vegetation Cover Anomaly [%]



Total Vegetation Cover Decile [%]

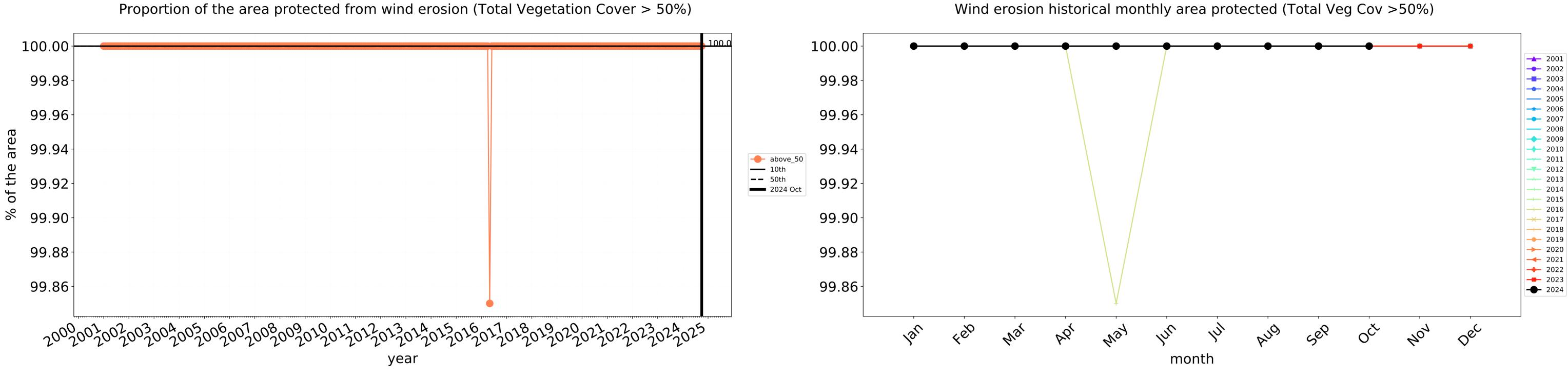




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline

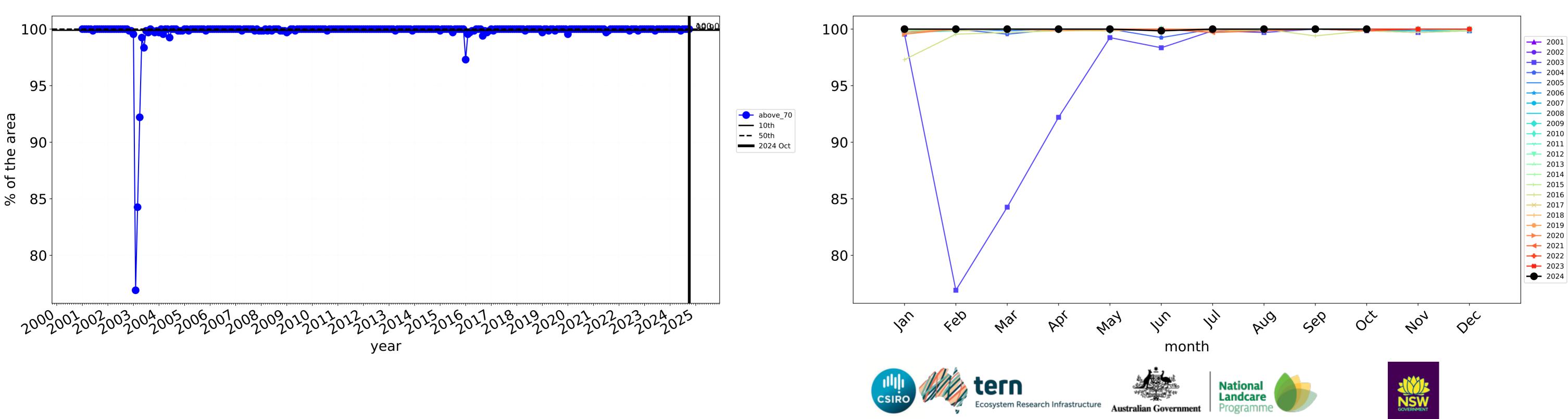
the map using baseline from 2001 to 2019.

Conservation and natural environments Forest (non woodland) timeseries

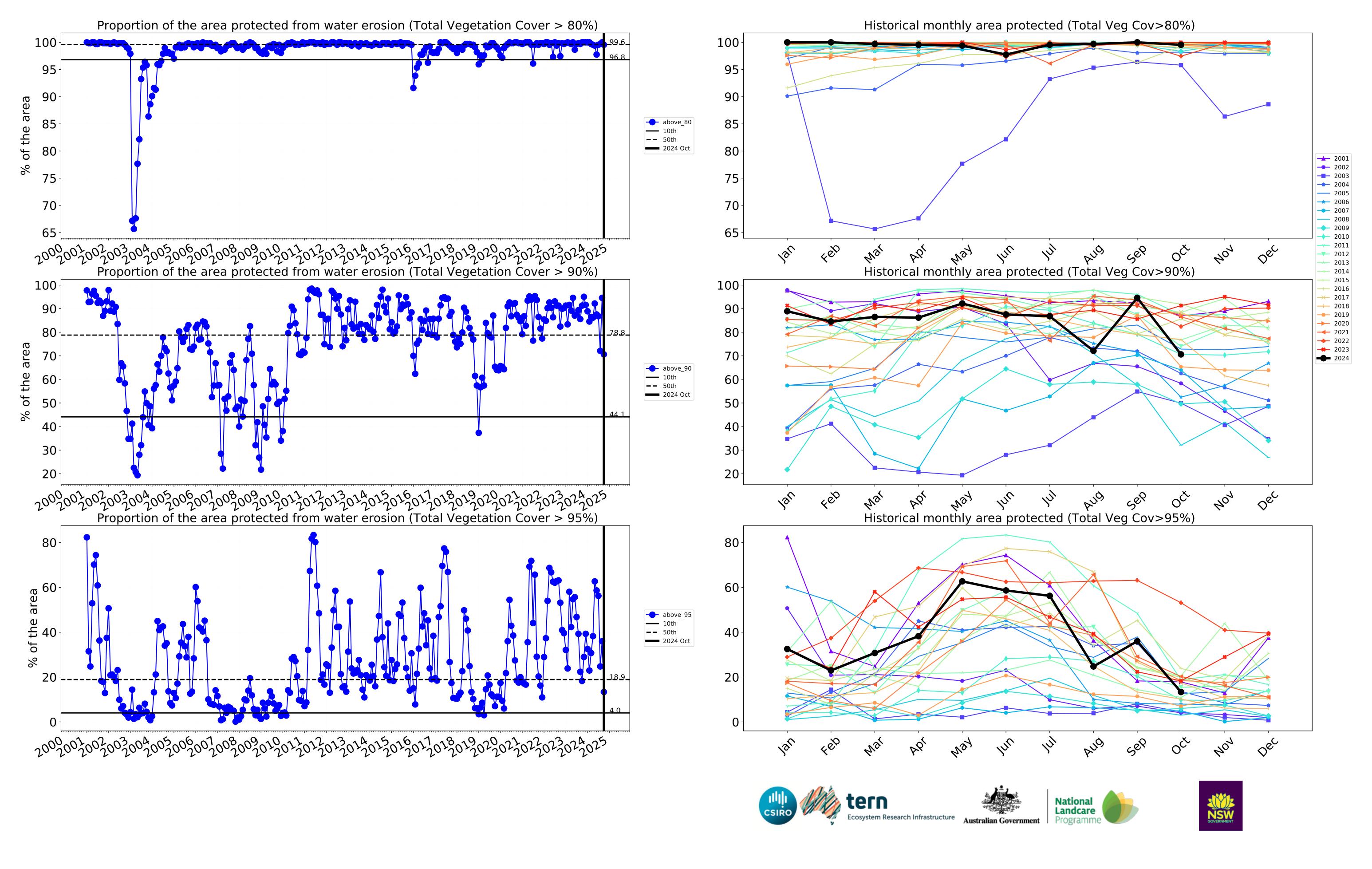


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



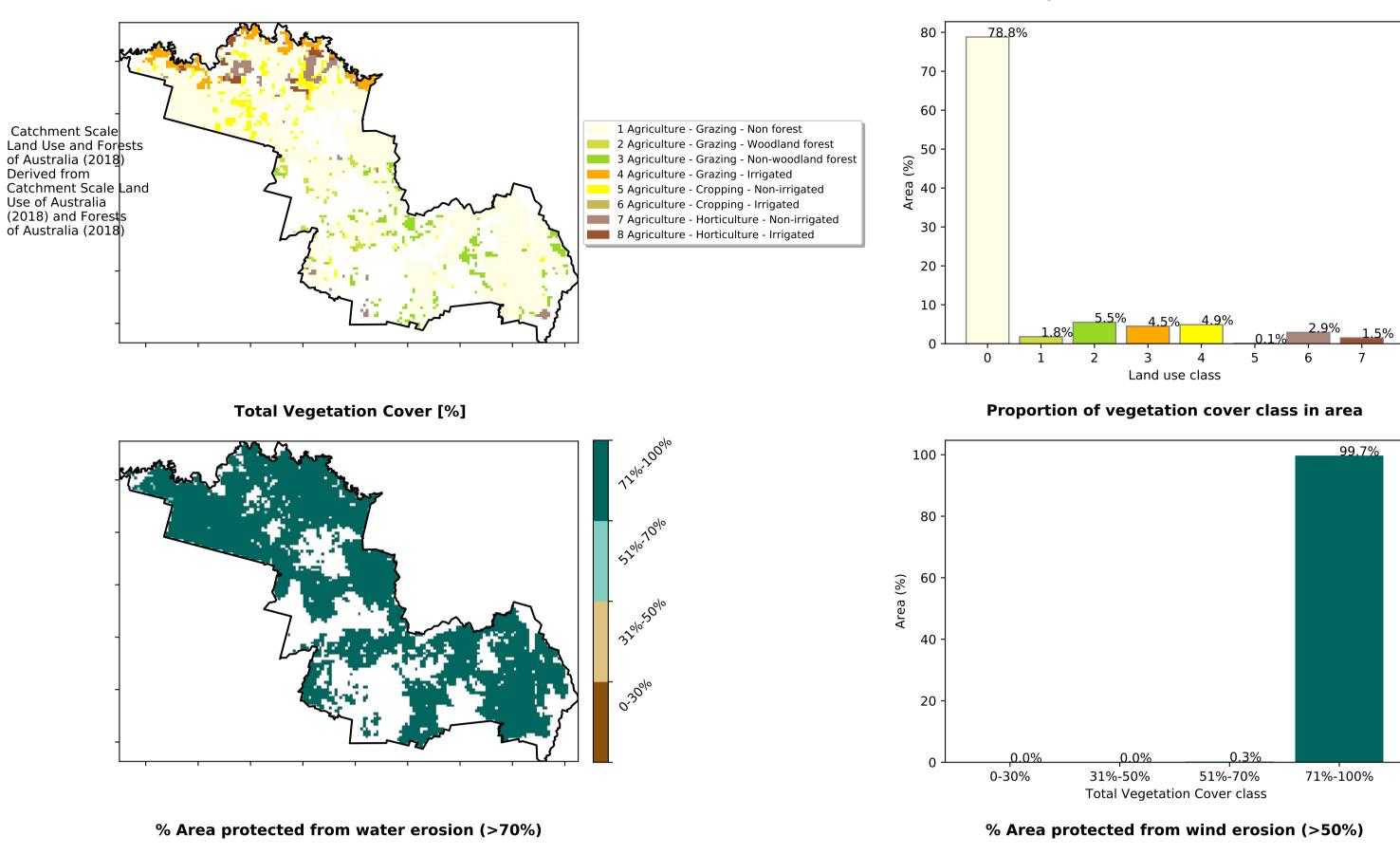
Water erosion historical monthly area protected (Total Veg Cov>70%)

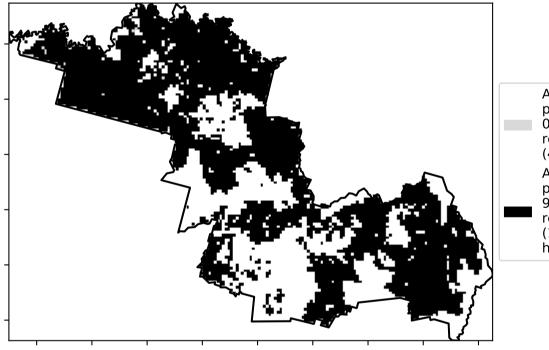


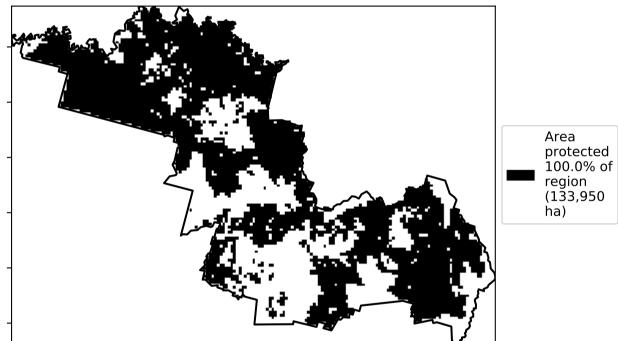
Agriculture

Land use and forest cover

Proportion of each land class in area

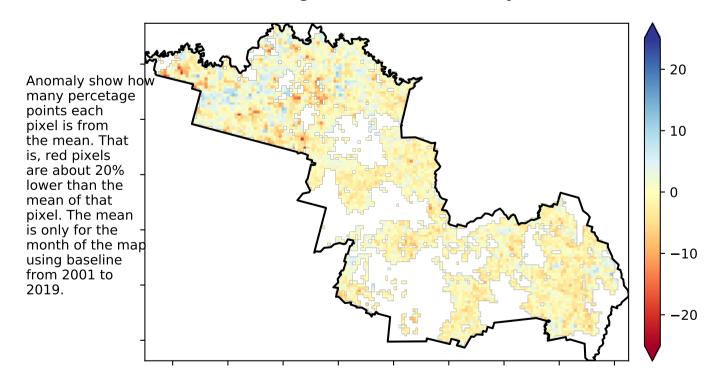






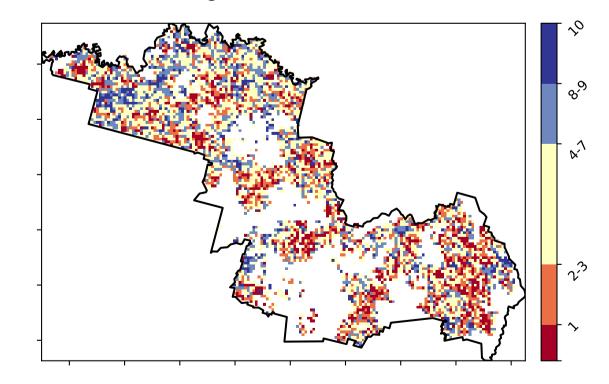
Area not protected 0.3% of region (402 ha) Area protected 99.7% of region (133,548 ha)

Total Vegetation Cover Anomaly [%]

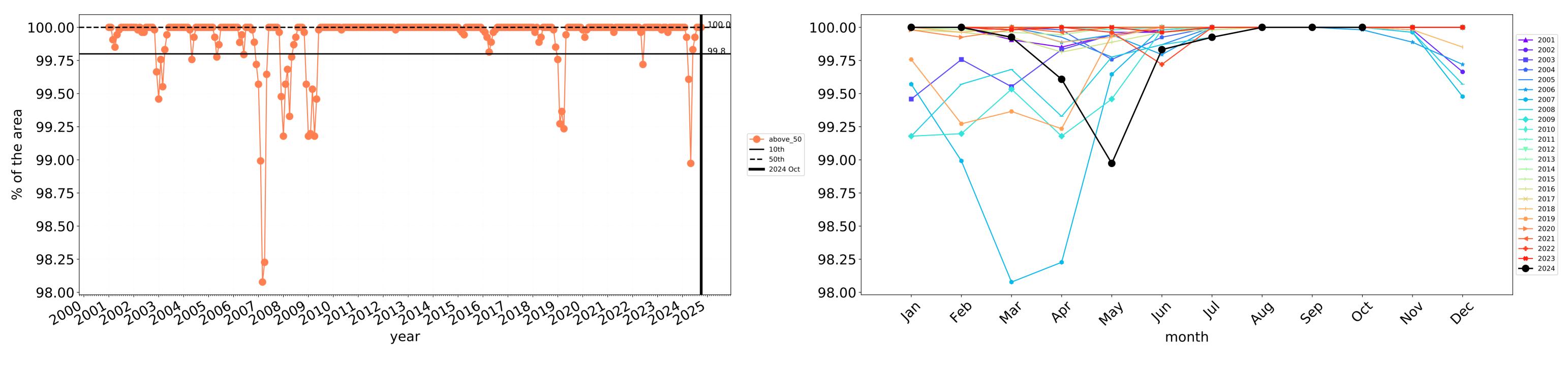


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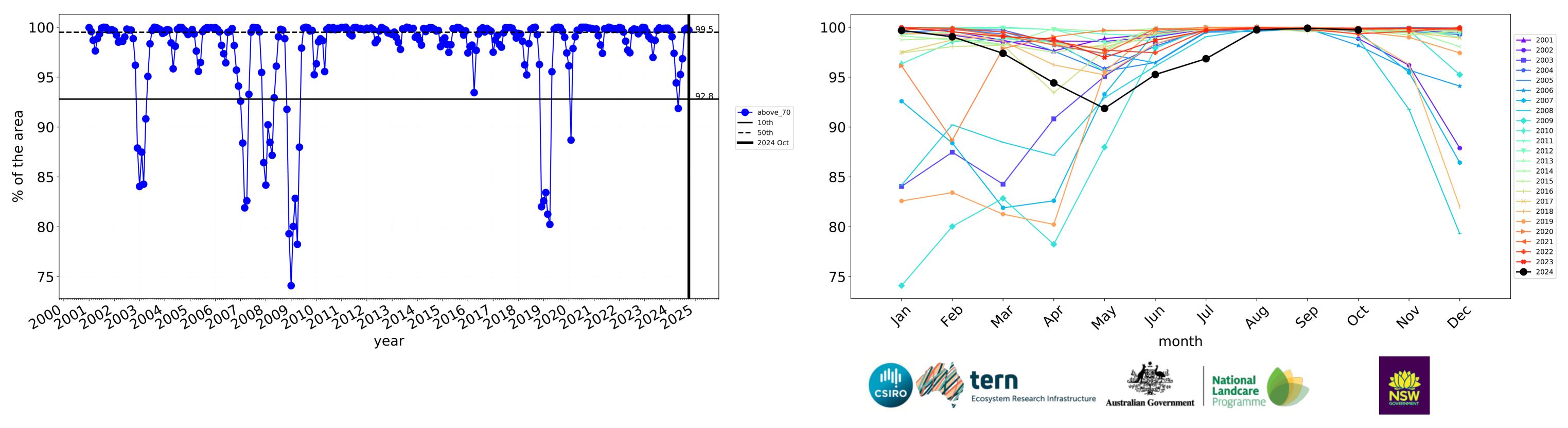
Total Vegetation Cover Decile [%]







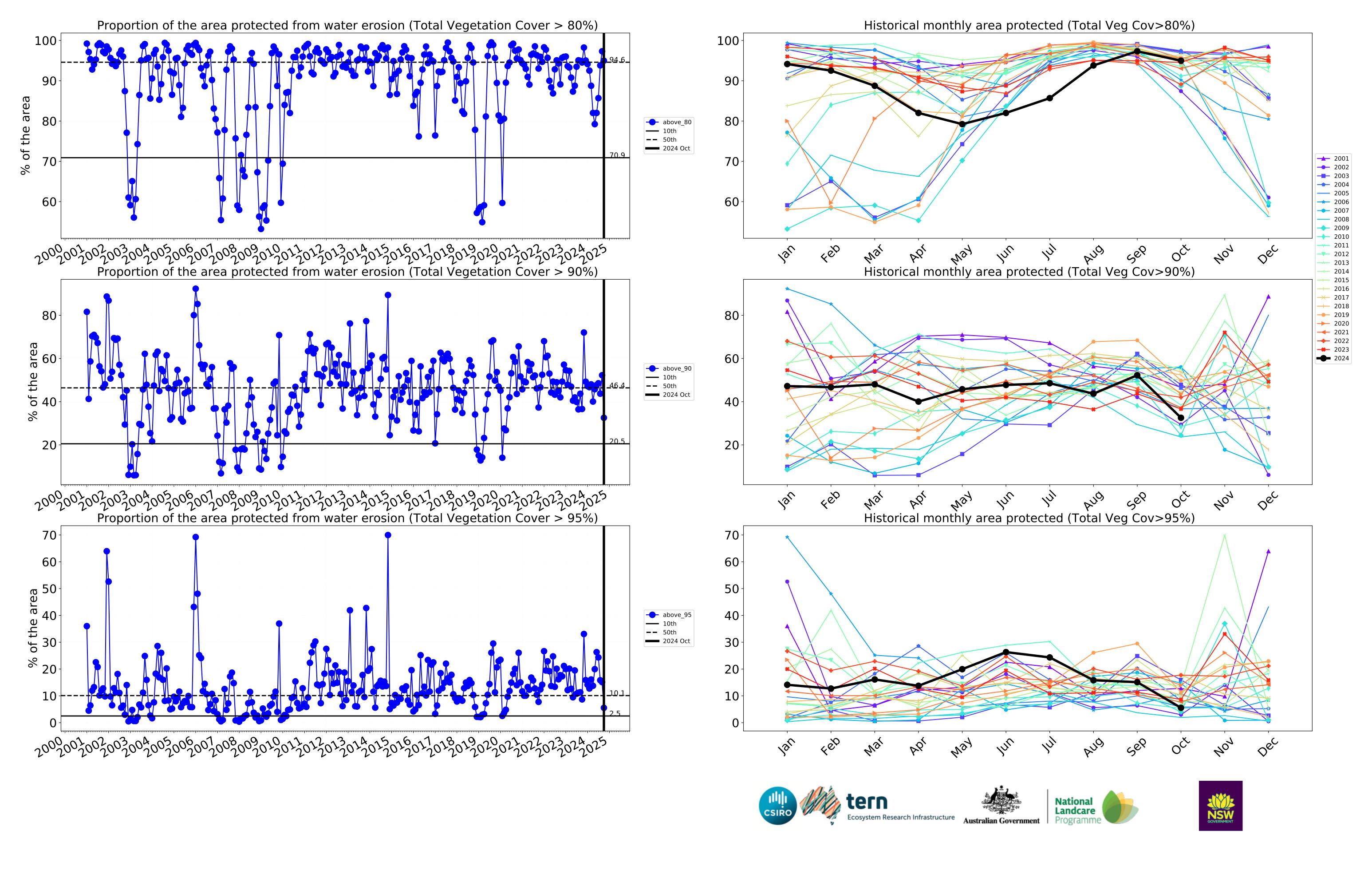
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



Agriculture timeseries

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

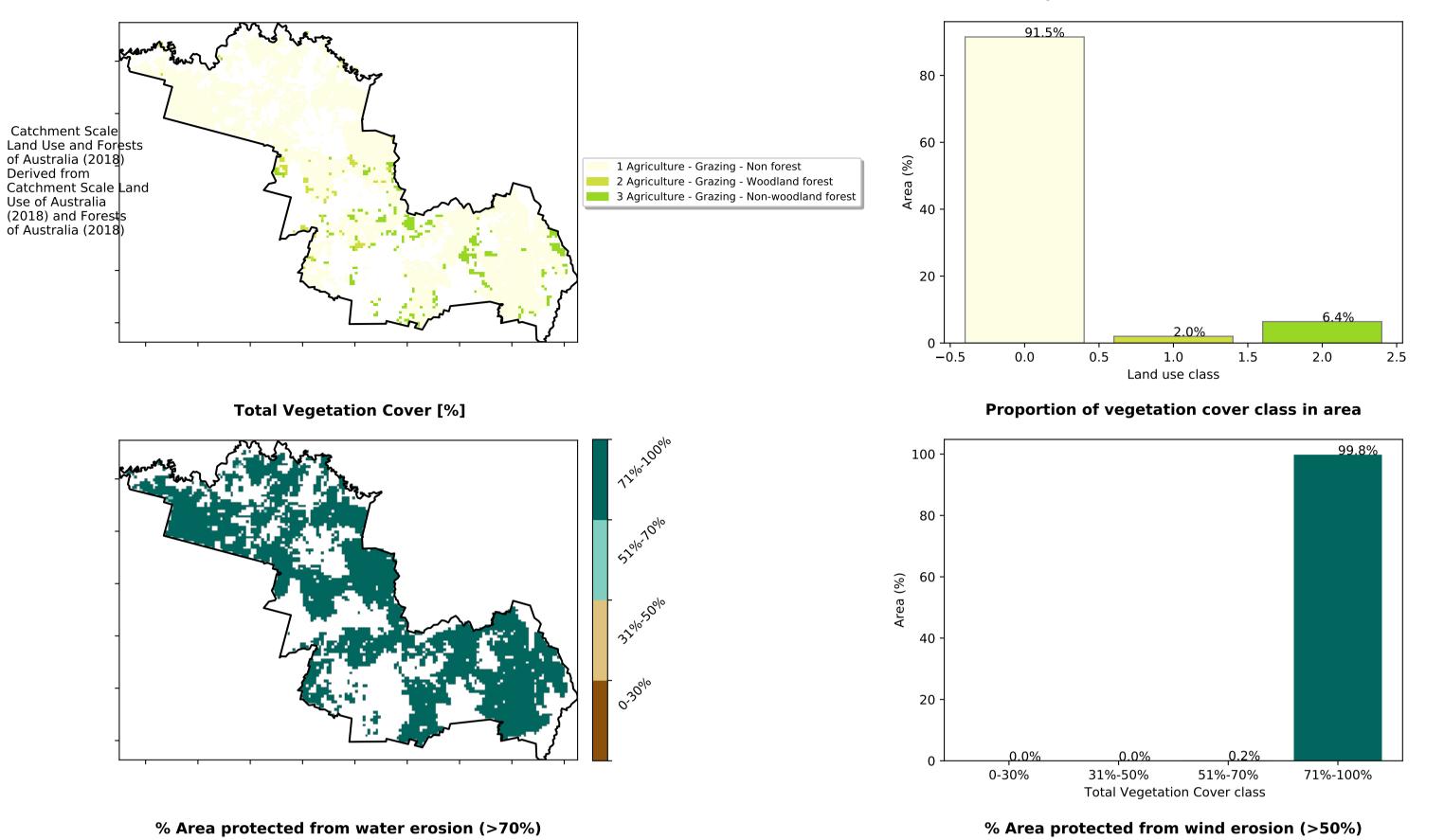
Water erosion historical monthly area protected (Total Veg Cov>70%)

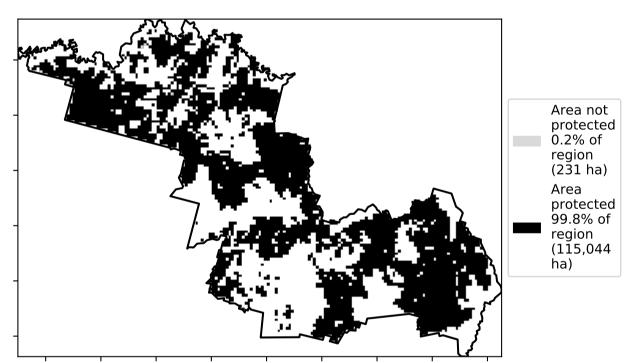


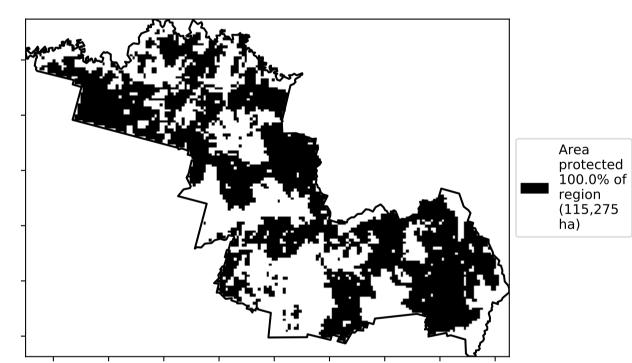
Grazing

Land use and forest cover

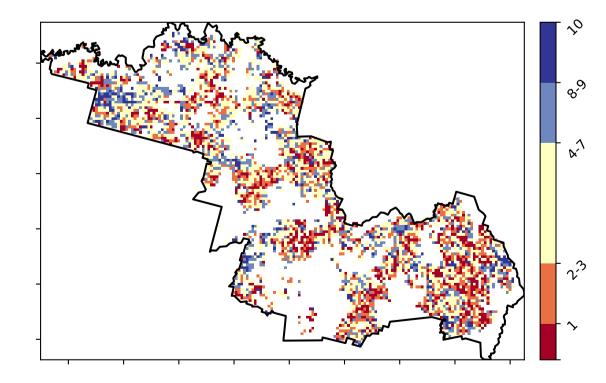
Proportion of each land class in area



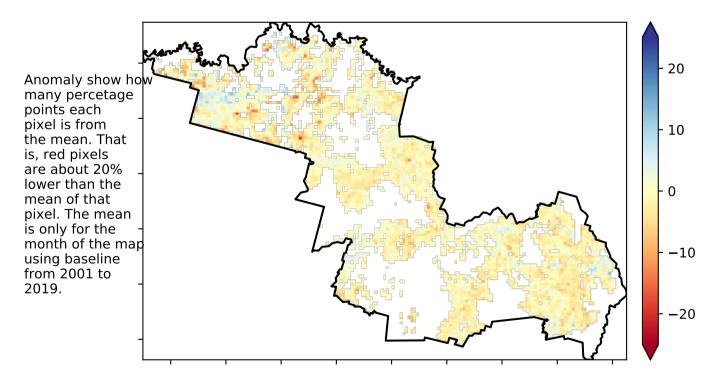




Total Vegetation Cover Decile [%]



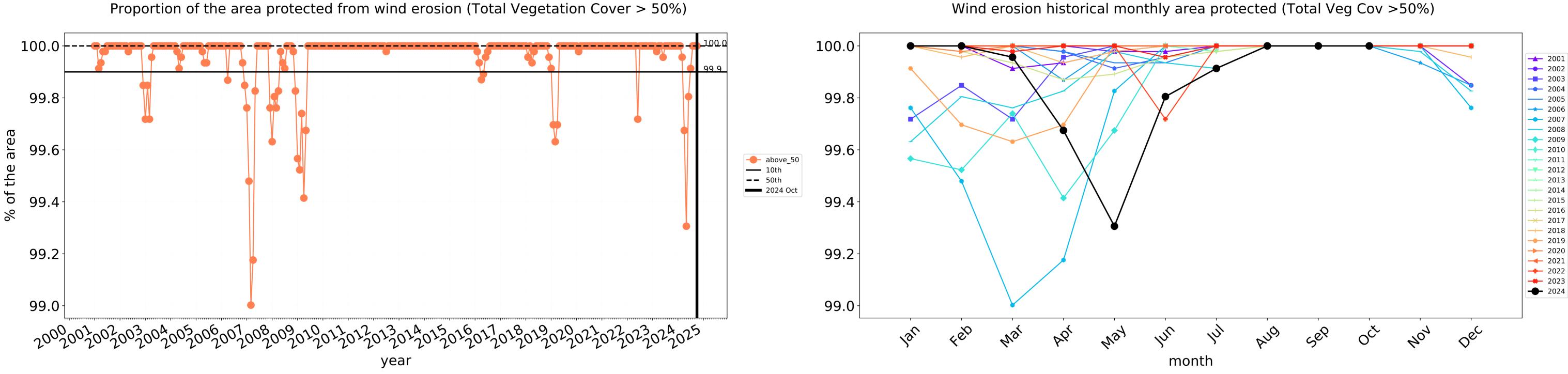
Total Vegetation Cover Anomaly [%]



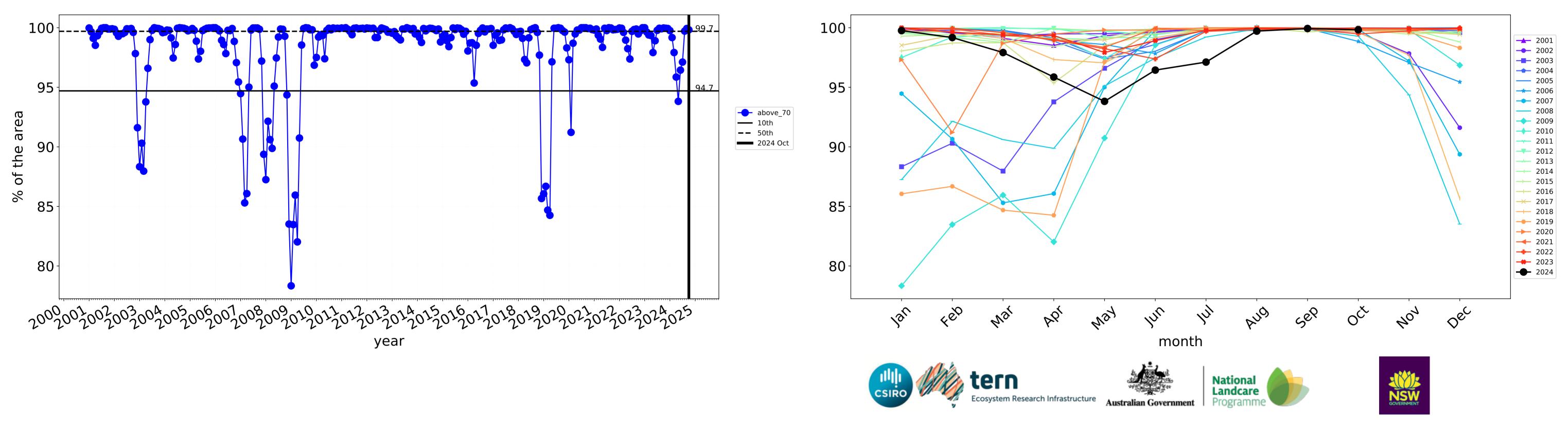


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline

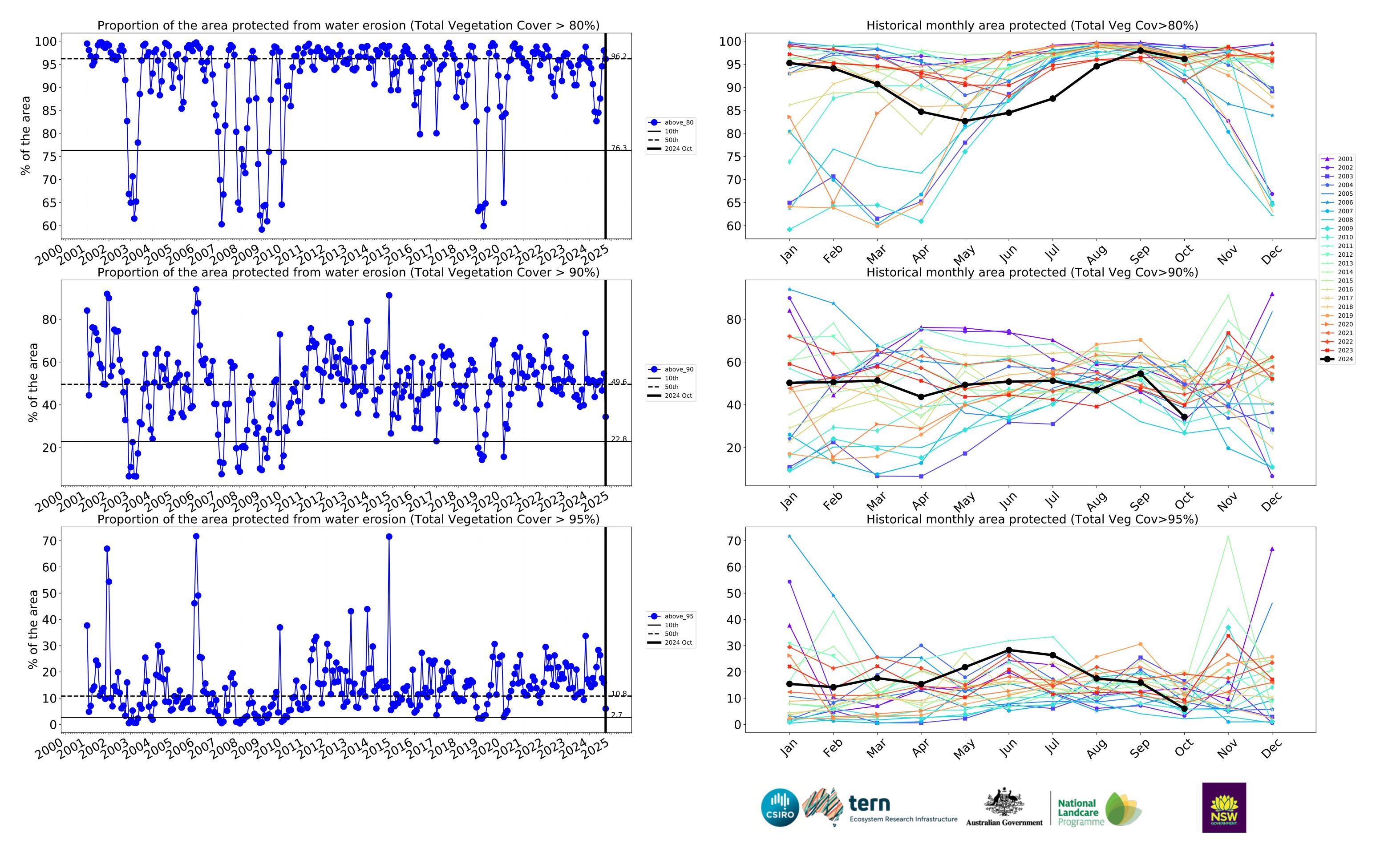
the map using baseline from 2001 to 2019.



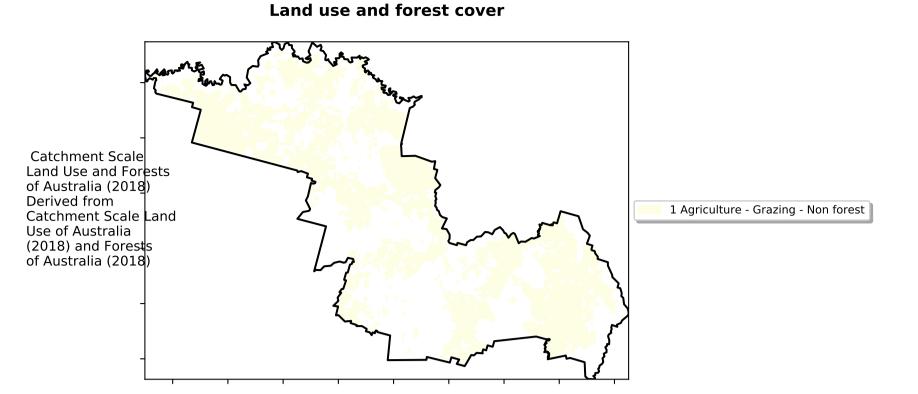
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



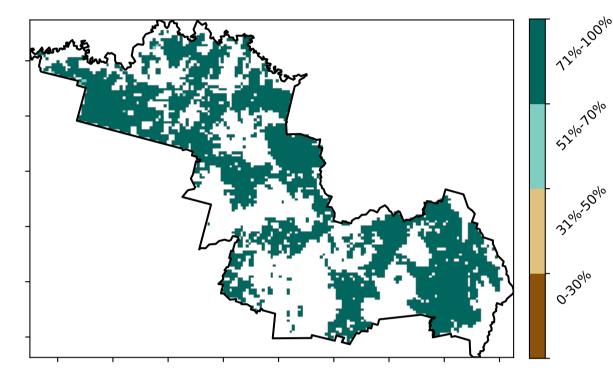
Water erosion historical monthly area protected (Total Veg Cov>70%)



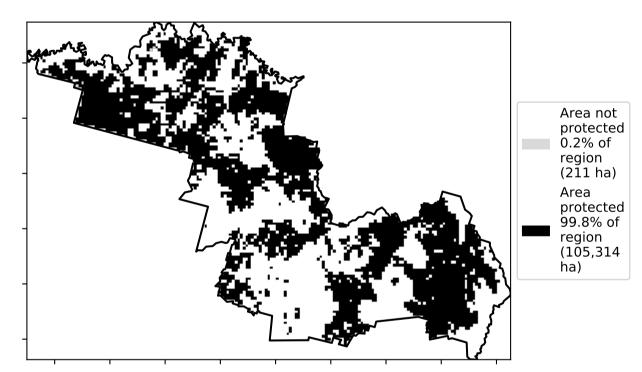
Grazing non forest



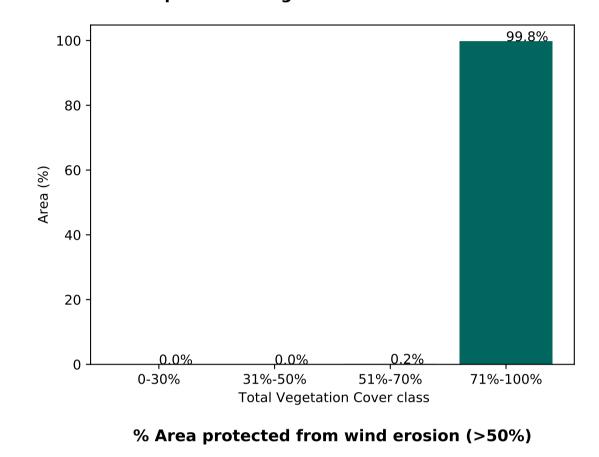
Total Vegetation Cover [%]

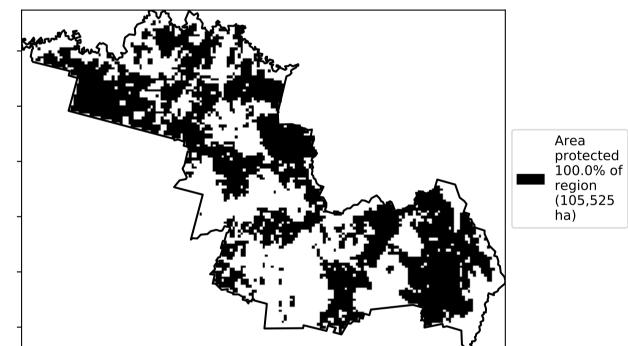


% Area protected from water erosion (>70%)

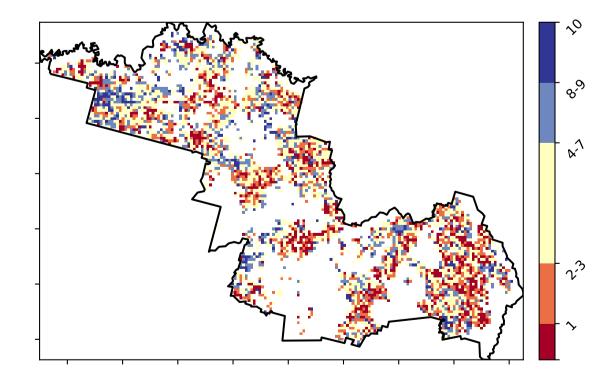


Proportion of vegetation cover class in area

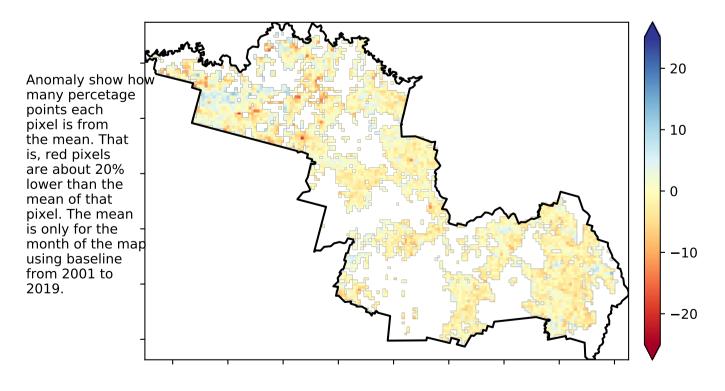




Total Vegetation Cover Decile [%]

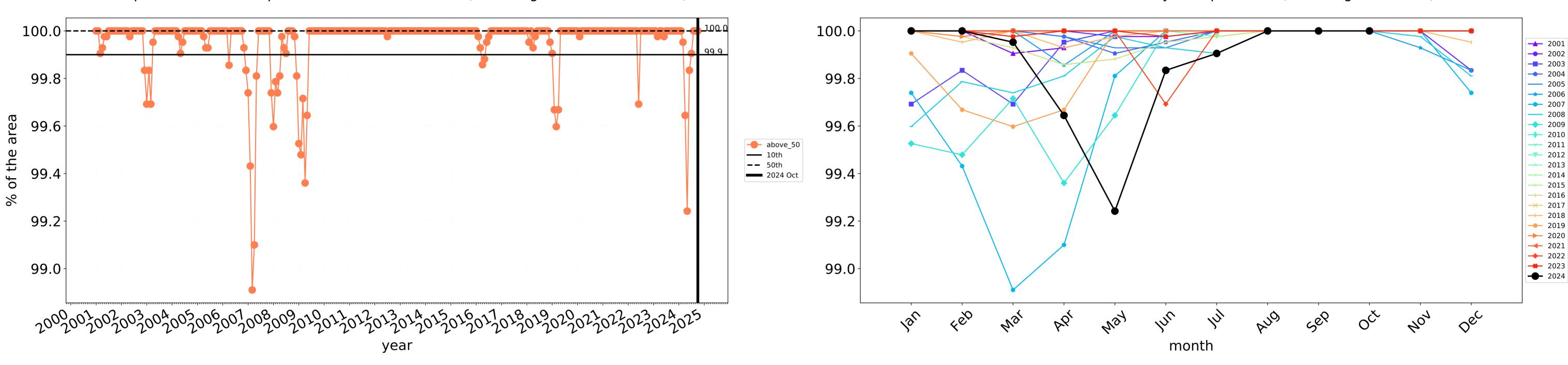


Total Vegetation Cover Anomaly [%]

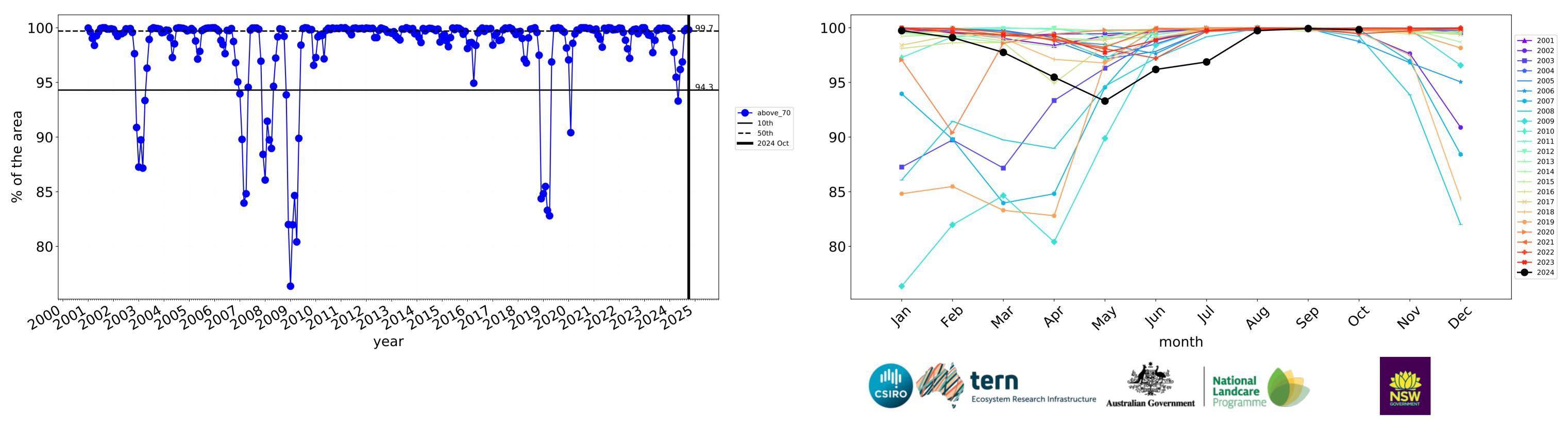




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

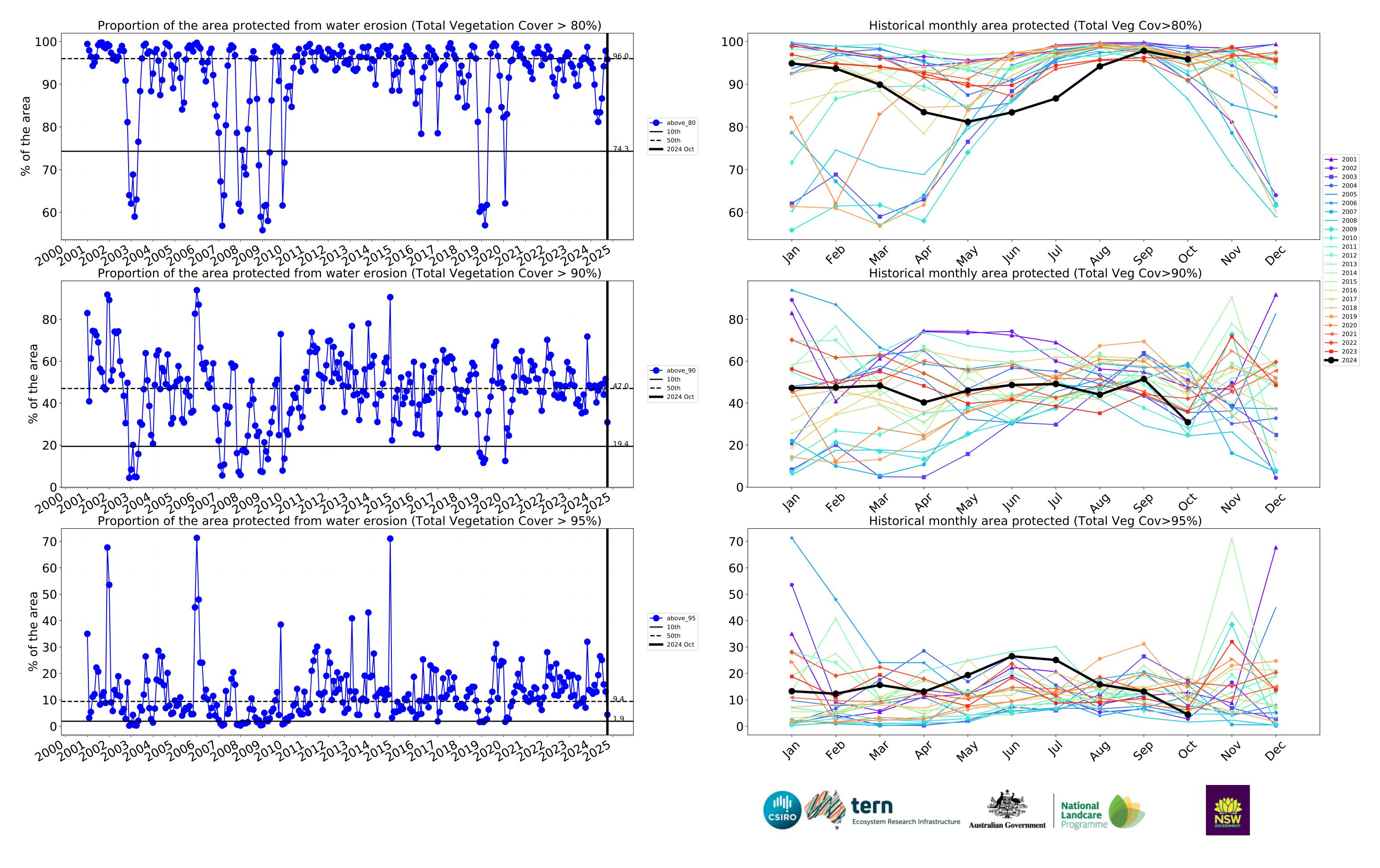


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

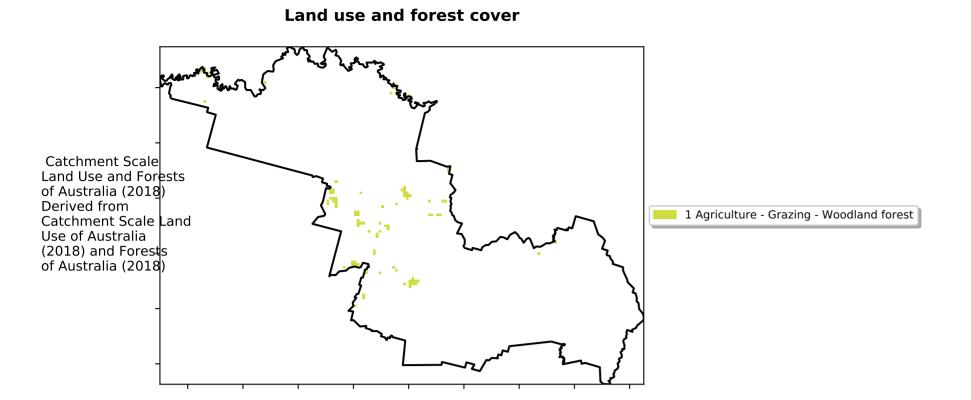




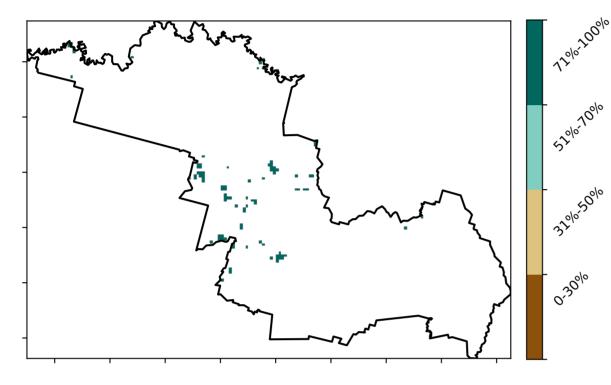
Wind erosion historical monthly area protected (Total Veg Cov >50%)



Grazing Woodland forest



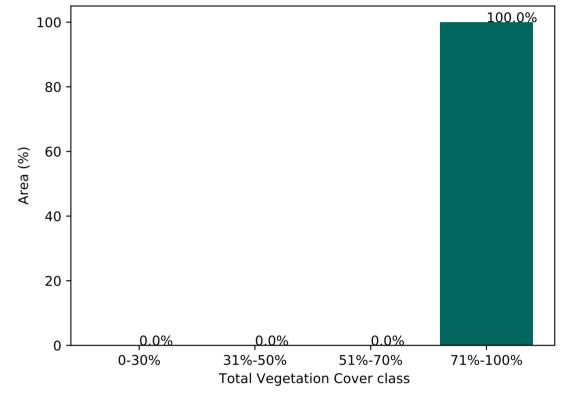
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

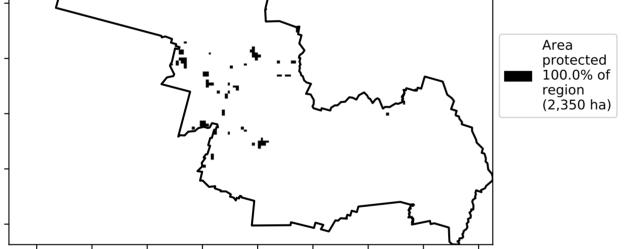


Proportion of vegetation cover class in area

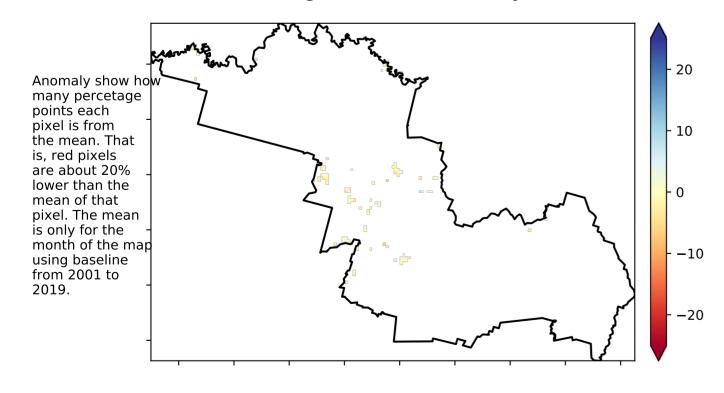


% Area protected from wind erosion (>50%)

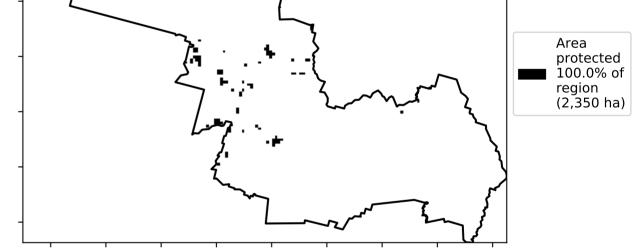




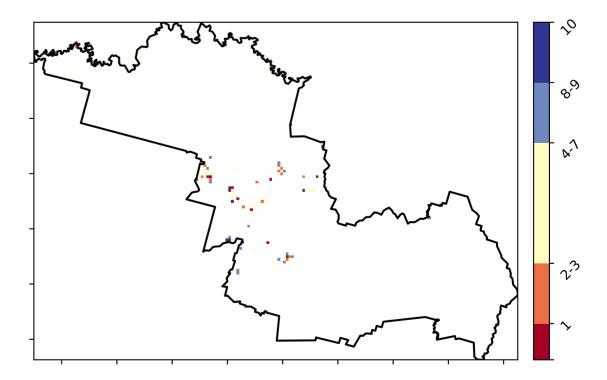
Total Vegetation Cover Anomaly [%]



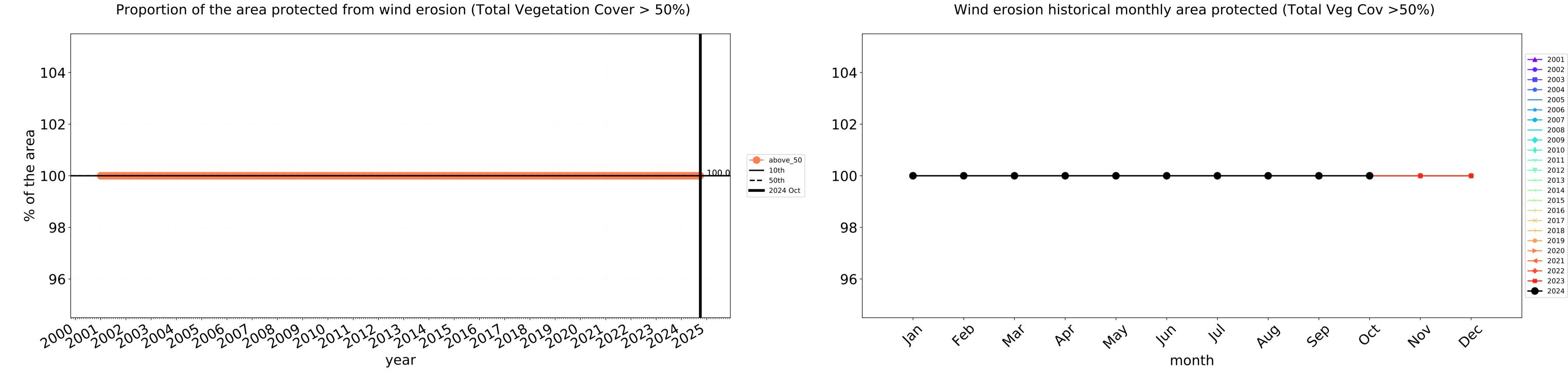
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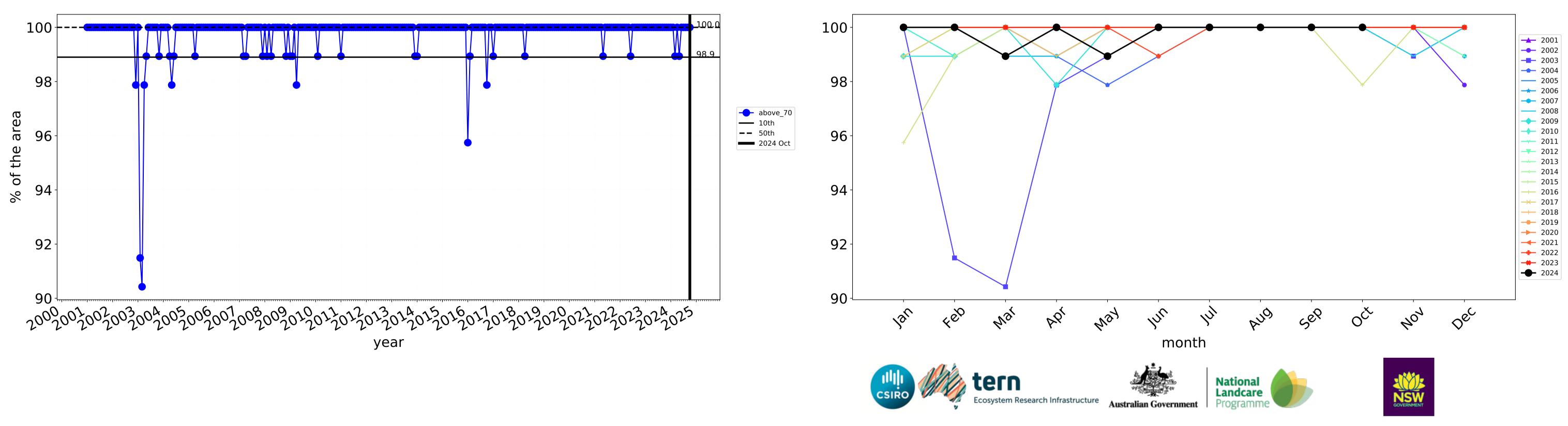


Total Vegetation Cover Decile [%]



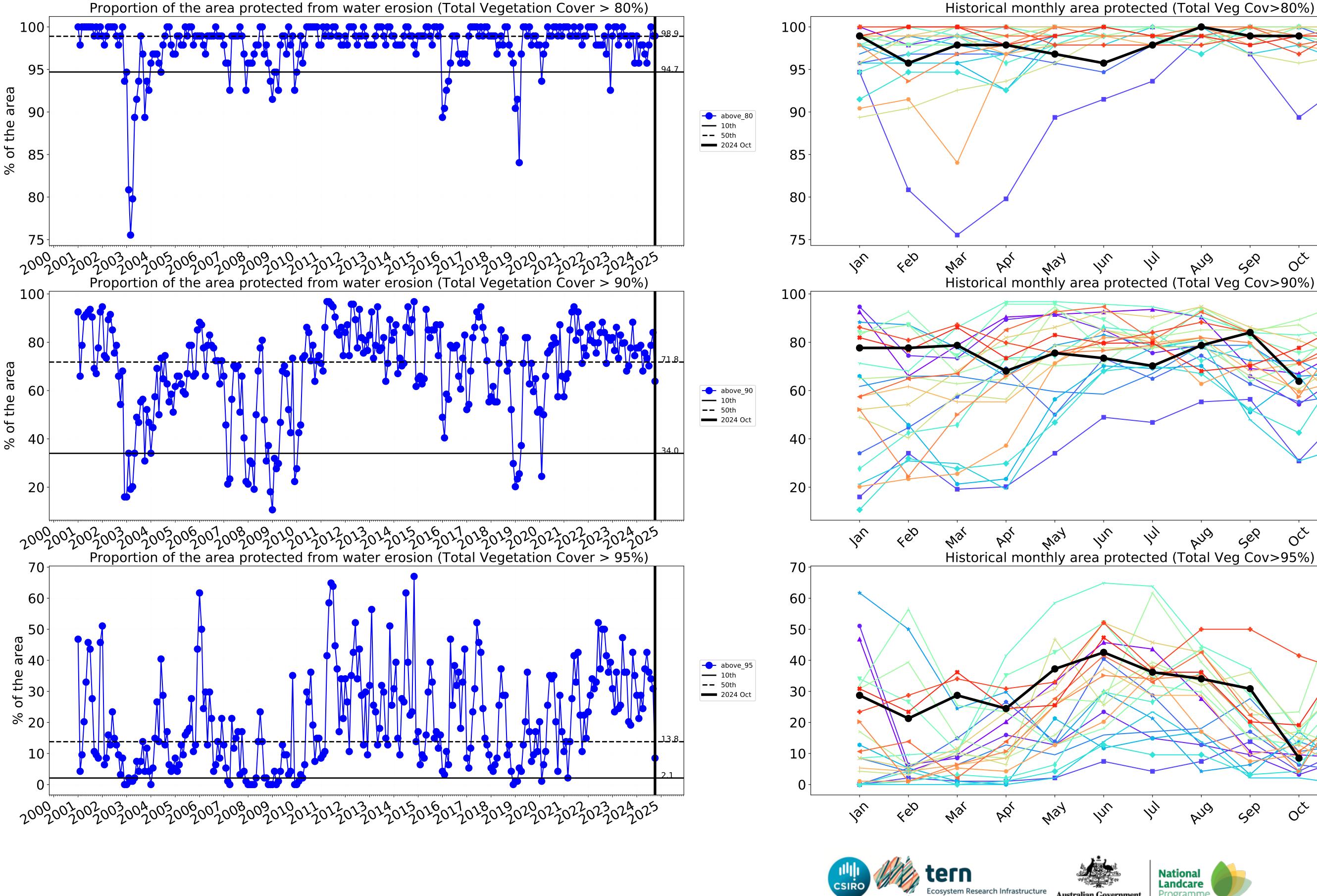






Grazing Woodland forest timeseries

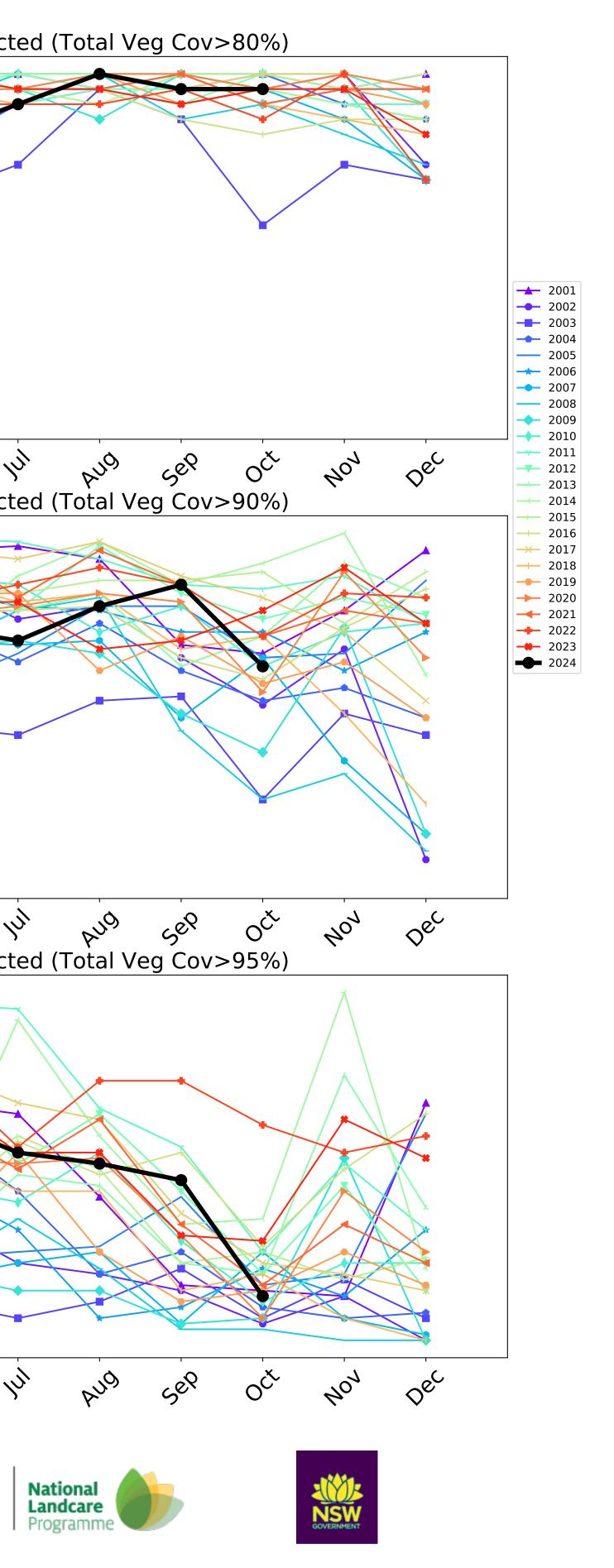
Water erosion historical monthly area protected (Total Veg Cov>70%)



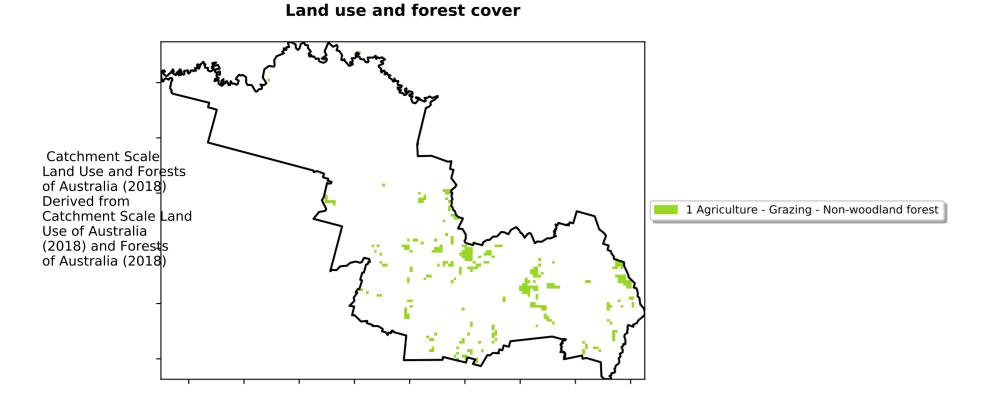
Ecosystem Research Infrastructure

Australian Government

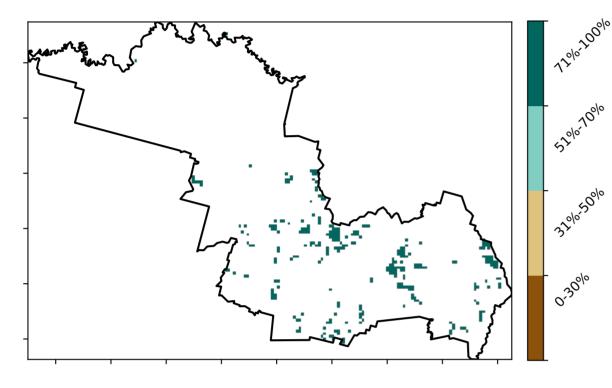
25



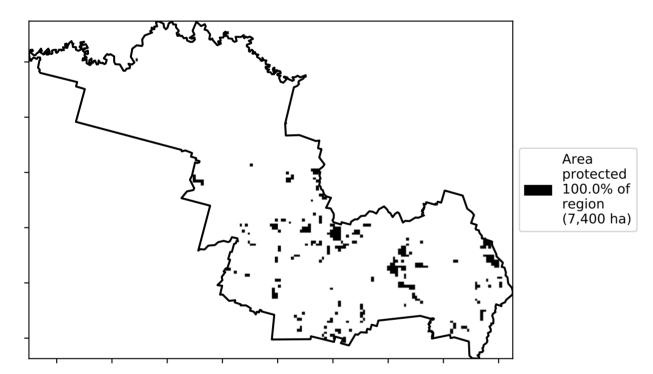
Grazing - Forest (non woodland)



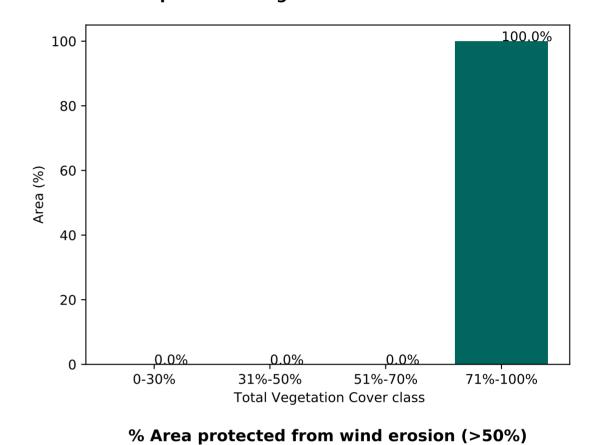
Total Vegetation Cover [%]

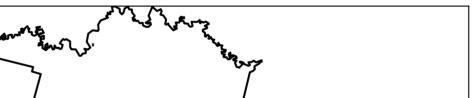


% Area protected from water erosion (>70%)

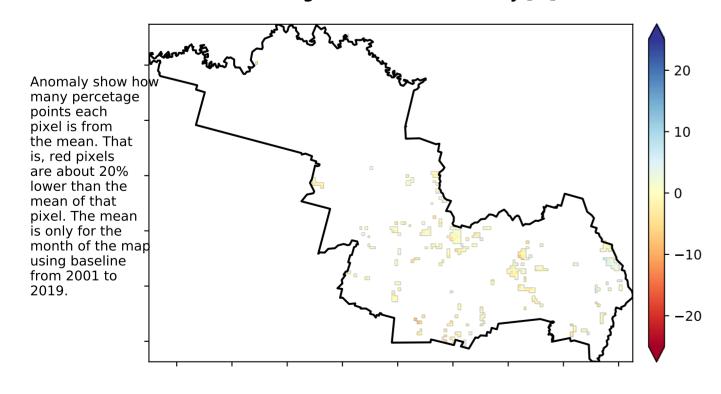


Proportion of vegetation cover class in area

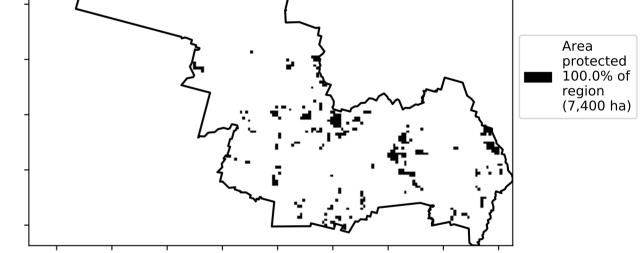




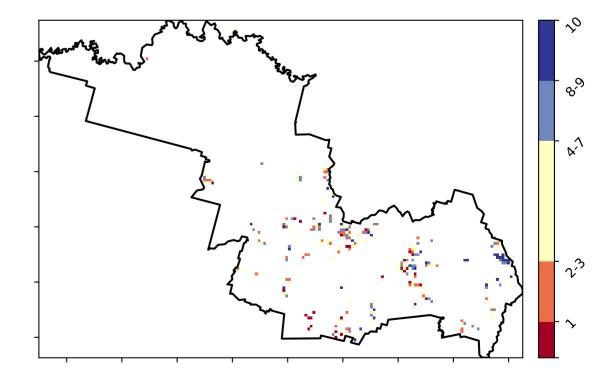
Total Vegetation Cover Anomaly [%]



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 the map using baseline from 2001 to 2019.

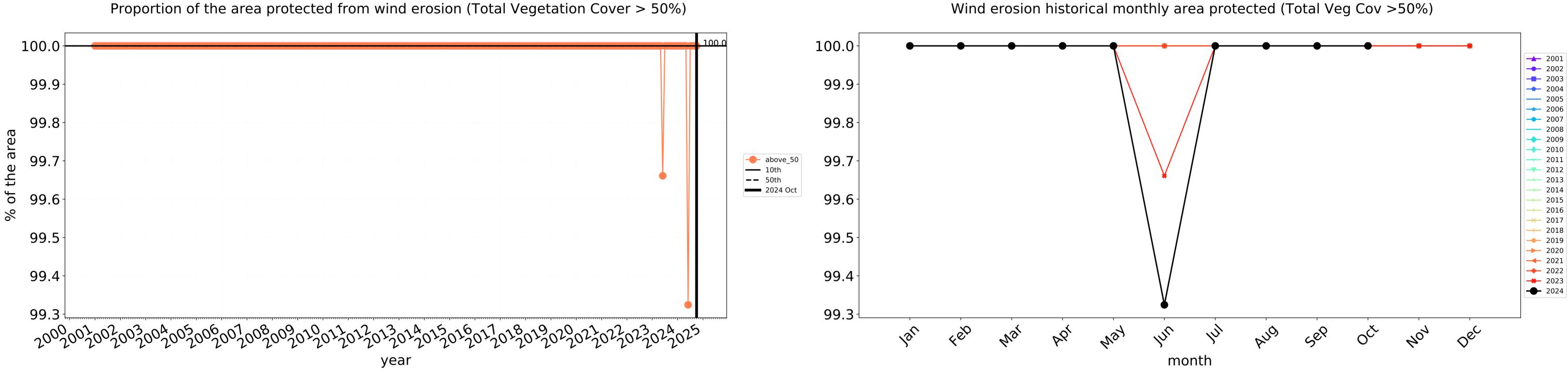


Total Vegetation Cover Decile [%]

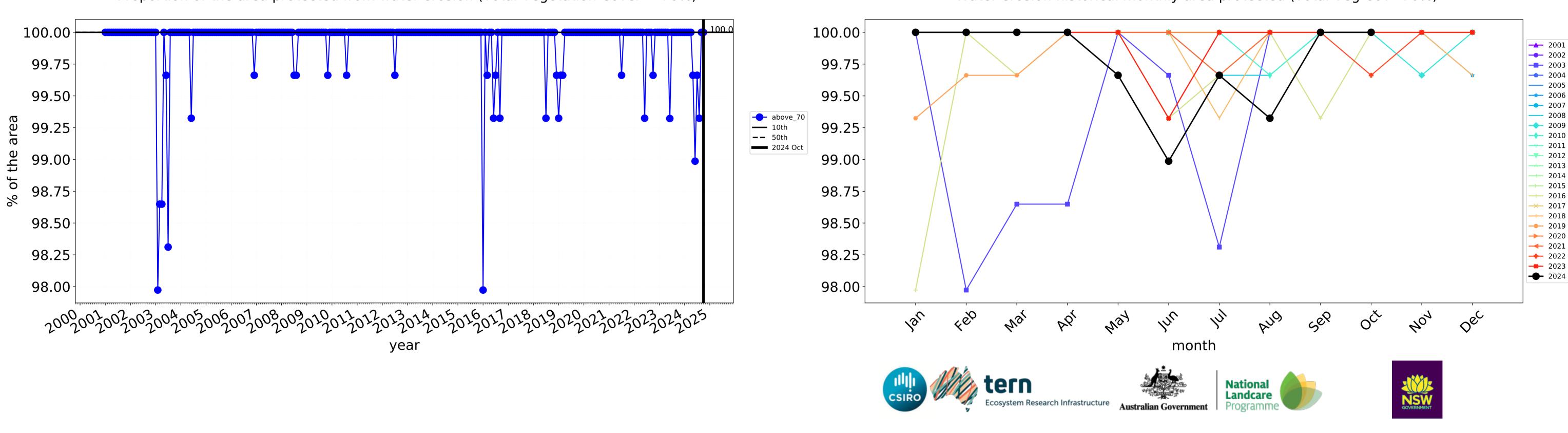




Grazing - Forest (non woodland) timeseries

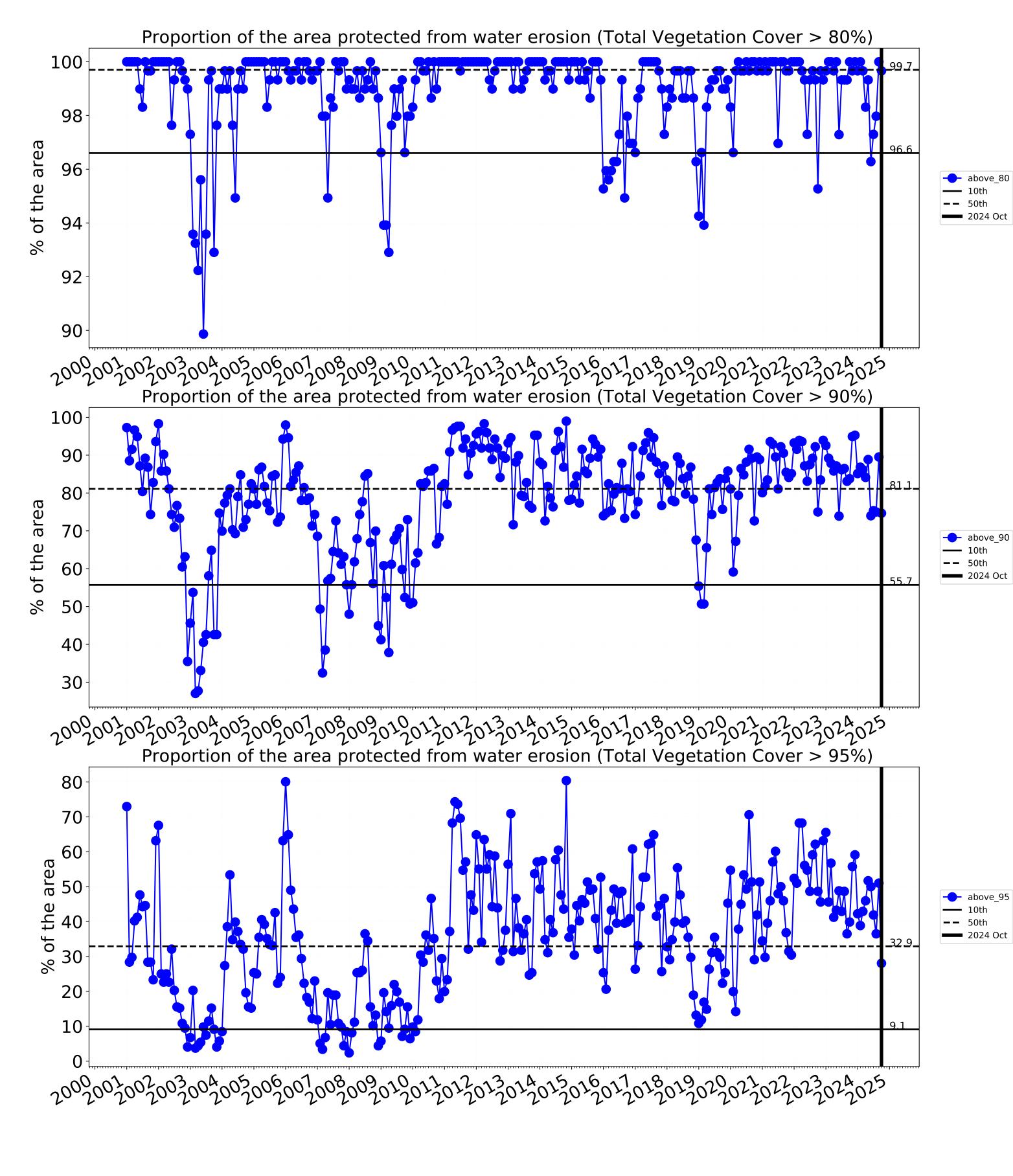


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

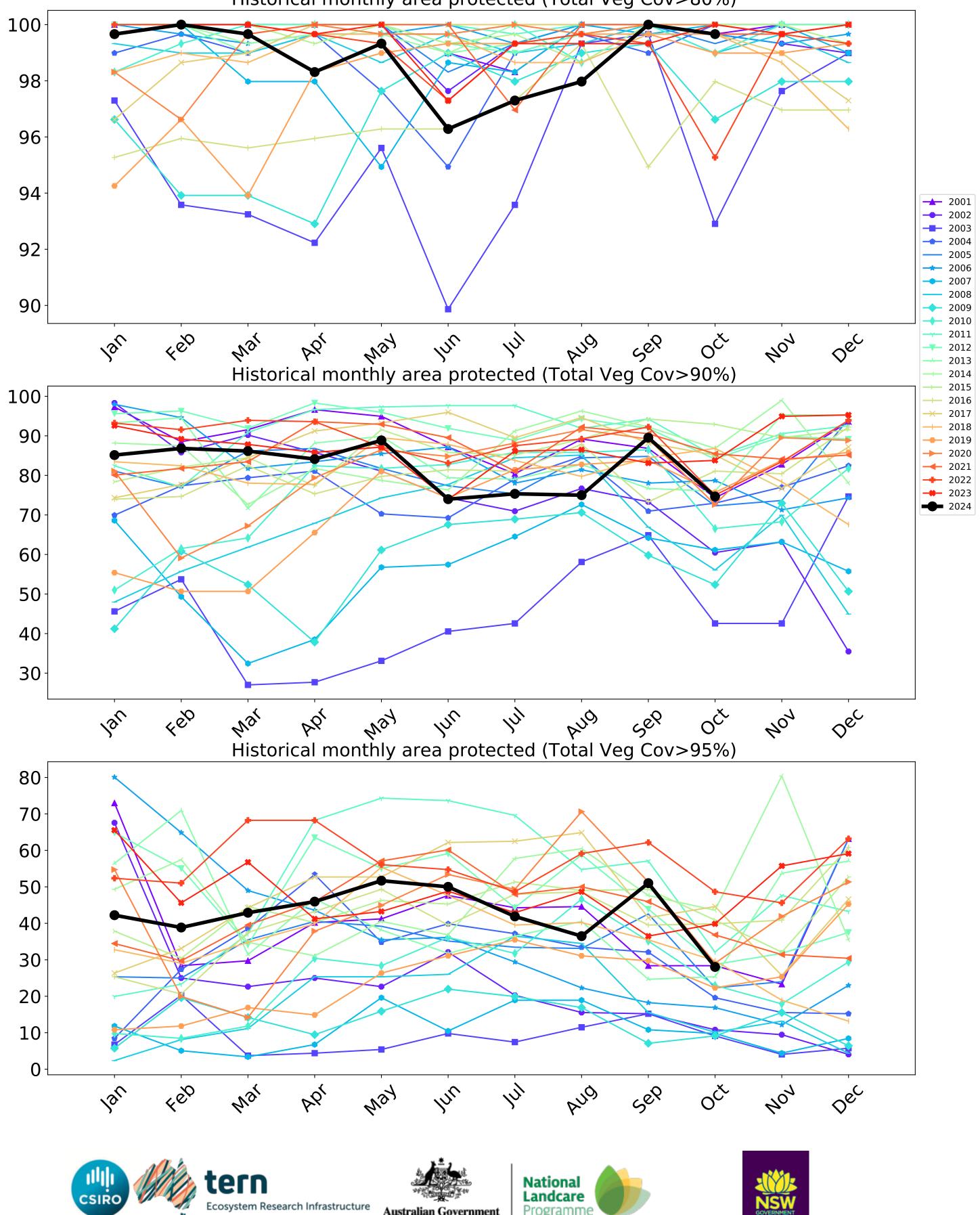


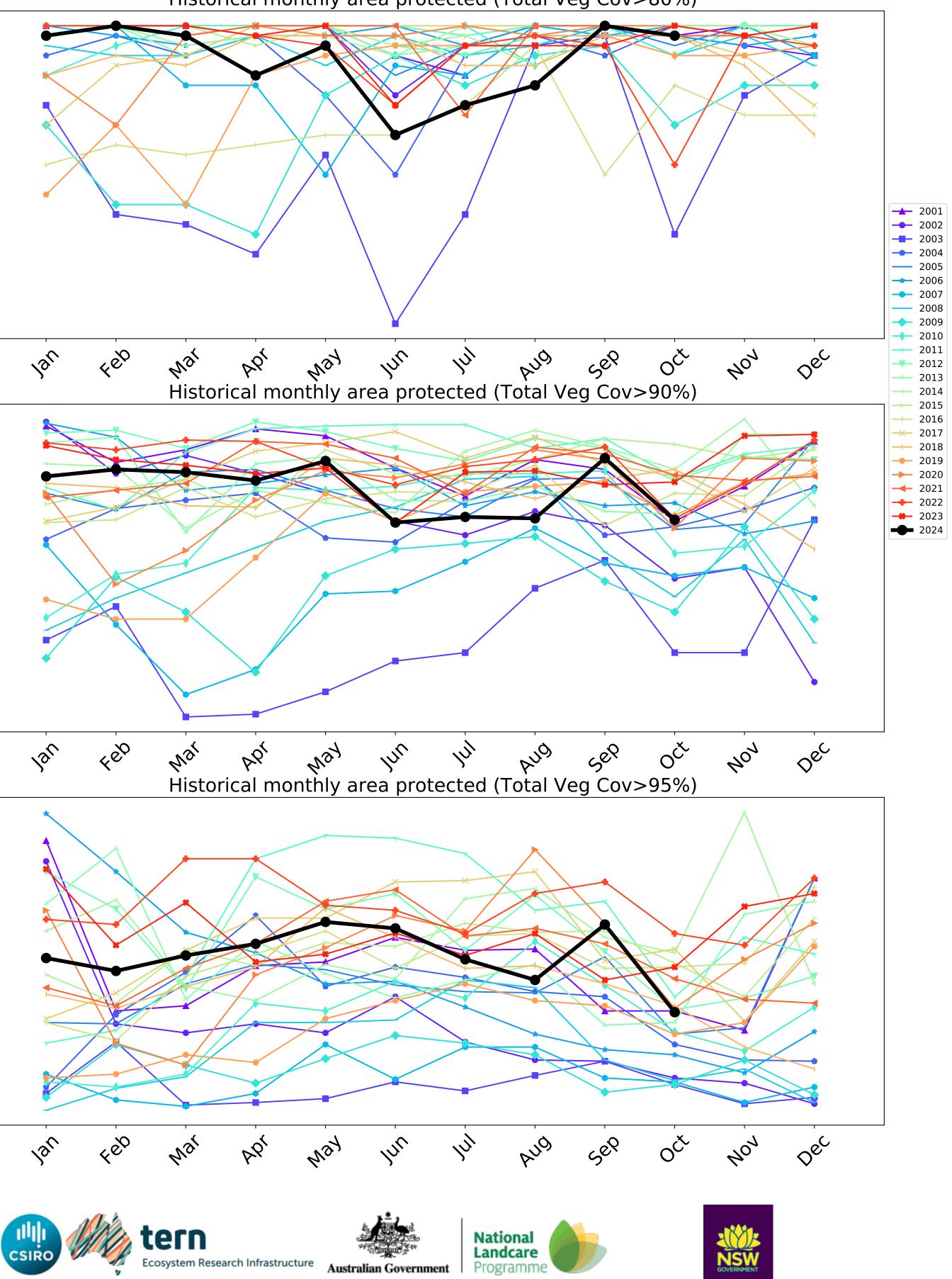
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

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

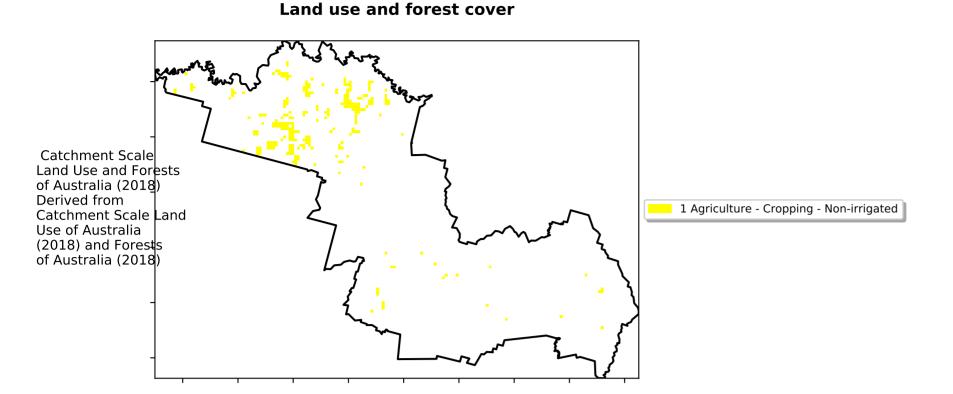


Historical monthly area protected (Total Veg Cov>80%)

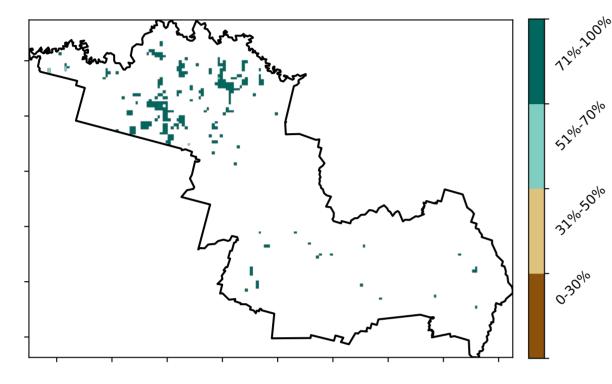




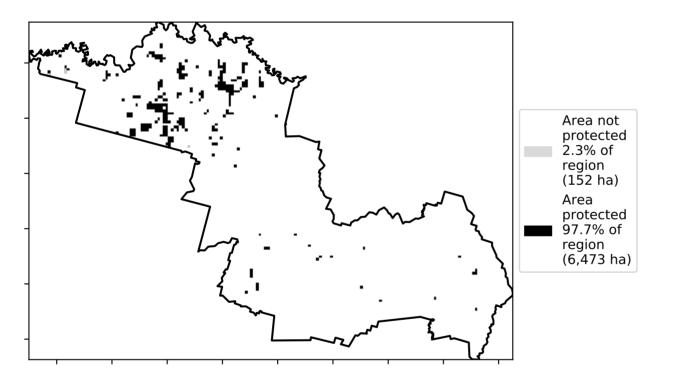
Cropping



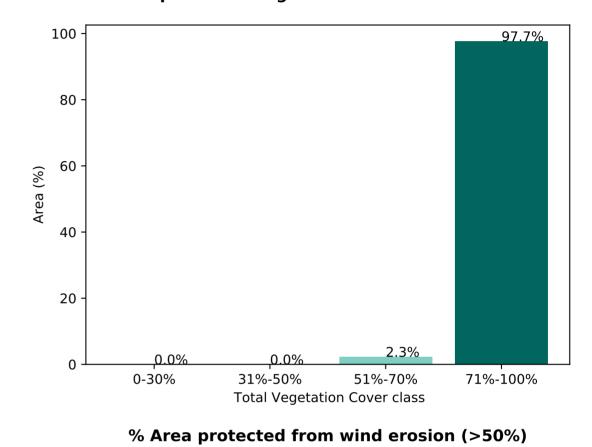
Total Vegetation Cover [%]

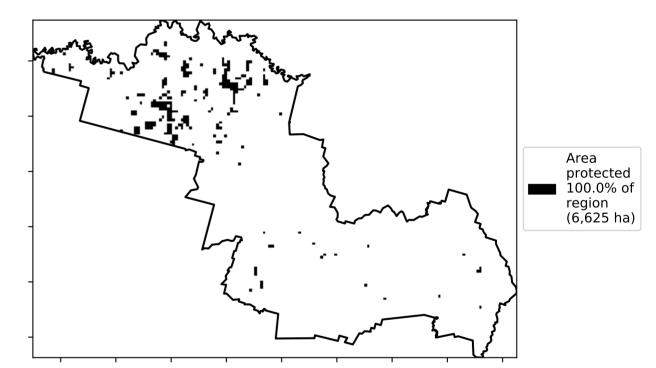


% Area protected from water erosion (>70%)

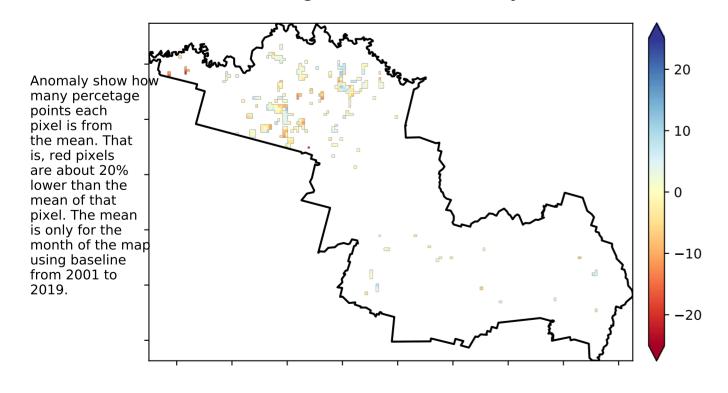


Proportion of vegetation cover class in area

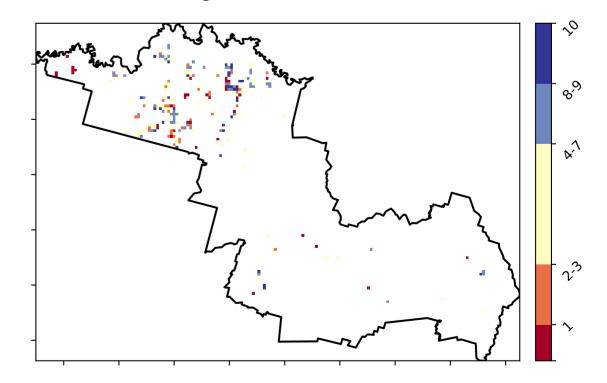




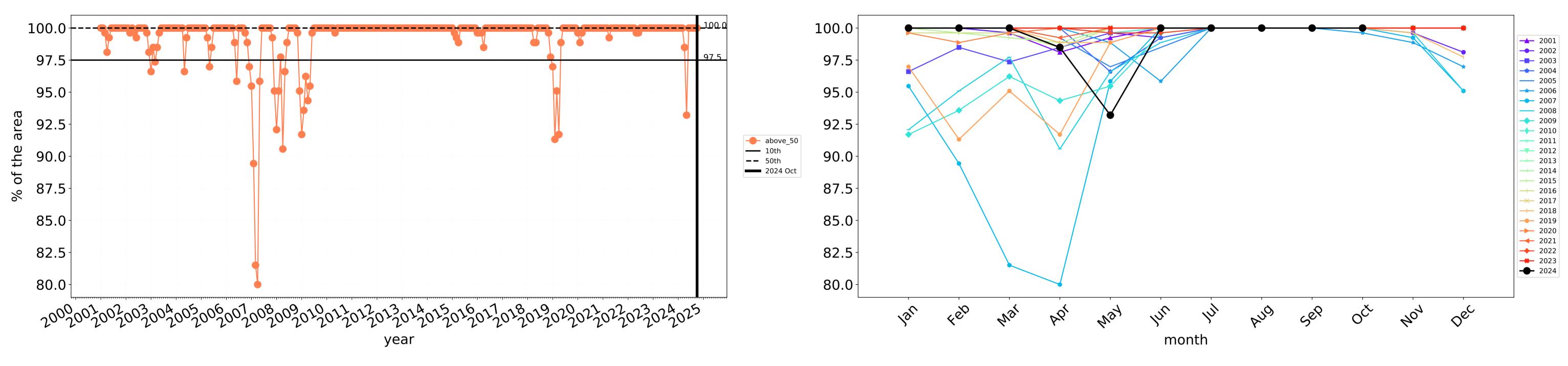
Total Vegetation Cover Anomaly [%]



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 [%]

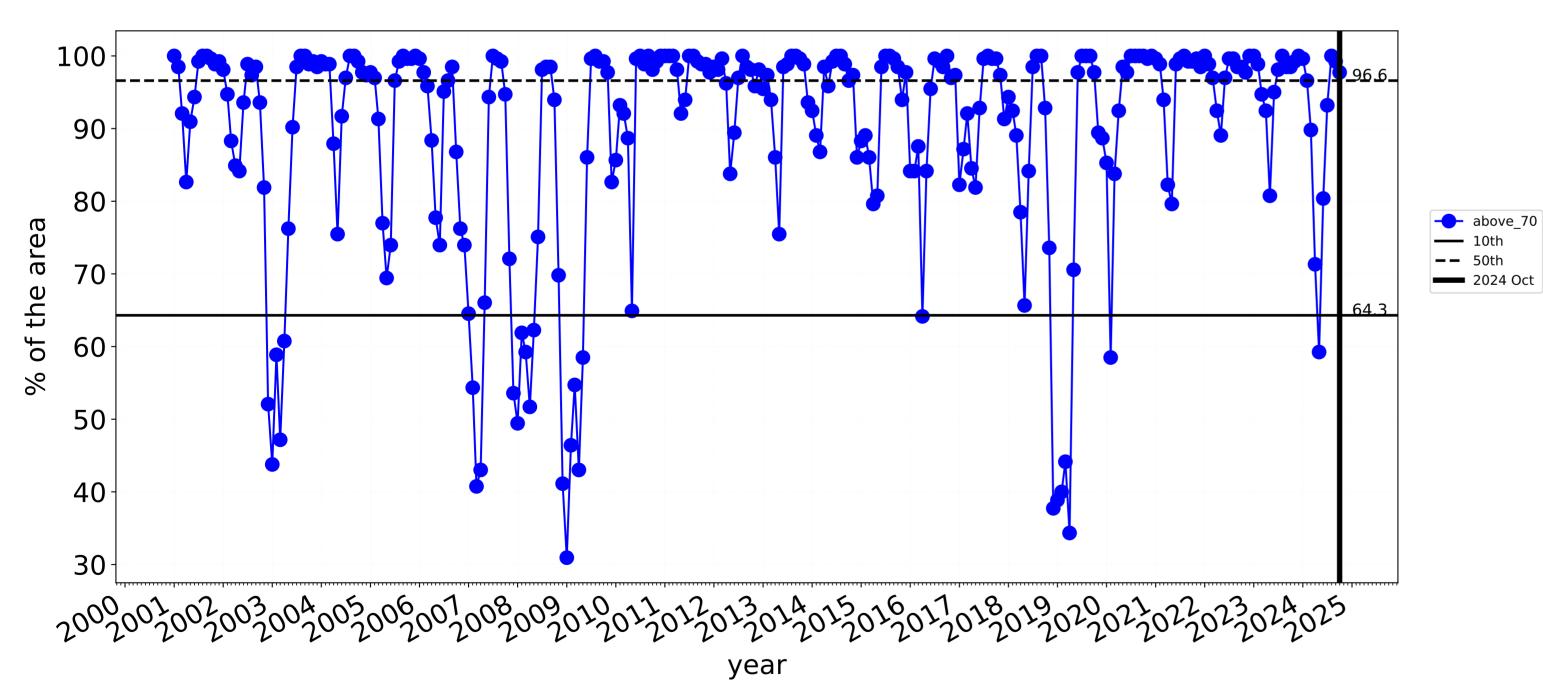




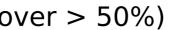


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

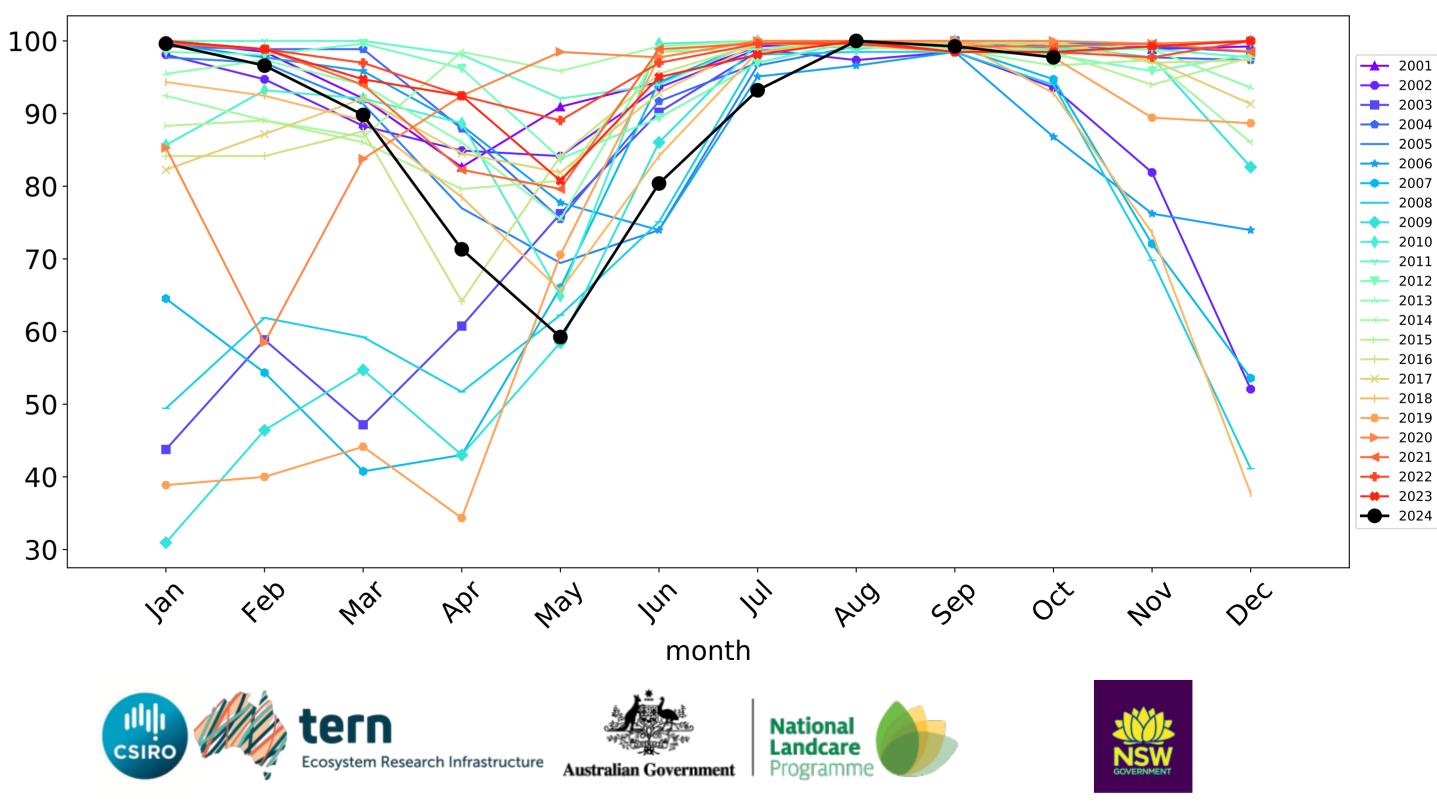
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



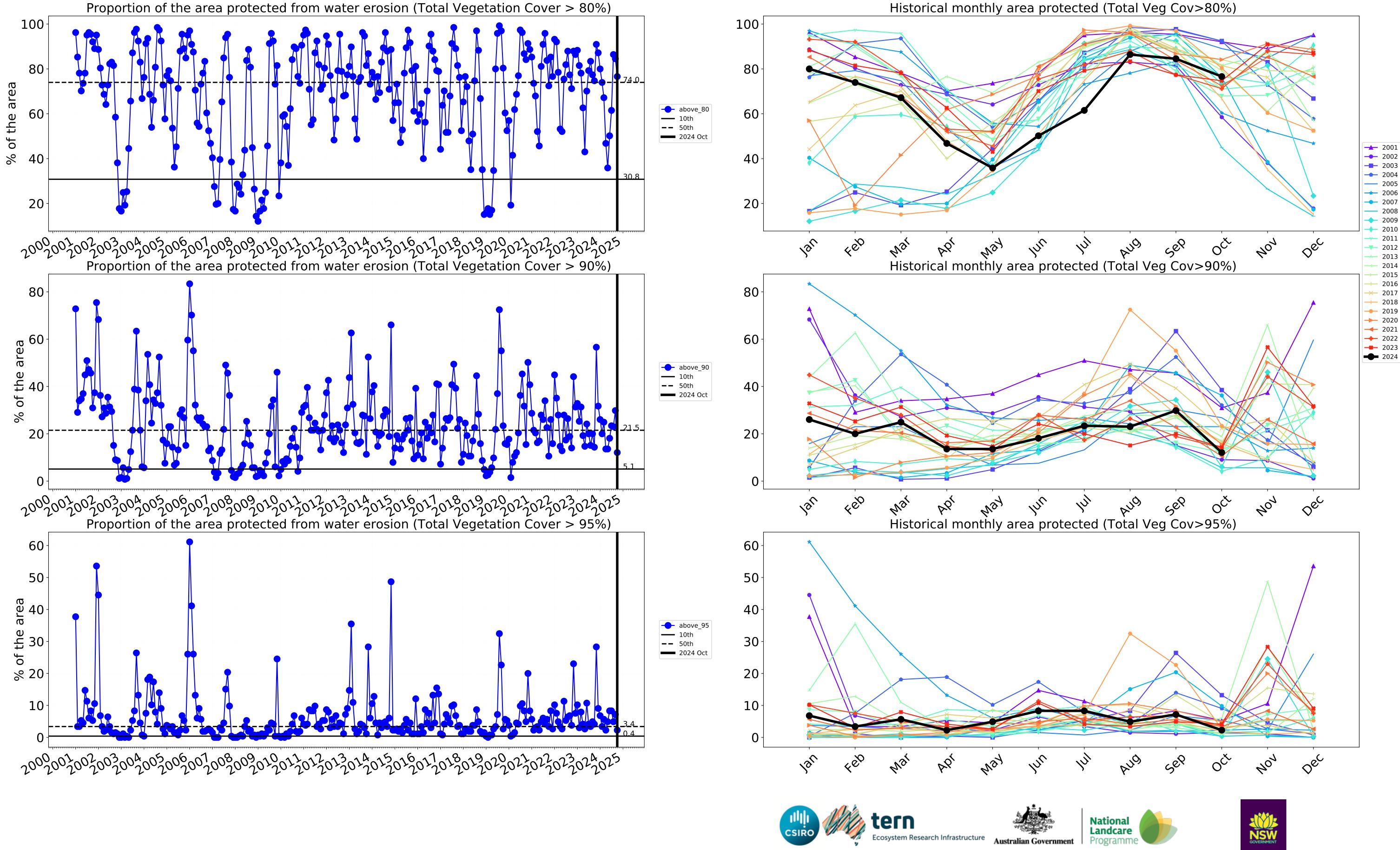
Cropping timeseries



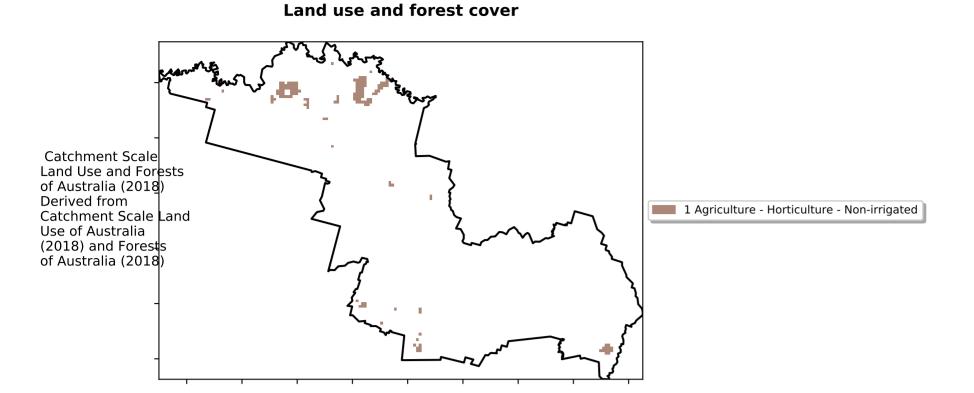
Wind erosion historical monthly area protected (Total Veg Cov >50%)



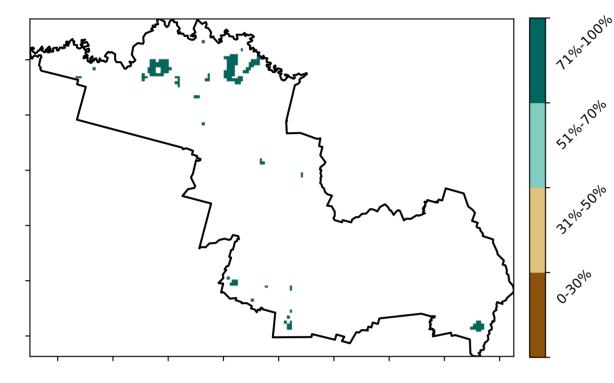
Water erosion historical monthly area protected (Total Veg Cov>70%)



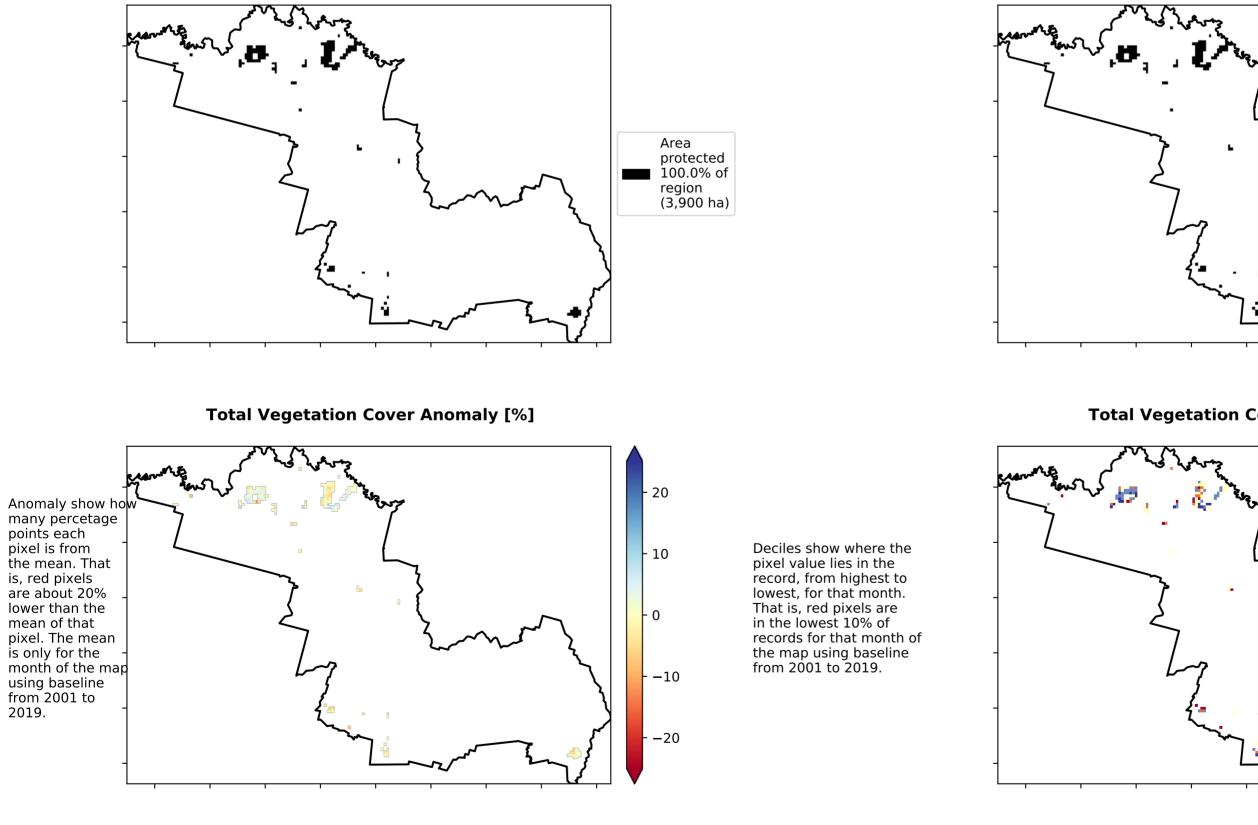
Horticulture



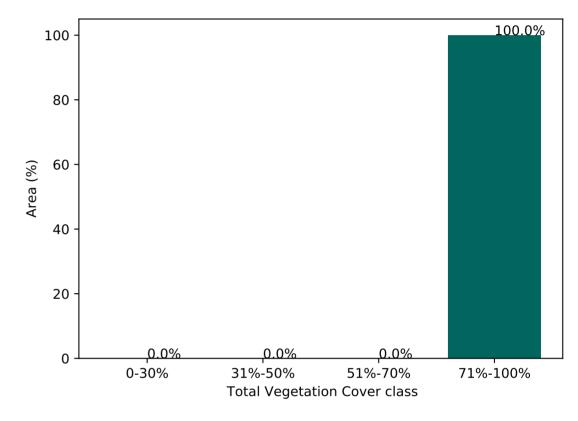
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

Area

5

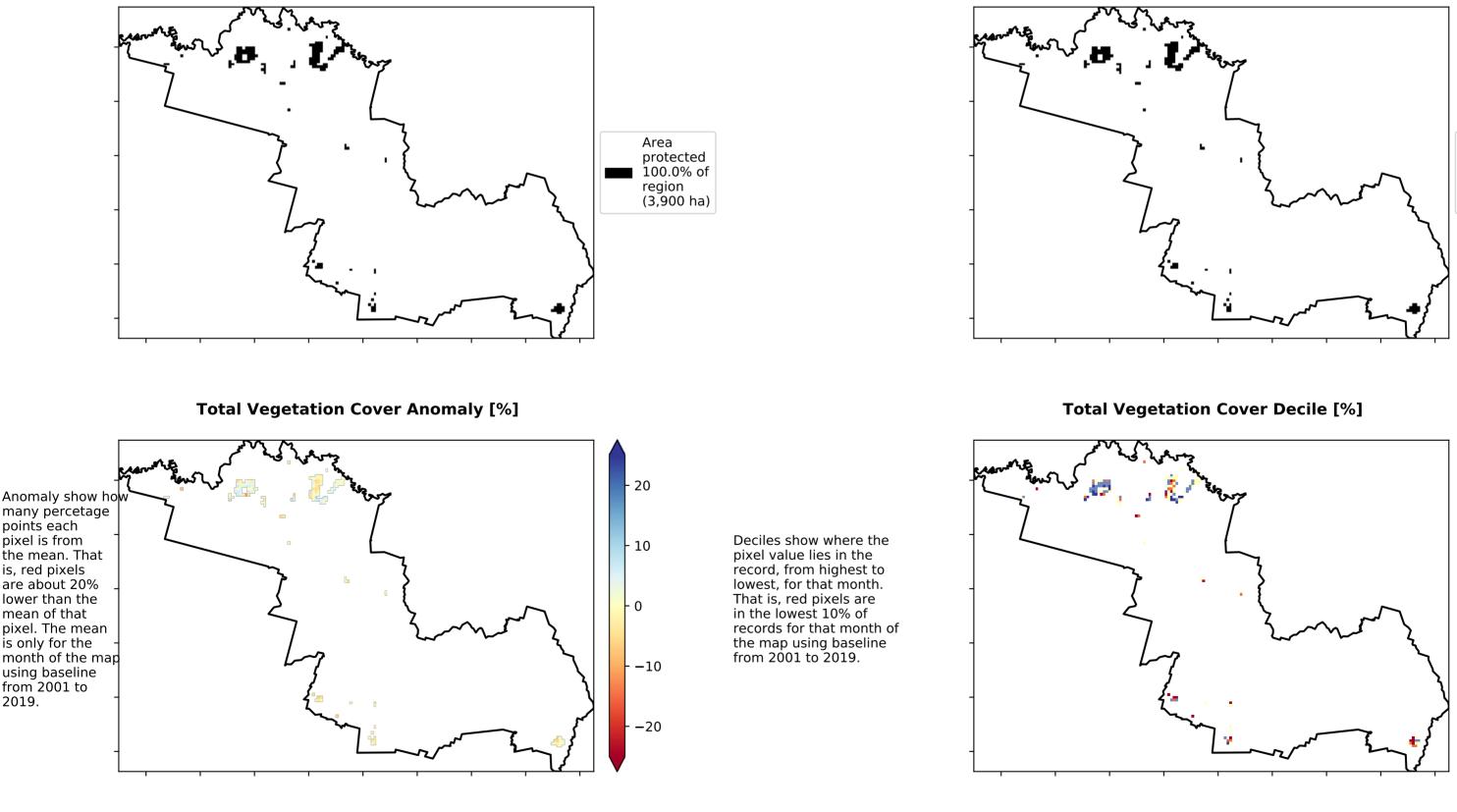
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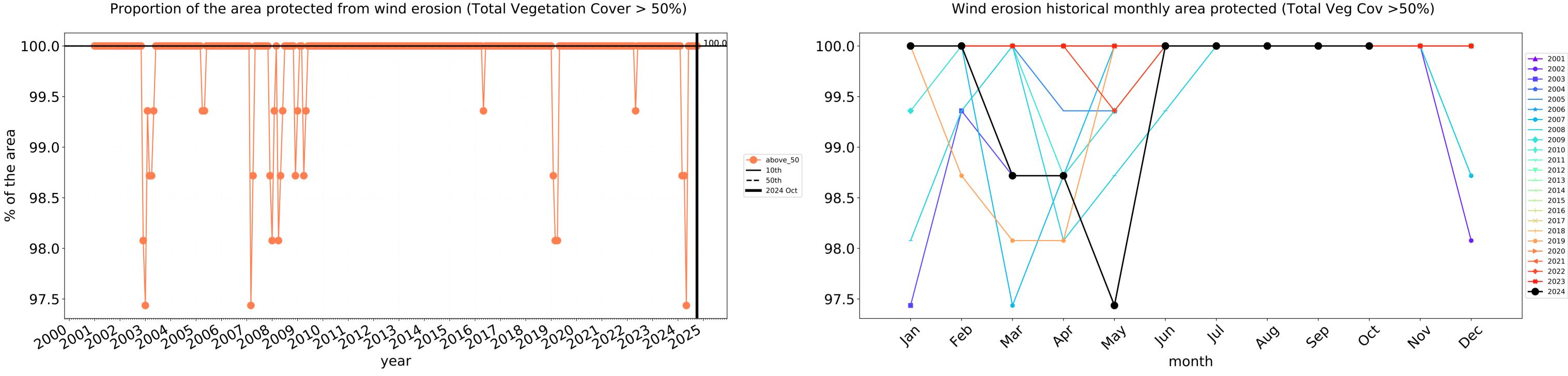
2?5

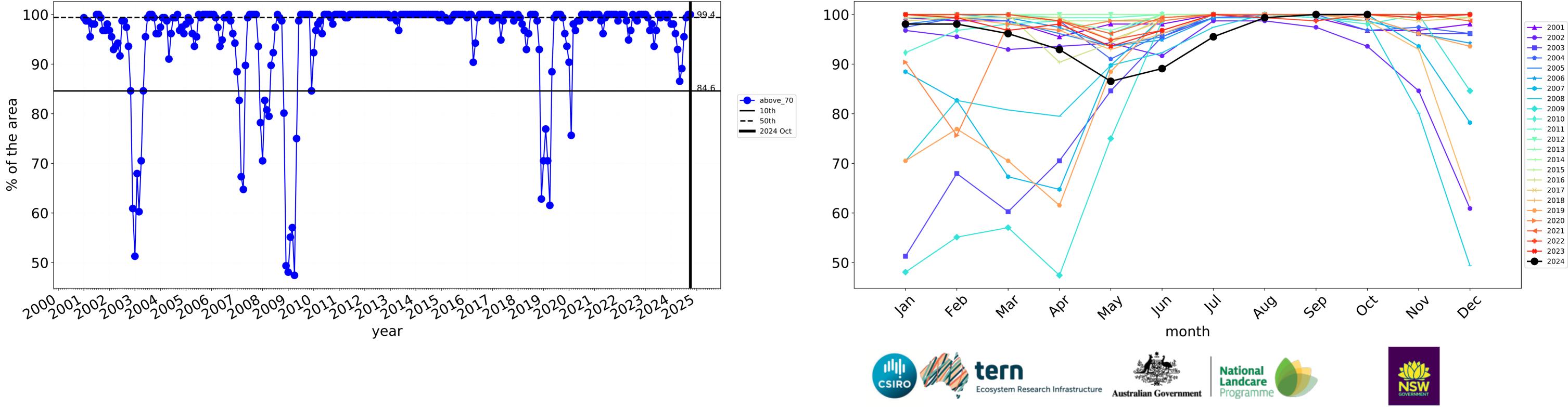
protected 100.0% of

region (3,900 ha)



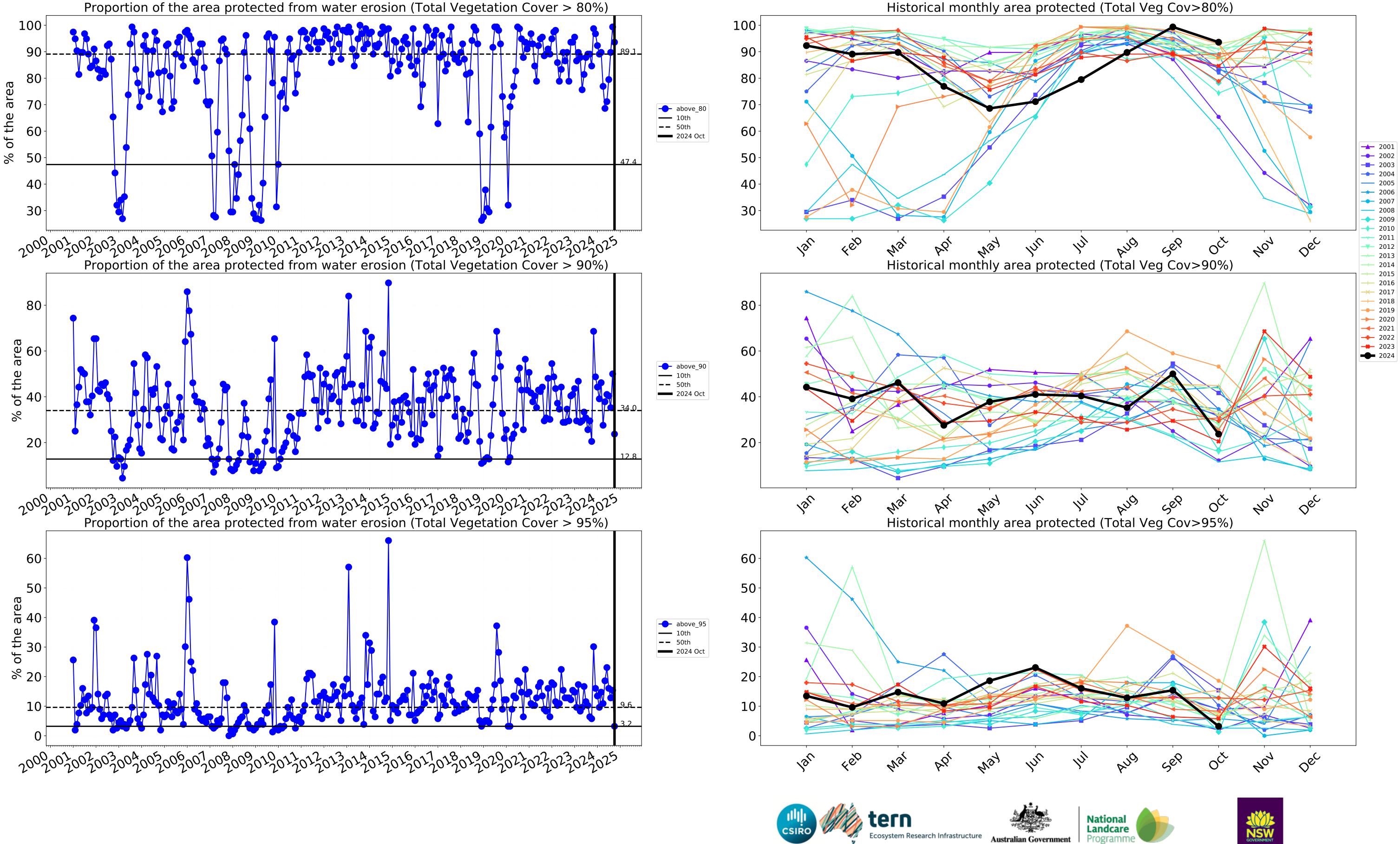






Horticulture timeseries

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

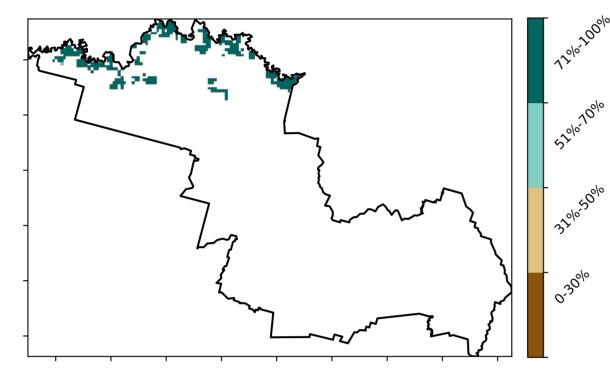


Irrigation

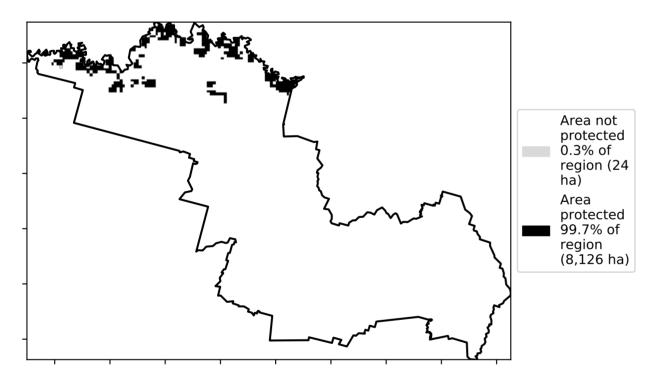
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) (2018) and Forests of Australia (2018)

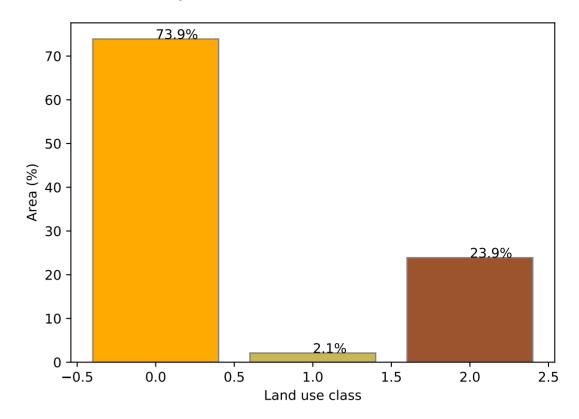
Land use and forest cover

Total Vegetation Cover [%]



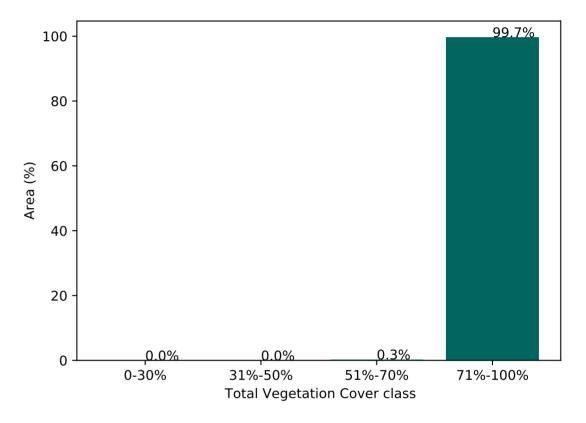
% Area protected from water erosion (>70%)





Proportion of each land class in area

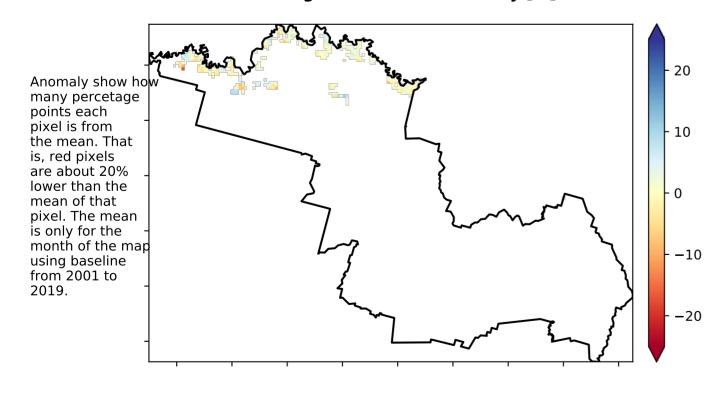
Proportion of vegetation cover class in area



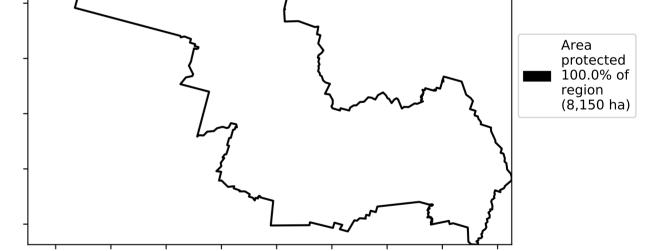
% Area protected from wind erosion (>50%)



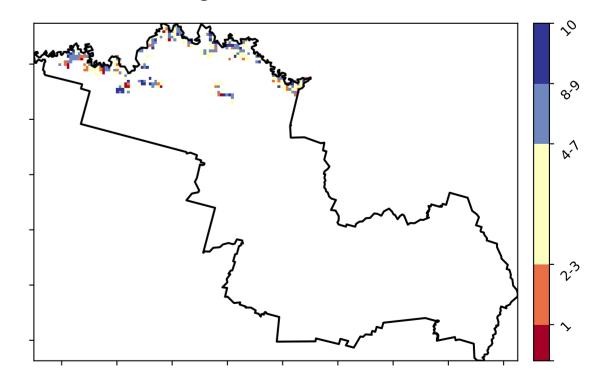
Total Vegetation Cover Anomaly [%]



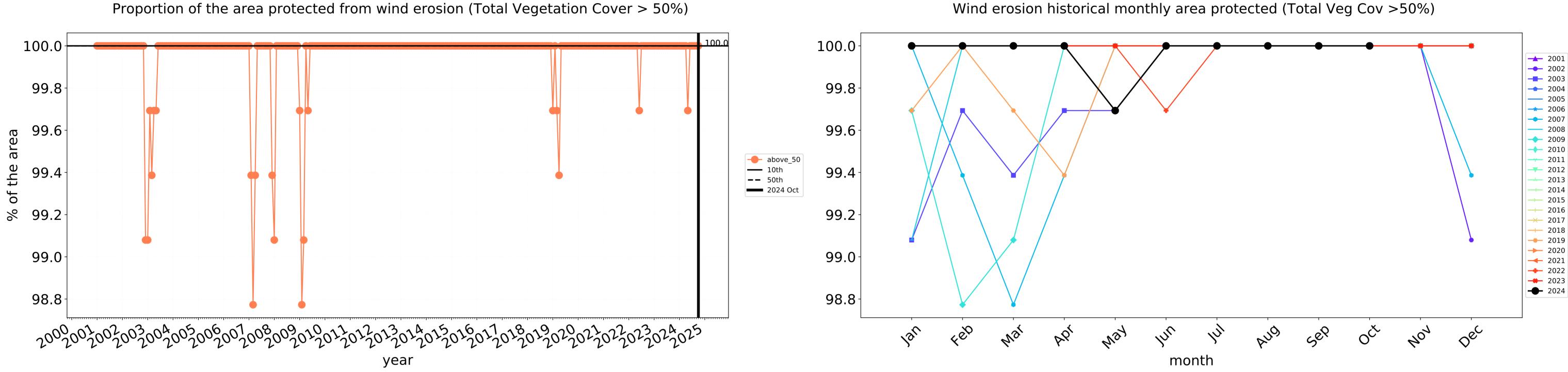
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

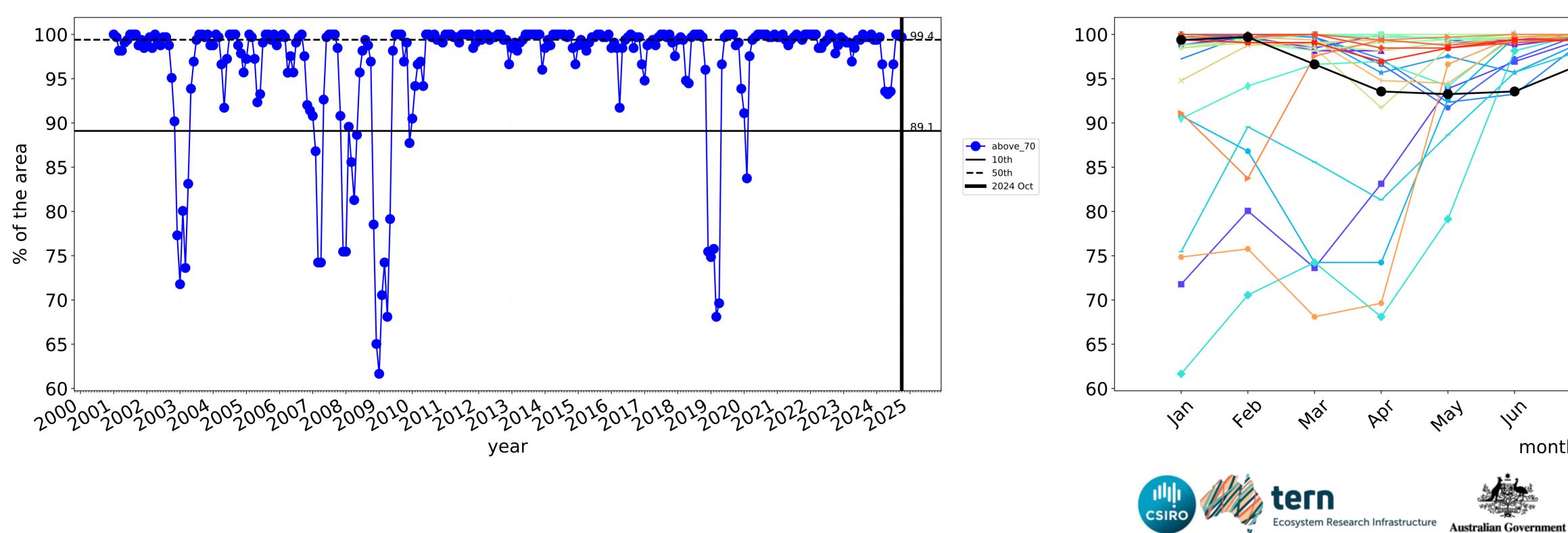


Total Vegetation Cover Decile [%]



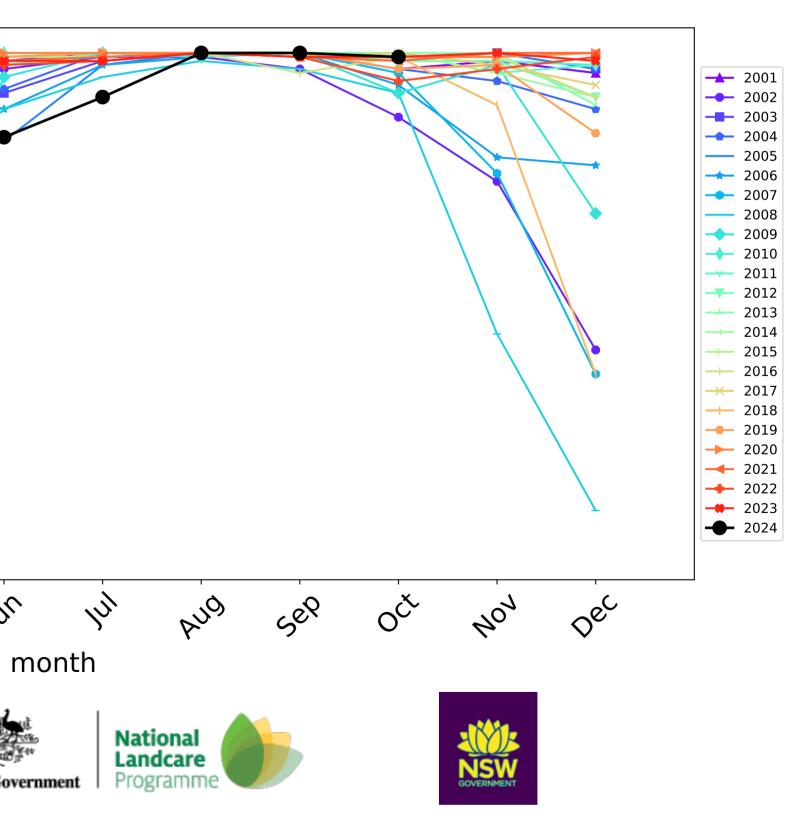


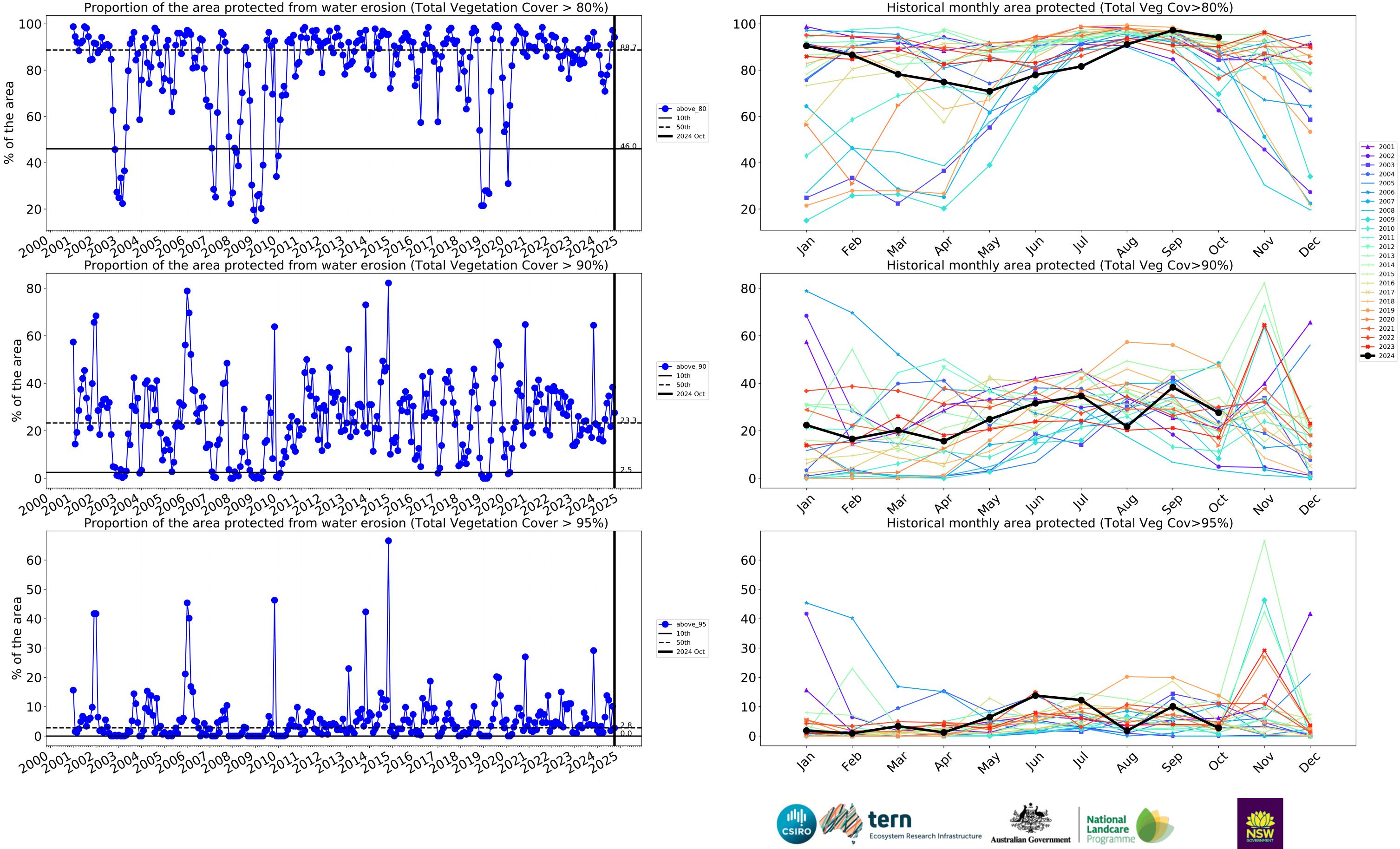




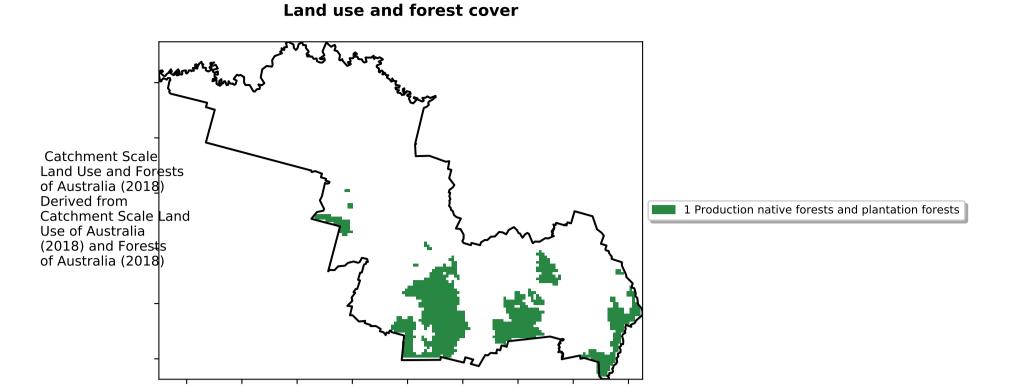
Irrigation timeseries

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

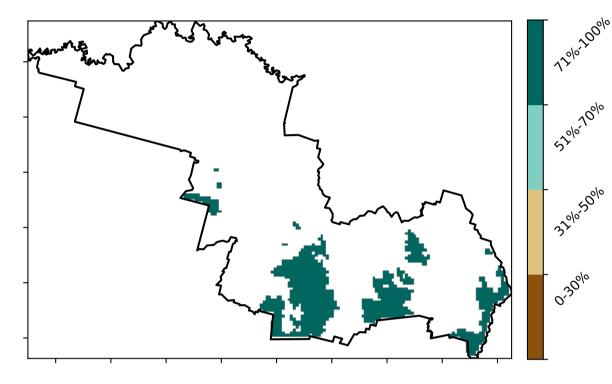




Production native forests and plantation forests



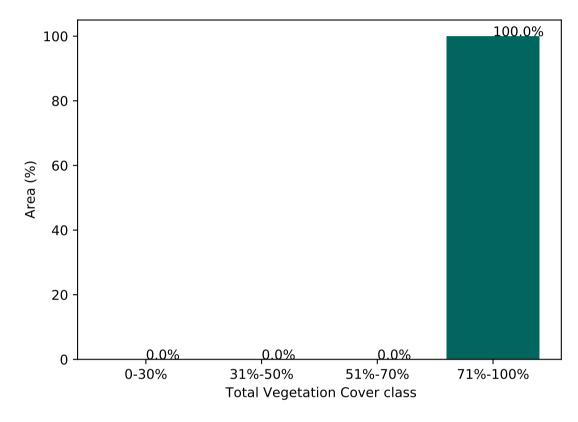
Total Vegetation Cover [%]



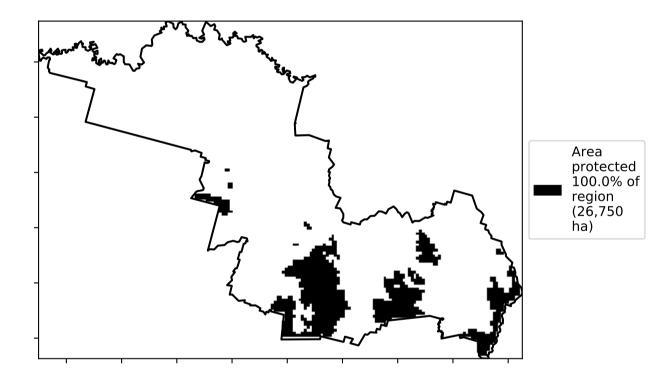
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



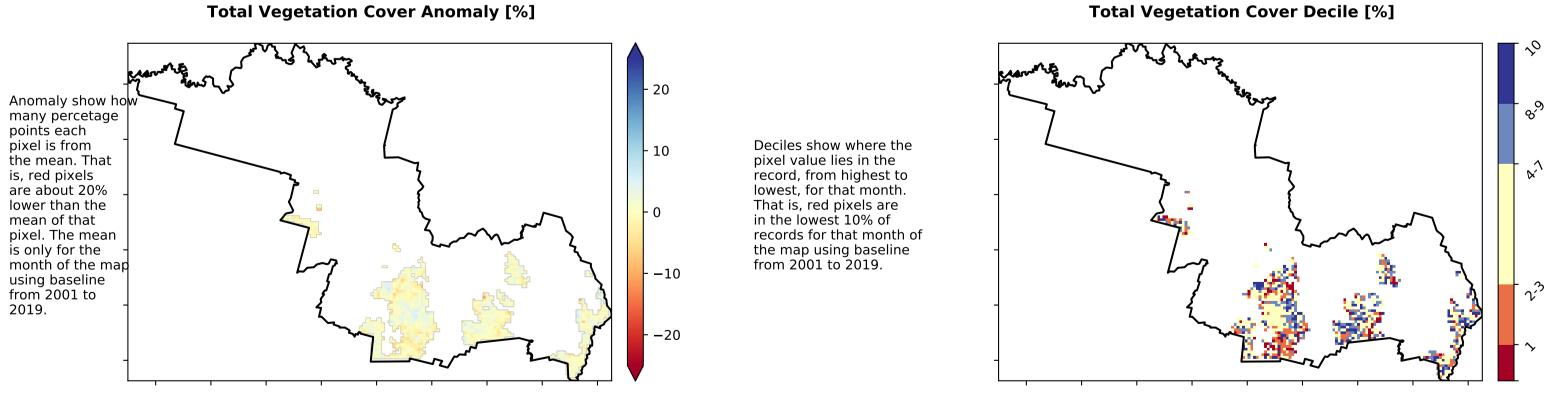
% Area protected from wind erosion (>50%)



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Total Vegetation Cover Decile [%]

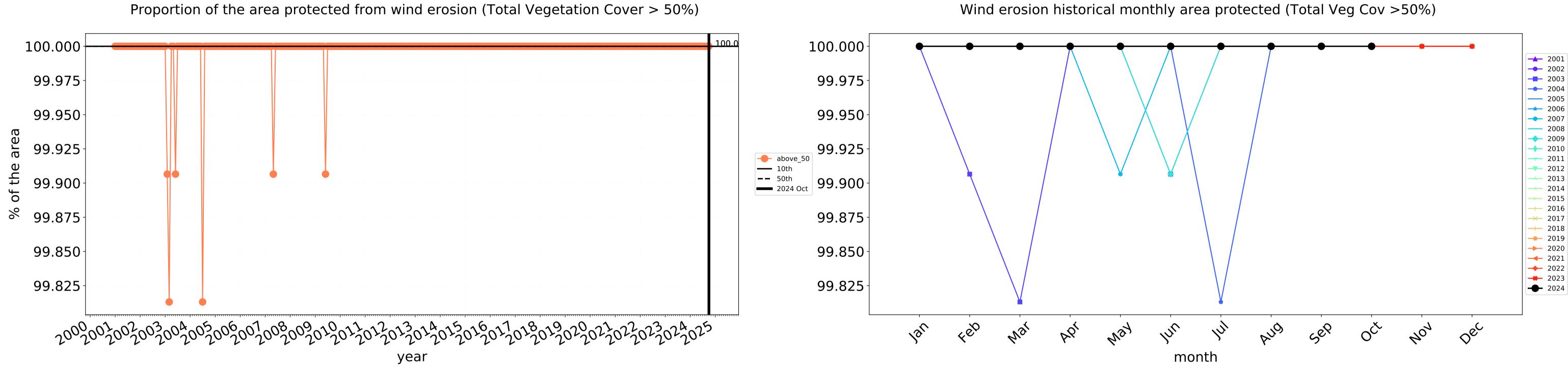


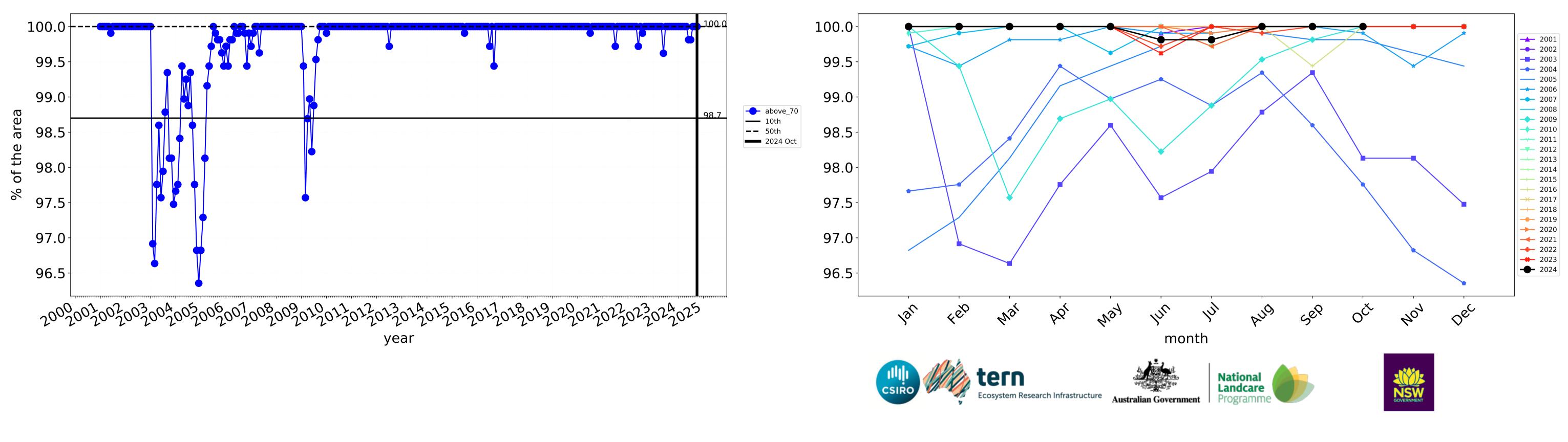


Area

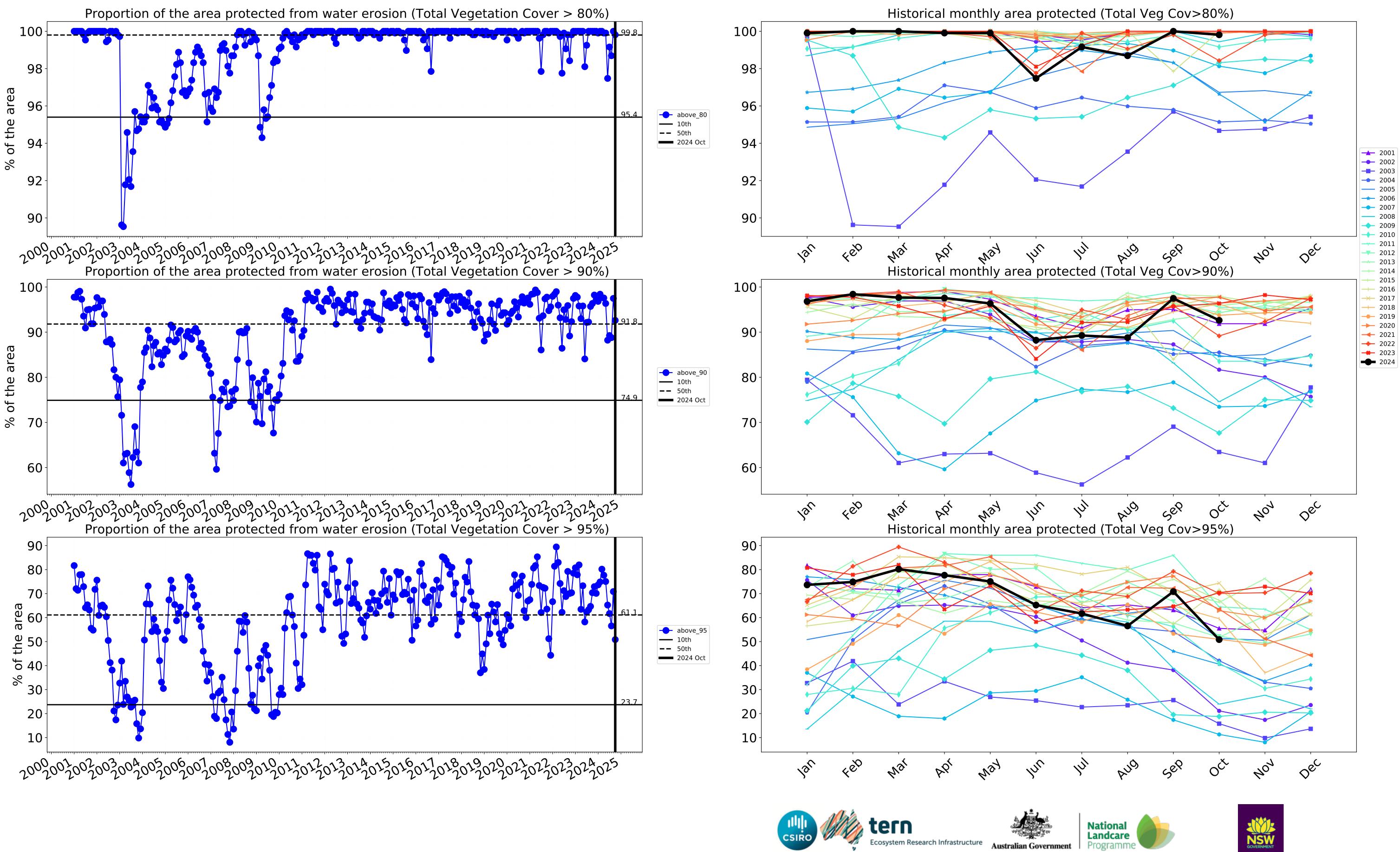
protected 100.0% of

region (26,750 ha)





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





Indigo_(S) (202,950 ha and no data 926 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	202,950	100.0% 202,925	99.9% 202,800	99.5% 202,025	95.4% 193,600	44.3% 89,825	12.2% 24,850
Conservation and natural environments	24,050	100.0% 24,050	100.0% 24,050	100.0% 24,050	99.2% 23,850	68.2% 16,400	12.7% 3,050
Conservation and natural environments Woodland forest	5,900	100.0% 5,900	100.0% 5,900	100.0% 5,900	98.3% 5,800	63.1% 3,725	10.2% 600
Conservation and natural environments Forest (non woodland)	16,675	100.0% 16,675	100.0% 16,675	100.0% 16,675	99.6% 16,600	70.6% 11,775	13.3% 2,225
Agriculture	133,950	100.0% 133,950	100.0% 133,950	99.7% 133,575	95.0% 127,225	32.5% 43,600	5.5% 7,425
Grazing	115,275	100.0% 115,275	100.0% 115,275	99.8% 115,075	96.1% 110,825	34.4% 39,625	6.0% 6,925
Grazing non forest	105,525	100.0% 105,525	100.0% 105,525	99.8% 105,325	95.8% 101,125	30.9% 32,600	4.4% 4,650
Grazing Woodland forest	2,350	100.0% 2,350	100.0% 2,350	100.0% 2,350	98.9% 2,325	63.8% 1,500	8.5% 200
Grazing - Forest (non woodland)	7,400	100.0% 7,400	100.0% 7,400	100.0% 7,400	99.7% 7,375	74.7% 5,525	28.0% 2,075
Cropping	6,625	100.0% 6,625	100.0% 6,625	97.7% 6,475	76.6% 5,075	12.1% 800	2.3% 150
Horticulture	3,900	100.0% 3,900	100.0% 3,900	100.0% 3,900	93.6% 3,650	23.7% 925	3.2% 125
Irrigation	8,150	100.0% 8,150	100.0% 8,150	99.7% 8,125	94.2% 7,675	27.6% 2,250	2.8% 225
Production native forests and plantation forests	26,750	100.0% 26,750	100.0% 26,750	100.0% 26,750	99.8% 26,700	92.6% 24,775	50.8% 13,600

