Total vegetation cover soil protection Region:NRM Hunter NSW

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

Land use forest cover:

Date: October 2022

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



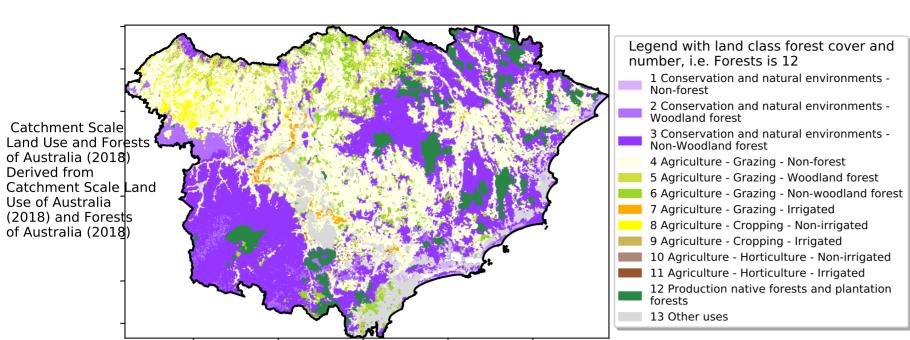




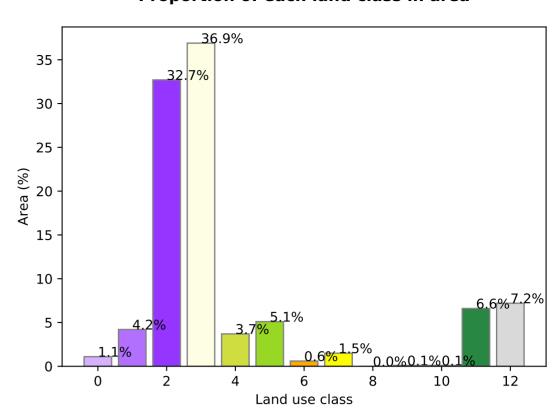


Vegetation Cover Oct 2022

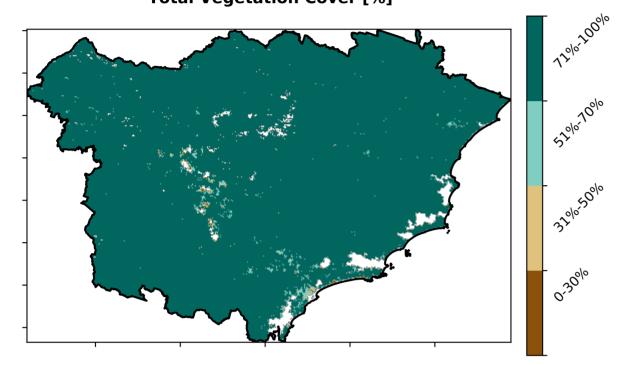
Land use and forest cover



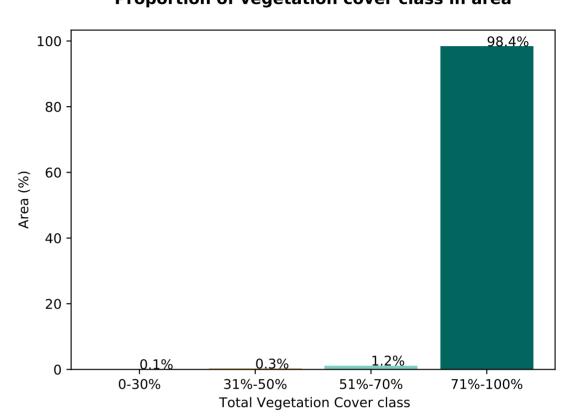
Proportion of each land class in area



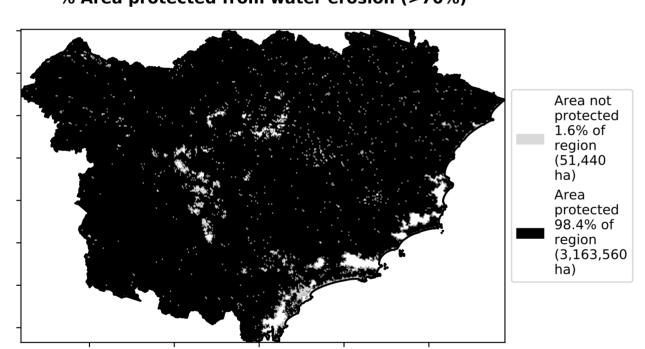
Total Vegetation Cover [%]



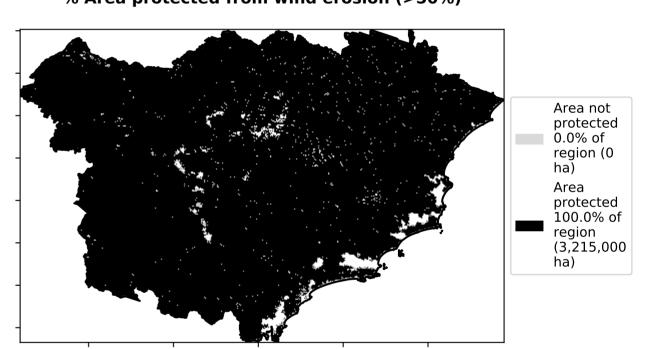
Proportion of vegetation cover class in area



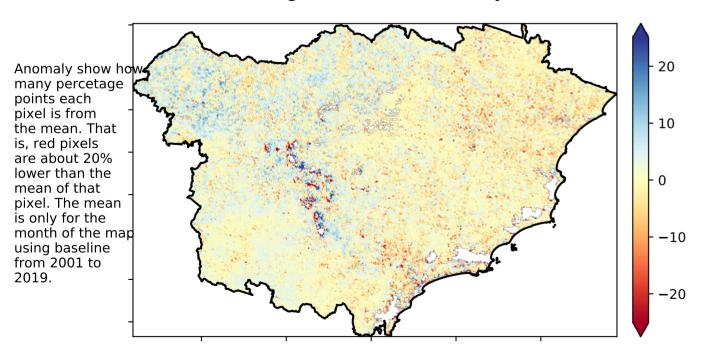
% Area protected from water erosion (>70%)



% 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.

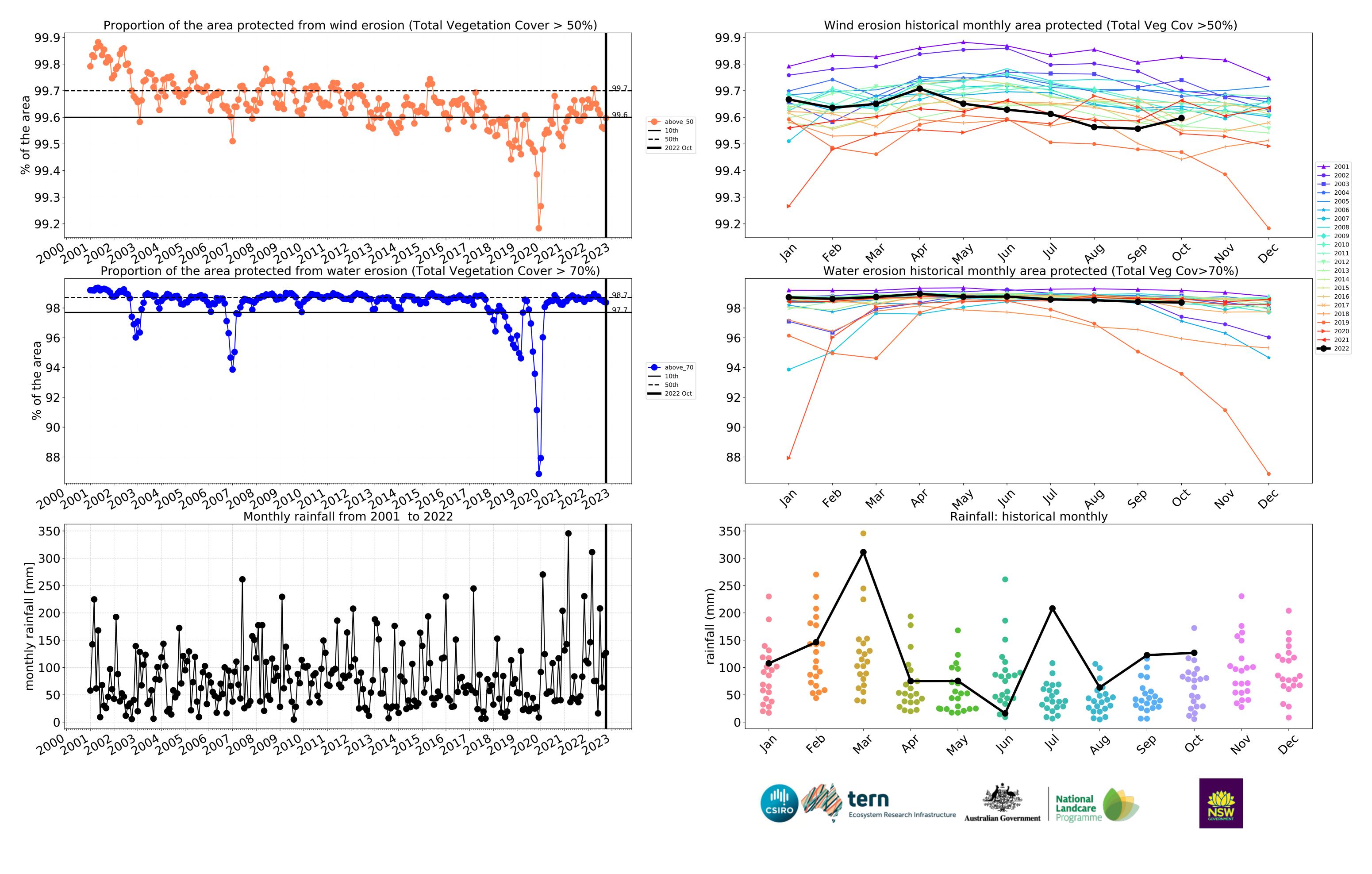
Total Vegetation Cover Decile [%]



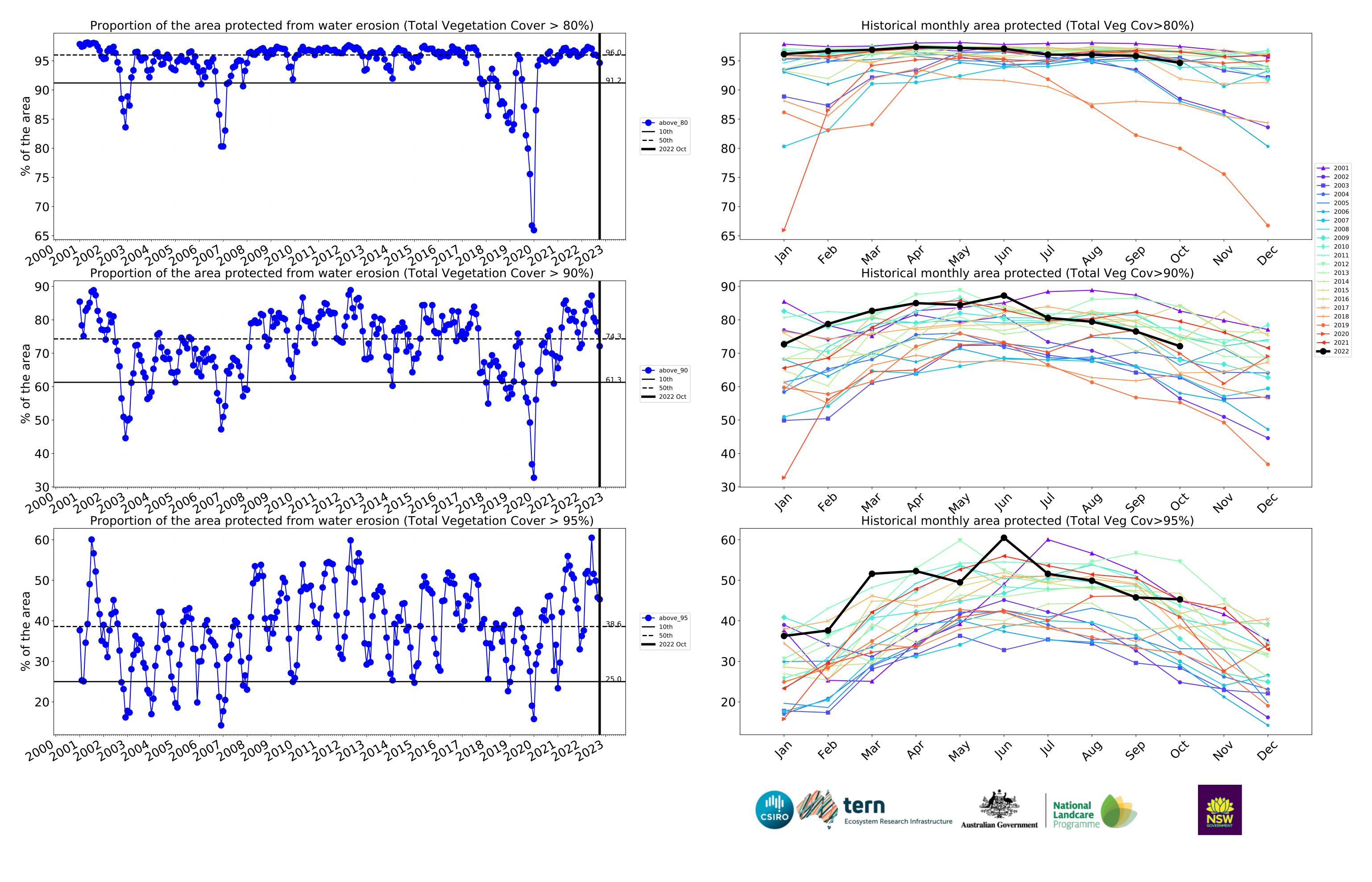




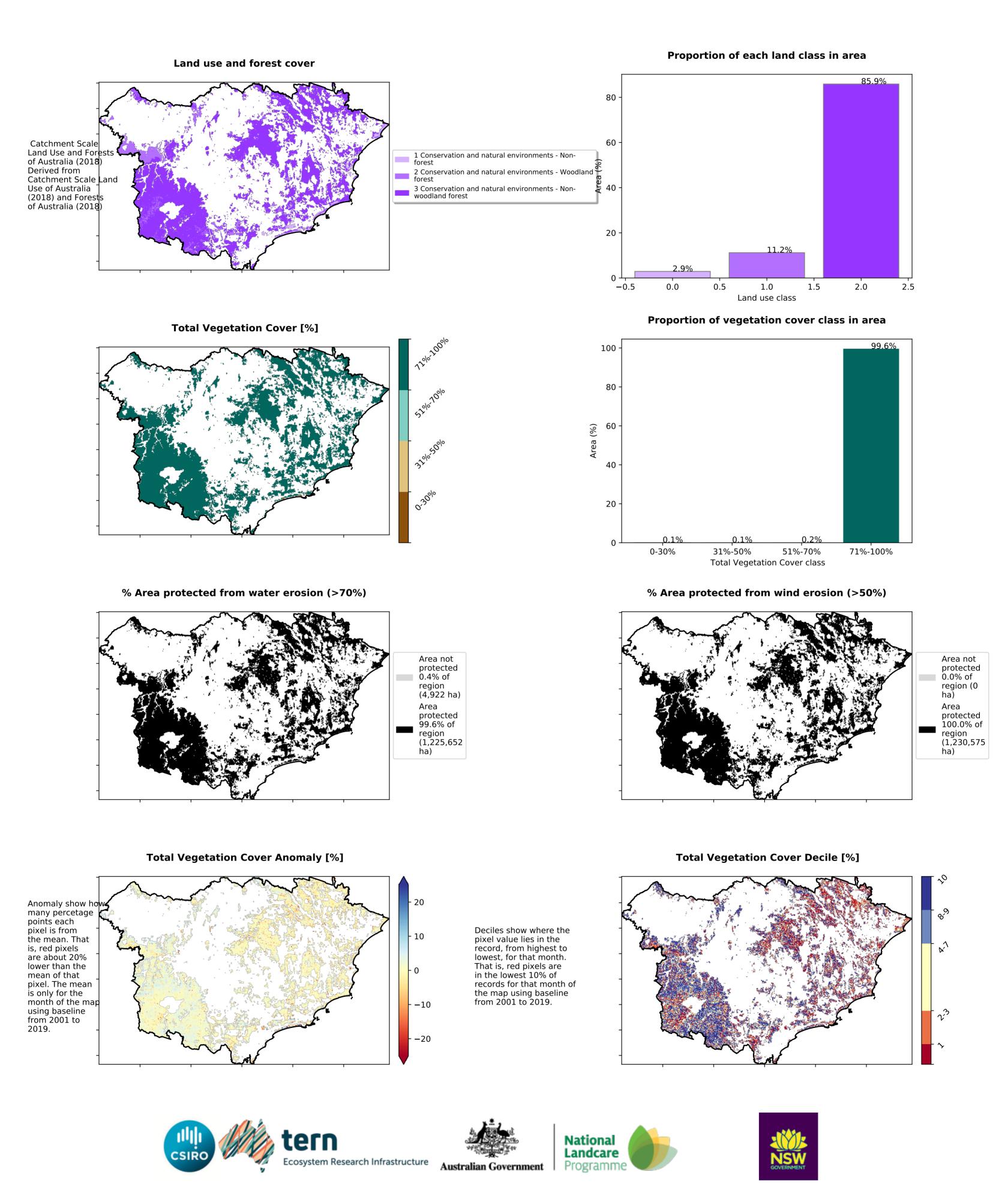




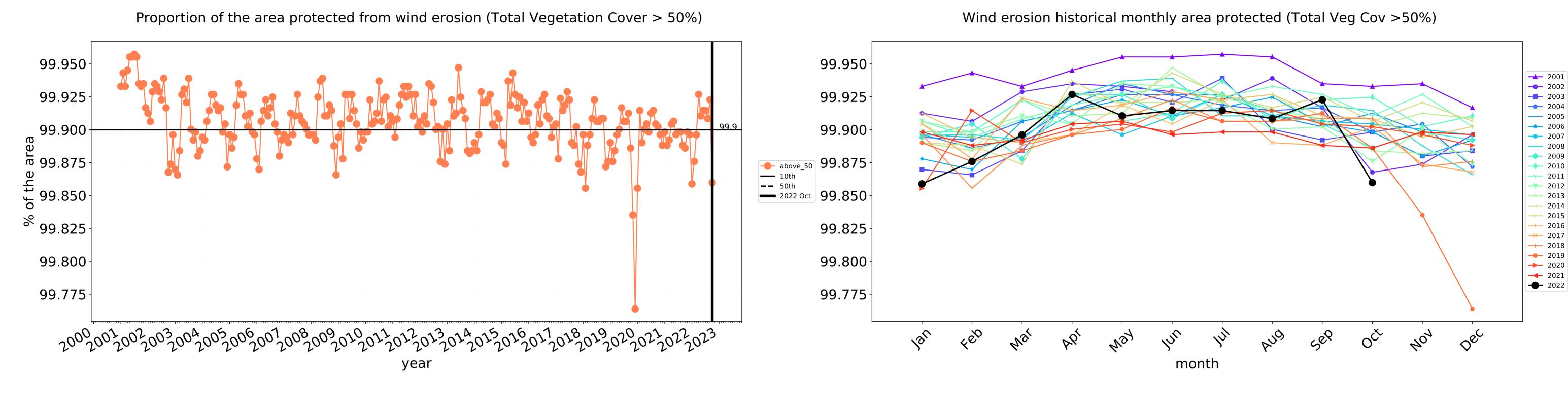
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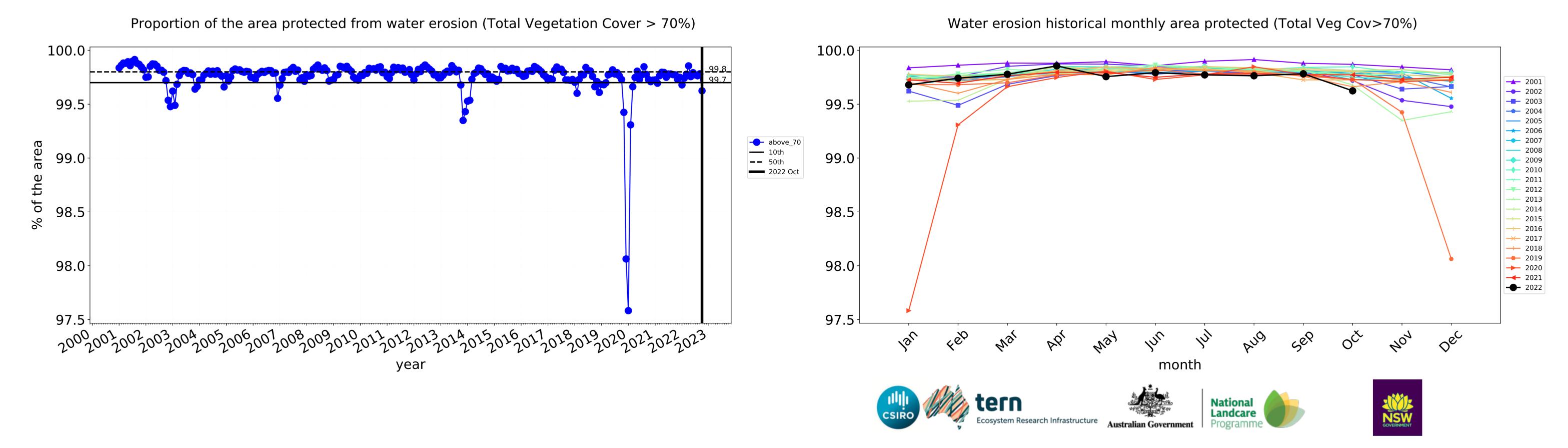


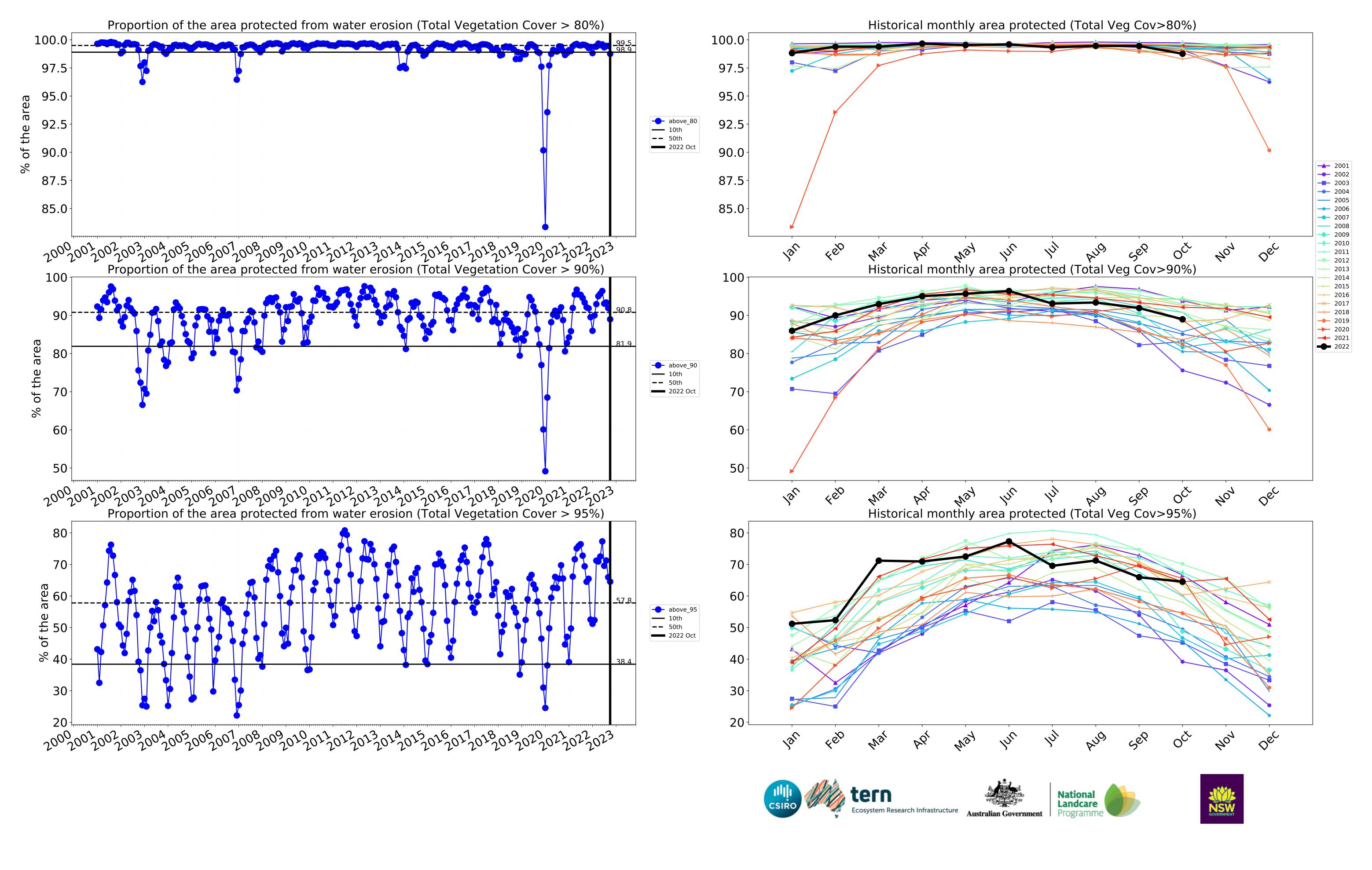
Conservation and natural environments



Conservation and natural environments timeseries



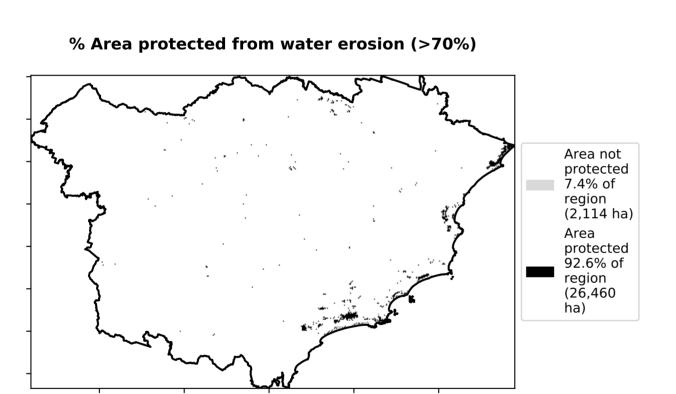


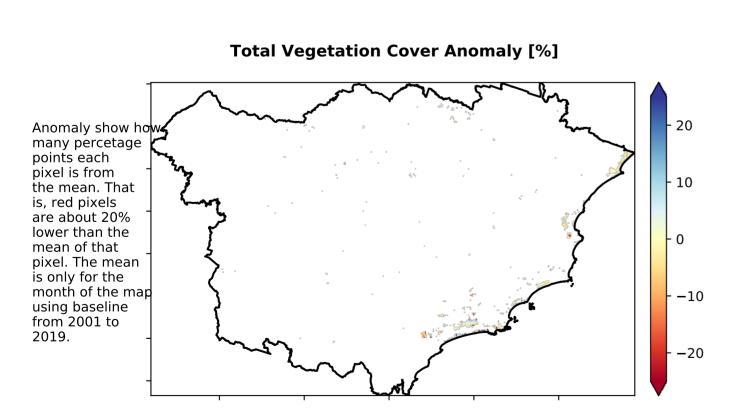


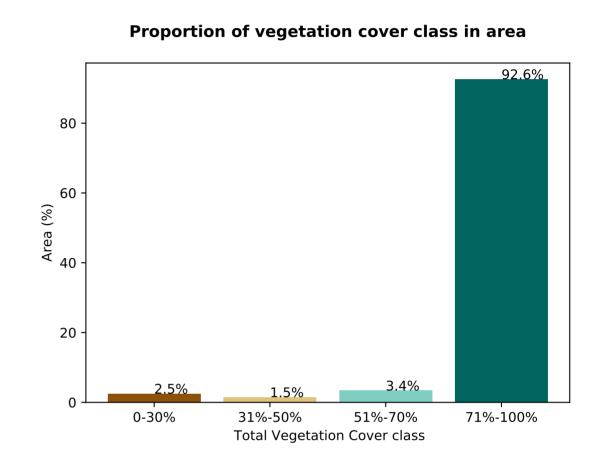
Conservation and natural environments non forest

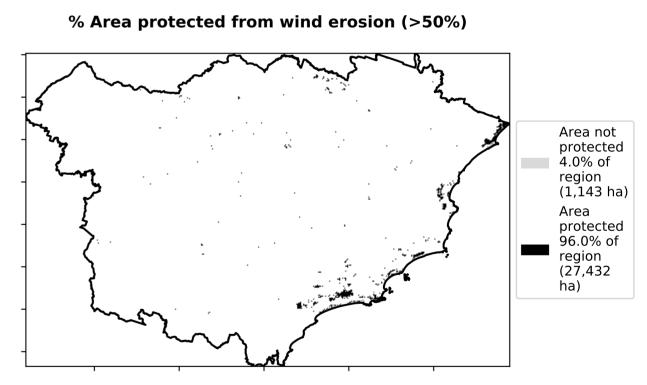
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 1 Conservation and natural environments - Nonforest 1 Conservation and natural environments - Nonforest

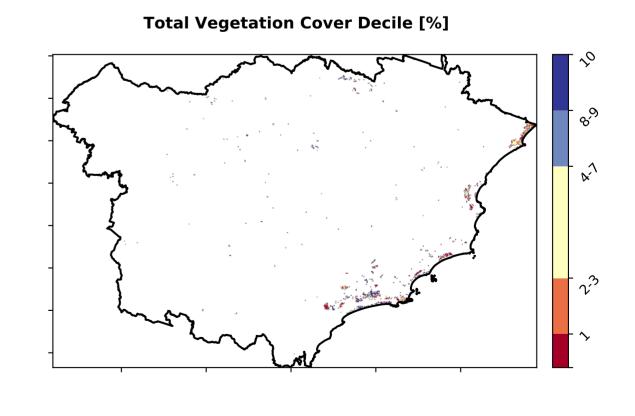
Total Vegetation Cover [%]











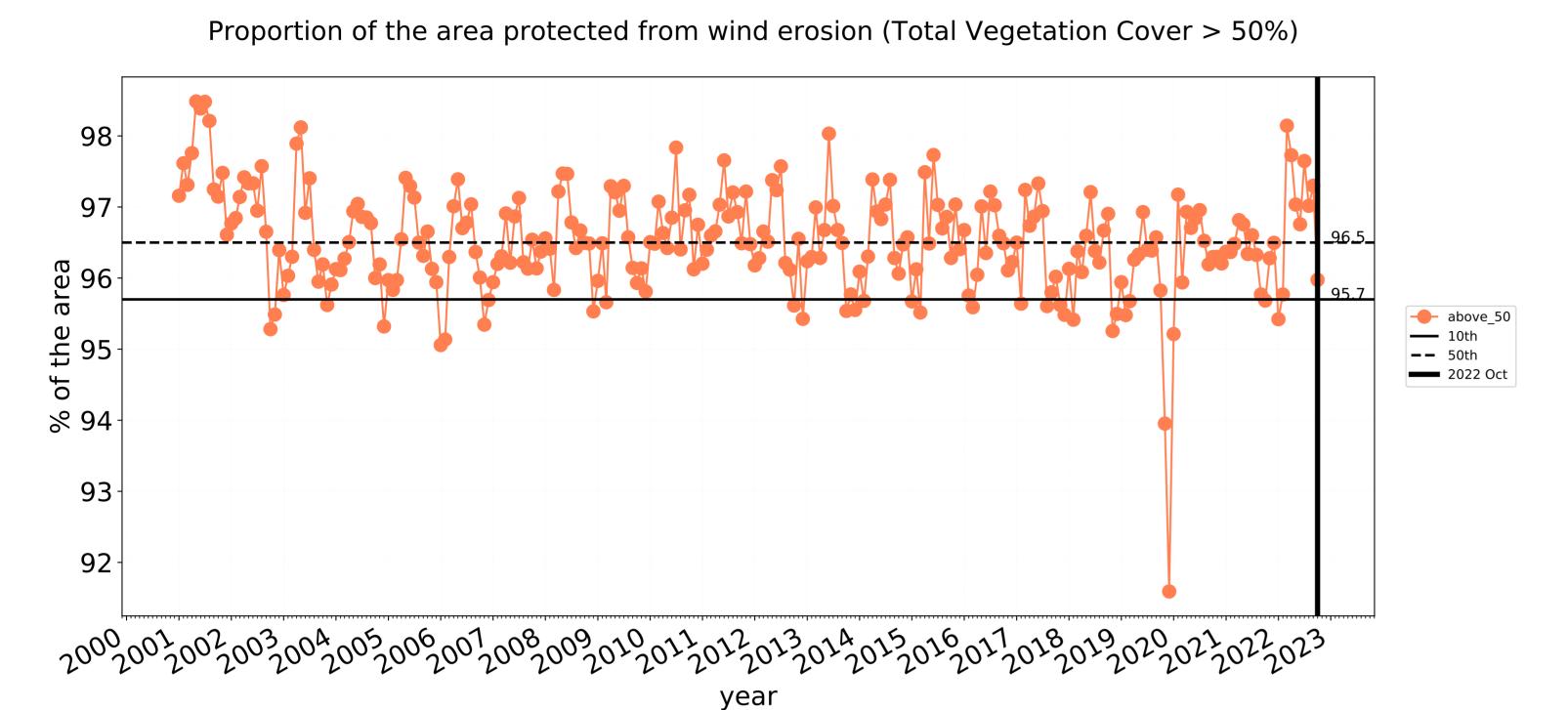


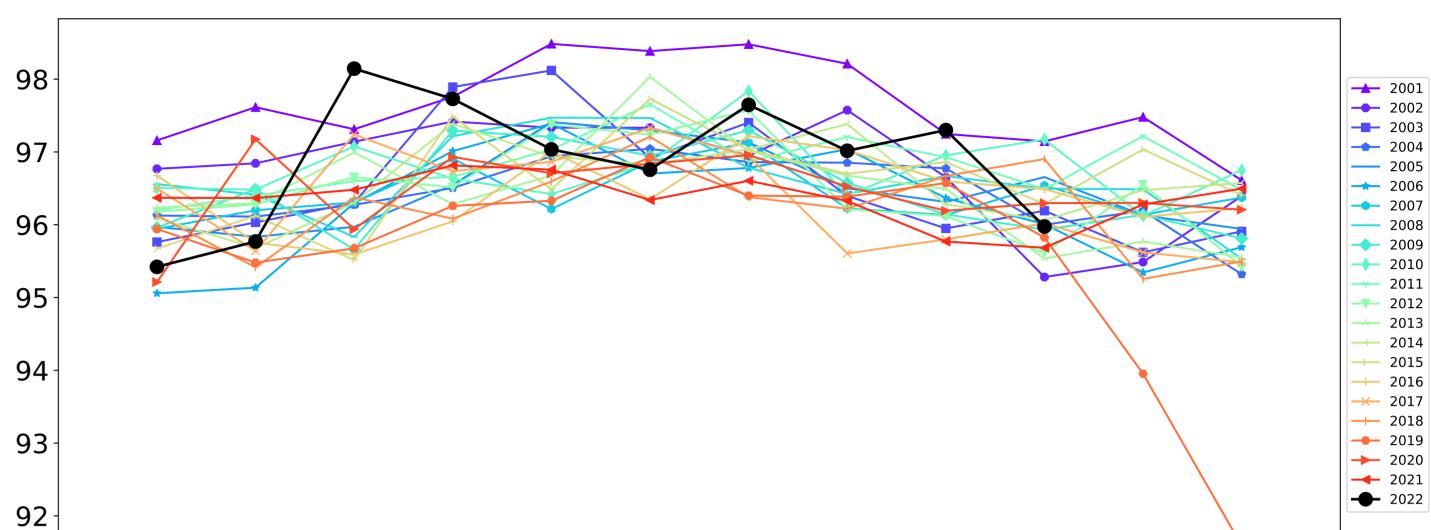






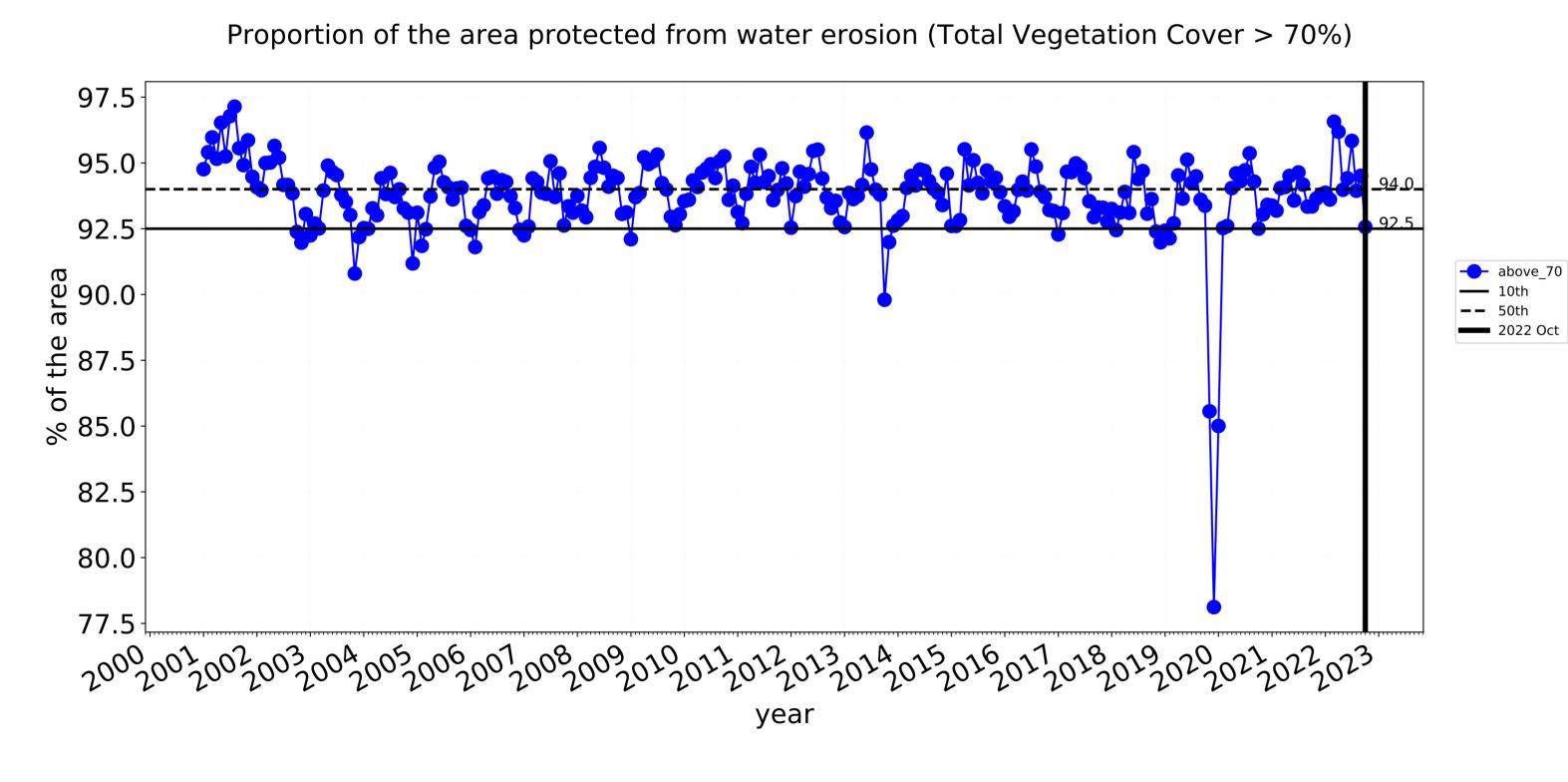
Conservation and natural environments non forest timeseries

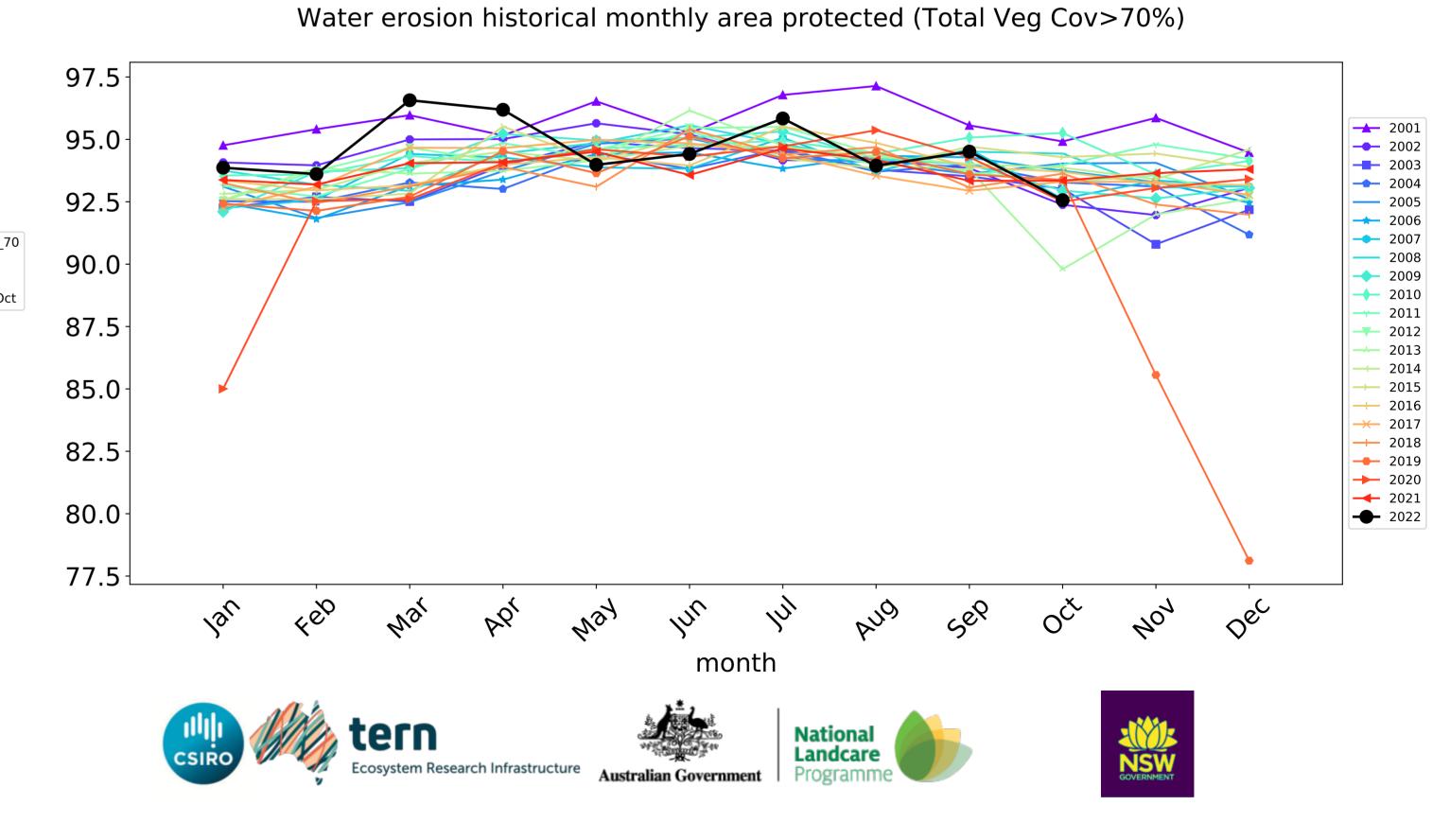


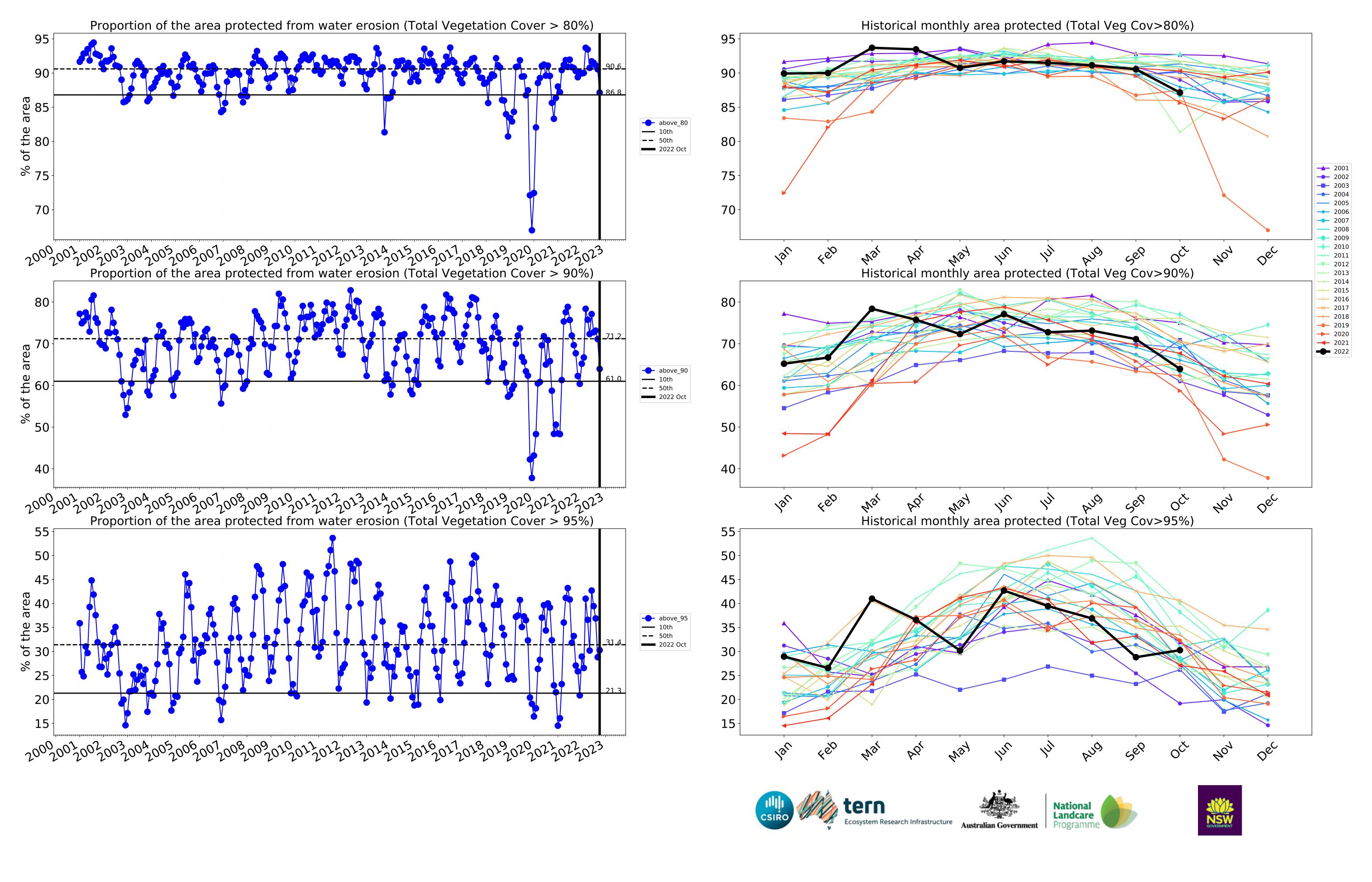


month

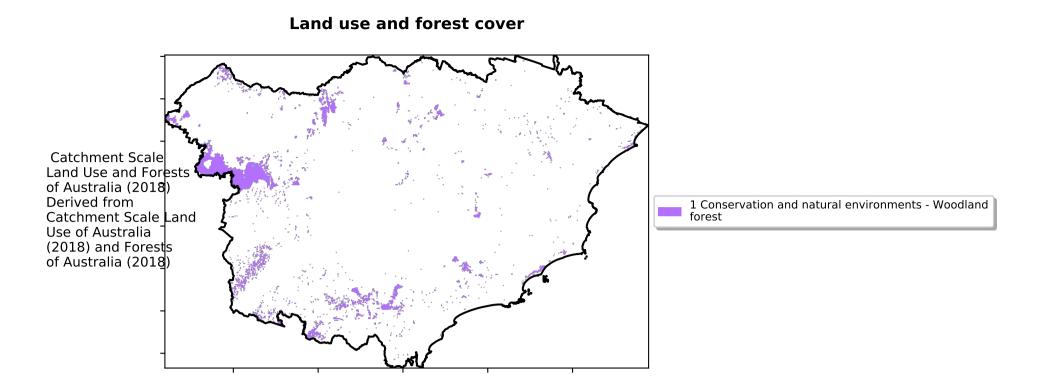
Wind erosion historical monthly area protected (Total Veg Cov >50%)



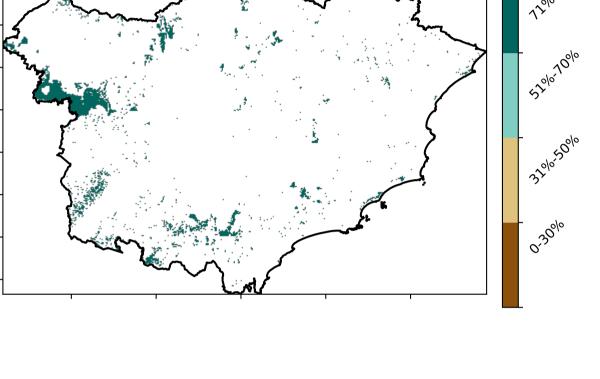


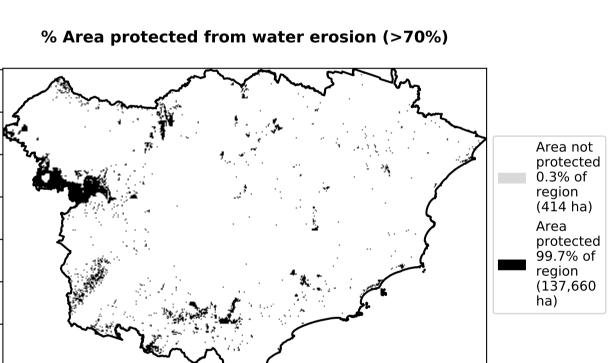


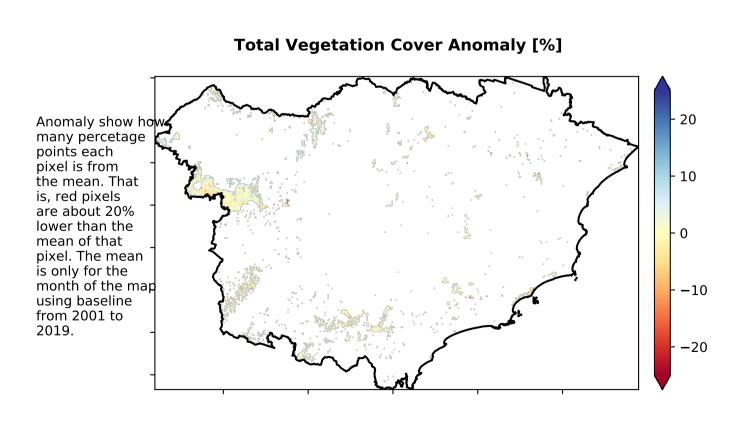
Conservation and natural environments Woodland forest

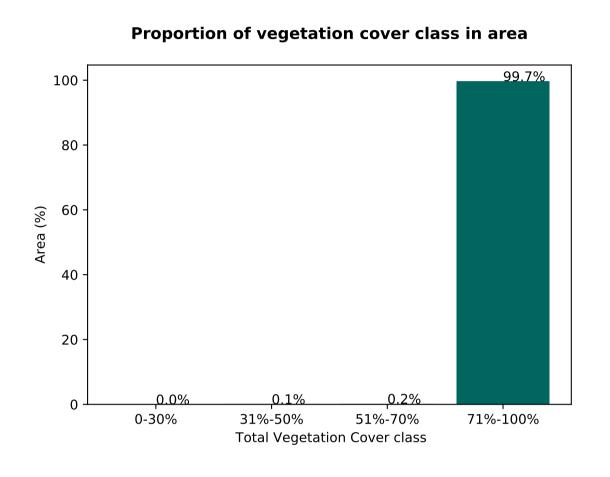


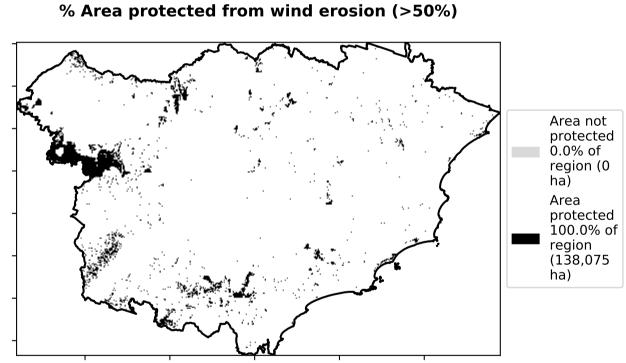
Total Vegetation Cover [%]

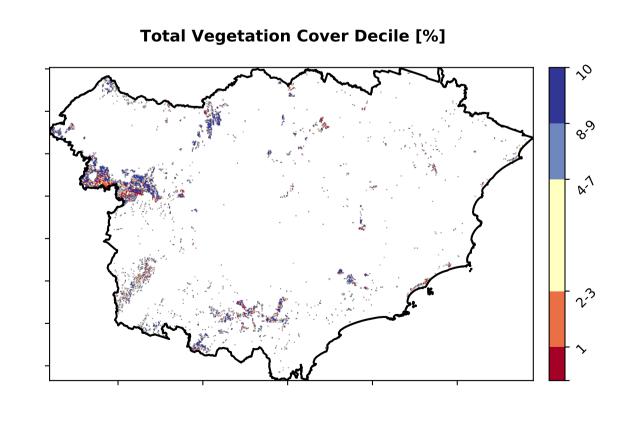












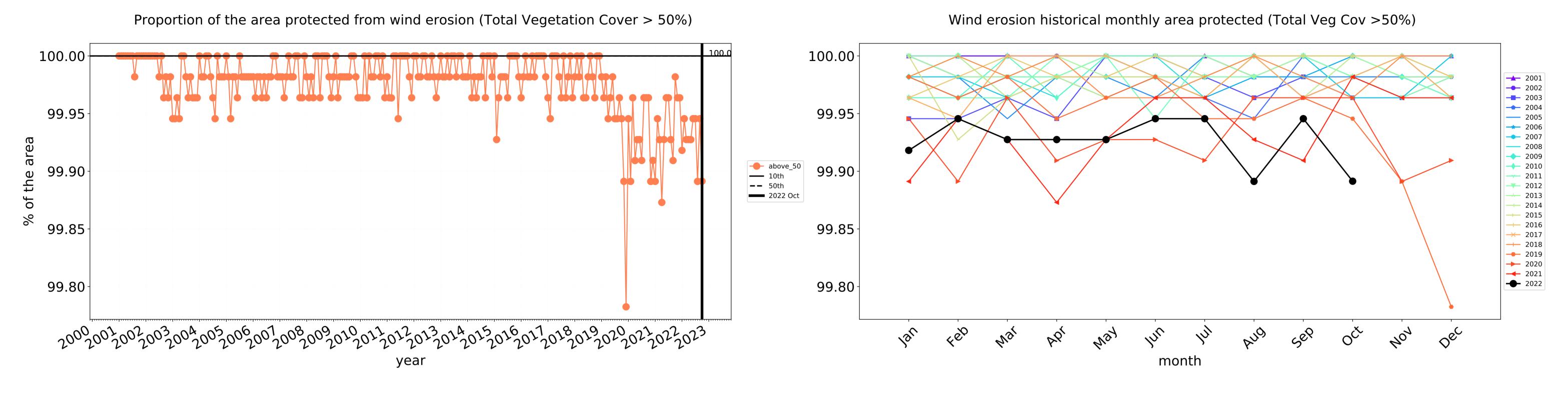


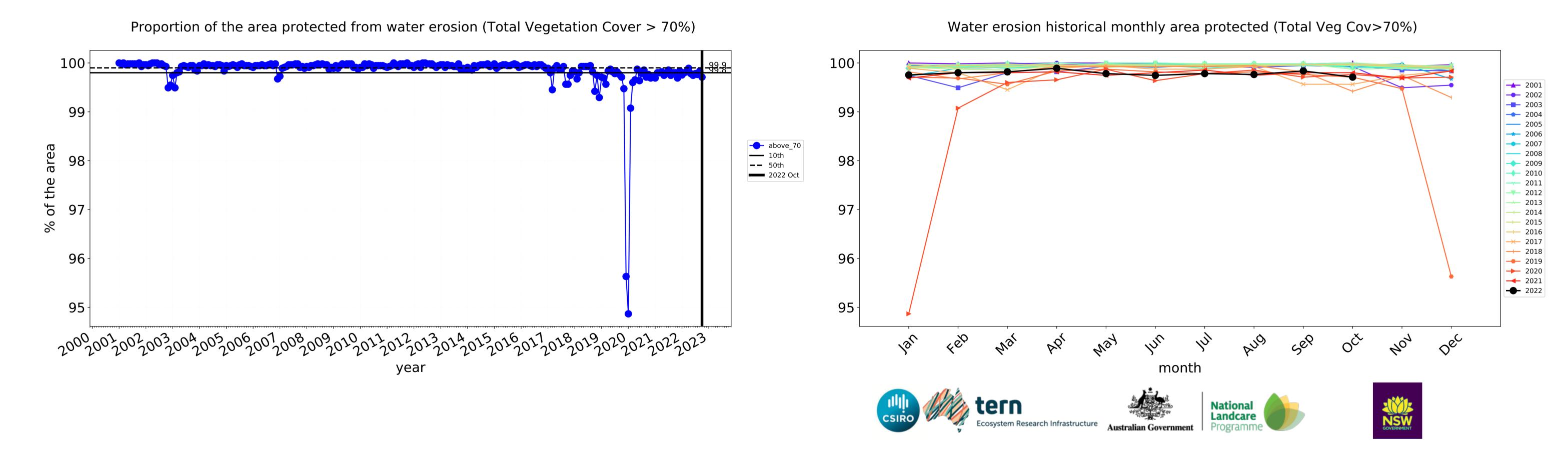


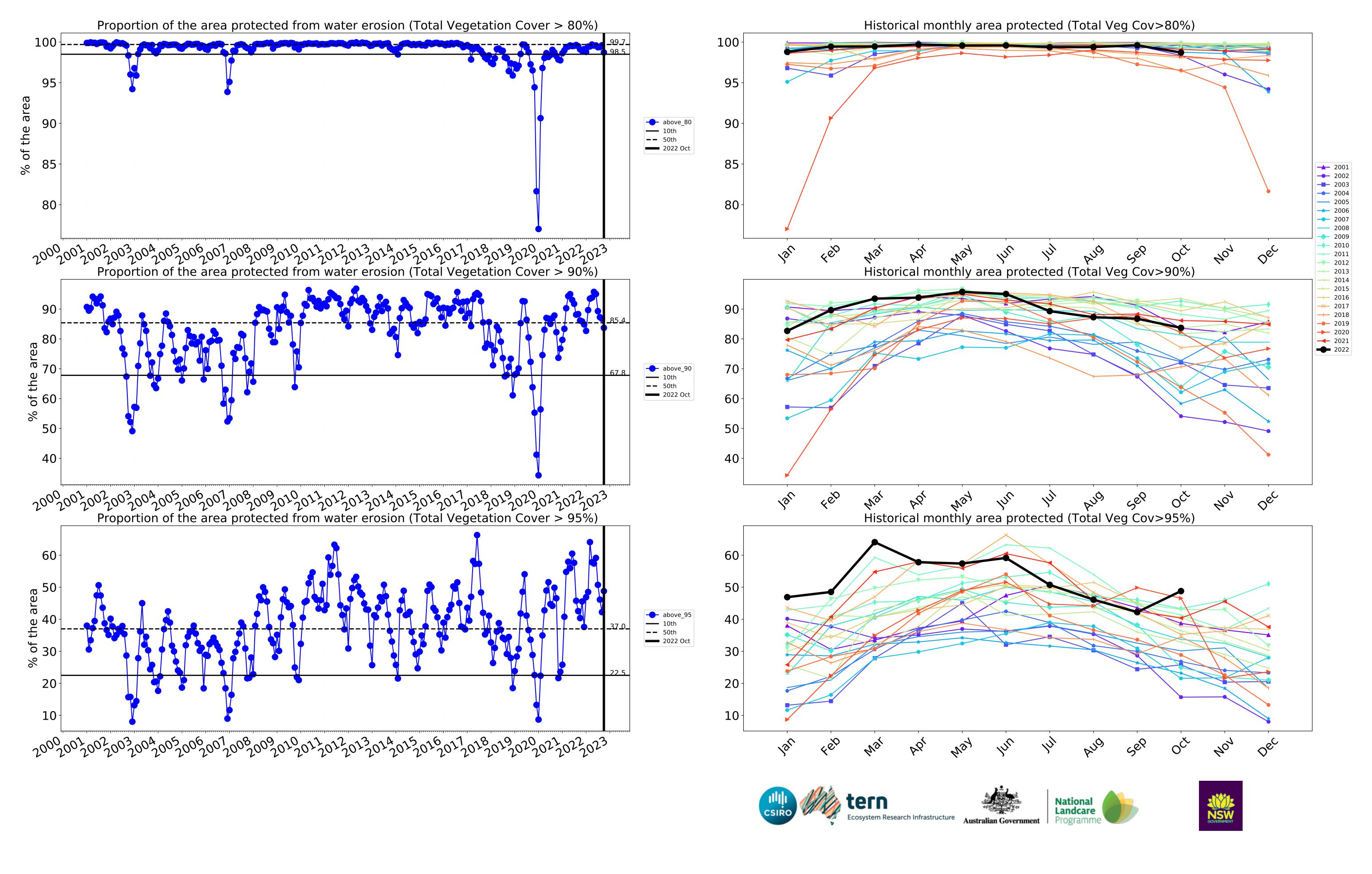




Conservation and natural environments Woodland forest timeseries



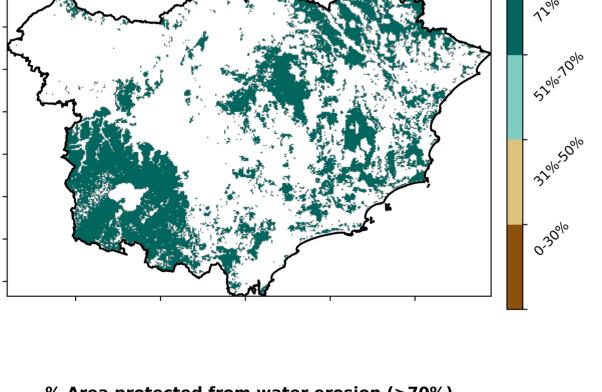


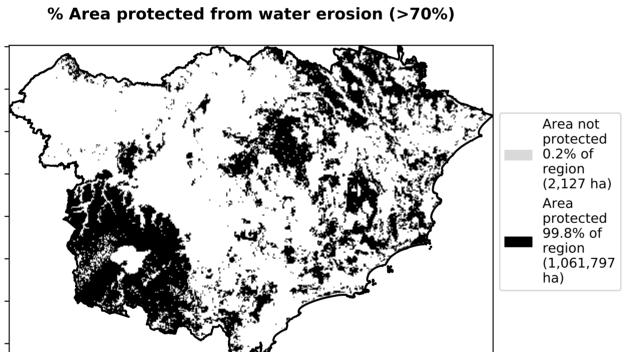


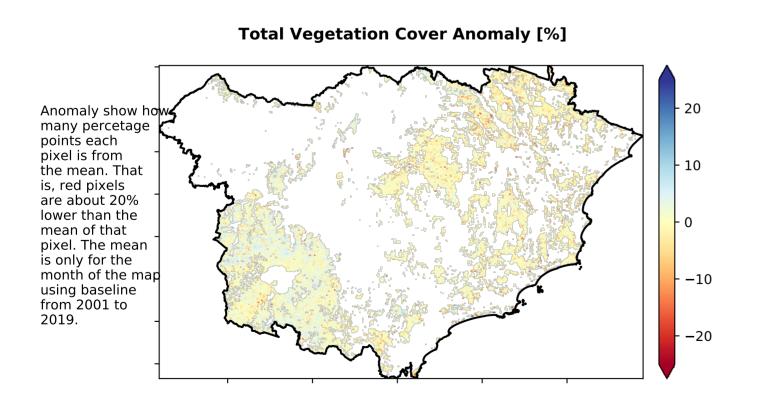
Conservation and natural environments Forest (non woodland)

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

Total Vegetation Cover [%]

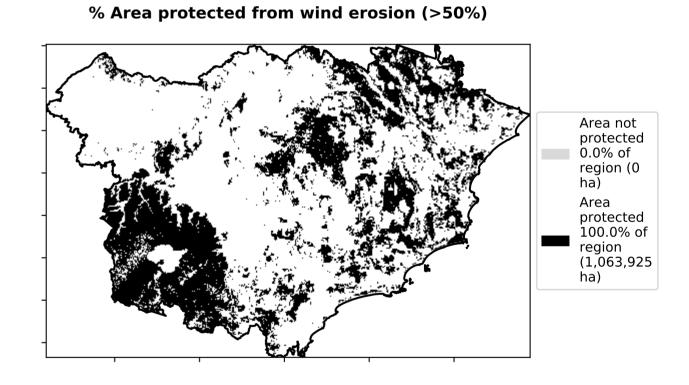


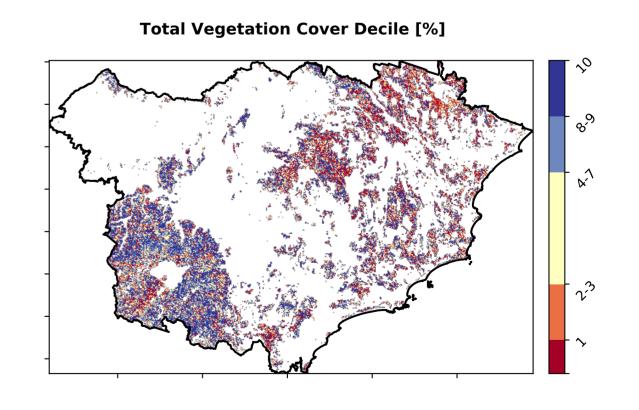




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 99.8% 100 80 60 40 20 -51%-70% 0-30% 31%-50% 71%-100% **Total Vegetation Cover class**





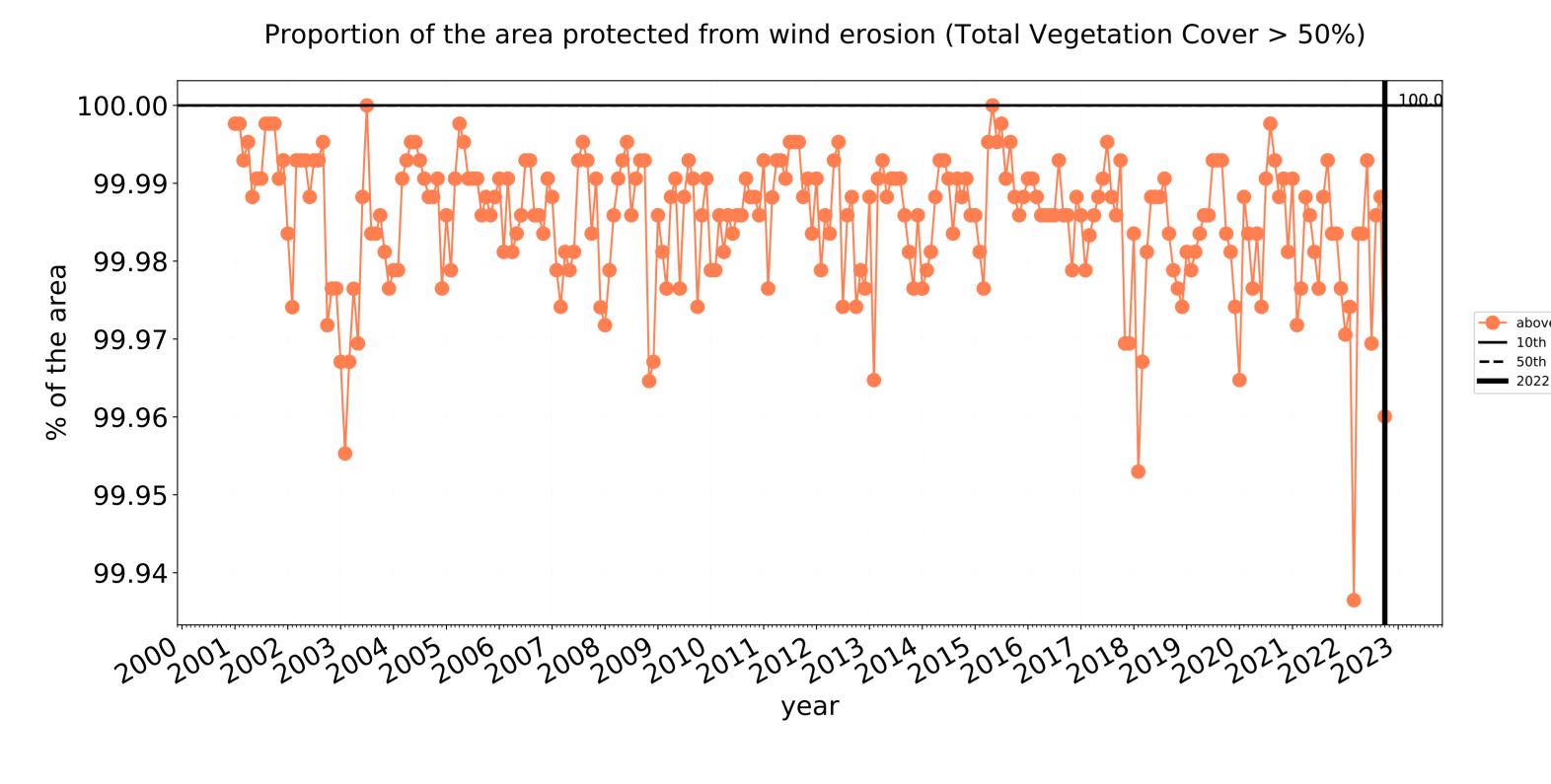


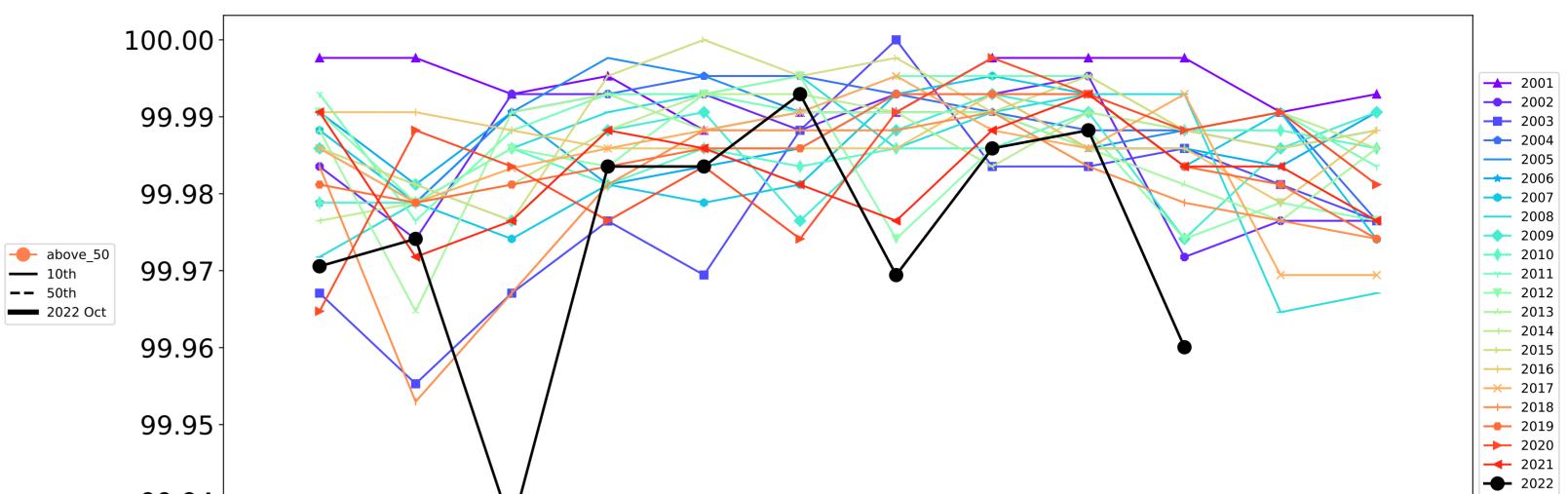






Conservation and natural environments Forest (non woodland) timeseries

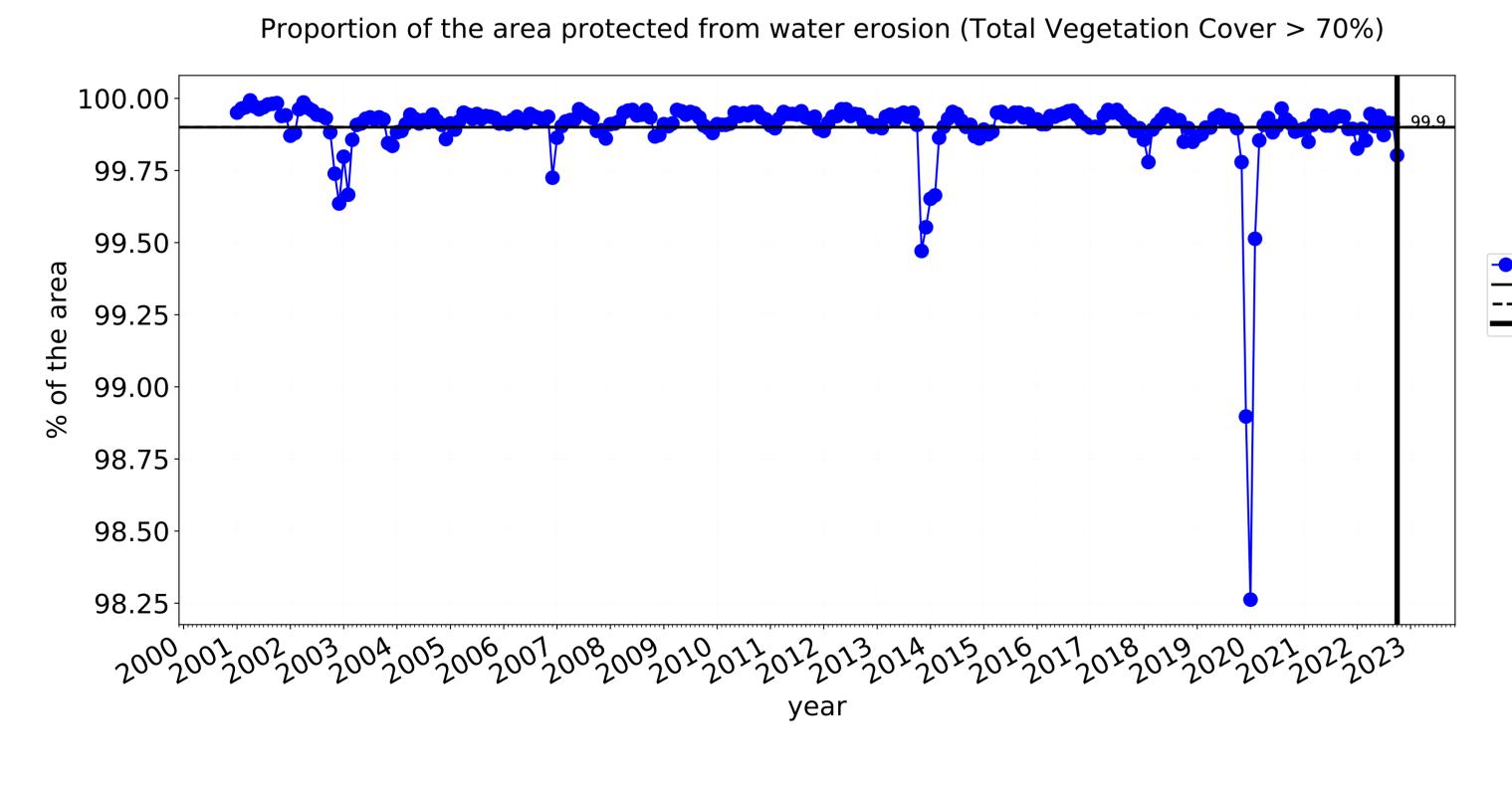


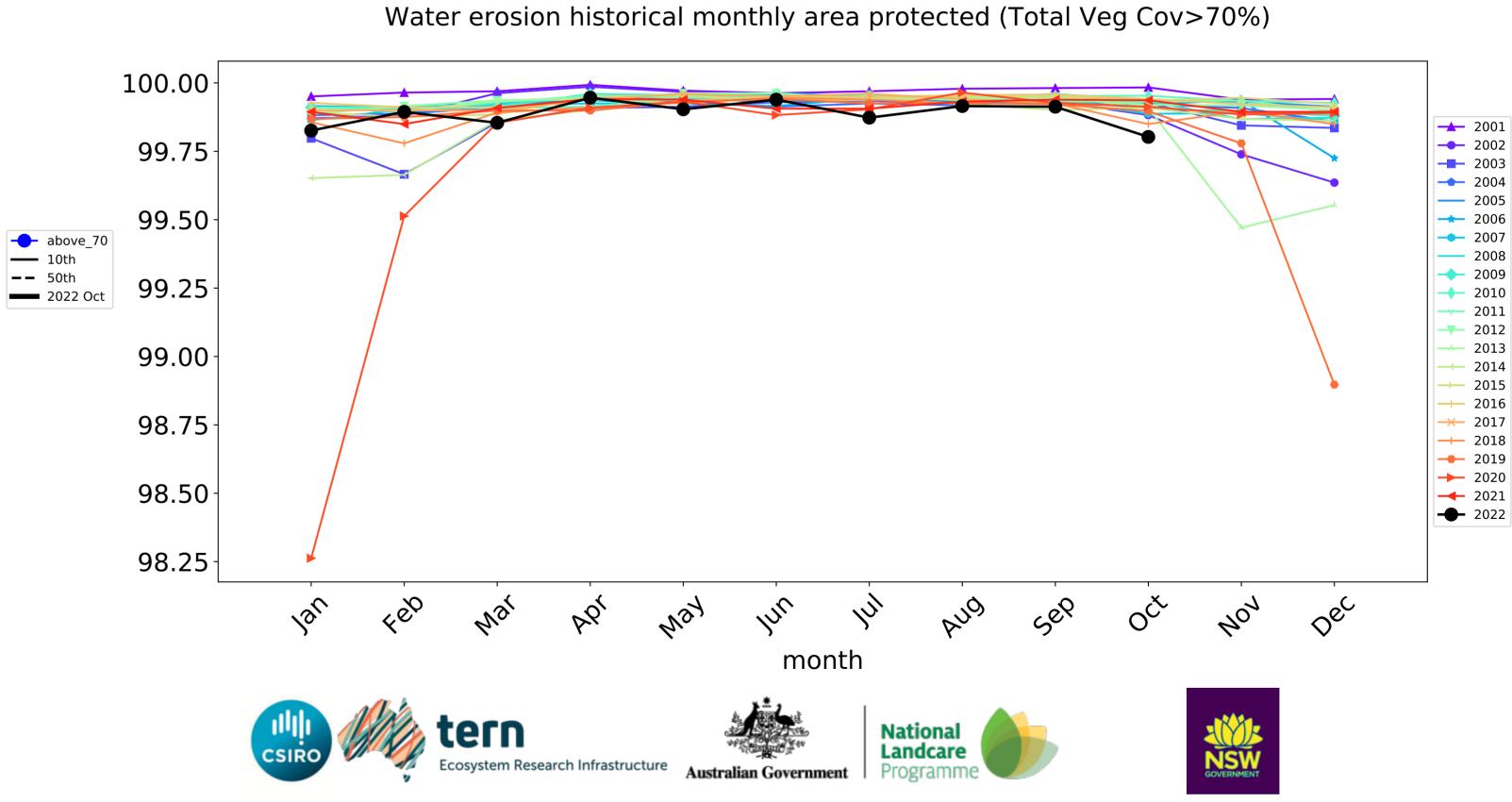


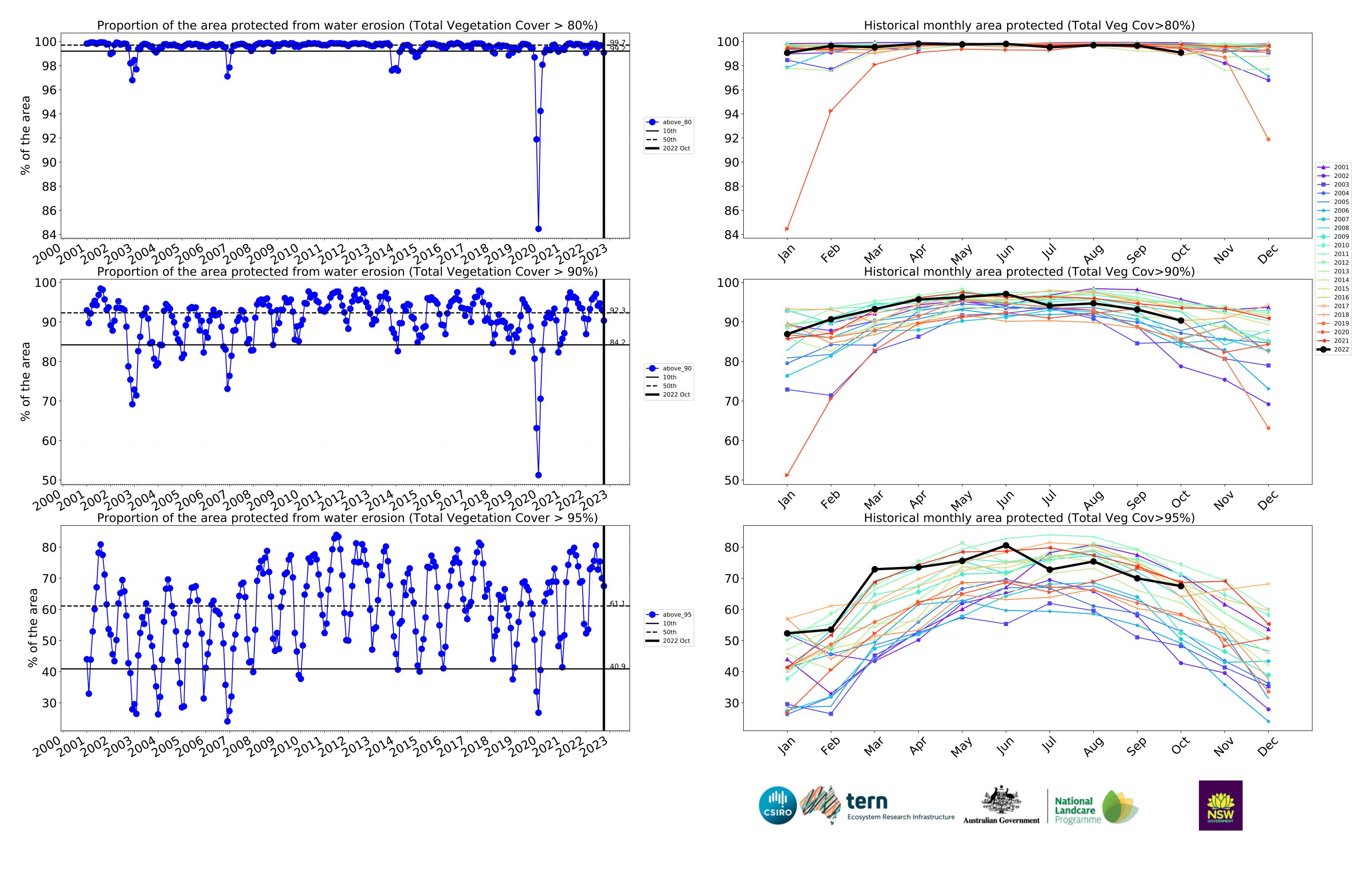
month

99.94

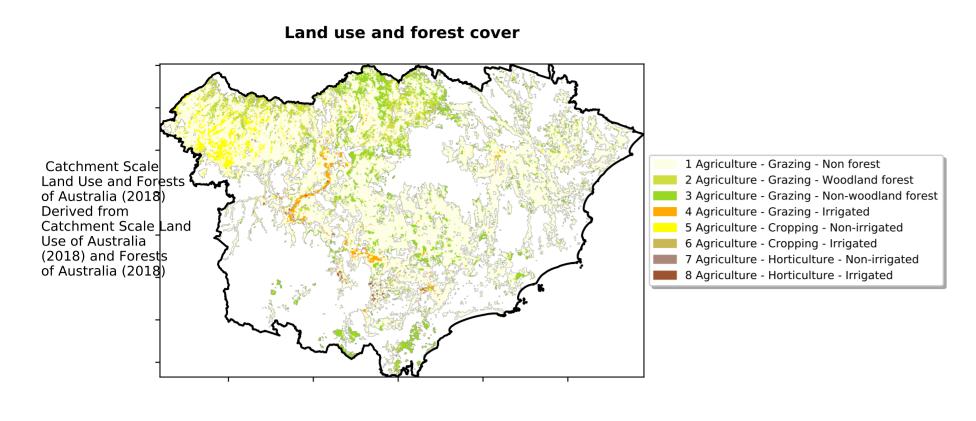
Wind erosion historical monthly area protected (Total Veg Cov >50%)

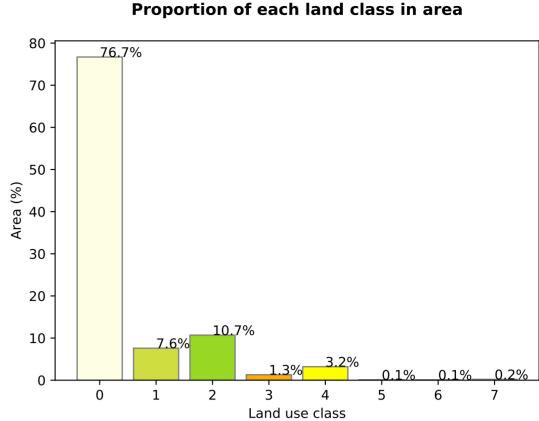




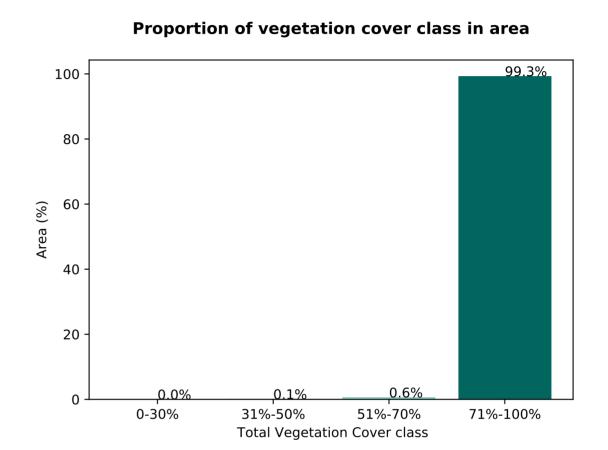


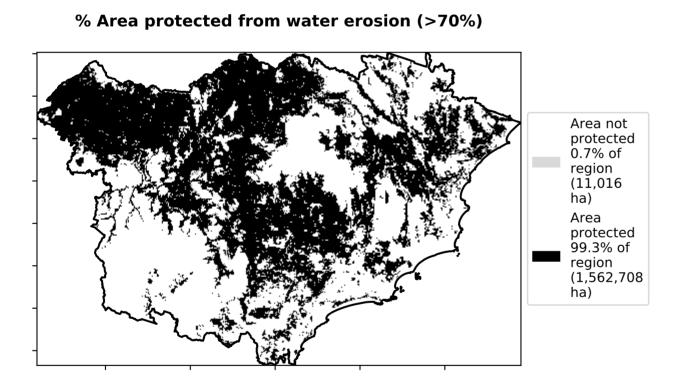
Agriculture

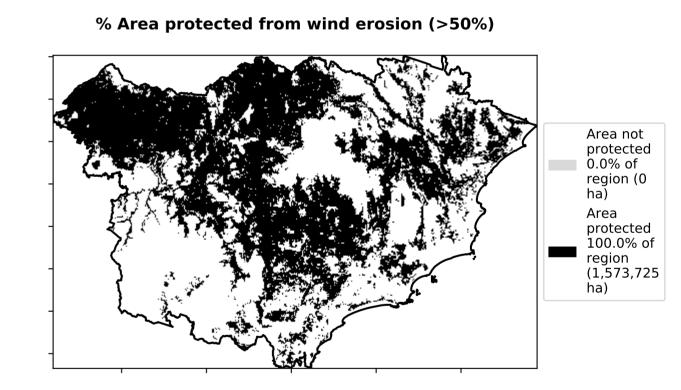


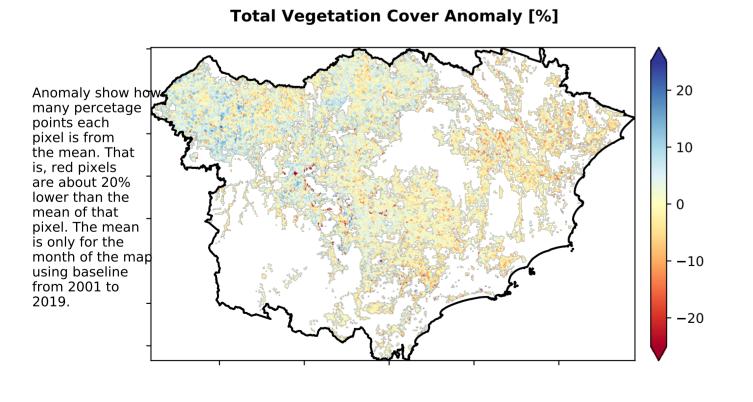


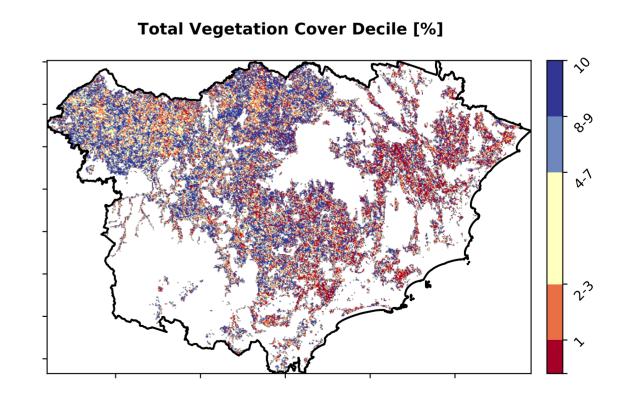
Total Vegetation Cover [%]











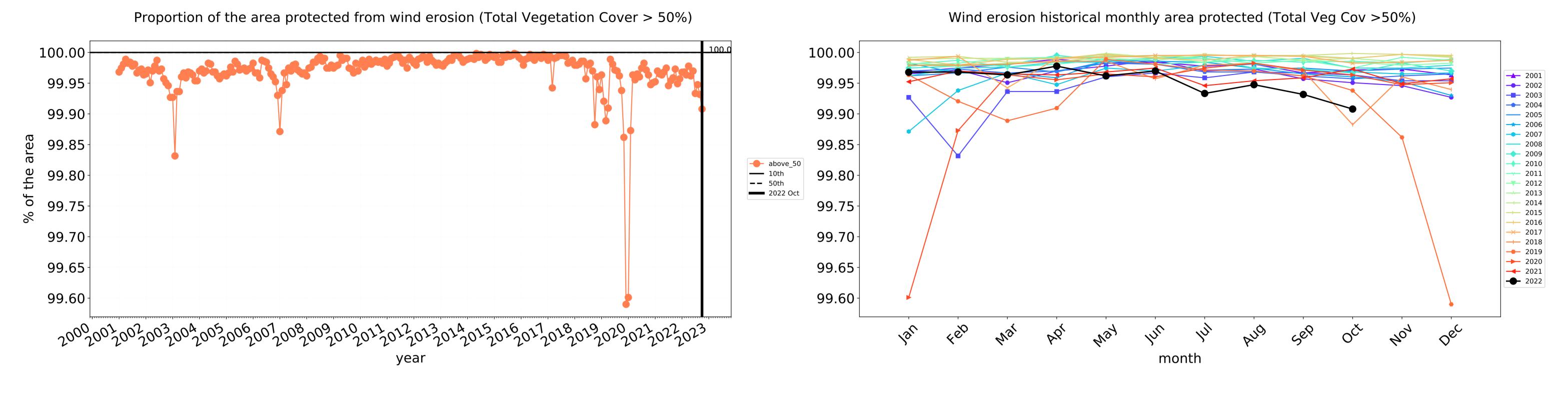


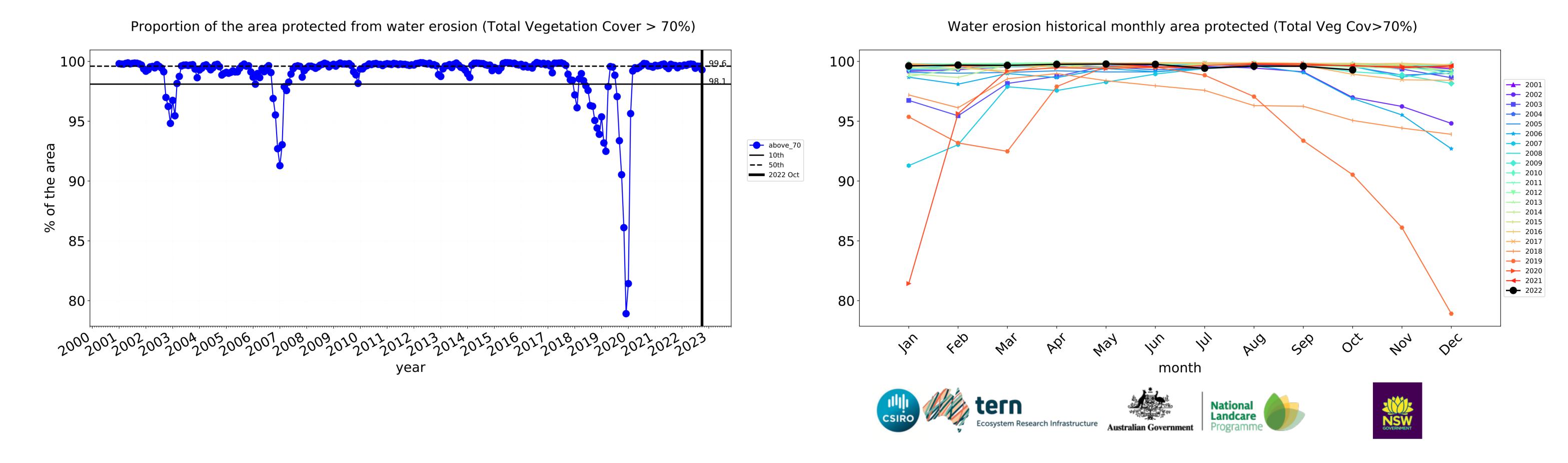


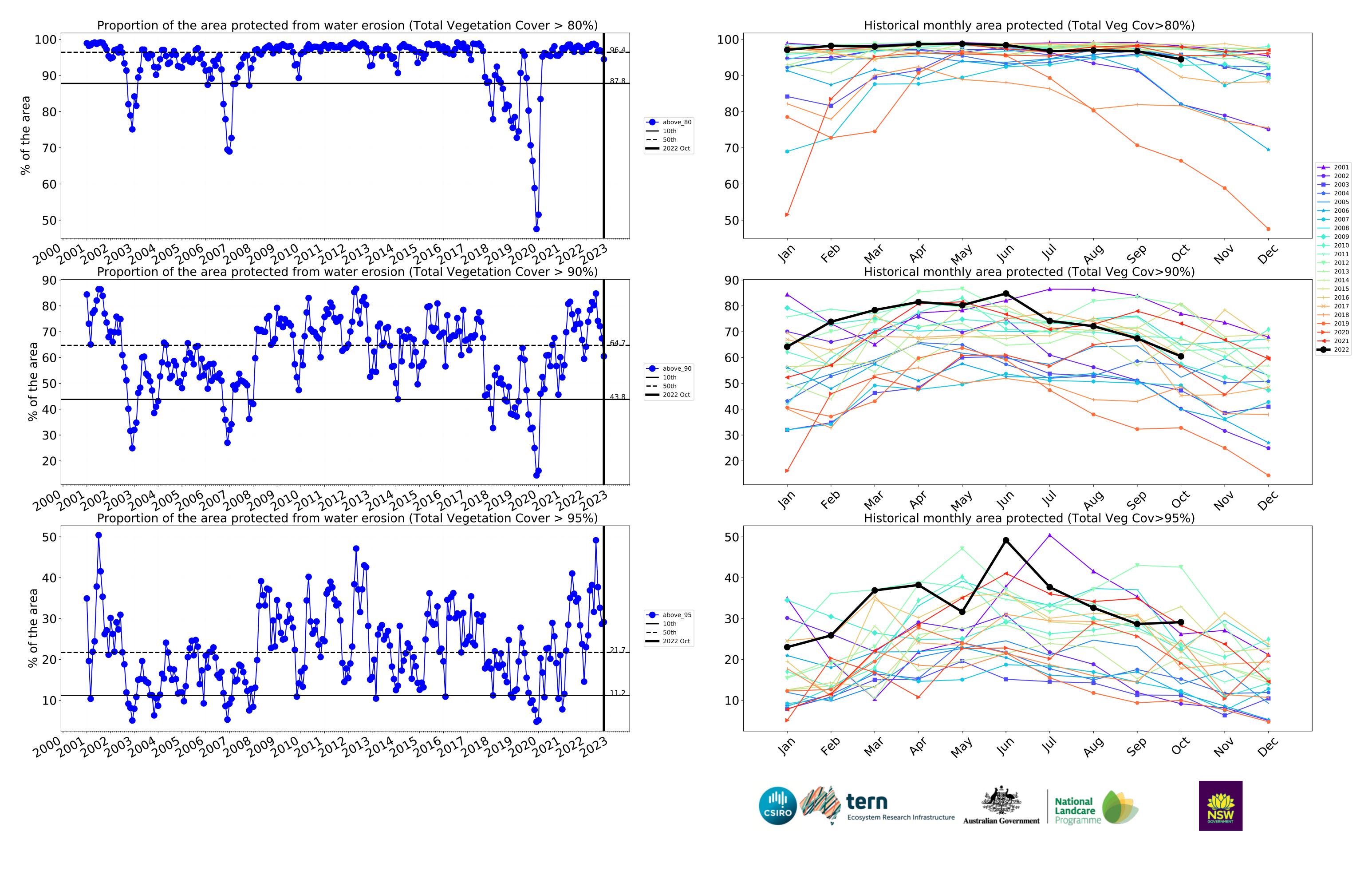




Agriculture timeseries







Grazing

80 -

70 -

60 -

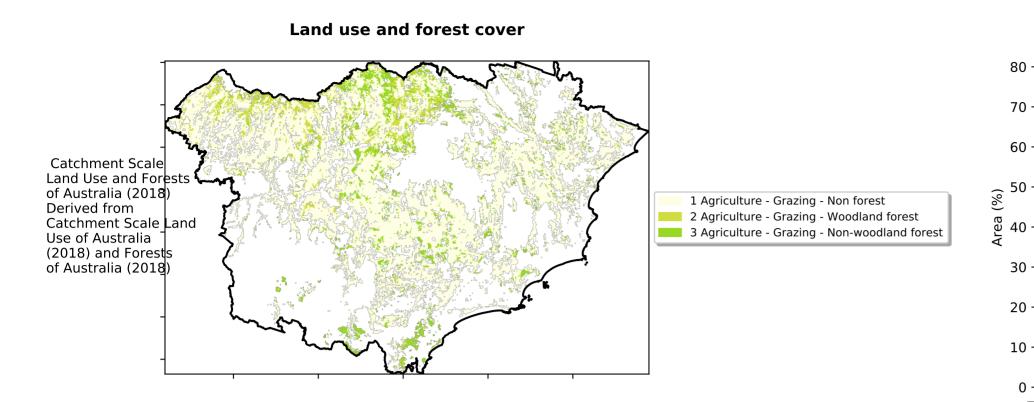
30

20 -

10 -

-0.5

0.0



80.7%

8.0%

1.5

1.0

Land use class

11.3%

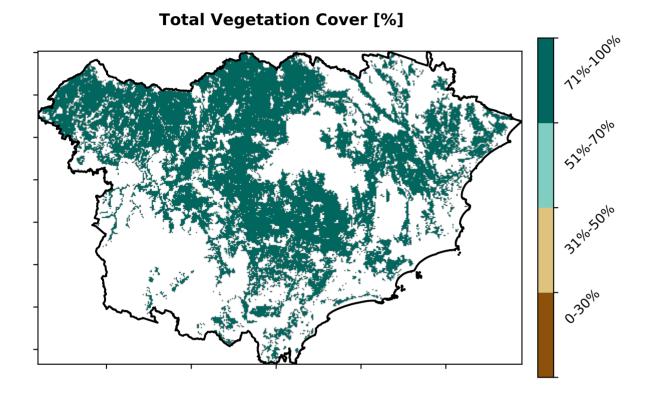
2.5

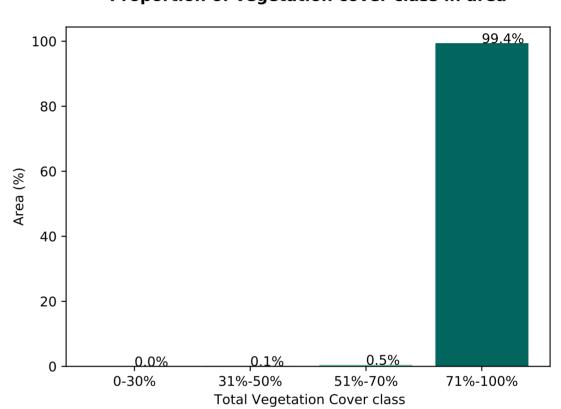
2.0

Proportion of each land class in area

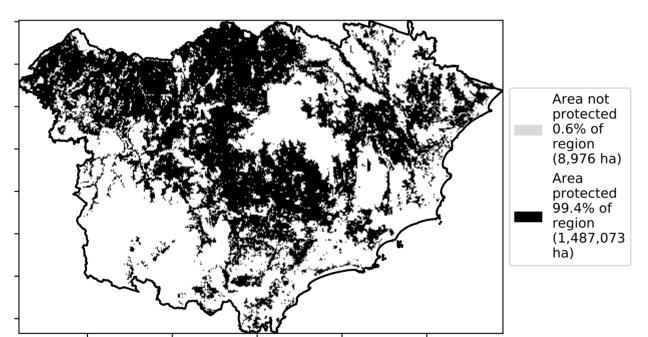
Proportion of vegetation cover class in area

0.5

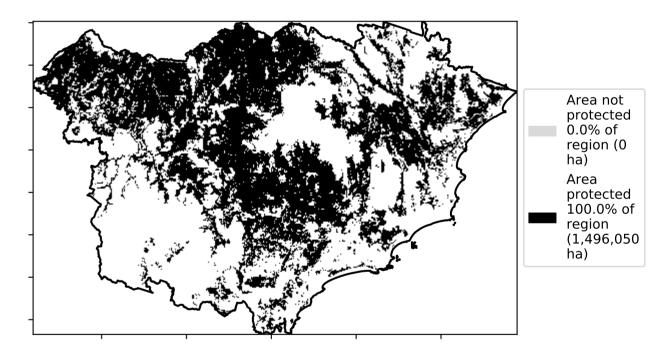




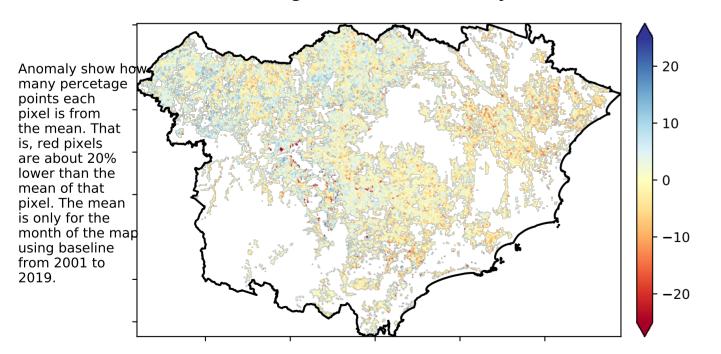
% Area protected from water erosion (>70%)

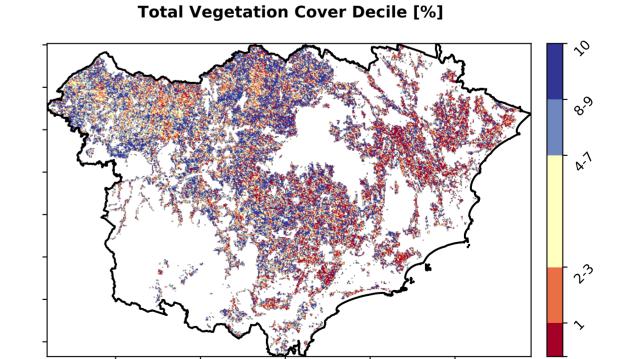


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]





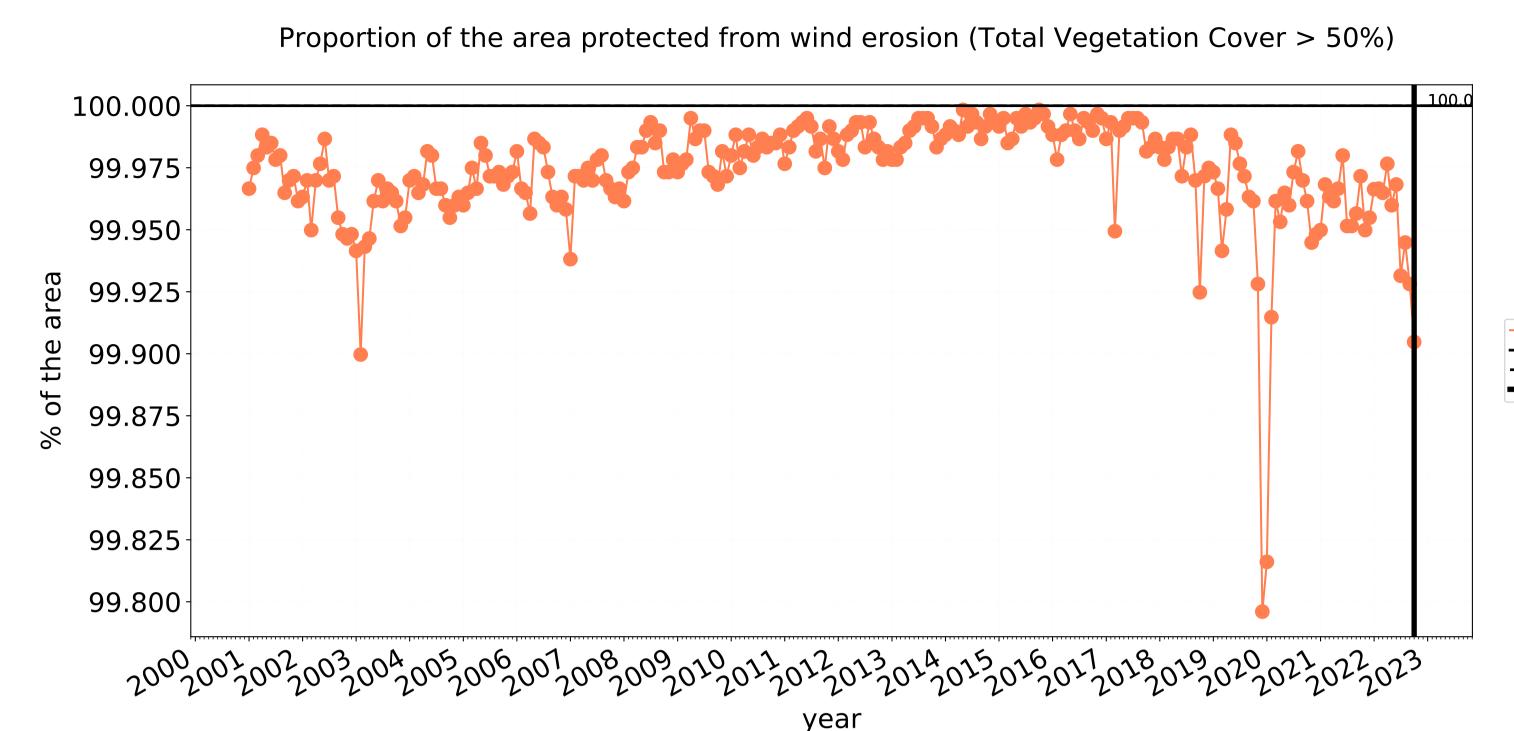




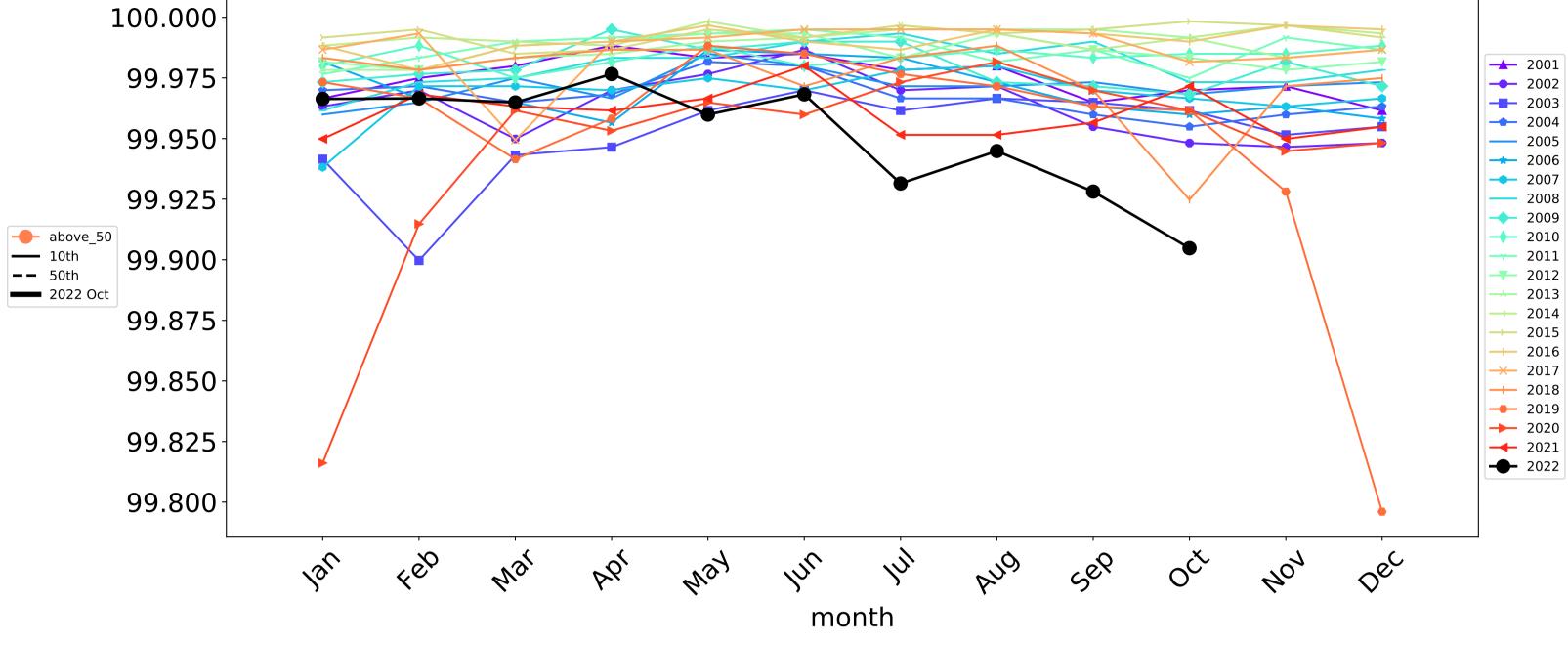


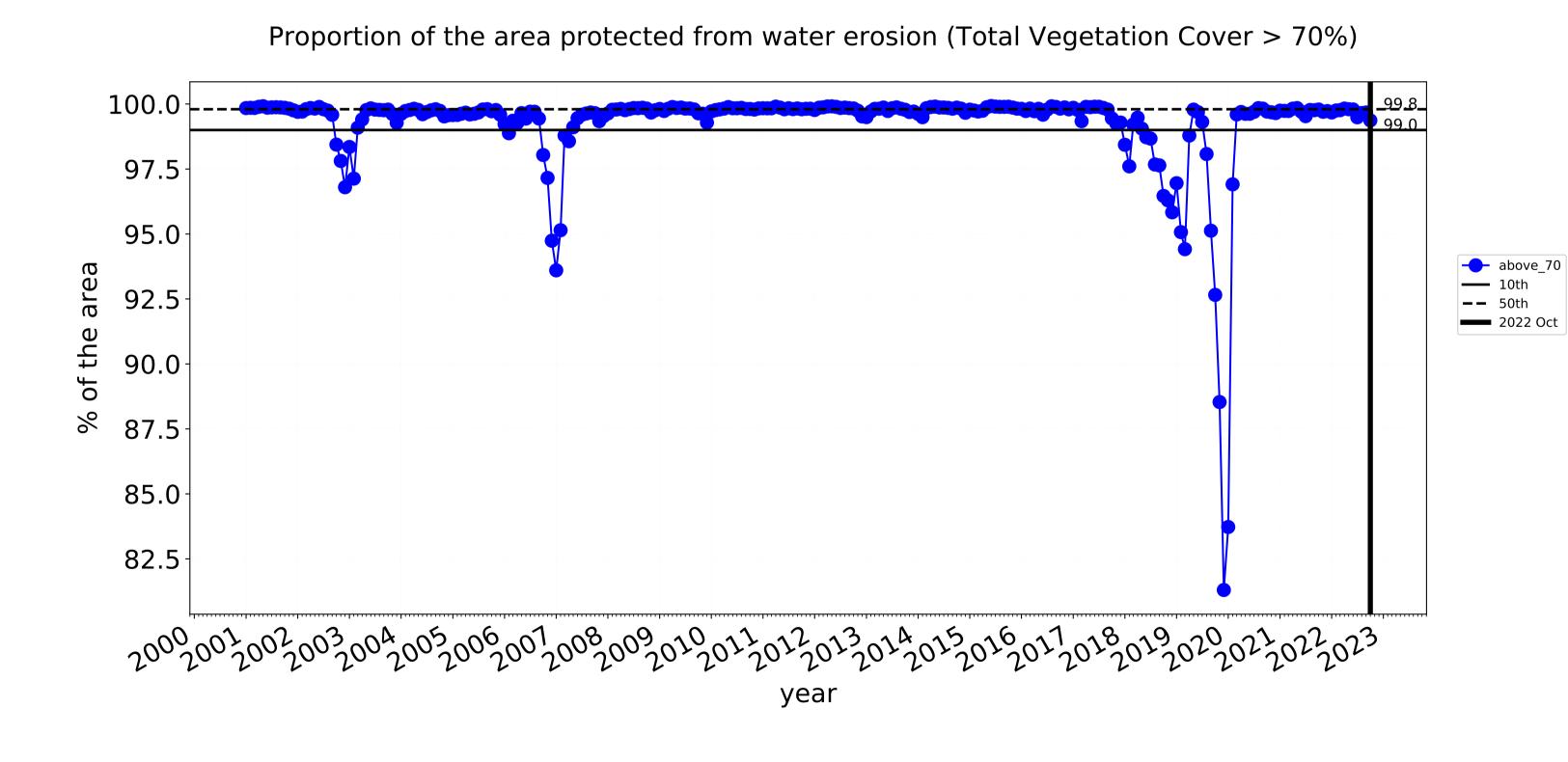


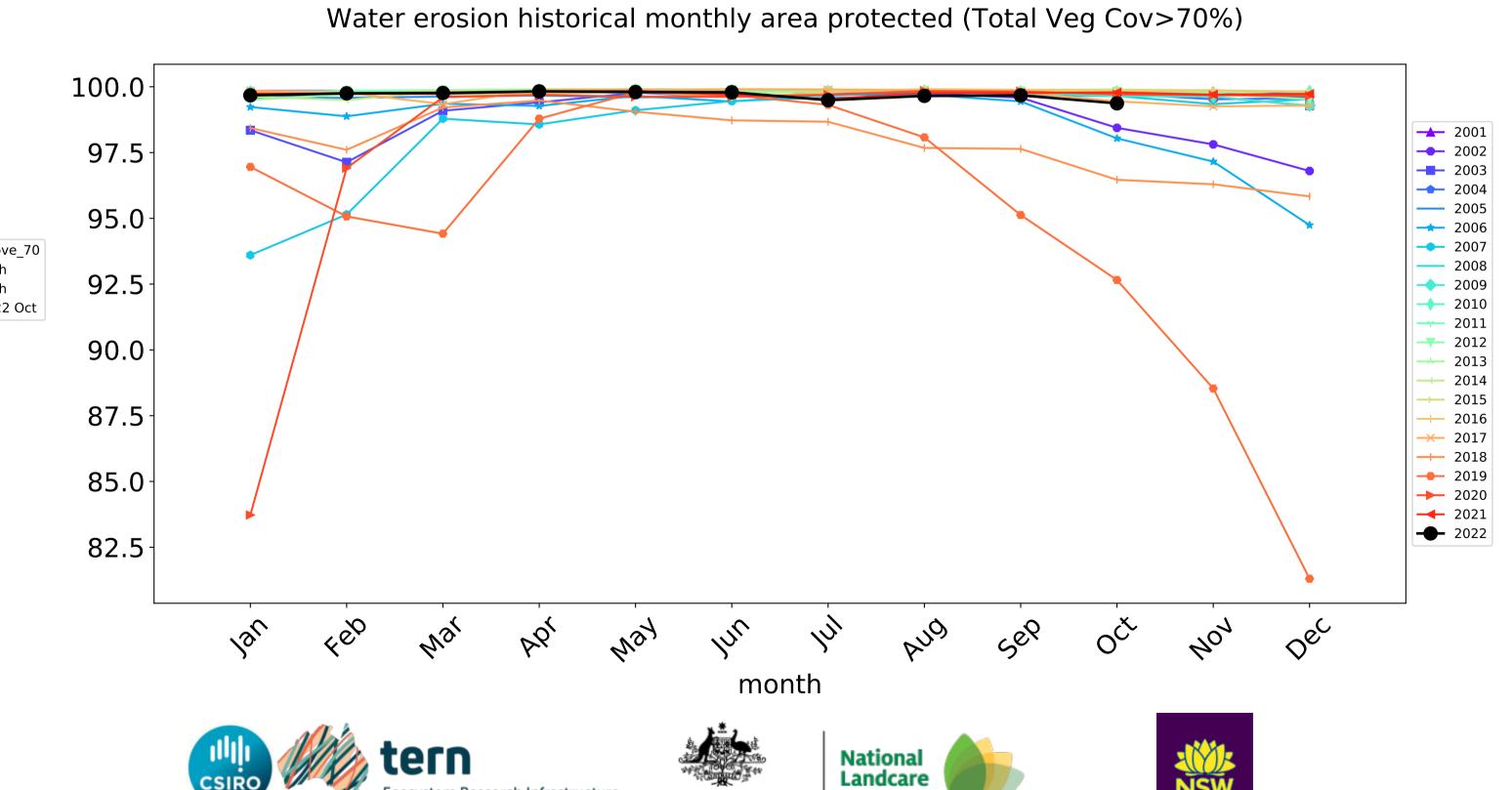
Grazing timeseries

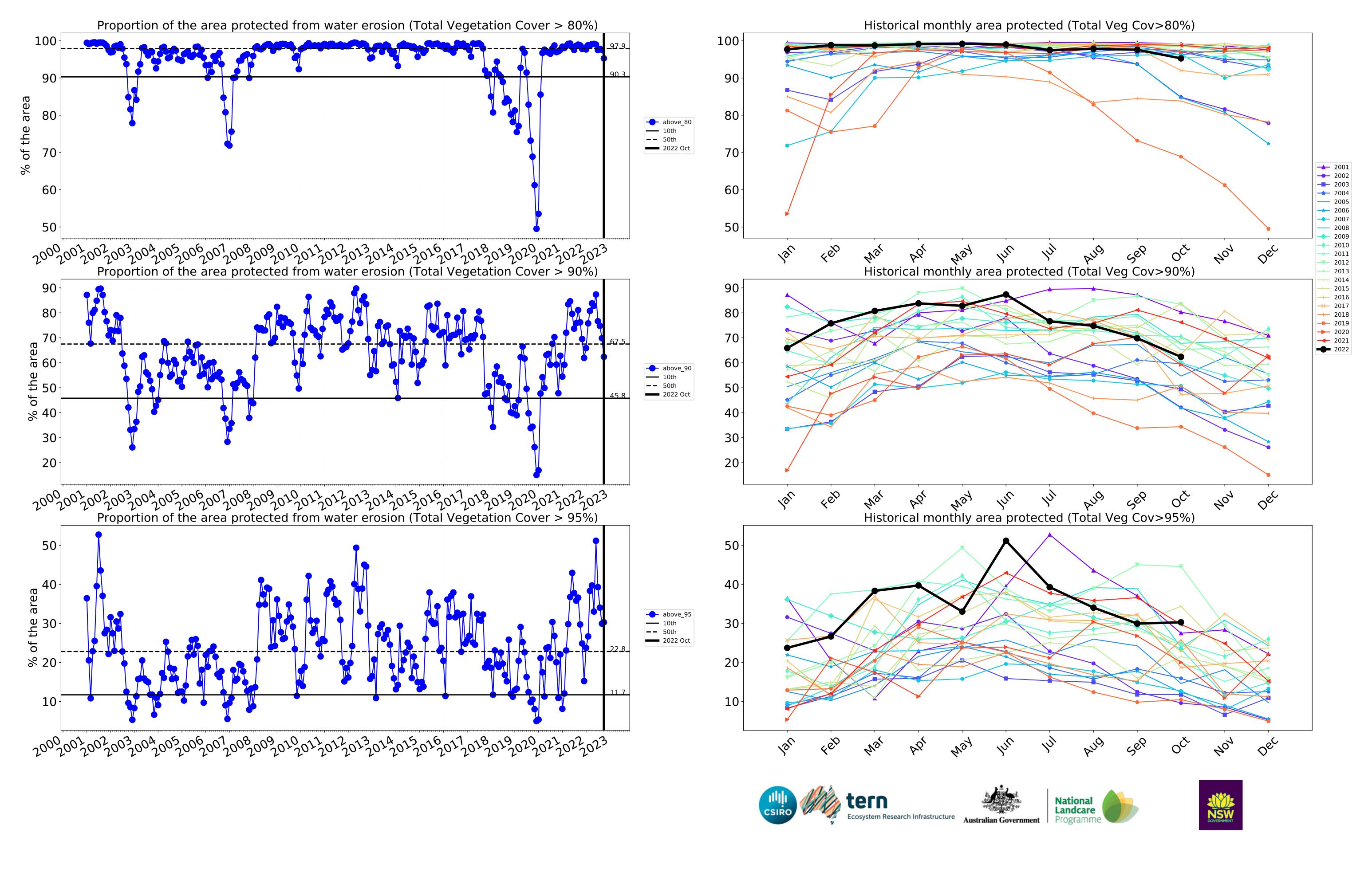






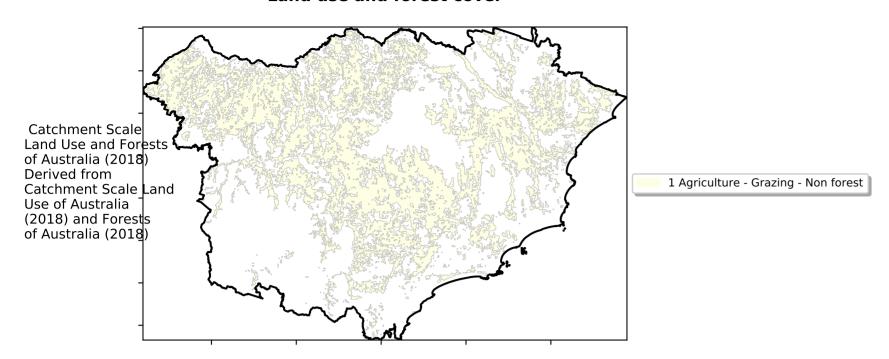




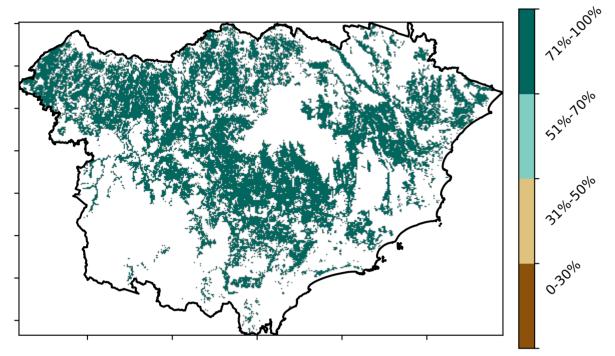


Grazing non forest

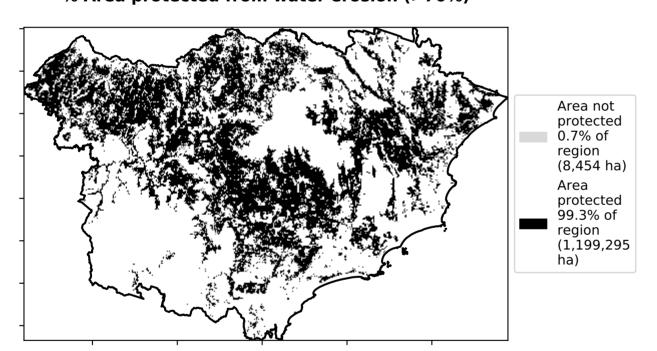
Land use and forest cover



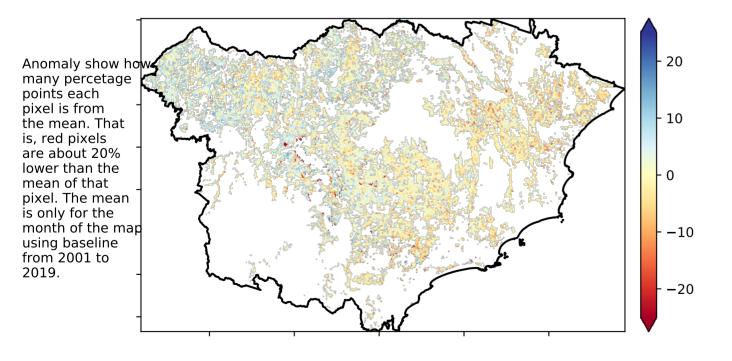
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

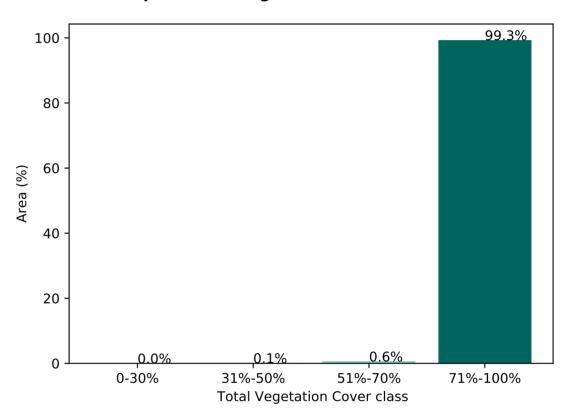


Total Vegetation Cover Anomaly [%]

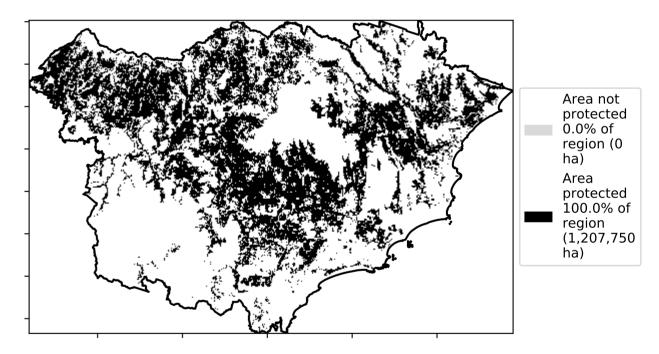


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

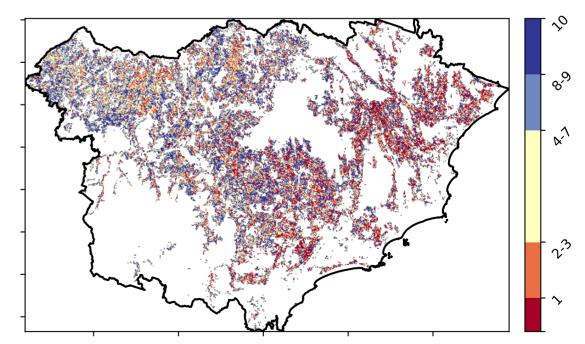
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



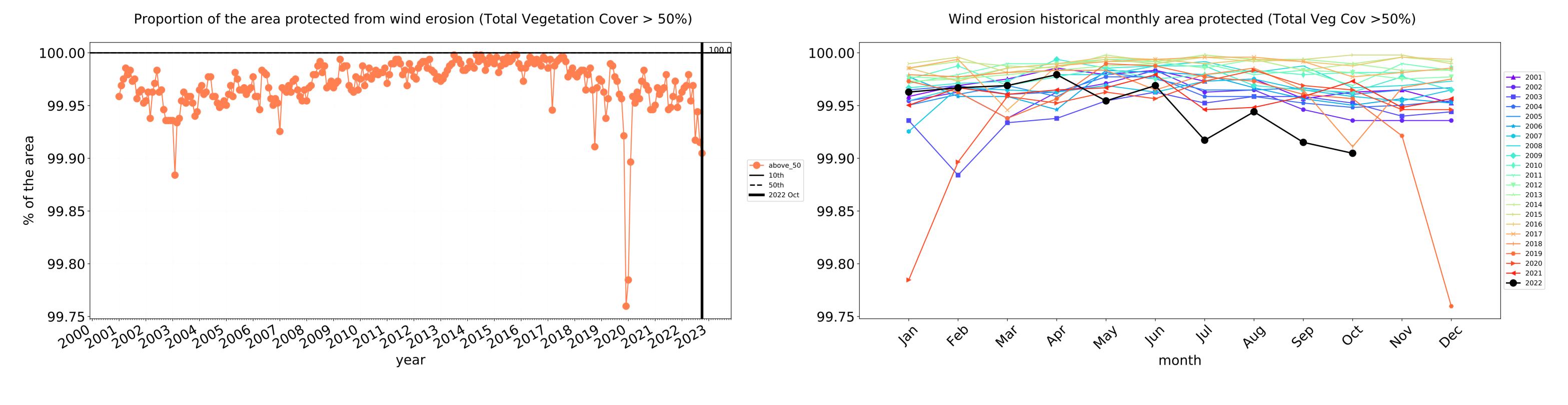


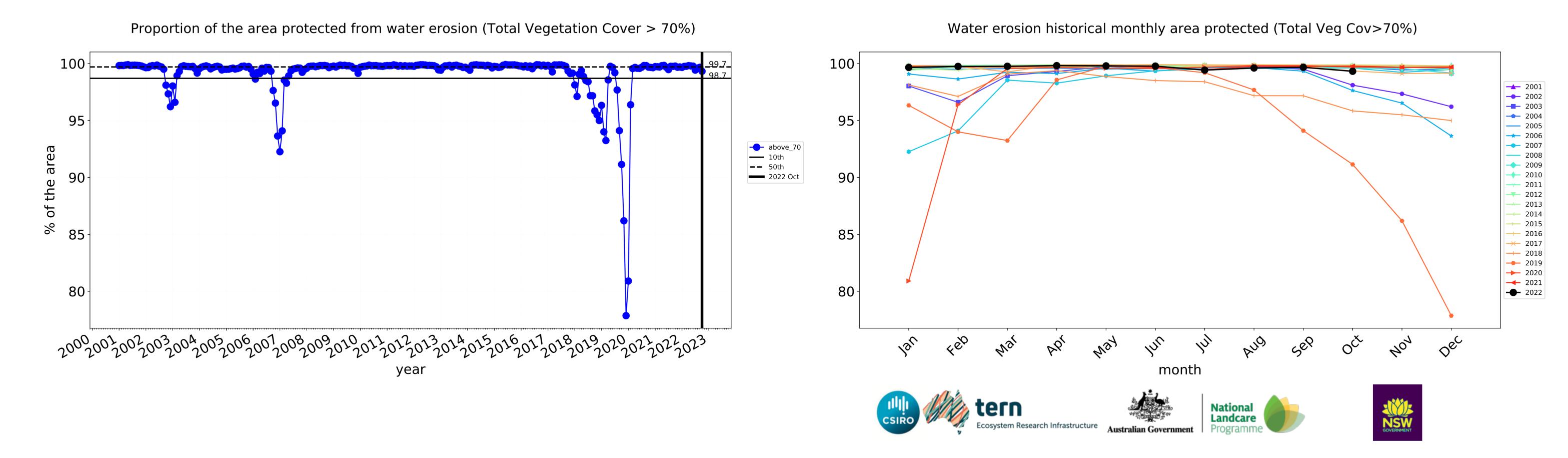


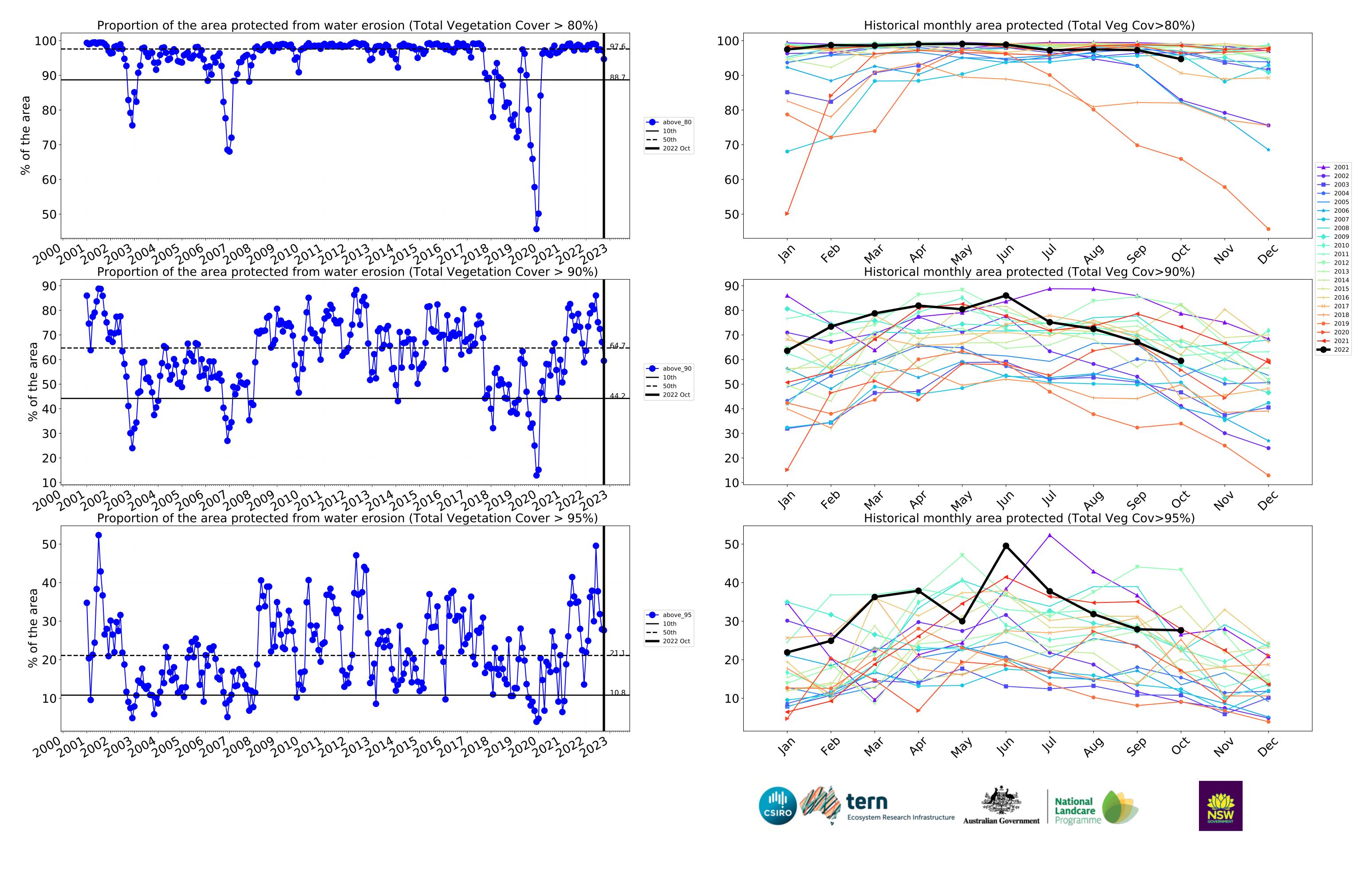




Grazing non forest timeseries







Grazing Woodland forest

Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

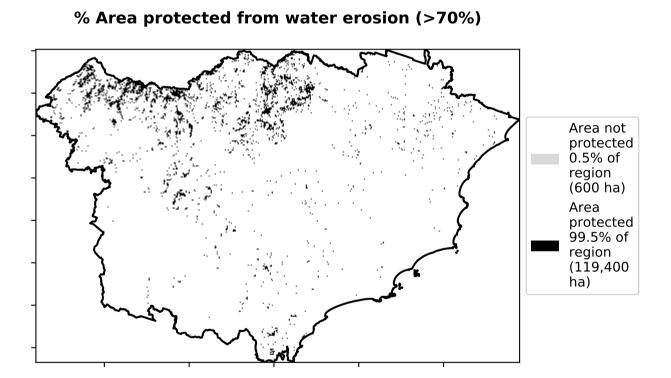
Total Vegetation Cover [%]

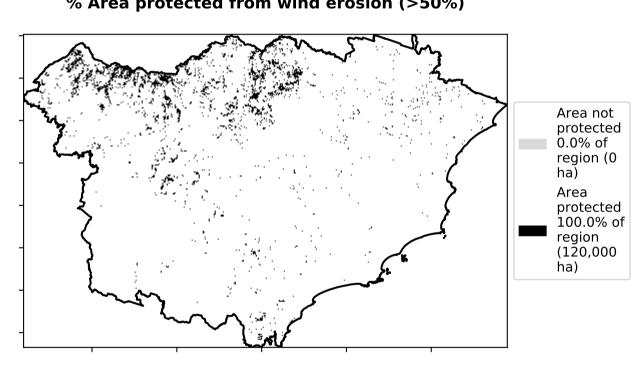
80 Area (%) 20 · 0.4% 31%-50% 0-30% 51%-70% 71%-100% **Total Vegetation Cover class** % Area protected from wind erosion (>50%)

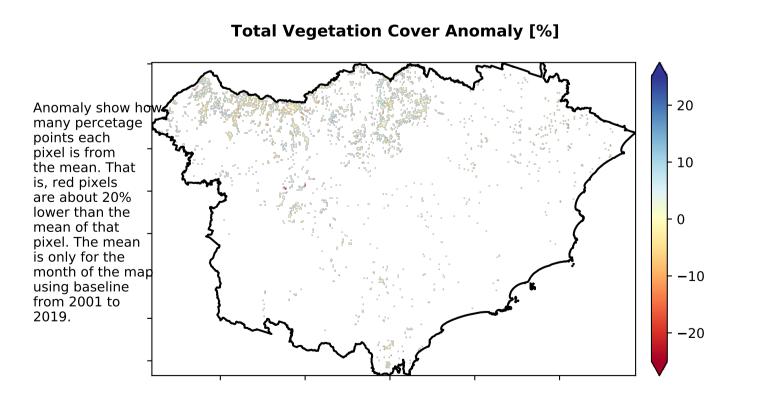
Proportion of vegetation cover class in area

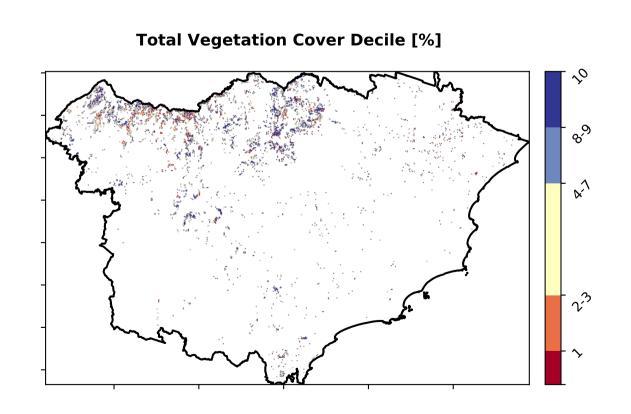
100

99.5%

















Grazing Woodland forest timeseries

100.00

99.98

99.96

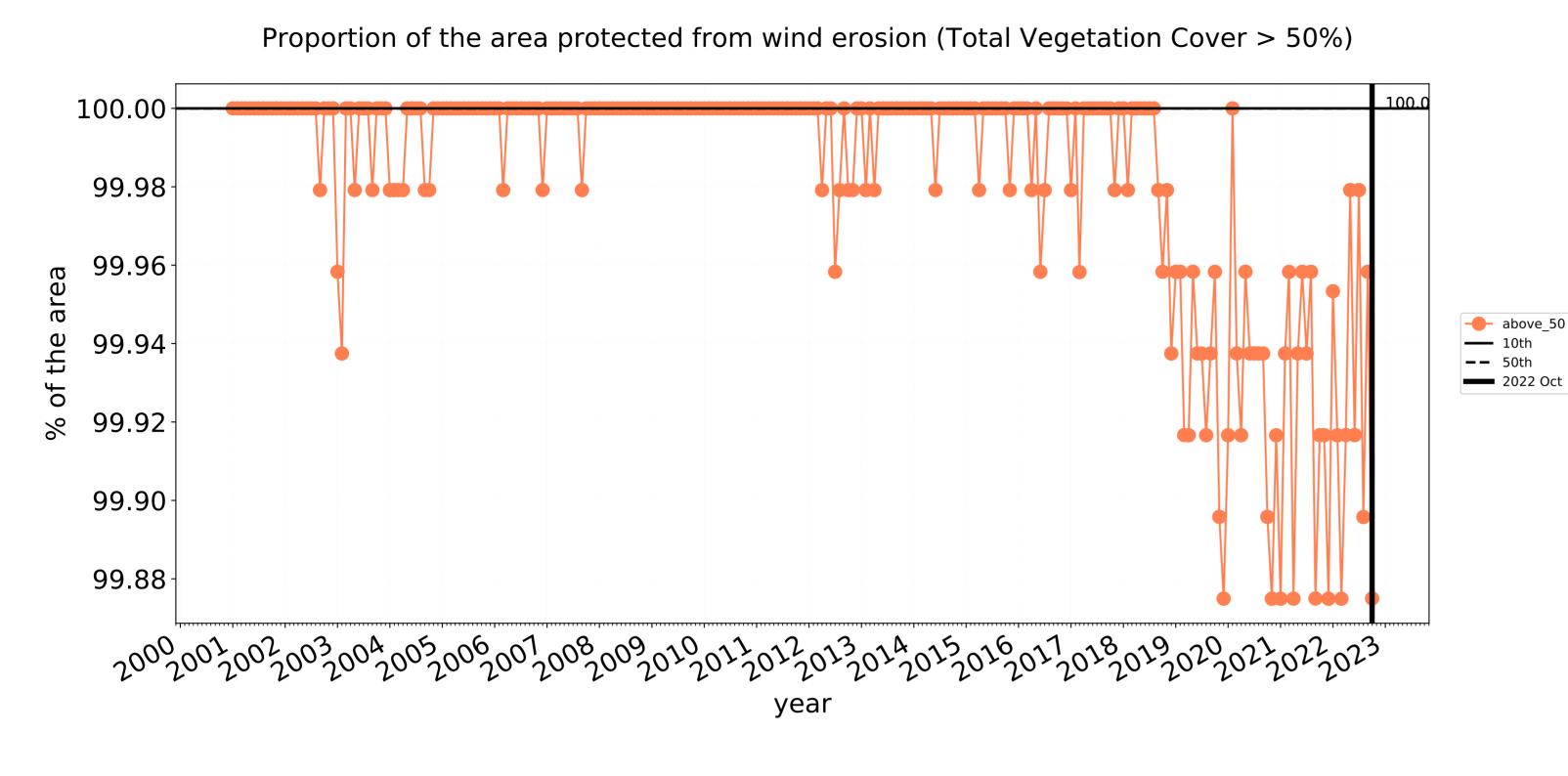
99.94

99.92

99.90

99.88

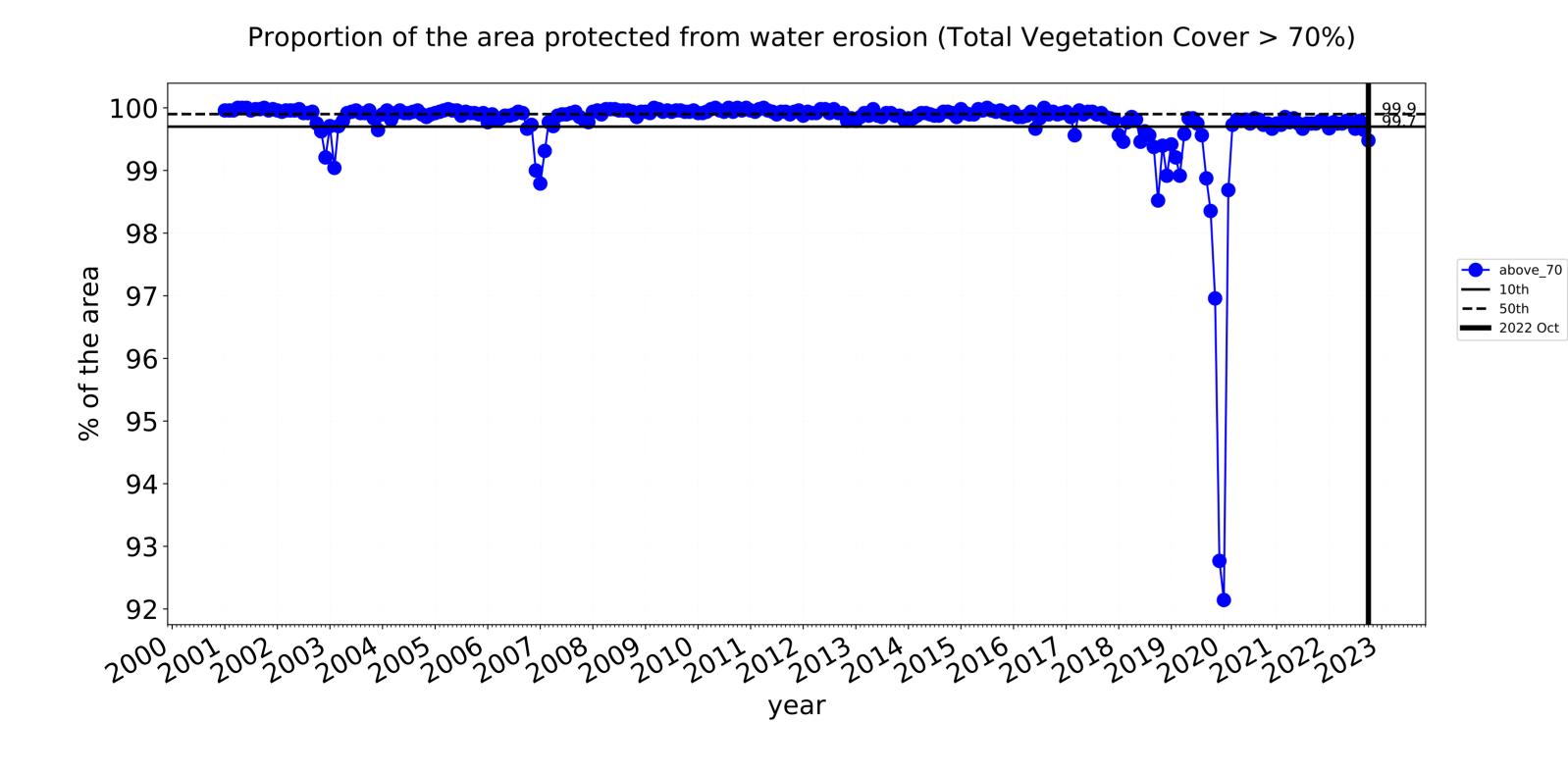
4eD

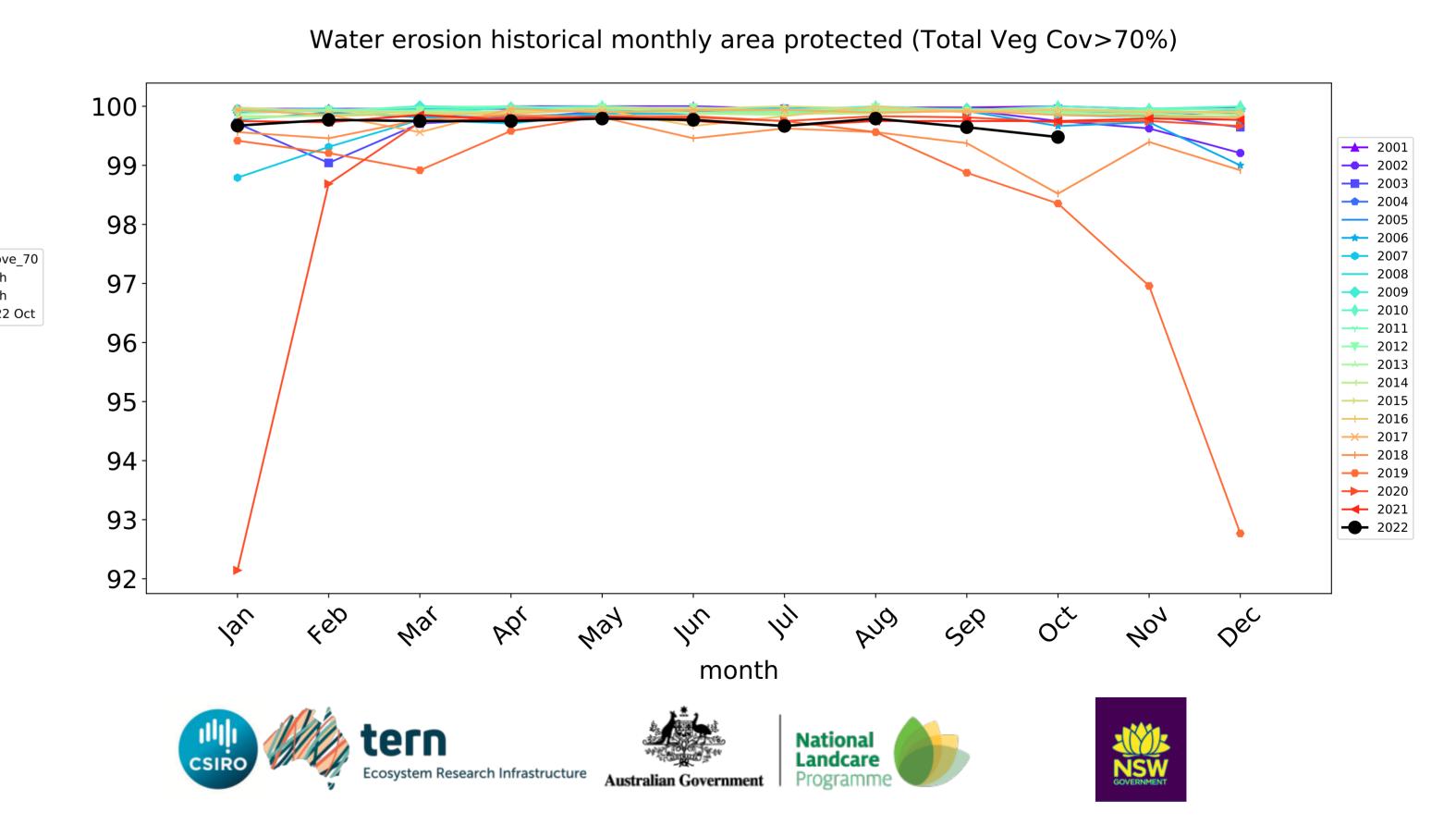


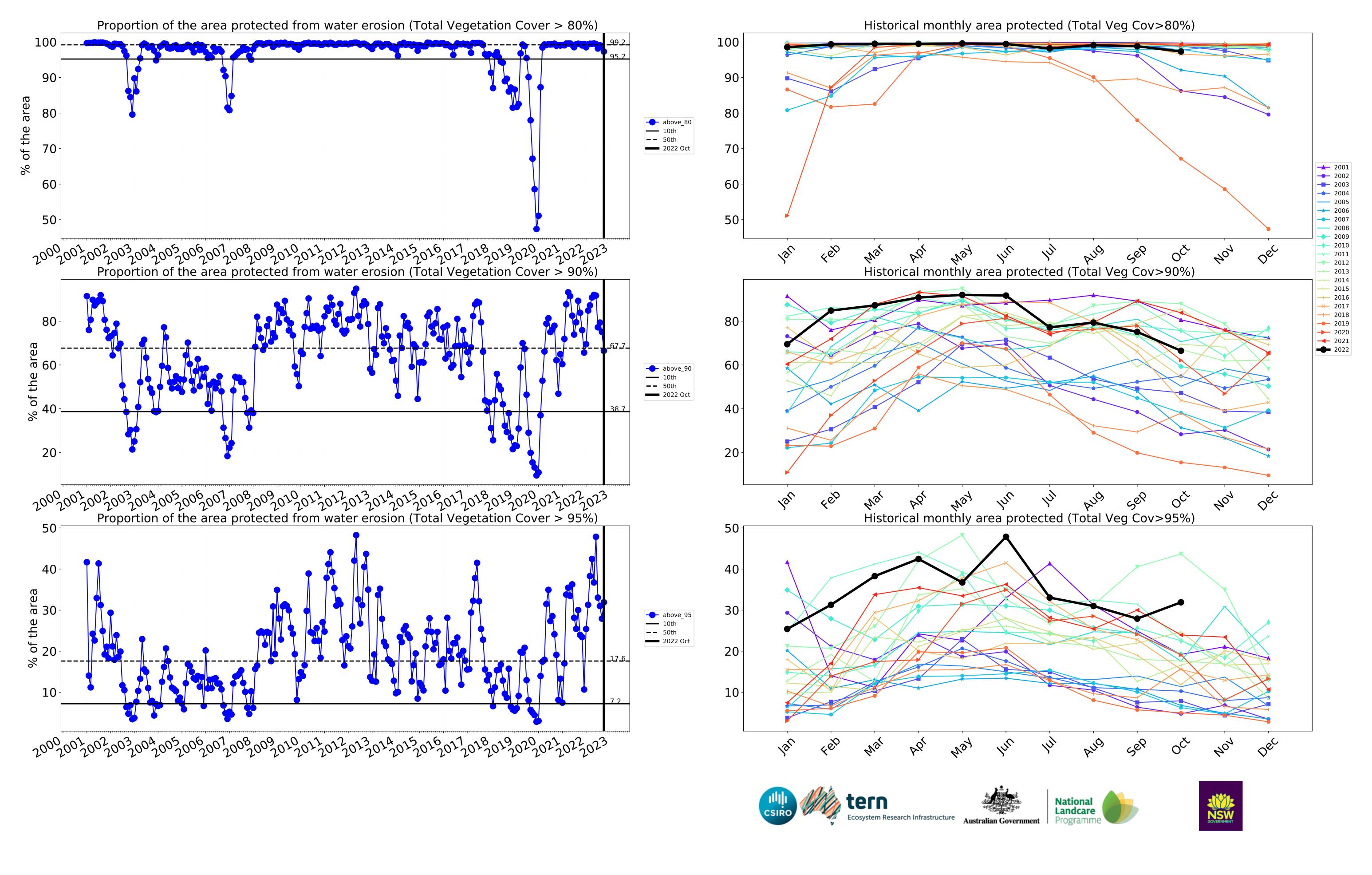
2019 2020 2021 2022

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

month



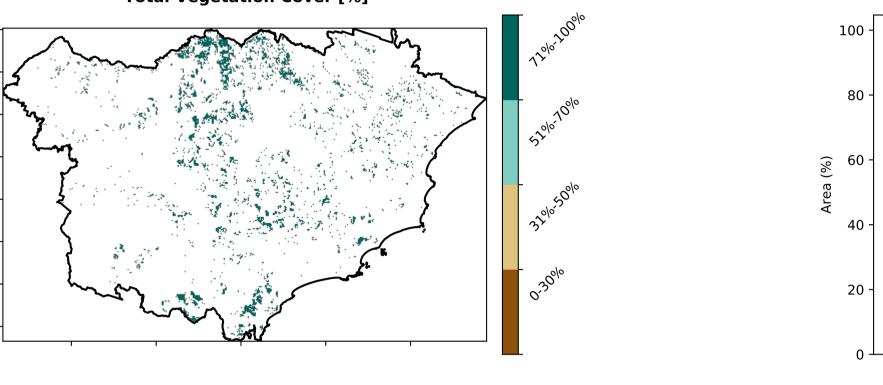


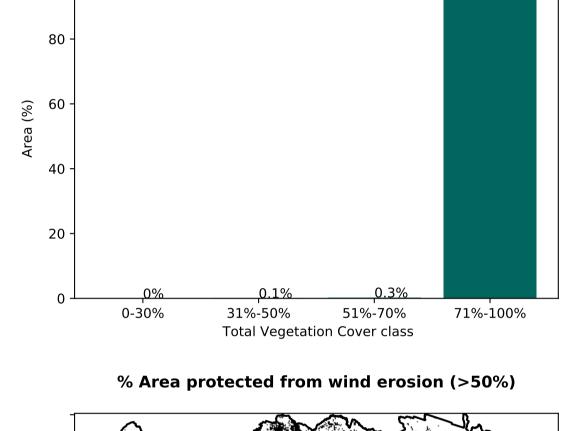


Grazing - Forest (non woodland)

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

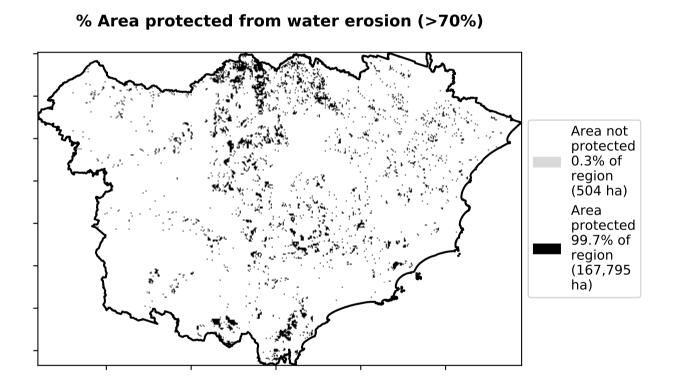
Total Vegetation Cover [%]

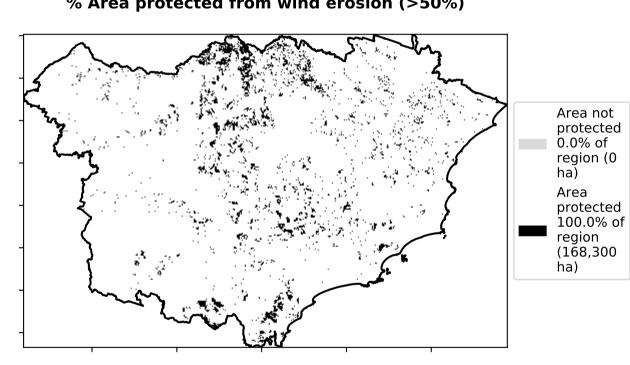


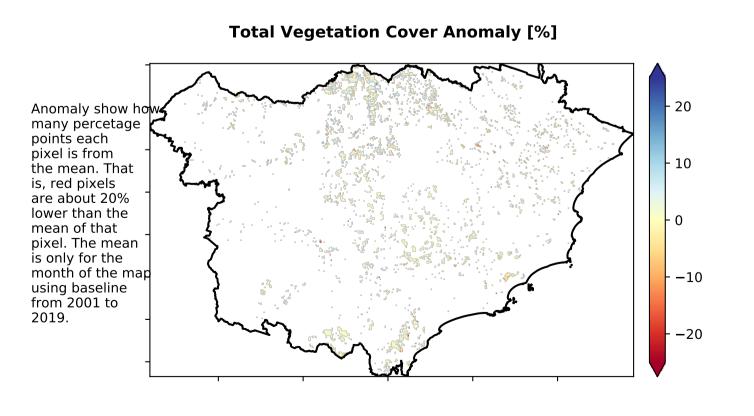


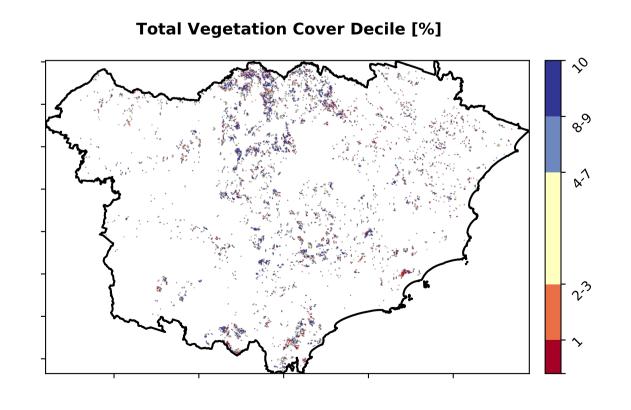
Proportion of vegetation cover class in area

99.7%







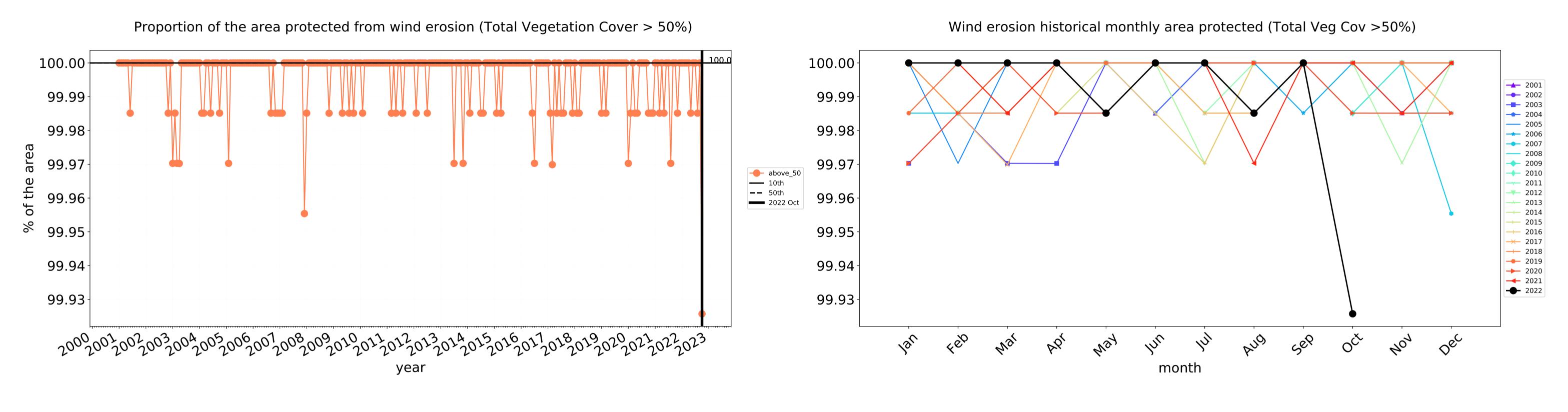


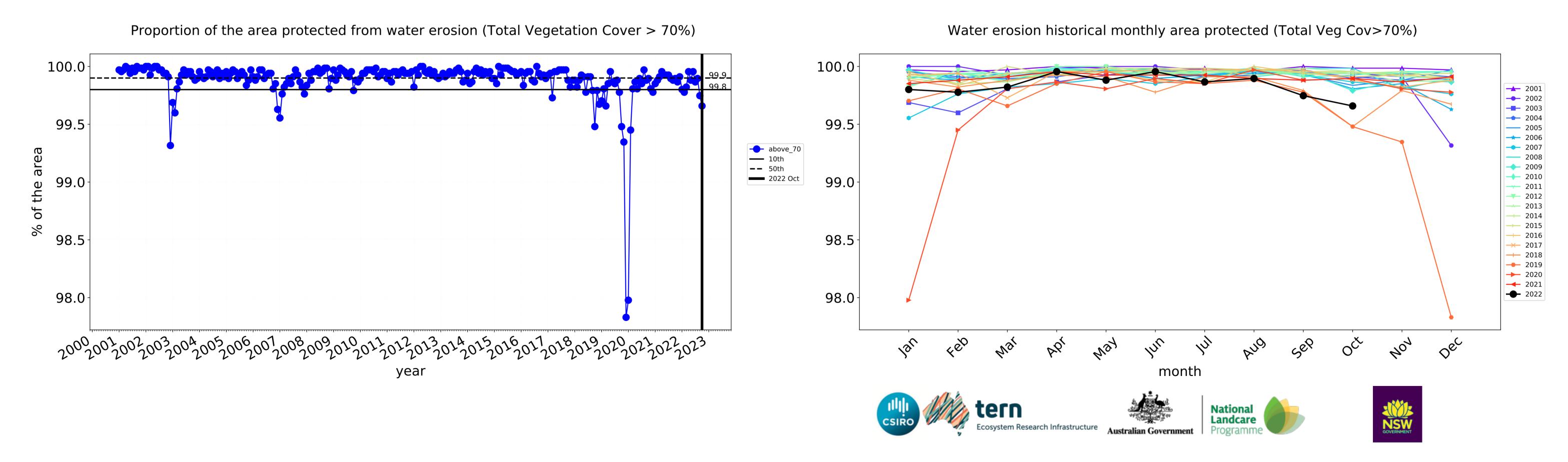


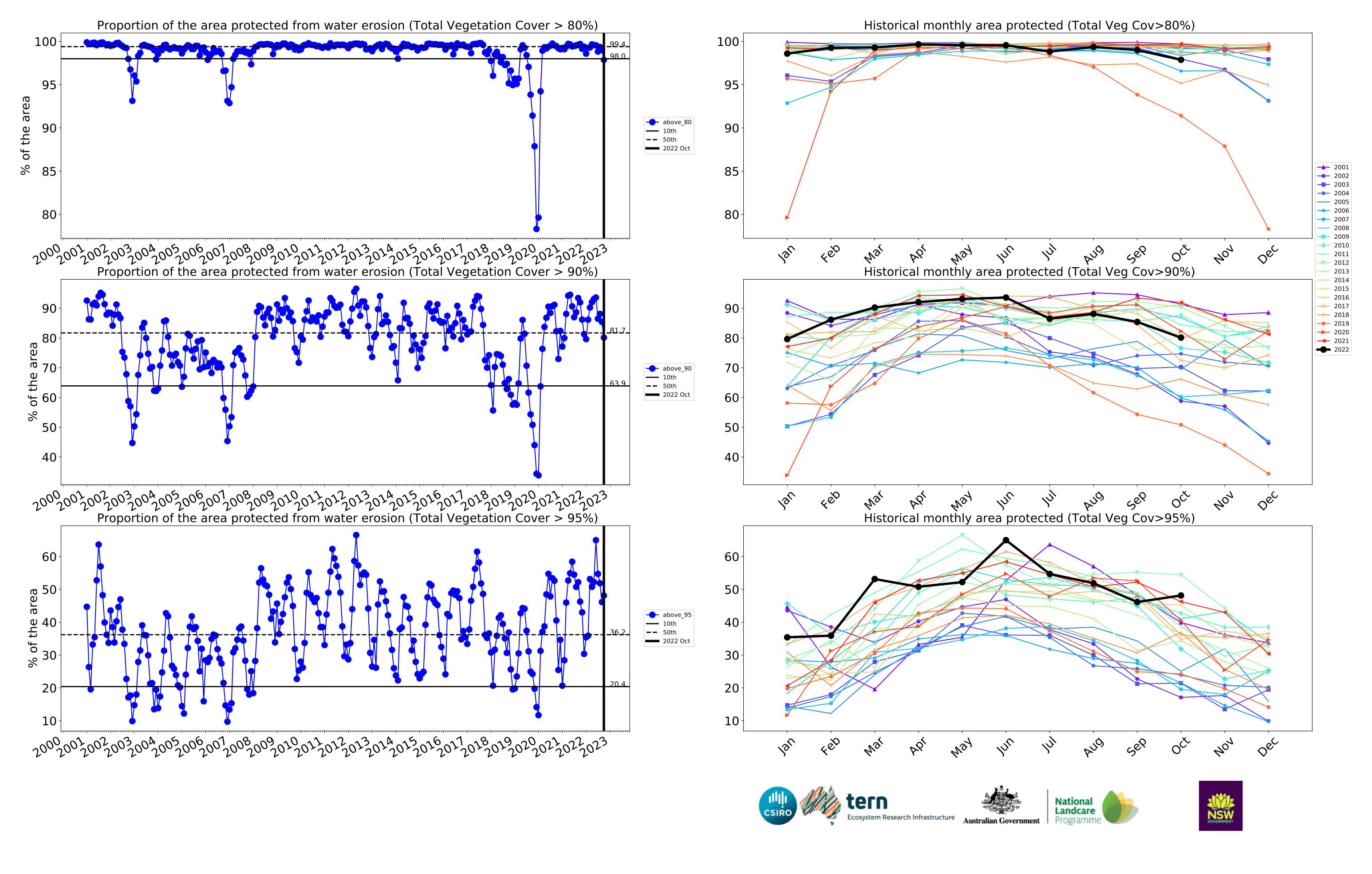






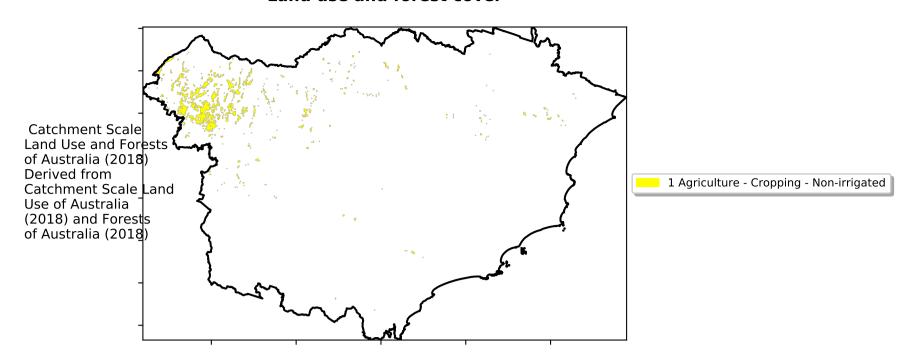




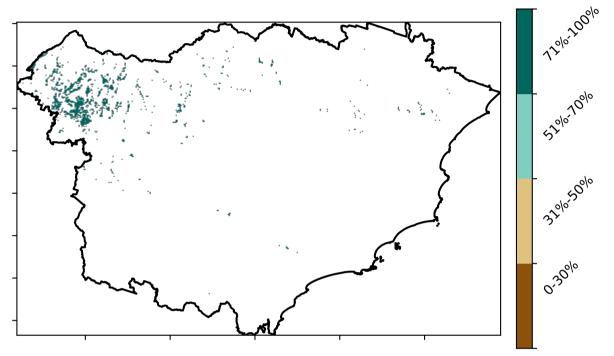


Cropping

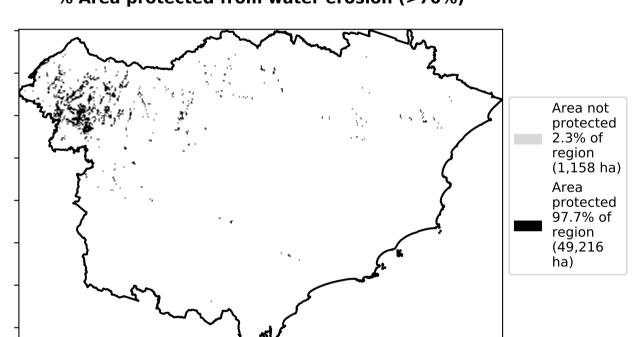
Land use and forest cover



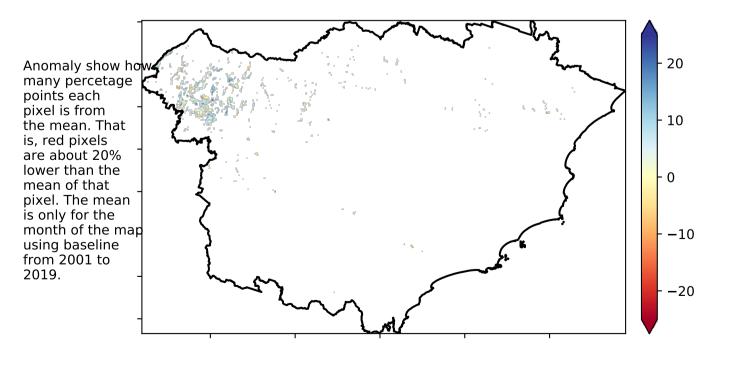
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

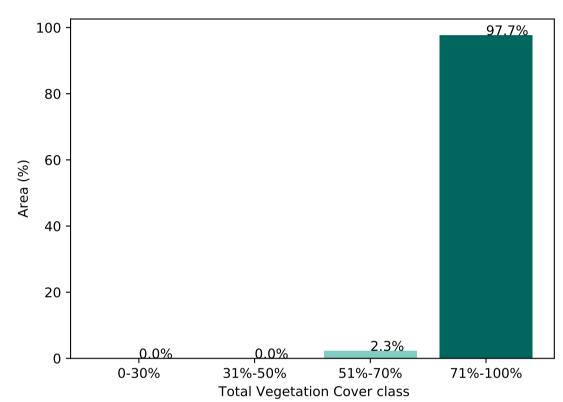


Total Vegetation Cover Anomaly [%]

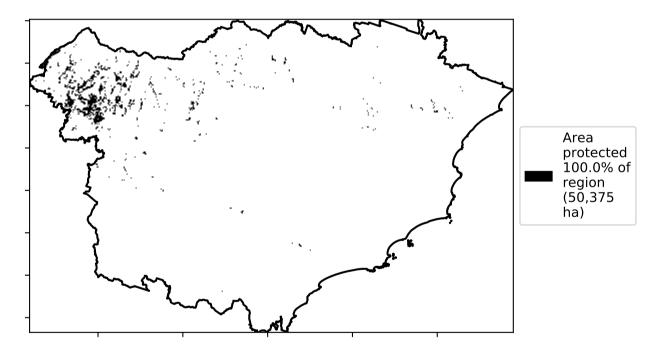


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

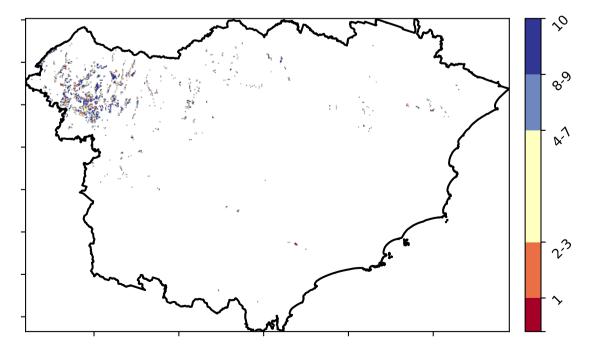
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



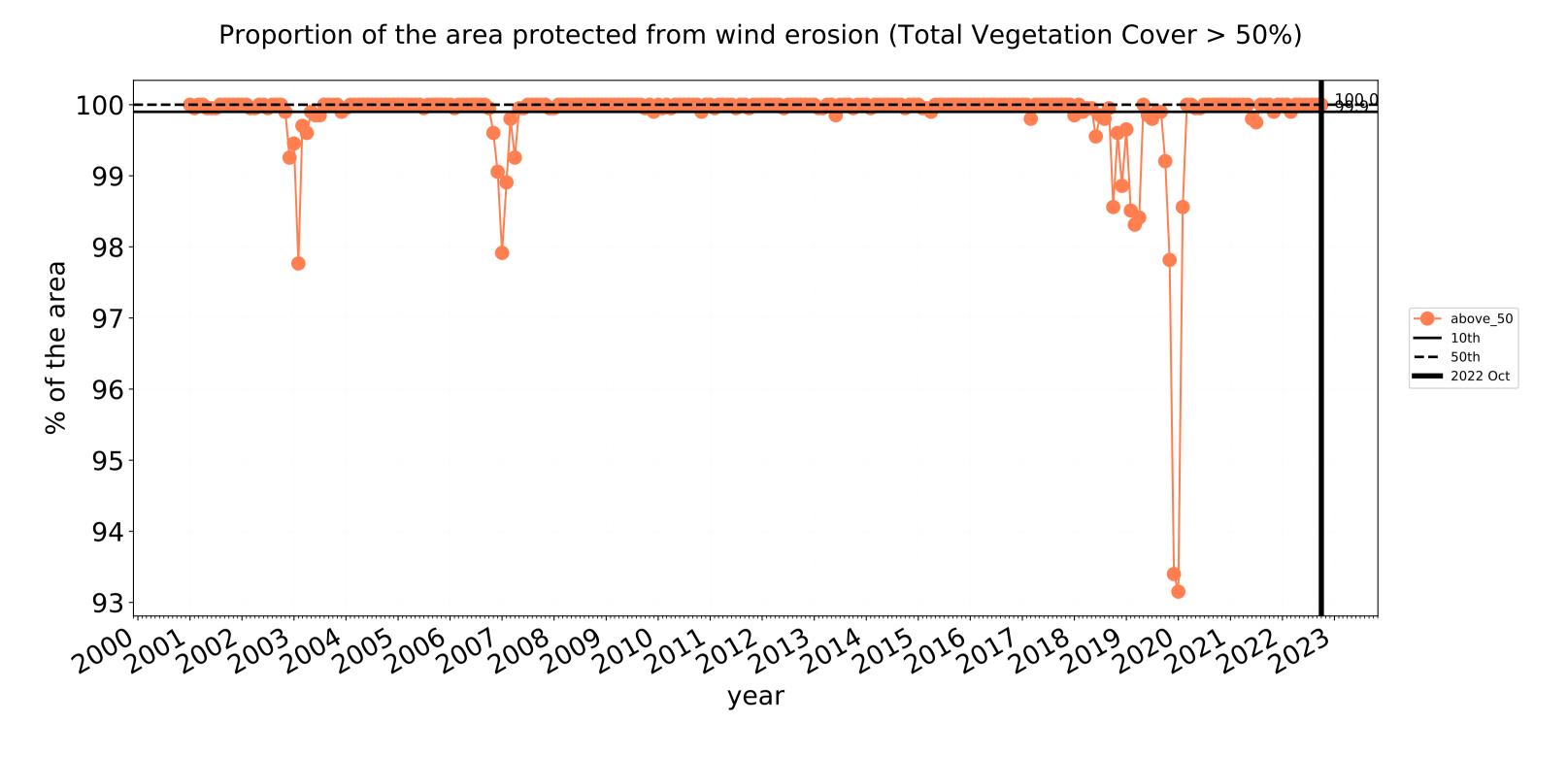


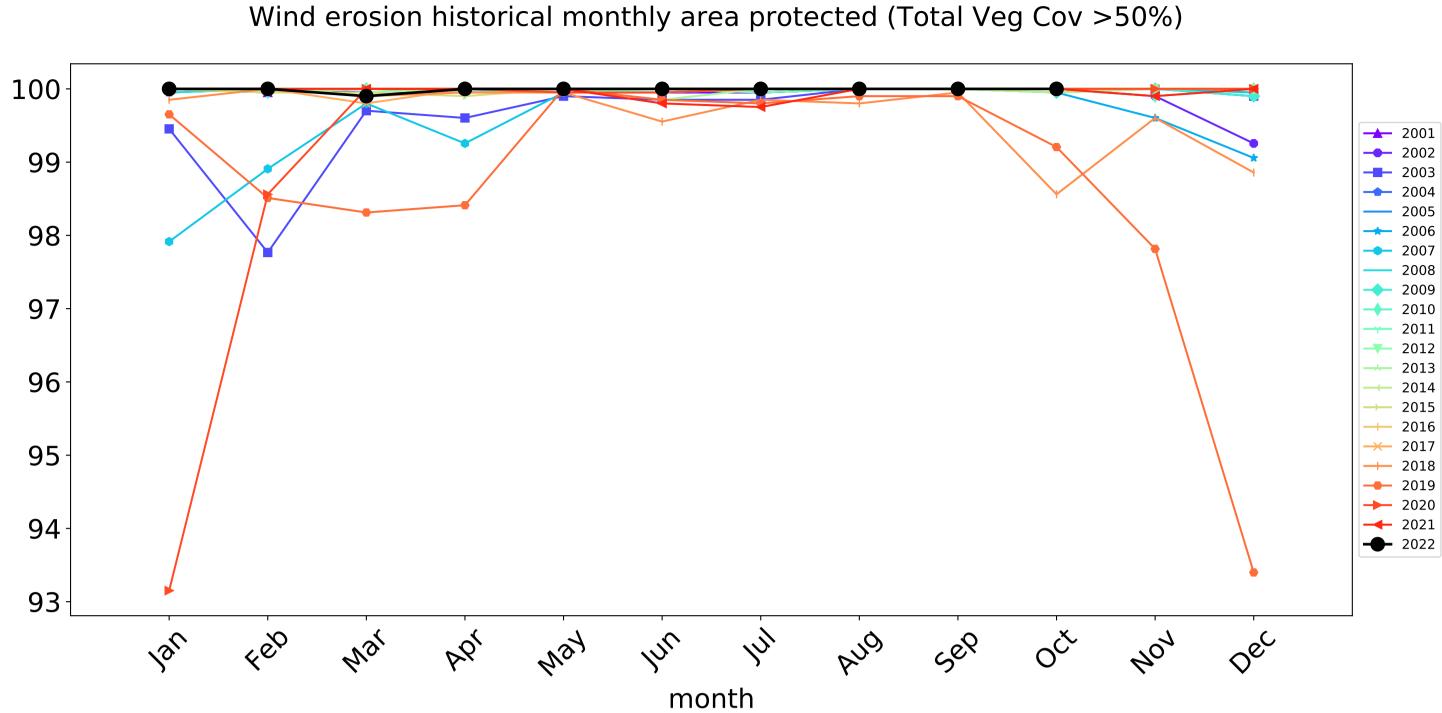


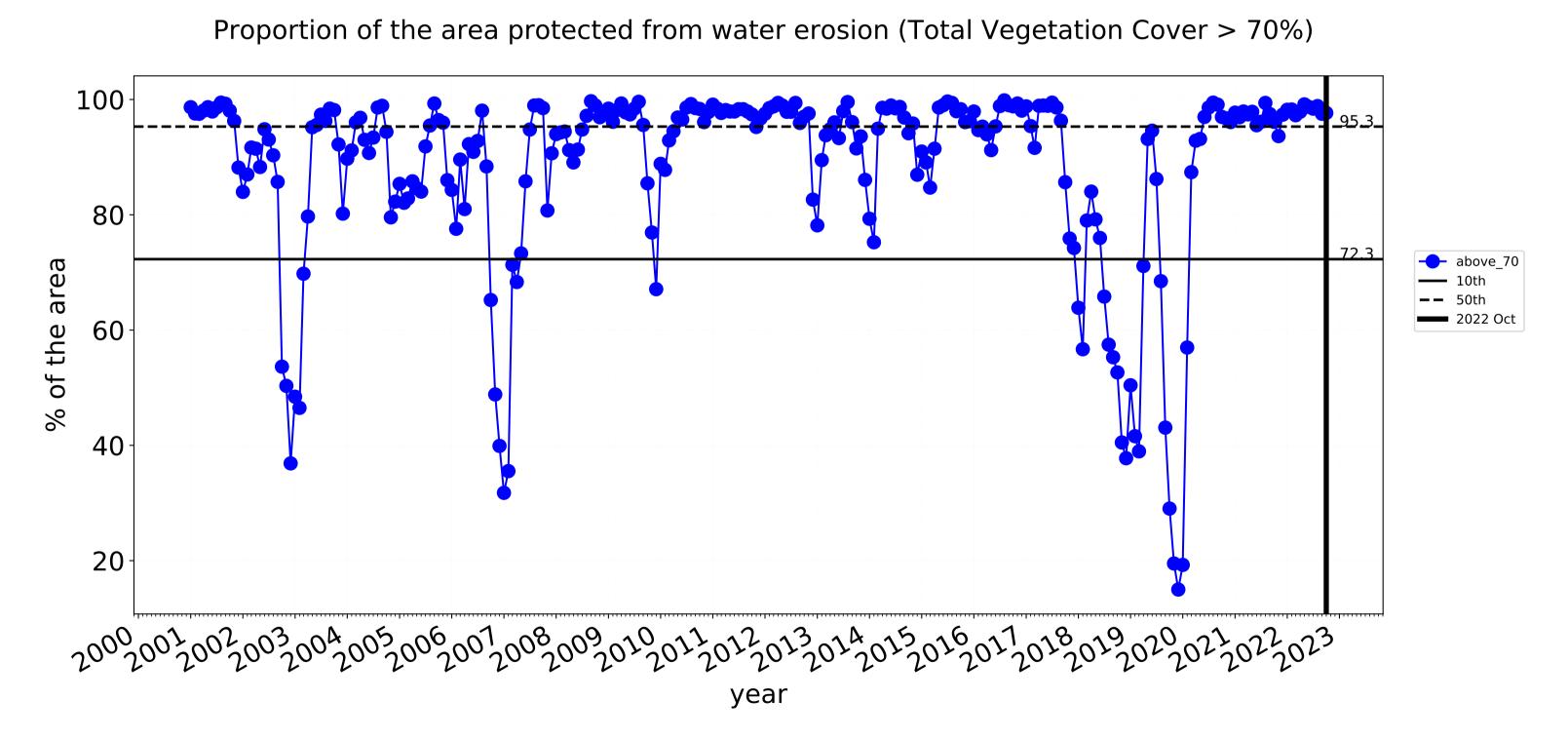


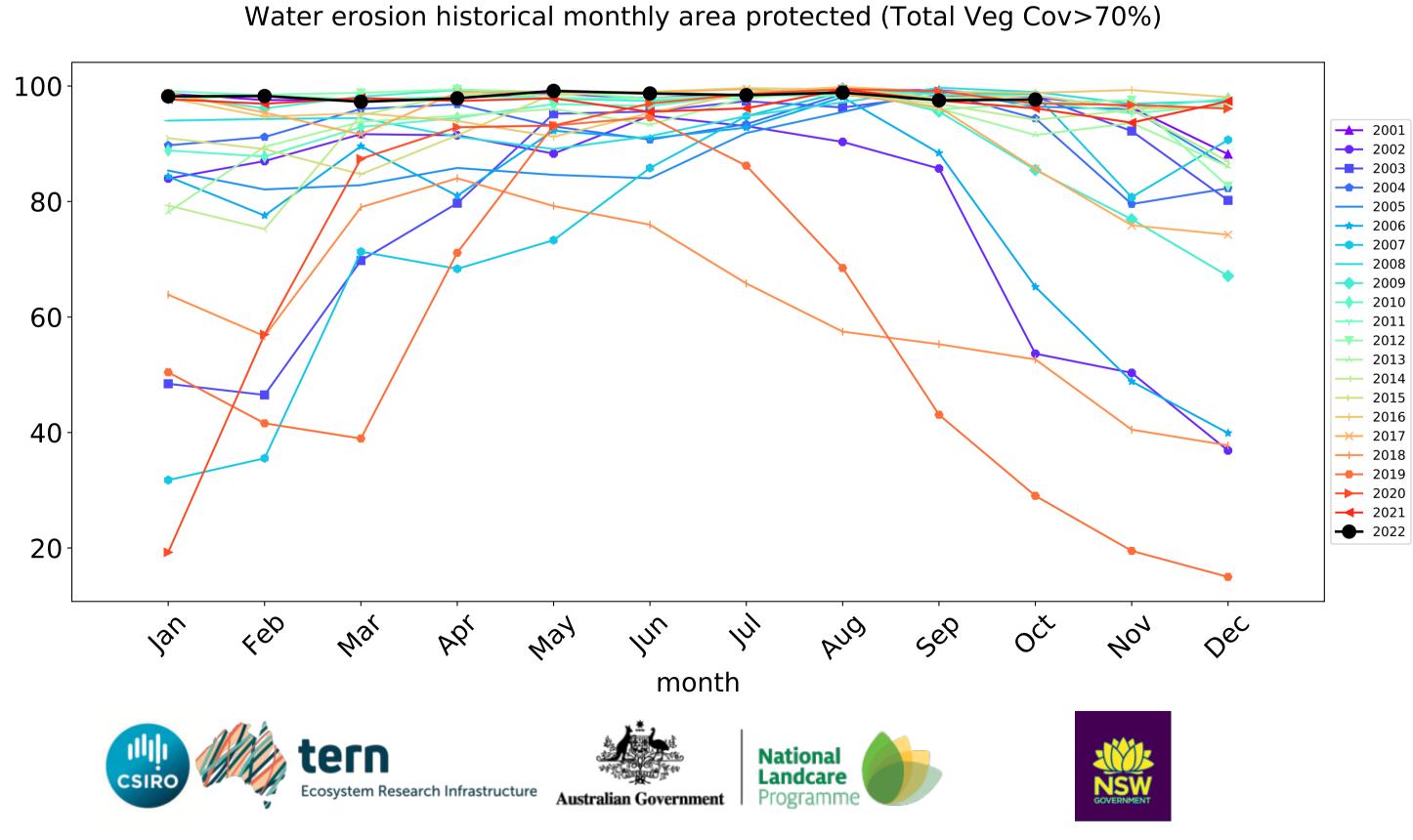


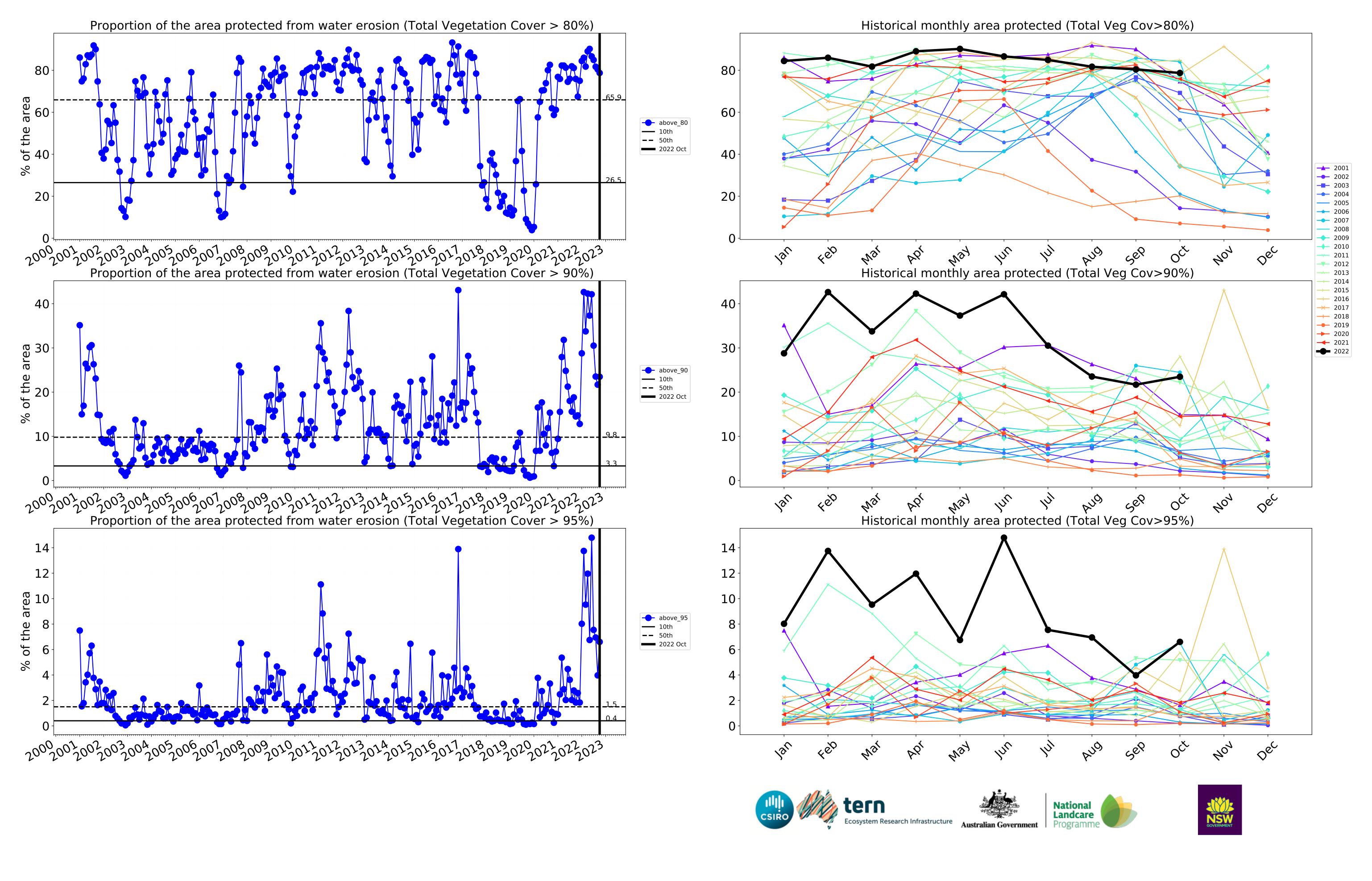
Cropping timeseries











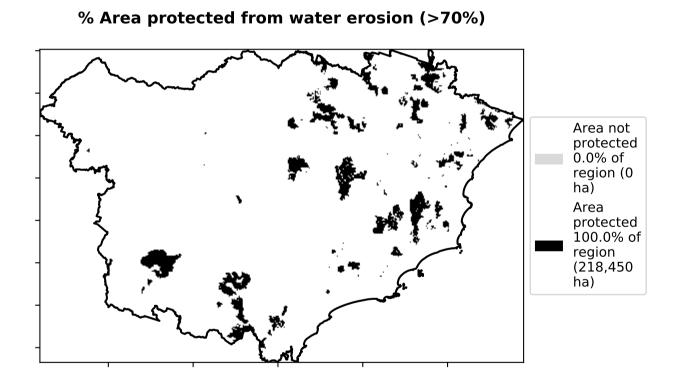
Production native forests and plantation forests

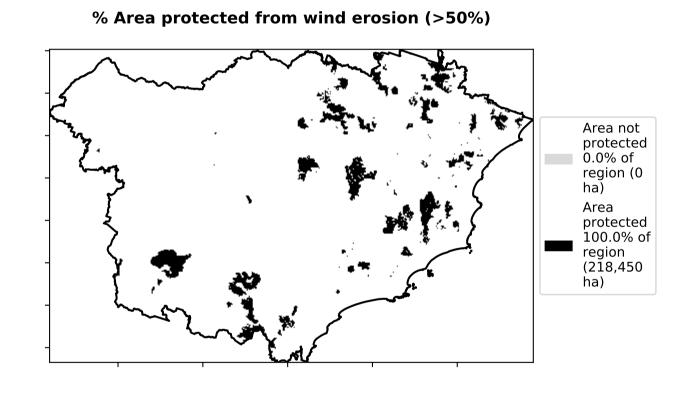
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Production native forests and plantation forests Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

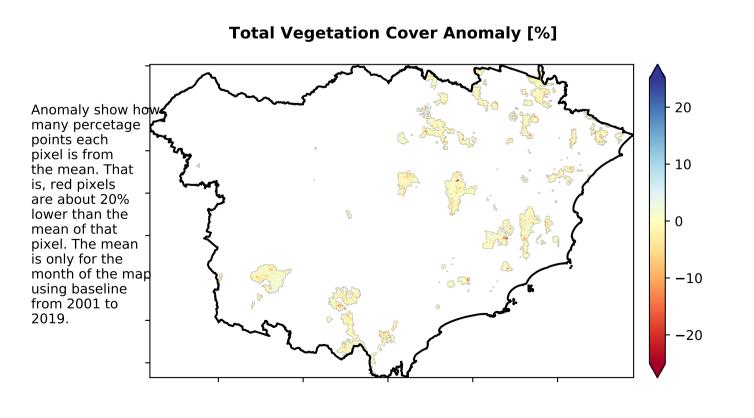
Total Vegetation Cover [%]

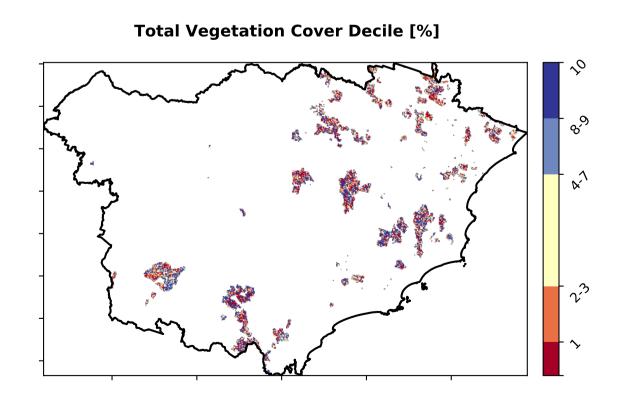
100.0% 100 Area (%) 40 20 -0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**

Proportion of vegetation cover class in area









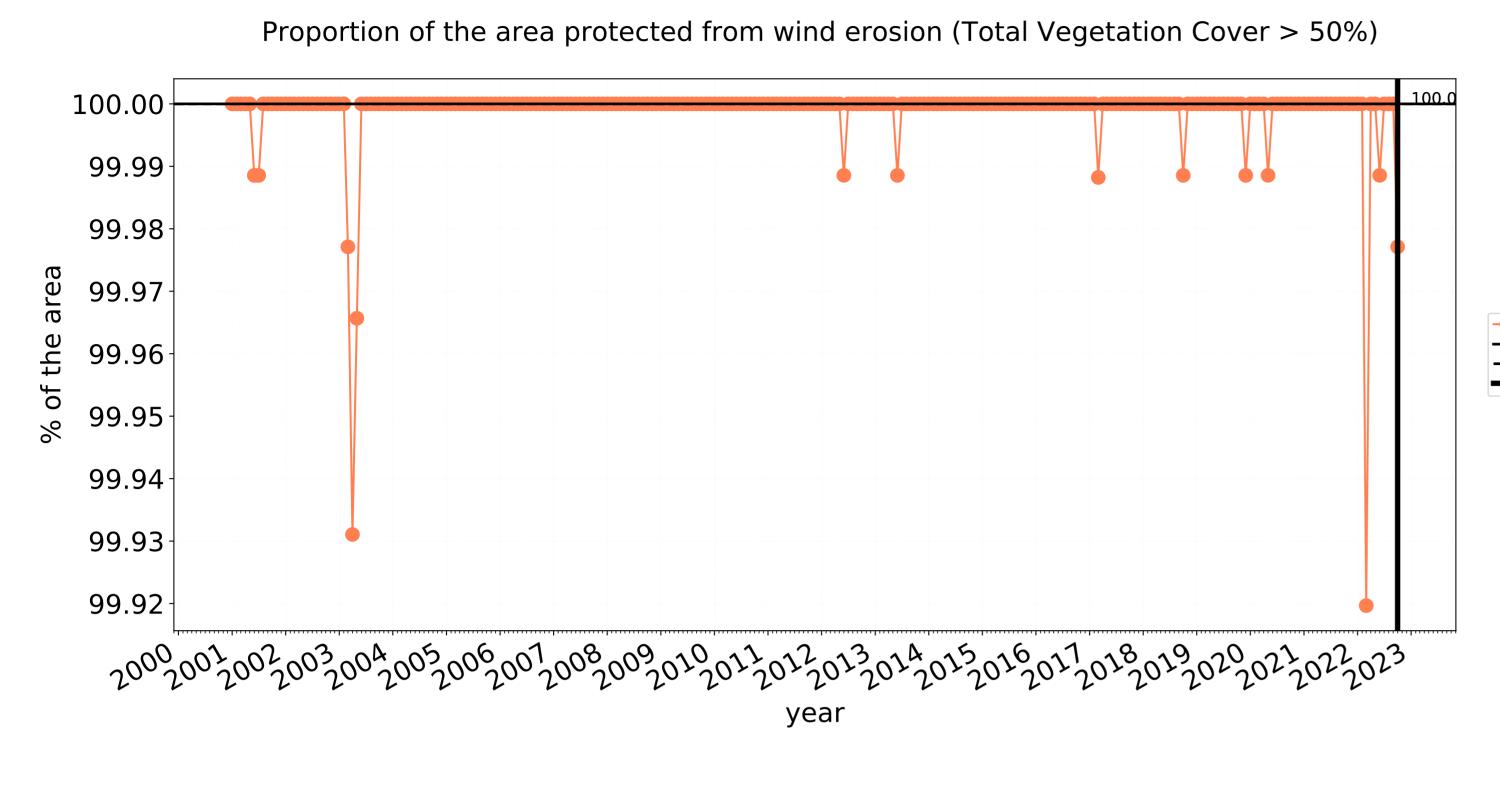


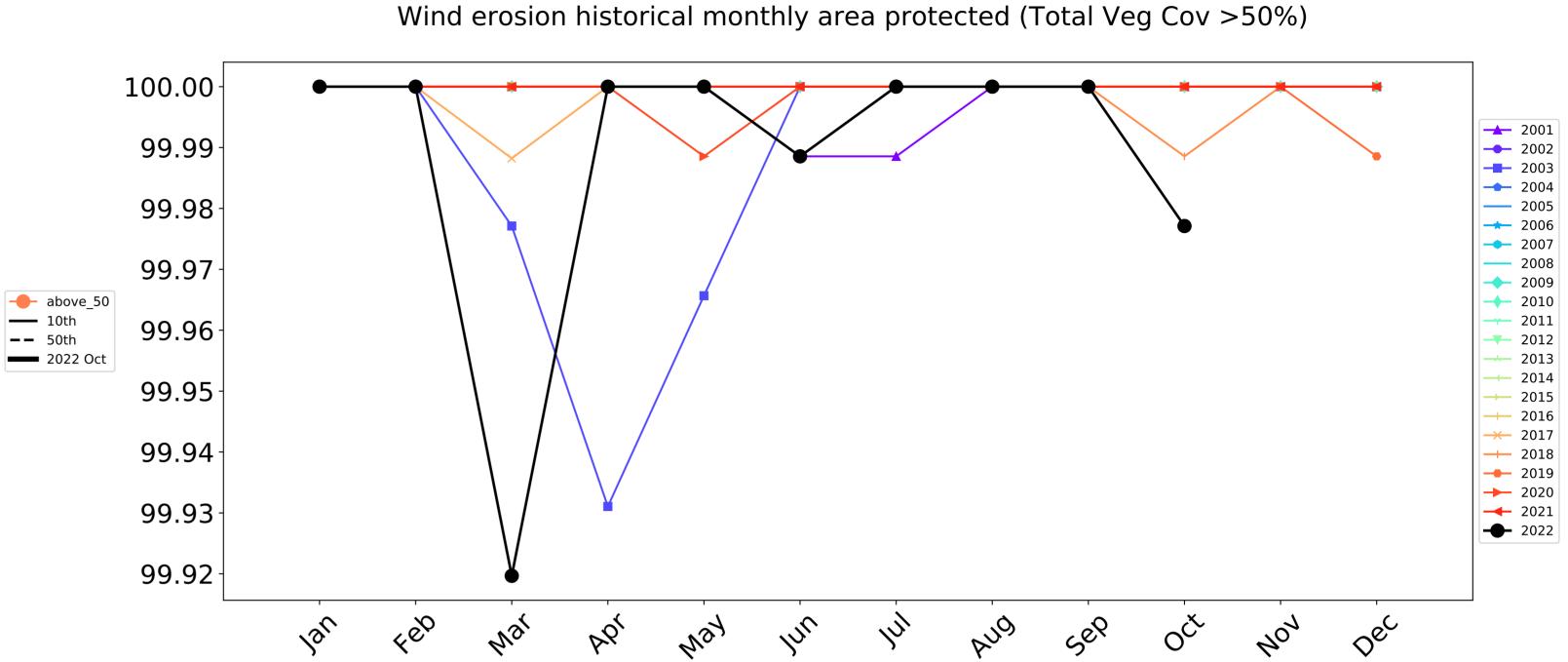




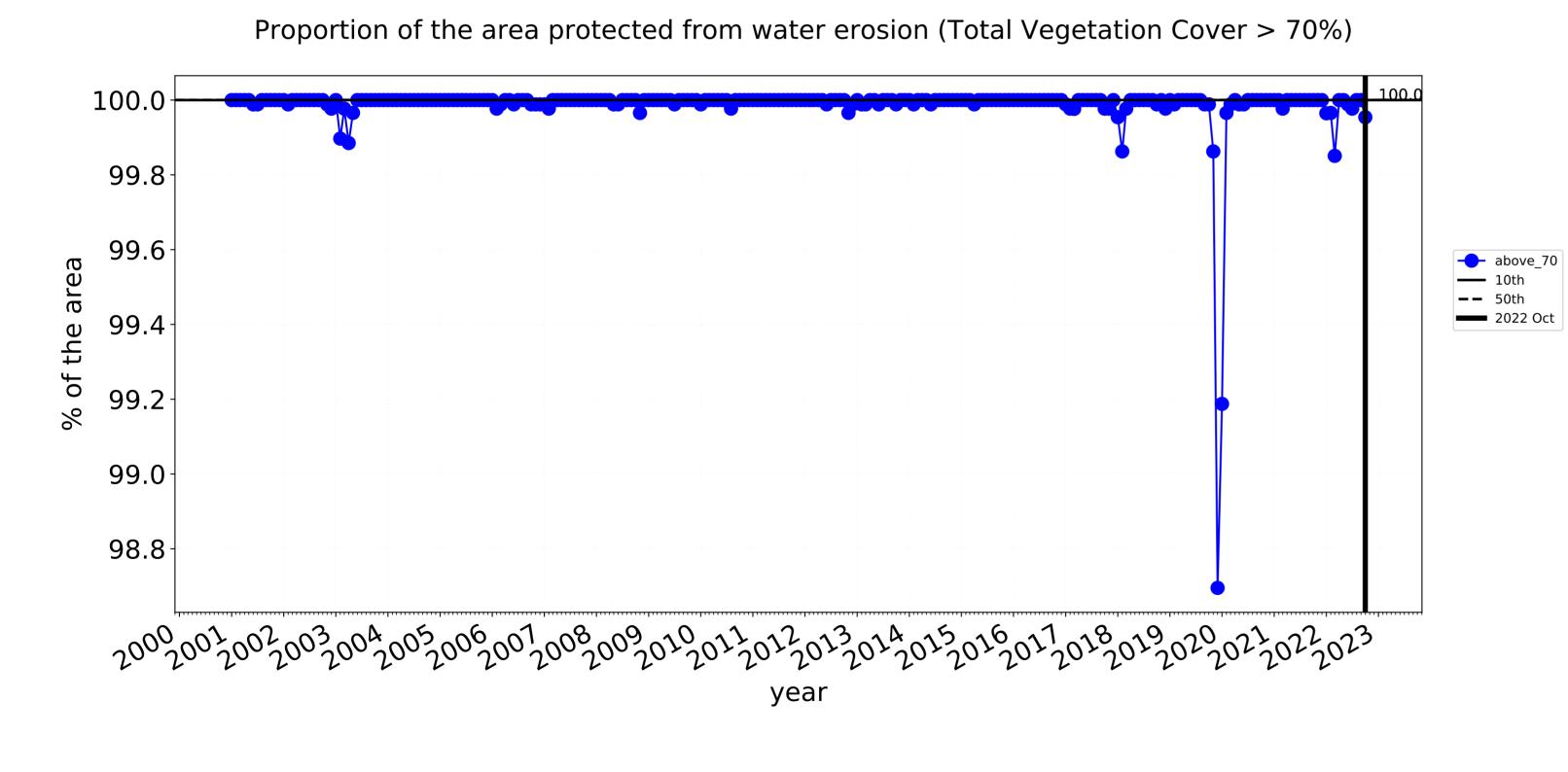


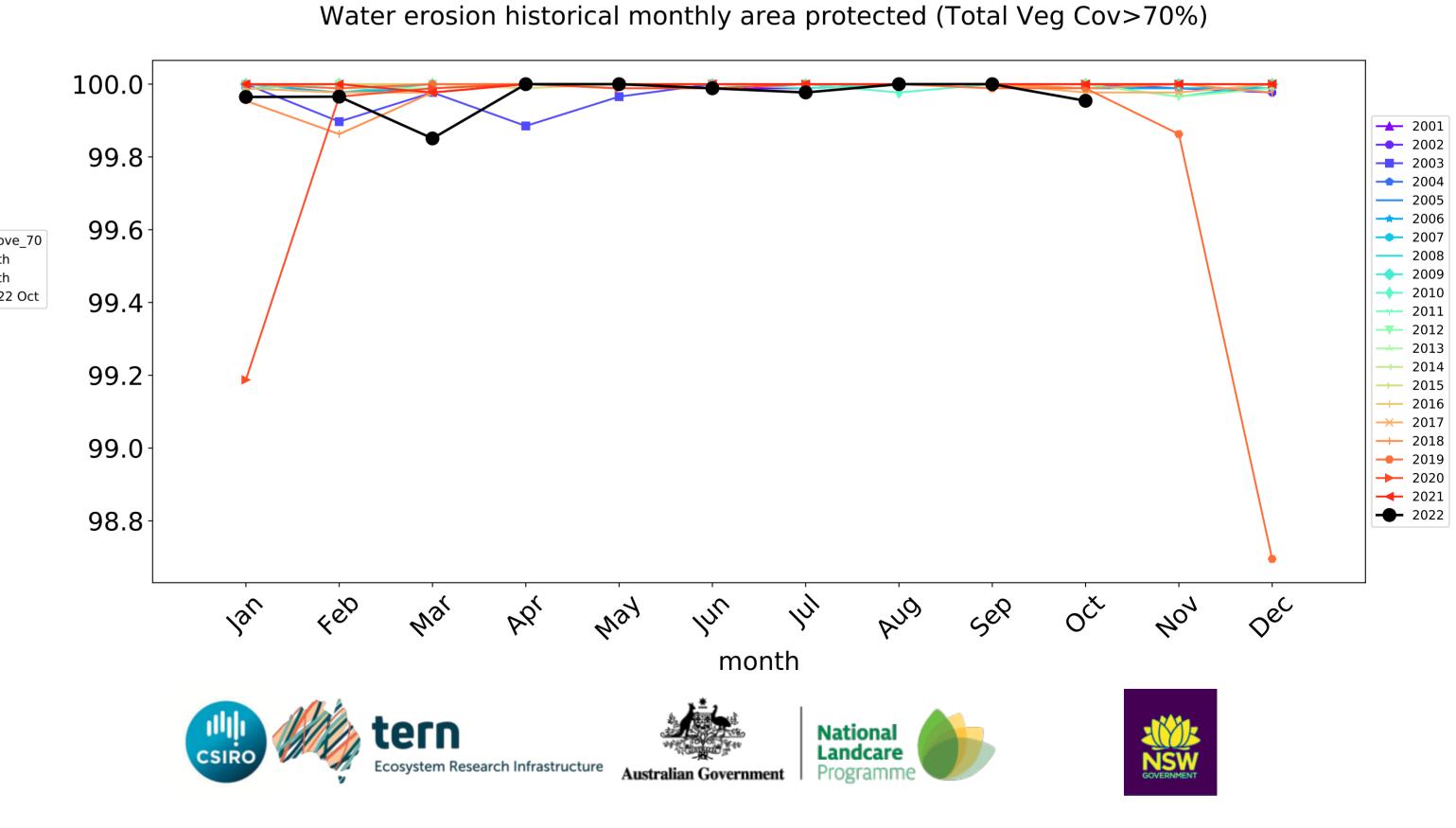
Production native forests and plantation forests timeseries

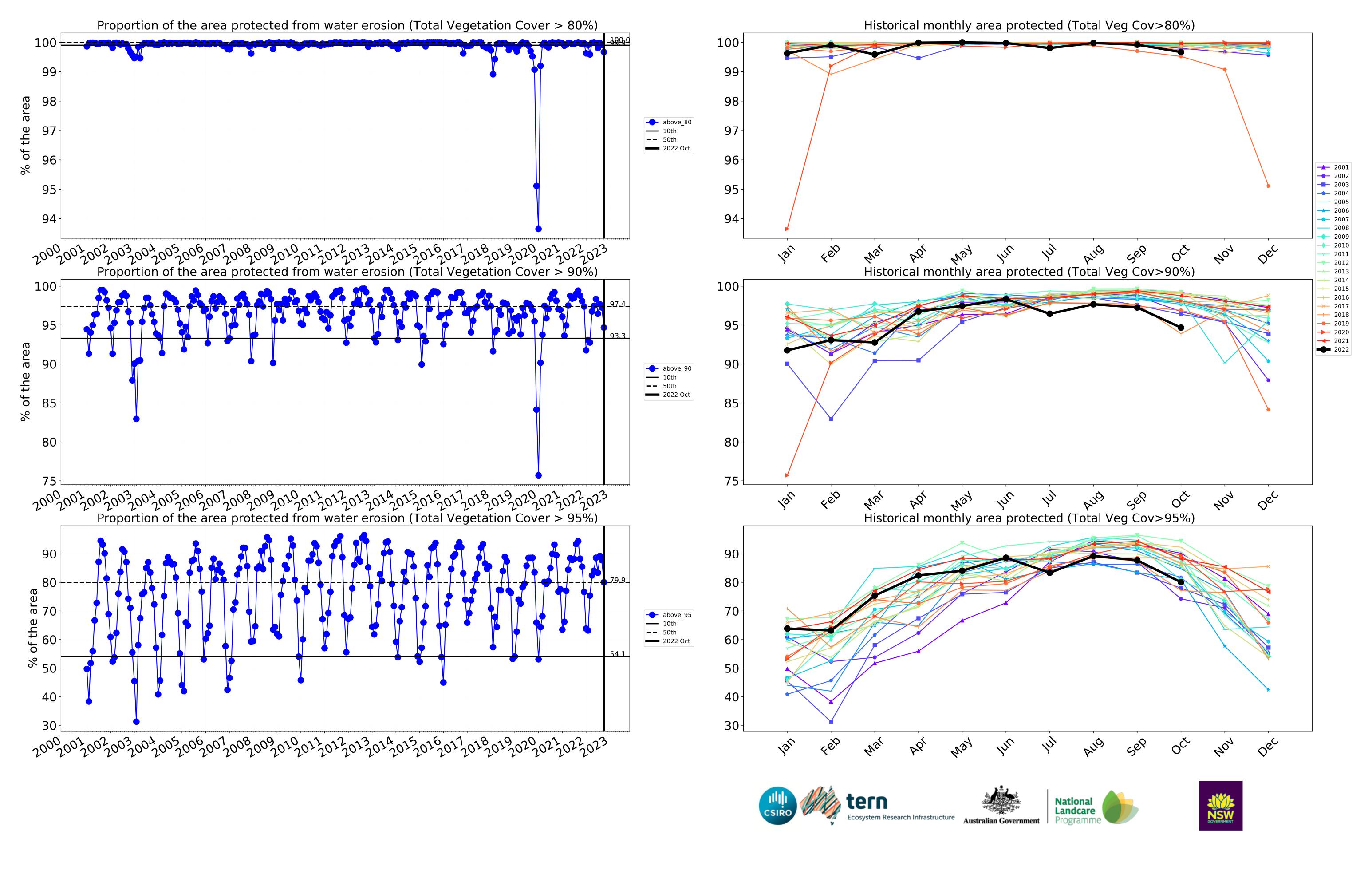




month







Hunter (3,215,000 ha and no data 85,425 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	3,215,000	99.9% 3,210,525	99.6% 3,202,050	98.4% 3,162,525	94.6% 3,042,825	72.1% 2,318,600	45.3% 1,456,375
Conservation and natural environments	1,230,575	99.9% 1,229,700	99.9% 1,228,850	99.6% 1,225,950	98.8% 1,215,300	89.0% 1,095,000	64.5% 794,100
Conservation and natural environments non forest	28,575	97.5% 27,850	96.0% 27,425	92.6% 26,450	87.1% 24,900	64.0% 18,275	30.3% 8,650
Conservation and natural environments Woodland forest	138,075	100.0% 138,050	99.9% 137,925	99.7% 137,675	98.7% 136,300	83.7% 115,575	48.8% 67,375
Conservation and natural environments Forest (non woodland)	1,063,925	100.0% 1,063,800	100.0% 1,063,500	99.8% 1,061,825	99.1% 1,054,100	90.3% 961,150	67.5% 718,075
Agriculture	1,573,725	100.0% 1,573,375	99.9% 1,572,275	99.3% 1,562,575	94.5% 1,486,725	60.5% 951,600	29.1% 458,225
Grazing	1,496,050	100.0% 1,495,700	99.9% 1,494,625	99.4% 1,486,625	95.3% 1,425,275	62.4% 932,975	30.3% 452,950
Grazing non forest	1,207,750	100.0% 1,207,450	99.9% 1,206,600	99.3% 1,199,525	94.7% 1,143,775	59.5% 718,325	27.6% 333,650
Grazing Woodland forest	120,000	100.0% 119,950	99.9% 119,850	99.5% 119,375	97.3% 116,775	66.5% 79,800	31.9% 38,275
Grazing - Forest (non woodland)	168,300	100.0% 168,300	99.9% 168,175	99.7% 167,725	97.9% 164,725	80.1% 134,850	48.1% 81,025
Cropping	50,375	100.0% 50,375	100.0% 50,375	97.7% 49,200	78.7% 39,650	23.5% 11,825	6.6% 3,325
Production native forests and plantation forests	218,450	100.0% 218,450	100.0% 218,400	100.0% 218,350	99.7% 217,725	94.7% 206,825	80.0% 174,800







