Total vegetation cover soil protection Region:LGA Gympie (R) QLD

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: September 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



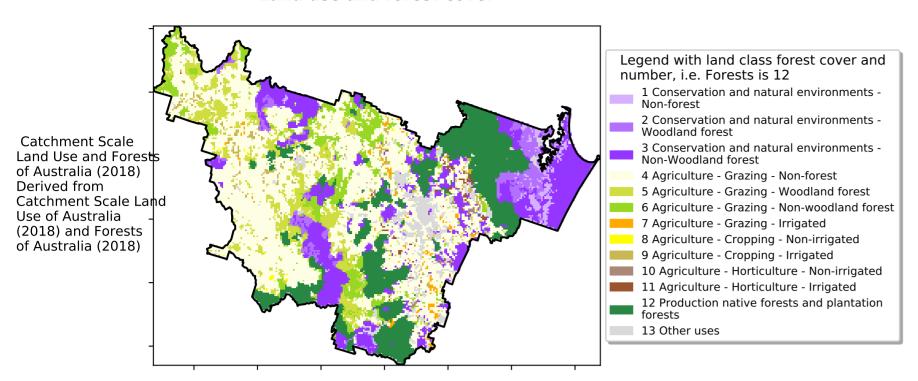




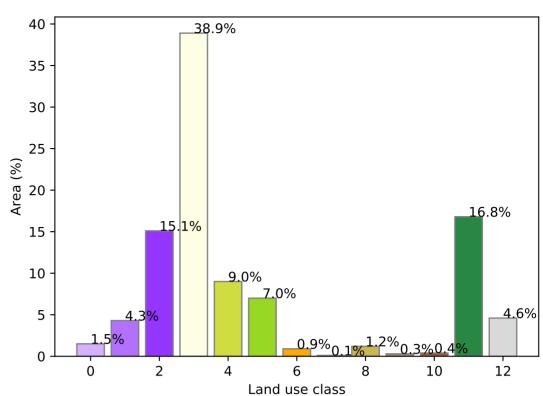


Vegetation Cover Sep 2023

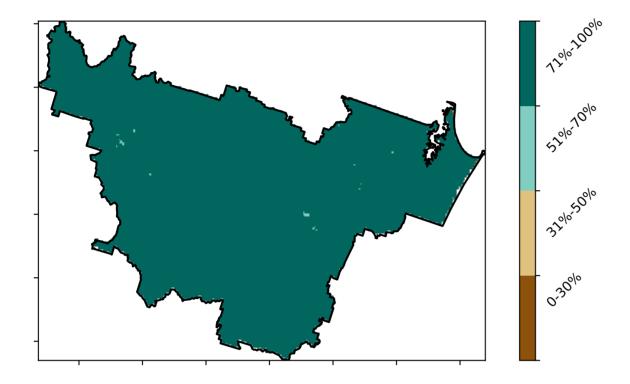
Land use and forest cover



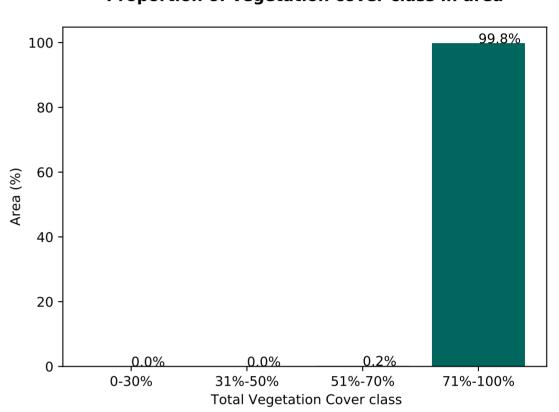
Proportion of each land class in area



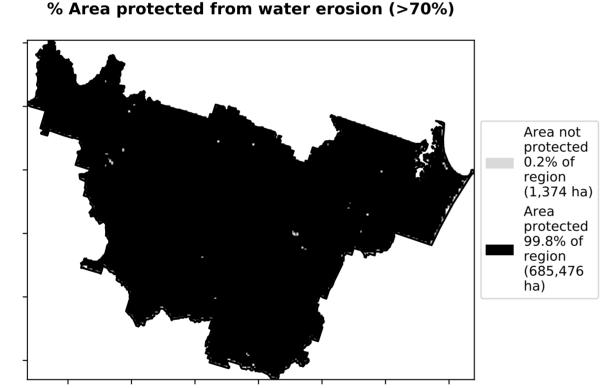
Total Vegetation Cover [%]



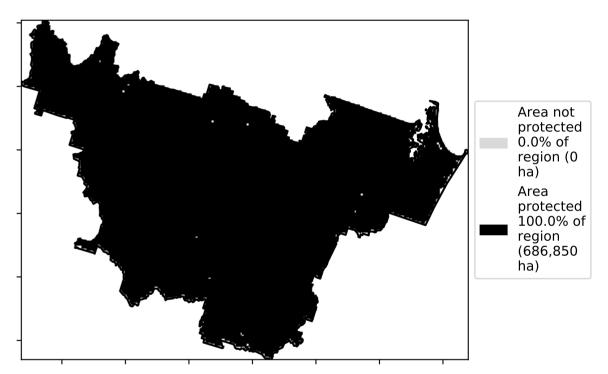
Proportion of vegetation cover class in area



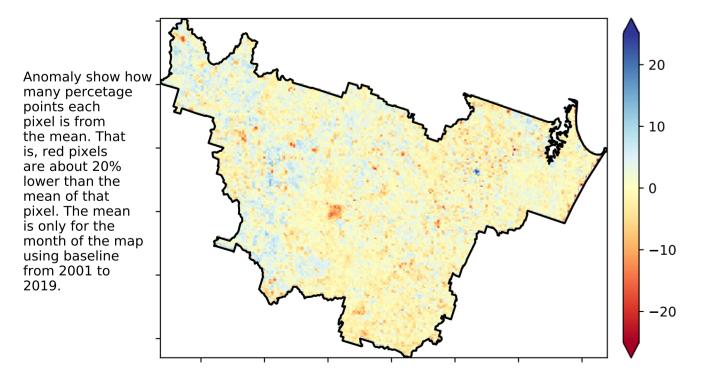
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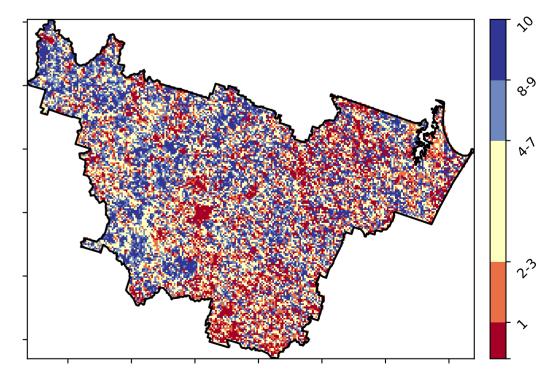
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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

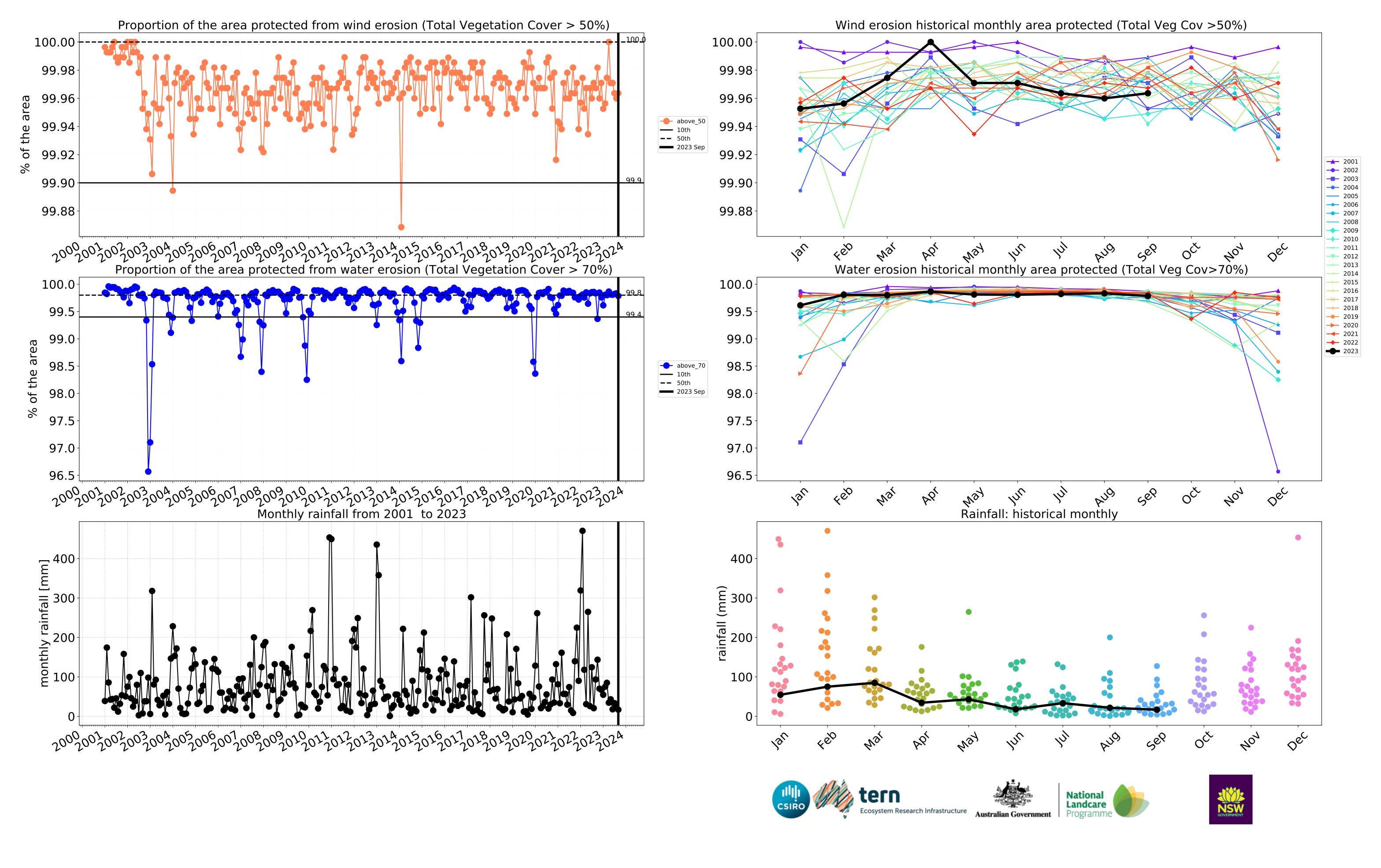


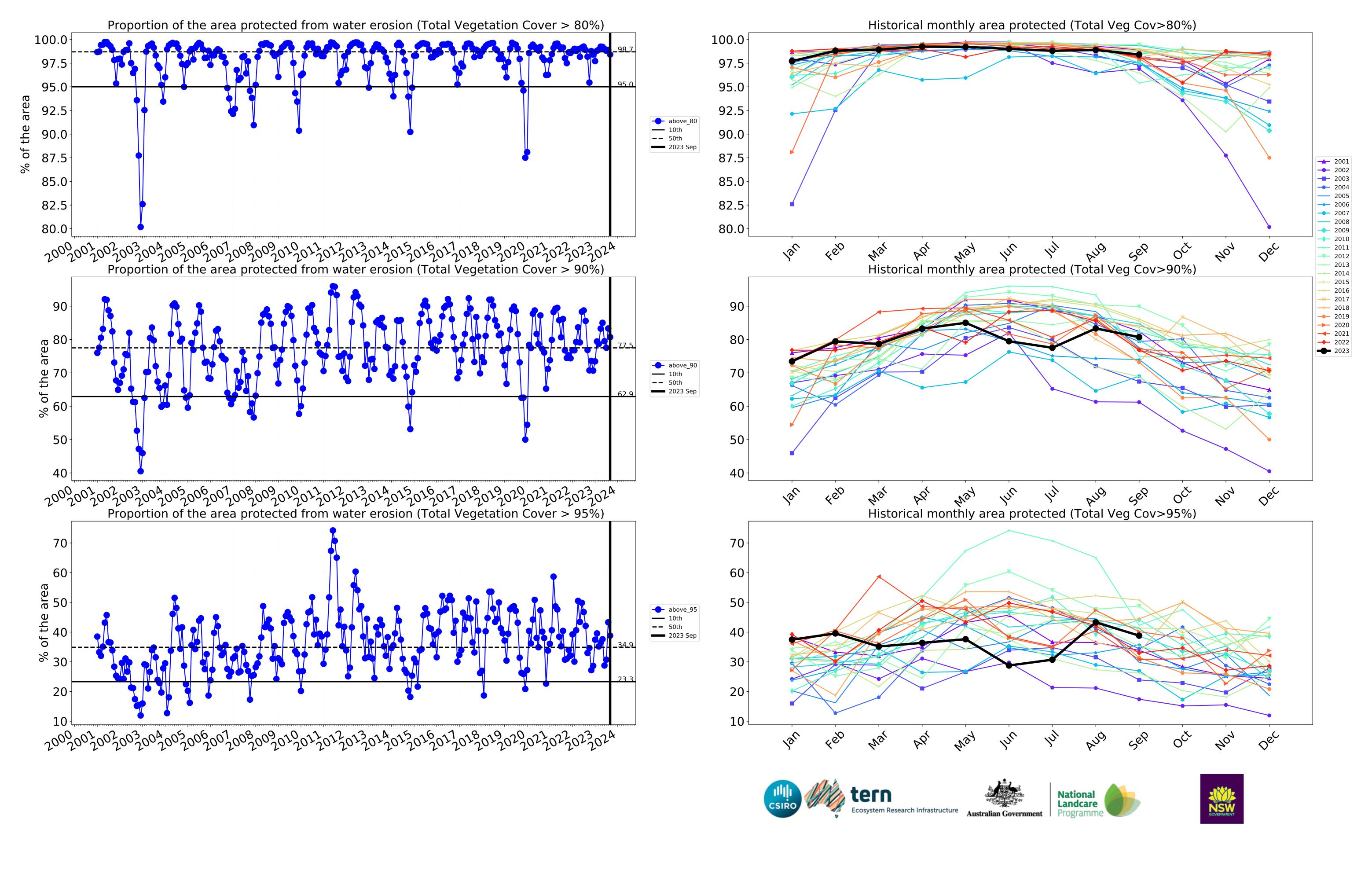




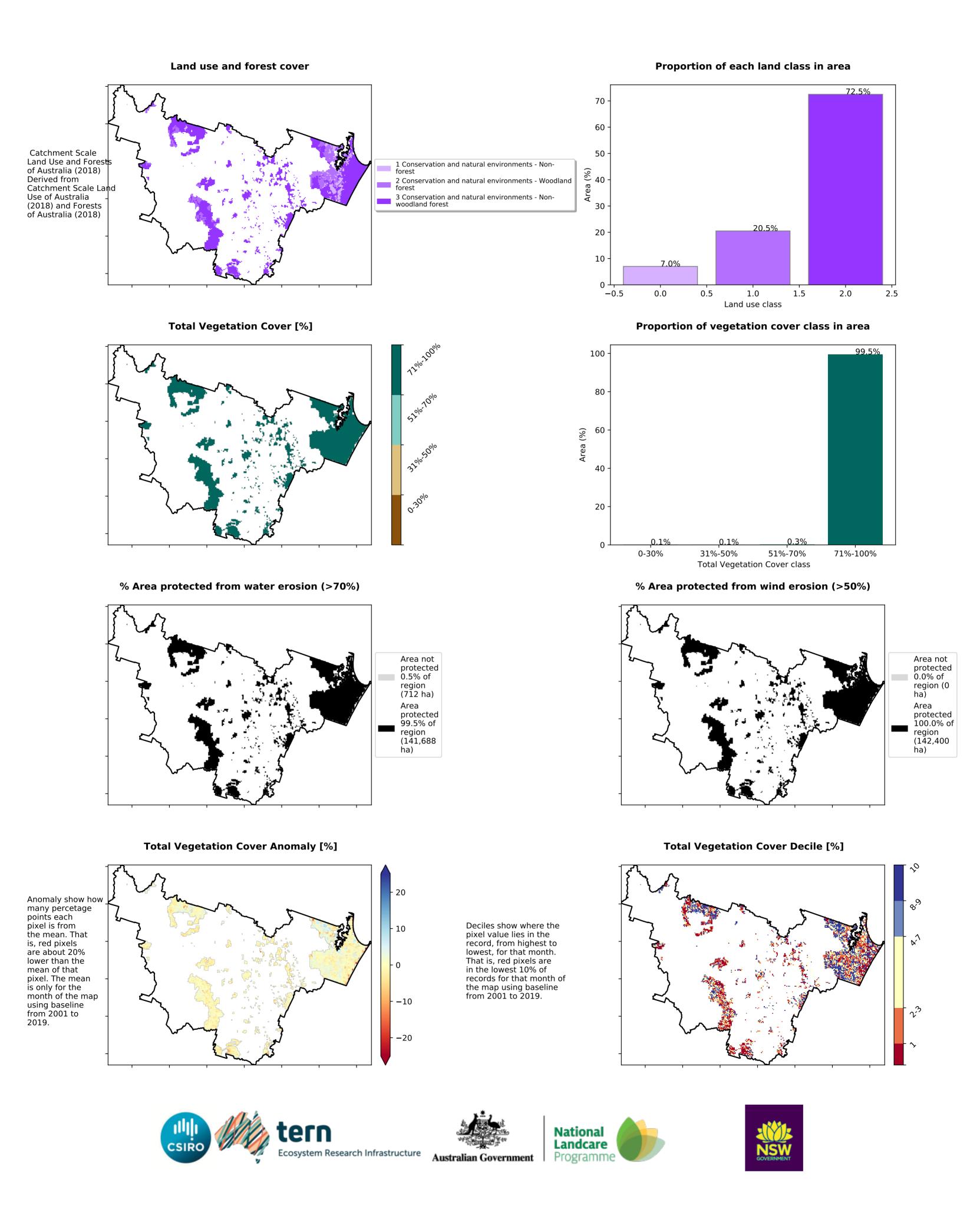




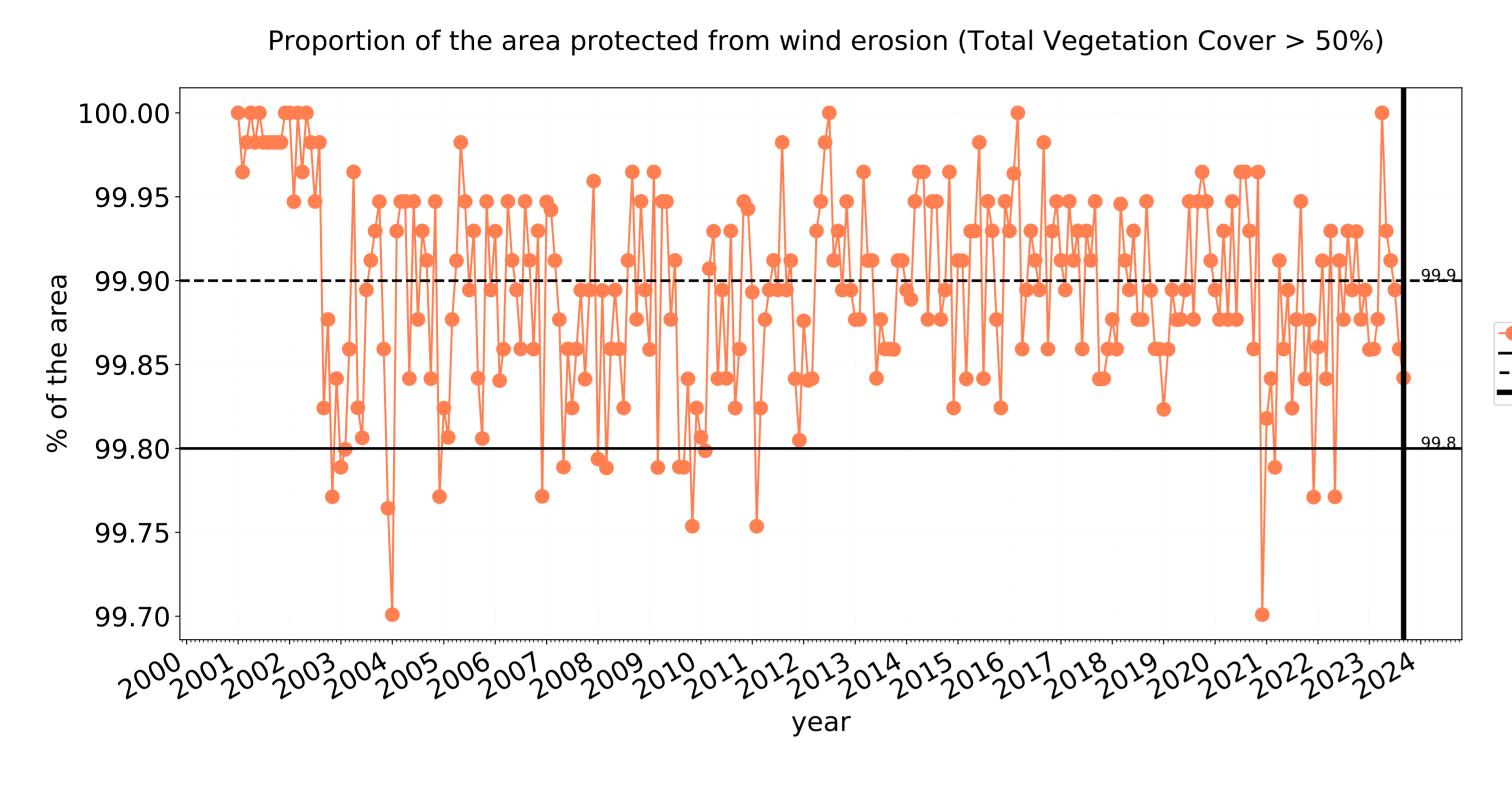


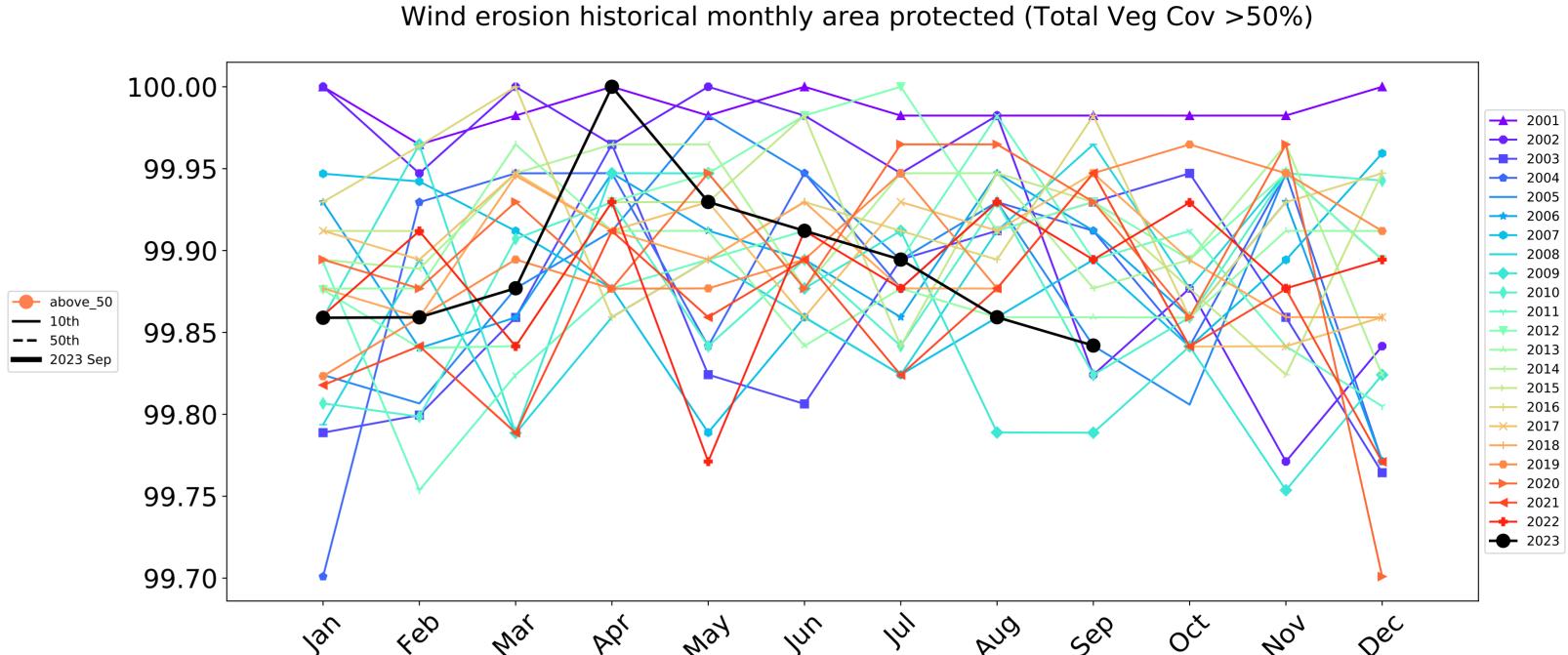


Conservation and natural environments

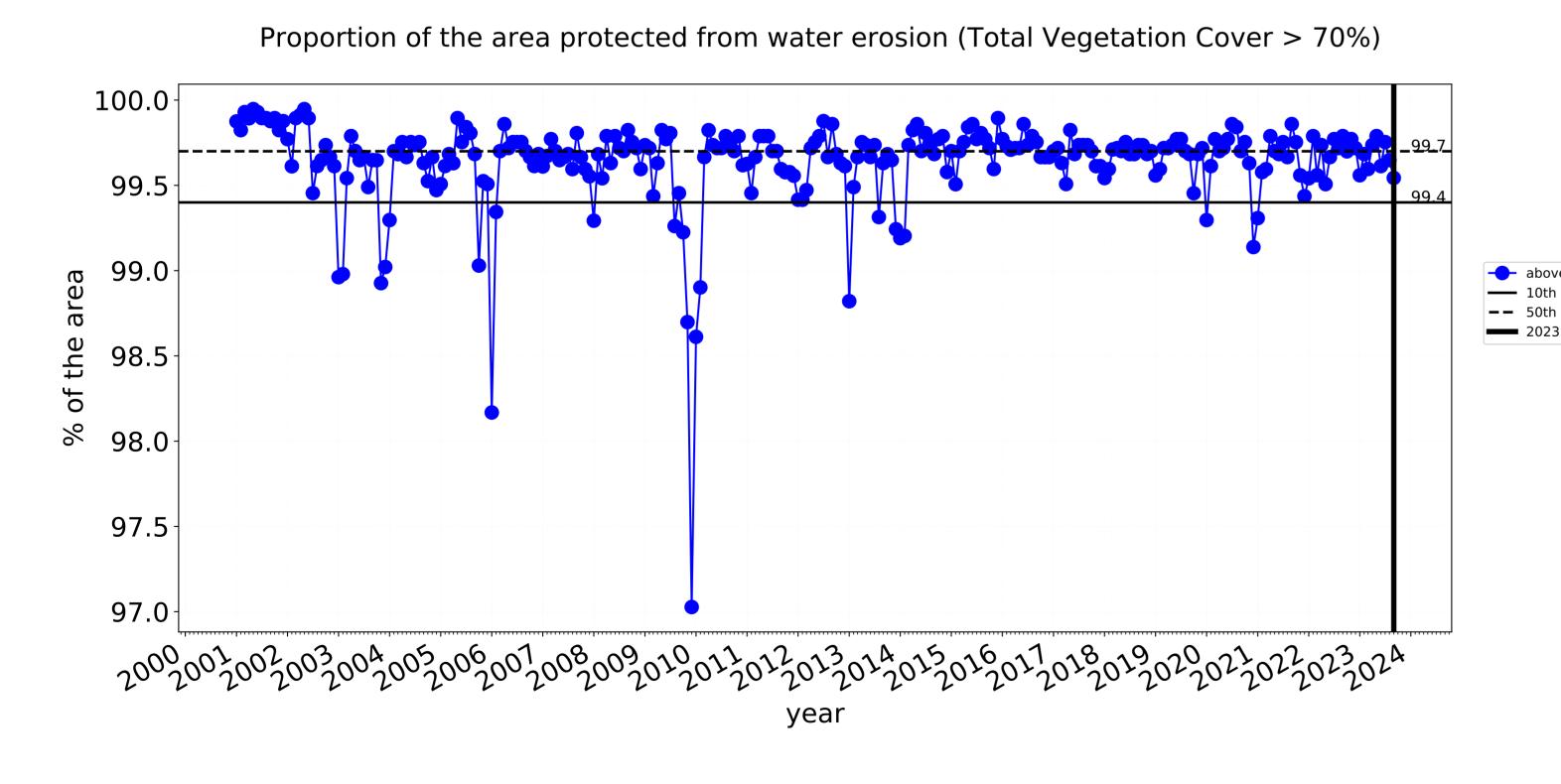


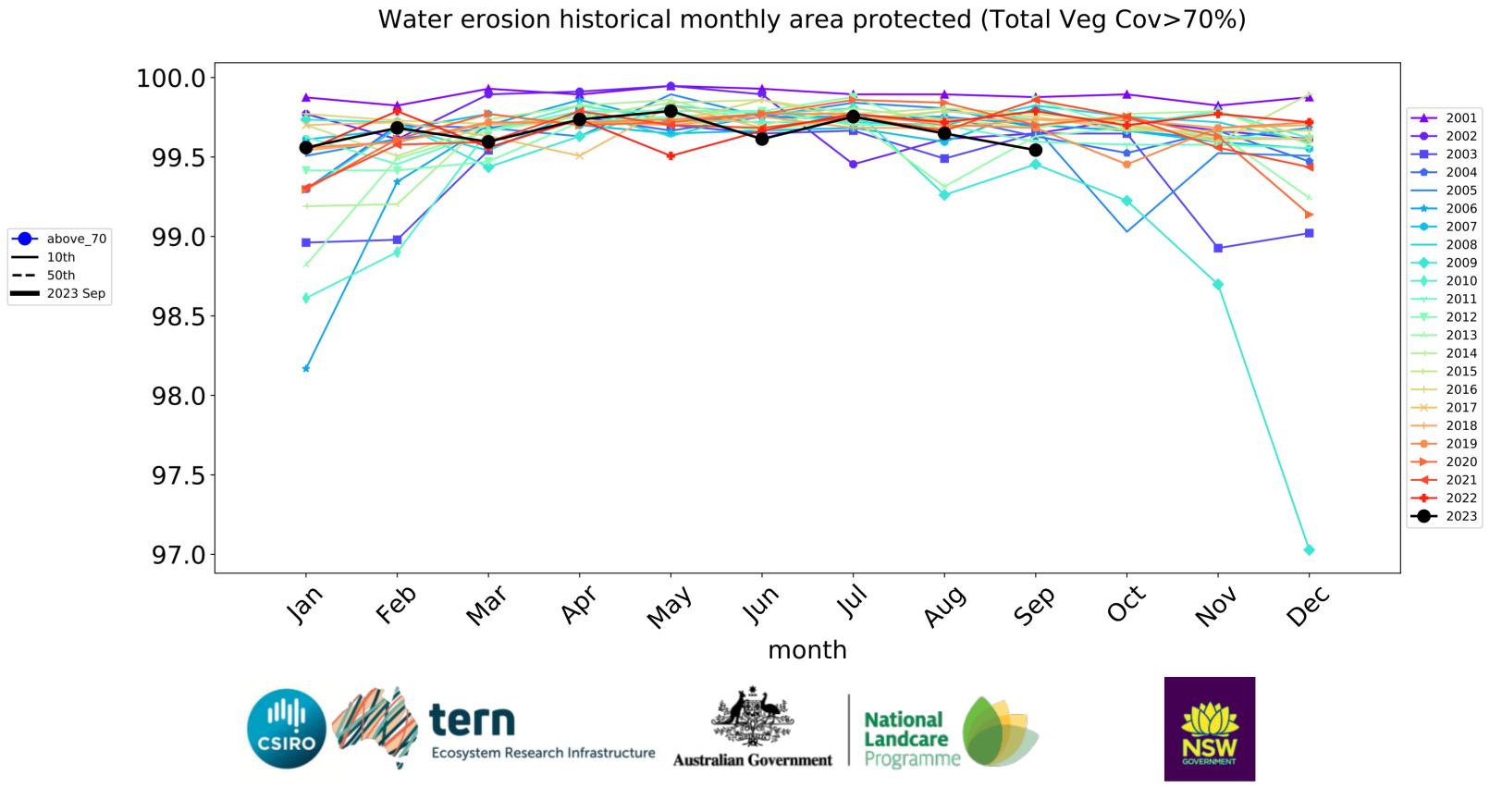
Conservation and natural environments timeseries

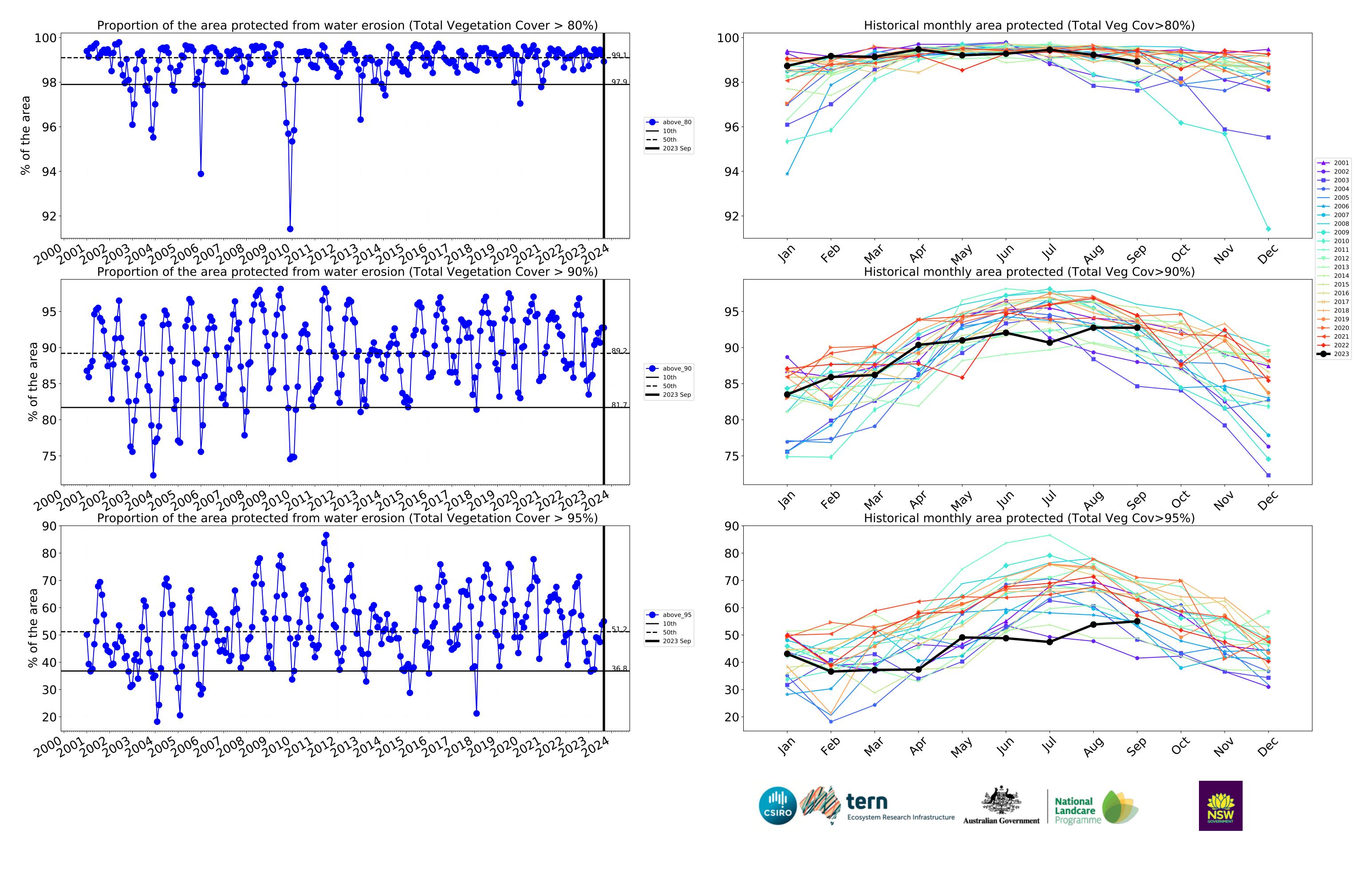




month

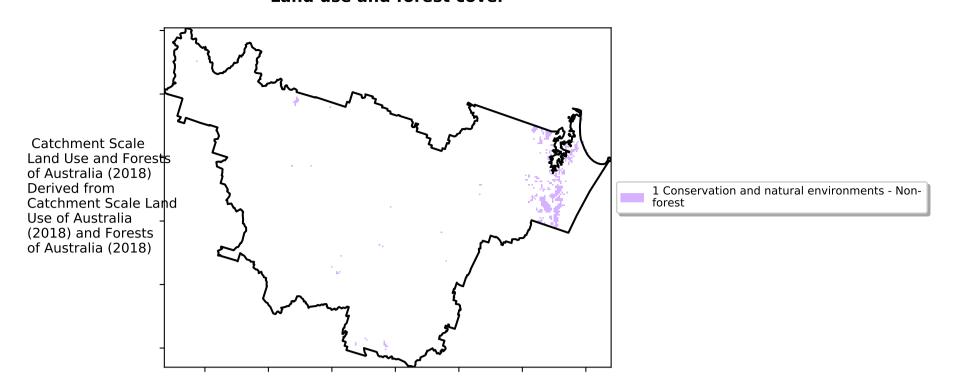




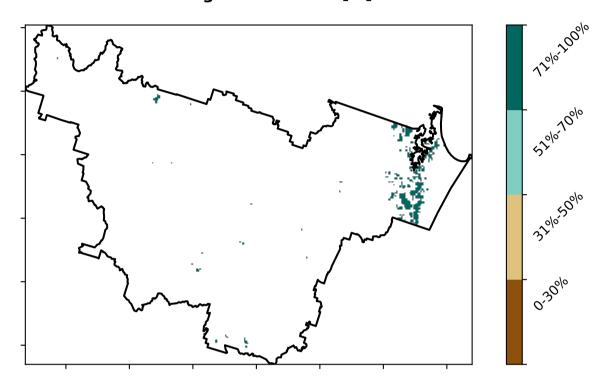


Conservation and natural environments non forest

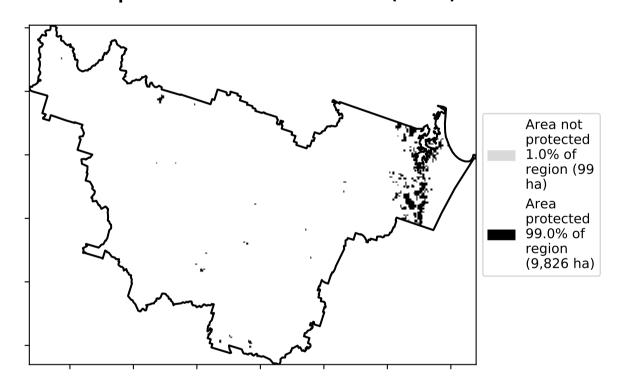
Land use and forest cover



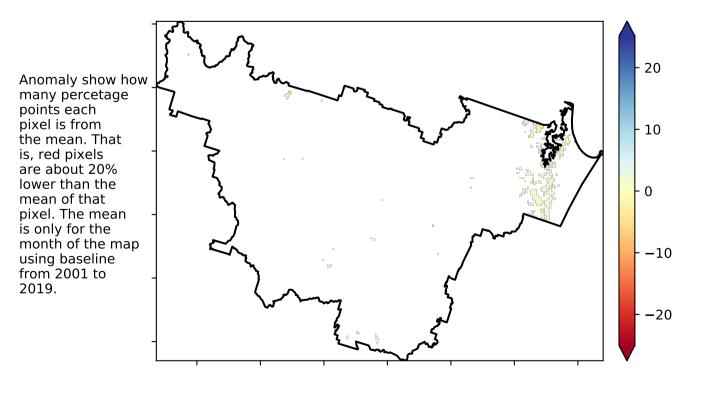
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

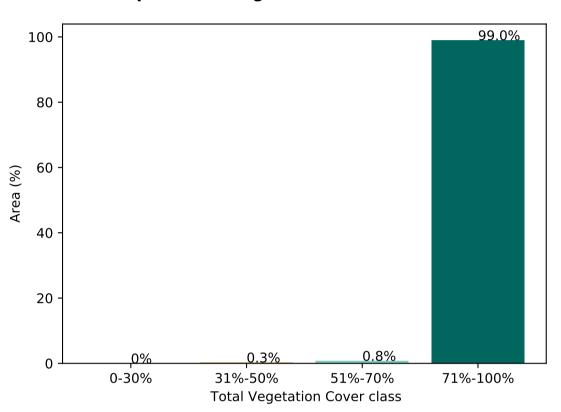


Total Vegetation Cover Anomaly [%]

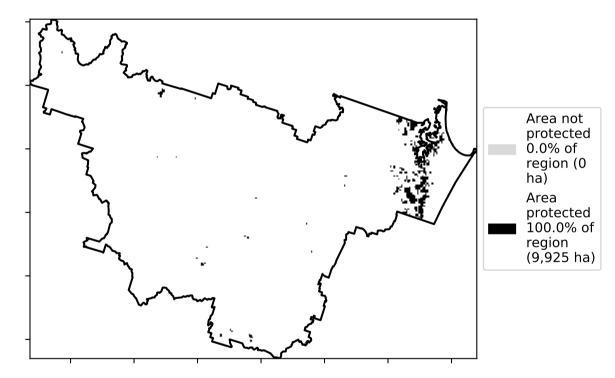


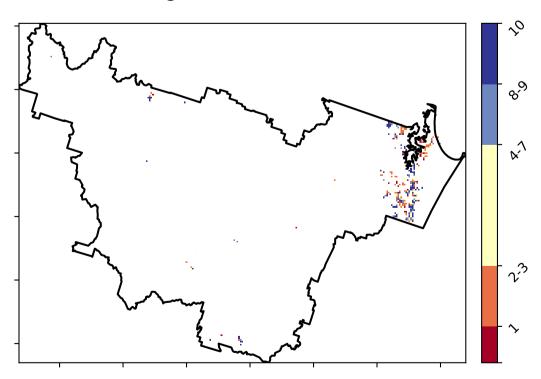
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





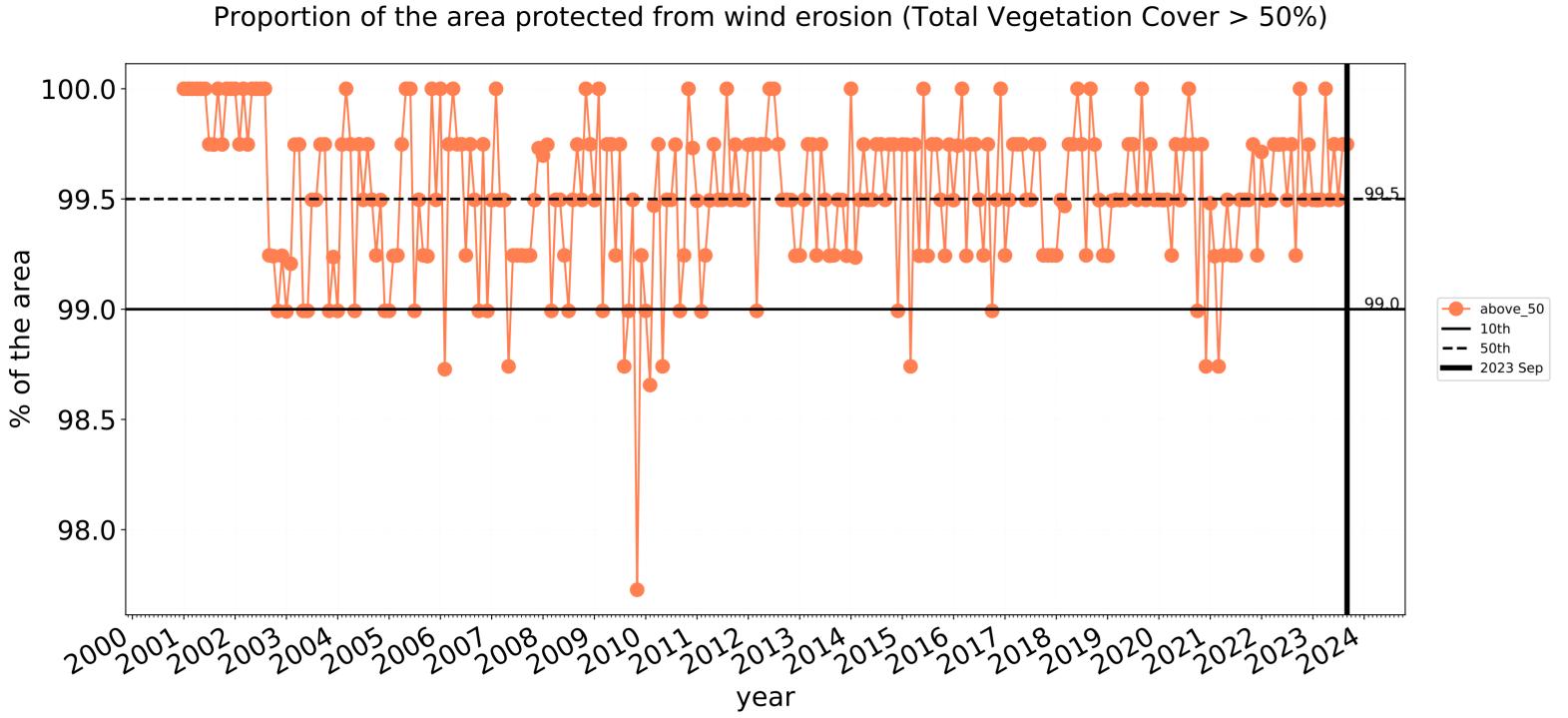


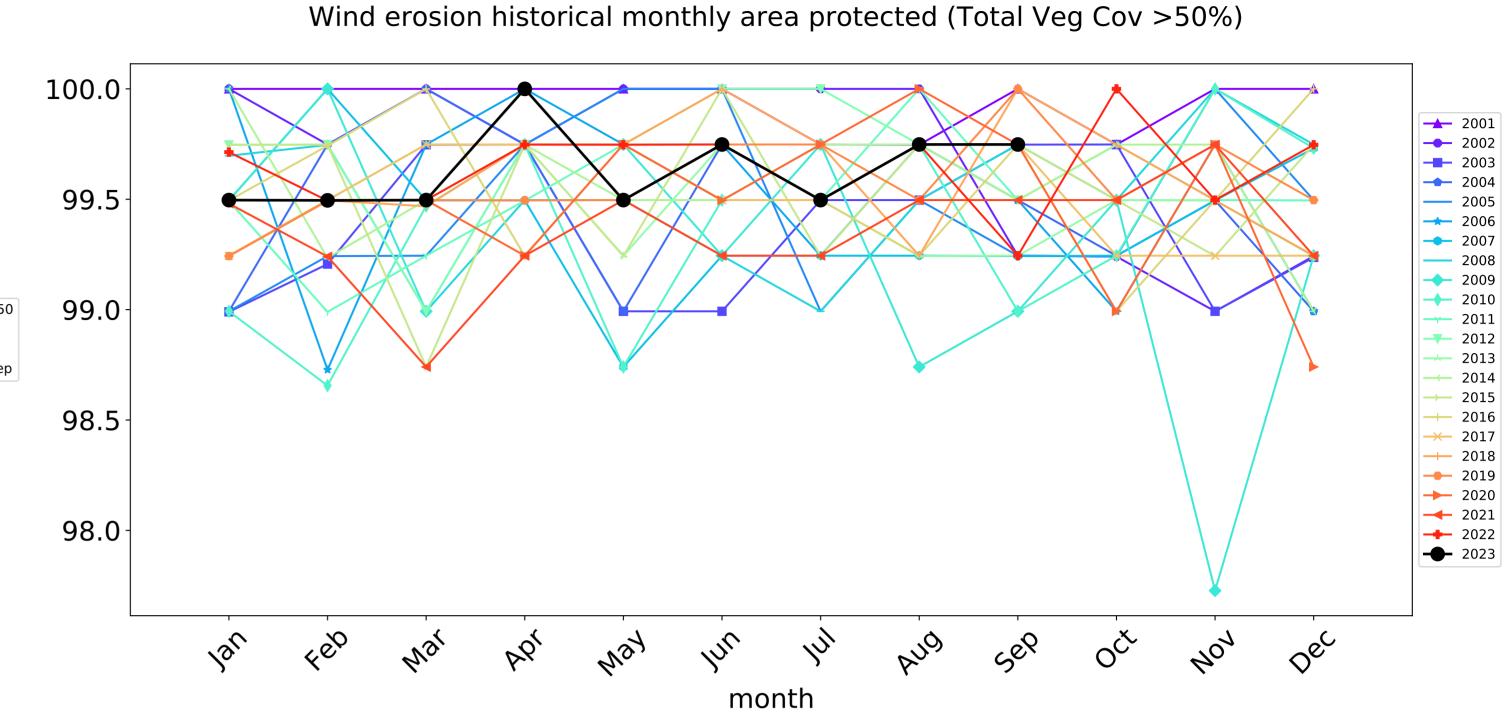


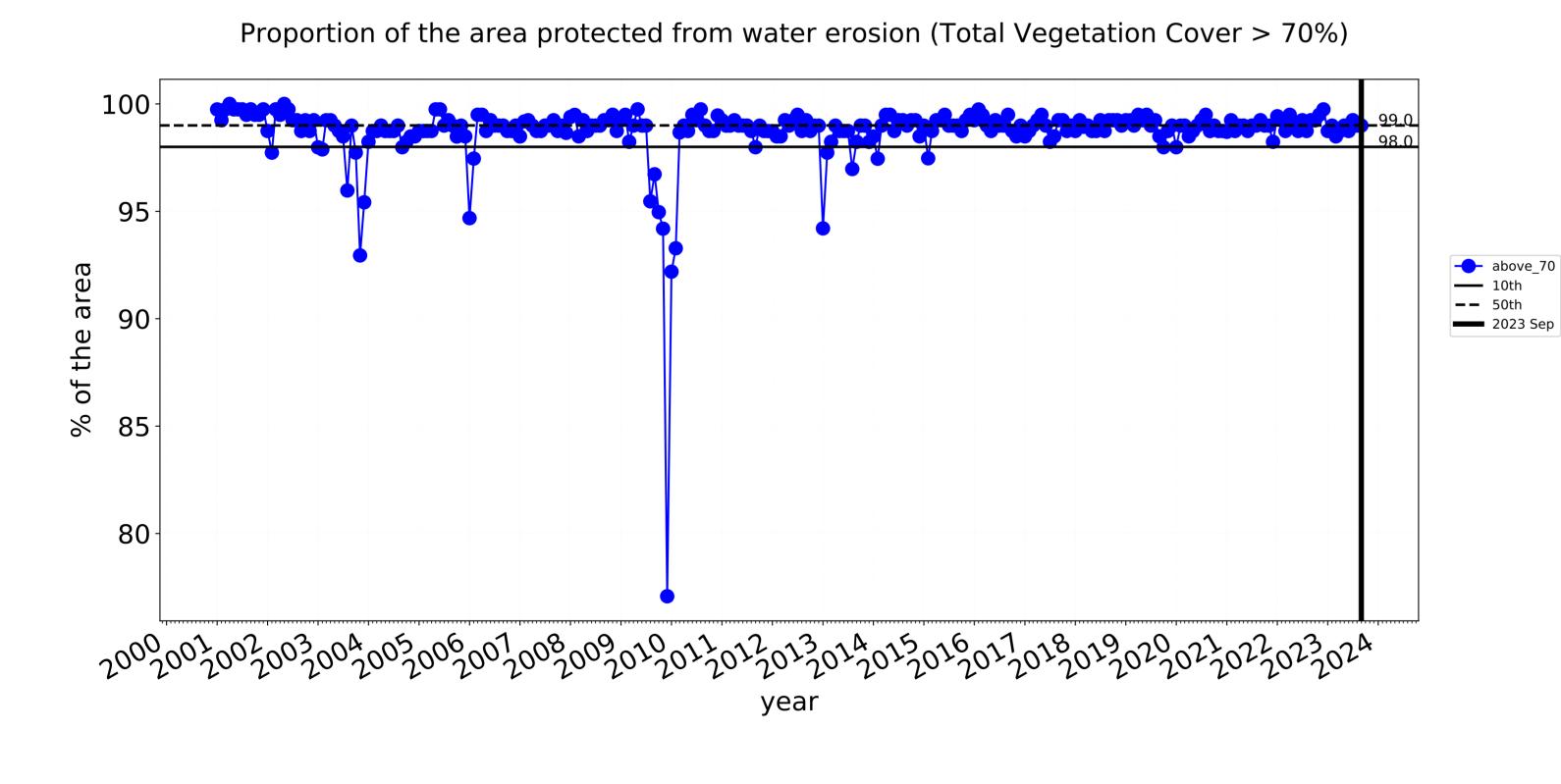


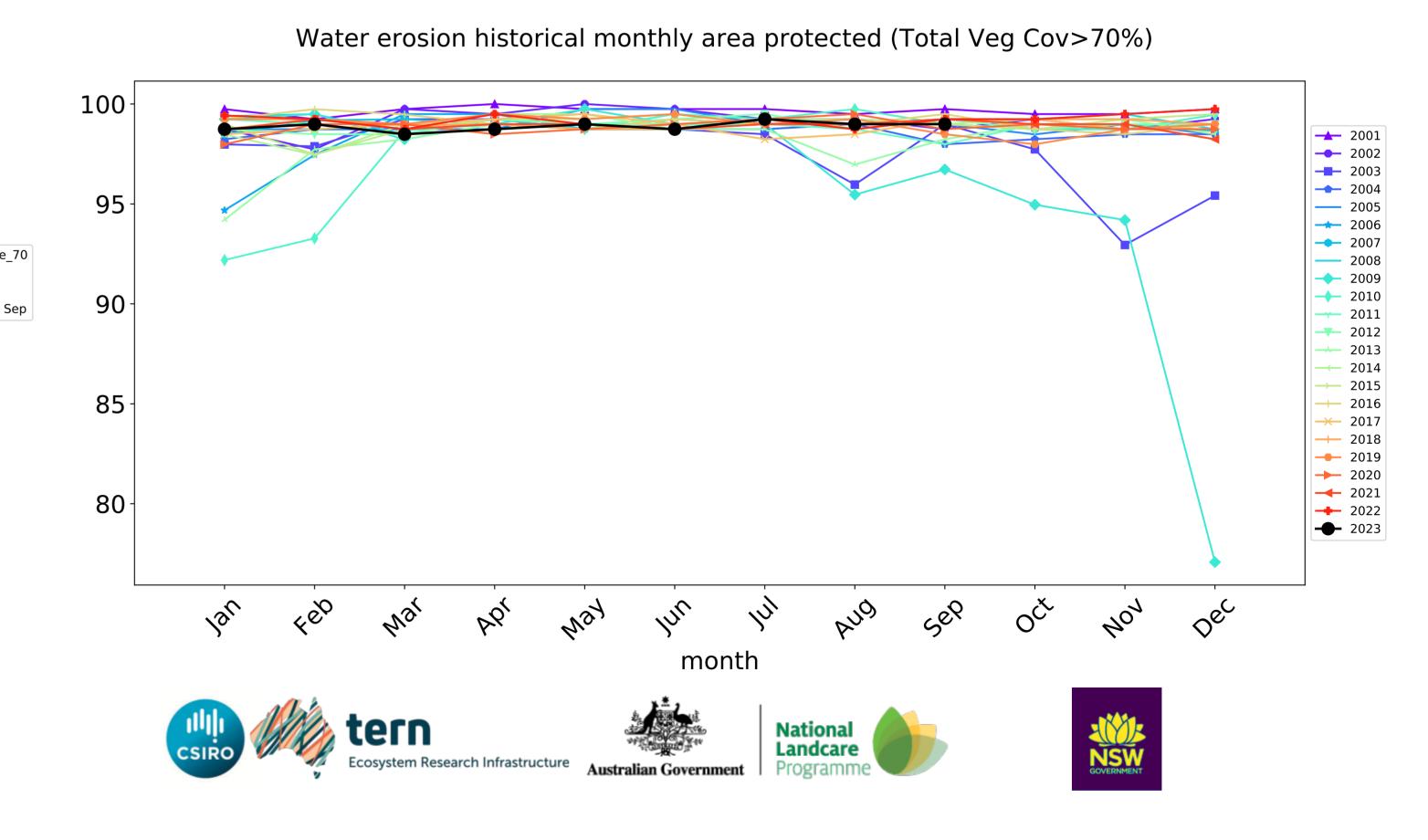


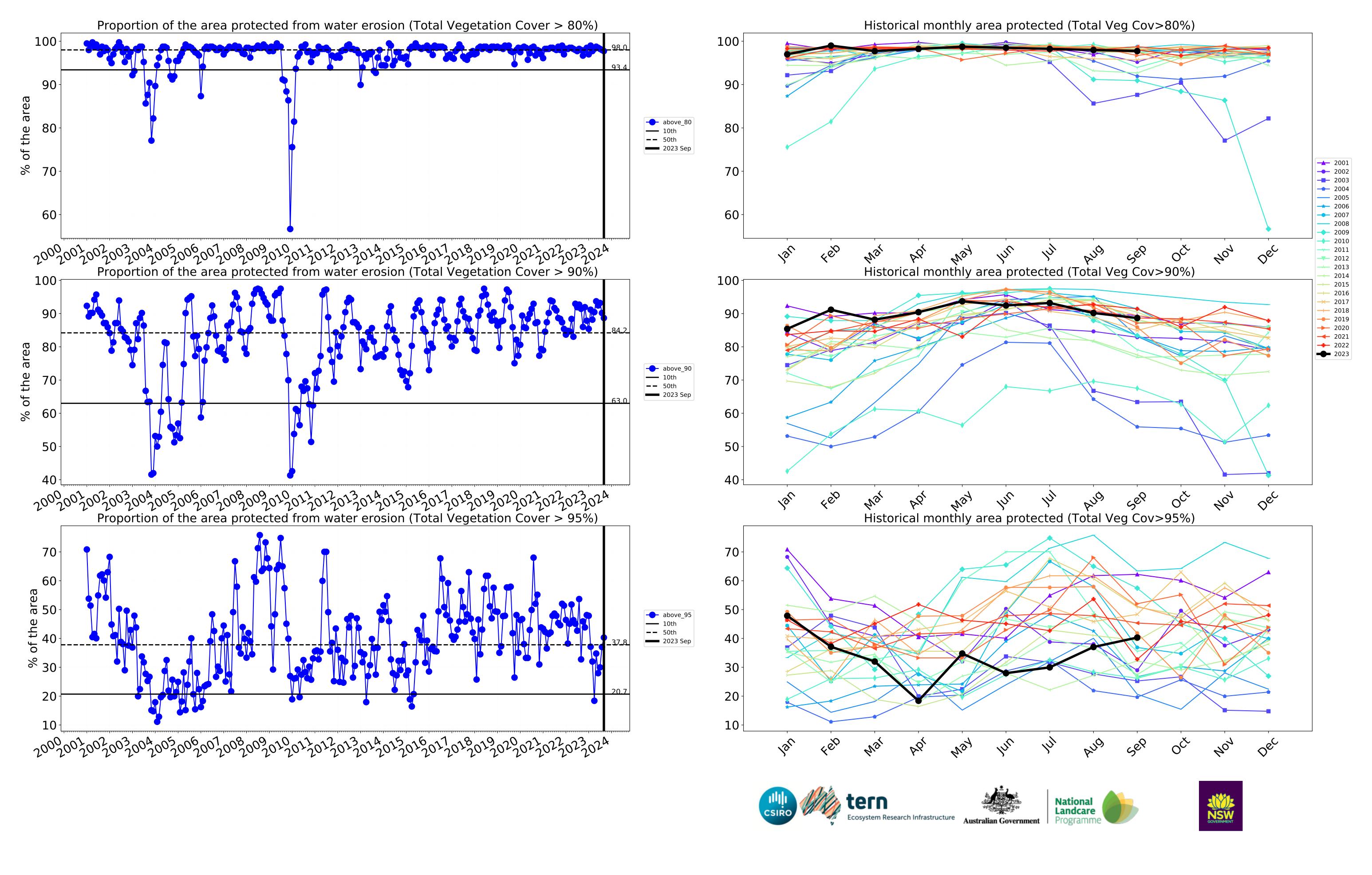
Conservation and natural environments non forest timeseries







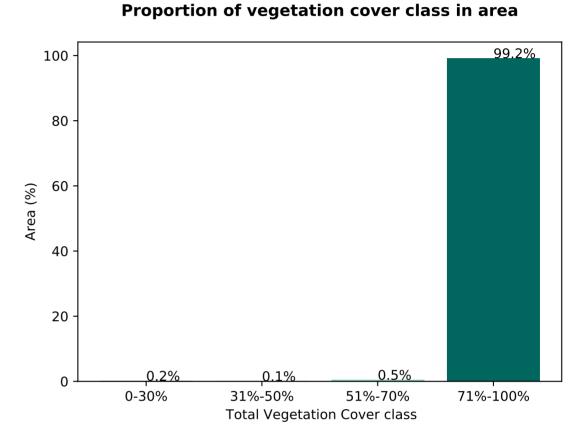


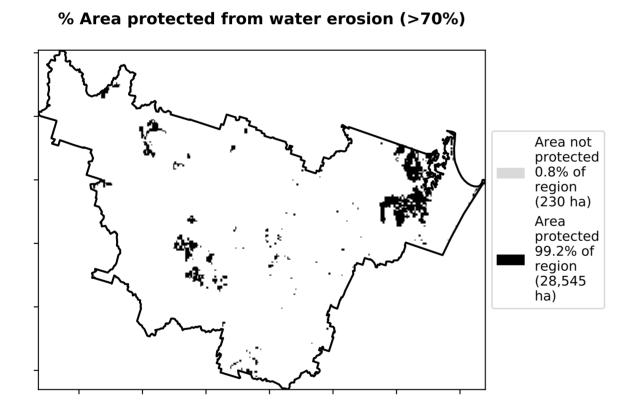


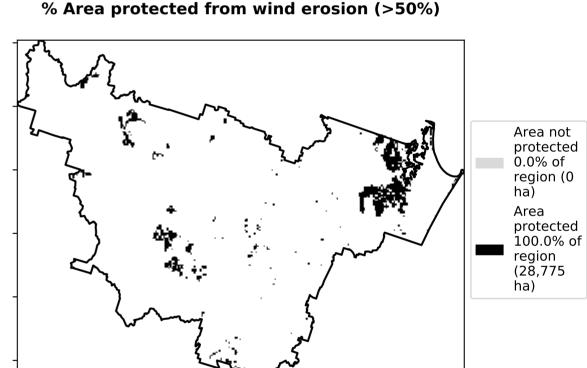
Conservation and natural environments Woodland forest

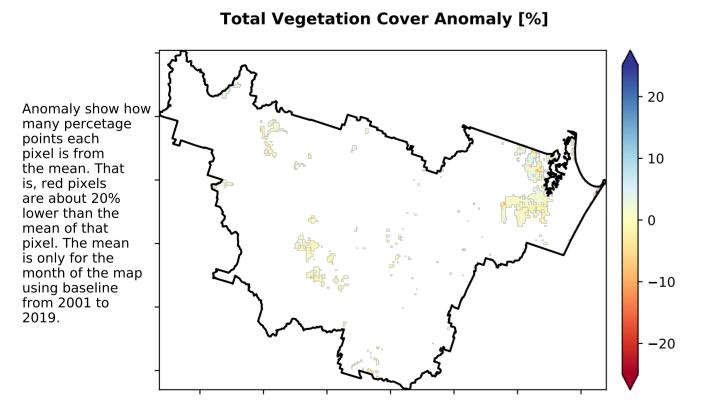
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Woodland Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Total Vegetation Cover [%]

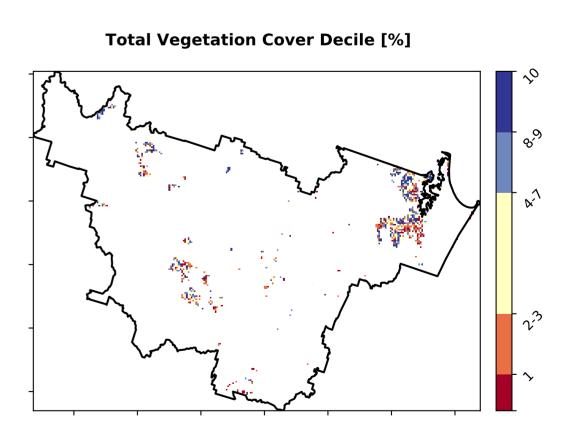








Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.



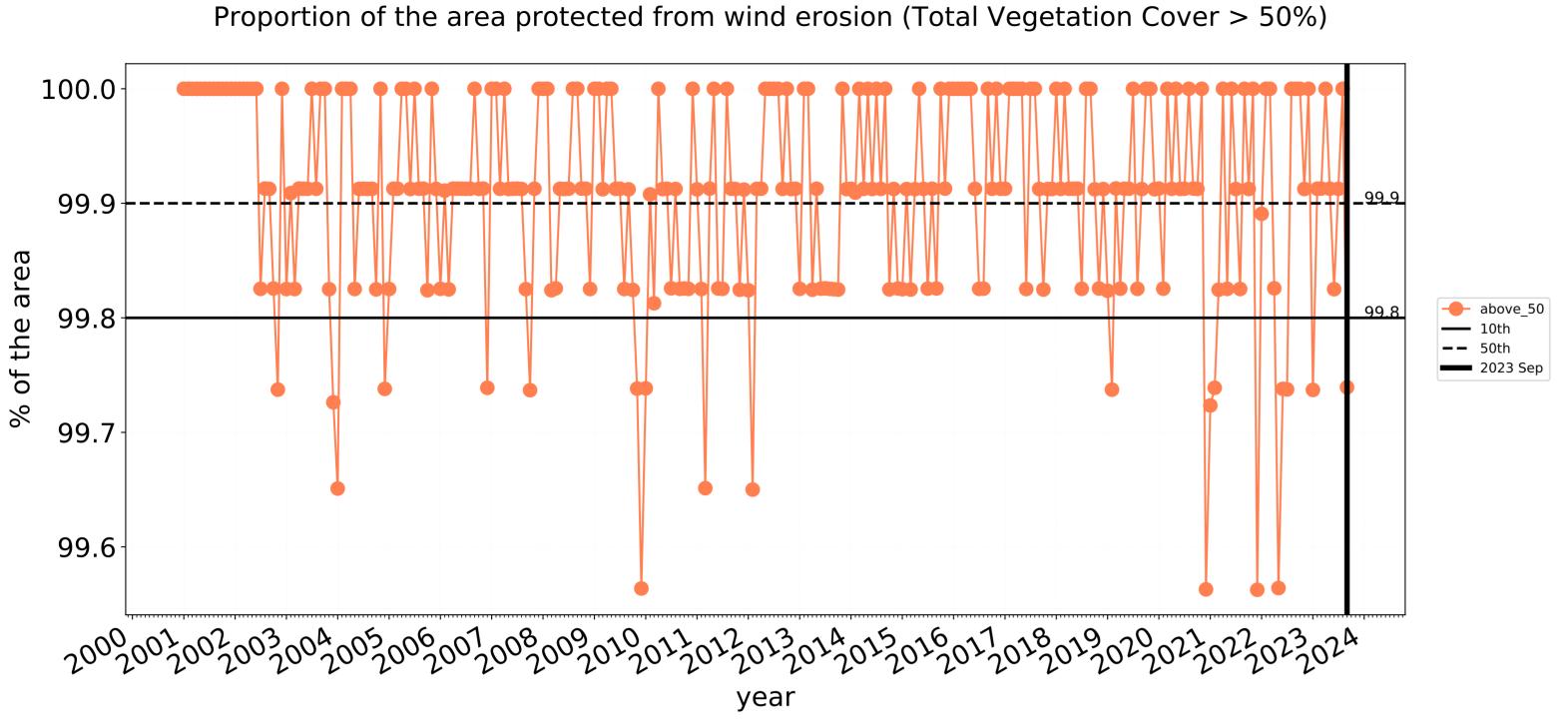


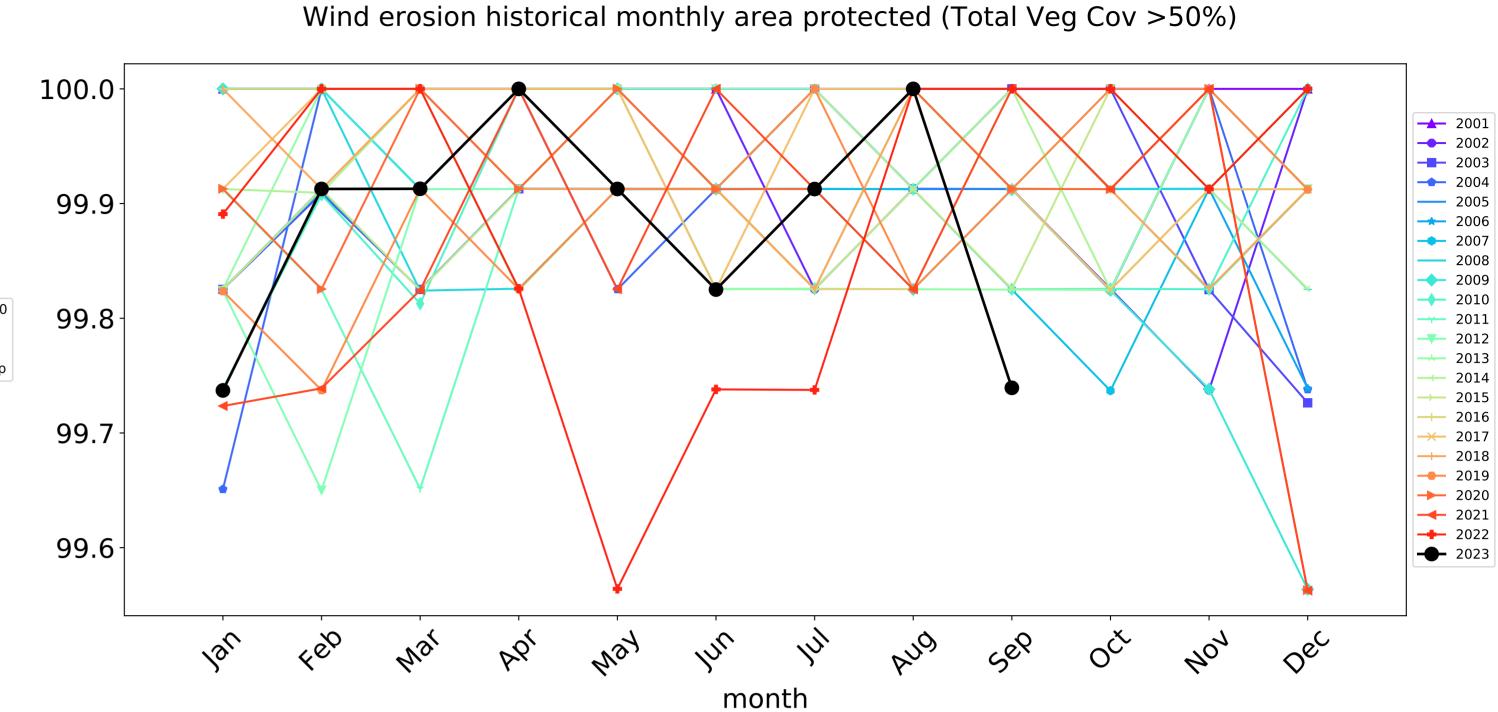


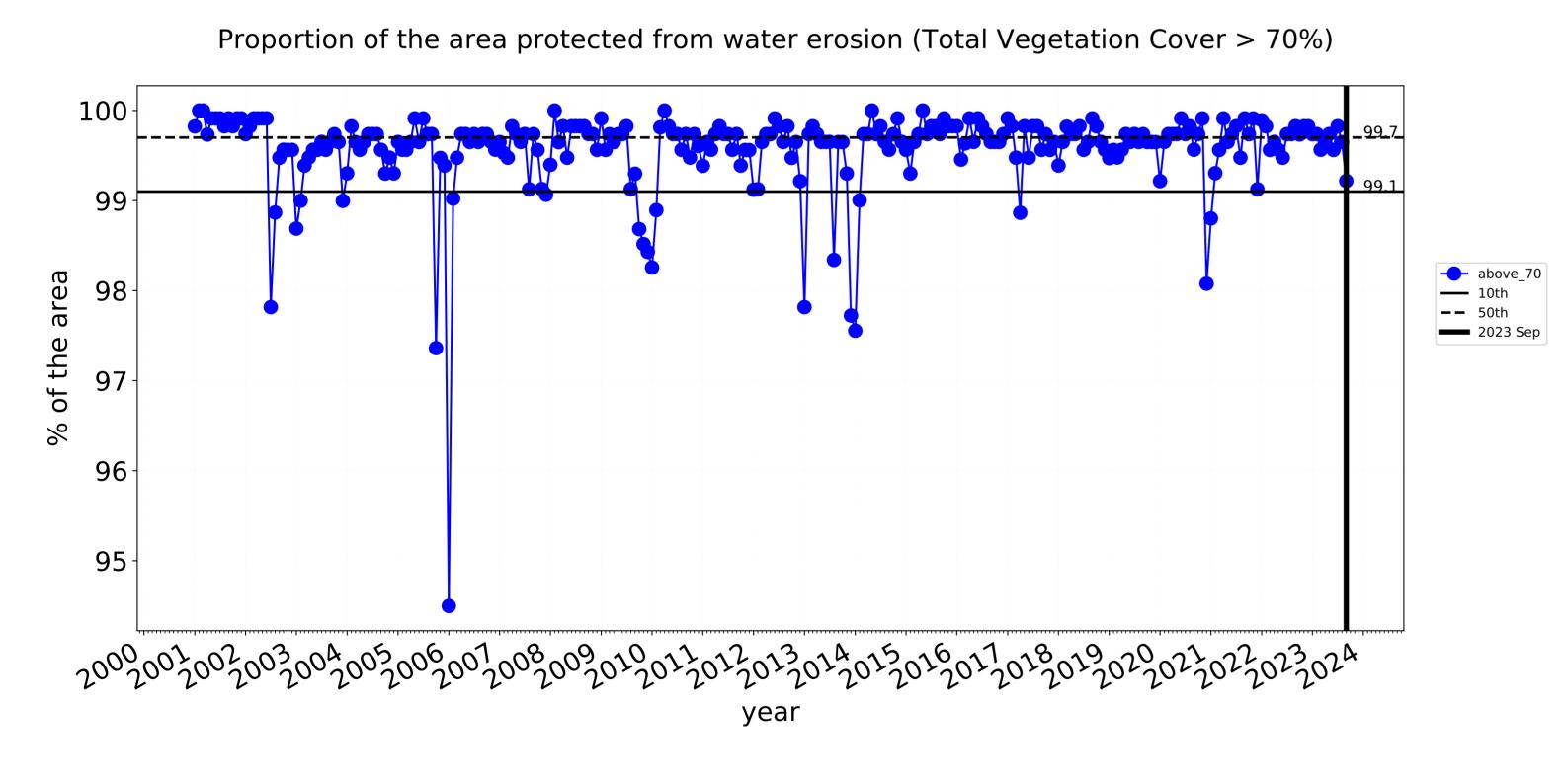


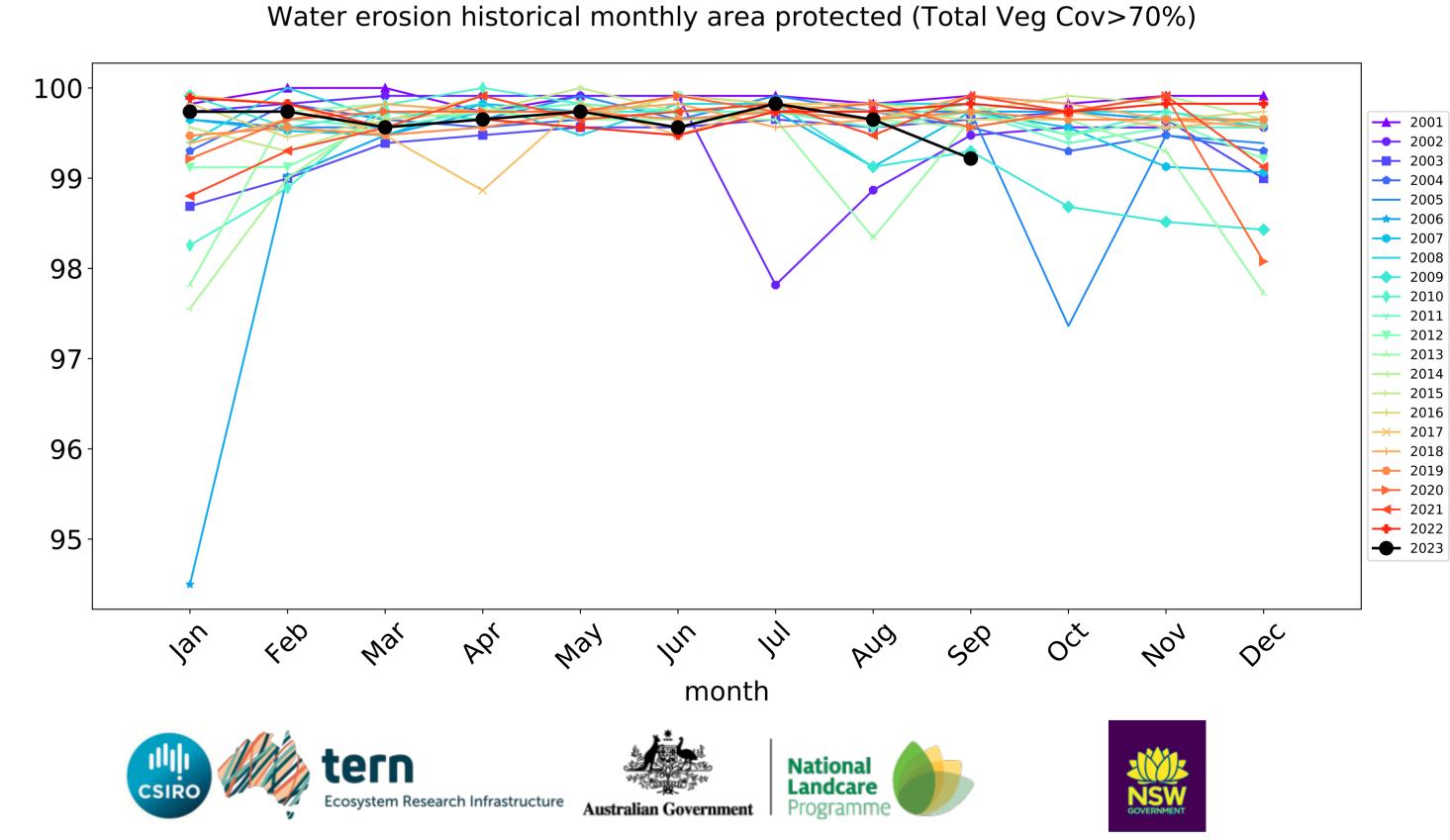


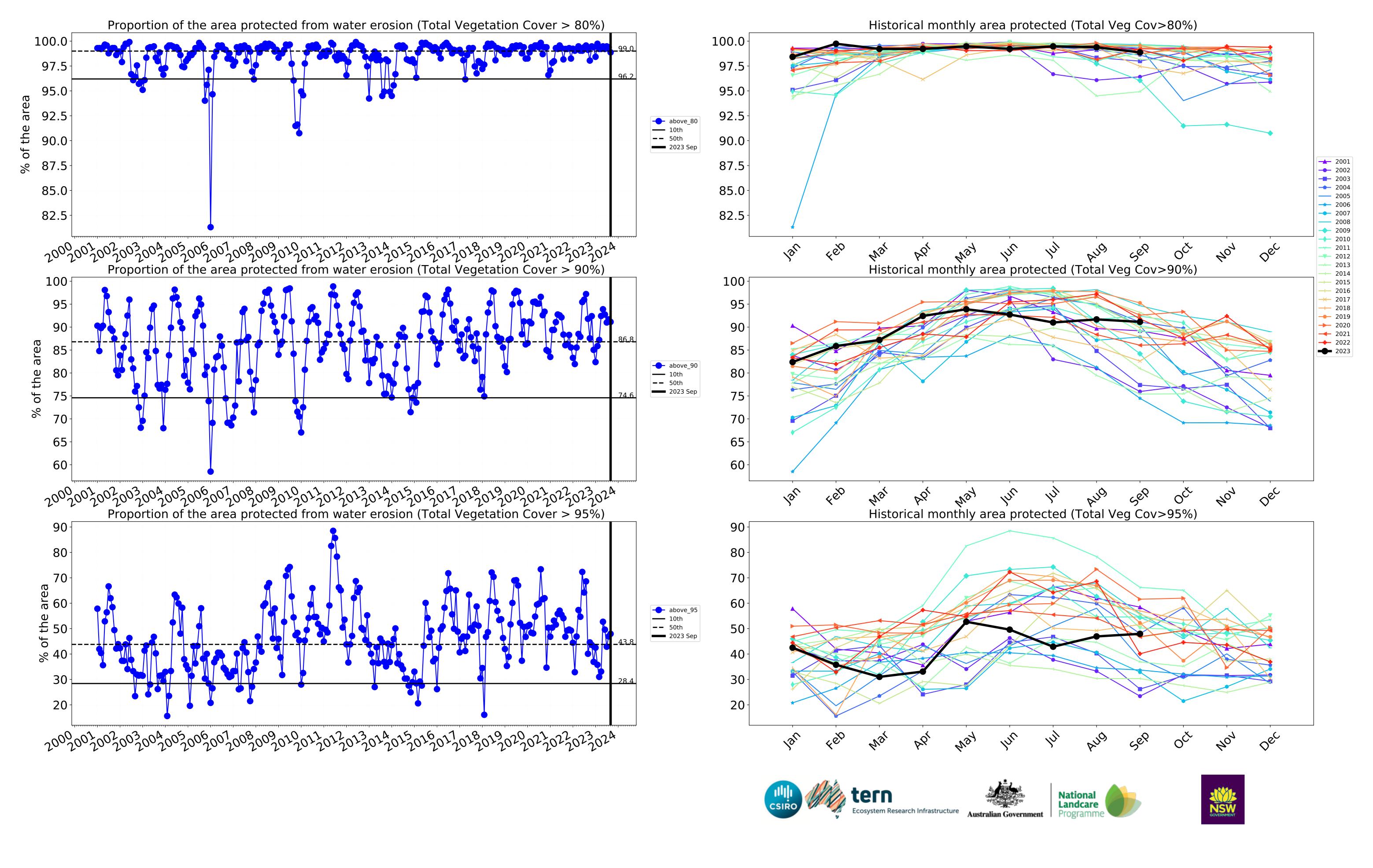
Conservation and natural environments Woodland forest timeseries



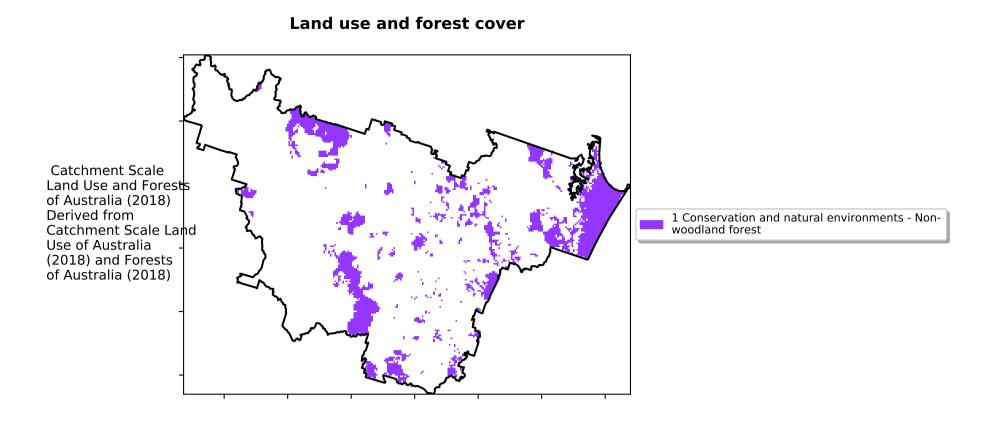






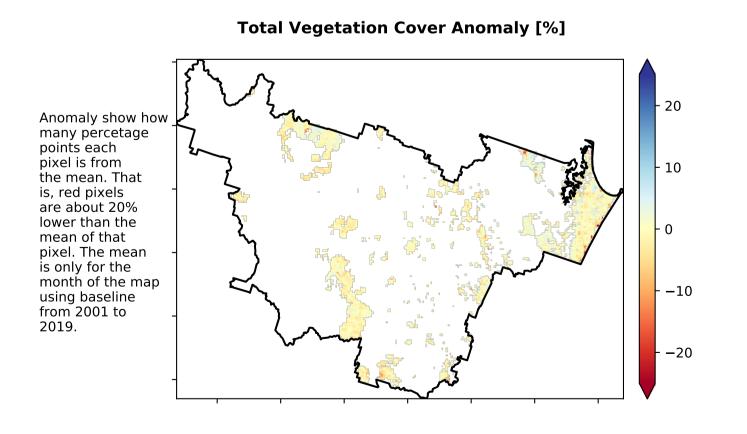


Conservation and natural environments Forest (non woodland)

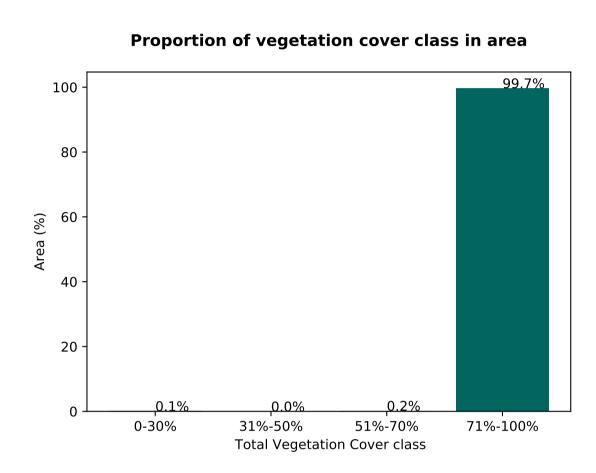


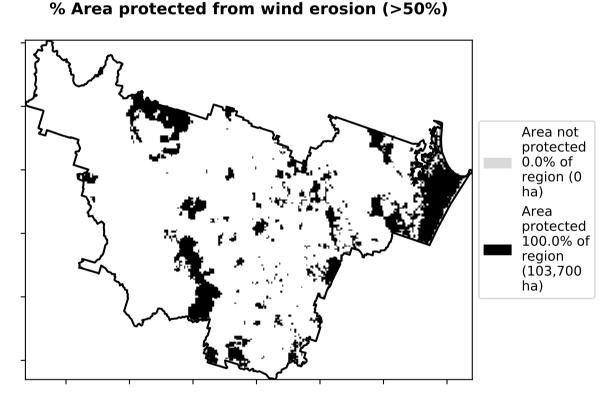
Total Vegetation Cover [%] Tuolo Judolo Tuolo Judolo Sulo Judolo Sulo Judolo O 30010

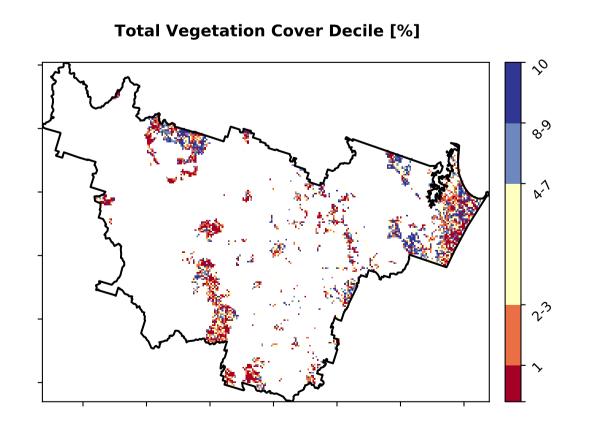
% Area protected from water erosion (>70%) Area not protected 0.3% of region (311 ha) Area protected 99.7% of region (103,389 ha)



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.





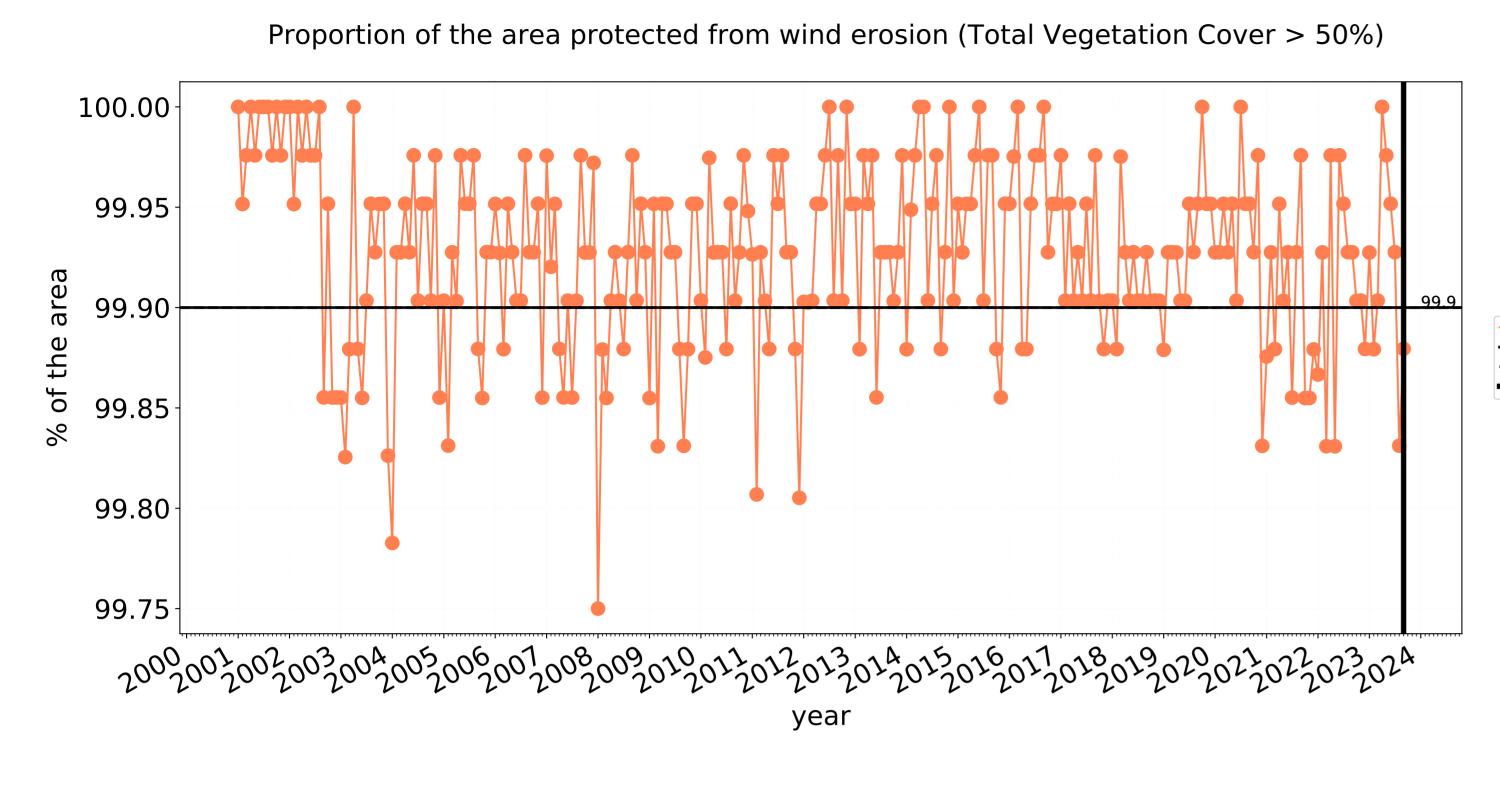


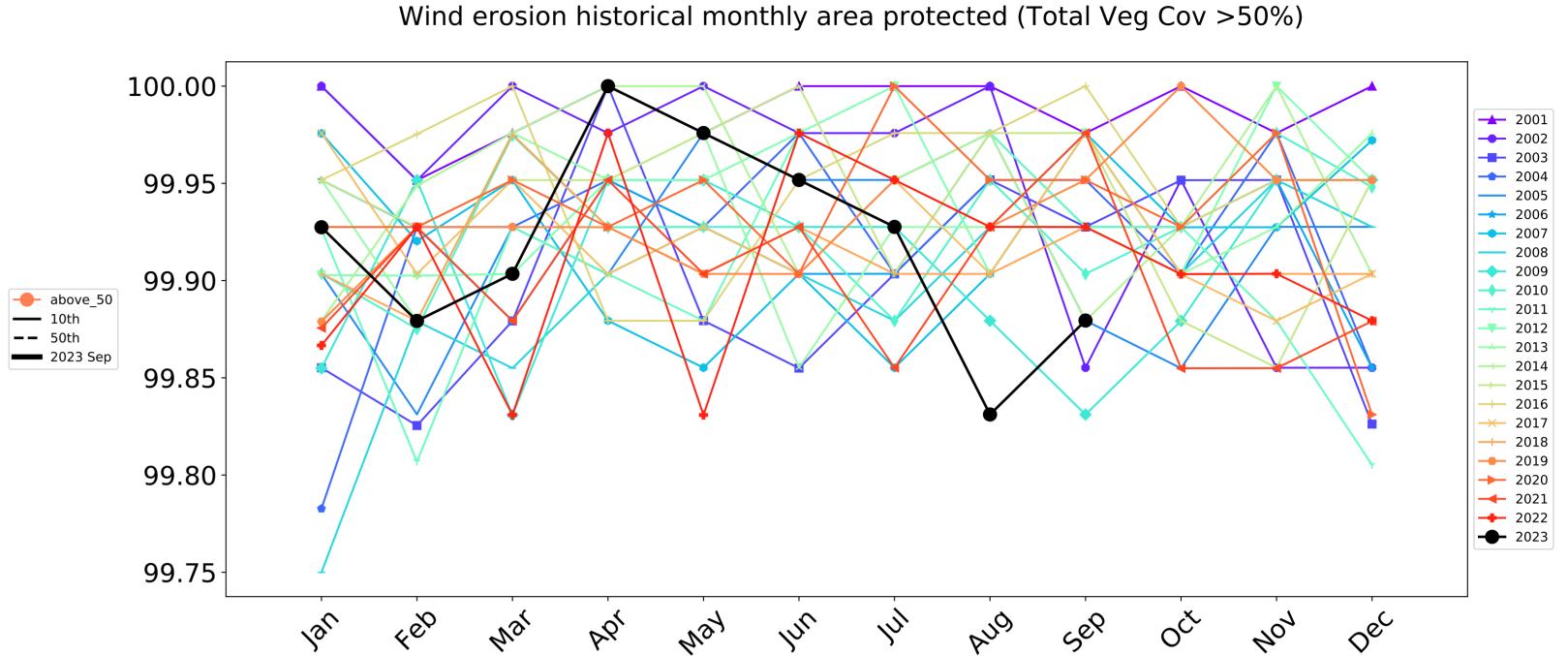




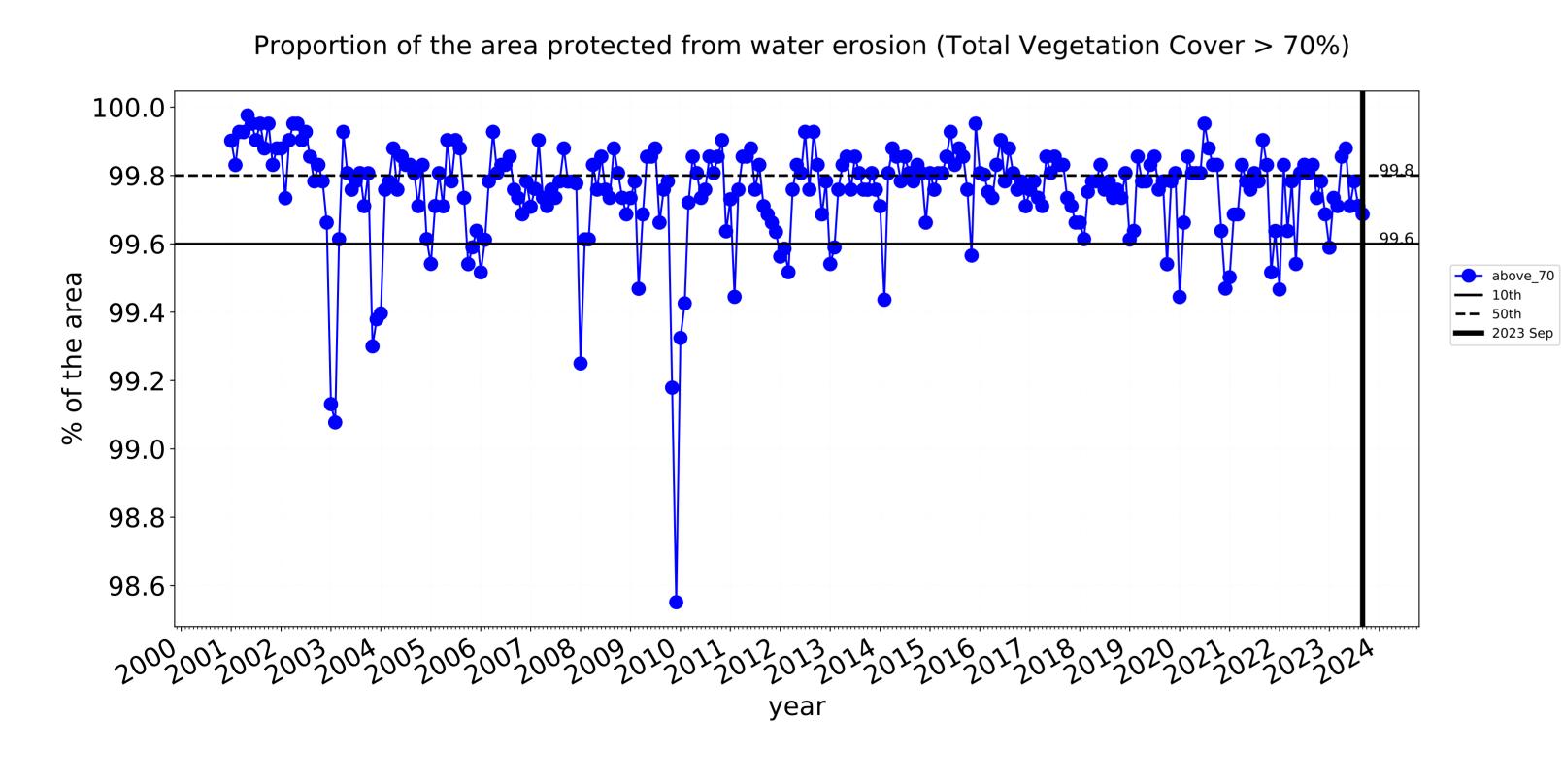


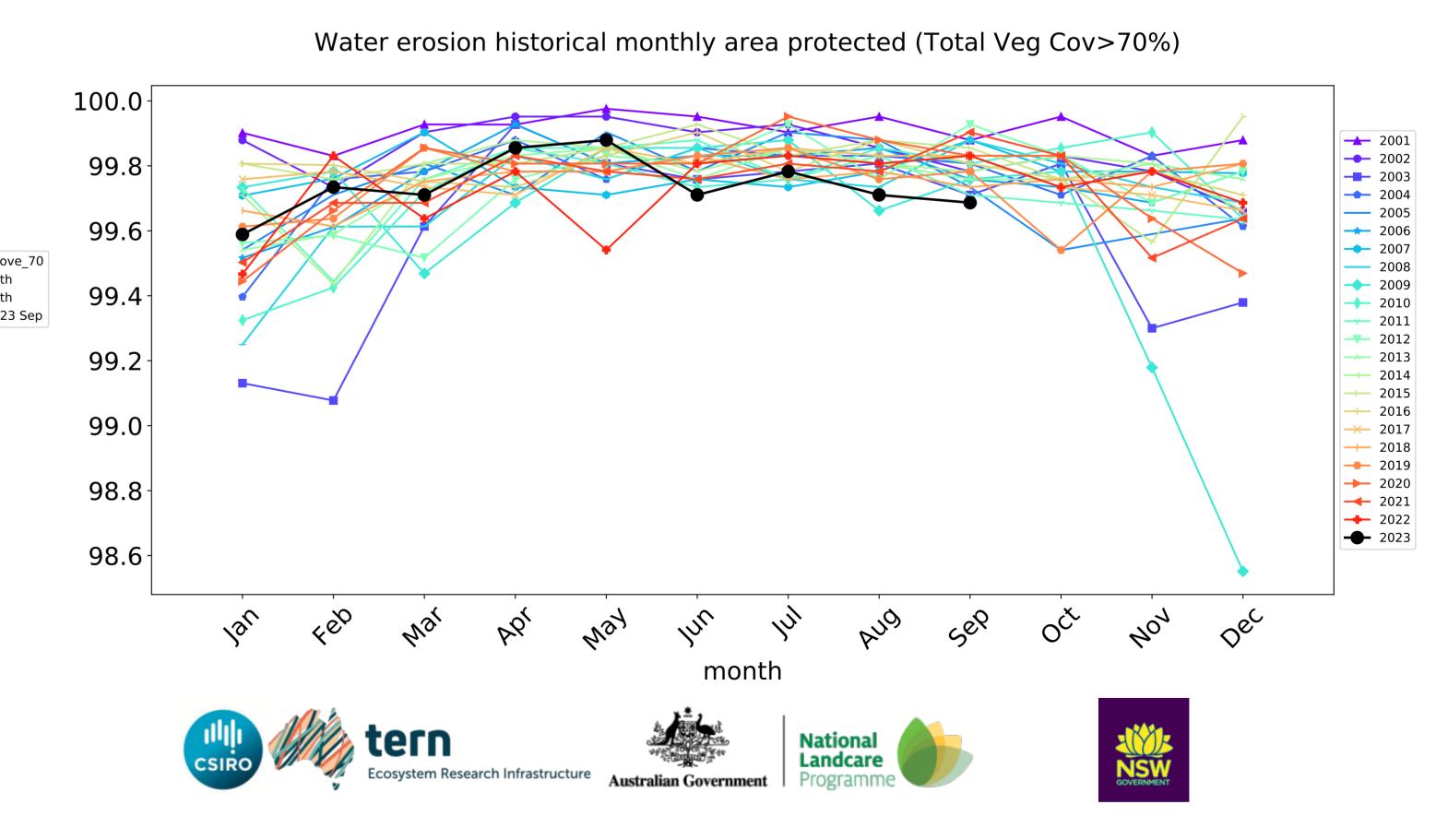


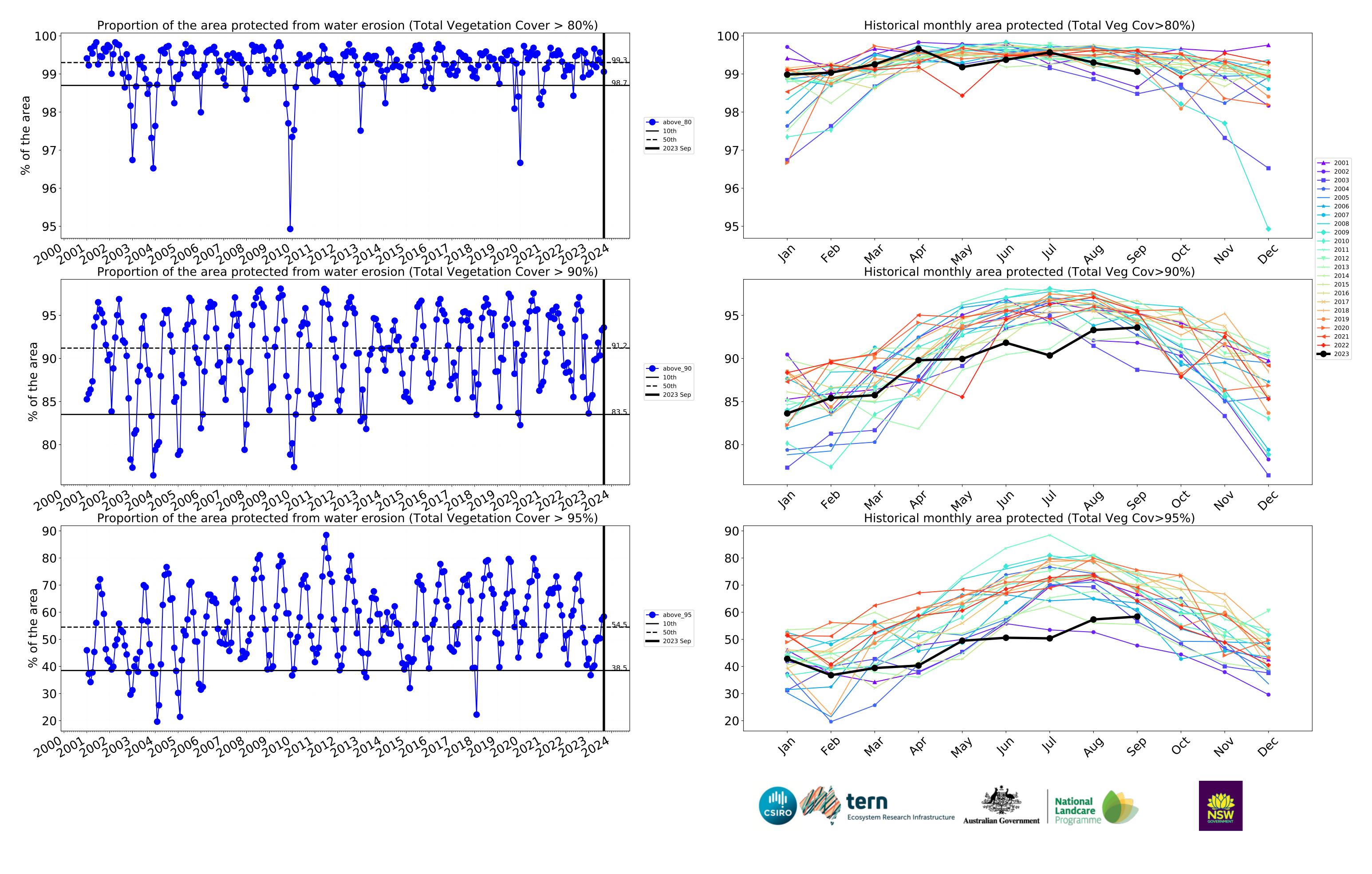




month

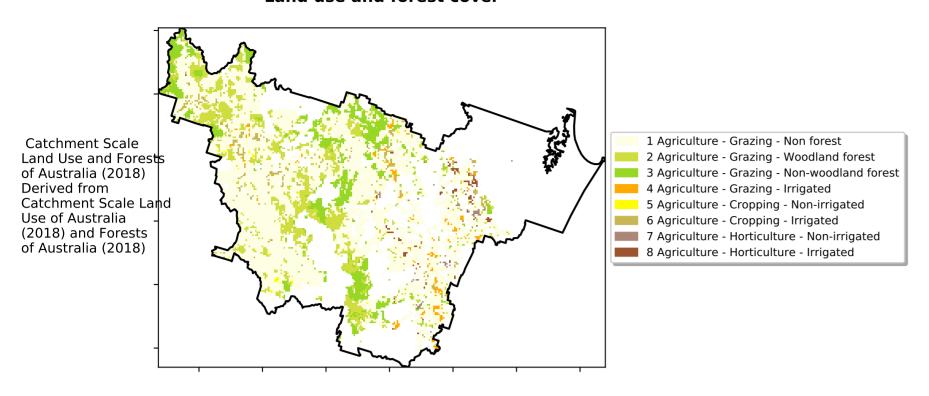


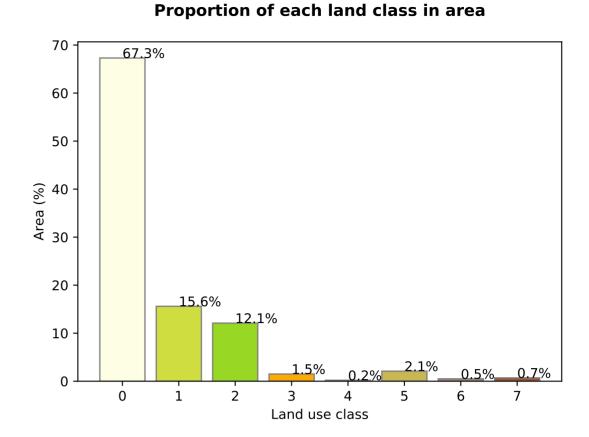




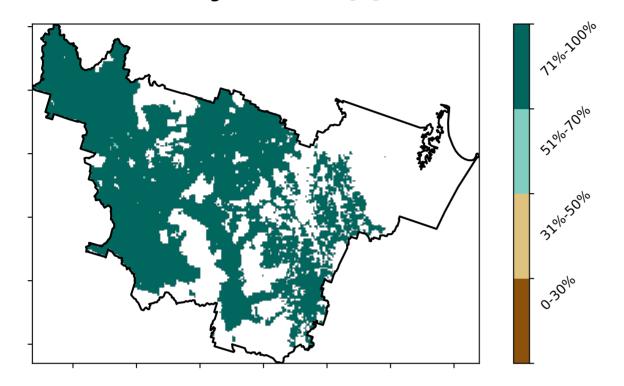
Agriculture

Land use and forest cover

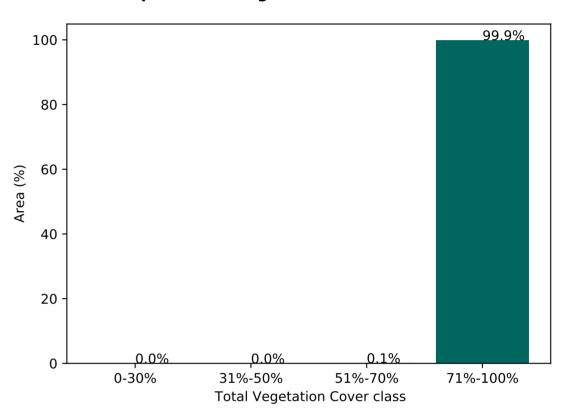




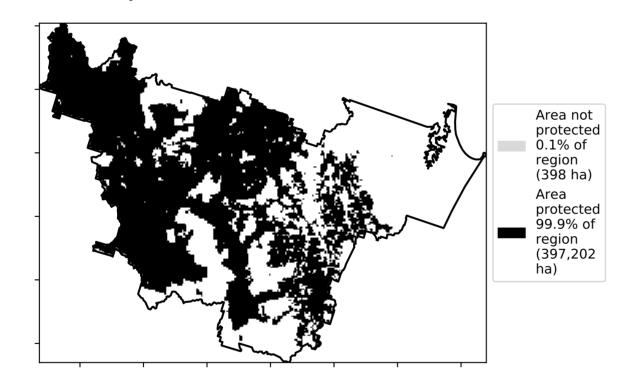
Total Vegetation Cover [%]



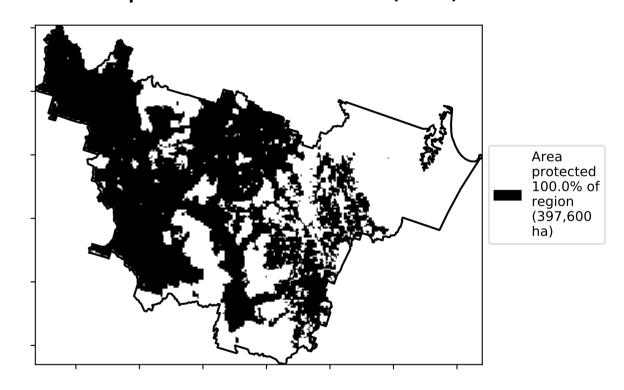
Proportion of vegetation cover class in area



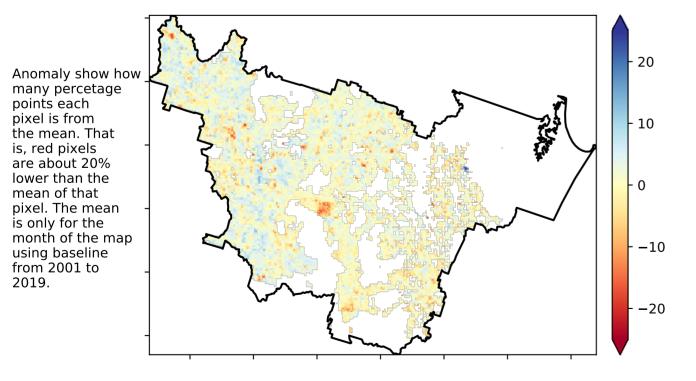
% Area protected from water erosion (>70%)



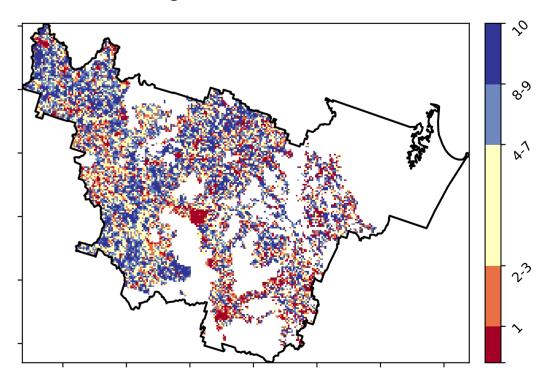
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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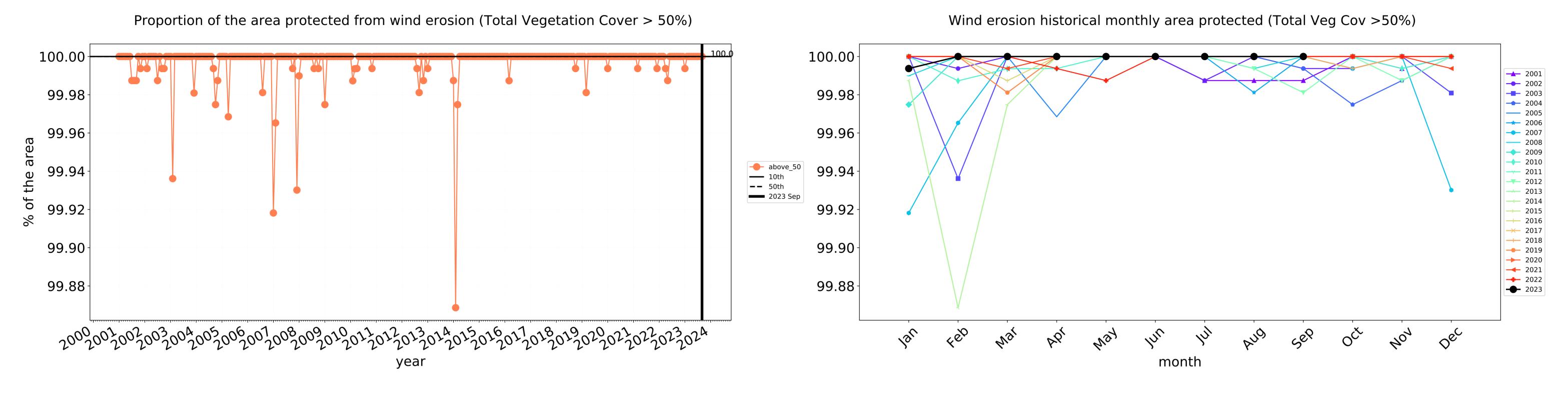


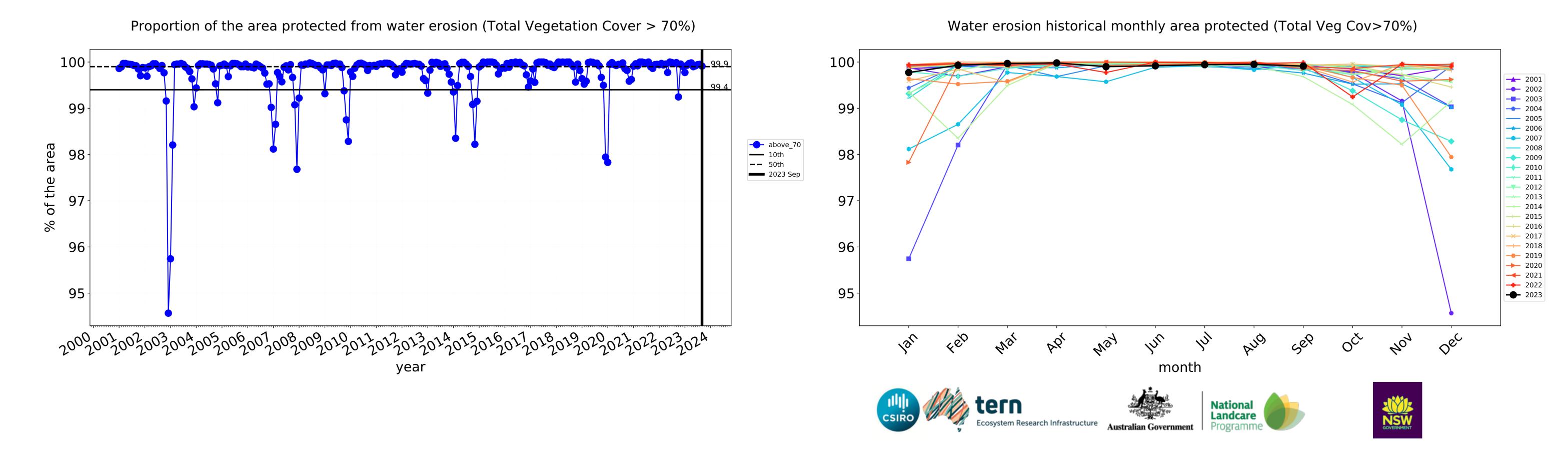


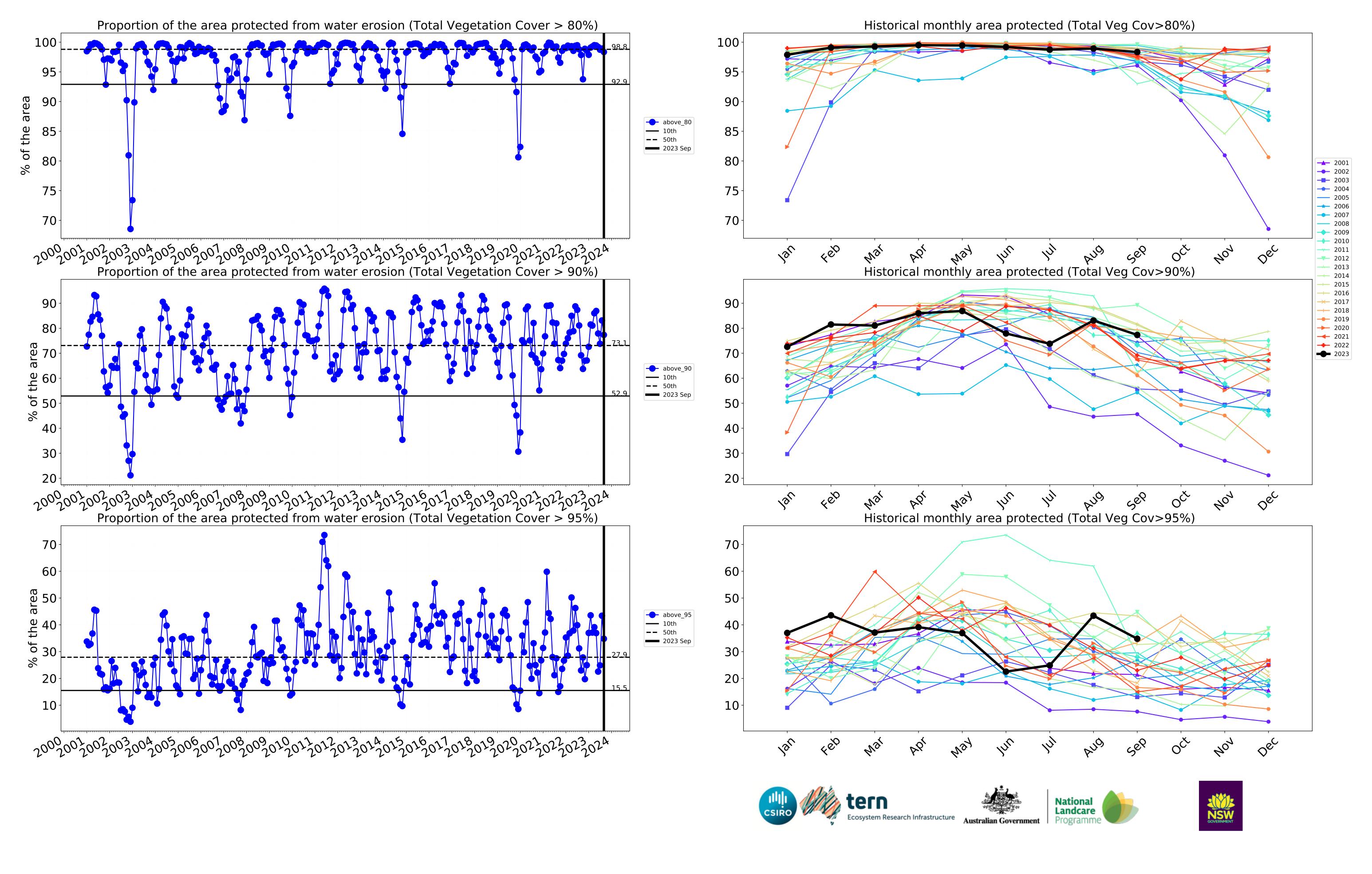




Agriculture timeseries

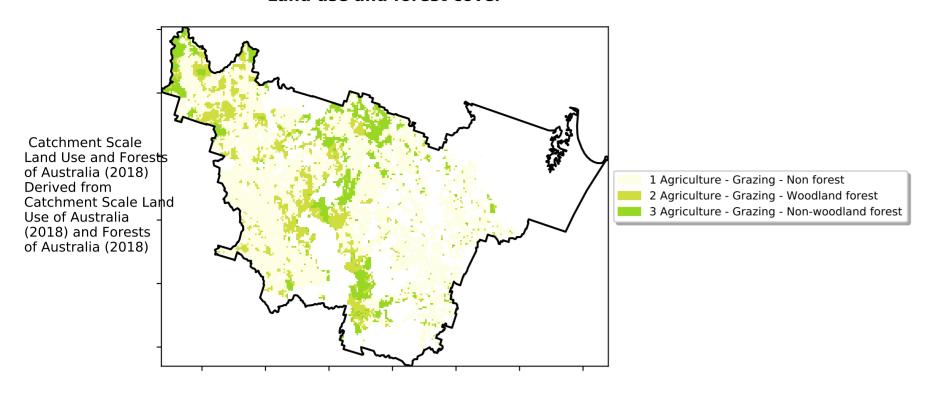




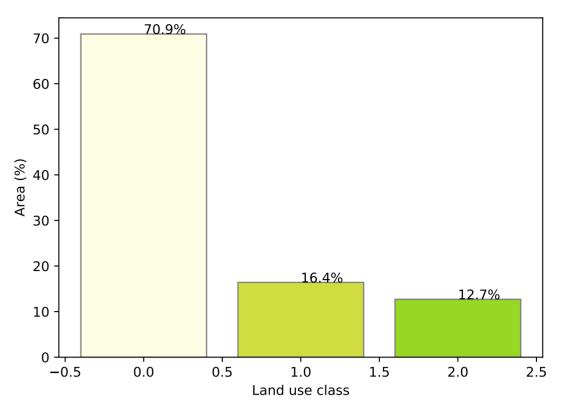


Grazing

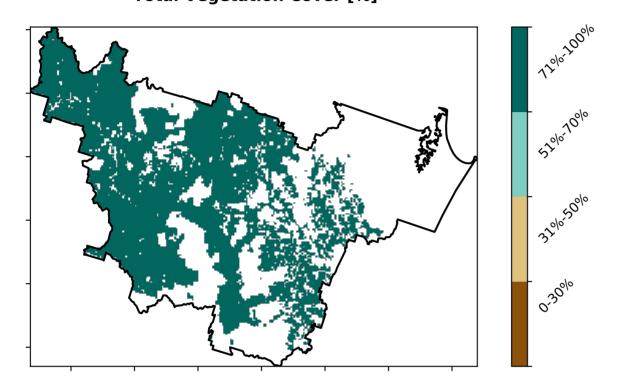
Land use and forest cover



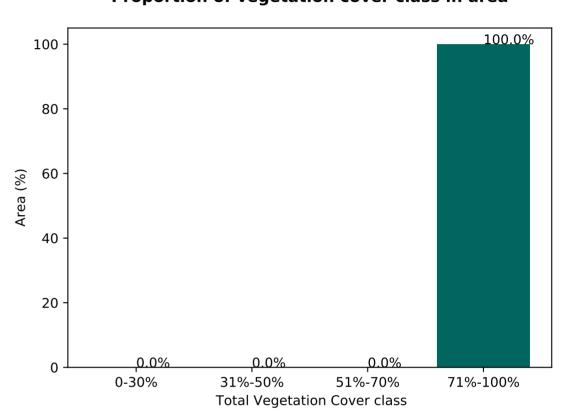
Proportion of each land class in area



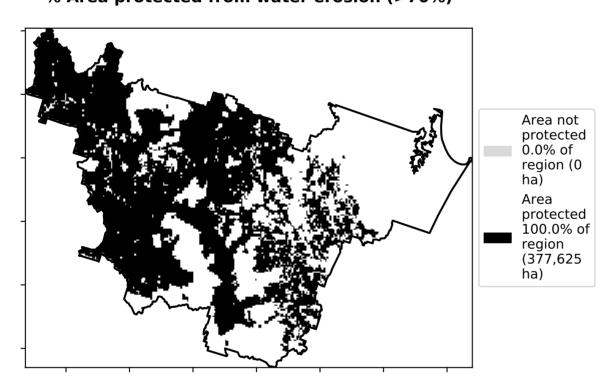
Total Vegetation Cover [%]



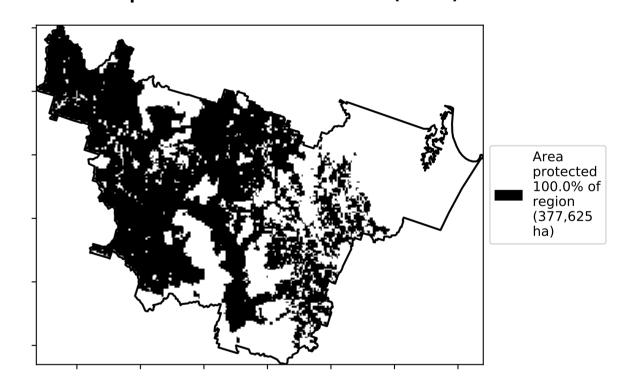
Proportion of vegetation cover class in area



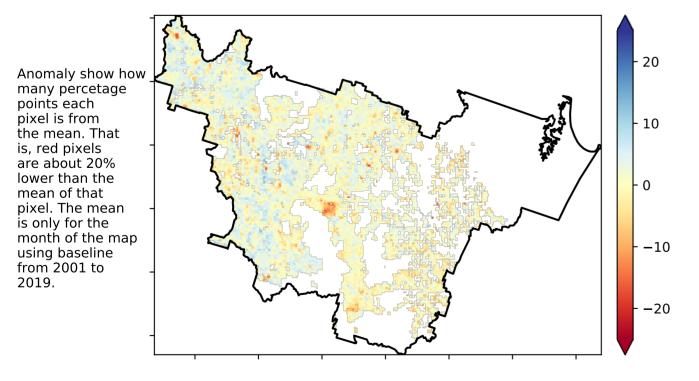
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

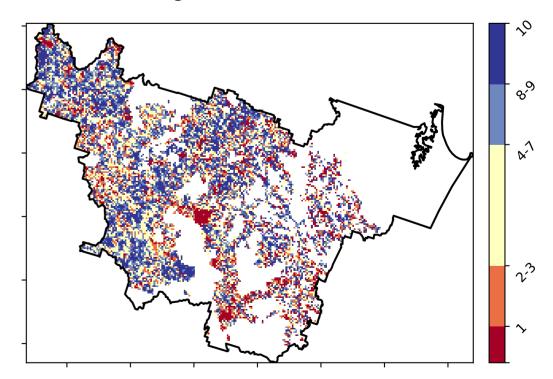


Total Vegetation Cover Anomaly [%]



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 [%]



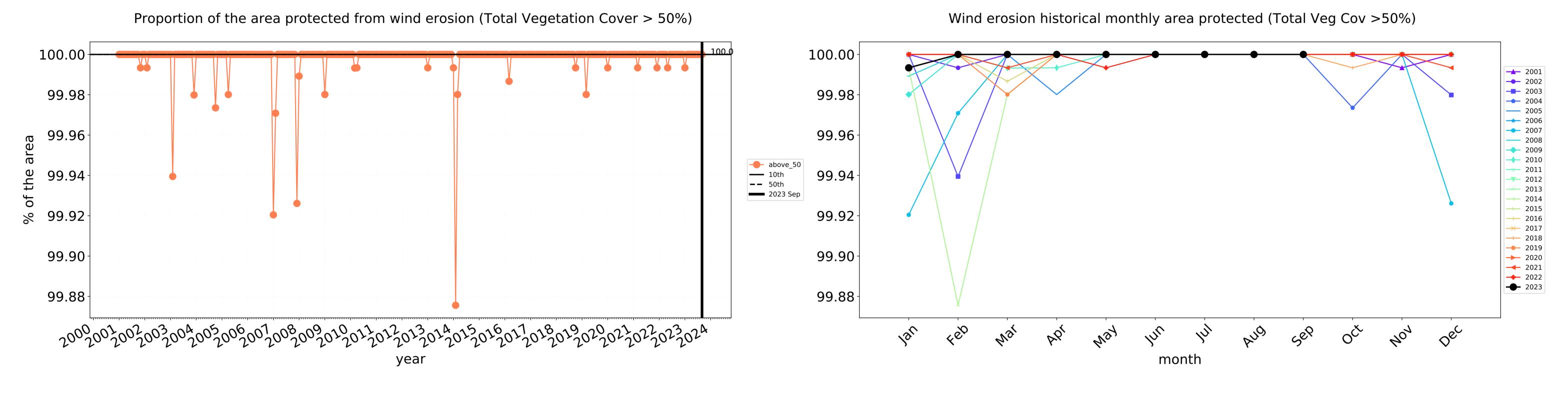


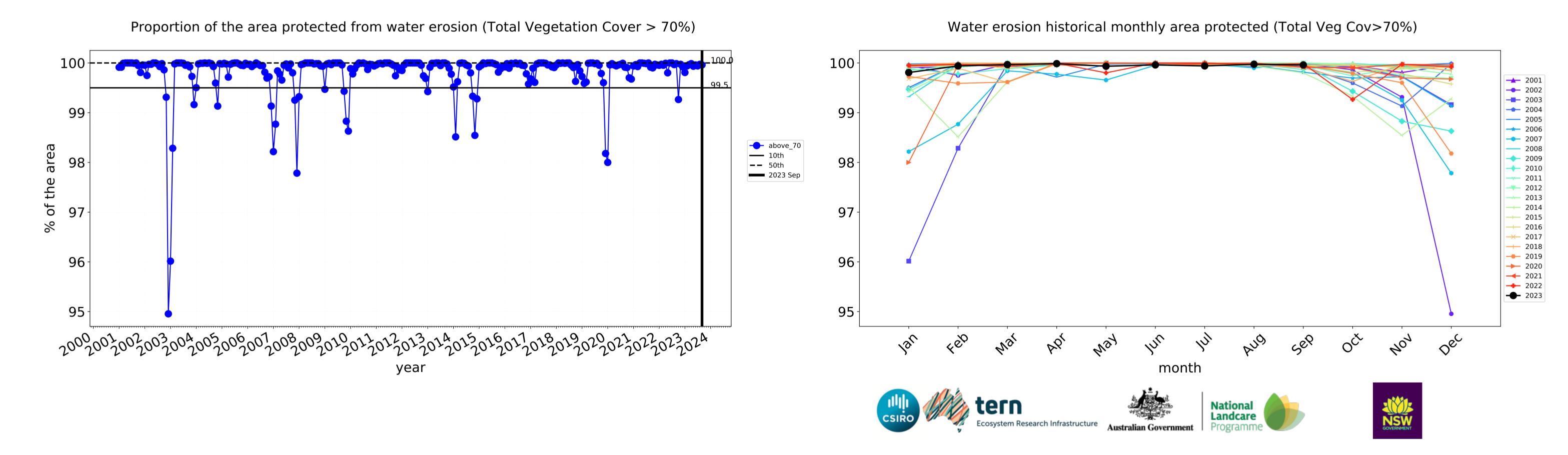


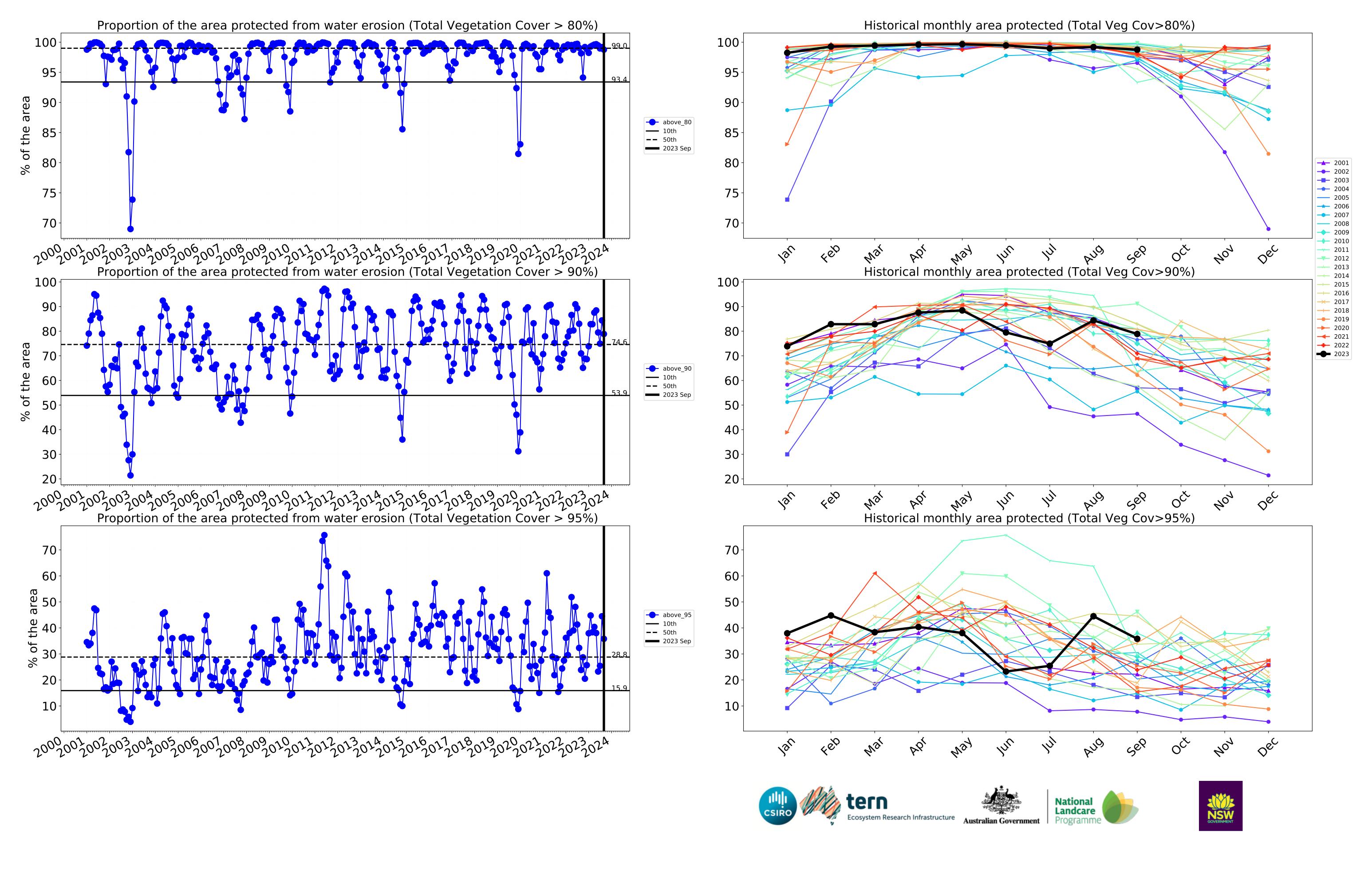




Grazing timeseries

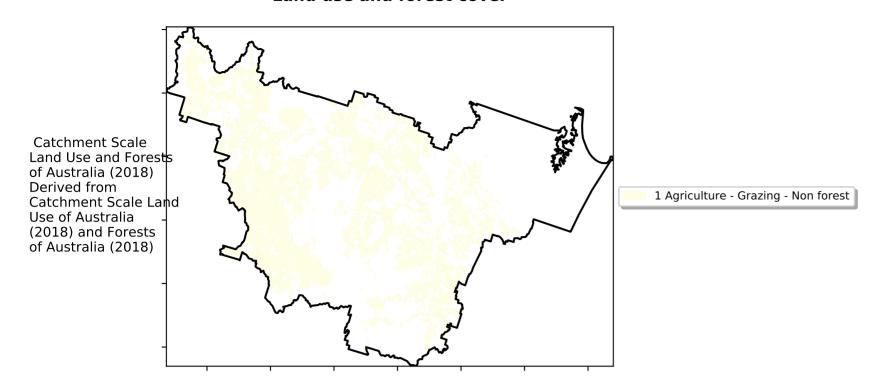




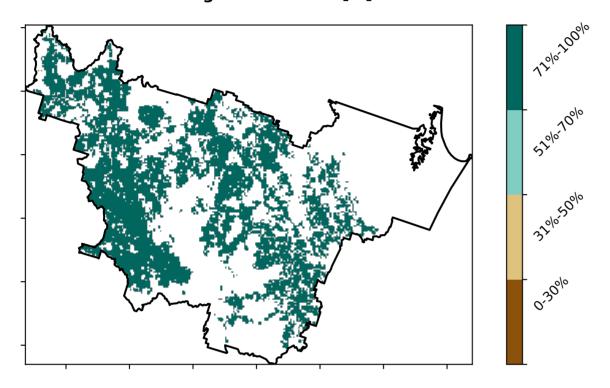


Grazing non forest

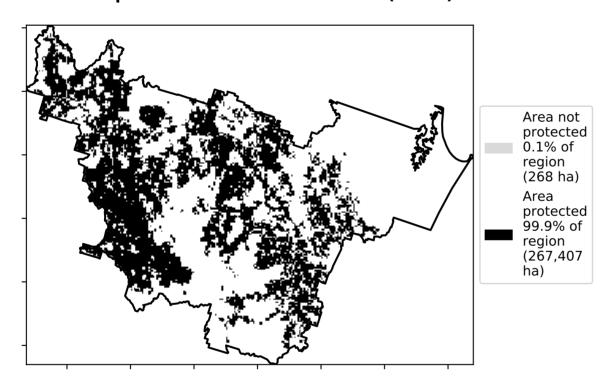
Land use and forest cover



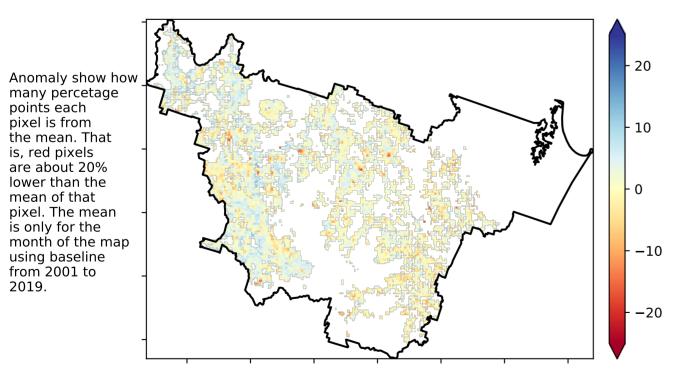
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

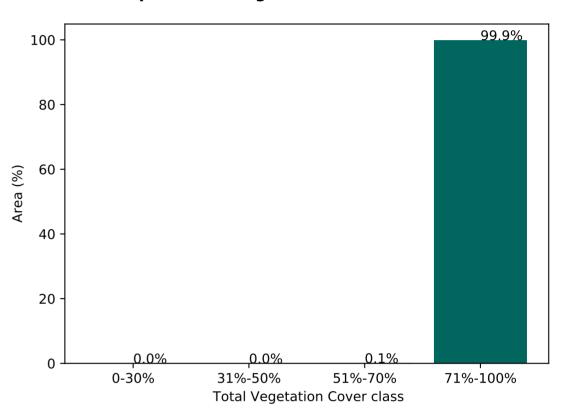


Total Vegetation Cover Anomaly [%]

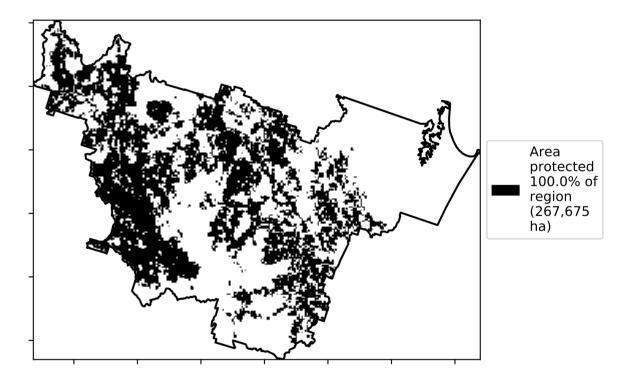


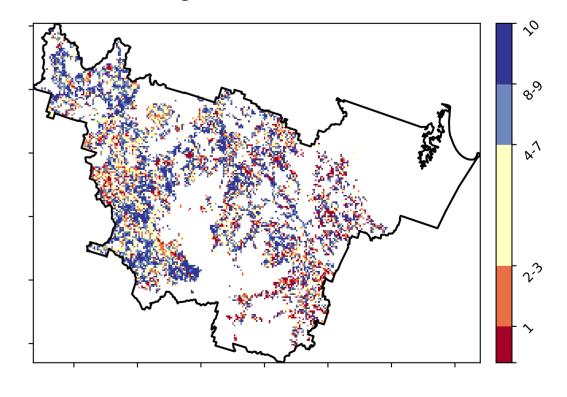
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





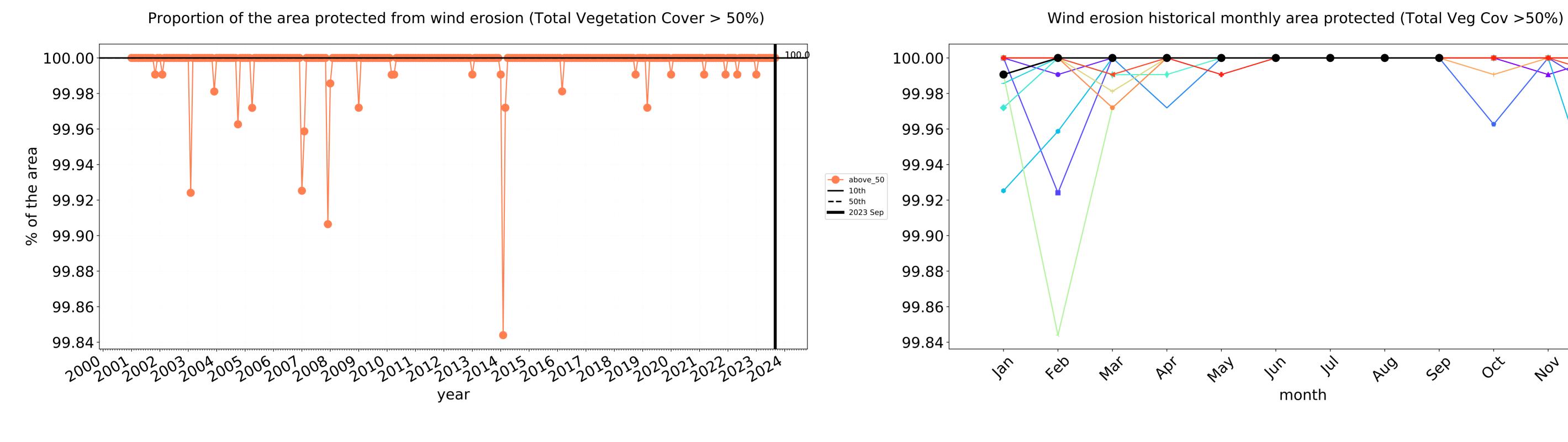


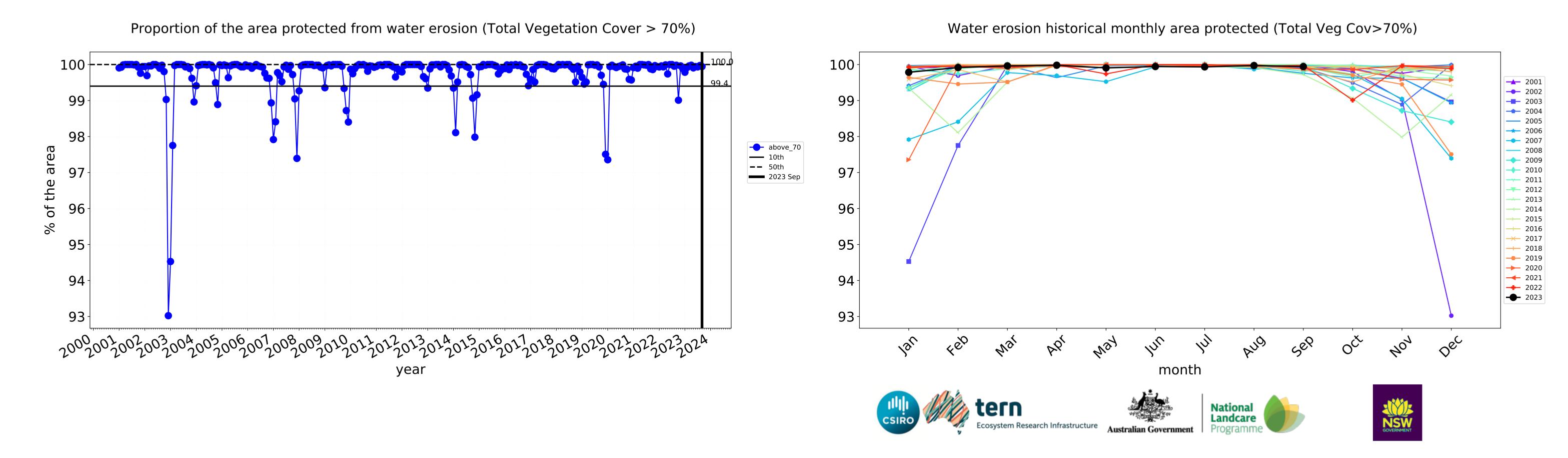






Grazing non forest timeseries

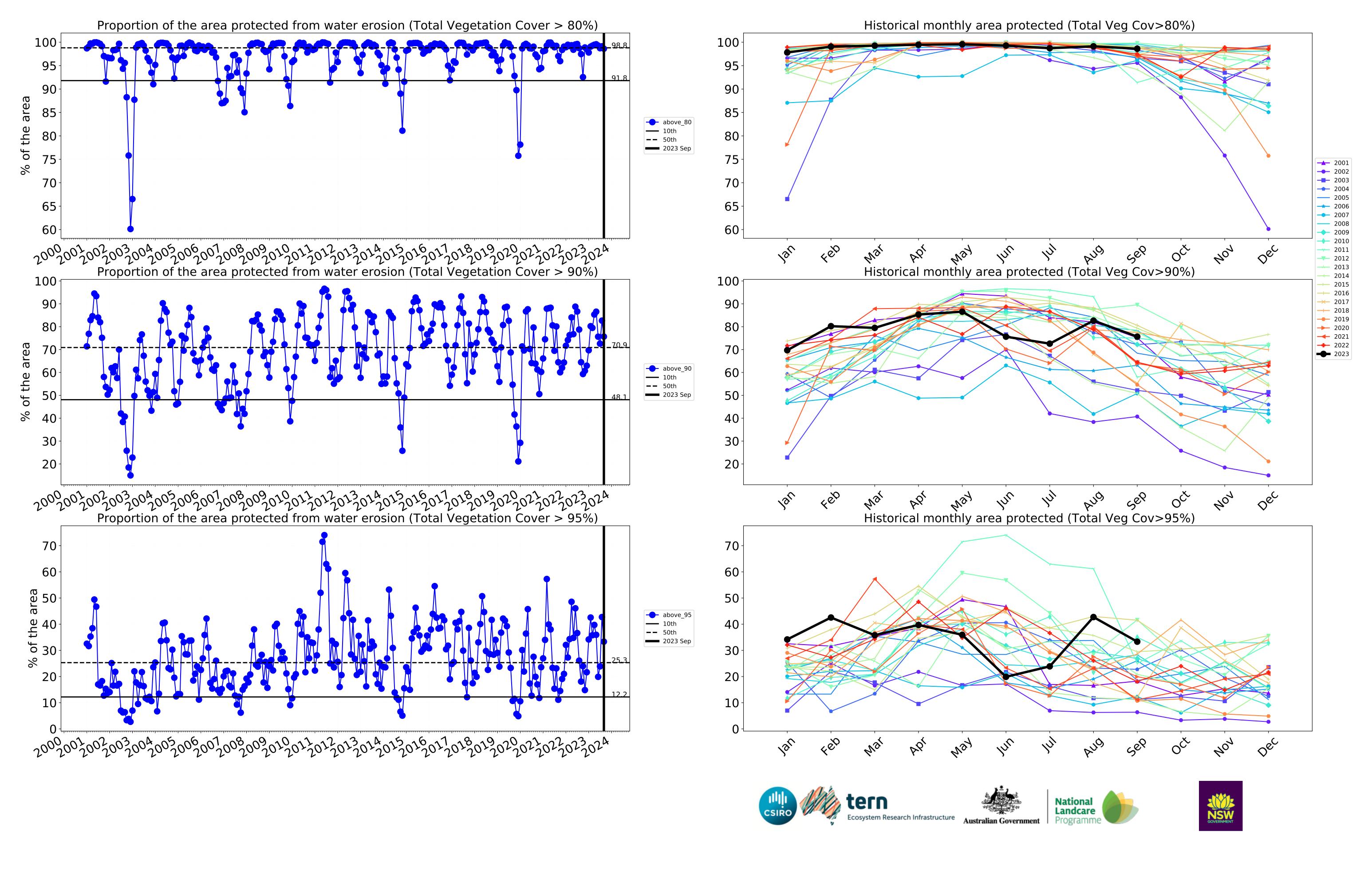




---- 2013

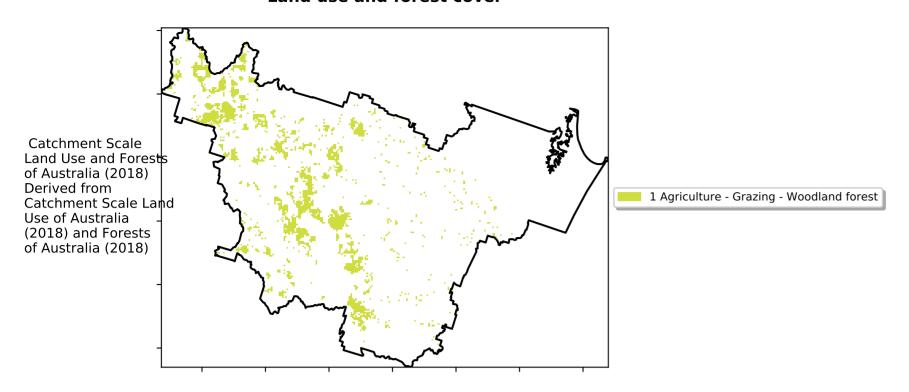
→ 2014
→ 2015

--- 2023

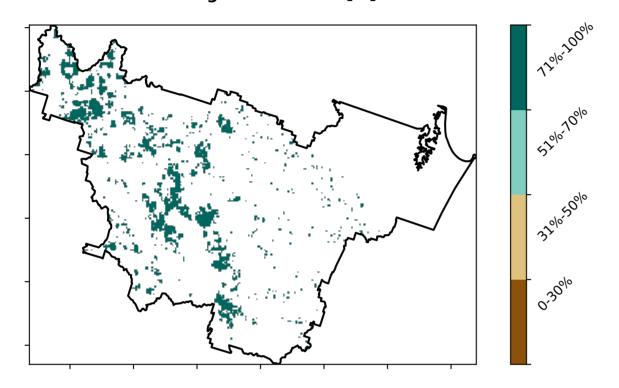


Grazing Woodland forest

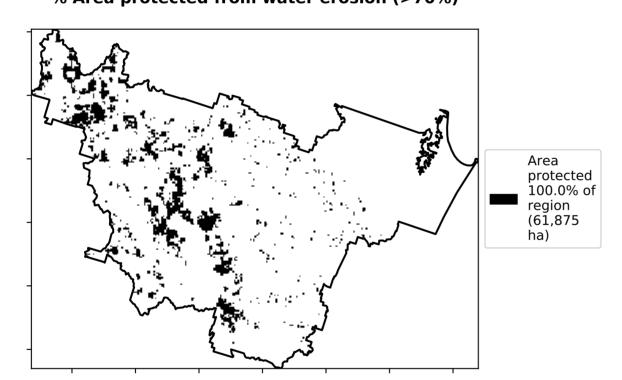
Land use and forest cover



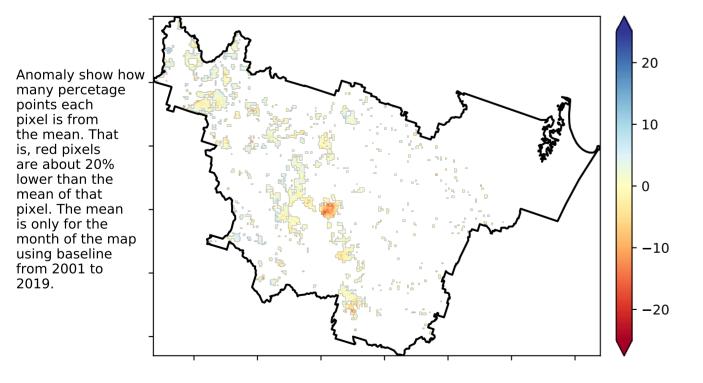
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

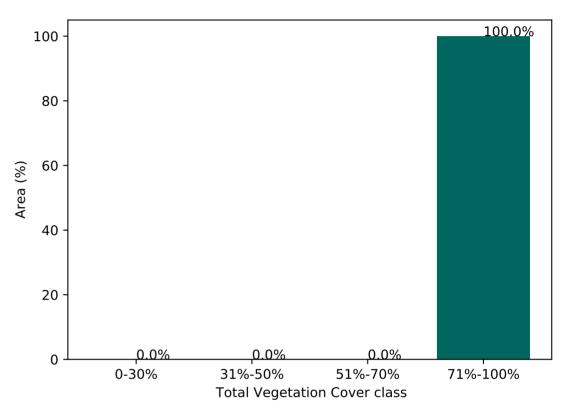


Total Vegetation Cover Anomaly [%]

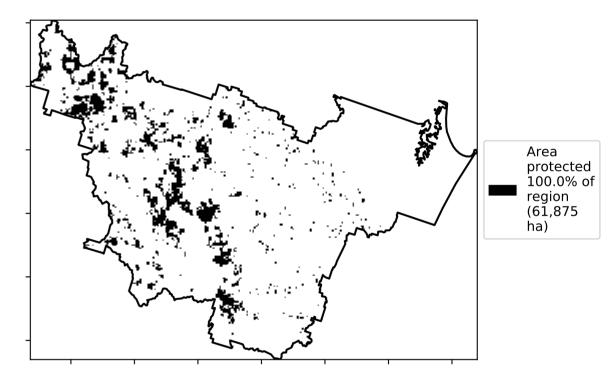


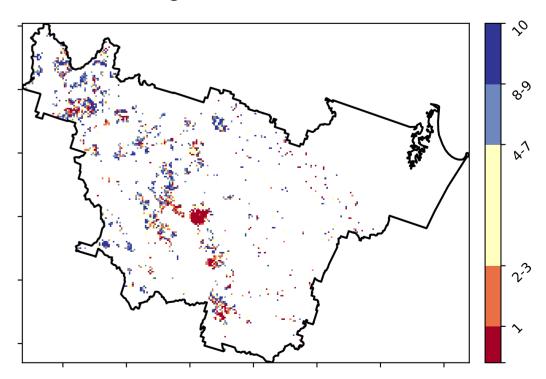
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





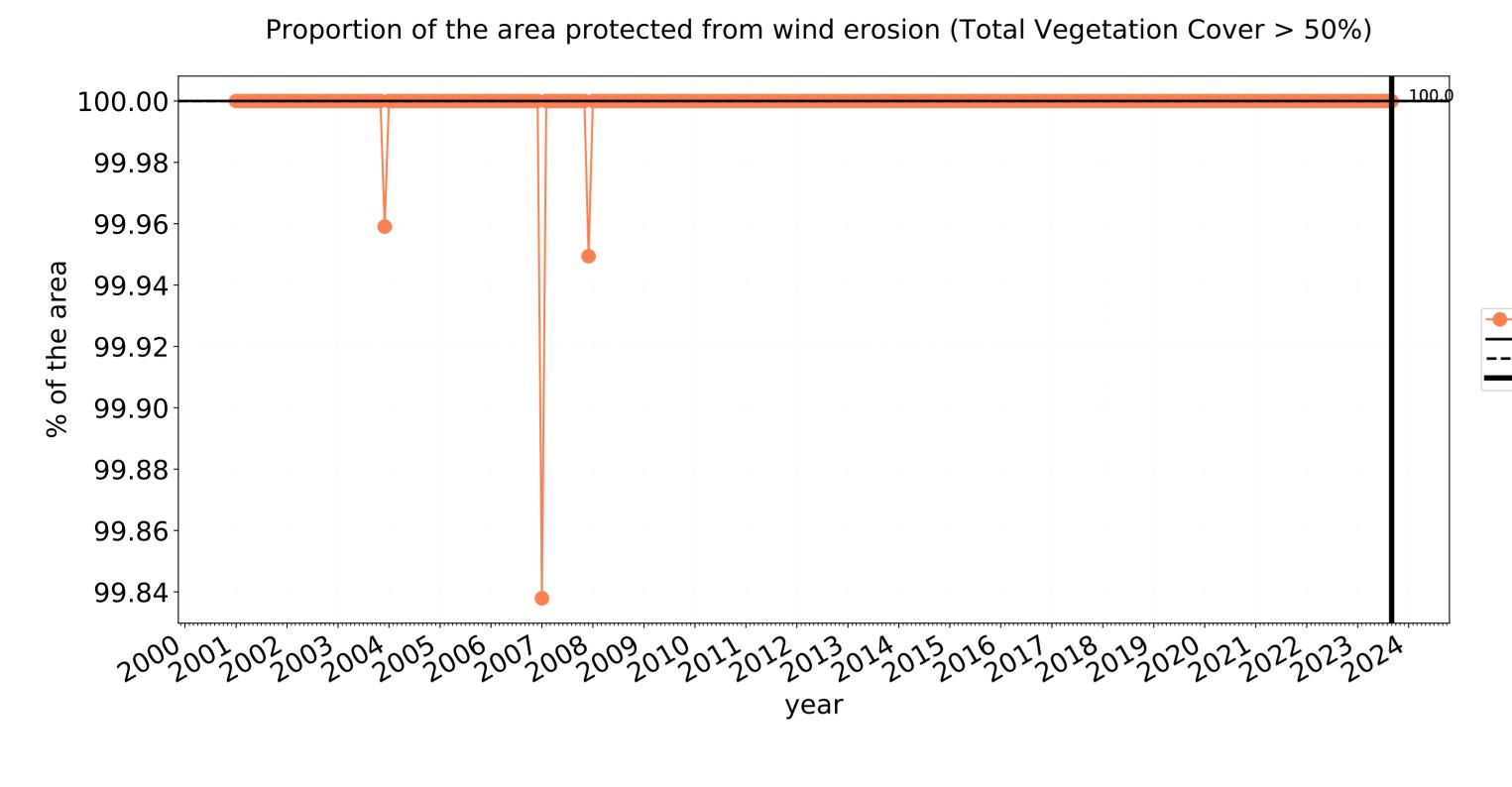


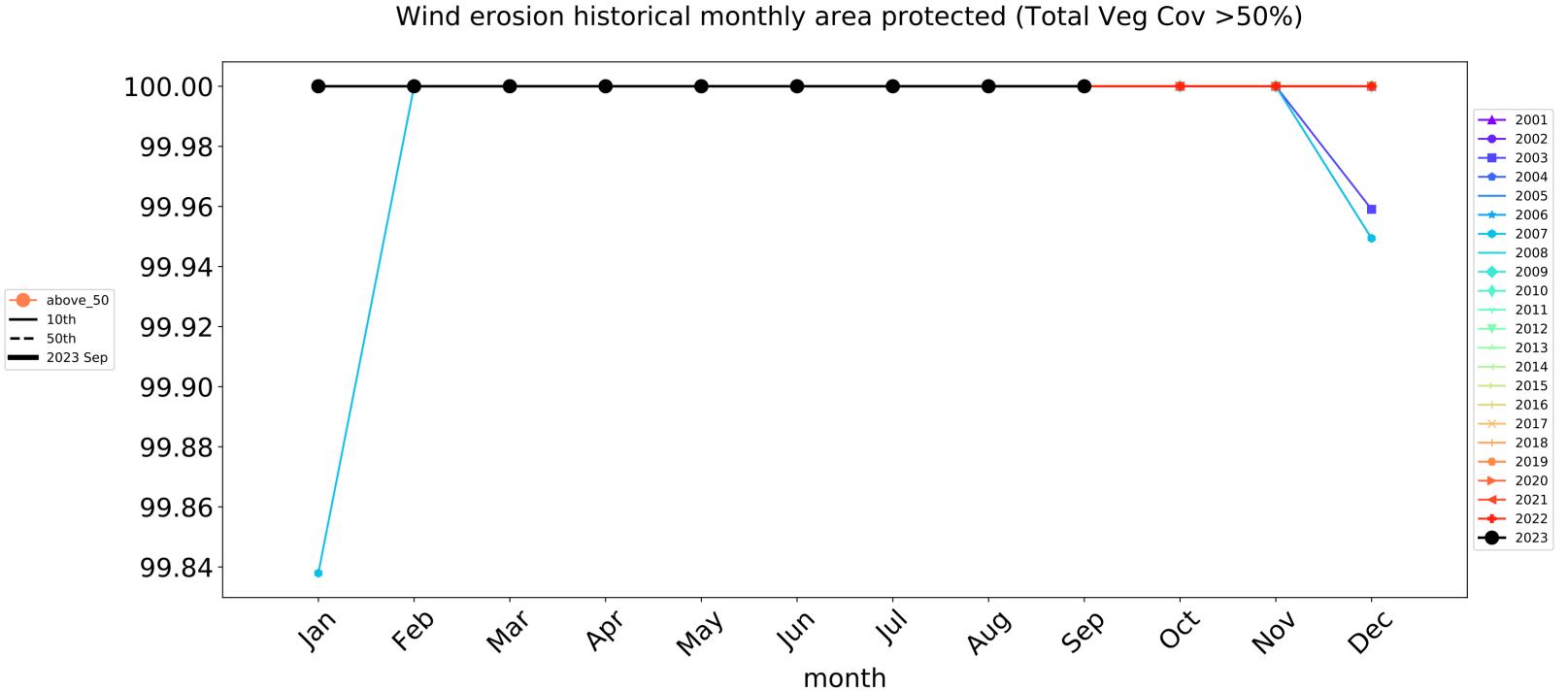


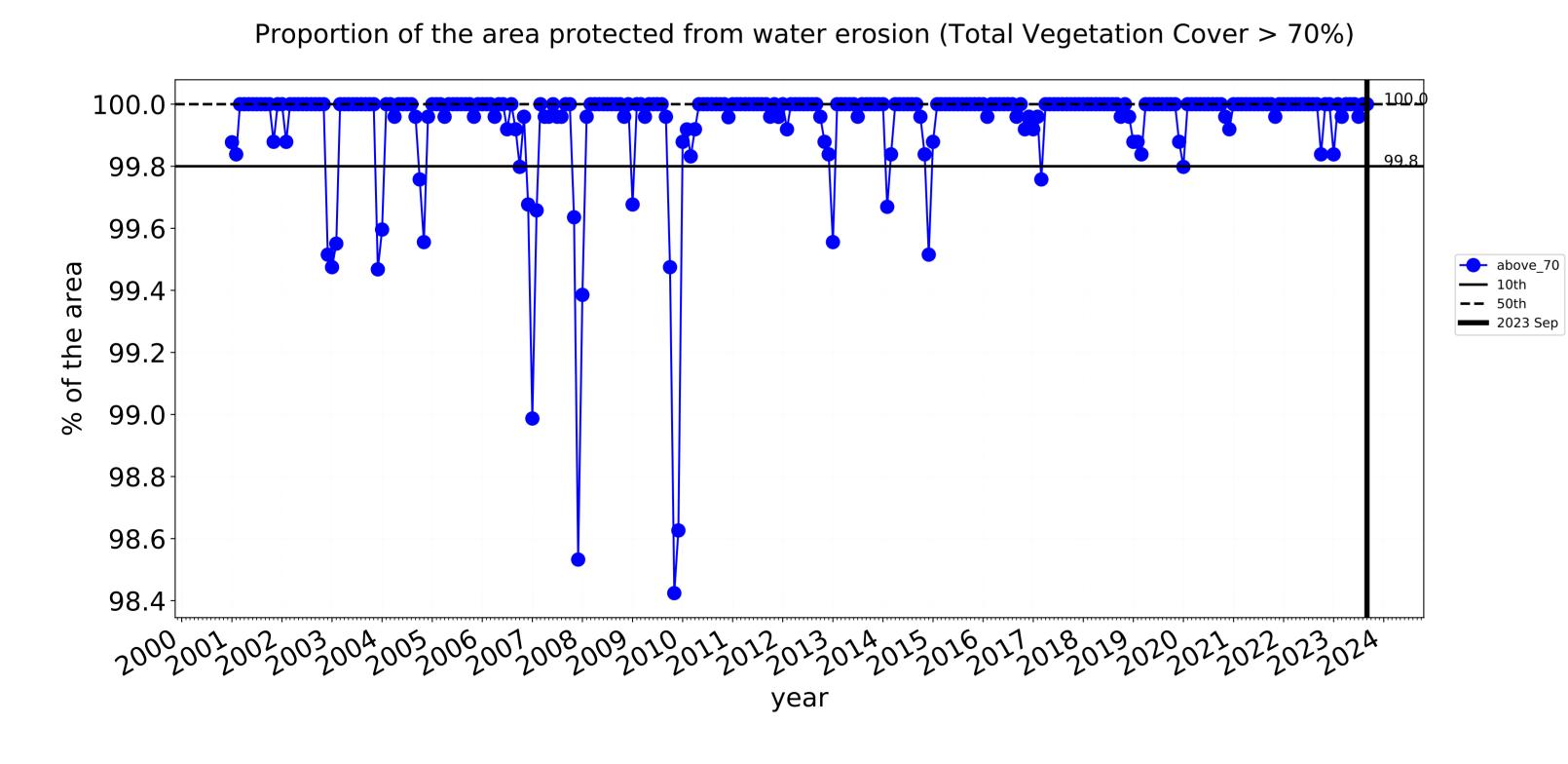


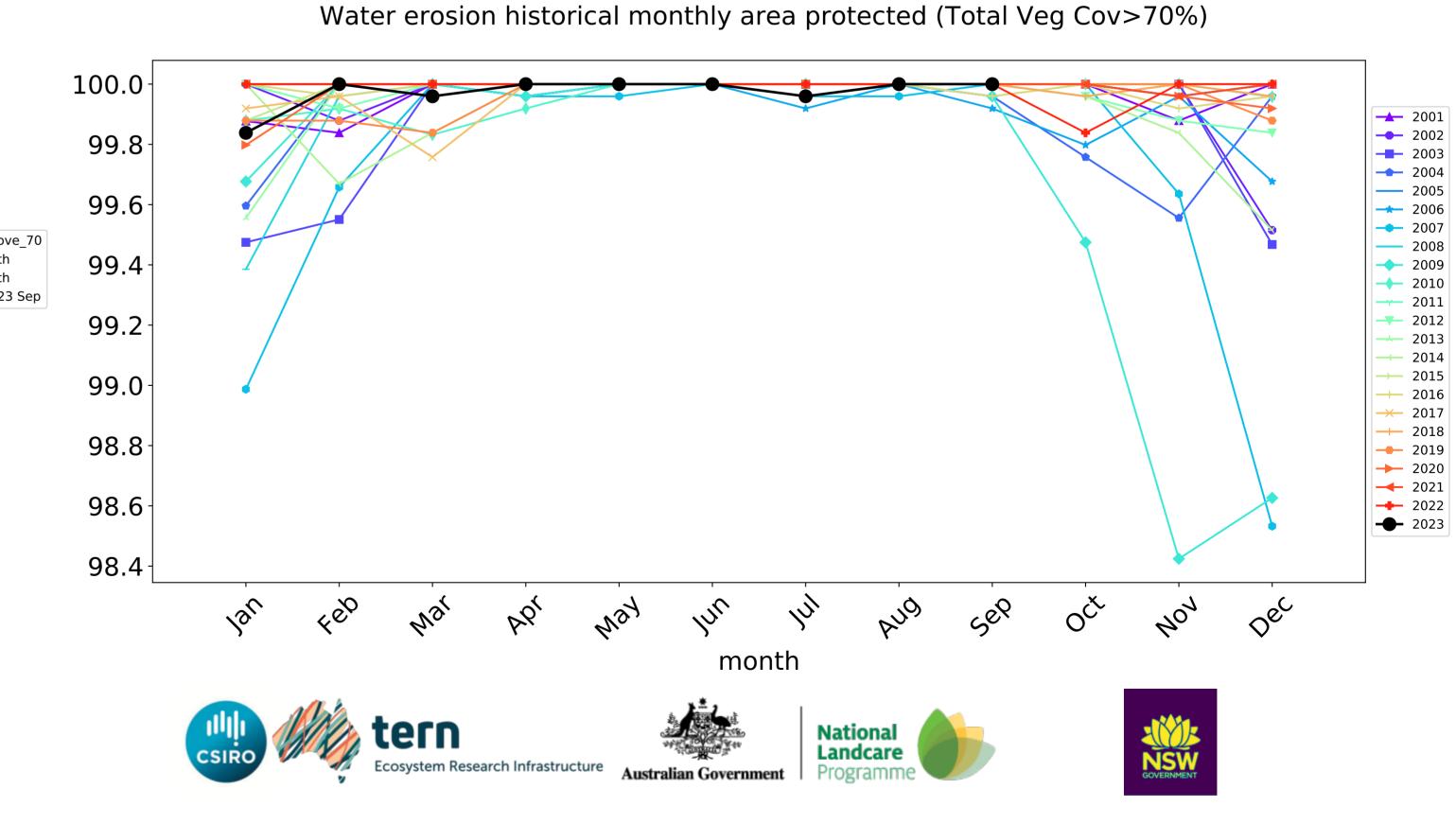


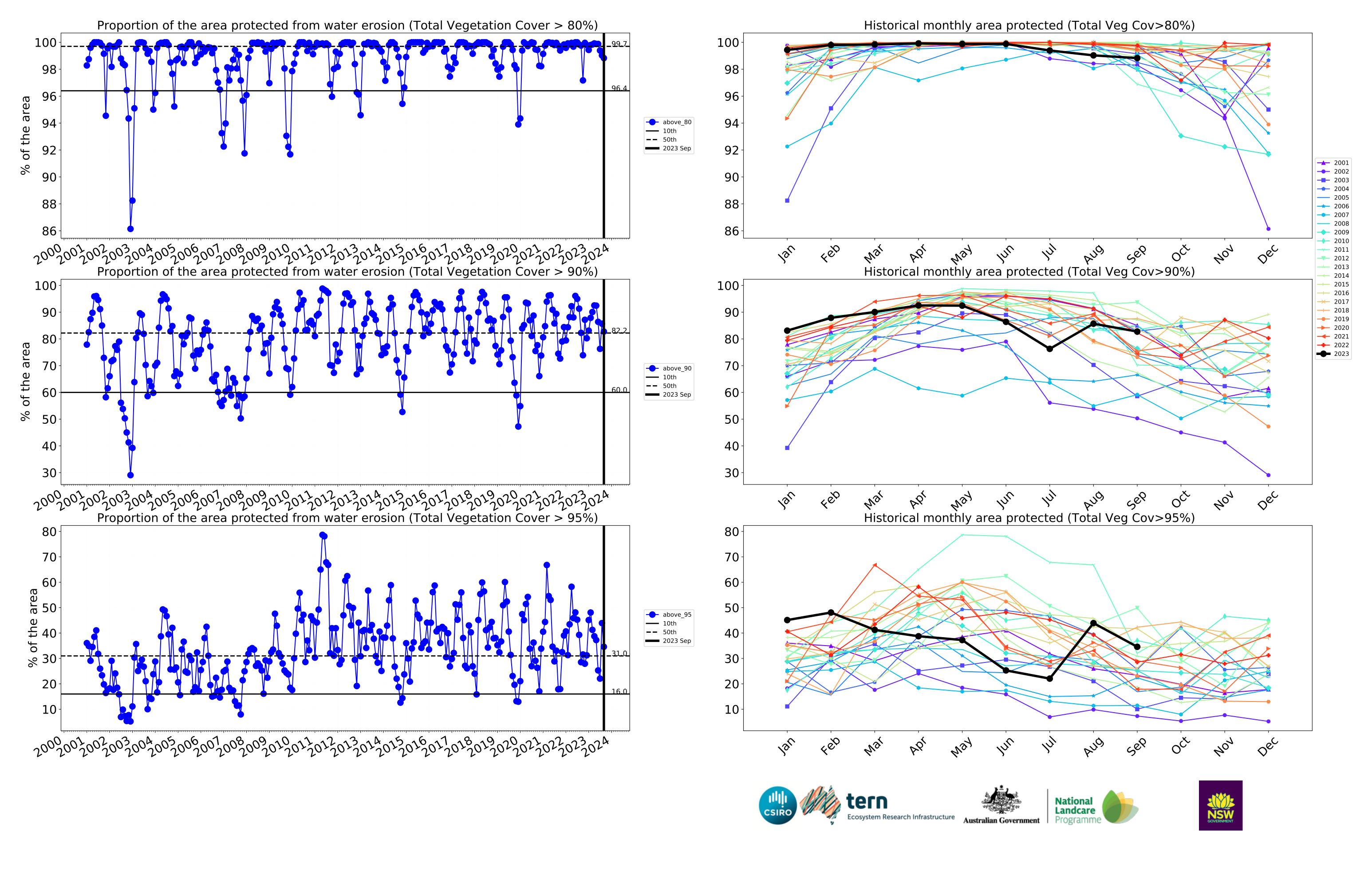
Grazing Woodland forest timeseries





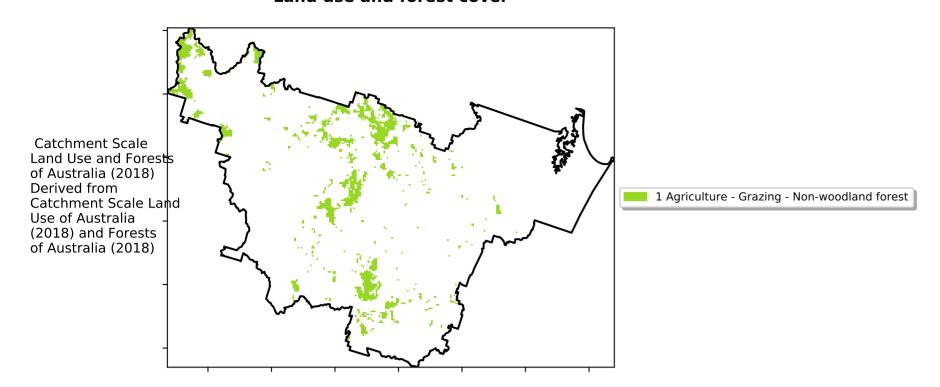




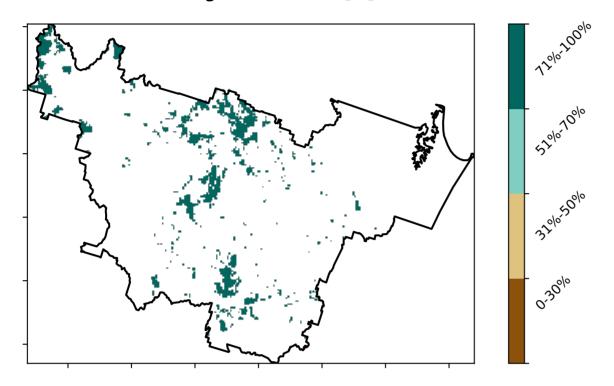


Grazing - Forest (non woodland)

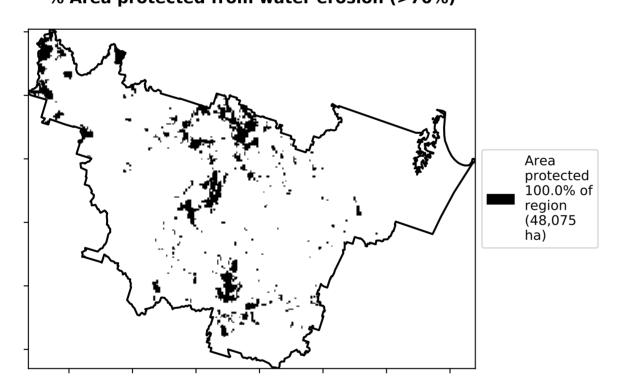
Land use and forest cover



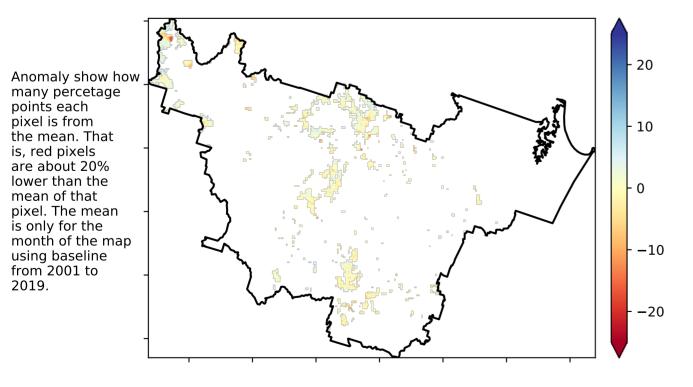
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

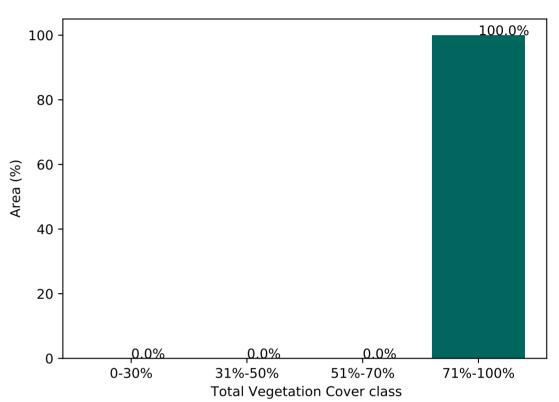


Total Vegetation Cover Anomaly [%]

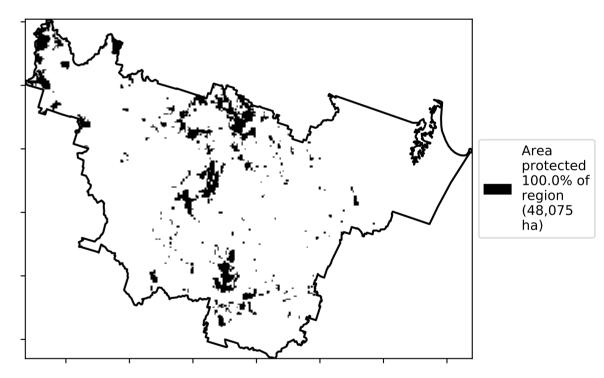


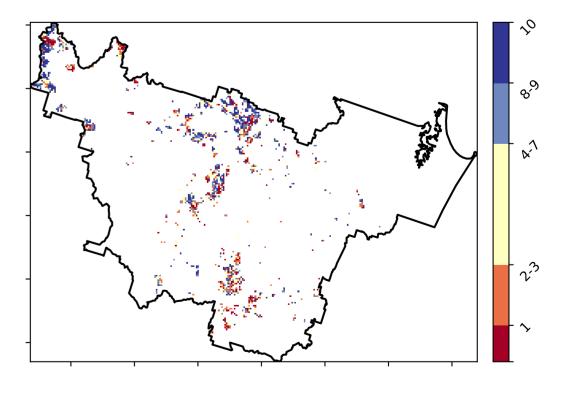
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



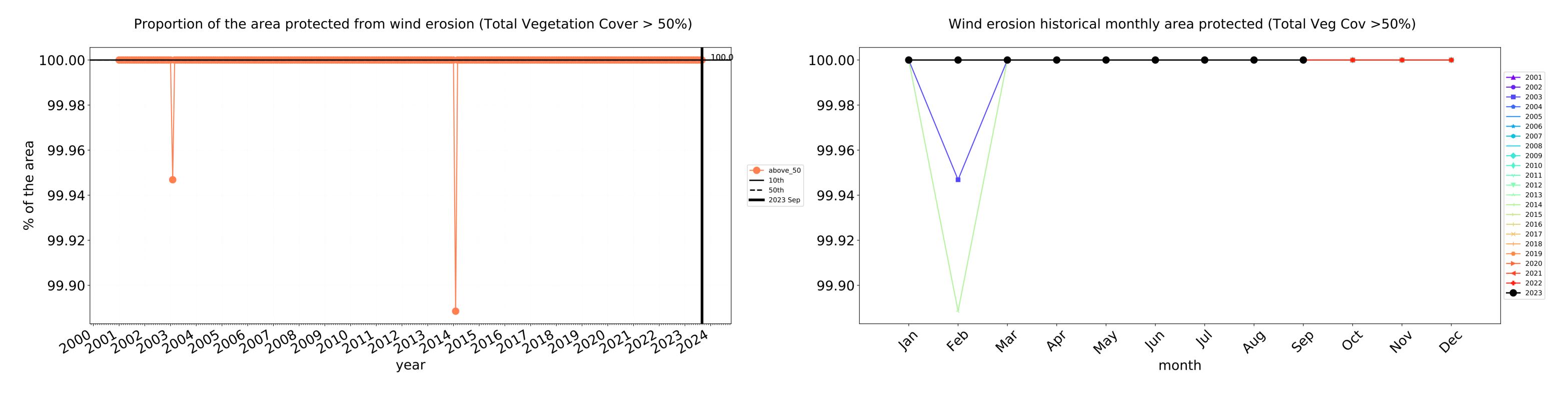


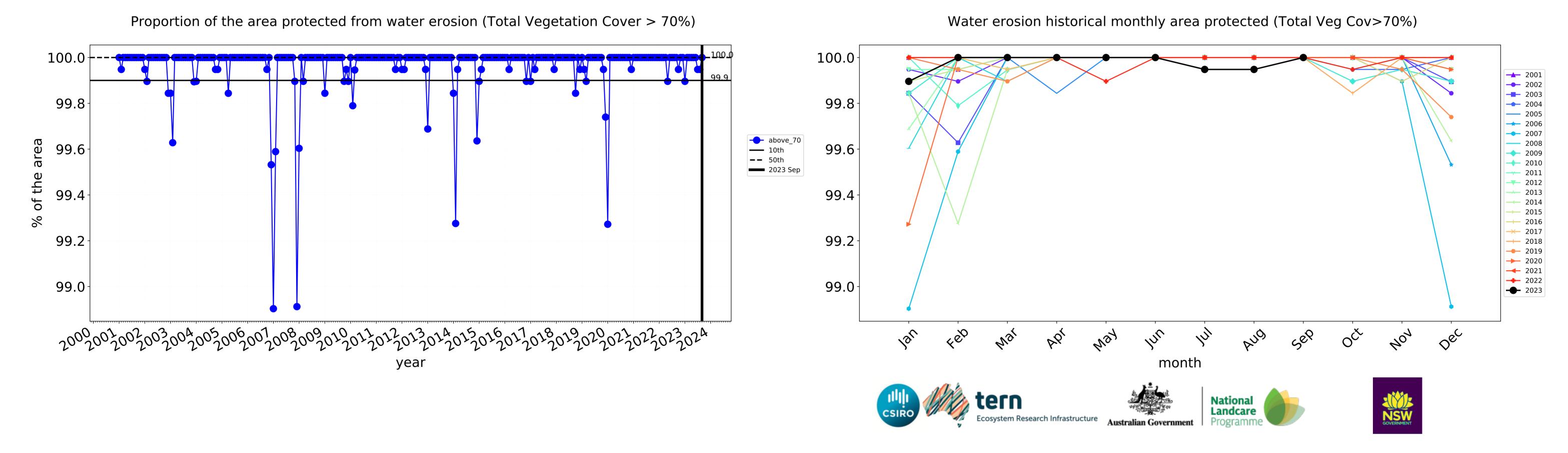


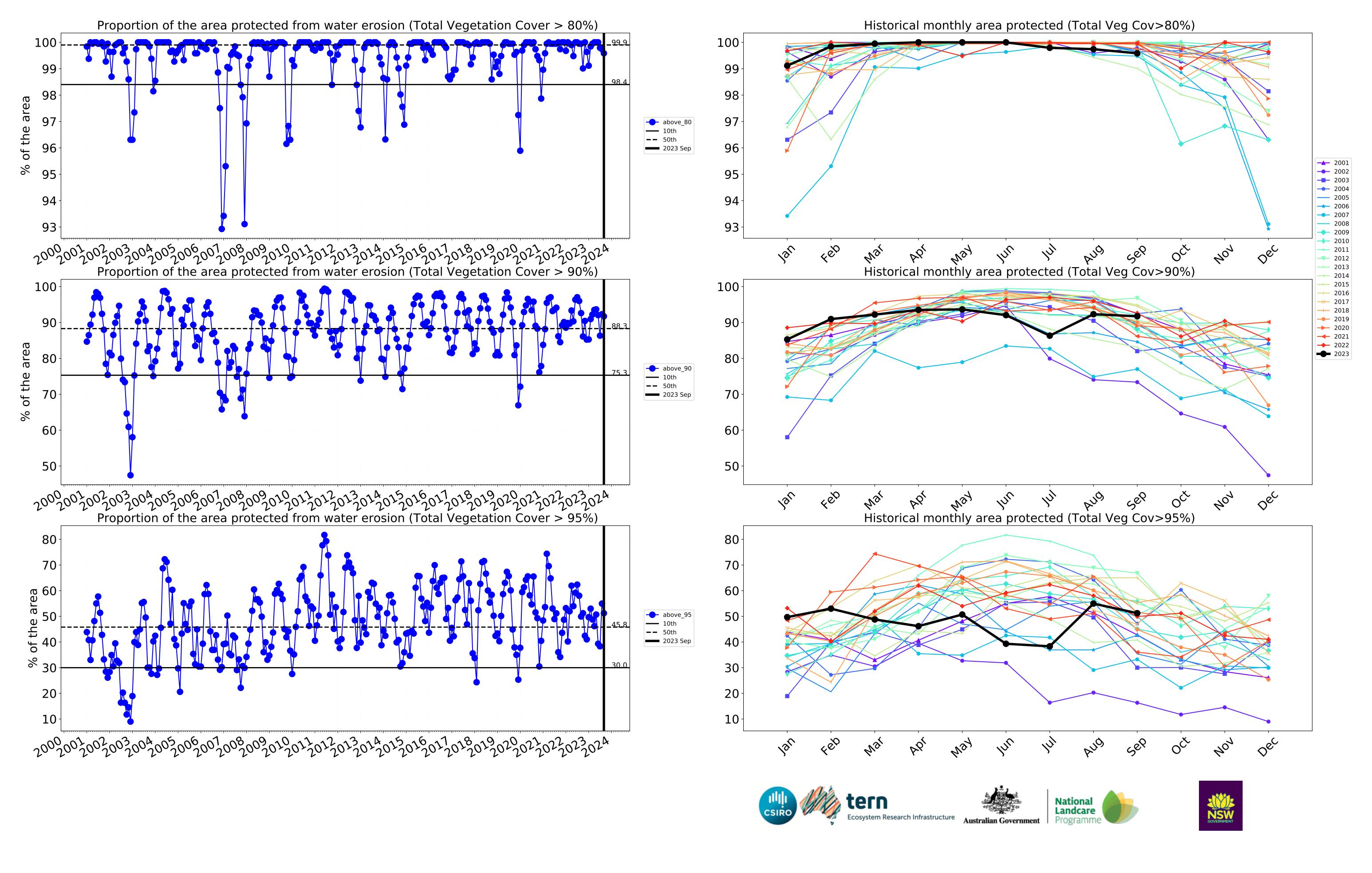








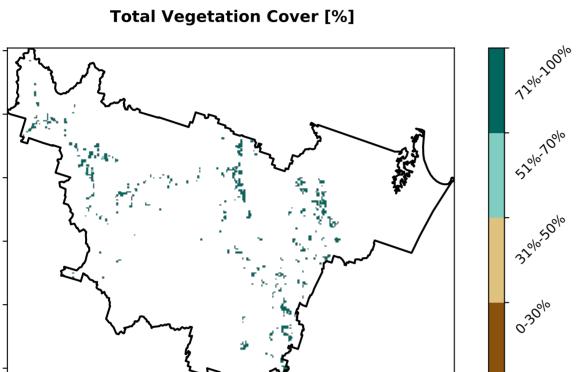


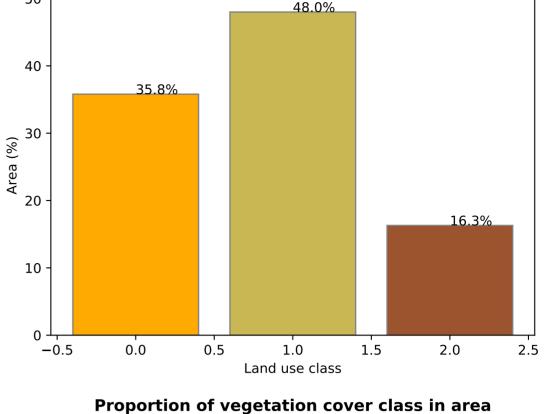


Irrigation

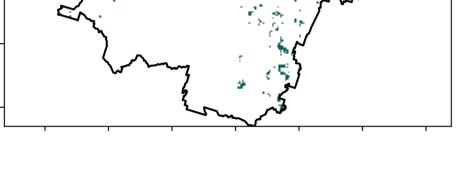
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests 1 Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated of Australia (2018)

Proportion of each land class in area 50 48.0% 40 35.8% Area (%) 0 20 16.3% 10 -0.50.5 1.0 0.0 1.5 2.0

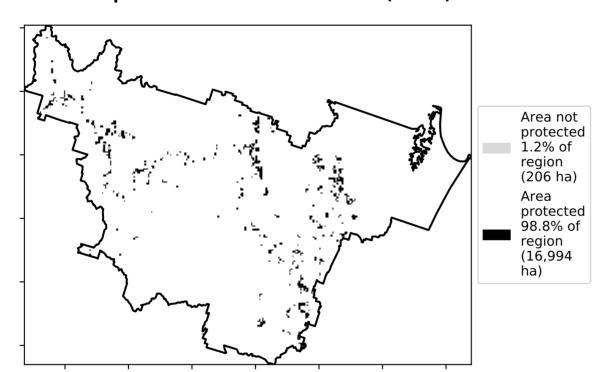




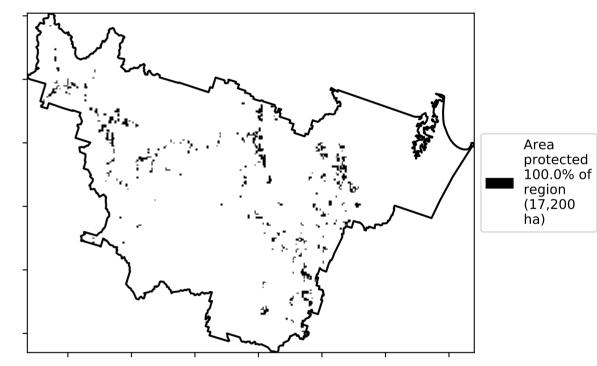
98.8% 100 80 Area (%) 60 20 0.0% 0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**

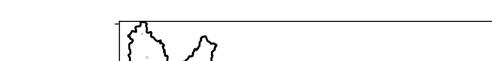


% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)





- 20 Anomaly show how many percetage points each pixel is from - 10 the mean. That is, red pixels are about 20% lower than the 0 mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019. -10**-**20

Total Vegetation Cover Anomaly [%]

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8,5)

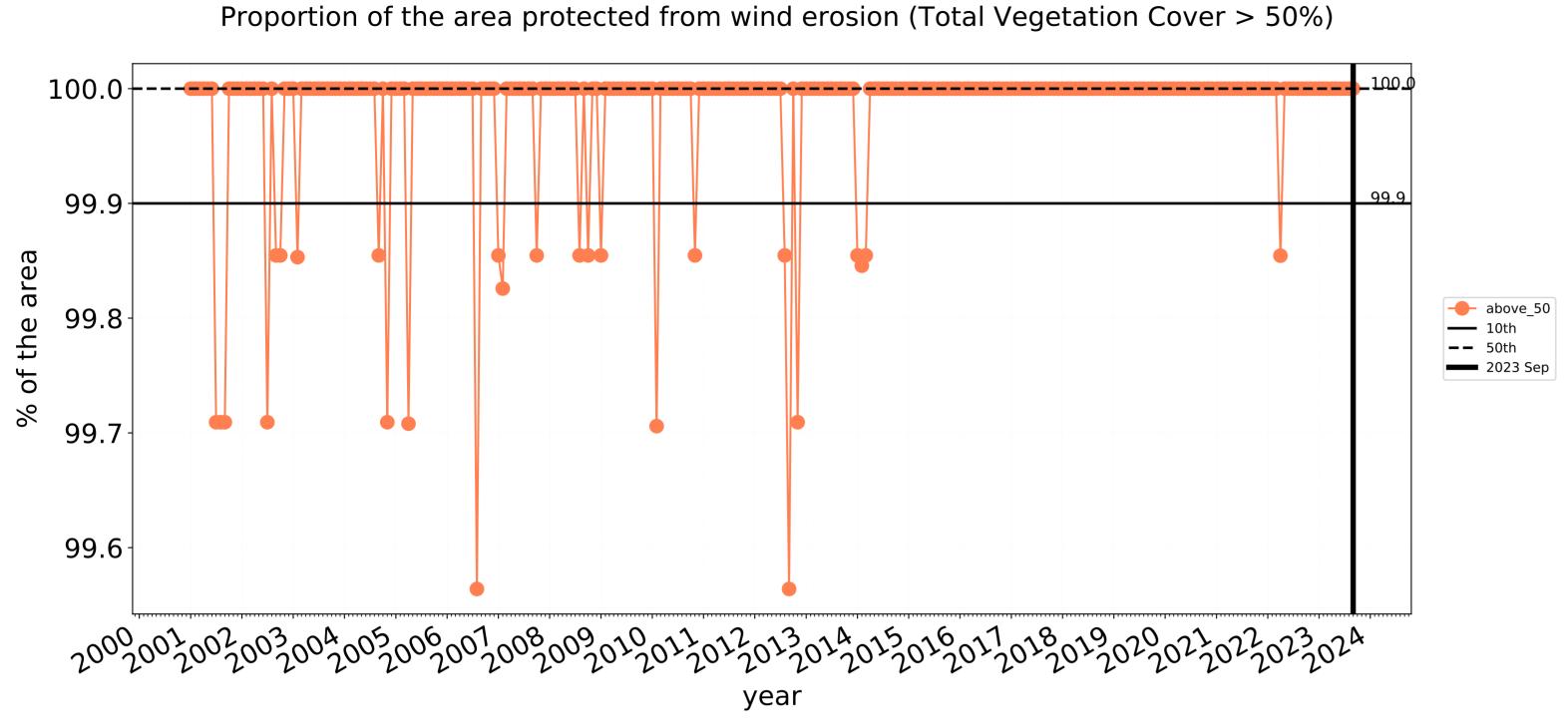


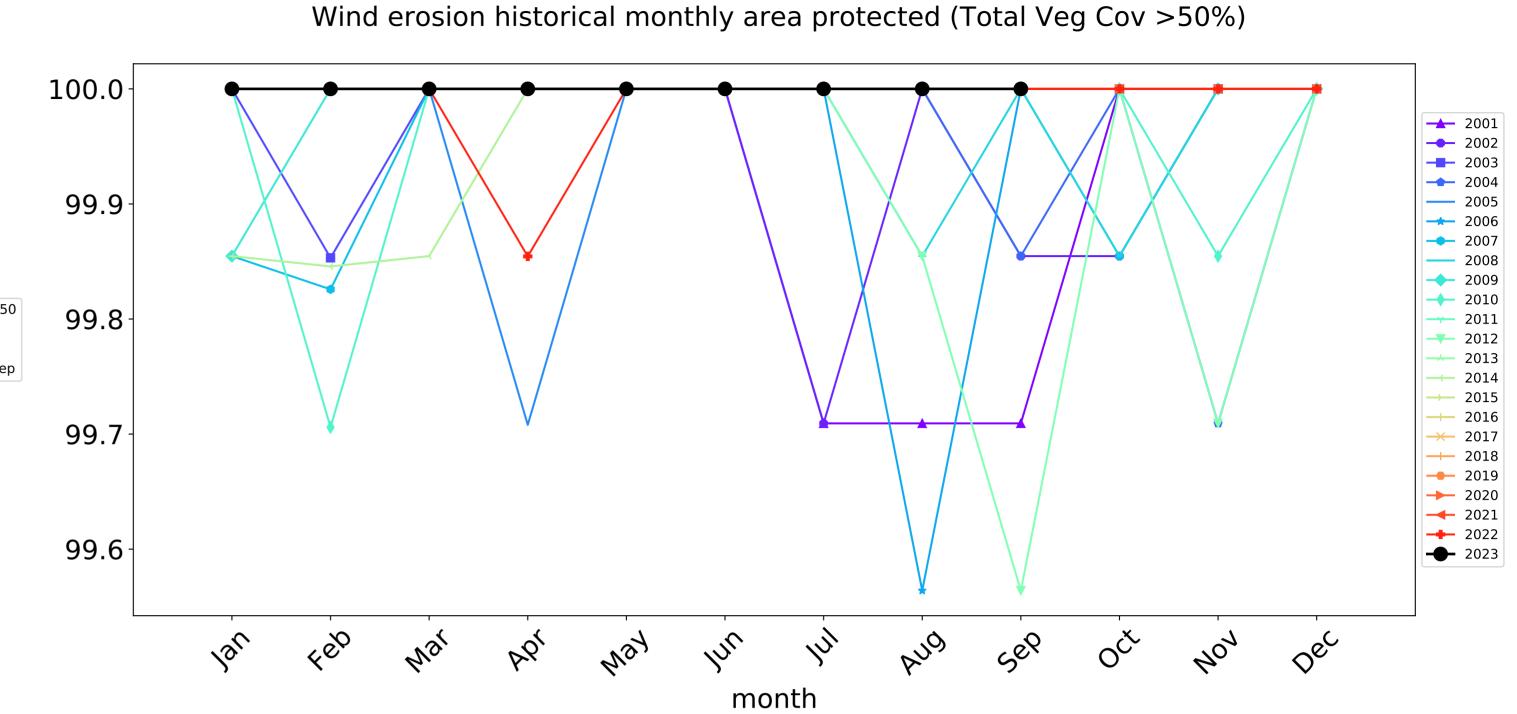


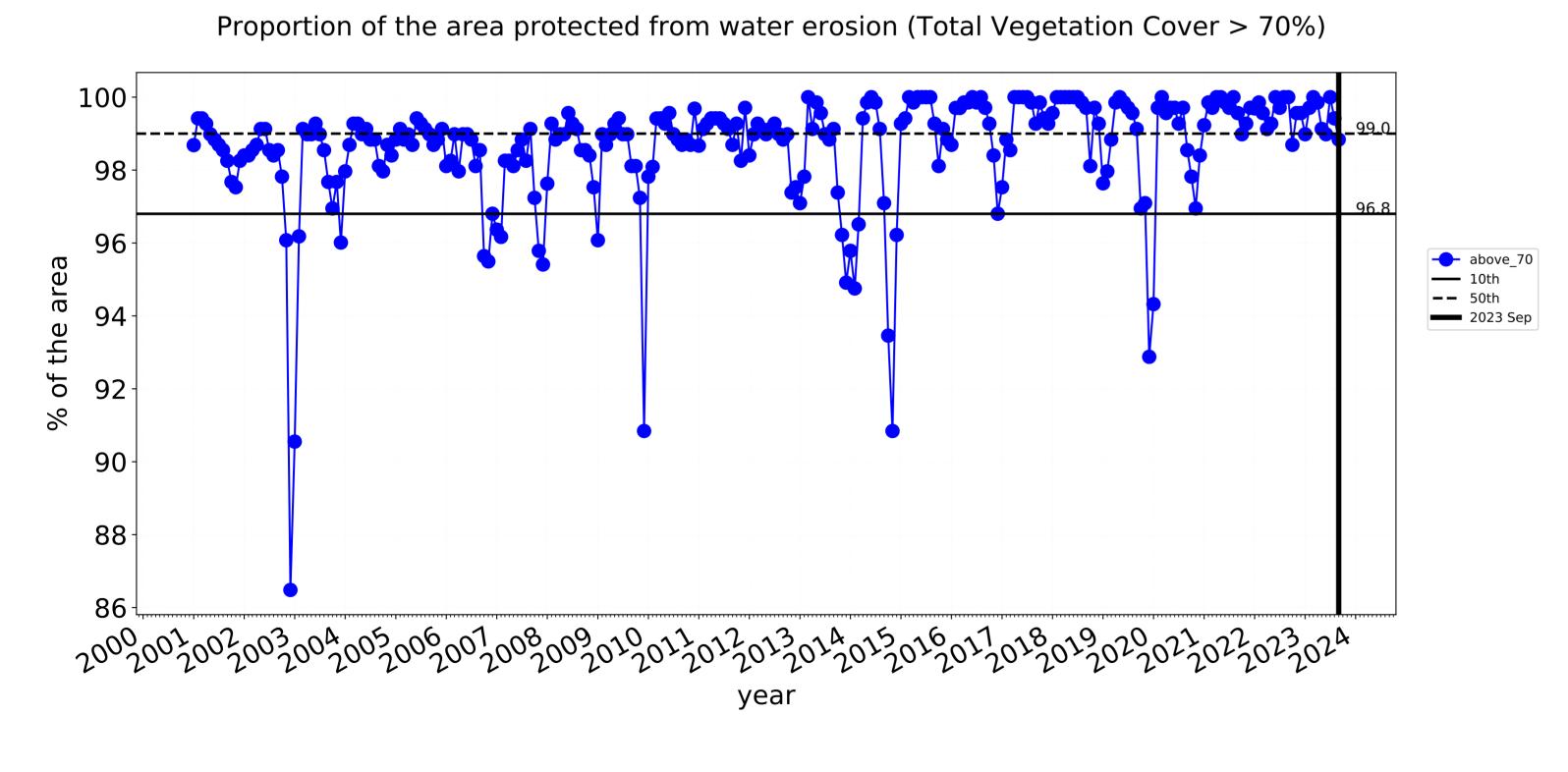


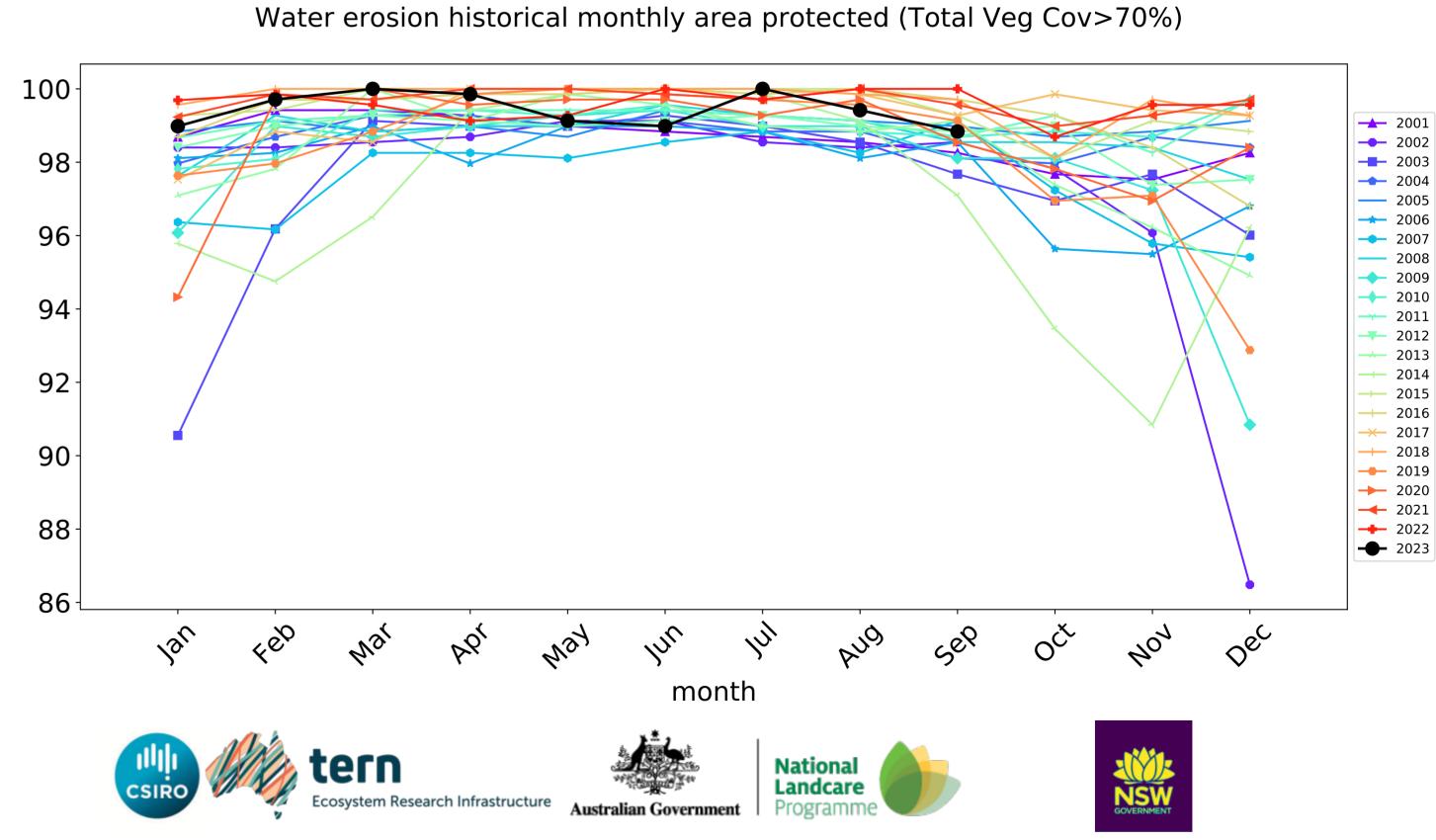


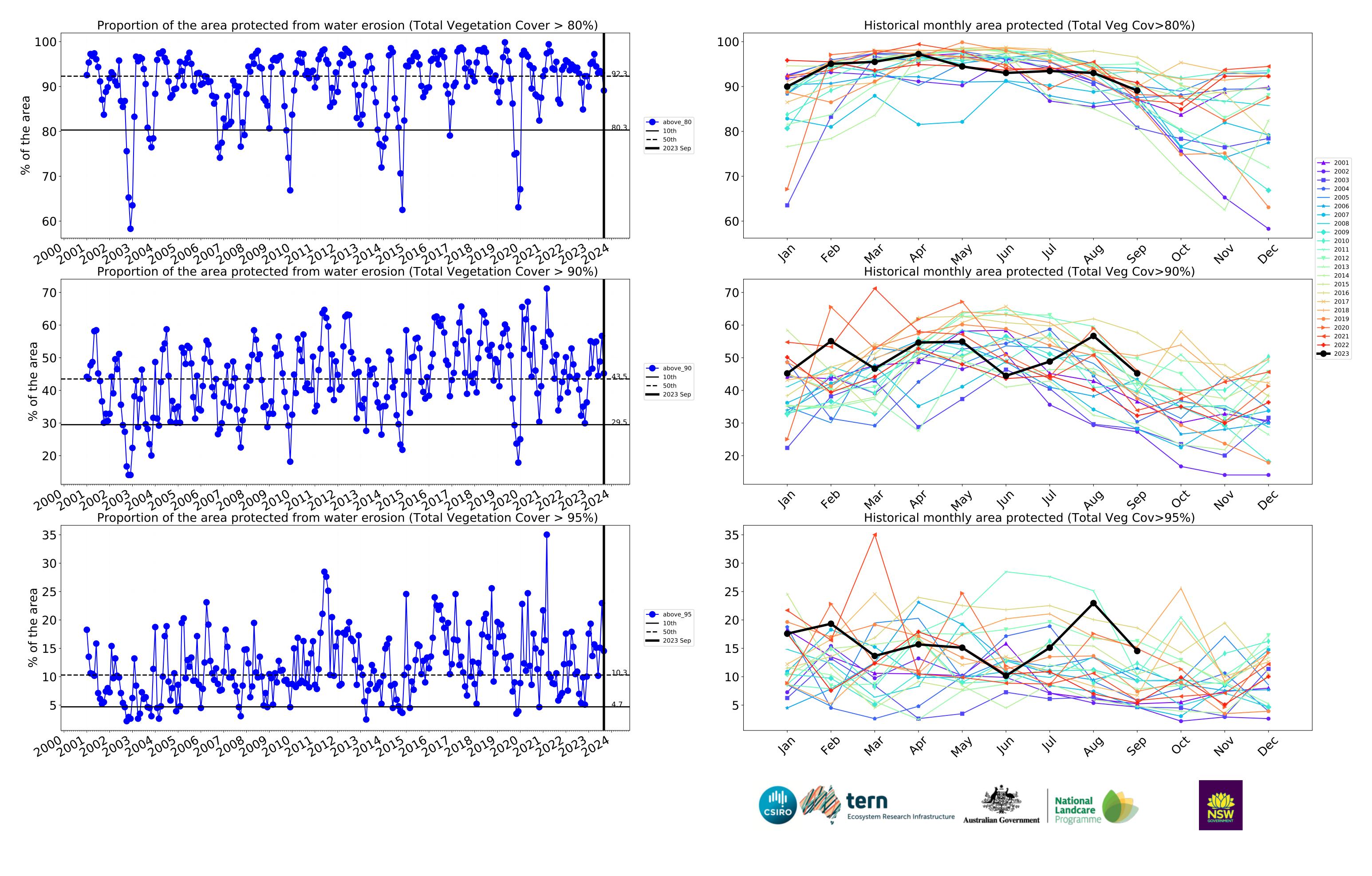
Irrigation timeseries





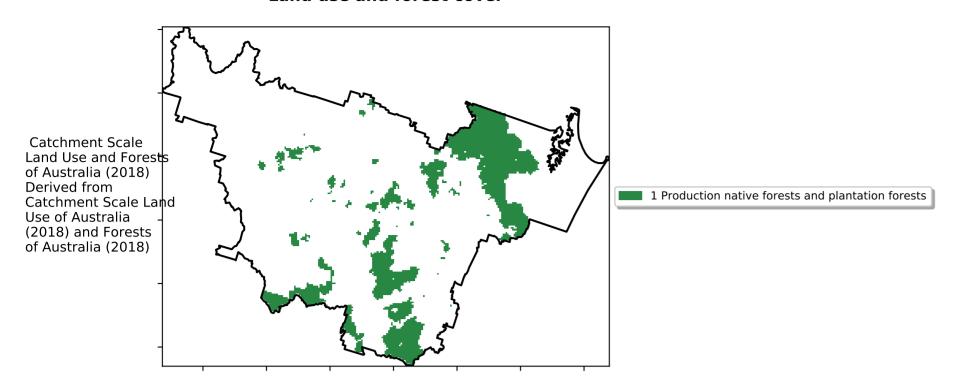




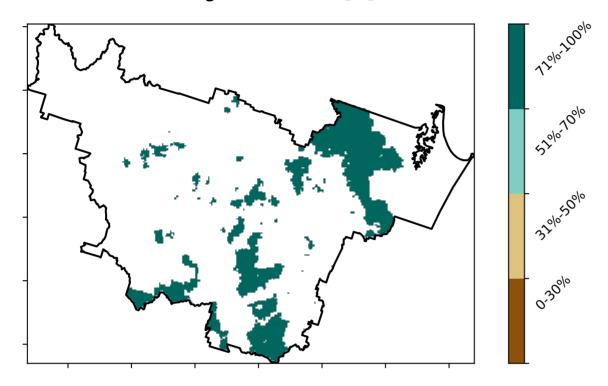


Production native forests and plantation forests

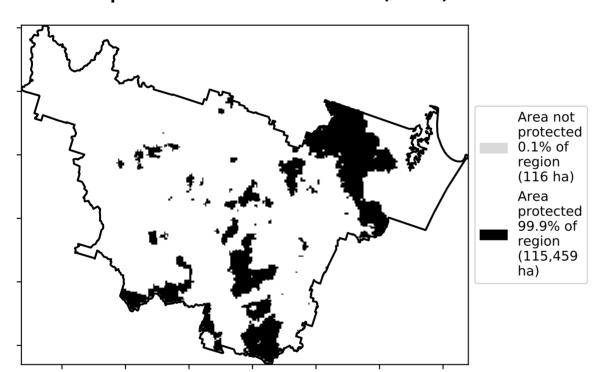
Land use and forest cover



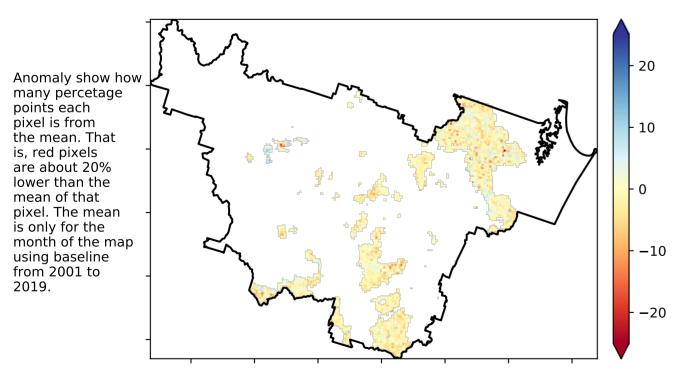
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

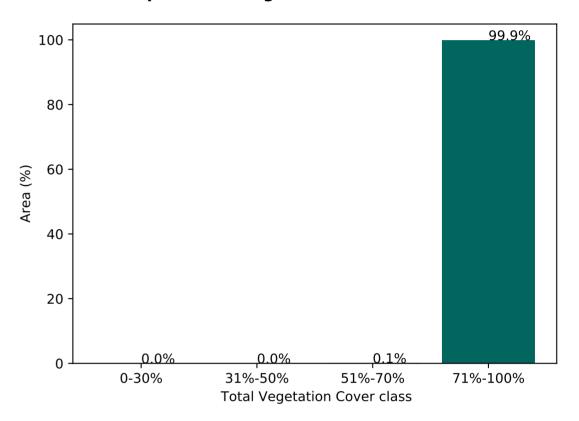


Total Vegetation Cover Anomaly [%]

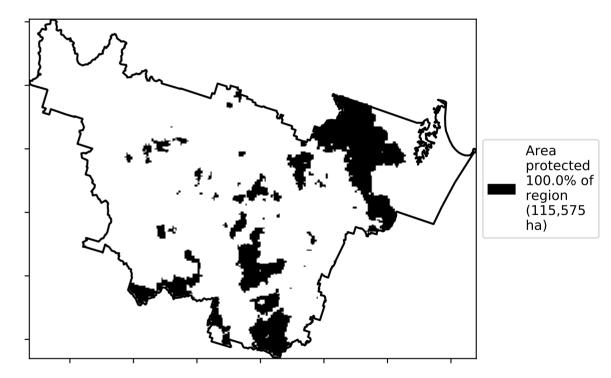


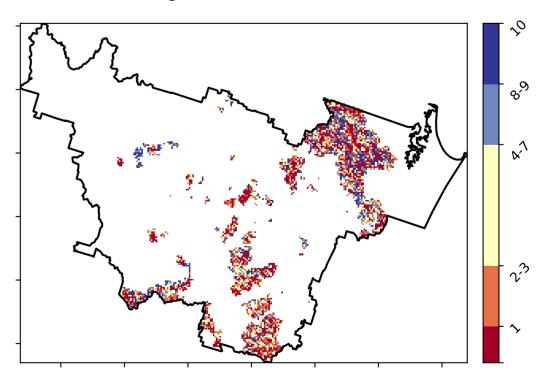
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





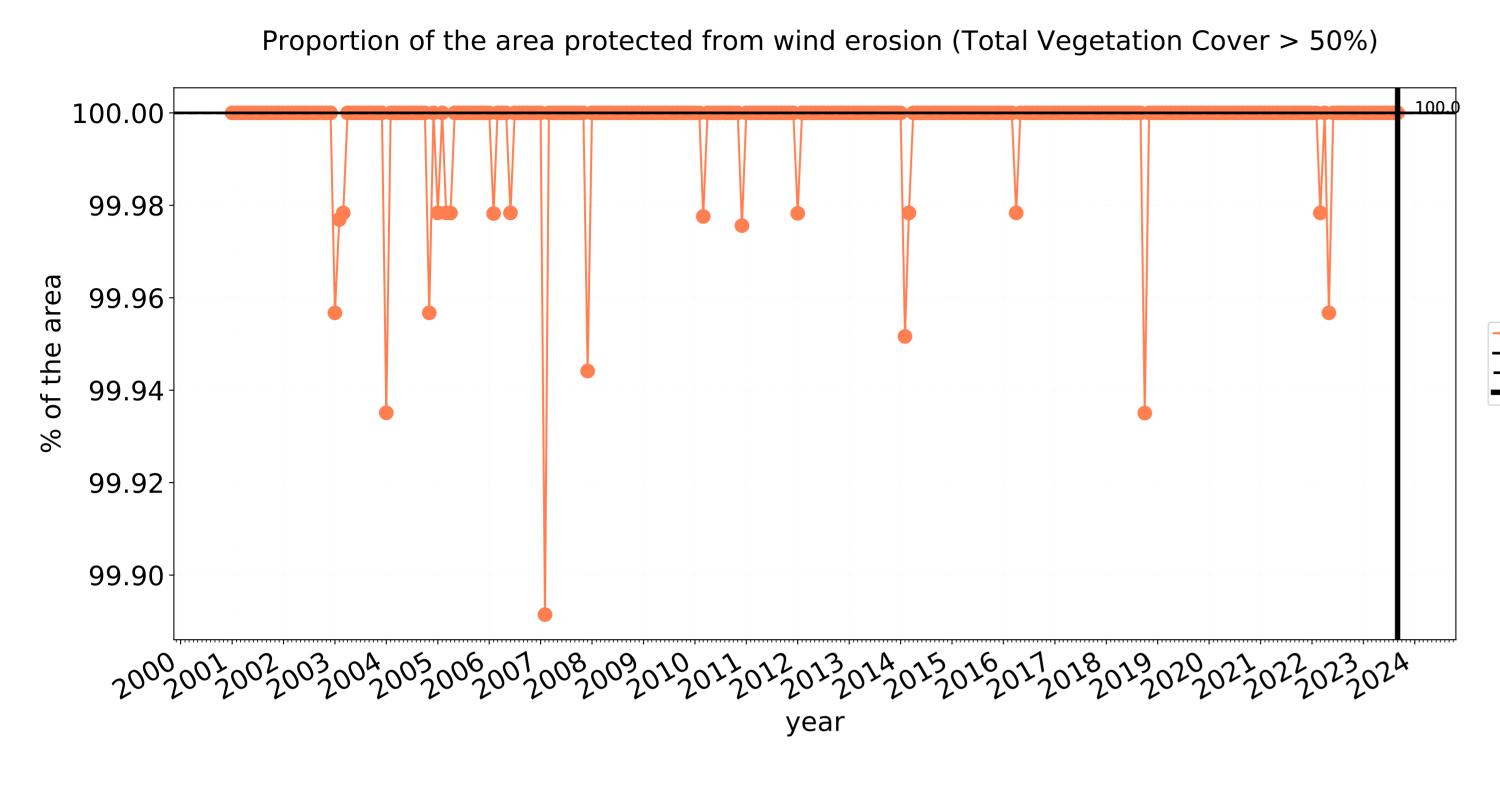


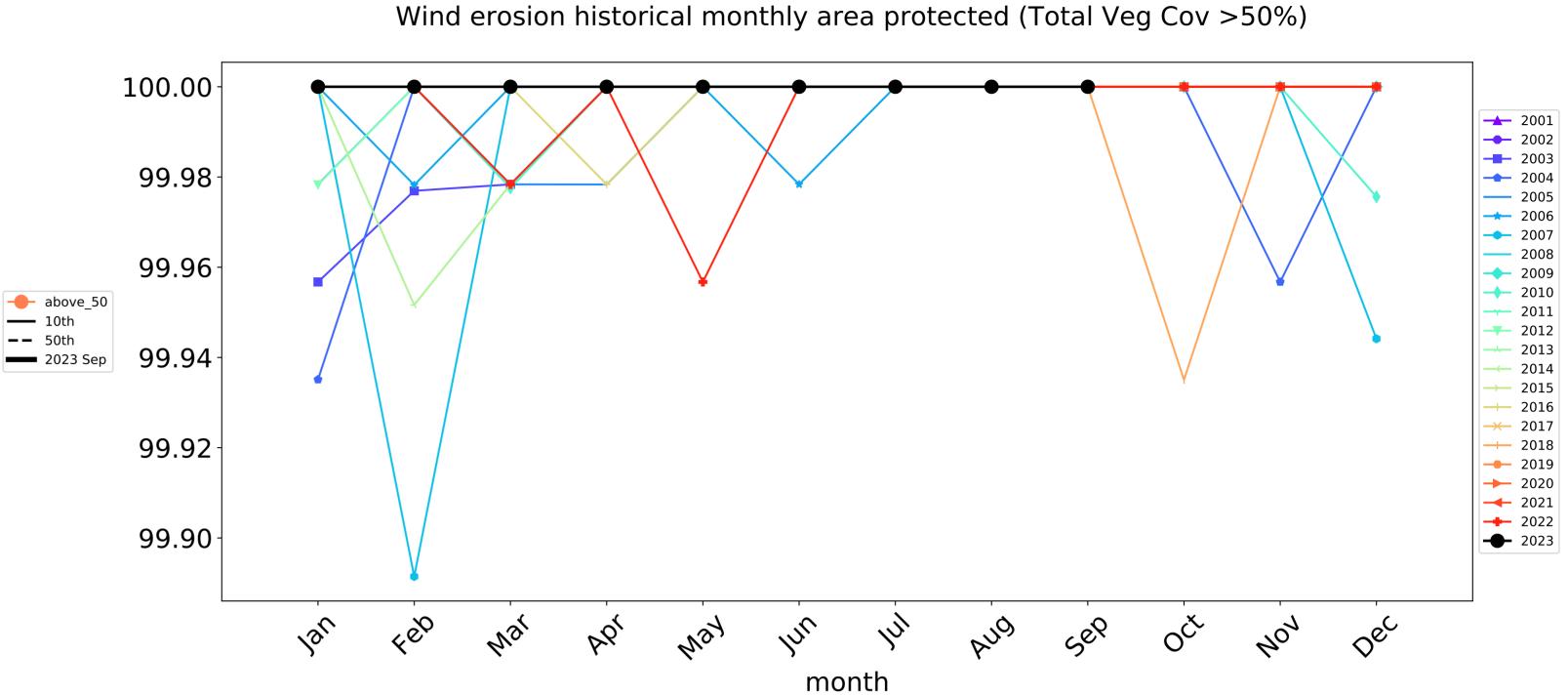


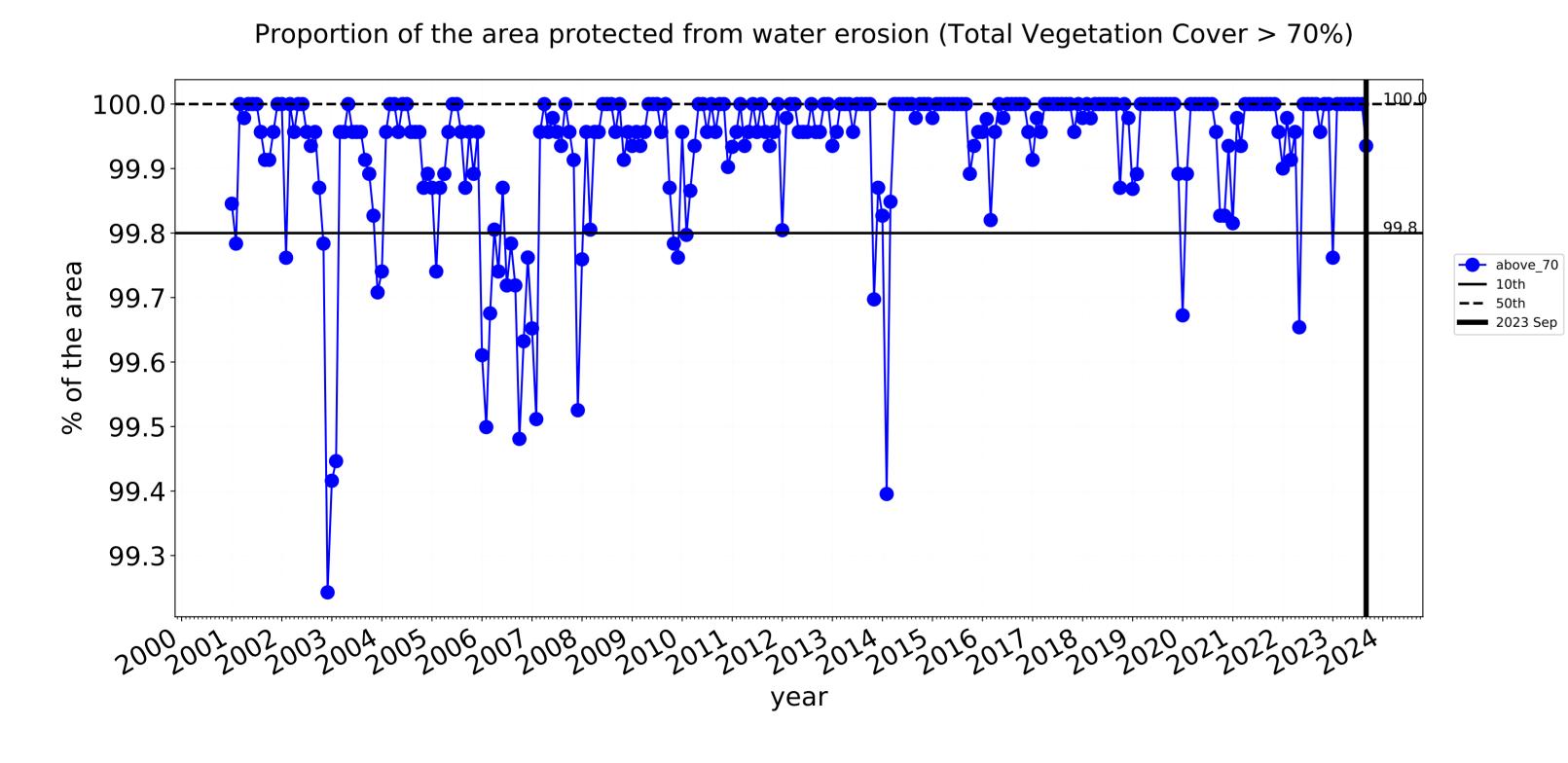


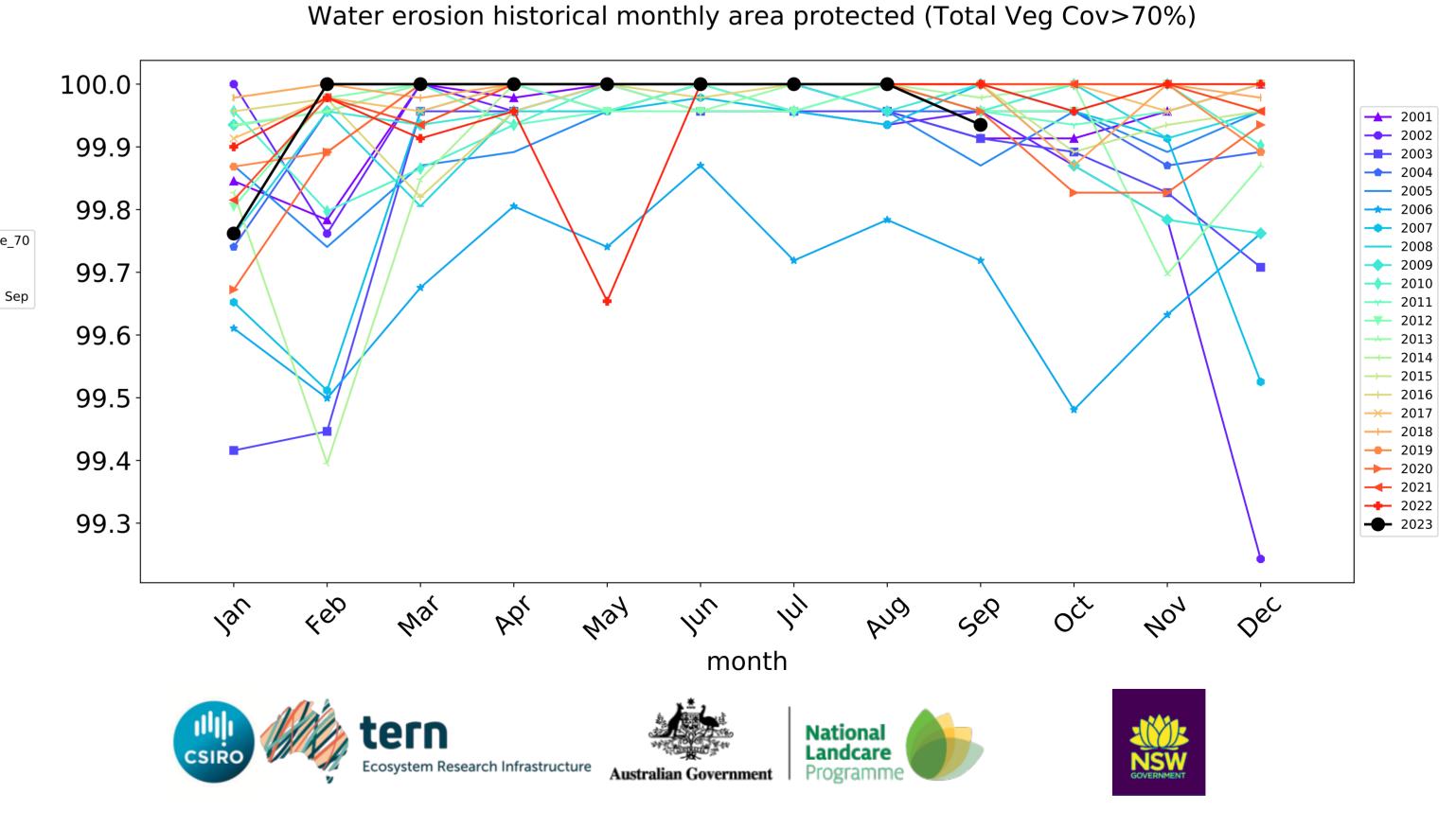


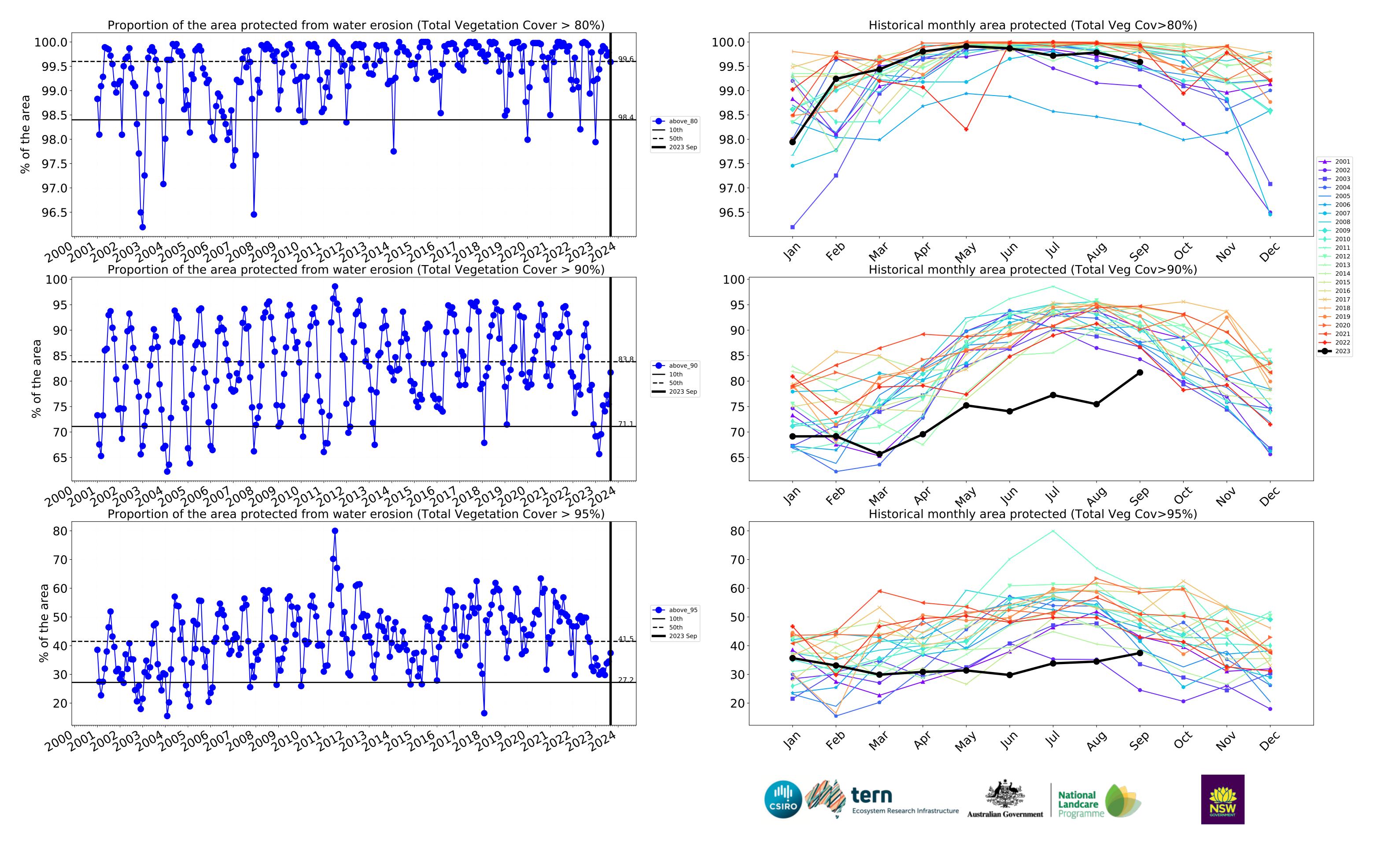
Production native forests and plantation forests timeseries











Gympie_(R) (686,850 ha and no data 1,525 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	686,850	100.0% 686,700	100.0% 686,600	99.8% 685,375	98.4% 675,950	80.7% 554,475	38.8% 266,575
Conservation and natural environments	142,400	99.9% 142,250	99.8% 142,175	99.5% 141,750	98.9% 140,875	92.7% 132,075	55.0% 78,350
Conservation and natural environments non forest	9,925	100.0% 9,925	99.7% 9,900	99.0% 9,825	97.7% 9,700	88.7% 8,800	40.3% 4,000
Conservation and natural environments Woodland forest	28,775	99.8% 28,725	99.7% 28,700	99.2% 28,550	98.9% 28,450	91.1% 26,225	48.0% 13,800
Conservation and natural environments Forest (non woodland)	103,700	99.9% 103,600	99.9% 103,575	99.7% 103,375	99.1% 102,725	93.6% 97,050	58.4% 60,550
Agriculture	397,600	100.0% 397,600	100.0% 397,600	99.9% 397,250	98.3% 391,025	77.3% 307,500	34.8% 138,400
Grazing	377,625	100.0% 377,625	100.0% 377,625	100.0% 377,475	98.8% 372,975	78.9% 297,850	35.8% 135,225
Grazing non forest	267,675	100.0% 267,675	100.0% 267,675	99.9% 267,525	98.6% 263,950	75.7% 202,550	33.3% 89,200
Grazing Woodland forest	61,875	100.0% 61,875	100.0% 61,875	100.0% 61,875	98.8% 61,150	82.7% 51,200	34.6% 21,400
Grazing - Forest (non woodland)	48,075	100.0% 48,075	100.0% 48,075	100.0% 48,075	99.6% 47,875	91.7% 44,100	51.2% 24,625
Irrigation	17,200	100.0% 17,200	100.0% 17,200	98.8% 17,000	89.1% 15,325	45.2% 7,775	14.5% 2,500
Production native forests and plantation forests	115,575	100.0% 115,575	100.0% 115,575	99.9% 115,500	99.6% 115,100	81.7% 94,425	37.4% 43,275







