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

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

Land use forest cover:

Date: January 2023

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



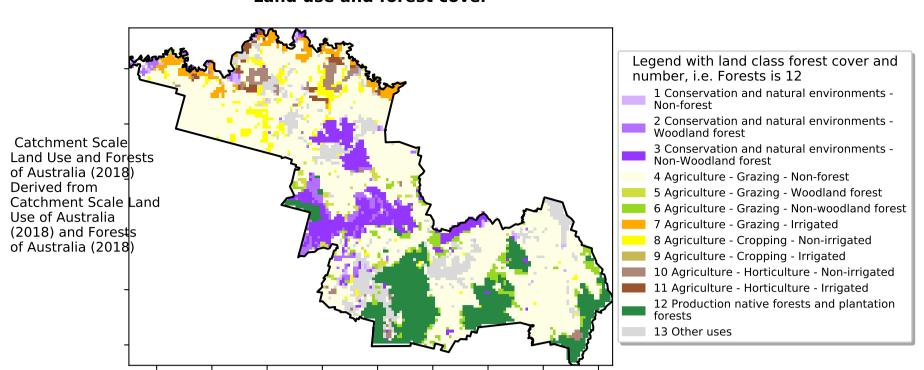




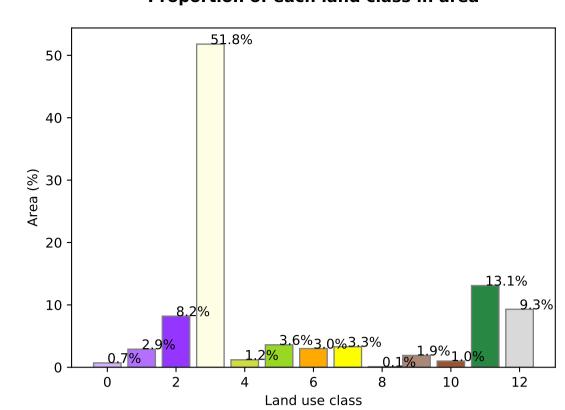


Vegetation Cover Jan 2023

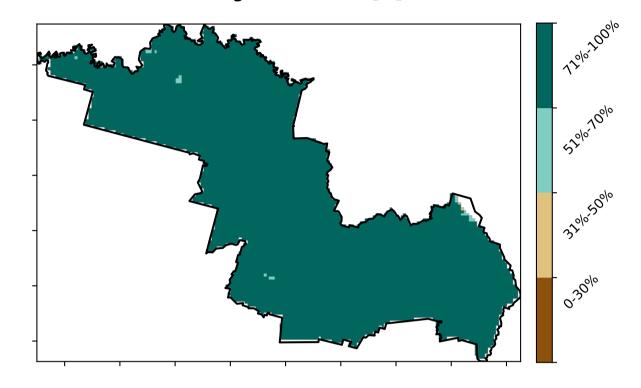
Land use and forest cover



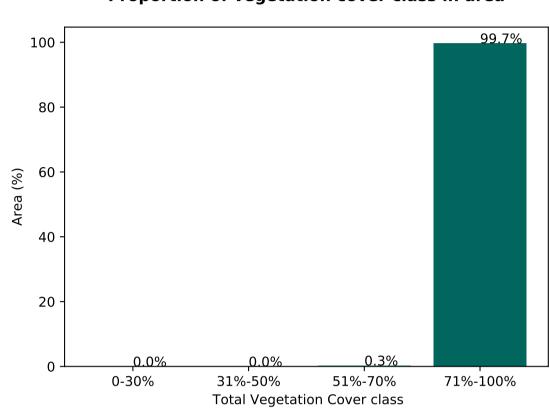
Proportion of each land class in area



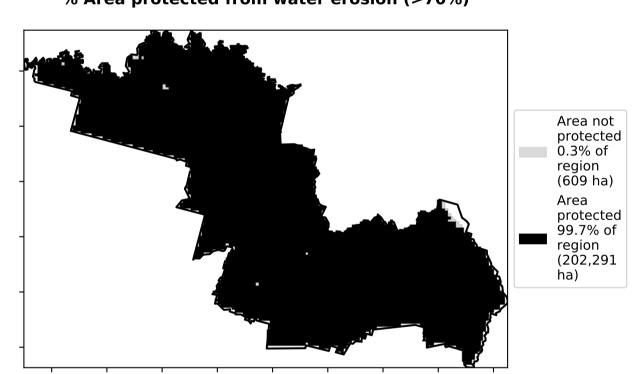
Total Vegetation Cover [%]



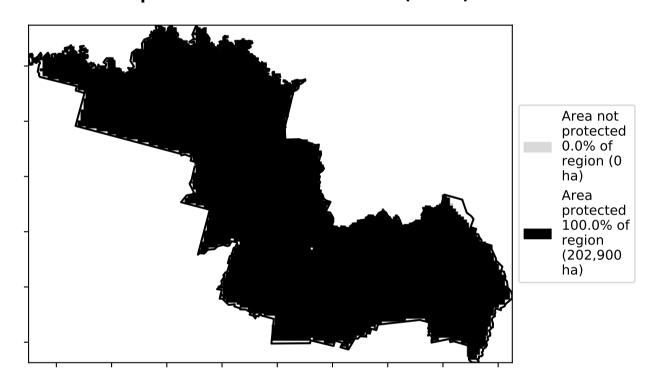
Proportion of vegetation cover class in area



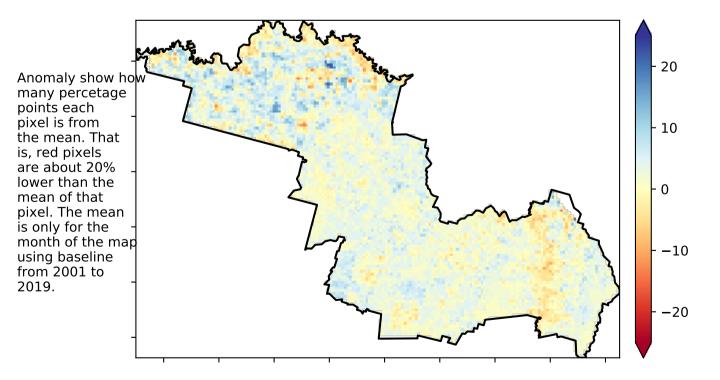
% Area protected from water erosion (>70%)



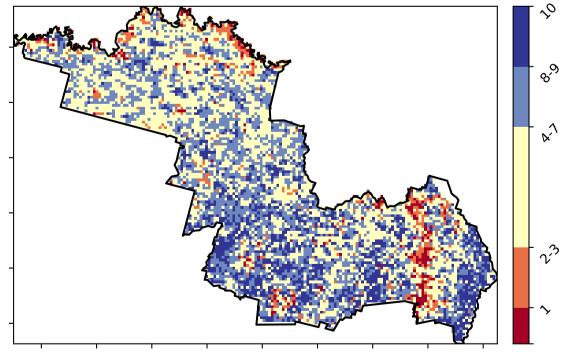
% Area protected from wind erosion (>50%)



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.

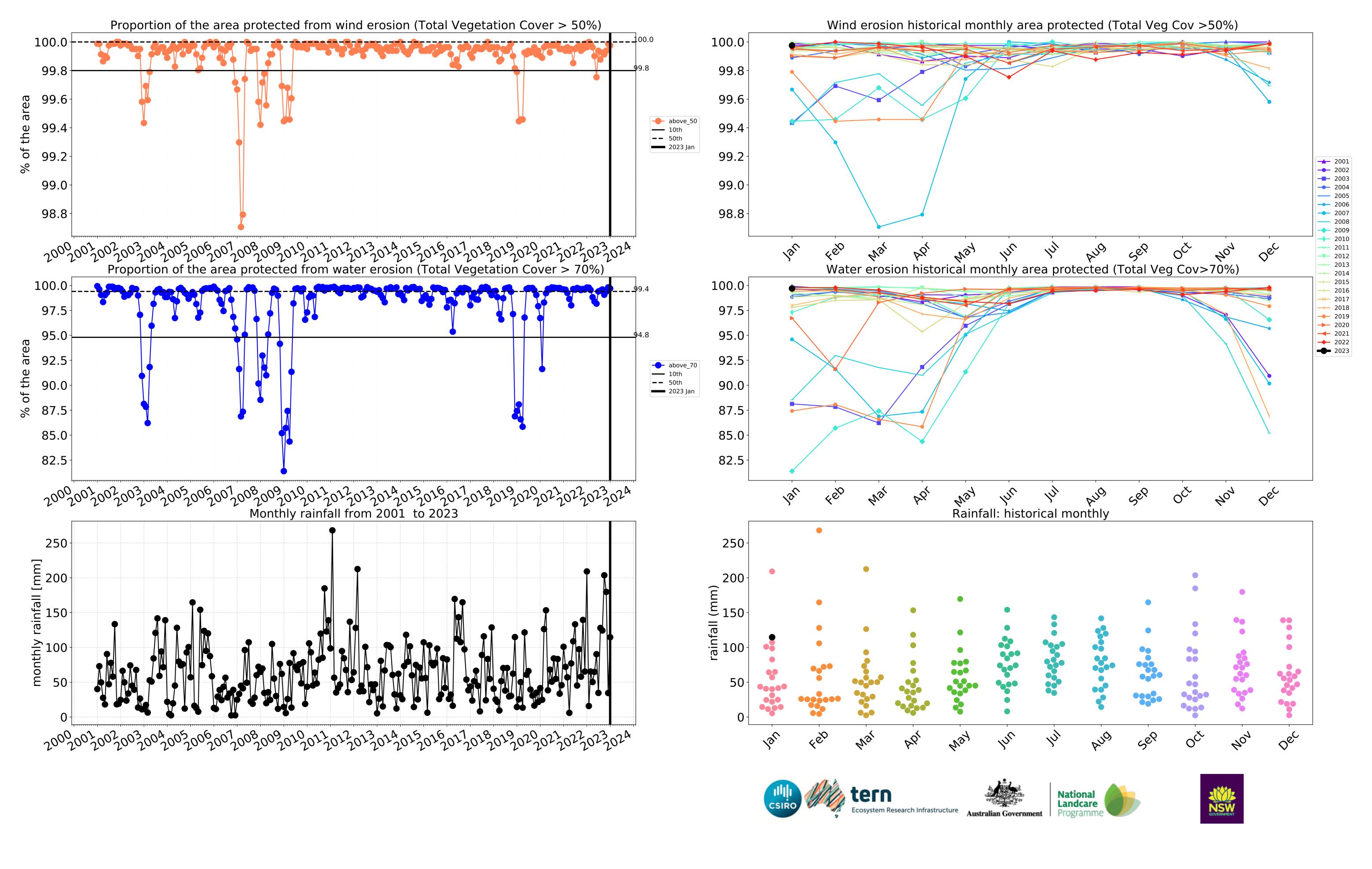


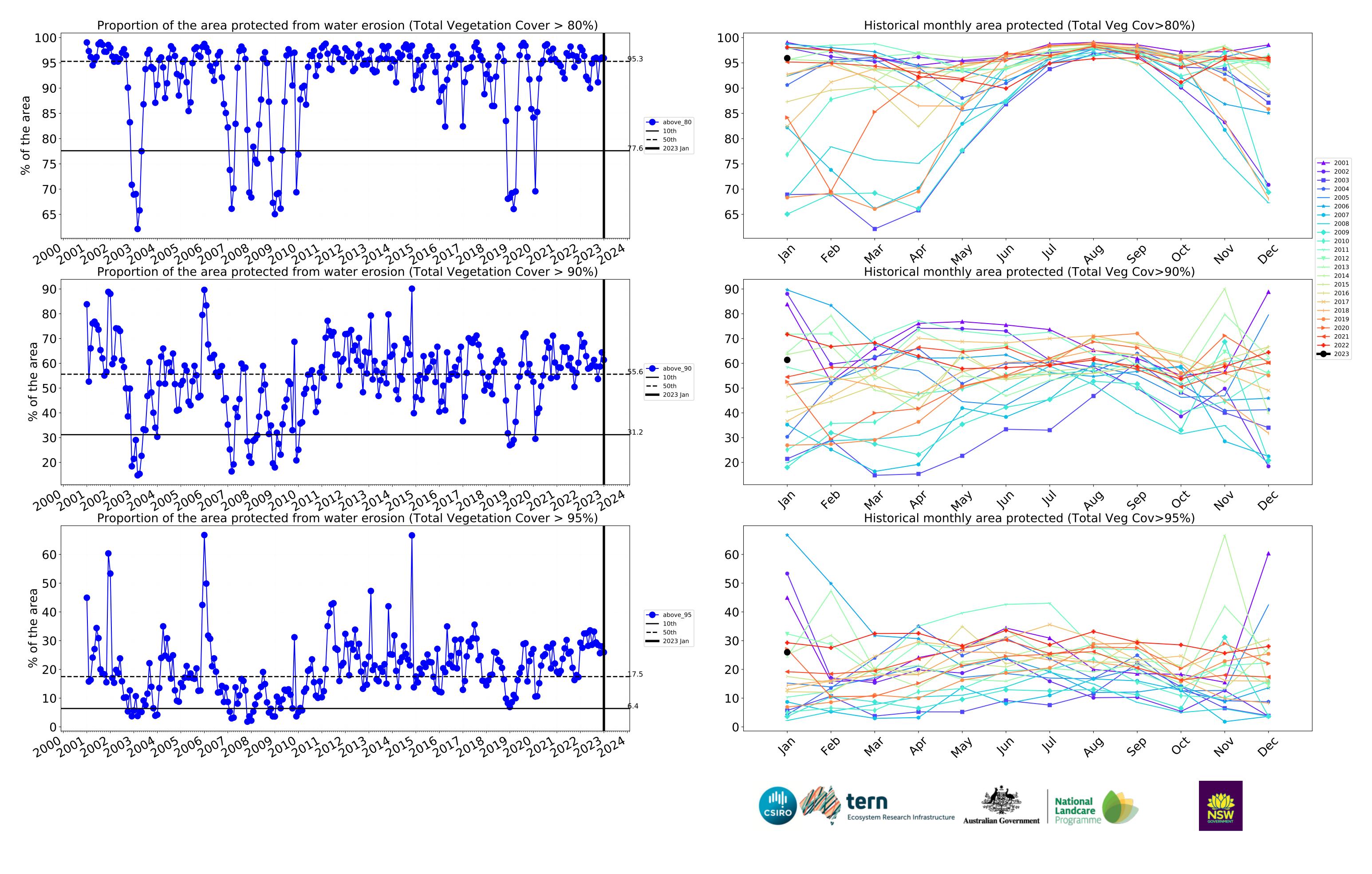












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Conservation and natural environments

Proportion of each land class in area Land use and forest cover 69.3% 70 60 · Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Nonforest 2 Conservation and natural environments - Woodland Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 3 Conservation and natural environments - Non-woodland forest 30 24.5% 20 · 10 6.1% 1.5 -0.50.0 0.5 1.0 2.0 Land use class **Proportion of vegetation cover class in area Total Vegetation Cover [%]** 100.0% 100 Area (%) 60 40 20 -0.0%0.0% 51%-70% 0-30% 31%-50% 71%-100% **Total Vegetation Cover class** % Area protected from water erosion (>70%) % Area protected from wind erosion (>50%) Area Area protected 100.0% of protected 100.0% of region (24,050 region (24,050 ha) ha) **Total Vegetation Cover Decile [%] Total Vegetation Cover Anomaly [%]** - 20 Anomaly show how many percetage points each pixel is from Deciles show where the pixel value lies in the - 10 the mean. That record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of is, red pixels are about 20% lower than the - 0 mean of that pixel. The mean records for that month of is only for the -month of the map the map using baseline from 2001 to 2019. using baseline from 2001 to 2019. -10**-**20



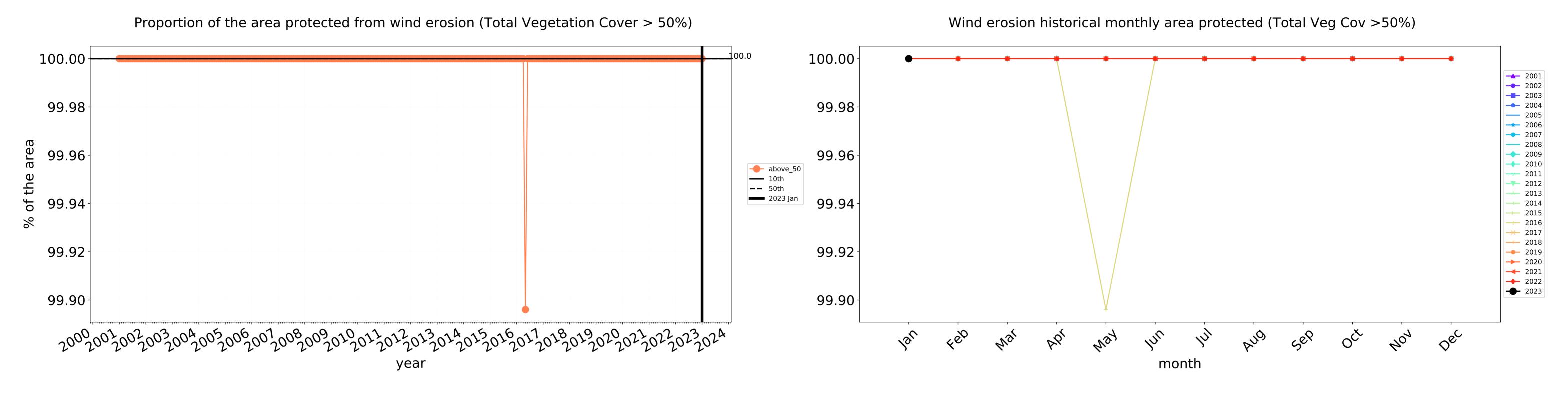
Australian Government

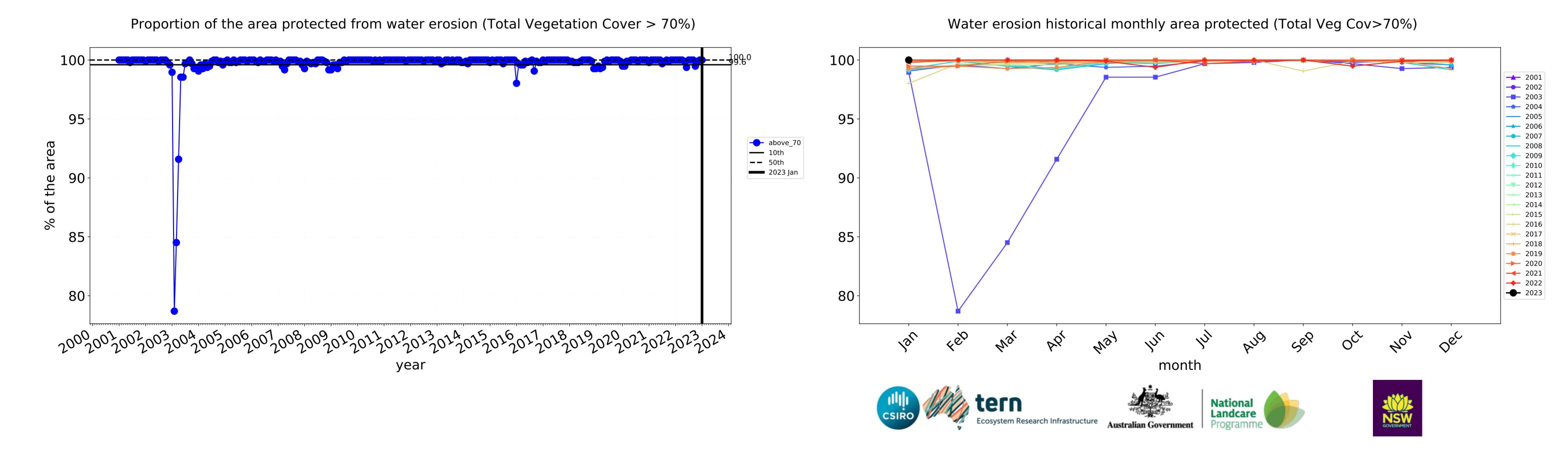
Ecosystem Research Infrastructure

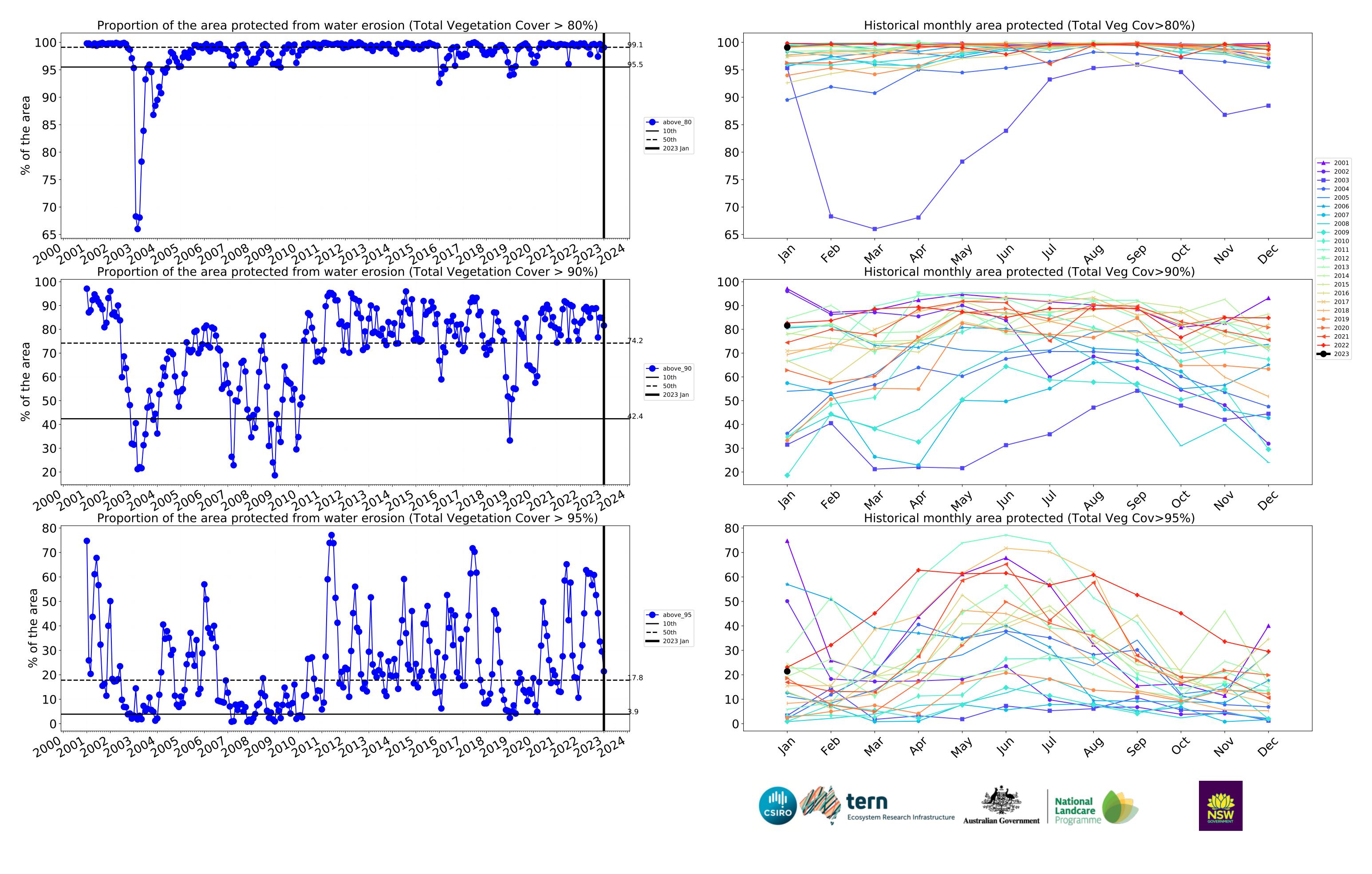
National Landcare

Programme

Conservation and natural environments timeseries

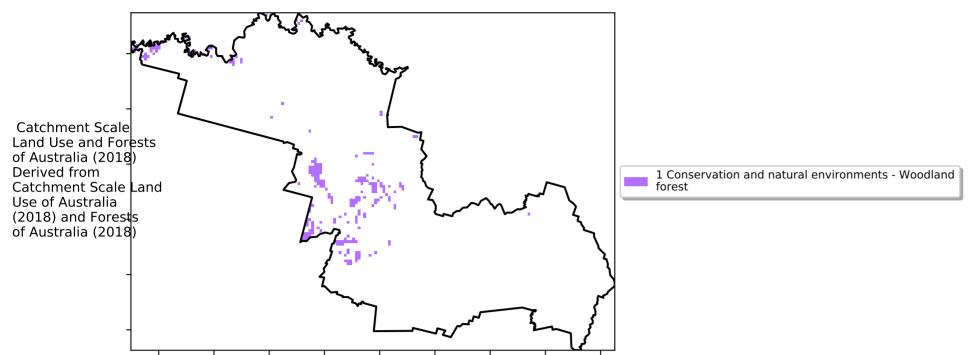




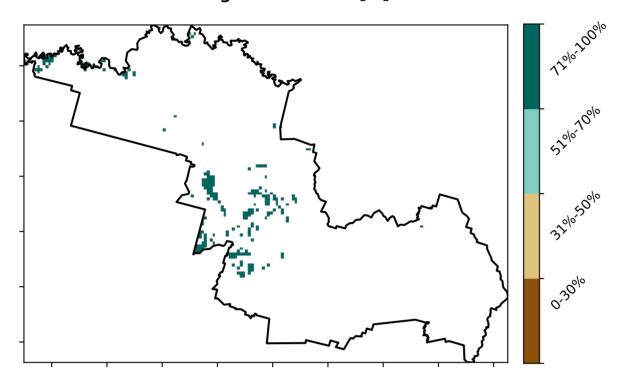


Conservation and natural environments Woodland forest

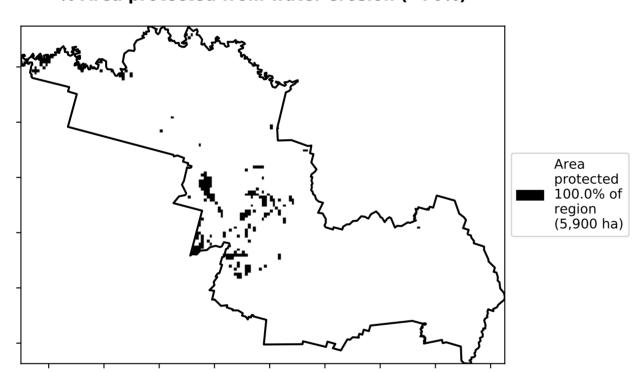
Land use and forest cover



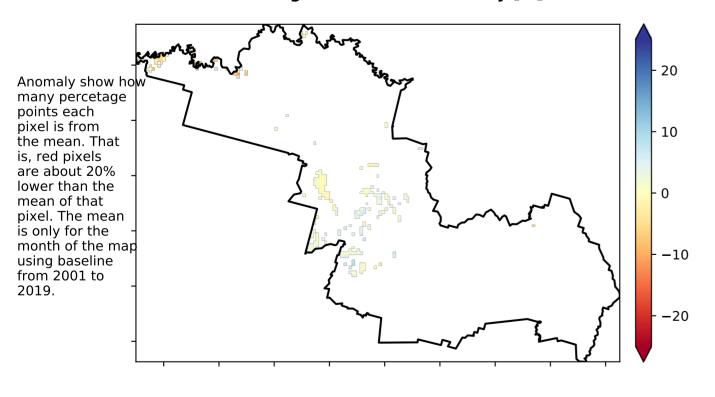
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

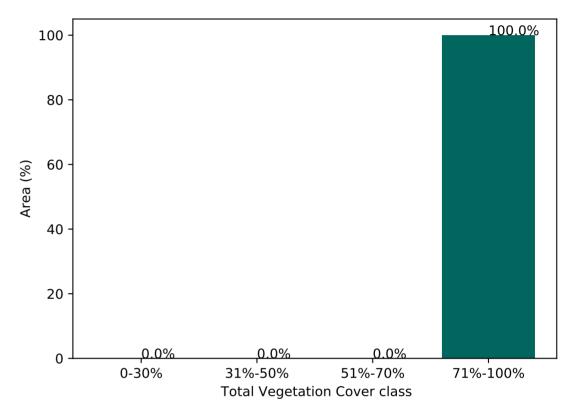


Total Vegetation Cover Anomaly [%]

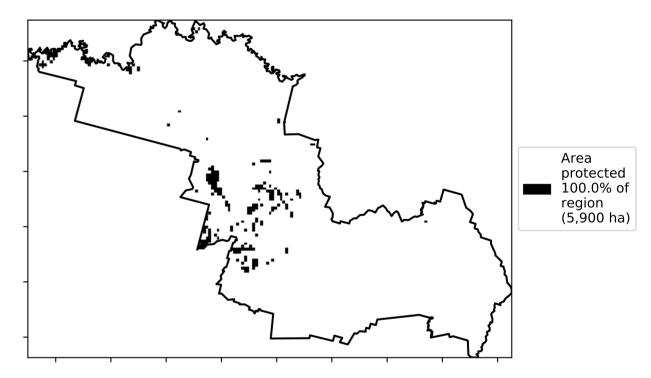


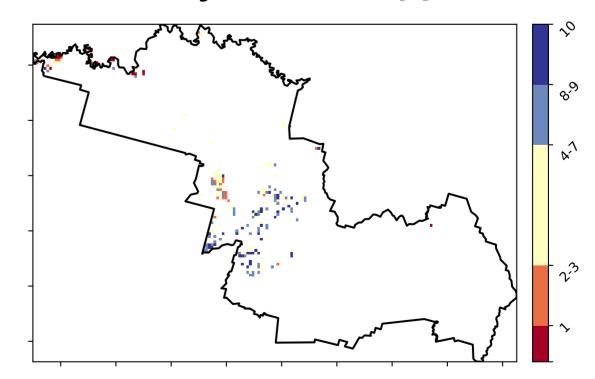
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



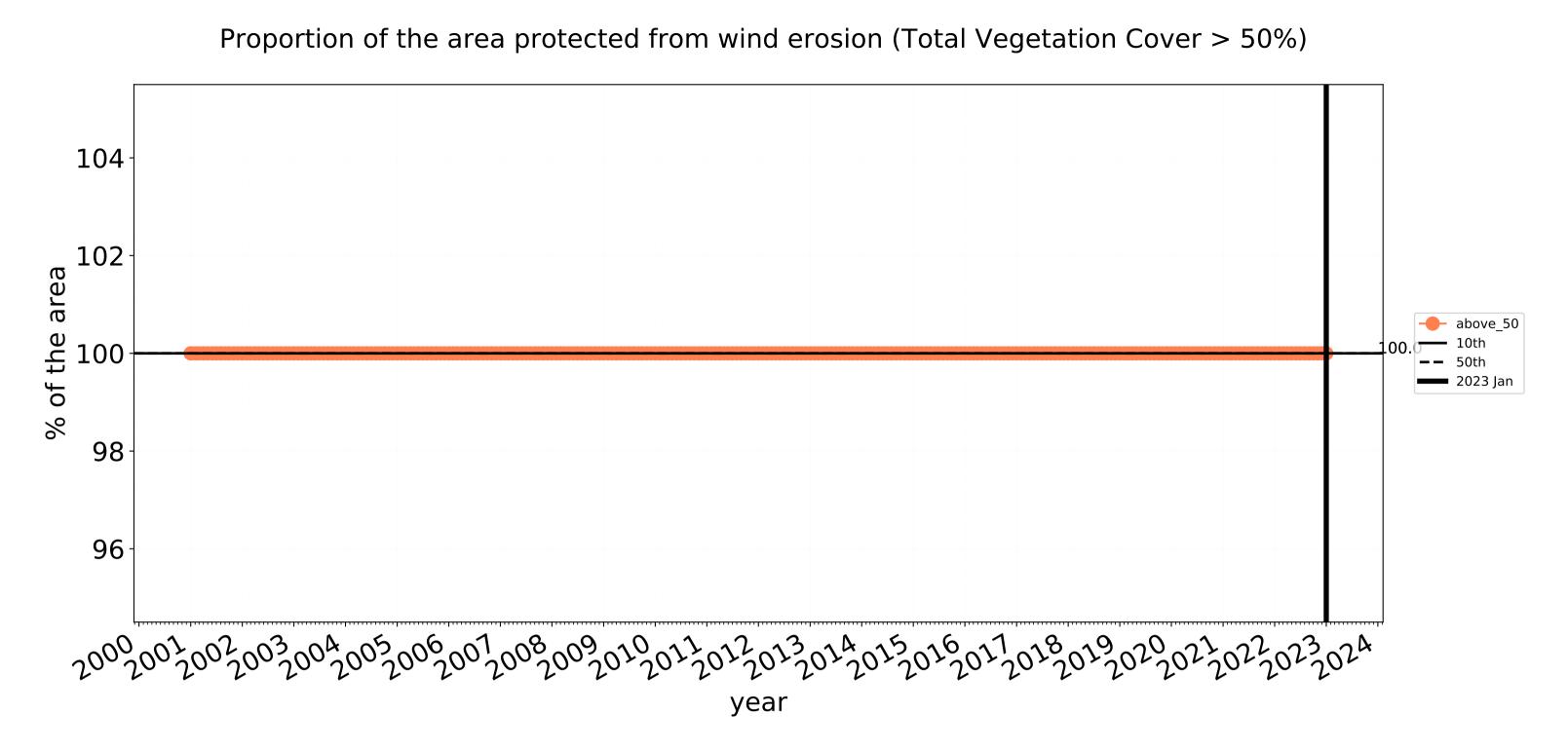


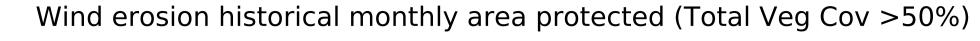


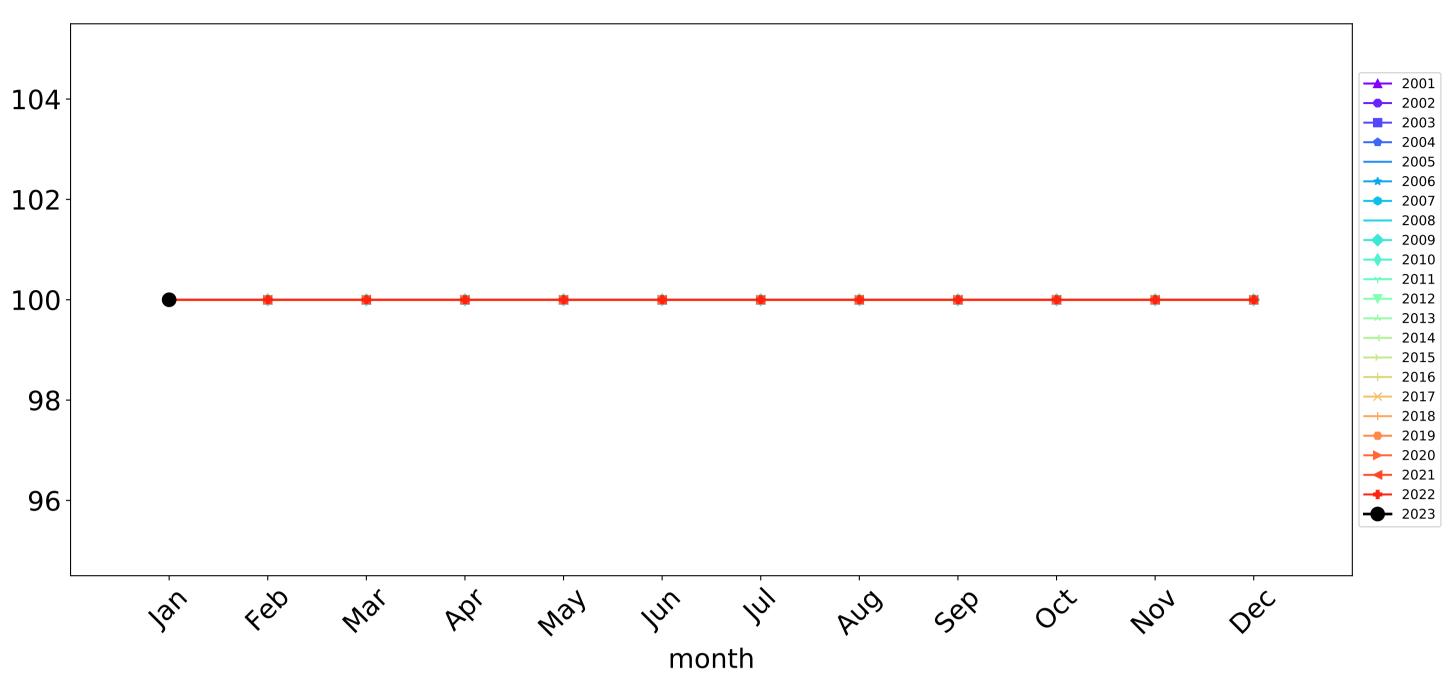


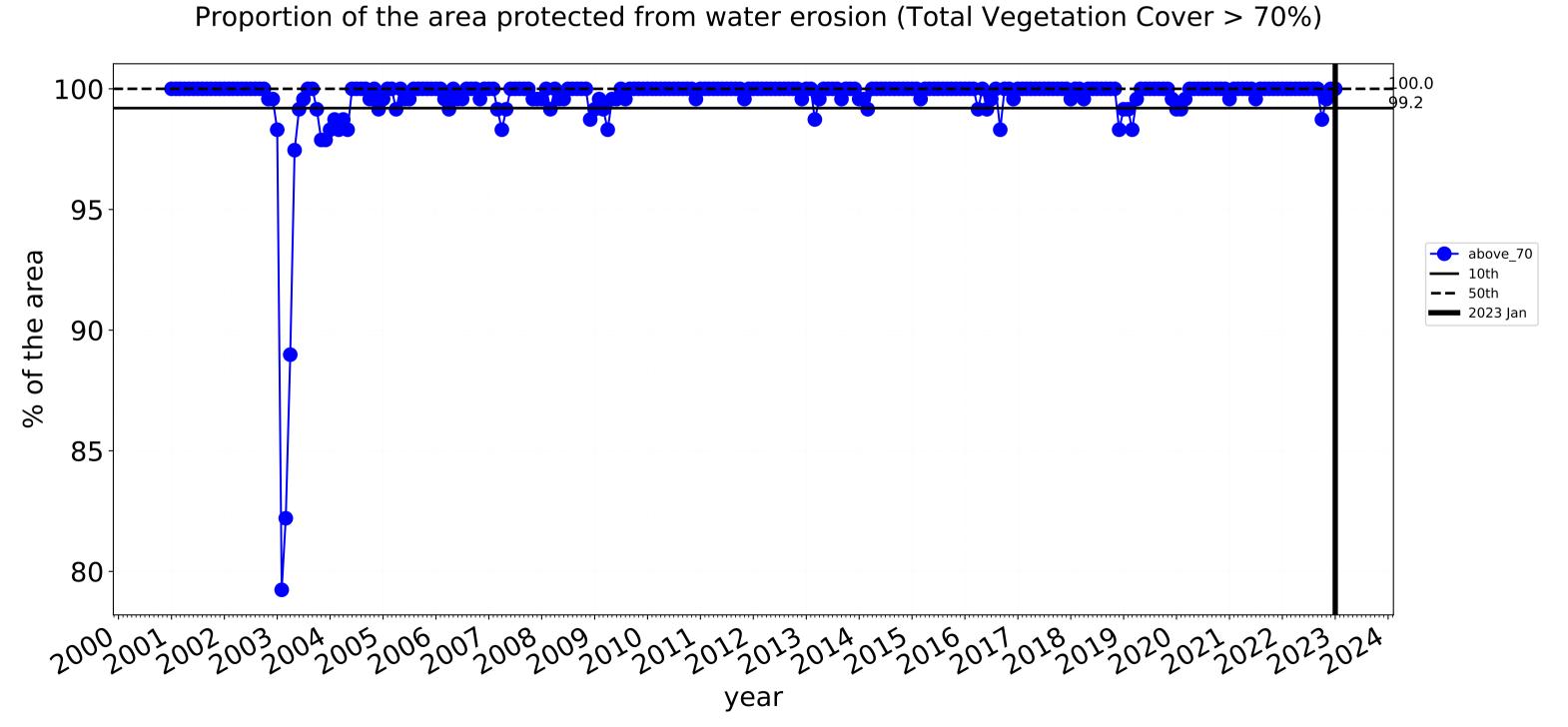


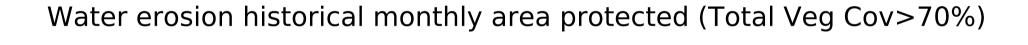


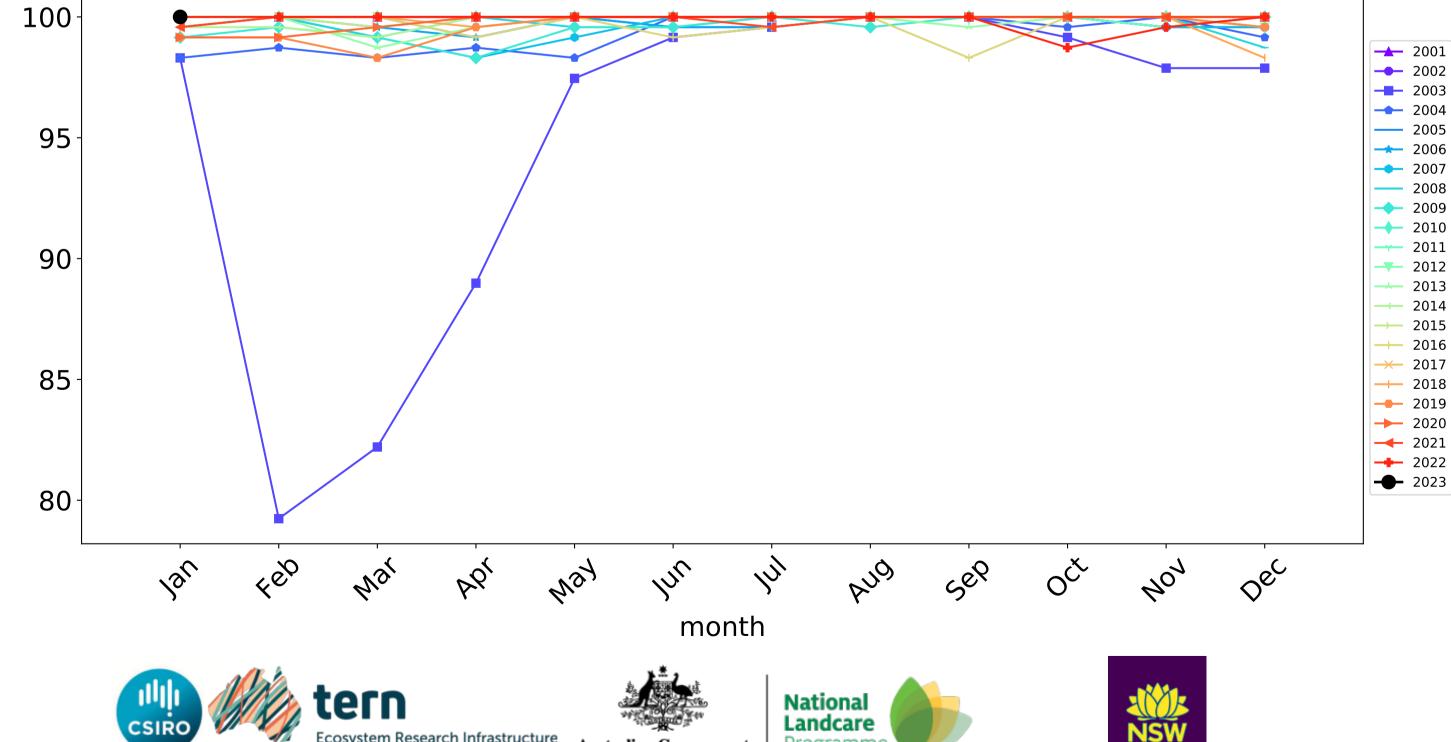








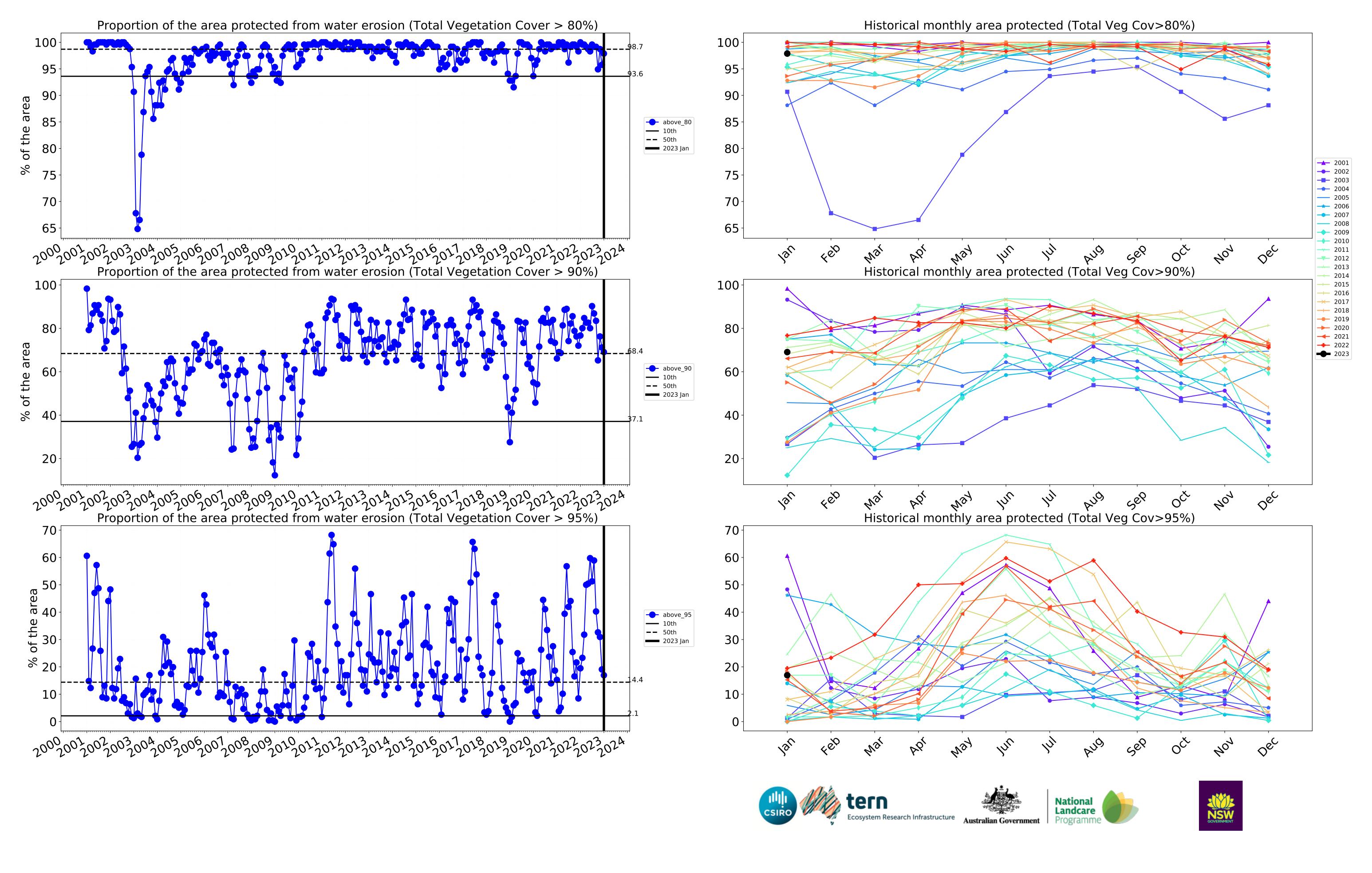




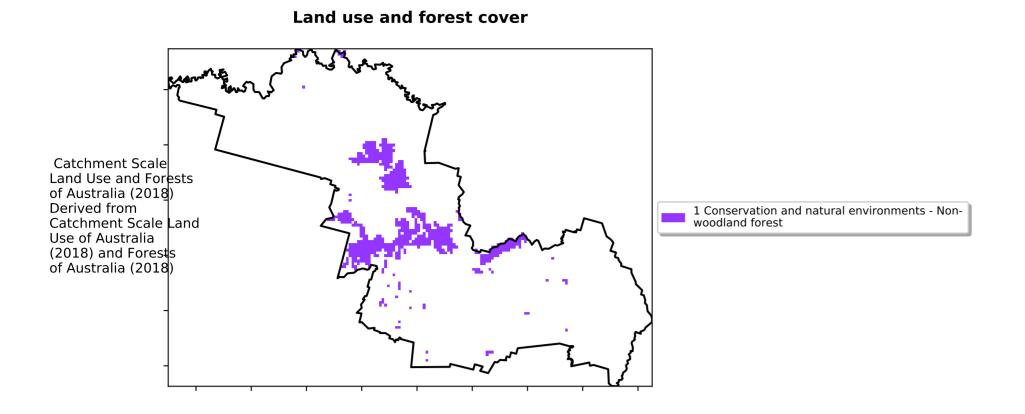




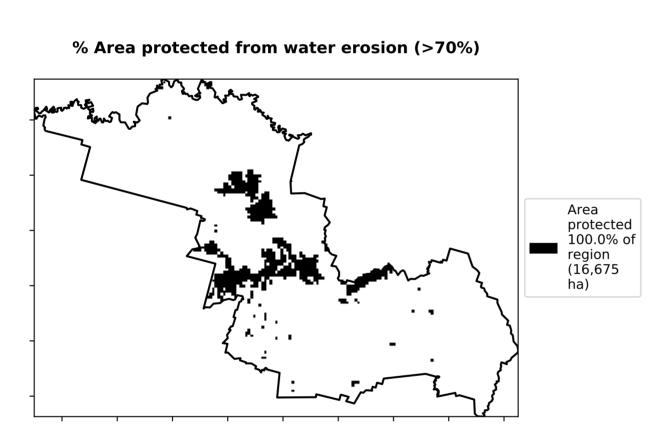


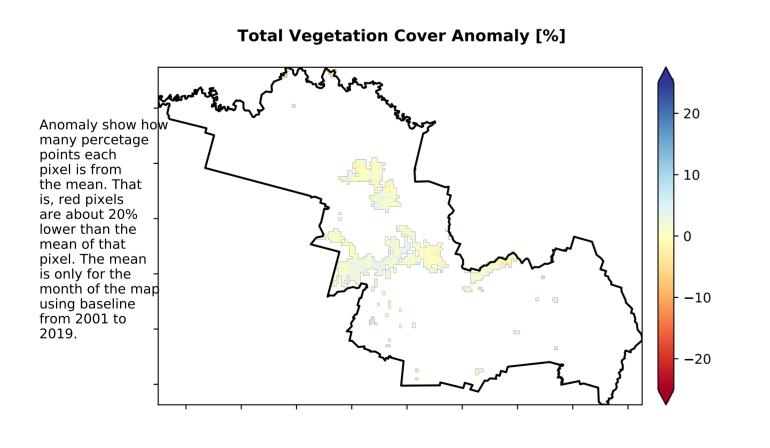


Conservation and natural environments Forest (non woodland)

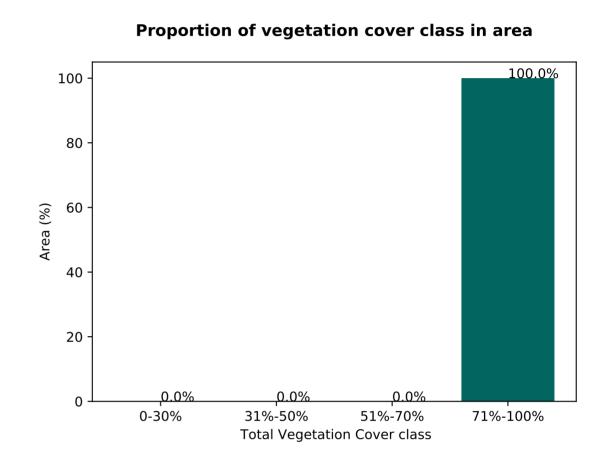


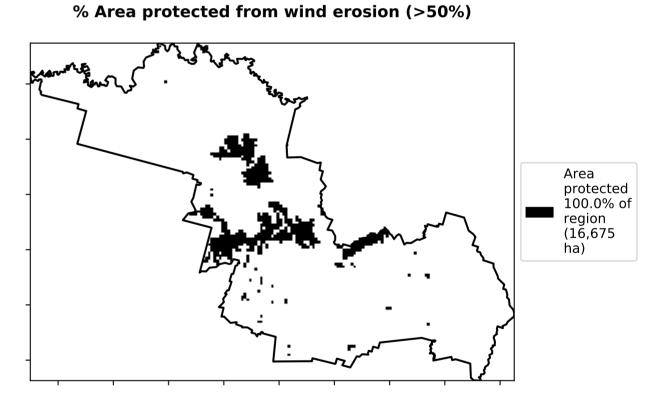
Total Vegetation Cover [%]

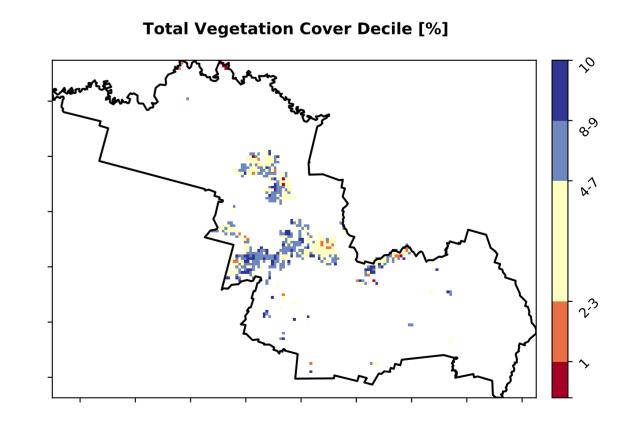




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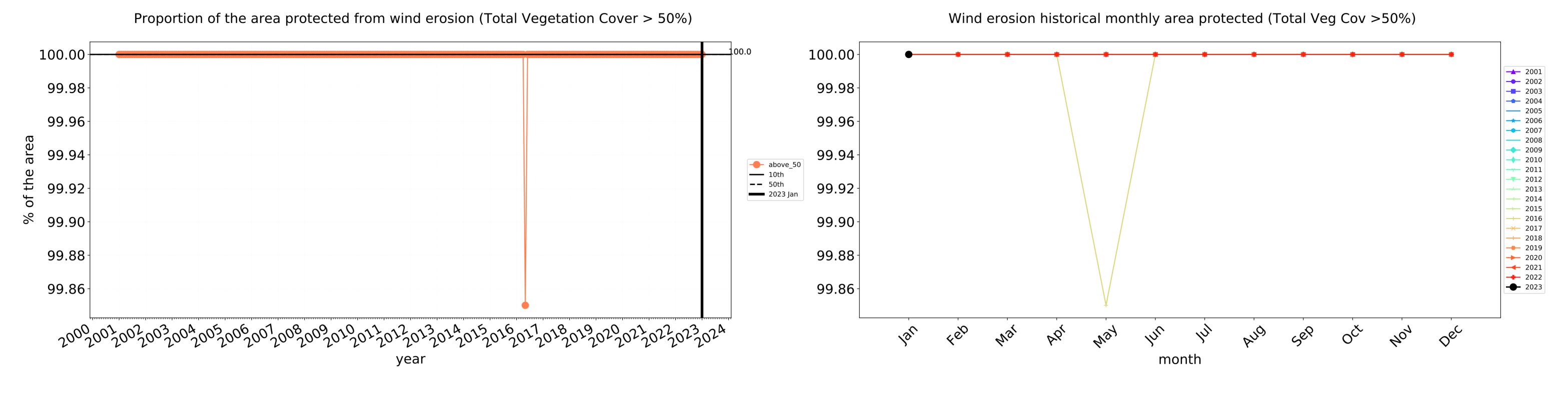


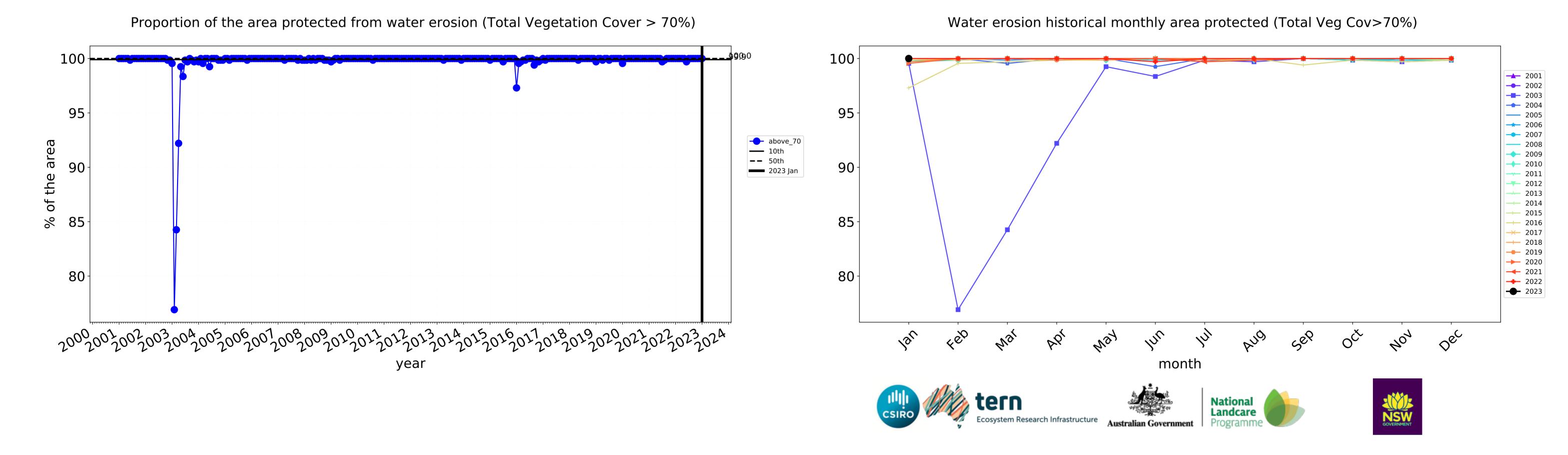


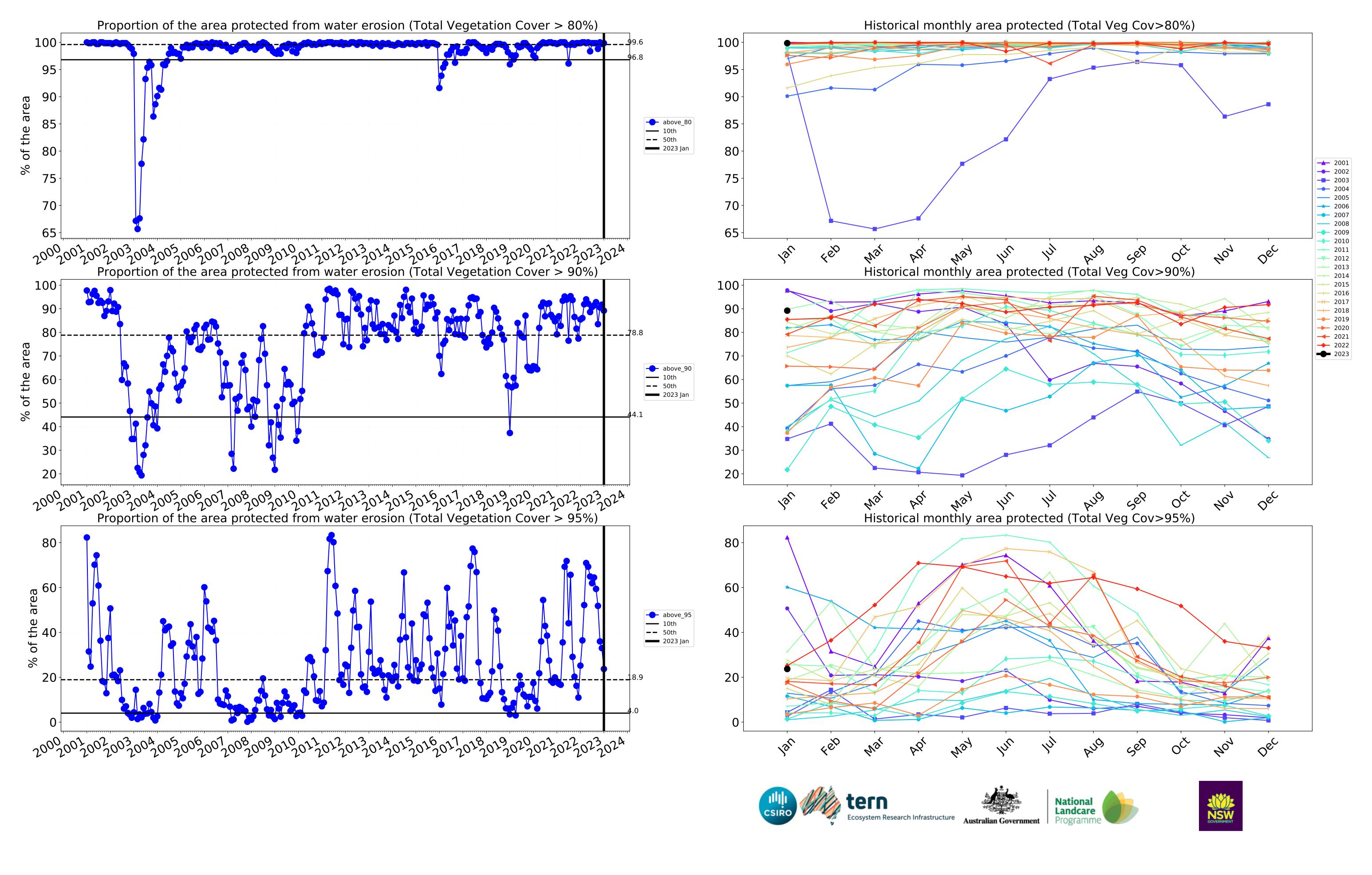






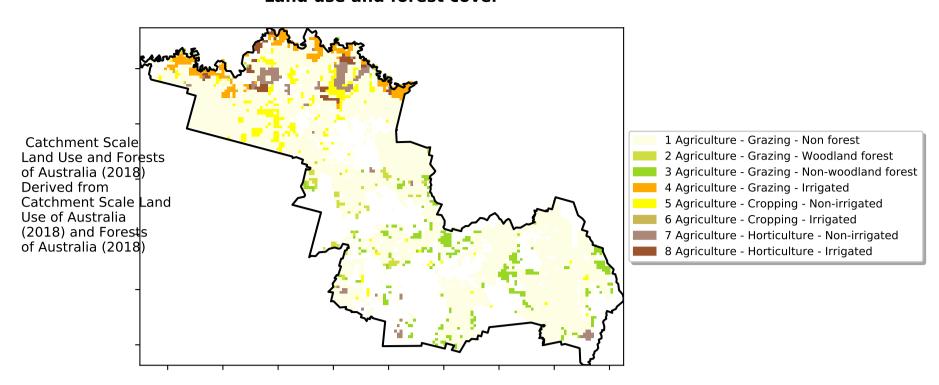




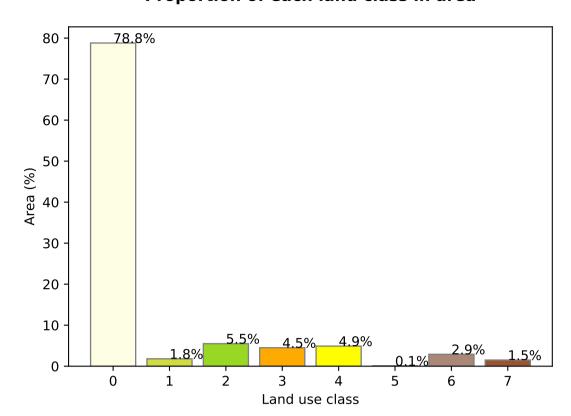


Agriculture

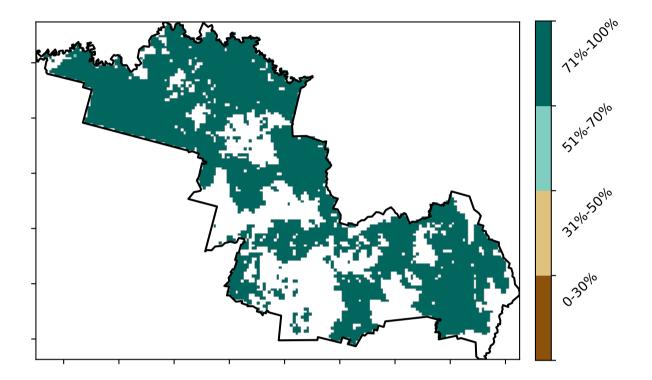
Land use and forest cover



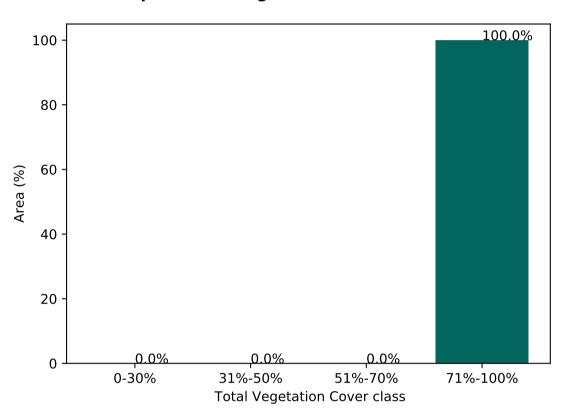
Proportion of each land class in area



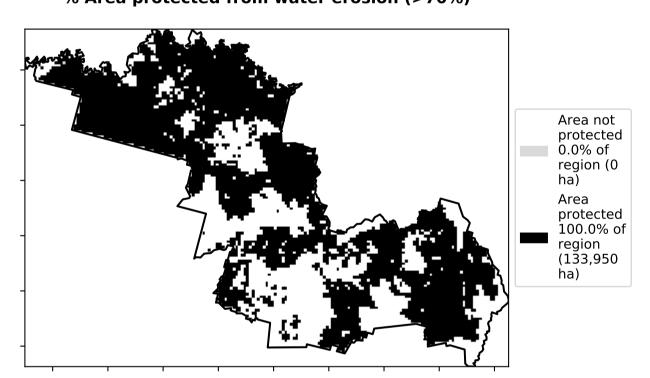
Total Vegetation Cover [%]



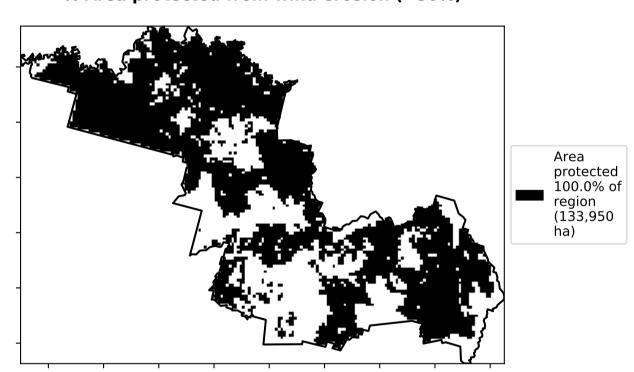
Proportion of vegetation cover class in area



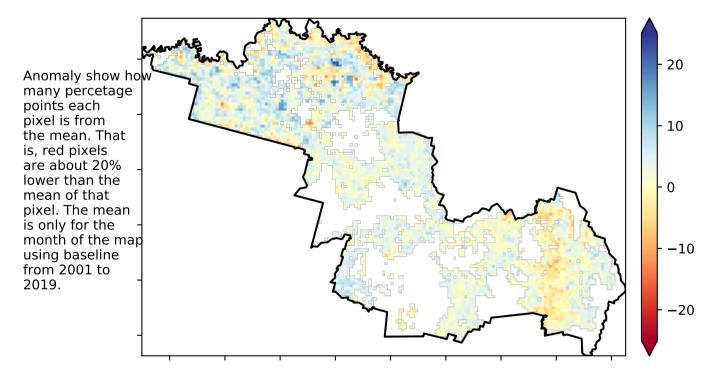
% Area protected from water erosion (>70%)



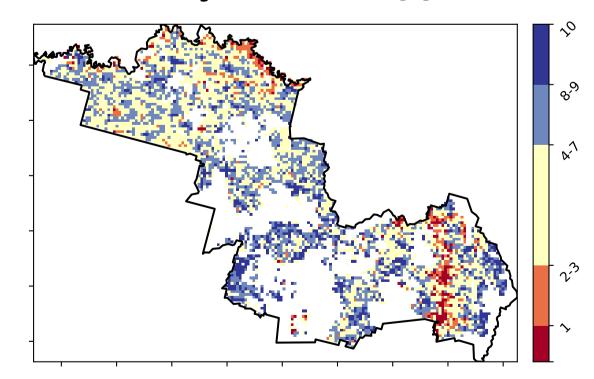
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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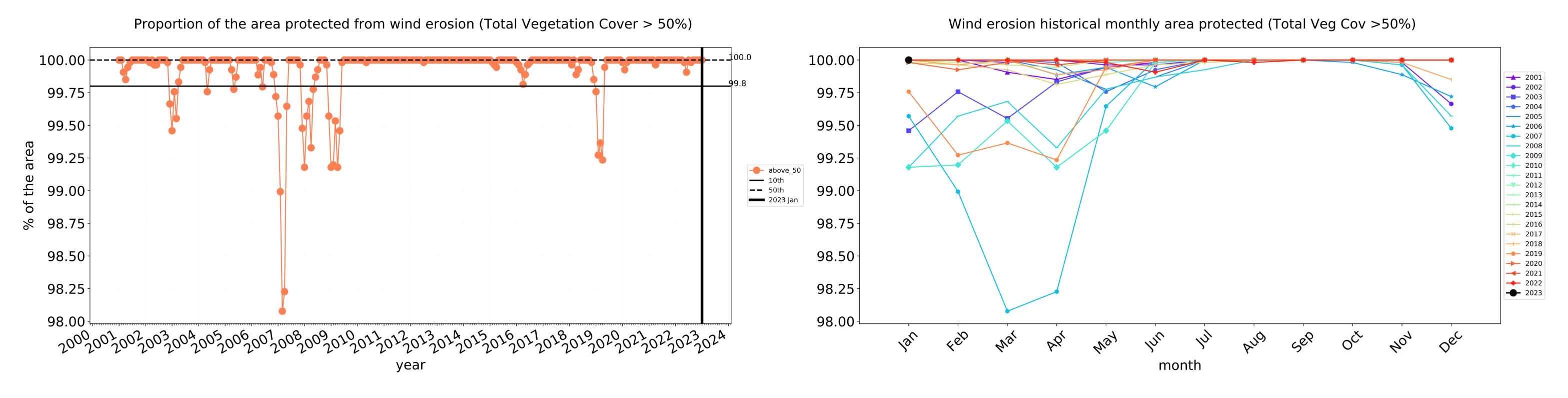


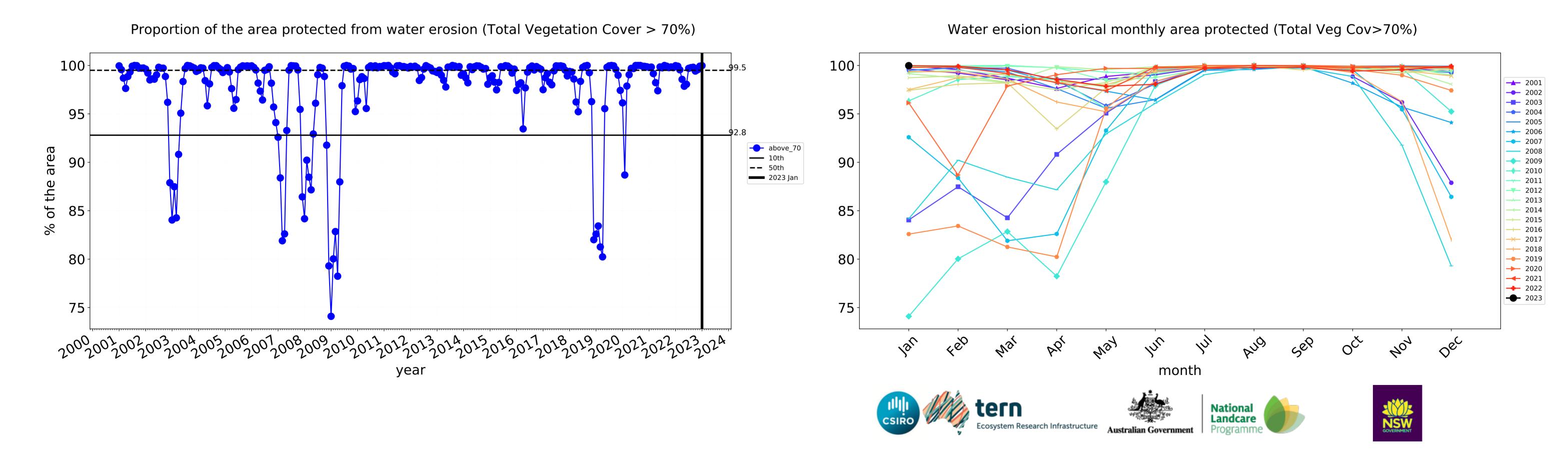


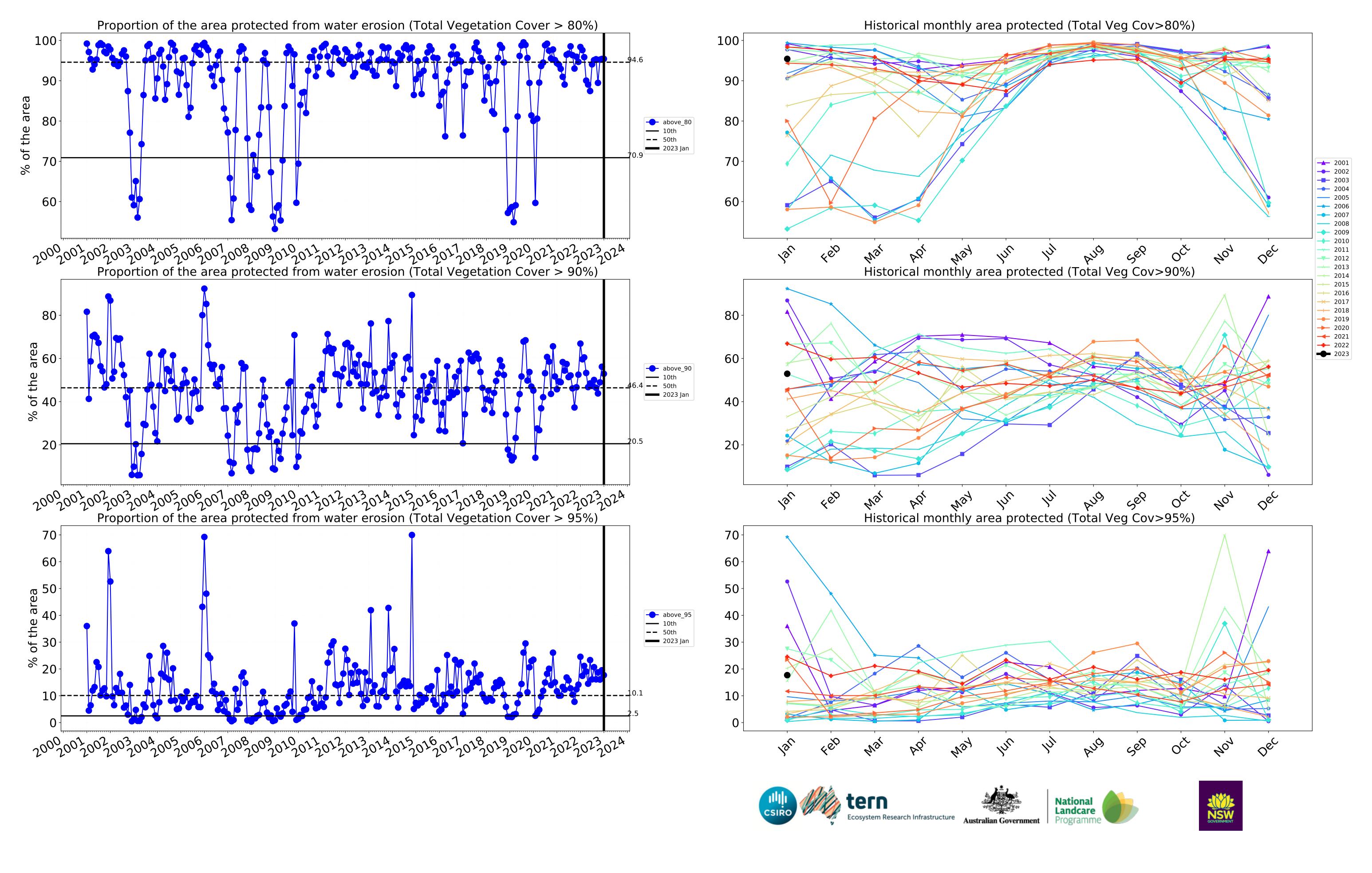




Agriculture timeseries

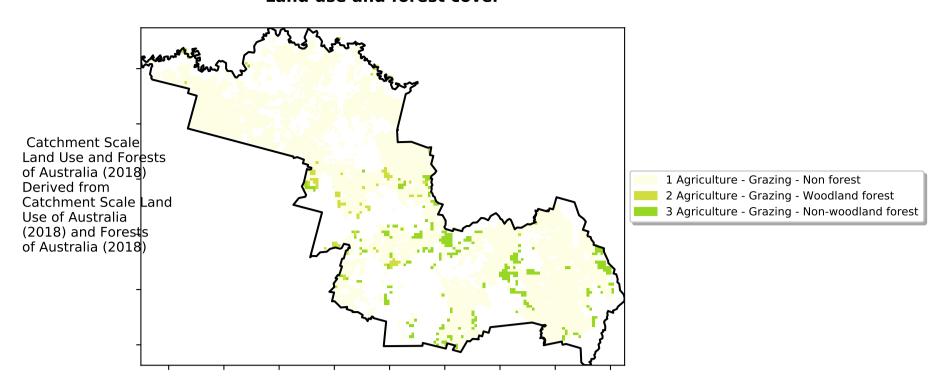




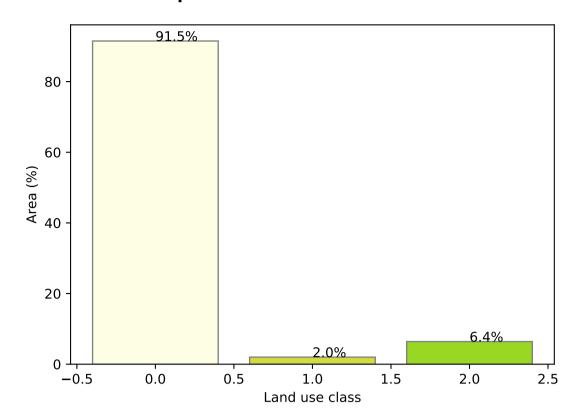


Grazing

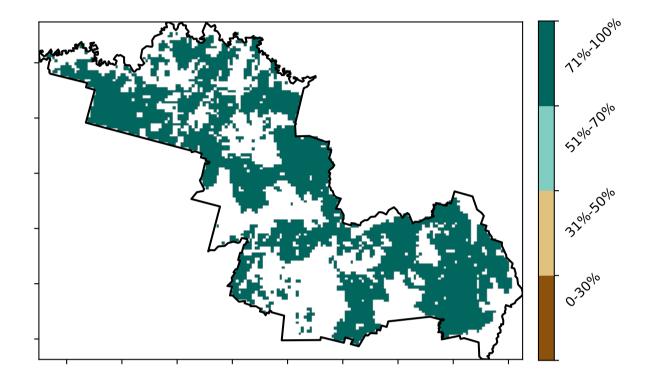
Land use and forest cover



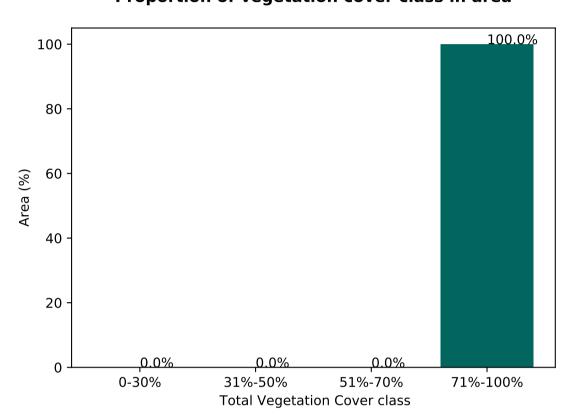
Proportion of each land class in area



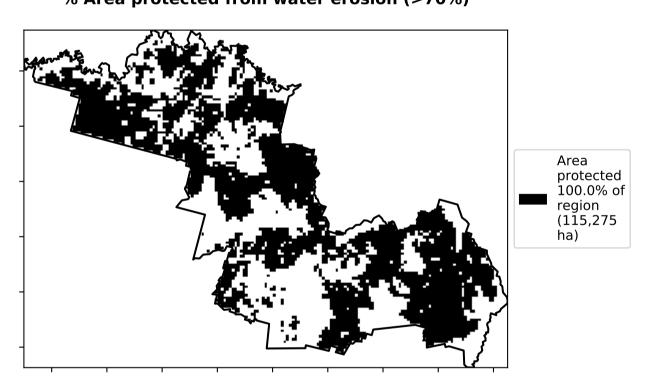
Total Vegetation Cover [%]



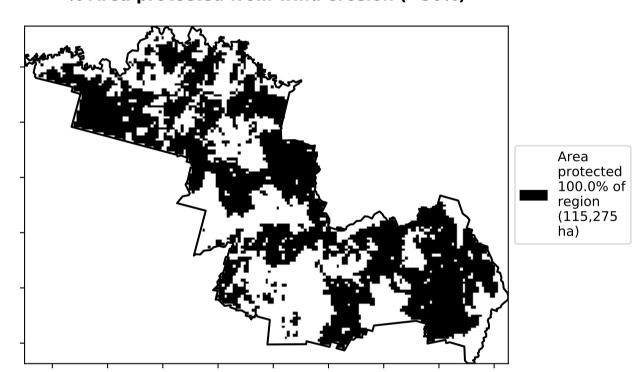
Proportion of vegetation cover class in area



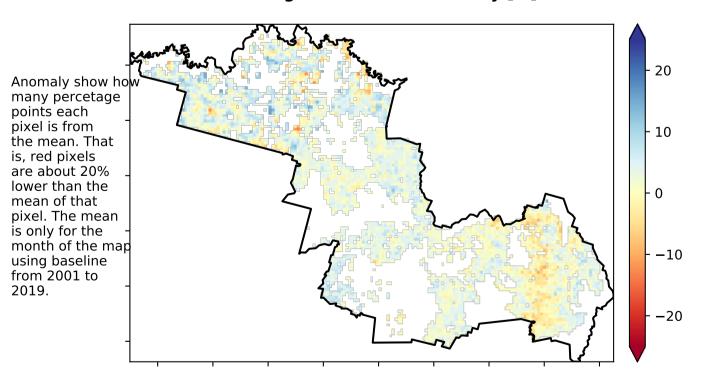
% Area protected from water erosion (>70%)



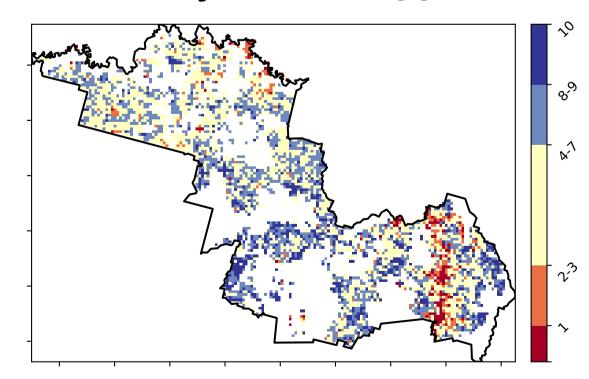
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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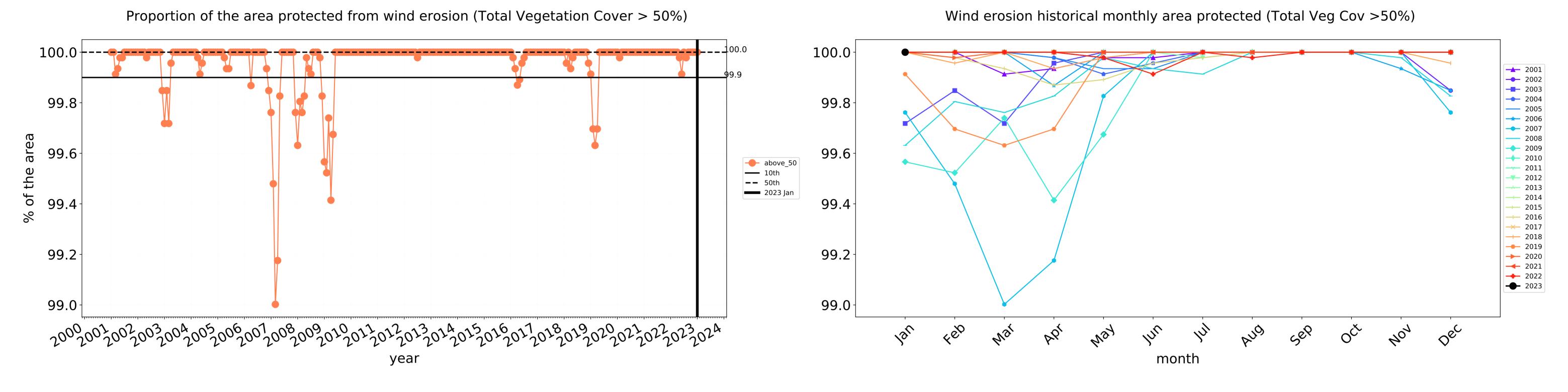


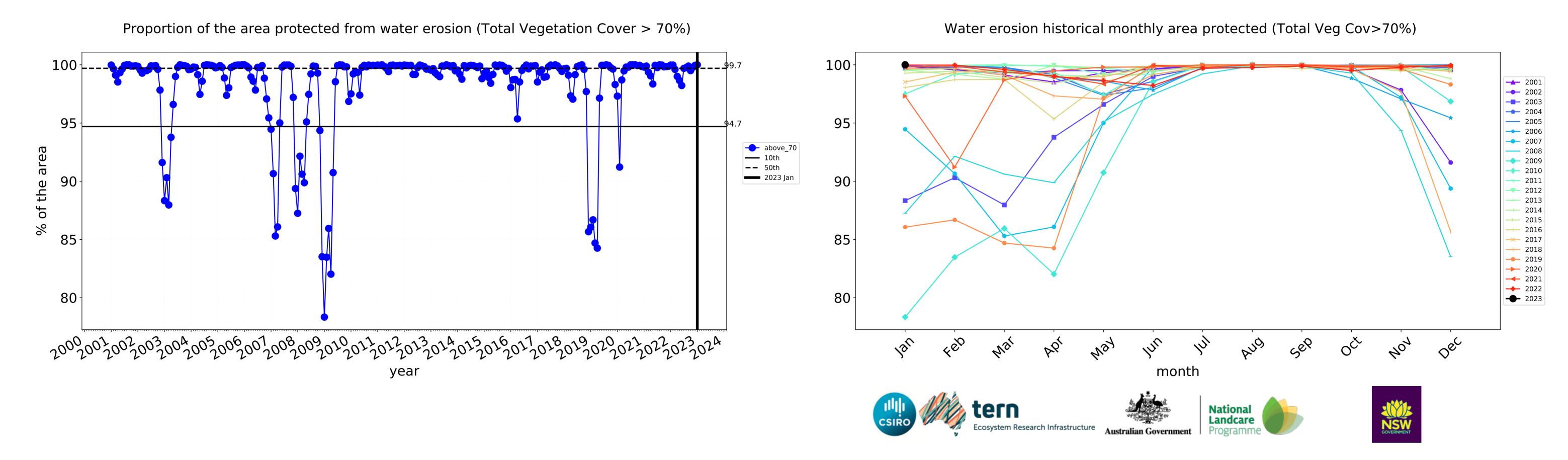


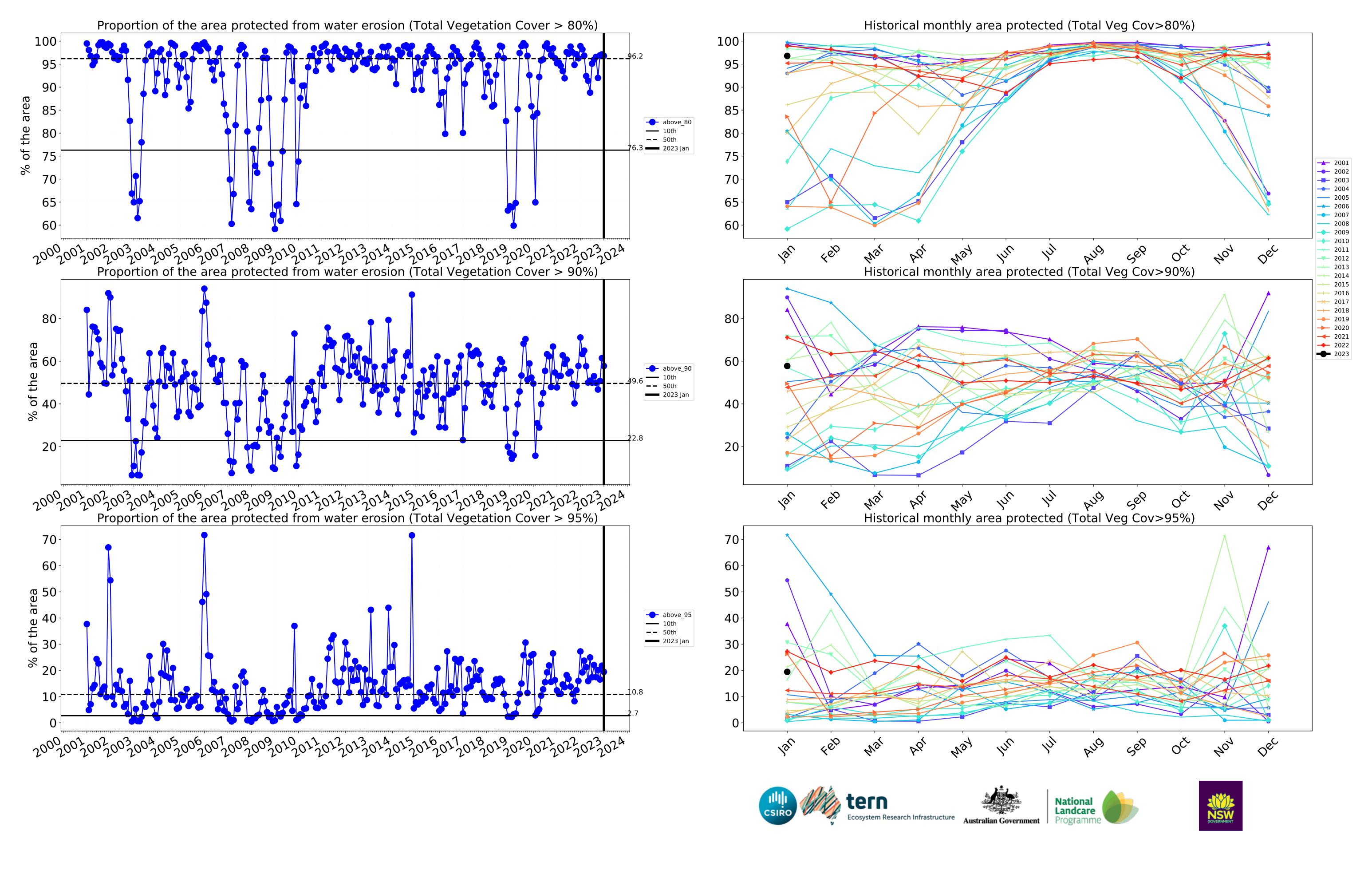




Grazing timeseries

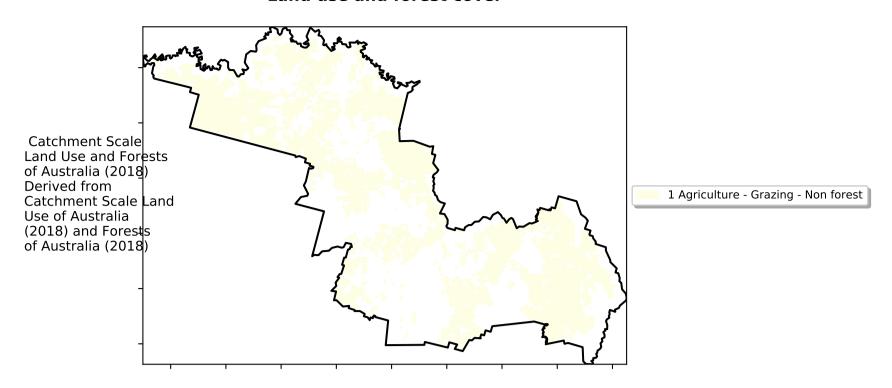




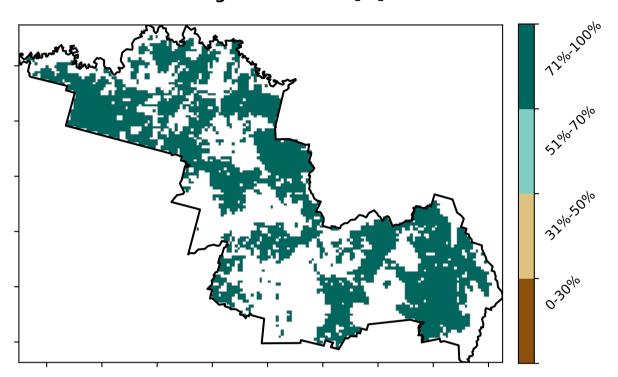


Grazing non forest

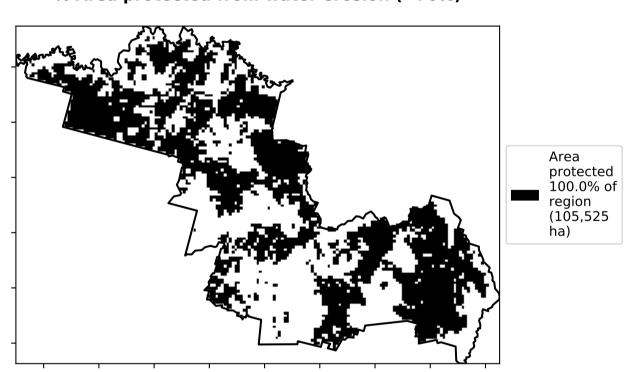
Land use and forest cover



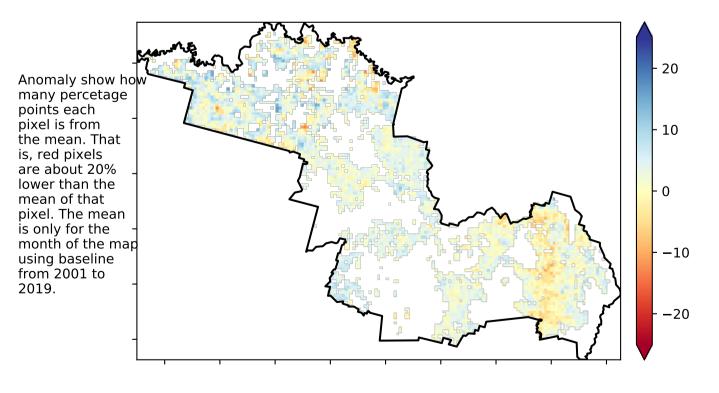
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

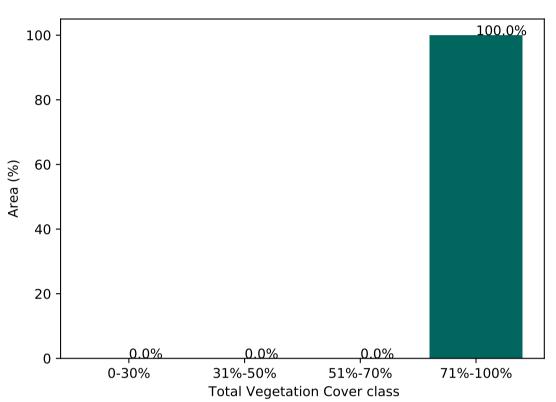


Total Vegetation Cover Anomaly [%]

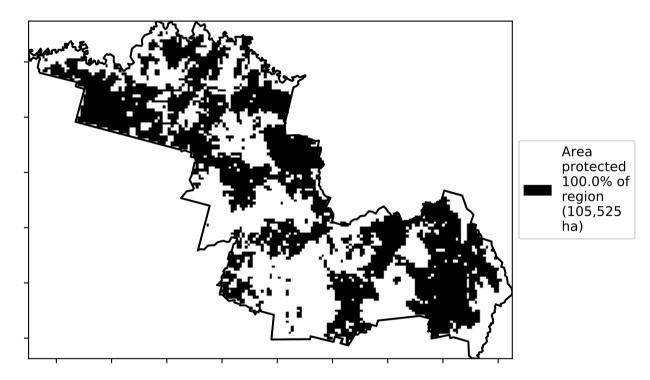


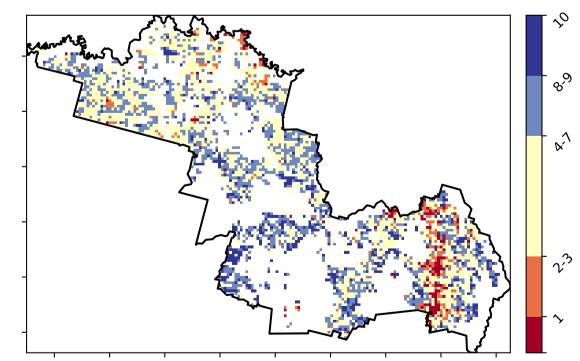
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





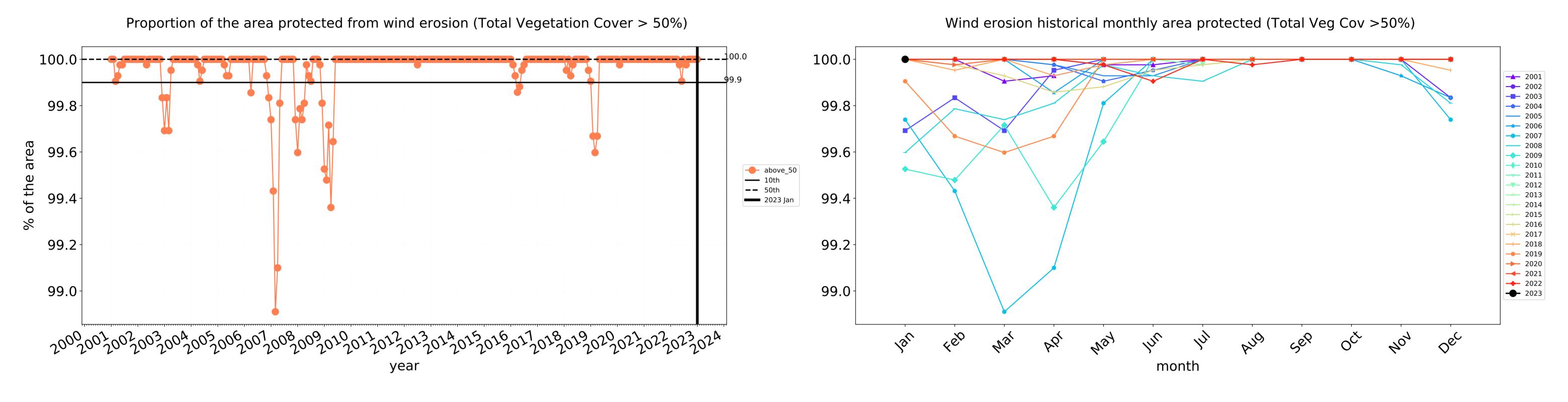


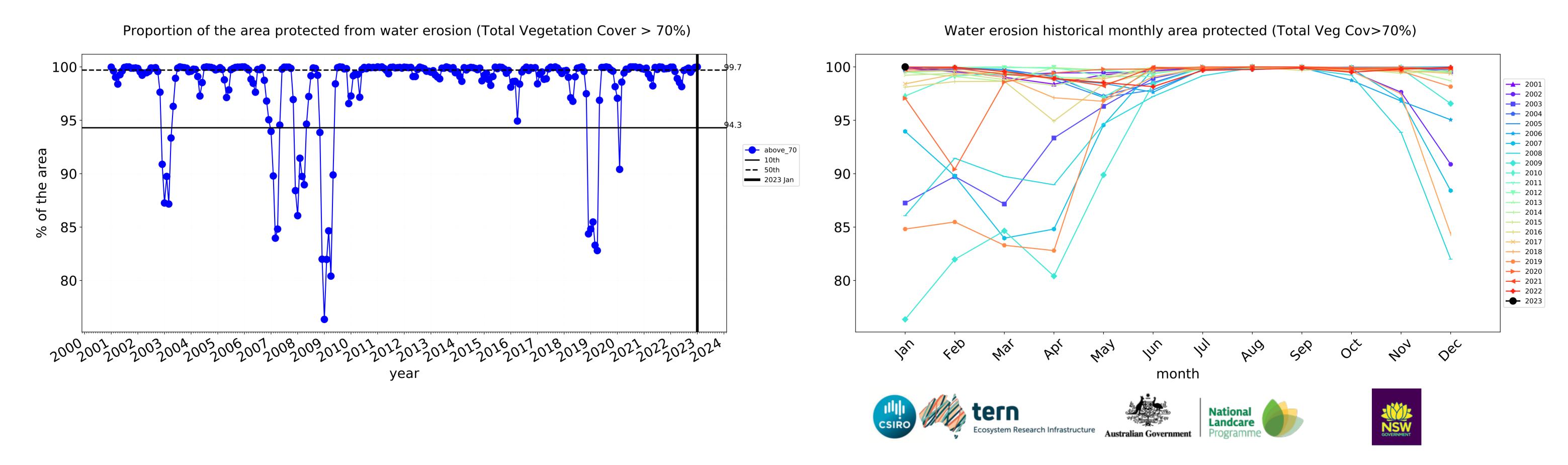


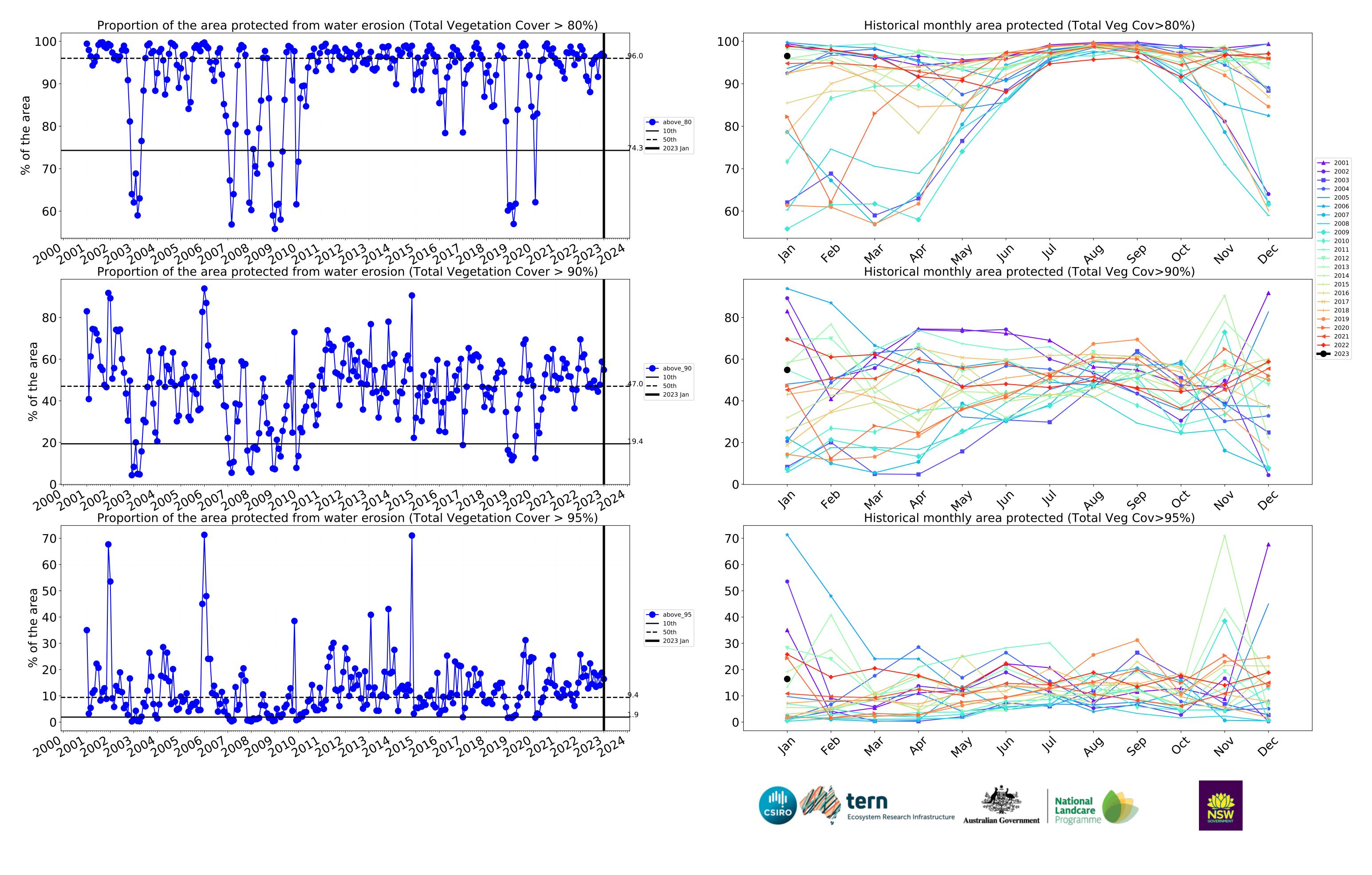




Grazing non forest timeseries

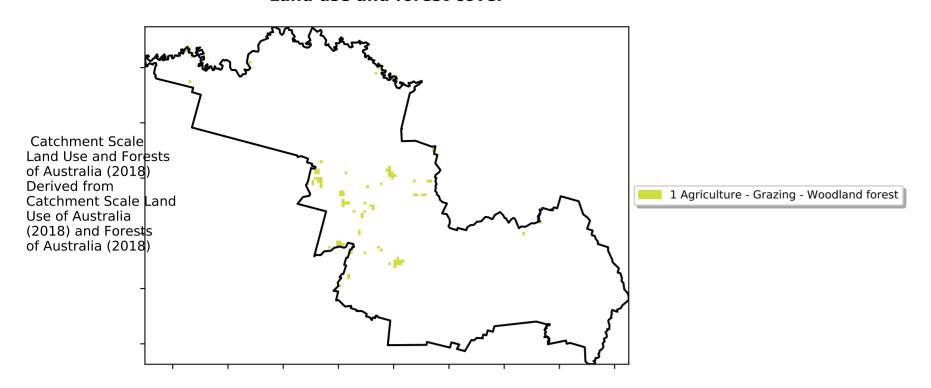




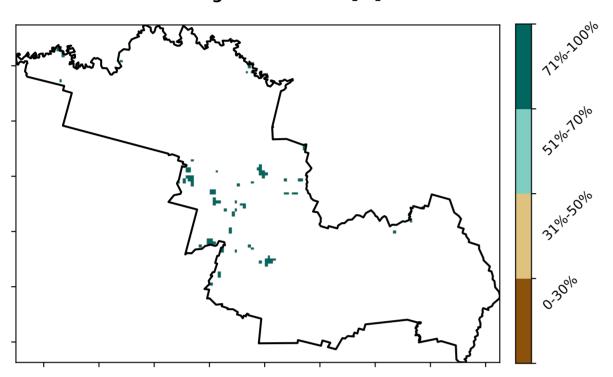


Grazing Woodland forest

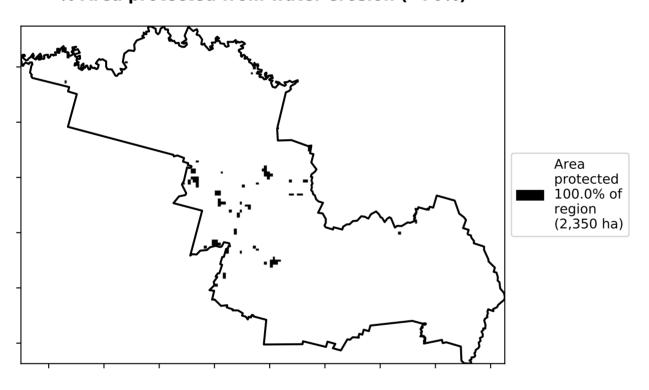
Land use and forest cover



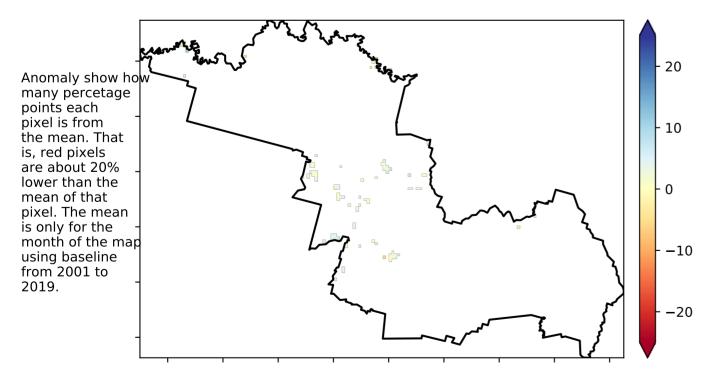
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

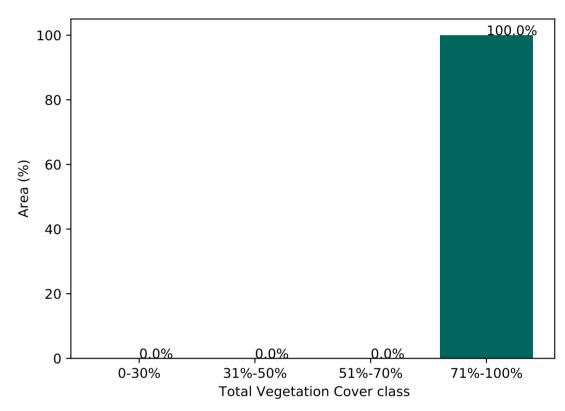


Total Vegetation Cover Anomaly [%]

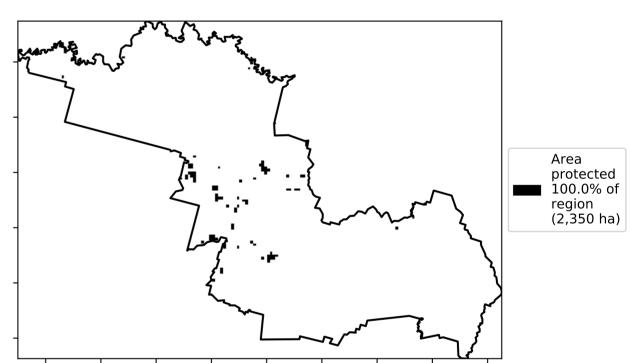


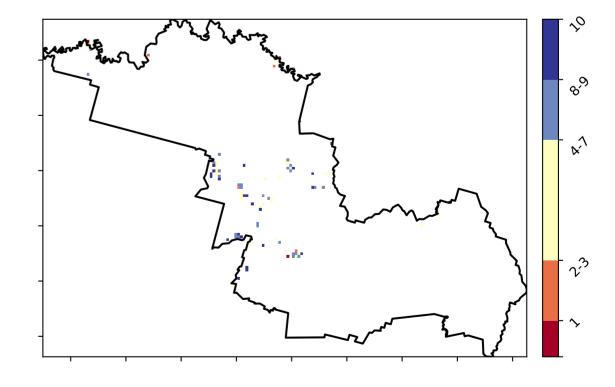
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





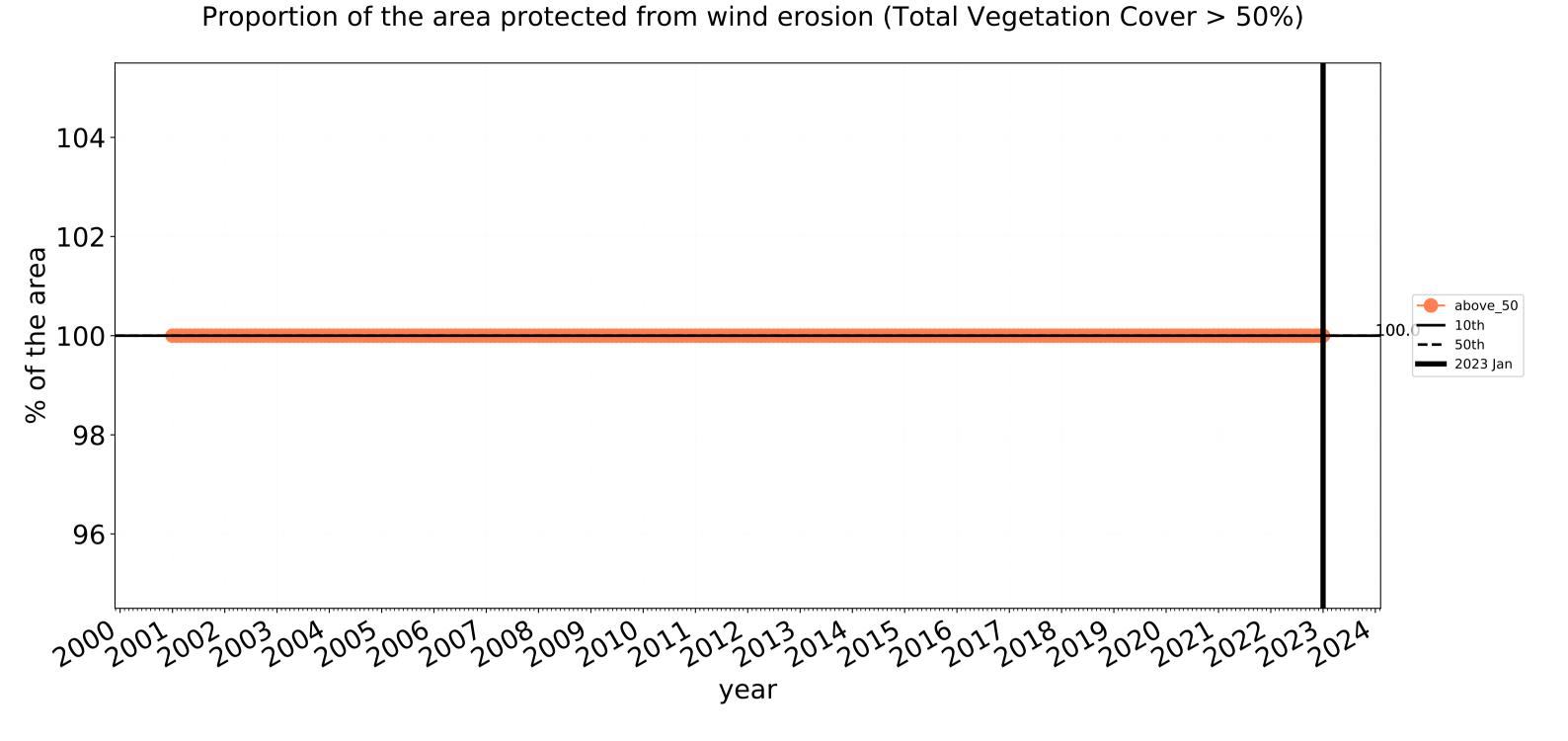




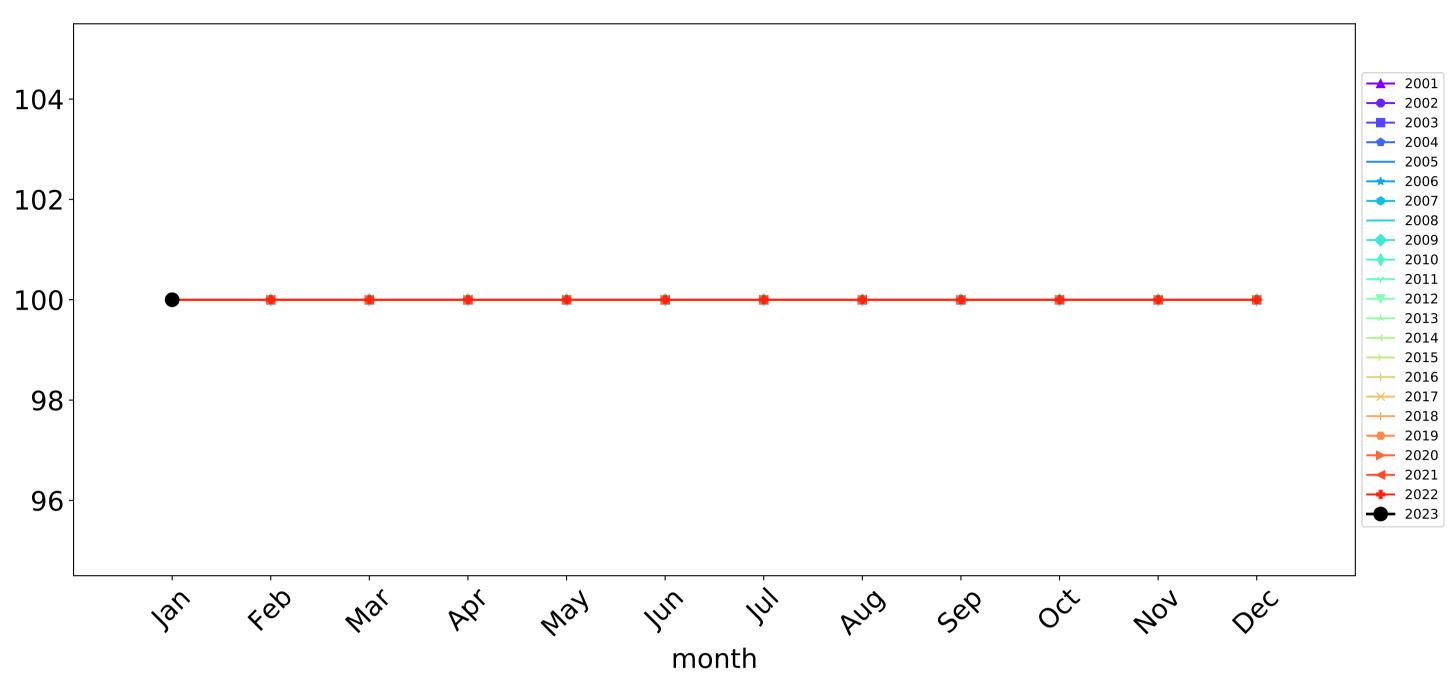


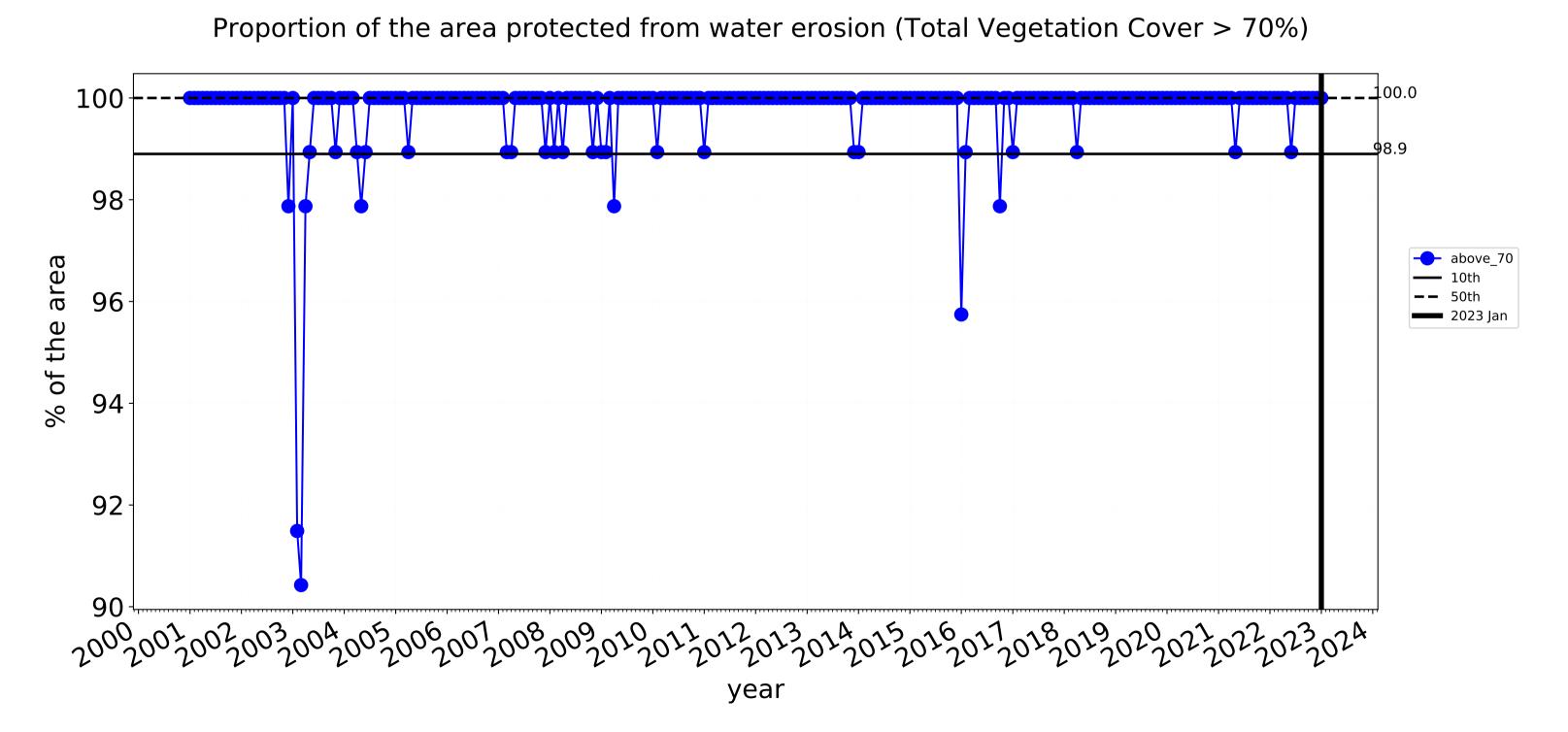


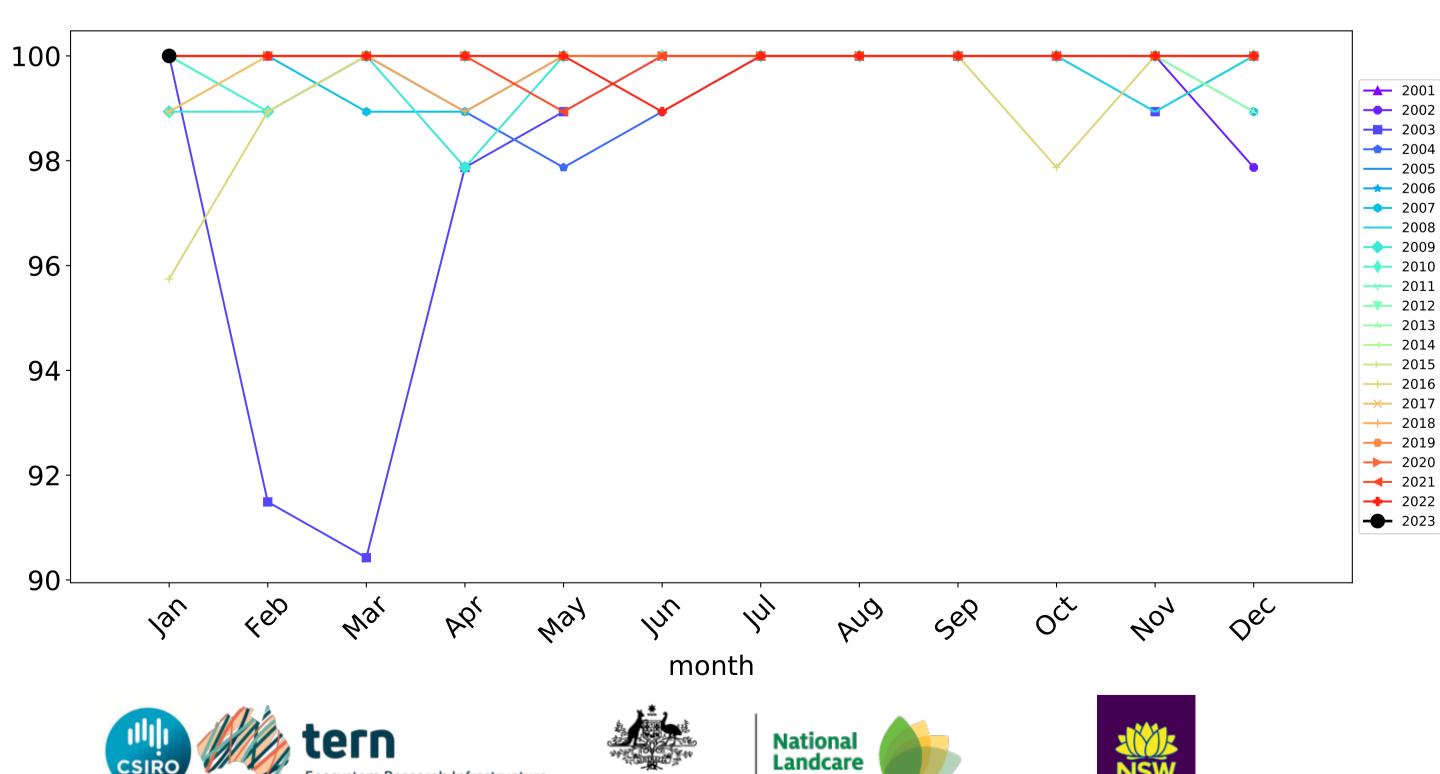
Grazing Woodland forest timeseries



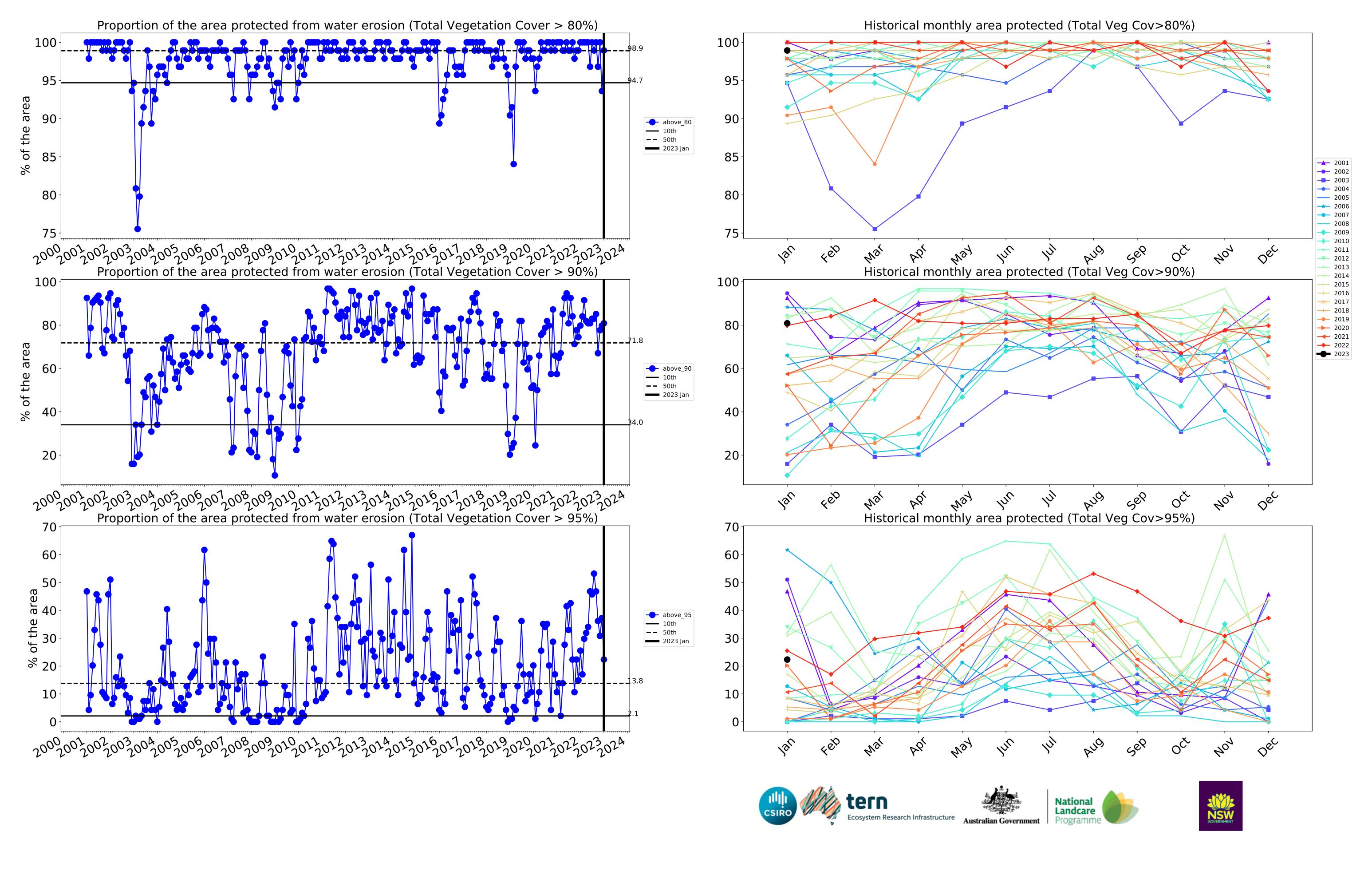
Wind erosion historical monthly area protected (Total Veg Cov >50%)





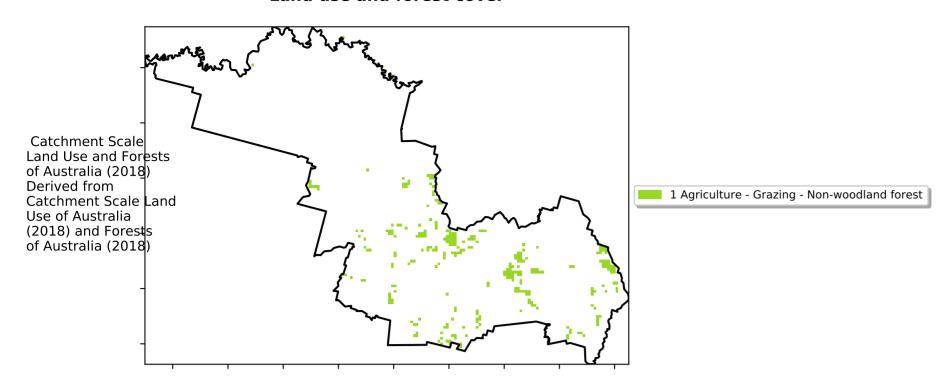


Water erosion historical monthly area protected (Total Veg Cov>70%)

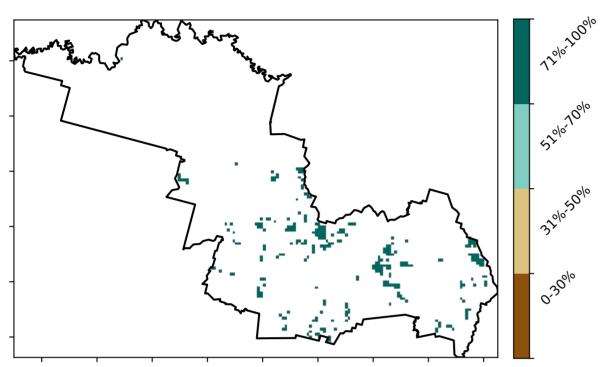


Grazing - Forest (non woodland)

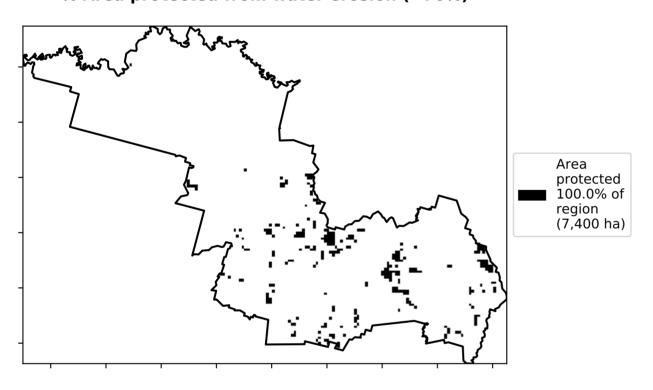
Land use and forest cover



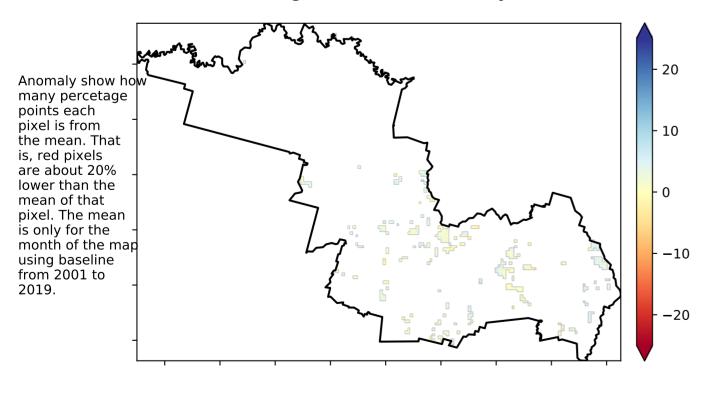
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

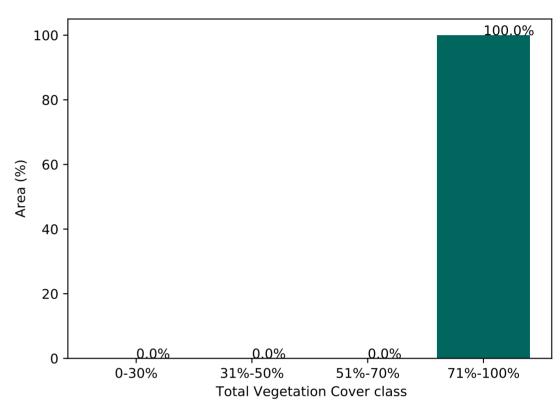


Total Vegetation Cover Anomaly [%]

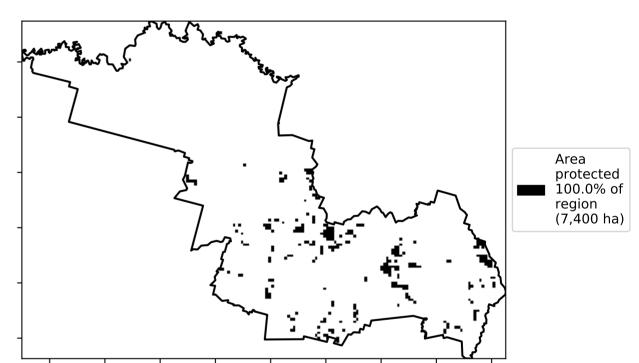


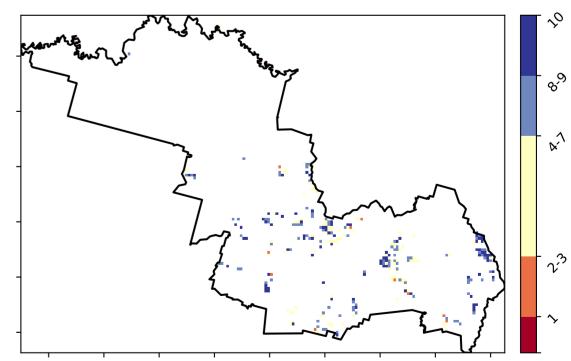
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





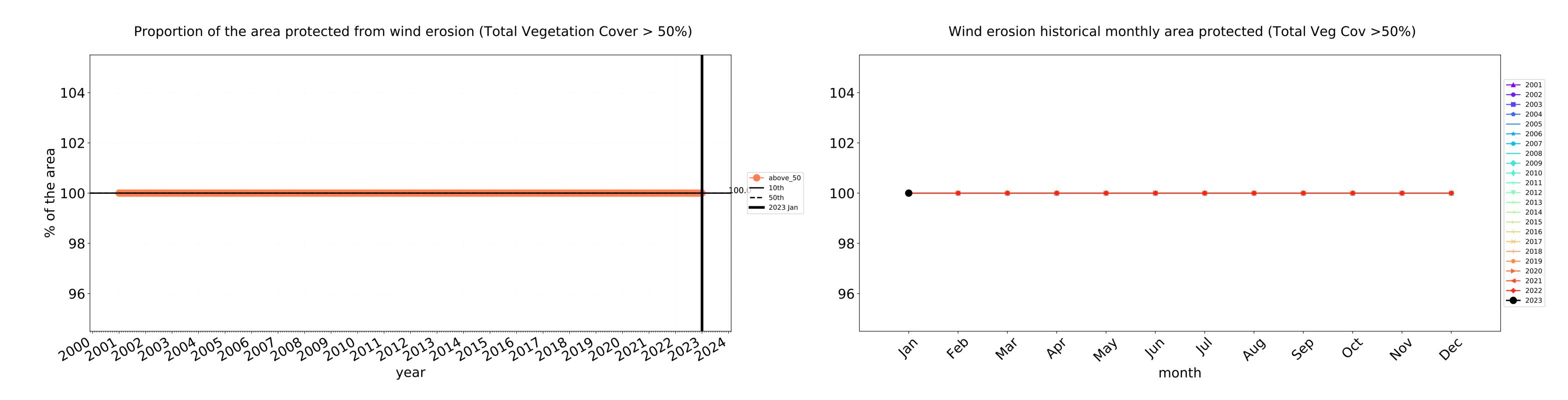


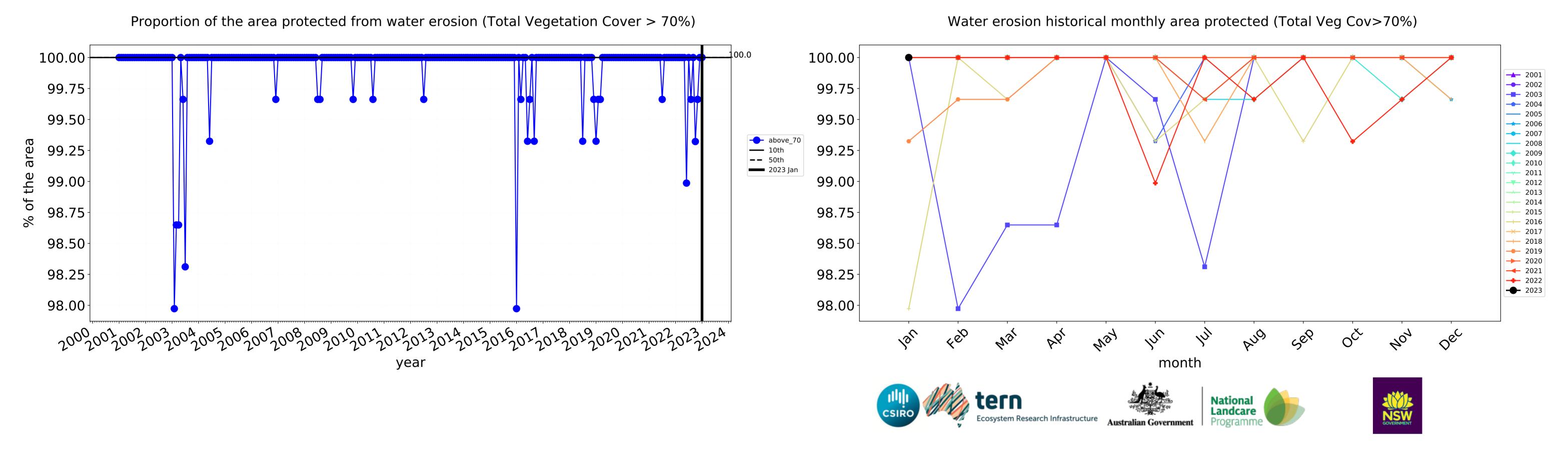


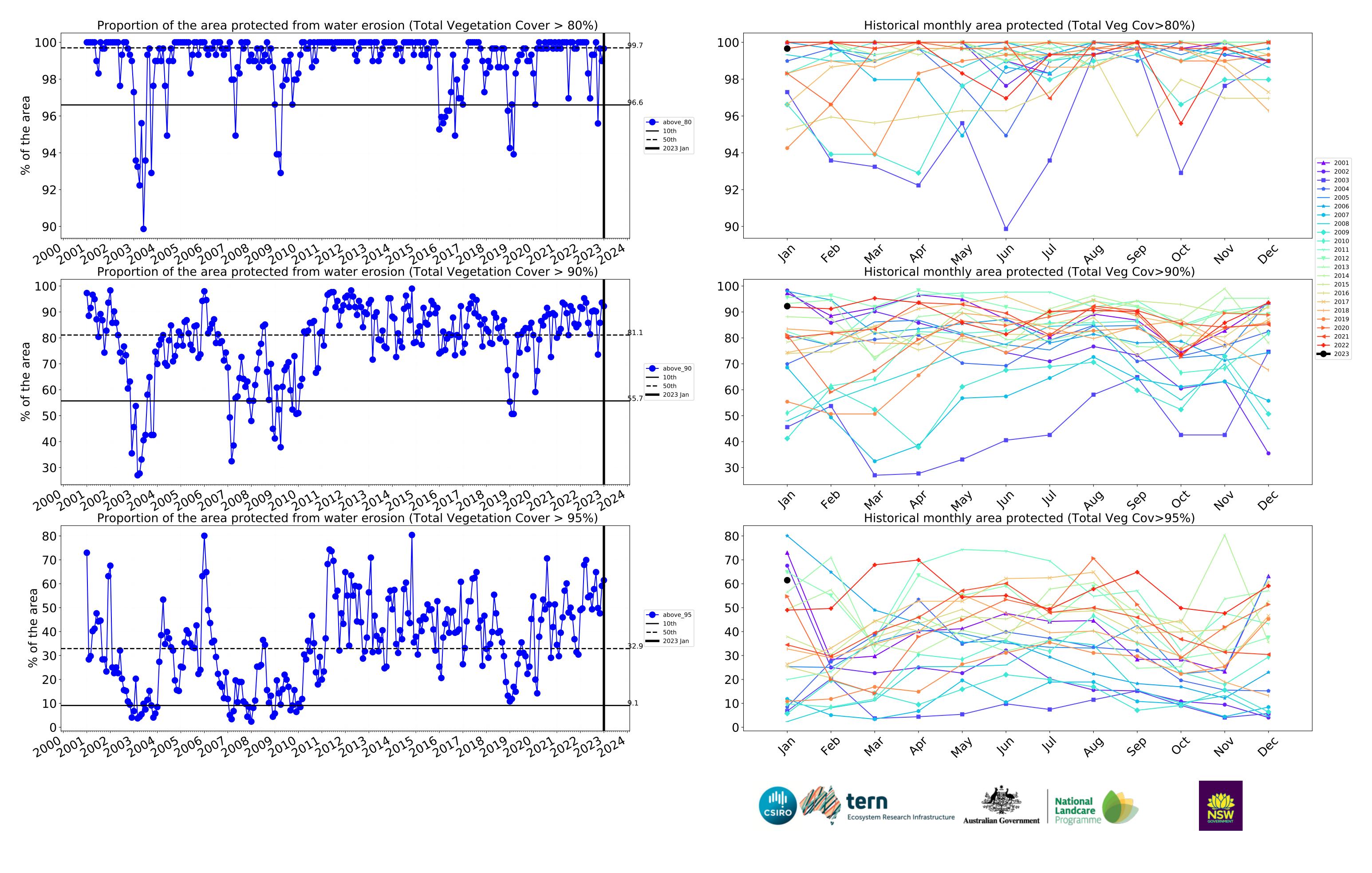






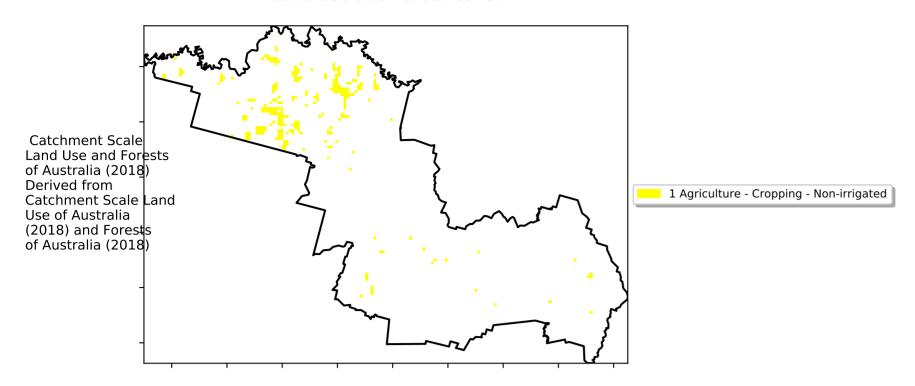




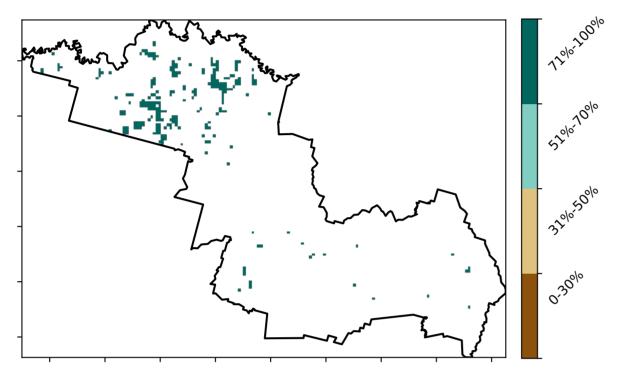


Cropping

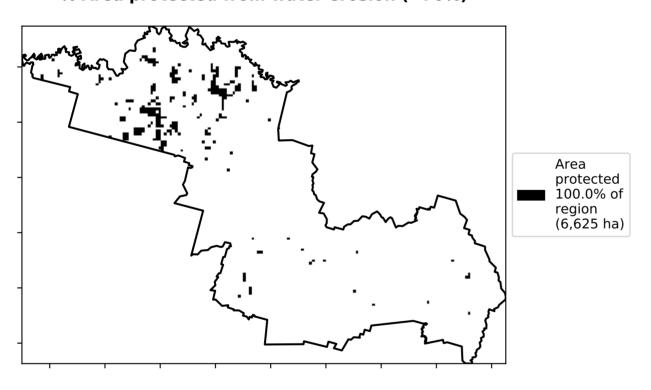
Land use and forest cover



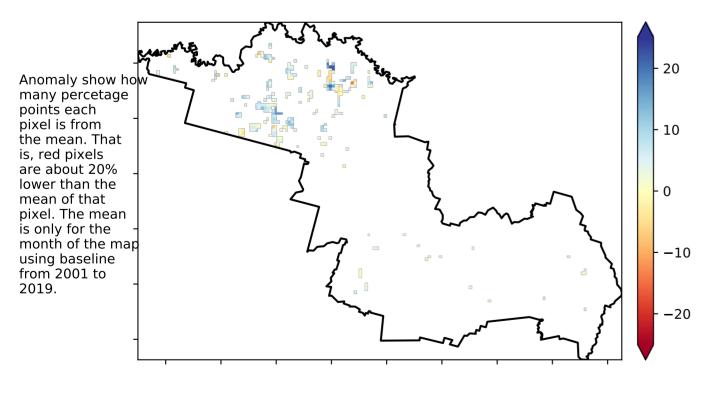
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

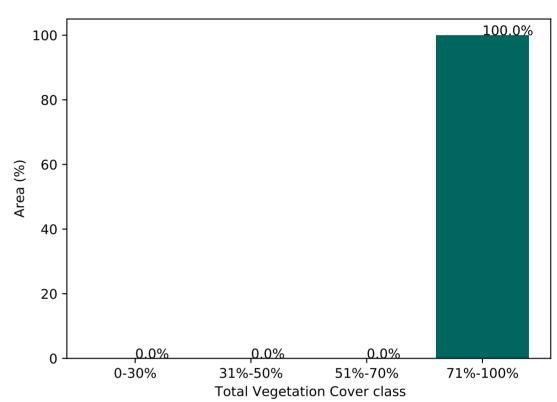


Total Vegetation Cover Anomaly [%]

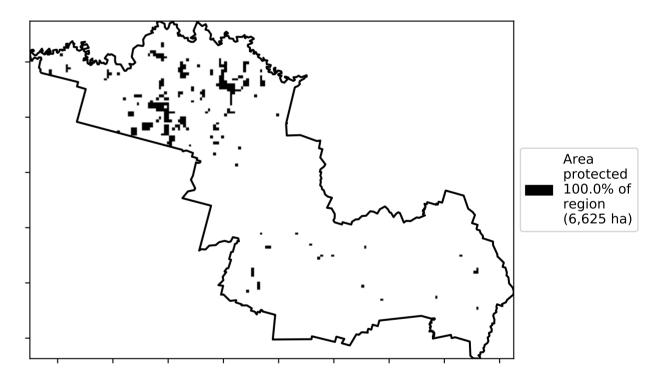


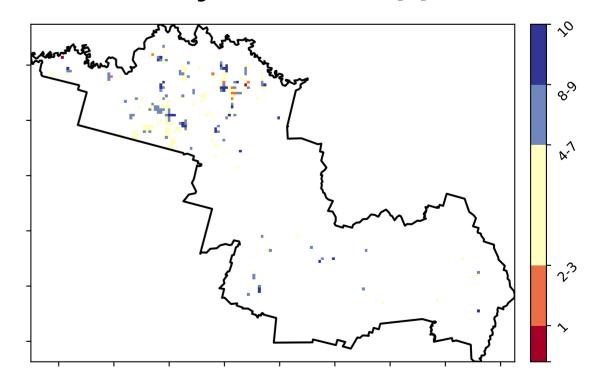
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





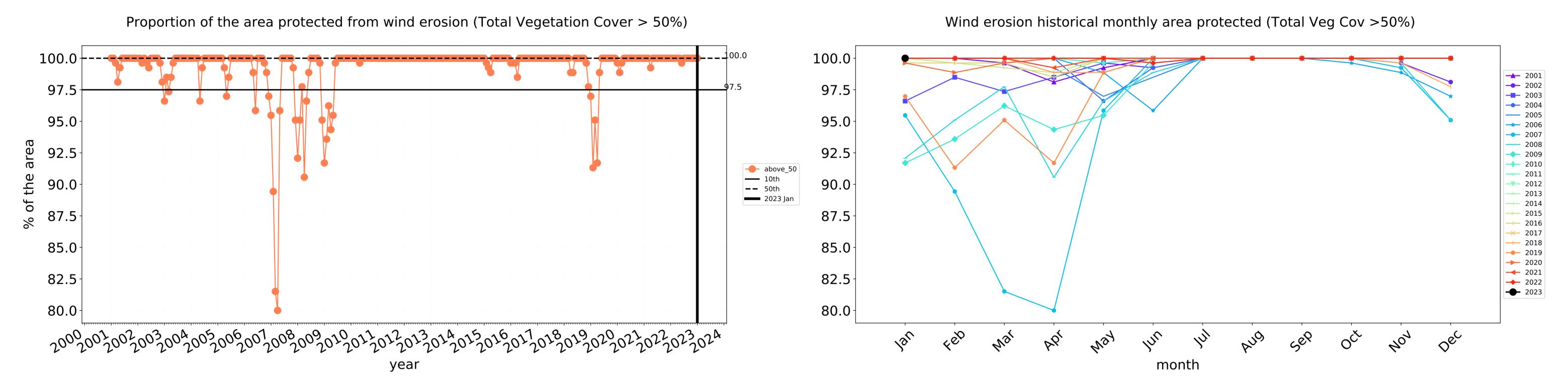


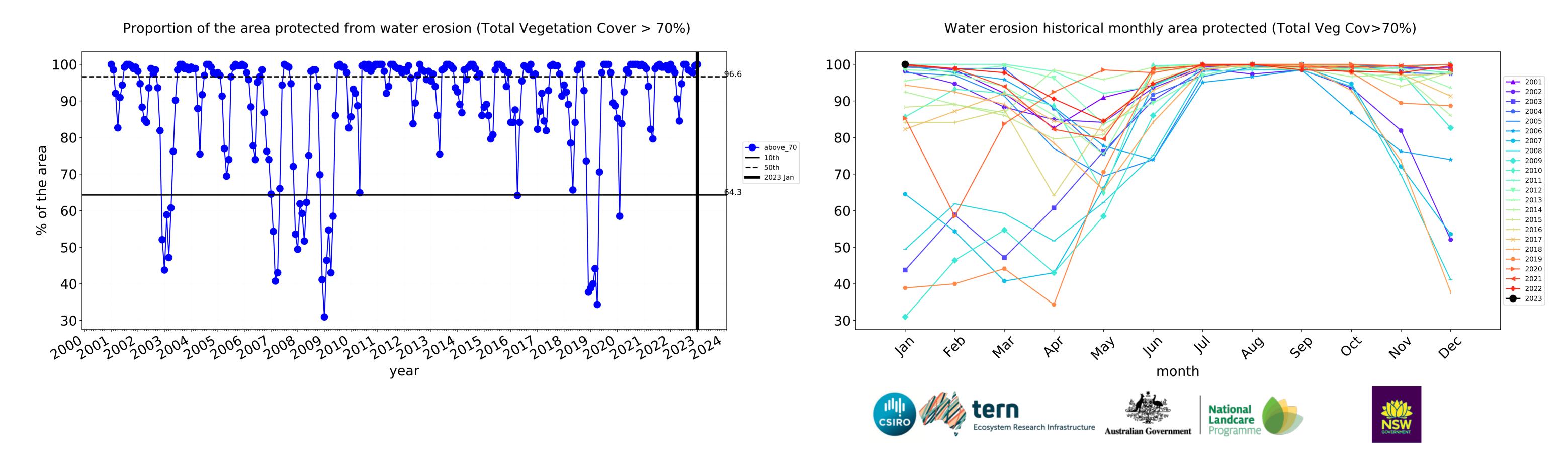


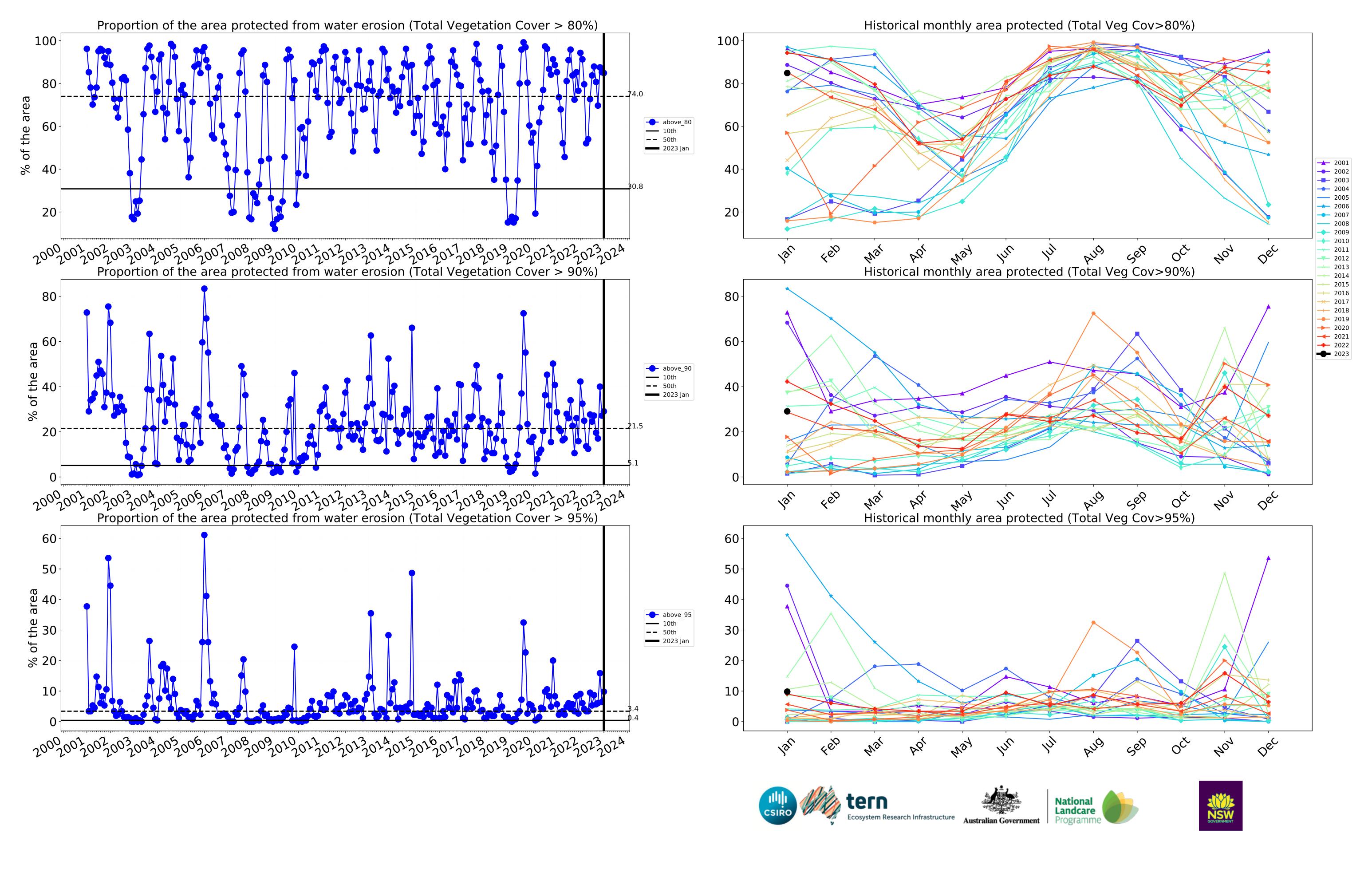




Cropping timeseries

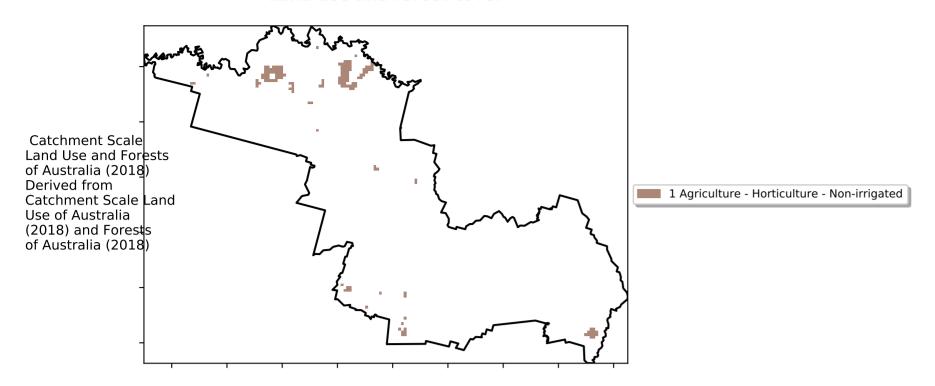




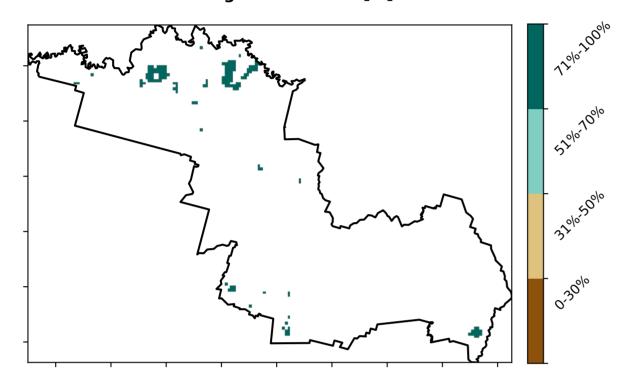


Horticulture

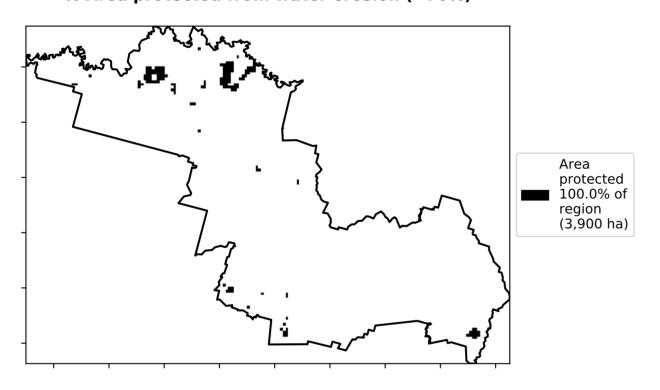
Land use and forest cover



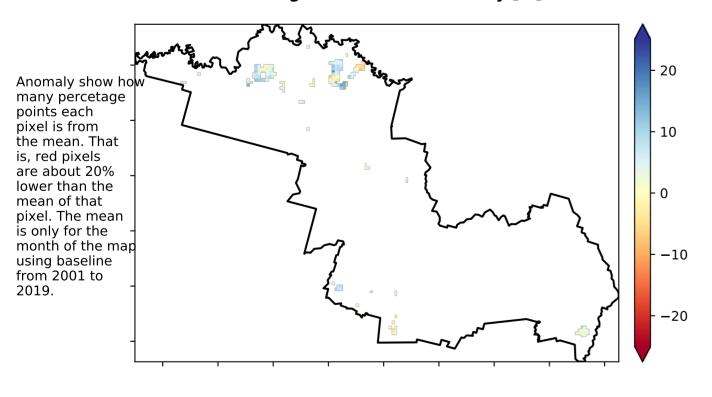
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

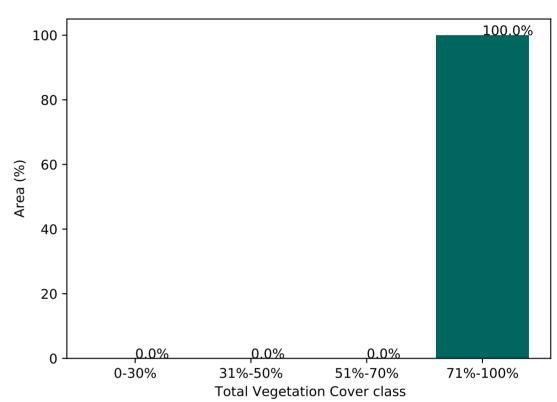


Total Vegetation Cover Anomaly [%]

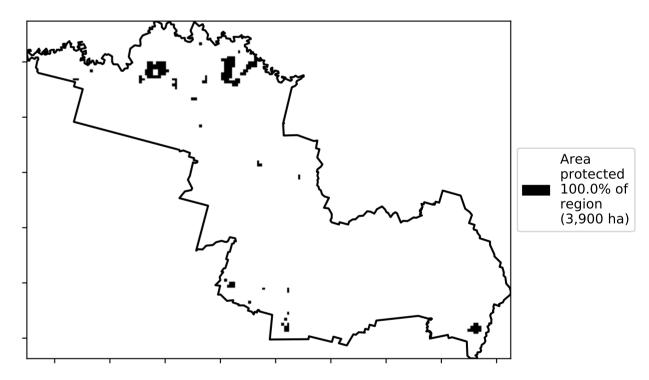


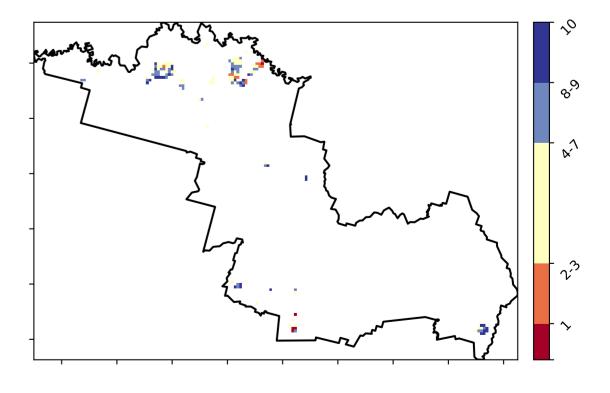
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





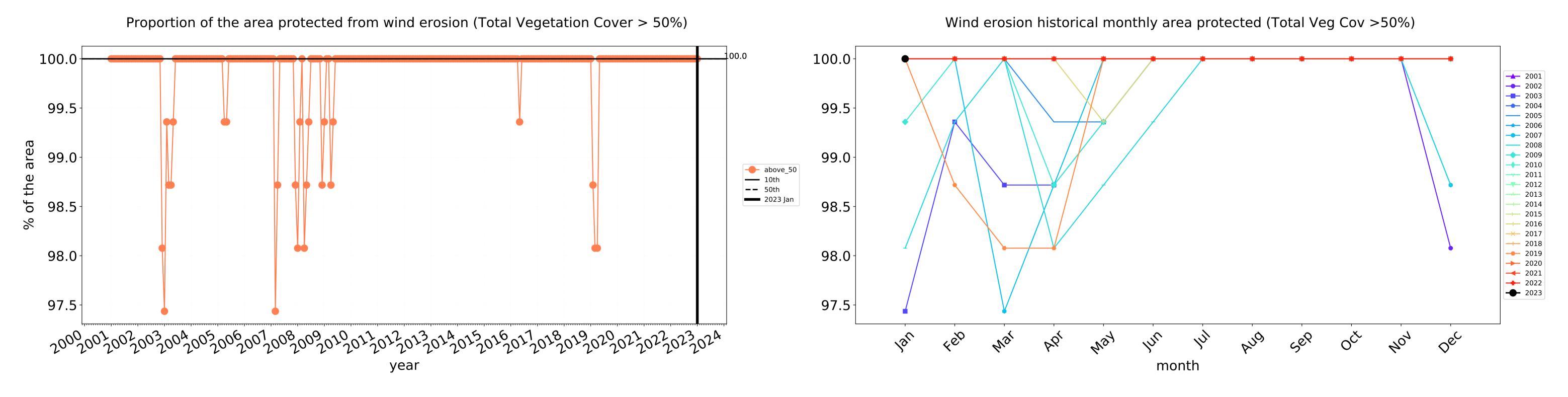


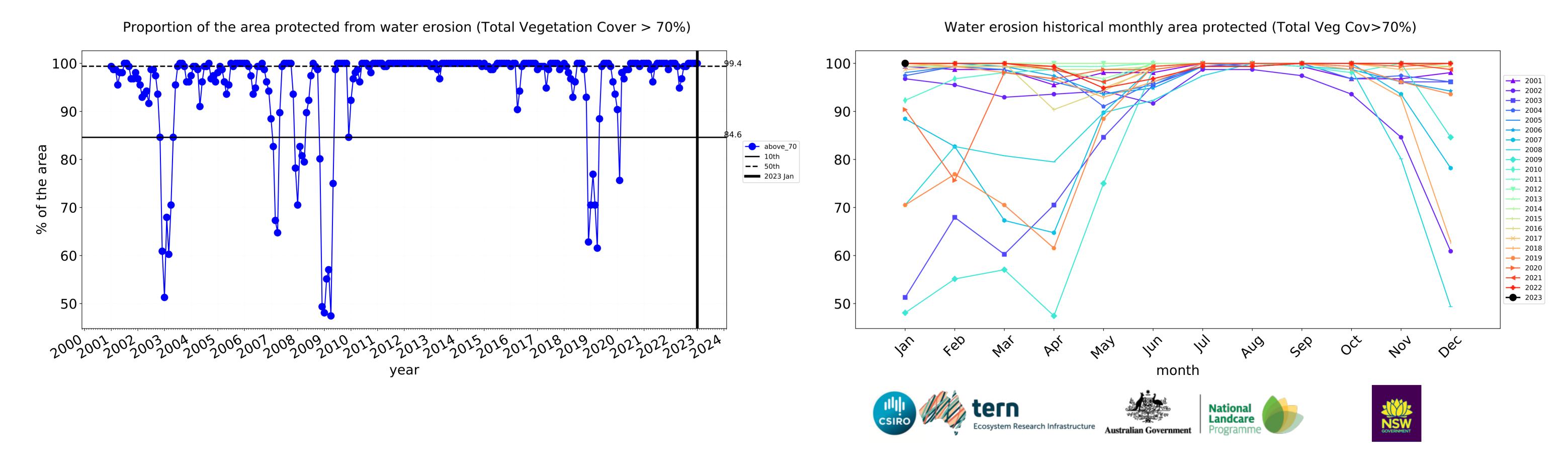


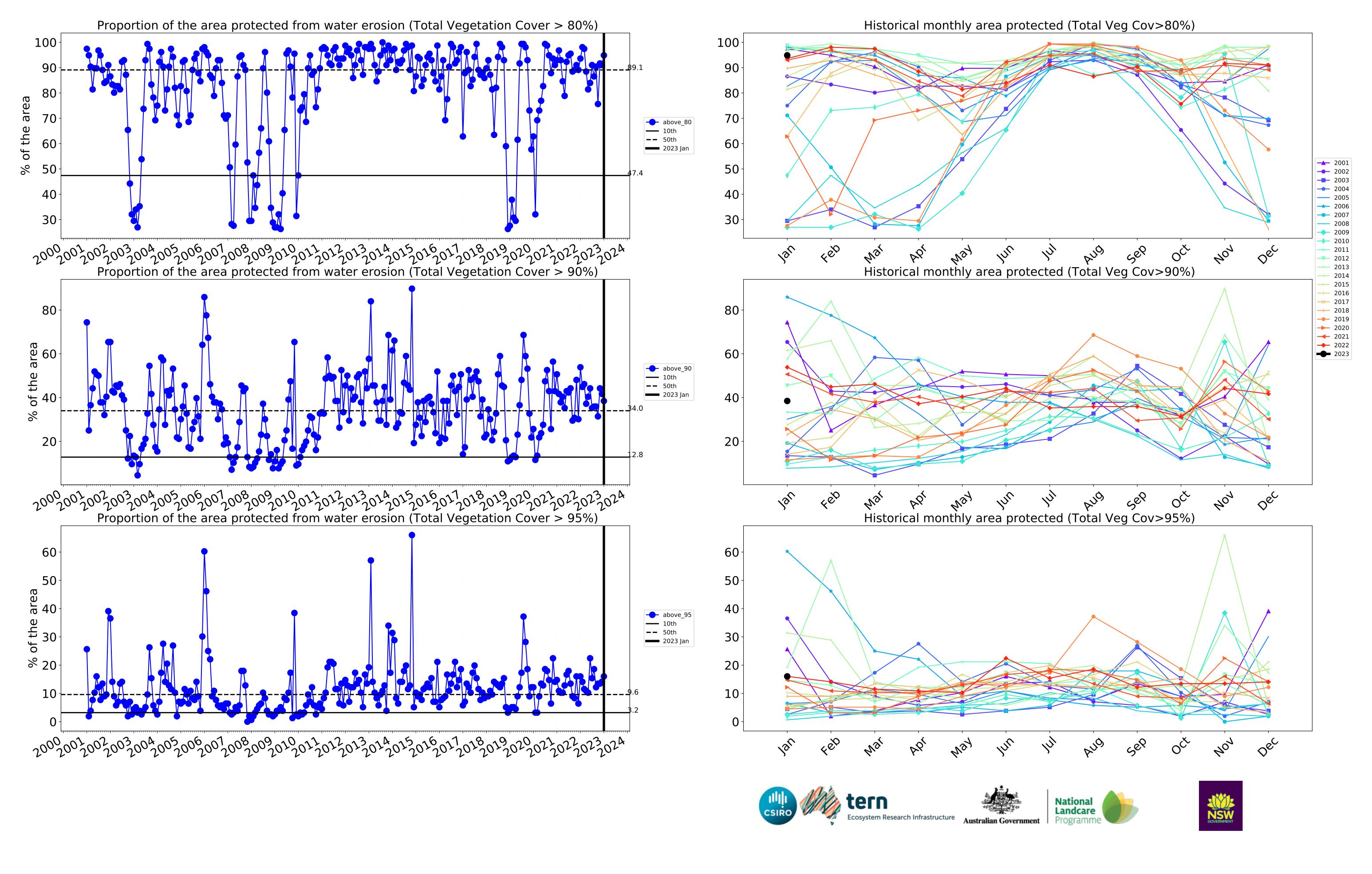




Horticulture timeseries

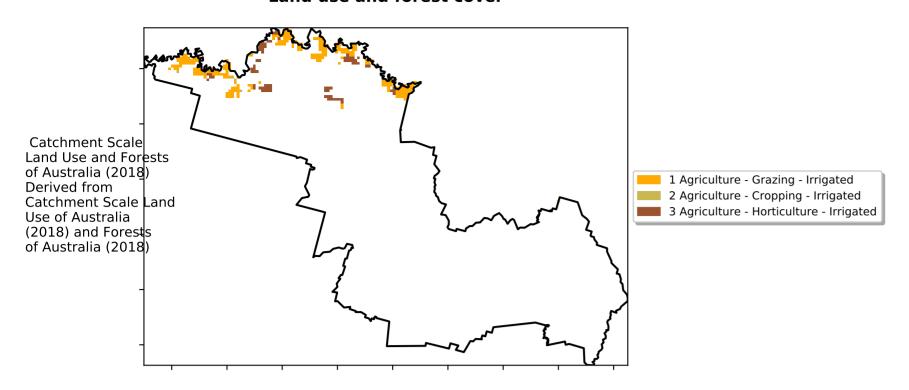




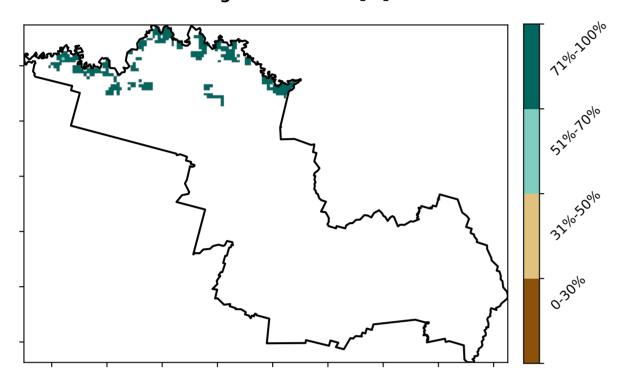


Irrigation

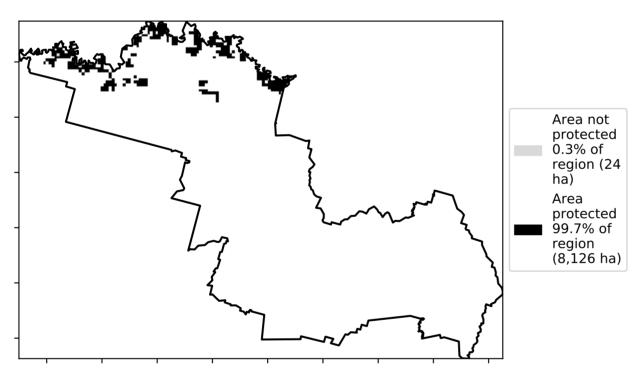
Land use and forest cover



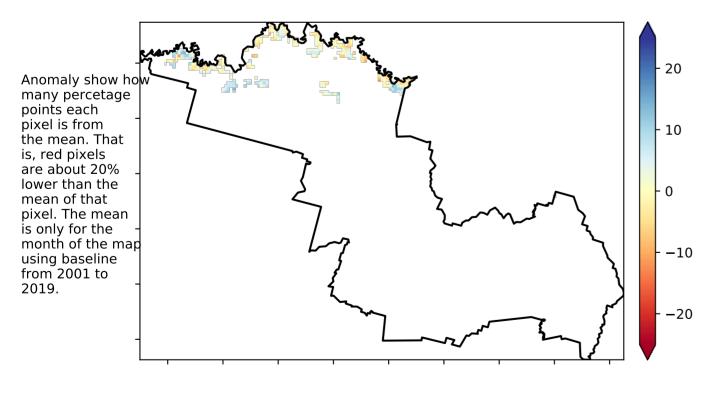
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

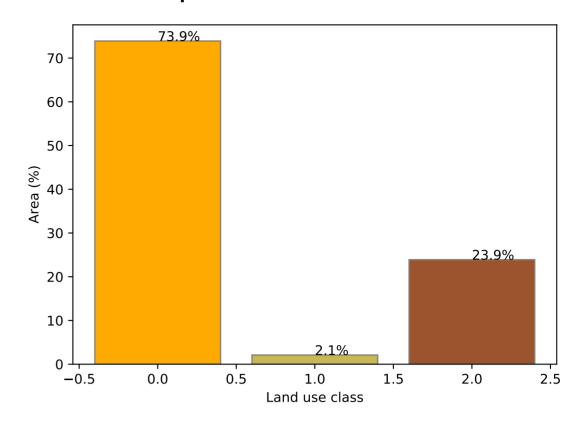


Total Vegetation Cover Anomaly [%]

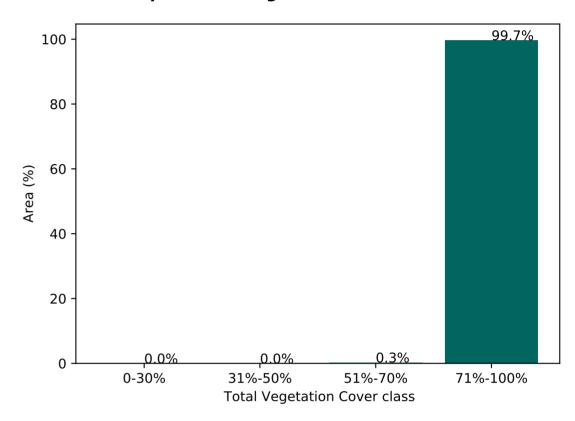


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

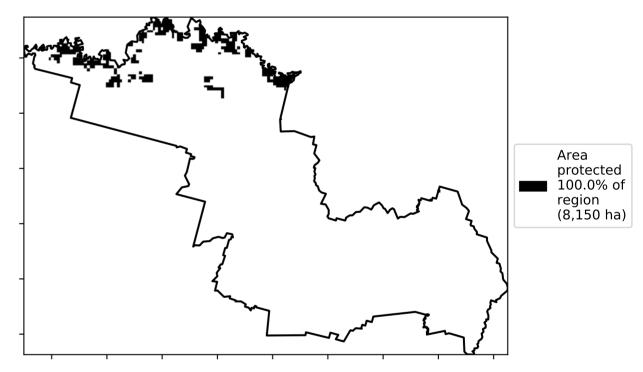
Proportion of each land class in area

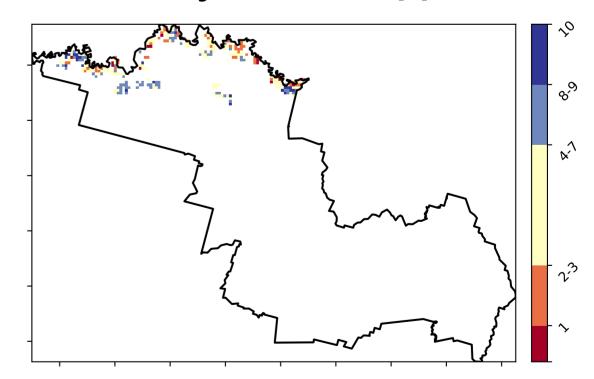


Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)







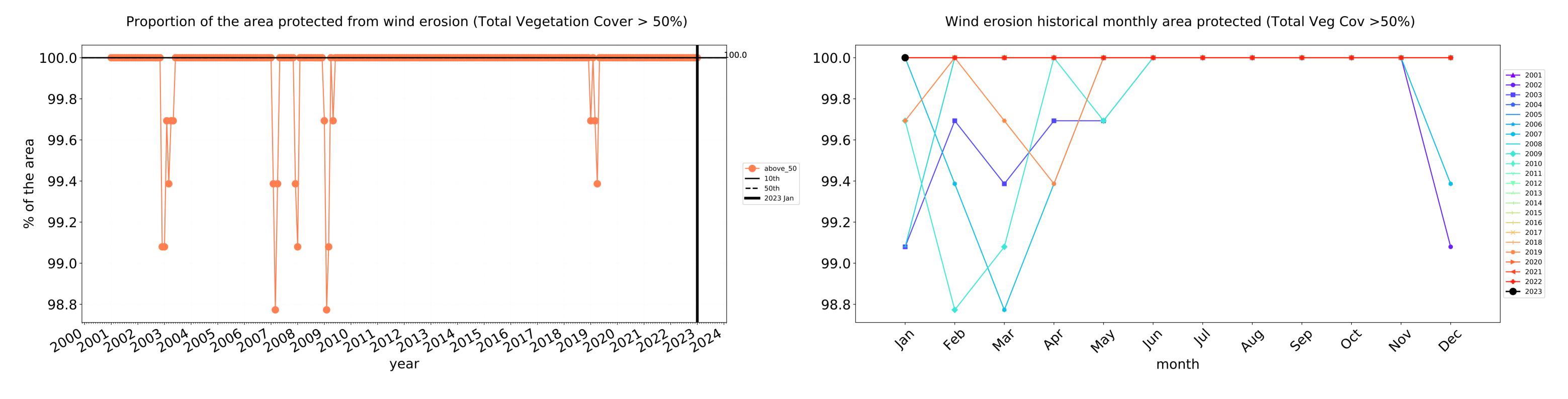


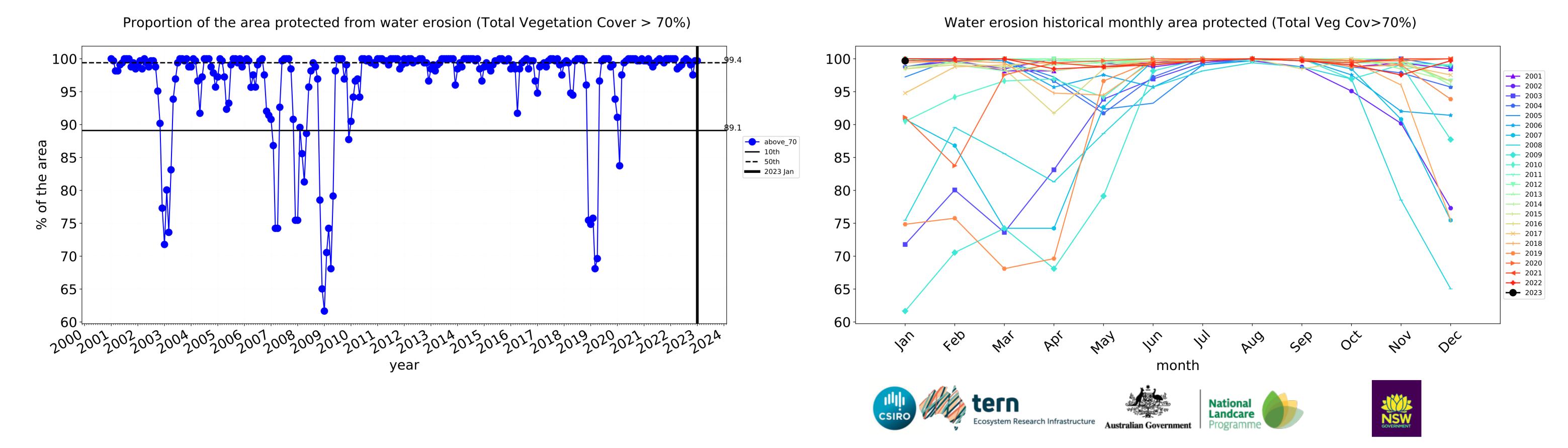


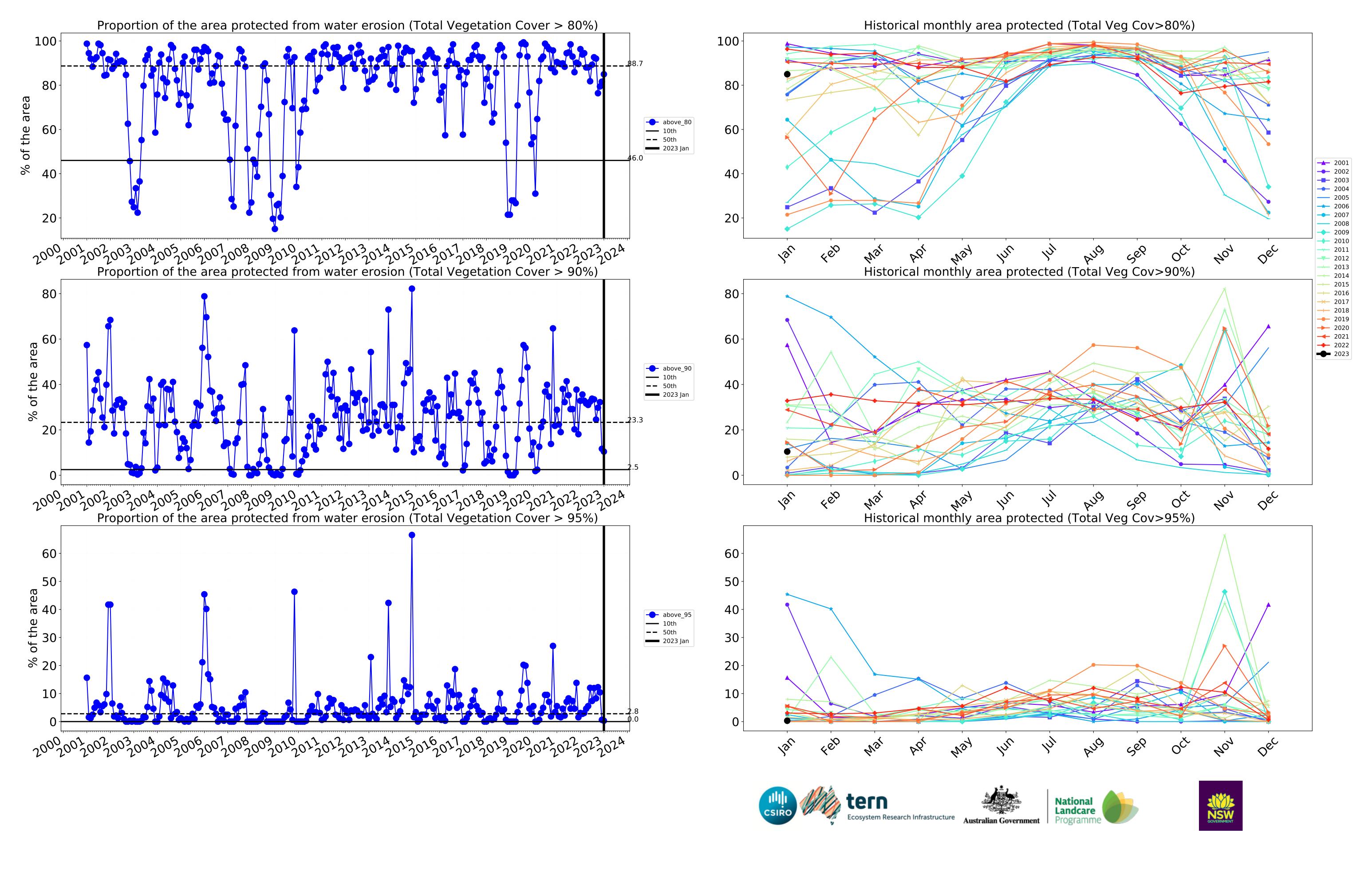




Irrigation timeseries

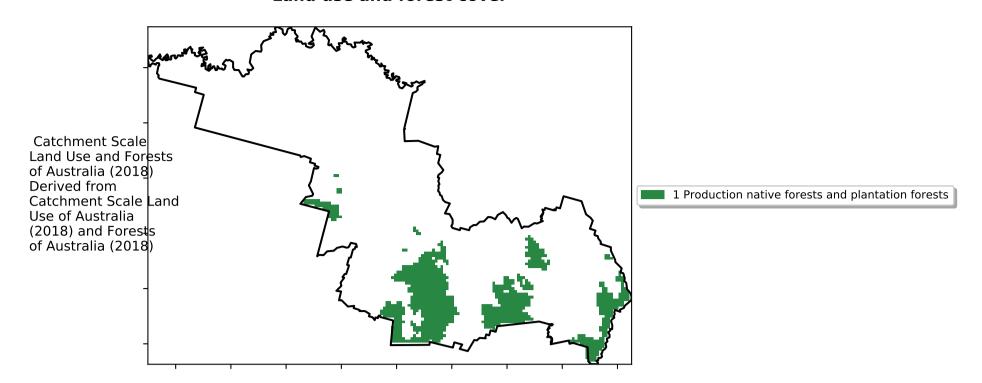




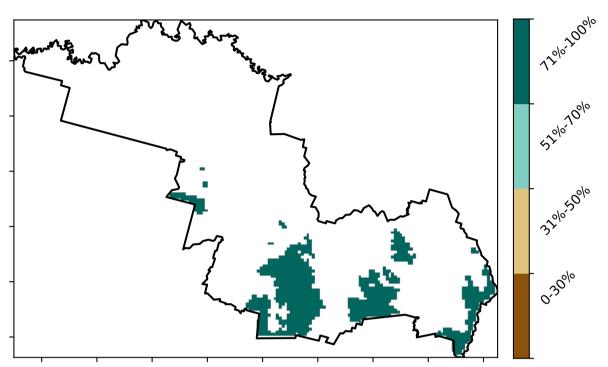


Production native forests and plantation forests

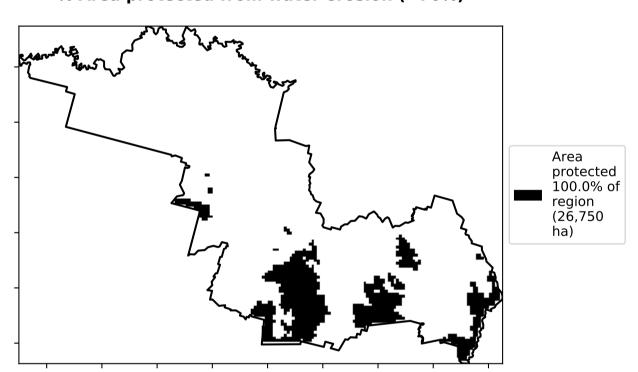
Land use and forest cover



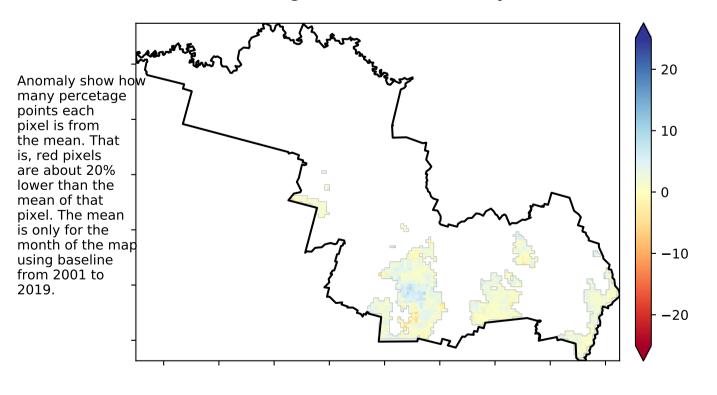
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

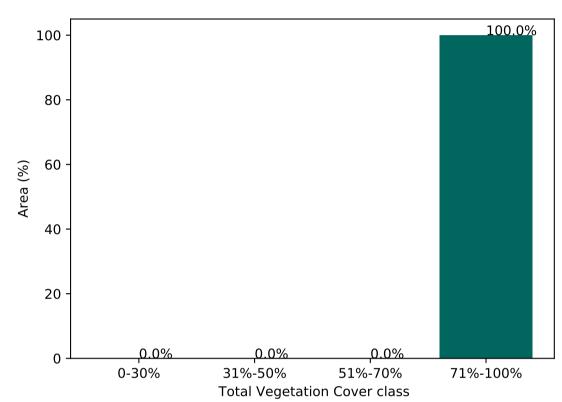


Total Vegetation Cover Anomaly [%]

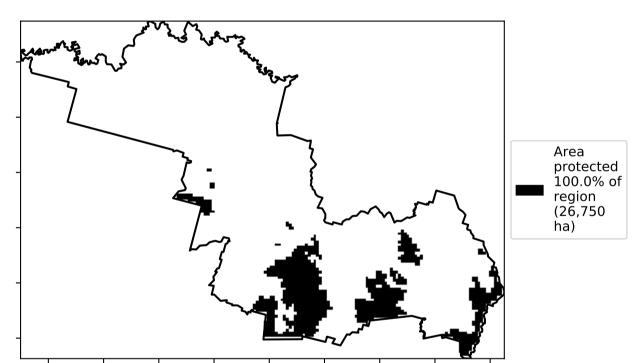


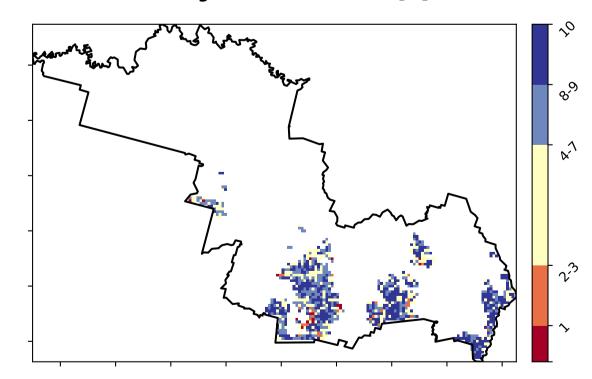
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





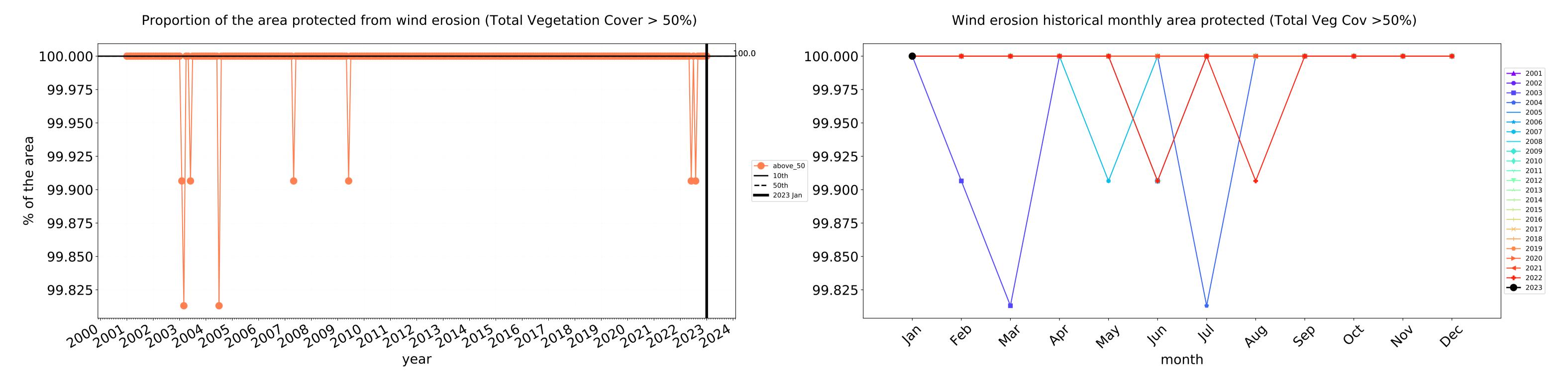


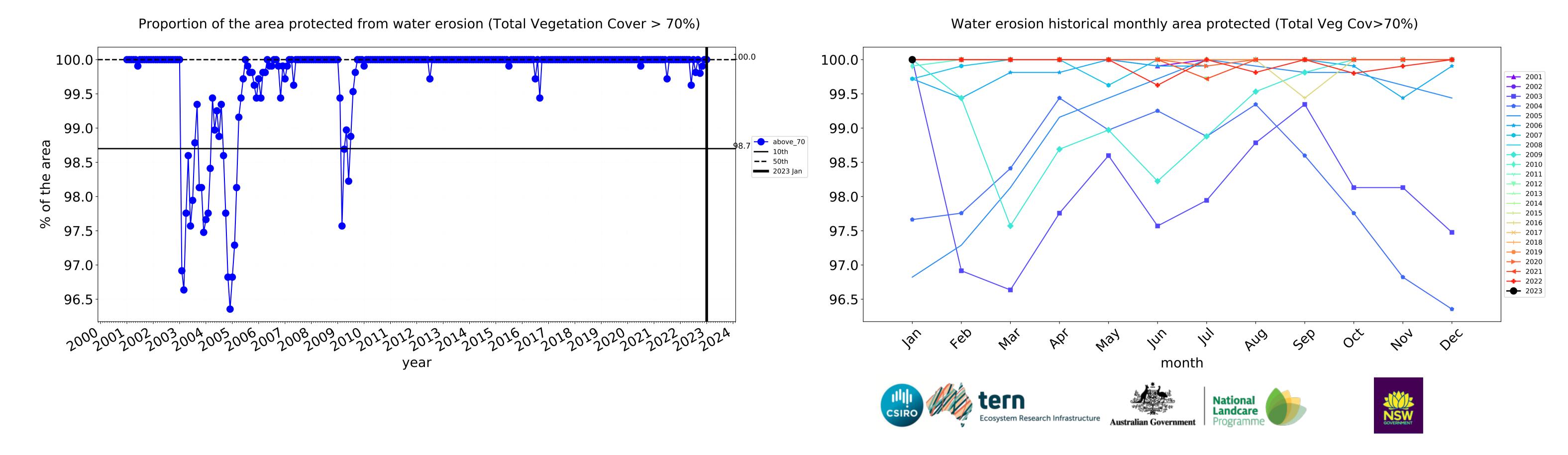


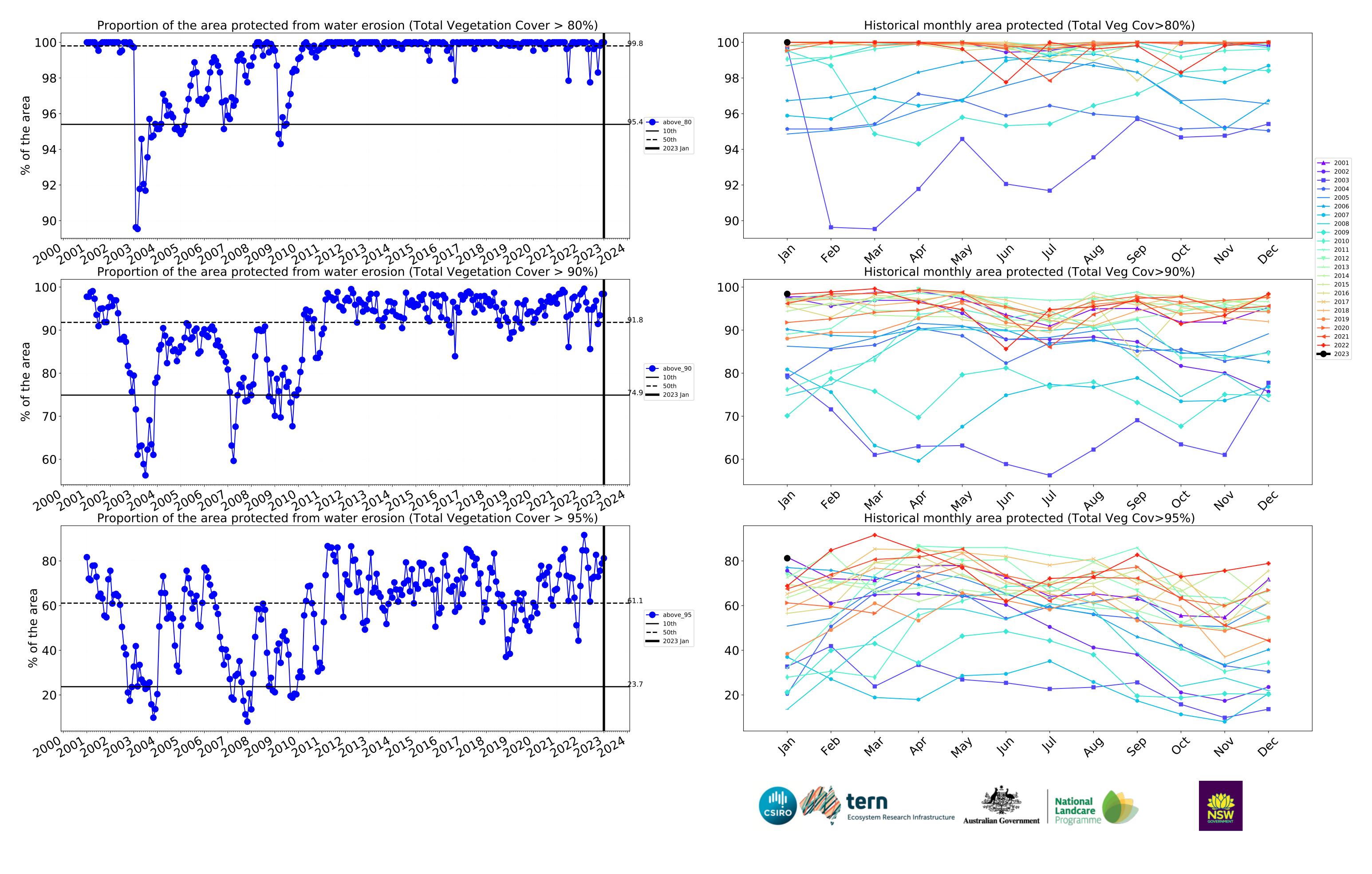




Production native forests and plantation forests timeseries







Indigo_(S) (202,900 ha and no data 976 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	202,900	100.0% 202,900	100.0% 202,850	99.7% 202,275	95.9% 194,650	61.4% 124,525	26.0% 52,675
Conservation and natural environments	24,050	100.0% 24,050	100.0% 24,050	100.0% 24,050	99.1% 23,825	81.6% 19,625	21.4% 5,150
Conservation and natural environments Woodland forest	5,900	100.0% 5,900	100.0% 5,900	100.0% 5,900	97.9% 5,775	69.1% 4,075	16.9% 1,000
Conservation and natural environments Forest (non woodland)	16,675	100.0% 16,675	100.0% 16,675	100.0% 16,675	99.9% 16,650	89.2% 14,875	23.7% 3,950
Agriculture	133,950	100.0% 133,950	100.0% 133,950	100.0% 133,925	95.4% 127,825	52.9% 70,875	17.7% 23,700
Grazing	115,275	100.0% 115,275	100.0% 115,275	100.0% 115,275	96.8% 111,575	57.8% 66,600	19.4% 22,400
Grazing non forest	105,525	100.0% 105,525	100.0% 105,525	100.0% 105,525	96.5% 101,875	54.8% 57,875	16.4% 17,325
Grazing Woodland forest	2,350	100.0% 2,350	100.0% 2,350	100.0% 2,350	98.9% 2,325	80.9% 1,900	22.3% 525
Grazing - Forest (non woodland)	7,400	100.0% 7,400	100.0% 7,400	100.0% 7,400	99.7% 7,375	92.2% 6,825	61.5% 4,550
Cropping	6,625	100.0% 6,625	100.0% 6,625	100.0% 6,625	84.9% 5,625	29.1% 1,925	9.8% 650
Horticulture	3,900	100.0% 3,900	100.0% 3,900	100.0% 3,900	94.9% 3,700	38.5% 1,500	16.0% 625
Irrigation	8,150	100.0% 8,150	100.0% 8,150	99.7% 8,125	85.0% 6,925	10.4% 850	0.3% 25
Production native forests and plantation forests	26,750	100.0% 26,750	100.0% 26,750	100.0% 26,750	100.0% 26,750	98.4% 26,325	81.2% 21,725







